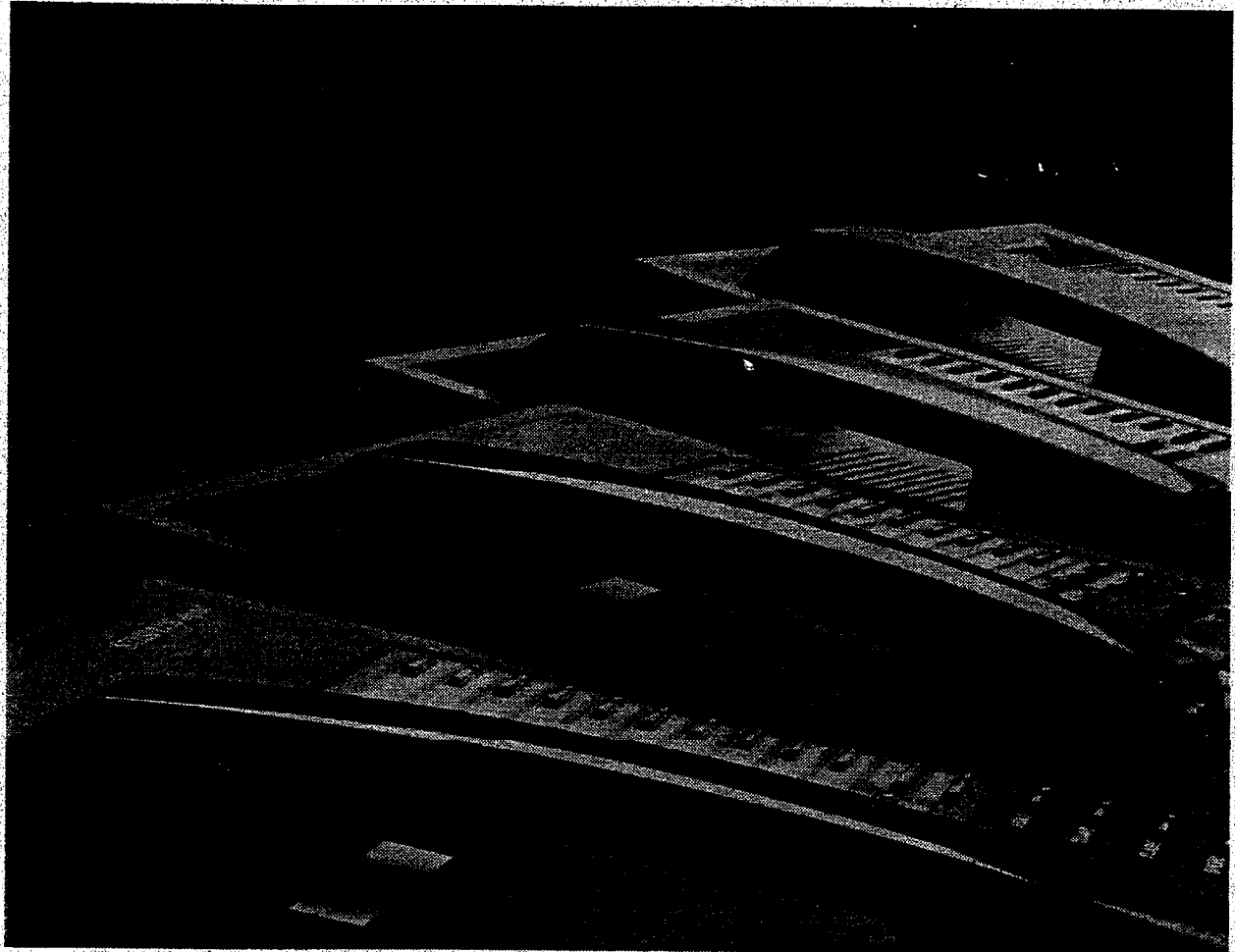# STARPLUS®

## digital systems

# SPD 4896
# HYBRID KEY TELEPHONE SYSTEM

## VODAVI

**COMMUNICATIONS
SYSTEMS**

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# ISSUE CONTROL SHEET

| ISSUE | DATE | CHANGE |
|-------|------|--------|
| Issue 1 | March 1994 | Initial Release of the Starplus SPD 4896 Digital System General Description, Installation and Maintenance Manual |

# SECTION 1ØØ
# INTRODUCTION

## 100.1    PURPOSE

This manual provides the information necessary to program, install, operate and maintain the Starplus Digital Key Telephone System.

## 100.2    REGULATORY INFORMATION (U.S.A.)

The Federal Communications Commission (FCC) has established rules which allow the direct connection of the Starplus Digital Key Telephone System to the telephone network. Certain actions must be undertaken or understood before the connection of customer provided equipment is completed.

### A. Telephone Company Notification

Before connecting the Starplus Digital Key Telephone System to the telephone network, the local serving telephone company must be given advance notice of intention to use customer provided equipment and provided with the following information:

- The telephone numbers to be connected to the system.

- The Ringer Equivalence Number also located on the KSU: 1.9B

- The Universal System Ordering Code (USOC) jack required for direct interconnection with the telephone network: RJ21 X

**FCC Registration Numbers:**
- For systems configured as a key system: (button appearances)
  DLPHKG-74722-KF-E
- For systems configured as a Hybrid system: (dial access codes)
  DLPHKG-74723-MF-E

### B. Incidence of Harm

If the telephone company determines that the customer provided equipment is faulty and possibly causing harm or interruption to the telephone network, it should be disconnected until repairs can be made. If this is not done, the telephone company may temporarily disconnect service.

### C. Changes in Service

The local telephone company may make changes in its communications facilities or procedures. If these changes should affect the use of the Starplus Digital Key Telephone System

or compatibility with the network, the telephone company must give written notice to the user to allow uninterrupted service.

### D. Maintenance Limitations

Maintenance on the Starplus Digital Key Telephone System is to be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in this manual. If unauthorized alterations or repairs are made, any remaining warranty and the software license for the system will be voided.

### E. Notice of Compliance

The Starplus Digital Key Telephone System complies with rules regarding radiation and radio frequency emissions by Class A computing devices. In accordance with FCC Standard 15 (Subpart J), the following information must be supplied to the end user:

| CAUTION |
|---|
| "This equipment generates and uses RF energy and if not installed and used in accordance with the Instruction- Manual, may cause interference to Radio Communications. It has been tested and found to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference, when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference." |

### F. Hearing Aid Compatibility

All Starplus Digital Terminals are Hearing Aid Compatible, as defined in Section 68.316 of Part 68 FCC Rules and Regulations.

### G. OPX Circuit

The Starplus Digital Key Telephone System may be equipped with Single Line Adapters (OPX) modules which provide a 48V FCC registered 2500-type single line off-premise extension interface pot-t.

- Each OPX port when used to support an off-premise extension requires an OL13C network circuit.

- An FCC registered interface such as a RJ11 C/W is also required to connect to the public network.

## 100.3    REGULATORY INFORMATION (CANADIAN)

- Department of Communications (DOC) Certification Number: 526 2933 **A**

- Load Number: 20

- Standard Connector: CA1 1 A/CA21 A

- Canadian Standards Association (CSA) File Number: LR57228

## A.  Notice

The Canadian Department of Communications' label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. This Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

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**CAUTION**

/Users should not attempt to make such connections /themselves, but should contact the appropriate electric, inspection authority, or electrician, **as** appropriate.

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## B.  Explanation of Load Number

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

## C. Maintenance Limitations

Maintenance on the **Starplus** Digital Key Telephone System is to be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in this manual. If unauthorized alterations or repairs are made, any remaining warranty and the software license for the system will be voided.

## D.  Notice of Compliance

The **Starplus** Digital Key Telephone System complies with Class **A** or Class B limits of the Canadian Radio Interference Regulations. In accordance with FCC Standard 15 (Subpart J), the following information must be supplied to the end user:

---

**CAUTION**

"This equipment generates and uses RF energy and if not /Installed and used. in accordance with the Instruction Manual, may cause interference to Radio-Communications. It has been tested and found to comply with the limits for a Class A or Class. B computing device, pursuant to Subpart J or Part.15 of the FCC Rules, which aredesigned to provide reasonable protection against such interference, when operated in a. commercial environment. Operation of this equipment in a. residential, area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference."

---

## E.  OPX Circuit

The **Starplus** Digital Key Telephone System may be equipped with Single Line Adapters (OPX) modules which provide a 48V FCC registered 2500-type single line off-premise extension interface port.

- A DOC registered interface such as a CA11 is also required to connect to the public network.

## 100.4    **UUCSA SAFETY COMPLIANCE**

The **Starplus** Digital Key Telephone System has met all safety requirements and was found be in compliance with the Underwriters Laboratories (UL) 1459 Second Edition and Canadian Standards Association (CSA) C22.2, No. 225 Standard. The **Starplus** Digital Key Telephone System is authorized to bear the UL and CSA marks.

### 100.5    TOLL FRAUD DISCLAIMER

"WHILE THIS DEVICE IS DESIGNED TO BE REA-SONABLY SECURE AGAINST INTRUSIONS FROM FRAUDULENT CALLERS, IT IS BY NO MEANS INVULNERABLE TO FRAUD. THERE-FORE NO EXPRESS OR IMPLIED WARRANTY IS MADE AGAINST SUCH FRAUD INCLUDING IN-TERCONNECTION TO THE LONG DISTANCE NETWORK."

"WHILE THIS DEVICE IS DESIGNED TO BE REA-SONABLY SECURE AGAINST INVASION OF PRIVACY, IT IS BY NO MEANS INVULNERABLE TO SUCH INVASIONS. THEREFORE NO EX-PRESS OR IMPLIED WARRANTY IS MADE AGAINST UNLAWFUL OR UNAUTHORIZED UTILIZATION WHICH RESULTS IN THE INVA-SION OF ONE'S RIGHT OF PRIVACY."

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **A** | | | | | | |
| Account Codes …...................................................... 200-I | | ● | ● | ● | ● | N |
| Attendant Recall ....................................................... 200-I | ● | ● | ● | ● | ● | N |
| Automatic Call Back Timer ....................................... 200-I | ● | ● | ● | ● | ● | N |
| Automatic Call Distribution (ACD). ........................... 200-I | | | ● | | ● | N |
|    Agent Positions.................................................. 200-I | | | ● | | ● | N |
|    Alternate ACD Group Assignments.. .................... 200-I | | | ● | | ● | N |
|    Group Member Status ......................................... 200-I | | | ● | | ● | ☠ |
|    Guaranteed Message Announcement.. ................ 200-2 | | | ● | | ● | RAN Device(s) |
|    Incoming CO Direct Ringing ................................ 200-2 | | | ● | | ● | N |
|    No-Answer Recall Timer.. ................................... 200-2 | | | ● | | ● | N |
|    No-Answer Retry Timer ....................................... 200-2 | | | a | | ● | ☠ |
|    Overflow Station Assignments.. ........................... 200-2 | | | ● | | ● | ☠ |
|    ACD Event Trace.. ............................................... 200-3 | | | ● | | ● | PC/Terminal/Printer |
|    Recorded Announcements (RAN) ....................... 200-2 | | | ● | | ● | RAN Device(s) |
|    Supervisor Positions.. ......................................... 200-2 | | | ● | | ● | ☠ |
|    Supervisor/Agent Calls in Queue Display ........... 200-3 | | | ● | | ● | ☠ |
| Automatic Line Access.. .......................................... 200-3 | ● | ● | ● | ● | ● | ☠ |
| Automatic Night Service ........................................... 200-3 | ● | ● | ● | ● | ● | ☠ |
| Automatic Pause Insertion w/Speed Dial ................. 200-3 | ● | ● | ● | ● | ● | ☠ |
| Automatic Privacy .................................................... 200-3 | ● | ● | ● | ● | ● | ☠ |
| Automatic Selection.. ............................................... 200-3 | e | ● | ● | ● | ● | ☠ |
| **B** | | | | | | |
| Background Music ..................................................... 200-3 | ● | ● | ● | ● | ● | Music Source |
| Battery Back-up (Memory) ........................................ 200-3 | ● | ● | ● | ● | ● | ☠ |
| Busy Lamp Field (BLF) ........... ..) ............................. 200-3 | ● | ● | ● | ● | ● | ☠ |

N=No additional hardware required

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **C** | | | | | | |
| Call Announce - Privacy.. ........................................... 200-3 | ● | ● | ● | ● | ● | N |
| Call Back ................................................................ 200-3 | ● | ● | ● | ● | ● | N |
| Call Cost Display Feature ......................................... 200-3 | | | | ● | ● | ⚒ |
| Call Forward: Preset ................................................ 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    ACD Groups.. ........................................................ 200-4 | | | ● | | ● | ⚒ |
|    Hunt Groups.. ....................................................... 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    Off-Net.. ................................................................ 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    Stations.. .............................................................. 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    UCD Groups ......................................................... 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    VM Groups.. .......................................................... 200-4 | | ● | ● | ● | ● | VM System |
| Call Forward: Station.. .............................................. 200-4 | ● | ● | ● | ● | ● | N |
|    All Calls,. .............................................................. 200-4 | ● | ● | ● | ● | ● | N |
|    Busy ..................................................................... 200-4 | ● | ● | ● | ● | ● | ⚒ |
|    Busy/No Answer ................................................... 200-5 | ● | ● | ● | ● | ● | N |
|    No Answer ............................................................ 200-5 | ● | ● | ● | ● | ● | N |
|    Off -Net ................................................................ 200-5 | ● | ● | ● | ● | ● | N |
| Call Park.. ............................................................... 200-5 | ● | ● | ● | ● | ● | N |
| Call Pick-up ............................................................. 200-5 | ● | ● | ● | ● | ● | N |
|    Directed Call Pick-up ............................................ 200-5 | ● | ● | ● | ● | ● | N |
|    Group Pick-up.. ..................................................... 200-5 | ● | ● | ● | ● | ● | N |
| Call Transfer ........................................................... 200-5 | ● | ● | ● | ● | ● | N |
| Caller Entered ICLID Digits.. ..................................... 200-5 | | | ● | | ● | N |
| Calling Station Tone Mode Option ............................. 200-5 | ● | ● | ● | ● | ● | N |
| Camp-On.. .............................................................. 200-5 | ● | ● | ● | ● | ●   I | N |
| Camp-On Recall.. ..................................................... 200-6 | ● | ● | ● | ● | ● | ⚒ |
| Canned Toll Restriction.. ........................................... 200-6 | ● | ● | ● | ● | ● | N |
| Centrex Compatibility.. ........) ..................................... 200-6 | ● | ● | ● | ● | ● | ⚒ |

N=No additional hardware required

## Table 200-I Key Station Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| Flex Button Programming ....200-6 | • | • | • | • | • | N |
| Off-Hook Preference ....200-6 | • | • | • | • | • | — |
| Private Line Appearance ....200-6 | • | • | • | • | • | N |
| Programmable Flash Timer ....200-6 | • | • | • | • | • | N |
| Programming *, #, and Hook-Flashes into Speed Dial ....200-6 | • | • | • | • | • | N |
| Centrex/PBX Transfer ....200-6 | • | • | • | m | • | N |
| Chaining Speed Bins ....200-6 | • | • | • | • | • | N |
| CO Line Access ....200-6 | • | • | • | • | • | N |
| CO Line Class of Service ....200-6 | • | • | • | • | • | N |
| CO Line Control (Contact) ....200-6 | • | • | • | • | • | Gen & Bells |
| CO Line Groups ....200-7 | • | • | • | • | • | N |
| CO Line Identification ....200-7 | • | • | • | • | • | N |
| CO Line Incoming Ringing Assignment ....200-7 | • | • | • | • | • | N |
| CO Line Loop Supervision ....200-7 | • | • | • | • | • | N |
| CO Line Queue ....200-7 | • | • | • | • | • | N |
| CO Line Ringing Options ....200-7 | • | • | • | • | • | N |
| CO Ring Detect ....200-7 | • | • | • | • | • | N |
| Conference ....200-7 | • | • | • | • | • | N |
| Add-On Conference ....200-7 | • | • | • | • | • | — |
| Multi-Line Conference ....200-7 | • | • | • | • | • | N |
| Unsupervised Conference ....200-7 | • | • | • | • | • | N |
| Conference Enable/Disable ....200-8 | • | • | • | • | • | N |
| **D** | | | | | | |
| Data Feature ....200-8 | • | • | • | m | • | PC/Terminal |
| DataBase Printout (Dump) ....200-8 | • | • | • | • | • | Printer/Terminal |
| Database Upload/Download ....200-8 | • | • | • | • | • | Printer/Terminal |
| Day/Night Class of Service (COS) ....200-8 | • | • | • | • | • | N |

N=No additional hardware required

## Table 200-I Key Station Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| Default Button Mapping . . . . . . . . . . 200-8 | ● | ● | ● | ● | ▢ | ☠ |
| Dial By Name . . . . . . . . . . . 200-8 | ● | ● | ● | ● | ▢ | ☠ |
| Dial Pulse Sending . . . . . . . . . . . 200-8 | ● | ▢ | ▢ | ● | ● | ☠ |
| Dialing Privileges . . . . . . . . . . . 200-8 | ● | ● | ● | ● | 0 | N |
| Direct Inward-System Access (DISA) . . . . . . . . 200-8 | 0 | ● | o | o | o | DTMF Rcvr |
| CO Line Group Access . . . . . . . . . . . 200-8 | o | o | o | o | o | N |
| DISA Call Forwarding . . . . . . . . . . . 200-I 1 | o | o | o | o | o | N |
| Programmable Access . . . . . . . . . . . 200-8 | o | o | o | o | o | N |
| Station Access . . . . . . . . . . . 200-I 1 | o | o | ● | o | o | N |
| Trunk-to-Trunk . . . . . . . . . . . 200-I 1 | o | o | o | ● | o | N |
| Direct Station Selection . . . . . . . . . . . 200-I 1 | o | o | o | o | o | N |
| Directed Call Pick-up . . . . . . . . . . . 200-I 1 | o | o | o | o | o | N |
| Call Pick-up - Station . . . . . . . . . . . 200-I 1 | o | o | o | o | o | N |
| Call Pick-up - UCD Groups . . . . . . . . . . . 200-11 | o | ● | ● | o | o | N |
| Directory Dialing . . . . . . . . . . . 200-I 1 | o | o | ● | o | o | N |
| Disable Outgoing CO Line Access 0 . . . . . 0 . . . . . . I    1 | o | o | o | o | o | N |
| Distinctive Ringing (User Selectable) . . . . . . | o | o | o | o | o | N |
| Do Not Disturb (DND) . . . . . . . . . . . 200-I 1 | o | ▢ | ▢ o | ● | ● | ☠ |
| One-Time Do Not Disturb (DND) . . . . . . . . 200-11 | o | o | ● | o | o | N |
| DTMF Sending . . . . . . . . . . . 200-12 | o | o | o | o | o | N |
| E | | | | | | |
| Emergency Transfer . . . . . . . . . . . 200-12 | o | o | ● | o | ● | OPX/48v supply PFTU/12v supply |
| End to End Signalling . . . . . . . . . . . 200-12 | ● | ● | ● | o | o | ☠ |
| Exclusive Hold . . . . . . . . . . . 200-12 | o | o | ▢ ▢ o | o | ● | ☠ |
| Executive Override . . . . . . . . . . . 200-12 | ● | o | ● | o | o | ☠ |
| Executive/Secretary Transfer . . . . . . . . . . . 200-12 | o | ● | o | o | o | N |
| External Night Ringing . . . . . . . . . . . 200-12 | o | o | 0 | o | o | Paging Equipment |

N=No additional hardware required

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **F** | | | | | | |
| Flash ................................................................. 200-I 2 | • | • | • | • | • | N |
| Flash On Intercom ..................................................... 200-12 | • | • | • | ☒ | • | N |
| Flash Rates (Programmable) .................................... 200-12 | • | • | • | • | • | N |
| Flash with Speed Dial ............................................... 200-12 | • | • | • | • | • | N |
| Flexible Attendant ...................................................... 200-13 | • | • | • | • | • | N |
| Flexible Button Assignment ......................................... 200-13 | • | • | • | • | • | 34-Btn/14-Btn |
| Flexible Port Assignments .......................................... 200-13 | • | • | • | • | • | N |
| Forced Account Codes ............................................... 200-13 | | • | • | • | • | N |
| Forced Least Cost Routing (LCR) ............................. 200-I 3 | | | | • | • | N |
| **G** | | | | | | |
| Group Call Pick-up ................................................... 200-I 3 | • | • | • | • | • | N |
| Group Listening ......................................................... 200-I 3 | • | • | • | • | • | N |
| **H** | | | | | | |
| Handset Receiver Gain .............................................. 200-I 3 | • | • | • | • | • | N |
| Headset Compatibility ................................................ 200-13 | • | • | • | • | • | Headset |
| Headset Mode ........................................................... 200-14 | • | • | • | • | • | Headset |
| Hearing Aid Compatible ............................................. 200-14 | • | • | • | • | • | N |
| Hold Preference ........................................................ 200-14 | • | • | • | • | • | N |
| Hold Recall ............................................................... 200-I4 | • | • | • | • | • | N |
| Hot Line/Ring Down .................................................. 200-14 | • | • | • | • | • | N |
| Hunt Groups ............................................................. 200-14 | • | • | • | • | • | N |
| Hunt Group Chaining .................................................. 200-14 | • | • | • | • | • | N |
| Pilot Hunting ............................................................. 200-14 | • | • | • | • | • | N |
| Station Hunting .......................................................... 200-14 | • | • | • | m | • | N |
| **I** | | | | | | |
| ICLID Feature ........................................................... 200-14 | | | • | | • | ICLID Keyset |
| Calling Number/Name Display ................................... 200-14 | | | • | | • | ICLID Keyset |

N=No additional hardware required

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| Incoming Number/Name for SMDR Records.. ....... 200-14 | | | • | | • | ICLID Keyset |
| Unanswered Call Management.. .......................... 200-15 | | | • | | • | ICLID Keyset |
| Idle Speaker Mode.. ................................................. 200-15 | • | • | • | • | • | N |
| Incoming CO Lines Off-Net Forward via Speed Dial. 200-15 | • | • | • | • | • | N |
| Intercom Calling ......................................................... 200-I 5 | • | • | • | • | • | N |
| Intercom Signaling Select . . ...................................... 200-I 5 | • | • | • | • | • | N |
| **K** | | | | | | |
| Keyset Self Test ........................................................ 200-15 | • | • | • | • | • | 34-Btn keyset |
| **L** | | | | | | |
| Last Number Redial (LNR). ....................................... 200-15 | • | • | • | • | • | N |
| LCD Interactive Display ............................................. 200-I 5 | • | • | • | • | • | Exec Keyset |
| Least Cost Routing (LCR) ......................................... 200-15 | | | | • | • | N |
| 6-Digit Table.. ....................................................... 200-16 | | | | • | • | N |
| Daily Start Time Tables ........................................ 200-16 | | | | • | • | N |
| Default LCR Data Base ......................................... 200-I 6 | | | | • | • | N |
| Exception Tables ................................................... 200-I 6 | | | | • | • | N |
| Insert/Delete Tables.. ........................................... 200-I 6 | | | | • | • | N |
| LCR Routing for Toll Information .......................... 200-16 | | | | • | • | N |
| Route List Tables ................................................. 200-I 5 | | | | • | • | N |
| Weekly Time Tables ............................................. 200-16 | | | | • | • | N |
| 3-Digit Table ......................................................... 200-I 5 | | | | • | • | N |
| Local Number/Name Translation Table .................... 200-I 6 | • | • | • | • | • | N |
| Loop Button CO Line Access.. .................................. 200-I 6 | • | • | • | • | • | N |
| **M** | | | | | | |
| Meet Me Page ............................................................ 200-I 6 | • | • | • | • | • | N |
| Message Waiting....... ................................................. 200-I 6 | • | • | • | • | • | N |
| Message Waiting Reminder Tone .............................. 200-I 6 | • | • | • | • | • | N |

N=No additional hardware required

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| Messages - Personalized ........................ 200-17 | . | ● | ● | ● | ● | N |
| Custom Messages .............................. 200-17 | ● | ● | ● | ● | ● | N |
| Date and Time Entry on Personalized Message(s) ............................ 200-17 | a | ● | ● | ● | ● | N |
| --Message Code on a Flex Key ........... 200-17 | ● | ● | ● | ● | ● | N |
| Music On Hold ................................... 200-17 | ● | ● | ● | ● | ● | Music Source |
| Mute Key ....................................... 200-17 | ● | ● | ● | ● | ● | N |
| Name in Display ............................... 200-17 | ● | ● | ● | ● | ● | Exec Keyset |
| Night Service Feature ......................... 200-17 | | ● | ● | ● | ● | N |
| Night Service Mode ............................ 200-17 | 4 | ● | ● | ● | ● | N |
| Automatic Night Mode Operation ......... 200-17 | ● | ● | ● | ● | ● | N |
| External Night Ringing ....................... 200-17 | ● | ● | ● | ● | ● | N |
| Manual Operation ............................. 200-17 | ● | ● | ● | ● | ● | N |
| Night Class of Service ....................... 200-17 | ● | ● | ● | ● | ● | N |
| Night Ringing Assignments ................. 200-17 | ● | ● | ● | ● | ● | N |
| Universal Night Answer (UNA) ............. 200-18 | ● | ● | ● | ● | ● | N |
| Weekly Night Mode Schedule ............. 200-18 | ● | ● | ● | ● | ● | N |
| Off Hook Voice Over (OHVO) .............. 200-18 | | ● | ● | ● | ● | OHVO Keyset |
| Off-Hook Preference ........................... 200-18 | ● | ● | ● | ● | ● | N |
| Auto Feature Access ......................... 200-18 | ● | ● | ● | ● | ● | N |
| Auto Line Access ............................. 200-18 | ● | ● | ● | ● | ● | N |
| Hot Line/Ring Down ........................... 200-18 | ● | ● | ● | ● | ● | N |
| Intercom Access .............................. 200-18 | ● | ● | ● | ● | ● | N |
| User Programmable Preference ........... 200-18 | ● | ● | ● | ● | ● | N |
| Off-Hook Signalling ........................... 200-18 | ● | ● | ● | I. | ● | N |
| Off-Premise Extensions (OPX) ............ 200-18 | ● | ● | ● | ● | ● | SLA/OPX/48v |

N=No additional hardware required

**Table 200-1 Key Station Features/Software Packages**

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| On-Hook Dialing ... 200-18 | • | • | • | • | • | N |
| On-Line Programming ... 200-18 | • | • | • | • | • | N |
| **P** | | | | | | |
| Page/Relay Control ... 200-19 | • | • | • | • | • | Relay/Sensor unit |
| Paging ... 200-19 | • | • | • | • | • | Paging Equipment |
| External Paging ... 200-19 | • | • | • | • | • | Paging Equipment |
| Internal Paging ... 200-19 | • | • | • | • | • | Paging Equipment |
| Paging Access Restriction ... 200-19 | • | • | • | • | • | N |
| Pause Timer ... 200-19 | • | • | • | • | • | N |
| PBX Dialing Codes ... 200-19 | • | • | • | • | • | N |
| Pool Button Operation ... 200-19 | • | • | • | • | • | N |
| Preferred Line Answer ... 200-19 | • | • | • | • | • | N |
| Privacy Release ... 200-19 | • | • | • | • | • | N |
| Per CO Line Option ... 200-19 | • | • | • | • | • | N |
| Per Station Option ... 200-20 | • | • | • | • | • | N |
| Private Line ... 200-20 | • | • | • | • | • | N |
| Pulse-To-Tone Switchover ... 200-20 | • | • | • | • | • | N |
| **R** | | | | | | |
| Range Programming ... 200-20 | • | • | • | • | • | N |
| Release Key ... 200-20 | • | • | • | • | • | N |
| Remote Administration ... 200-20 | • | • | • | • | • | PC/Term/Modem |
| Database Upload/Download ... 200-20 | • | • | • | • | • | PC/Term/Modem |
| Remote System Monitor & Maintenance ... 200-20 | • | • | • | • | • | PC/Term/Modem |
| Remote System Maintenance ... 200-20 | • | • | • | • | • | PC/Term/Modem |
| Remote System Monitor ... 200-20 | • | • | • | • | • | PC/Term/Modem |
| **S** | | | | | | |
| Save Number Redial (SNR) ... 200-21 | • | • | • | • | • | N |

N=No additional hardware required

**Table 200-I Key Station Features/Software Packages**

| FEATURE | STANDARD FEATUHES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| Single Line Telephone (SLT) Compatibility* . . . . . . . . . . . . . 200-21 | | ● | ● | ● | o | 2500 type |
| *A Single Line Telephone board (SL12), or Single Line Adapter (OPX) w/48v supply can be used for SLT operations | | | | | | |
| Speakerphone . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | ● | ● | o | o | o | 34-Btn/14-Btn |
| Station Class of Service (COS) . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | o | o | o | o | N |
| Station Message Detailed Recording . . . . . . . . . . . . . . . . . . . . 200-21 | | o | ● | o | 0 | Printer/Terminal |
| Station Relocation Feature . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | ● | 0 | o | ● | N |
| Station Speed Dial . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | o | ● | o | □ | N |
| System . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | o | o | o | □ | N |
| Configuration . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | o | o | o | □ | N |
| System Hold . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | o | ● | o | □ | N |
| System Speed Dial . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-21 | o | ● | o | o | □ | N |
| **T** | | | | | | |
| Text Messaging (Silent Response) . . . . . . . . . . . . . . . . . . . 200-21 | o | o | o | o | □ | Exec Keyset |
| Toll Restriction (Table Driven) . . . . . . . . . . . . . . . . . . . . . . 200-22 | ● | □ | □ | □ | □ | N |
| Transfer Recall . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | o | o | o | 0 | □ | N |
| **U** | | | | | | |
| Uniform Call Distribution (UCD) . . . . . . . . . . . . . . . . . . . . . . 200-22 | ● | □ | ● | □ | □ | N |
| Agent Queue Status Display . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | o | o | 0 | o | □ | N |
| Alternate UCD Group Assignments . . . . . . . . . . . . . . . . . . . . 200-22 | o | 0 | 0 | o | □ | N |
| Auto Wrap-Up w/Timer . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | o | o | ● | o | □ | N |
| Available/Unavailable Mode . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | ● | o | o | o | ◎ | N |
| Incoming CO Direct Ringing . . . . . . . . . . . . . . . . . 200-22 | o | o | ● | o | □ | N |
| No-Answer Recall Timer . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | o | o | 0 | o | ▥ | N |
| No-Answer Retry Timer . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200-22 | ● | o | o | ● | □ | N |
| Overflow Station Assignments..\ . . . . . . . . . . . . . . . . . . . . . . 200-22 | ● | ● | ● | ● | ● | N |
| Recorded Announcements (RAN) . . . . . . . . . . . . . . . . . 200-22 | ● | ● | ● | ● | □ | RAN Device(s) |
| Universal Night Answer (UNA) . . . . . . . . . . . . . . . . . . . . . . 200-23 | ● | ● | ● | ● | □ | N |

N=No additional hardware required

## Table 200-1 Key Station Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **V** | | | | | | |
| Voice Mail Groups (VM) ............ 200-23 | | • | • | • | • | VM System |
| In-Band Signaling Integration ......... 200-23 | | • | • | • | • | VM System |
| Message Waiting Indication ......... 200-23 | | • | • | • | • | VM System |
| Tone Mode Calling Option ......... 200-24 | | • | • | • | • | VM System |
| Transfer/Forward ......... 200-24 | | • | • | • | • | VM System |
| VM Disconnect Signal ......... 200-23 | | • | • | • | • | VM System |
| VM Transfer with ID Digits ......... 200-24 | | • | • | • | • | VM System |
| Volume Controls ......... 200-24 | • | ■ | • | • | • | N |

N=No additional hardware required

# SECTION 200
# KEY STATION FEATURE DESCRIPTION

The System and Key Station features of the Starplus Digital Key Telephone System are listed and described below in alphabetical order. An abbreviated feature index is provided in Table 200-I Key Station Features/Software Packages.

## 200.1    ACCOUNT CODES
### *This feature is available with optional software.*

An account code is the last field within Station Message Detail Recording (SMDR), that provides the ability to track specific calls by entering a non-verified, variable length (up to 12-digits) identifier. The use of forced Account Codes is optional, offered on a system wide basis.SMDR must be enabled in order for the account code to be included as part of the SMDR record.

## 200.2    ATTENDANT RECALL

When a line has been left on hold for a programmable period of time, the station placing that line on hold will be recalled. If that station fails to answer the recall, the call will be recalled to the attendant(s) for handling. There can be three attendants per system. Transferred, Parked and Camp-on recalls will also recall the Attendant.

## 200.3    AUTOMATIC CALL BACK TIMER

To accommodate the reduced number of buttons on the Starplus Basic keyset, an automatic call back feature has been implemented. This feature will invoke a call back anytime a user listens to busy tone for a preset period of time. By default, this timer is disabled and is variable from 00 to 99 seconds.

## 200.4    AUTOMATIC CALL DISTRIBUTION (ACD)
### *This feature is available with optional software.*

When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. 16 Automatic Call Distribution (ACD) groups can be programmed, each containing up to 16 three-digit station numbers (up to the system station maximum). Each group is assigned a pilot number. When this number is dialed, the first available agent in that group is rung. Calls are routed to the station that has been on-hook for the longest period of time.

### A. Agent Positions

- Agent Login/Logout w/Agent ID Feature: The Agent Login/Logout Feature provides a means for an agent to log into one of the ACD groups and receive calls. The Agent ID entered in the login process identifies the agent and places that agent in the available agent list for the ACD group specified in the login process. This feature allows an agent to log into any ACD group from any station in the system and receive calls.

- Agent Identification: Each ACD Agent has a unique Agent ID code (0000-9999) which he uses during login and logout procedures, This unique ID code is not verified or stored as part of the system database.

- Agent Available/Unavailable Mode: Stations programmed into a ACD group may remove themselves from their assigned ACD group by dialing the Available/Unavailable code. When an agent is in the Available mode, that agent will receive ACD calls in the normal manner. When an agent is in the Unavailable mode, that agent will no longer receive ACD type calls, however he may receive non-ACD calls. Agents that have gone Unavailable will receive a visual reminder with a flashing LED and or a LCD display message.

- Agent Help Request: The HELP feature provides a means for an ACD agent to signal his assigned supervisor for assistance. The agent while on a call can press the HELP button to signal the assigned supervisor. The supervisor may respond by use of his HELP button and his ACD Barge-In feature.

- Agent Call Qualification: This feature provides a means for an agent to enter codes on ACD type calls that identify the call. This feature will permit up to 12-digits to be entered, however, only the first four digits are provided for in the SMDR record. A programmable confirmation tone option has been added to the Agent Call Qualification feature on a system-wide basis.

### B. Alternate ACD Group Assignments

An alternate ACD group can be programmed so that if stations in one group are busy, the alternate group will be checked for an available station.

## C. Group Member Status

The Supervisors Group Member Status feature provides a means for an ACD supervisor to view the status of each of the 16 ACD groups in the system individually. This display will tell the supervisor which stations are logged into the group, and if the station logged in is available, unavailable, out of service, in DND, or busy on a call. The supervisor can use this display to determine why there are a lot of queued calls in a specific group.

## D. Incoming CO Direct Ringing

CO Lines can be programmed to ring directly into a ACD group. When all agents are busy and RAN is enabled, the system will answer the caller and present the 1 st RAN announcement automatically.

## E. No-Answer Recall Timer

if a call routed to a station via ACD is not answered by the ACD Agent/Station before the No-Answer Recall timer expires, the call will be returned to ACD Queue with the highest priority. In addition, the station that failed to answer the ringing ACD call will be placed into an out of service (OOS) state.

## F. No-Answer Retry Timer

When the No-Answer Recall timer expires, a station that failed to answer the ringing ACD call is placed into an out-of-service (OOS) state. The station that was taken out-of-service (OOS) will be placed back in service if the agent hits his available flex button or dials the available flex code. In addition, the agent will be placed back in service if the No-Answer Retry timer expires. If the agent does not answer his next ACD call, he will again be taken out-of-service. This cycle will continue until the station answers calls, logs out, or goes unavailable.

## G. Overflow Station Assignments

An overflow station may be assigned to route callers in queue to a designated station after a specified time. The Overflow station may remove themselves from their assigned group by dialing the Overflow Available/Unavailable code. When the Overflow station is in the available mode, that station will receive ACD calls in the normal manner. When the Overflow station is in the Unavailable mode, that station will no longer receive ACD type calls, however they may receive non-ACD calls. The Overflow station that has gone Unavailable wiil receive a visual reminder with a flashing LED and/or an LCD display message. The overflow station may NOT be one of the ACD group stations.

> **NOTE** if no stations are logged into the ACD Group, ACD calls will overflow to the Attendant station.

## H. Recorded Announcements (RAN)

Recorded announcement devices can be assigned to provide up to eight different messages per system, if ail stations in a ACD group are busy. The eight messages are available to all 16 ACD groups in different configurations with a maximum of 2 per group. A RAN device can provide an announcement to one caller at a time. Subsequent callers will be queued onto the message on a first-in basis.

## I. Guaranteed Message Announcement

This feature provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with the entire message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety.

## J. Supervisor Positions

- Supervisor Login/Logout Feature: The Supervisor Login/Logout Feature will provide a means for a supervisor to log into one of the ACD groups. The Supervisor ID entered in the login process identifies the supervisor for the specific ACD group he is assigned to. This feature will allow a supervisor to log into any ACD group from any station in the system. However, to have the supervisor monitor with barge-in feature, the supervisor must log in at a station with monitor barge-in capability.

- Supervisor Identification: Each ACD Supervisor has a unique Supervisor ID code (0000-9999) which he uses during login and logout procedures. This unique ID code is not verified or stored as part of the system database.

- Supervisor Help Request: The HELP feature provides a means for an ACD agent to signal his assigned supervisor-for assistance. The agent while on a call can press the HELP button to signal the assigned supervisor. The supervisor may respond by use of his HELP button and his ACD Barge-In feature.

- Supervisor Monitor w/Barge-In Feature: The ACD Supervisor Monitor with Barge-In feature provides a means for an ACD supervisor to monitor an agent's call in pro-

gress in order to coach sales techniques or customer relations skills. When used, a supervisor may intrude onto an agents call in a listen only mode or in a true conference mode. This feature is available with or without a warning tone.

> **NOTE** *The use of silent monitor and barge-in is limited by federal law and may also be limited or prohibited by state or local law, so check the relevant laws in your area before employing these features.*

- Supervisor Station Assignment Feature: The ACD Supervisor Station Assignment feature provides a means to assign each ACD group a supervisor. This supervisor station can receive the calls in queue display in real time, receives No Answer/Out of Service, receives "HELP" displays from the groups that the supervisor is assigned to and can barge in on active calls in his ACD group or groups.

**K. Supervisor/Agent Calls in Queue Display**

Tiiis feature provides a means for an agent and ACD supervisor to view the status of their ACD group. This display is an idle state display and will prompt a supervisor that his agents in the group are having problems answering all their calls. The display will tell the agent and his supervisor how many calls are in queue, how many agents are logged into the ACD group, and the length of time in minutes that the oldest call has been in queue.

**L. ACD Event Trace**

The ACD Event Trace provides a series of events trace output which would provide input to a customer-developed ACD Reporting package.

## 200.5 AUTOMATIC LINE ACCESS

Each station, key or SLT, may have their phone programmed to access a particular CO Line such as a private line or a line from a Group of CO lines upon going off-hook. This is useful in Centrex or PBX applications when station users have dedicated or individual lines. Outside line dial tone is received just by going off-hook, without the need to dial an access code.

## 200.6 AUTOMATIC NIGHT SERVICE

The system may optionally be programmed to go into and out-of night service automatically. This method does not require the attendant to activate or deactivate night service on a daily basis. The automatic night service is enabled and disabled on a programmable daily schedule including Saturday and Sunday schedules. A time can be set to enable Night Service and to Disable Night Service on a per day basis.

## 200.7 AUTOMATIC PAUSE INSERTION WITH SPEED DIAL

if a flash command is placed into system speed dial numbers or station speed dial numbers, a pause will automatically be inserted after the flash. A pause will also be automatically inserted after a PBX dialing code has been used. Manually dialing a flash during a call will cause only those numbers dialed after the flash to be redialed for a Last Number re-dialed number of for a Save Number re-dialed number.

## 200.8 AUTOMATIC PRIVACY

Privacy is automatically provided on all calls. If one station is conversing, another station cannot intrude on that line. The Automatic Privacy feature can be disabled, allowing one other station to join in on existing CO line conversations.

> **NOTE** *Disabling of the privacy feature may be limited by federal, state or local law, so check the relevant laws in your area before disabling privacy.*

## 200.9 AUTOMATIC SELECTION

The user can select an outside line, intercom station, speed dial button, or dial a feature and automatically place the phone in the dialing mode without pressing the ON/OFF button or lifting the handset.

## 200.10 BACKGROUND MUSIC

Each Digital Terminal user may receive music over their speaker when an optional music source is connected to the system. This feature can be allowed or denied on a system-wide basis by programming.

## 200.11 BATTERY BACK-UP (MEMORY)

A NICAD battery is located on the Central Processing Unit (CPU) of the Starplus SPD 4896 system to protect system memory in case of commercial power outage or the system power being turned off for a period of time. Battery Back-up Memory retains all system features including both system and station speed dial during a power outage.

## 200.12 BUSY LAMP FIELD (BLF)

When a button on a Digital Terminal is assigned as a DSS, it also serves as a Busy Lamp Field to display the status of that telephone.

## 200.13 CALL ANNOUNCE - PRIVACY

Each telephone user can set their intercom signaling switch to receive intercom call announcements without having the calling party hear any conversations in progress.

## 200.14 CALL BACK

A station can initiate a call back request to another busy station. As soon as that station becomes idle, the station that left the call back request is signaled.

## 200.15 CALL COST DISPLAY FEATURE

***This feature is available with optional software.***

The Call Cost Display Feature allows a user to view the approximate cost of each call made. This approximate cost will also be printed as part of the SMDR record.

The Call Cost Display will replace the call duration display when a call is made using LCR. This display is enabled in programming.

The cost information is programmable by selecting one of the 16 route list tables and one of the four time periods. This allows the user to program four separate costs based on the time of day for each of 16 routes. The costs entered in the tables will be a cost for one minute, however, costs are calculated using a 1/10th of a minute value. These costs are rounded down and are based on the start time of the call, even if the call extends into a different time period. The SMDR printout will contain a cost calculated using a 1/10th of a minute increment and the display will update approximately every 30 seconds. The user must have LCR enabled to get the call cost display.

## 200.16 CALL FORWARD: PRESET

This feature allows the system database to be configured so that incoming CO Lines, which are programmed to ring at a particular station, can be forwarded elsewhere in the system predetermined by programming. This feature is active if the station ringing is not answered in a specified time. This is particularly useful in "overflow" applications where a Voice Mail or Auto Attendant may be in use.

- A station may have one designated preset forward location defined in the database.

. Preset Call Forward is chainable only to other predetermined preset forward stations specified in the database up to a chain of 5 stations.

- Chainable Preset Call Forwarding will force the incoming CO Line to ring at each station preassigned in the database for the Preset Forward Ring Timer specified in the database before forwarding.

- Each station in the system may, independently, have incoming CO calls preset forwarded to the following destinations:

### A. Preset Call Forward - ACD Groups

CO Lines can be preset forwarded to ring into a ACD Group from any station. A CO line will not preset forward to **a** busy ACD group, however each time the preset forward timer expires (for a total of five attempts) the group will be checked for an idle station. If a member of the group is idle the call will then be presented to that member.

### B. Preset Call Forward - Hunt Groups

CO Lines can be preset forwarded to ring into a Hunt Group from any station. **A** CO line will not preset forward to a busy Hunt group, however each time the preset forward timer expires (for a total of five attempts) the group will be checked for an idle station. If a'member of the group is idle the call will then be presented to that member.

### C. Preset Call Forward - Off-Net

CO Lines can be preset forwarded to ring Off-Net via speed dial from any station. After the expiration of the preset forward timer, the system will select an idle CO line and dial the off-net location, then connect the two CO lines.

### D. Preset Call Forward - Stations

Each Digital Terminal user may have preset in the database Initial Ringing Incoming to be directed to another station in the system, if the call goes unanswered for a predetermined amount of time.

### E. Preset Call Forward - UCD Groups

CO Lines can be preset forwarded to ring into a UCD Group from any station. **A** CO line will not preset forward to a busy UCD group, however each time the preset forward timer expires (for a total of five attempts) the group will be checked for an idle station. If a member of the group is idle the call will then be presented to that member.

### F. Preset Call Forward - YM Groups

CO Lines can be preset forwarded to ring into a Voice Mail Group from any station. A CO line will not preset forward to a busy Voice Mail group, however each time the preset forward timer expires (for a total of five attempts) the group will be checked for an idle Voice Mail port. If a VM port is idle the call will then bepresented to Voice Mail.

> **NOTE** *Calls will forward only if they ring nowhere else.*

## 200.17 CALL FORWARD: STATION

### A. Call Forward - All Calls

This feature allows a station the ability to have all their calls (internal or external) forwarded immediately to a designated station, an ACD or

UCD group pilot number, Voice Mail group number, or Hunt group. (See Note)

**B. Call Forward - Busy**

This feature allows a station the ability to have their calls forwarded to a designated station, an ACD or UCD group pilot number, Voice Mail group number, or Hunt group when their station is busy. (See Note)

**C. Call Forward - Busy/No Answer**

Allows a stations the ability to forward a combination busy/no answer calls to a designated station, an ACD or UCD group pilot number, Voice Mail group number, or Hunt group. No answer calls forward when the system-wide "no answer timer" expires. initial CO ringing, transferred CO ringing and intercom ringing calls can all be forwarded. Calls that ring to an idle station will be call forwarded after expiration of the No Answer ring timer.(See Note)

**D. Call Forward - No Answer**

This feature allows a station the ability to have their calls forwarded to a designated station, an ACD or UCD group pilot number, Voice Mail group number or Hunt group number when there is no answer at the station. No answer calls forward when the system-wide "no answer timer" expires. (See Note)

**E. Call Forward - Off-Net**

Stations will be allowed to forward intercom and transferred CO line calls to an off-net location. This allows a station to reroute calls that would normally be lost. Calls can be forwarded to home or another off-net site. Initially ringing CO calls cannot be forwarded with this feature (see Incoming CO lines Off-Net Forward feature).

> **NOTE** *Initial Ringing Incoming calls will forward to groups, (i.e.: ACD, UCD, Voice Mail, Hunt) if the station forwarded is the only station assigned to ring on the CO line.*

## 200.18 CALL PARK

An outside line can be placed into one of eight parking locations and can be retrieved by any station that has a direct line appearance or an available loop button. Parked calls have their own recall timer and will recall the originating station and if still unanswered, the attendant(s).

## 200.19 CALL PICK-UP:

**A. Directed Call Pick-up**

A station can pick up an intercom call, transferred, incoming, or recalling outside line call to a specific unattended station. The call must be a tone ringing call.

**B. Group Pick-up**

Stations can be placed in one or more of four pick-up groups. Stations within a group can pick up tone ringing intercom calls, transferred, incoming, or recalling outside line calls for another station in that group.

> **NOTE** *By default, all Voice Mail stations are placed in Pickup Group 1. You may need fo change this default setting.*

## 200.20 CALL TRANSFER

An outside CO line can be transferred from one keyset to another. By using the TRANS button, screened (announced) or unscreened transfers can be made. The line being transferred rings on the keyset and provides Exclusive Hold flashing indication to the receiving party's keyset. Any number of attempts can be made to locate someone by calling different keysets without losing the call. If a line is transferred to a busy station, it will receive muted ringing.

## 200.21 CALLER ENTERED ICLID DIGITS

*This feature is available with optional software.*

The Guaranteed Message announcement feature provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with the entire message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety.

In addition, the Guaranteed Message feature provides an option to capture digits dialed by the incoming caller which can be inserted as ICLID incoming number identification.

If the Guaranteed Message announcement is programmed in Admin, incoming ACD calls will be routed to the Guaranteed Message RAN before going to the ACD Group. If the ICLID option is selected, digits received before the announcement time-out will be captured and inserted as incoming ICLID number information. When the ICLID option is selected, a [#] will be recognized as a termination of the announcement and a [✳] will be recognized as an entry error. An entry error will cause the ICLID number to be removed and the incoming caller can re-enter his phone number.

## 200.22 CALLING STATION TONE MODE OPTION

This feature will provide an easy means for a Calling station to override a desired stations "H" (handsfree) or "P" (call announce) intercom switch setting. A dial

code has been added that is dialed in front of the extension number to force the tone ringing.

## 200.23 CAMP-ON

A station may alert a busy party that an outside line is on hold and waiting for them by using the CAMP-ON button. To camp on a call, press the TRANS button to transfer the call to the desired busy station, then press the CAMP ON button. The busy party will receive a muted ring over the keyset speaker, and a visual flashing CAMP ON LED. By pressing the CAMP ON button, the person called places his existing outside call on hold and is connected to the person placing the Camp On. He can then pick up the call on the appropriate line. Calls cannot be camped on when a station is in DND or in Conference.

## 200.24 CAMP-ON RECALL

When a station does not answer a Camp On, that call will recall the person placing the Camp On, and if unanswered by them, will recall the attendant(s).

## 200.25 CANNED TOLL RESTRICTION

The system provides an easy means of applying the most common form of toll restriction where 1+ and 0+ along with 976, 555, and 411 type of calls are denied and 1-800, 911, 1-911, and I-611 type of calls are allowed. This canned toll restriction is applied through the use of a single pre-built Class-of-Service and can be assigned to stations using range programming.

## 200.26 CENTREX COMPATIBILITY

The Star-plus Digital Key Telephone System provides features that are Centrex compatible so that Centrex users can utilize the Starplus Digital Key Telephone System to enhance their Centrex capabiiities. The system actually simplifies and provides easier access to many Centrex features by offering the following features:

### A. Flex Button Programming

Flexible button programming allows Centrex users to program complex Centrex dial codes onto a keyset button for easy one touch access to Centrex features.

### B. Off-Hook Preference

Both Digital Terminals and Single line telephones may be programmed to have their personal Centrex line accessed automatically just by lifting the handset or pressing the ON/ OFF button. Internal features to the Starplus Digital Key Telephone System are still made available to Digital Terminals by accessing intercom before going off-hook.

### C. Private Line Appearance

The Starplus Digital Key Telephone System allows for private line assignment on an unlimited basis. Each *station may have sole access* to a particular outside line if desired and may also be assigned to receive incoming ringing on that line.

### D. Programmable Flash Timer

CO line flash is a momentary opening on a CO line used for signaling. When using the Starplus Digital Key Telephone System in a Centrex environment the CO line flash is to signal the intention to transfer a caller using Centrex transfer. The CO line flash timer is programmable on a per CO line bases to facilitate a mixture of Centrex and CO lines within the same system.

### E. Programming "✳", "#", and Hook-Flashes into Speed Dial

Many Centrex codes utilize a hook-flash followed by in many cases the digit [✳] and or [#]. The Starplus Digital Key Telephone System allows these codes to be programmed as a pan of system or station speed dial sequences.

## 200.27 CENTREX/PBX TRANSFER

When Centrex or PBX lines are connected to the Starplus Digital Key Telephone System, users may, by using the Flash button, transfer callers to other Centrex or PBX extensions. Additionally, the Flash command may be included within a Speed Bin and programmed onto a flex button for one button transfer.

## 200.28 CHAINING SPEED BINS

Speed dial bins may be chained together by simply pressing one speed bin, then another and another as required.

This is helpful for accessing Long Distance carriers or banking services when account codes may be required.

## 200.29 CO LINE ACCESS

Through programming, telephones are allowed or denied access to particular outside lines or line groups.

## 200.30 CO LINE CLASS OF SERVICE

Each CO Line may be programmed with a Class-of-Service to provide dialing privileges. The Starplus Digital Key Telephone System uses an array between CO Line Class-of-Service and Station Class-Of-Service to offer a wide variety of dialing privilege possibilities.

## 200.31    CO LINE CONTROL (CONTACT)

On the Starplus SPD 4896 system, there are 12 control contacts which may be individually programmed as either CO Line Control (to control ancillary equipment) or Loud Bell Control to control a customer provided ringing device to external areas. When programmed as CO Line Control and assigned to a CO line, the corresponding contact will close whenever that CO line is accessed by a station. Since no "on-board" relay contacts are available on the Starplus SPD 4896 system for CO Line Control, the Relay/Sensor Interface module is used for this purpose.

## 200.32    CO LINE GROUPS

Outside lines can be placed in one of eight groups if the customer's business requires such grouping. Stations are then individually assigned access to these groups and given the ability to dial on particular lines.

## 200.33    CO LINE IDENTIFICATION

This feature allows a name to be entered into the database programming for each individual line (trunk) connected to the system. The name may be entered in any combination up to 12-characters in length (this will represent 24-digits entered). Once entered, LCD digital terminals including the attendant station(s) will receive the programmed line "name" in place of the default "LINE XX" message. This applies to all line call processing conditions where the current "LINE XX" message appears.

SMDR will continue to print out the line number in place of the programmed name. If the line name has not been programmed, then the current "LINE XX display will be used as the default. A programmable data field is available for each line in the system.

| **NOTE** | *This feature is for LCD Display appearance only!* |

## 200.34    CO LINE INCOMING RINGING AS-
SIGNMENT

Each CO line may be programmed (in database admin) so that incoming ringing on the specified CO line(s) may be assigned initial ringing to one of the following destinations:

- one or more stations (Keyset or SLT)
- To an ACD, UCD, Voice Mail or Hunt Group
- Off-Net (via Speed Dial)

The ring-in will follow Day Ring assignments unless Night Service mode is active, in which case all incoming CO calls will follow Night Ring assignments.

When ringing is assigned to a keyset, a direct line appearance or an idle Loop button must be available to receive the call. Station call forwarding of initial

ringing CO call is possible and can be directed to other keysets with an available Loop button or direct appearance.

If the initially ringing CO call cannot ring at the destination assigned, it will ring at the first Attendant station.

| **NOTE** | *You cannot Station Cal Forward an initially ringing CO call to ACD, UCD, Voice Mail, or Hunt groups if the line is assigned to ring at more than one station.* |

## 200.35    CO LINE LOOP SUPERVISION

The Starplus Digital Key Telephone System can be programmed to monitor CO lines while on-hold or connected to RAN devices or Voice Mail systems or in Trunk-to-Trunk connections for disconnect signal provided by the Telco.

After a disconnect signal is detected, the Starplus Digital Key Telephone System will release the CO lines and automatically place them back in service.

## 200.36    CO LINE QUEUE

When all the outside lines in a group are busy, stations can be placed in queue awaiting a line in the same group to become available. if a station doesn't answer the queue signal within 15 seconds, that station is dropped from the queue.

## 200.37    CO LINE RINGING OPTIONS

When a CO call rings at a busy station, the call rings at the station using a muted ring signal. This option allows a user to receive a reminder ring at his busy station, instead of muted ringing. In addition, a reminder ring timer has been added to the system to provide the reminder ring every time the timer expires, as long as the incoming CO line remains connected. The system defaults this option to muted ringing.

## 200.38    CO RING DETECT

The duration of the ringing signal from the CO or the PBX is matched with ringing detection circuitry in the KSU. The ring detect can range from 200 to 900 msec, programmed in 100 msec increments. This timer helps prevent false ringing.

## 200.39    C O N F E R E N C E    ---

There are three different types of conferencing:

**A. Add On Conference**

Up to five internal parties can engage in a conference, or four internal parties with a limit of one external party.

**B.    Multi-Line Conference**

One internal station can engage in a conference with two outside parties.

## C. Unsupervised Conference

The conference initiator can exit a conference with two outside parties and leave them in an unsupervised conference. The initiator can re-enter the conference at any time. The Starplus Digital Key Telephone System can automatically terminate the call when both parties hang up, when Loop Supervision is provided by the telco and enabled in the database.

A programmable conference timer will disconnect the unsupervised conference if the initiator does not re-enter.

## 200.40 CONFERENCE ENABLE/DISABLE

This feature will allow the system conference feature to be administered on a per station basis for the ability of a station to initiate a conference.

## 200.41 DATA FEATURE

The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports. To establish a data call, a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. The Digital Data Interface Unit (DDIU) allows any serial data communications device (which conforms to RS-232C) to be connected to the Starplus Digital system. This requires a station port.

## 200.42 DATABASE PRINTOUT (DUMP)

Through a system programming command, either portions of or a complete database dump can be printed using the RS-232C connector located on the Central Processing Unit (CPU) on the Starplus Digital Key Telephone System.

## 200.43 DATABASE UPLOAD/DOWNLOAD

DataBase Upload/Download feature provides a maintenance facility which has been added to the Remote Administration routine. This routine will permit the database to be downloaded to a PC, when a software change is made or when the system needs to be initialized and re-programmed. In addition, the routine will facilitate the programming of a database on an in-house system which can be downloaded to a PC and then uploaded to a system in the field. After the system maintenance is completed, the file saved in the PC can then be uploaded to the system.

## 200.44 DAY/NIGHT CLASS OF SERVICE (COS)

This feature allows stations that are a certain COS during the day, to be assigned a different COS when the system is put in the night mode. The night COS goes into affect when the system is placed into the night mode, manually or automatically. This prevents the misuse of phones after hours.

## 200.46 DEFAULT BUTTON MAPPING

The Starplus Digital Key Telephone System allows for 28 flexible buttons on each Enhanced or Executive Digital Terminals to be flexibly assigned to CO/PBX lines, DSS buttons, Speed Dial or Feature buttons. However, the system will power up with a default button mapping as shown in Figure 200-I Executive Keyset Default Button Map . The Starplus Digital Key Telephone System also supports a Basic Digital Terminal with 6 fixed feature buttons, 8 flexible buttons, and speakerphone capability on intercom calls. This keyset provides the same functionality that the standard non-display 34-button keyset provides. The Basic Digital Terminal default button map is shown in Figure 200-2 Basic Keyset Default Button Map.

## 200.46 DIAL BY NAME

The system will allow station users to dial extension numbers, or speed bins by entering the name of a person that has been programmed for that station. The system database will allow entry of a name (alphanumeric) up to 24 digits in length for each station. The programmed name can be used for dial-by-name station users and in directory dialing. This feature should not be confused with the Name In Display feature.

## 200.47 DIAL PULSE SENDING

Each CO interface circuit for outside lines can be programmed to send dial pulse or DTMF signals. Dialing speed and break/make ratios are programmable.

## 200.48 DIALING PRIVILEGES

The system provides a flexible means of providing toll or dialing restriction. Through the assignment of class of service (both station and outside line) many combinations of allow and deny numbers can be set. Both area and office codes can be screened for allow/deny privileges.

## 200.49 DIRECT INWARD SYSTEM ACCESS (DISA)

Allows an unlimited number of outside line calls to be programmed to provide direct access to the system and the use of features such as WATS lines, intercom dial tone or the ability to dial out on outgoing trunks without going through the attendant. The duration of a Trunk-to-Trunk DISA call can be set by the system administrator. DISA callers may also access LCR, All Internal/External paging, All Call paging, Call Park pick-up, and Meet-Me paging.

| 1 | STA 100 | | CO 1 | 11 |
|---|---------|---|------|----|
| 2 | STA 101 | | CO 2 | 12 |
| 3 | STA 102 | | CO 3 | 13 |
| 4 | STA 103 | | CO 4 | 14 |
| 5 | STA 104 | | CO 5 | 15 |
| 6 | STA 105 | | CO 6 | 16 |
| 7 | STA 106 | | CO 7 | 17 |
| 8 | STA 107 | | CO 8 | 18 |
| 9 | STA 108 | | LOOP | 19 |
| 10 | STA 109 | | POOL | 20 |

| CAMP ON | LINE QUE | CALL BACK | PICK UP |
|---------|----------|-----------|---------|
| MSG | FWD | DND | CONF |

| 1 | ABC 2 | DEF 3 | HOLD |
|---|-------|-------|------|
| GHI 4 | JKL 5 | MNO 6 | TRANS |
| | | | FLASH |
| PRS 7 | TUV 8 | WXY 9 | SPEED |
| | | | MUTE |
| ✶ | OPER 0 | # | ON/OFF |

H  T  P        SPKR VOL        RING VOL

**Figure 200-I Executive Keyset Default Button Map**

| c o 1 | CO 2 | LOOP | POOL |
|---|---|---|---|
| MSG | FWD | DND | CONF |

| 1 | ABC 2 | DEF 3 | HOLD |
|---|---|---|---|
| GHI 4 | JKL 5 | MNO 6 | TRANS |
| PRS 7 | TUV 8 | WXY 9 | FLASH |
| | | | SPEED |
| | | | MUTE |
| ✳ | OPER 0 | # | ON/OFF |

H  T  P        SPKR VOL        RING VOL

**Figure 200-2 Basic Keyset Default Button Map**

### A. CO Line Group Access

Incoming DISA callers may access all line groups such as FX or WATS lines or other outgoing services from home or while away from the office.

### B. Programmable Access

A three-digit security code can be assigned in the system database to restrict unwanted use of the DISA circuits. Each DISA line can be programmed independently for 24 hour DISA use or night DISA use only.

### C. Station Access

DISA callers may dial any station directly without going thru the attendant.

If a DISA caller attempts to call a station that is busy or does not answer the system will return ICM dial tone at the end of a programmable timer (Preset Forward Timer). This will allow the DISA caller to try another station without having to dial into the system again.

### D. Trunk-to-Trunk:

The DISA Trunk-to-Trunk (or Conference) option on the CO line governs a DISA callers ability to access other outside lines. CO lines must have DISA Trunk-to-Trunk enabled to allow a DISA caller to establish an outgoing trunk-to-trunk connection. This allows for specific CO line access restriction on DISA calls.

### E. DISA Call Forwarding:

Two options provide a DISA line to be 24 hours or at night only, which converts the incoming DISA line to an incoming line with ringing assignments at the station number dialed.

The CO line ringing at a station will follow preset forward or no-answer call forward using the preset forward timer that same as an initially ringing CO line does. It will follow direct forward and busy forward the same as an initially ringing CO line. If the preset forward timer is set to 00 (disabled) the first forward of the DISA ringing call at a station will take 15 seconds.

## 200.50 DIRECT STATION SELECTION

The user with DSS buttons assigned at their Digital Terminal can call an intercom station by simply pressing the appropriate DSS button. The called station is automatically signaled.

### 200.51 DIRECTED CALL PICK-UP

### A. Call Pick-up - Station

A station can pick up a tone-ringing intercom call, transferred, incoming, or recalling outside line call to a specific unattended station. The call must be a tone ringing call.

### B. Call Pick-up - ACD/UCD Groups

Stations outside of an ACD or UCD group can pick up a tone-ringing intercom call, transferred, incoming, or recalling outside line call ringing to a specific UCD station. The call must be a tone ringing call.

## 200.52 DIRECTORY DIALING

Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The Starplus SPD 4896 system provides locations for up to 200 names.

Directory dialing also allows users to program a "name" along with a speed dial bin for use in later locating a speed dial number. When prompted to do so, the system will display the name associated with a speed dial number on the LCD display so that when the desired name is shown, the user may then have the system dial the number.

Directory dialing also allows users to associate a "name" with an entry in the local number/name translation table. When prompted to do so, the system will display the name associated with the table on the LCD display so that when the desired name is shown, the user may then have the system dial the number. The Starplus SPD 4896 system provides locations for up to 200 names.

## 200.53 DISABLE OUTGOING CO LINE ACCESS

This feature allows the first Attendant station to dial a code and disable a CO line from outgoing CO calls. This applies to all station(s) that have access to that line. Incoming status is not affected. This feature is a part of the "Maintenance" package.

## 200.54 DISTINCTIVE RINGING (User Selectable)

The tone ring signal. used to notify stations of an incoming call can be changed by each station user to provide distinctive ringing among a group of stations. Each station user may select a distinctive ringing tone that will be used to ring their station. The system provides 81 different ring patterns that the station users may select from.

## 200.55 DO NOT DISTURB (DND)

Placing a keyset in DND will eliminate incoming outside line ringing, intercom calls, transfers and paging announcements. A ringing station may go into DND to silence ringing. The attendant can override a station in DND. The station in DND can use the telephone to make normal outgoing calls. A

station can be denied this feature through programming.

### A. One-Time Do Not Disturb (DND)

Allows a station user to turn off muted ringing that occurs while off hook (handset or ON/OFF) on another call. Useful when having an important conversation and do not wish to be disturbed by ringing. The station, while off hook, (ON/OFF or handset) depresses the DND button which eliminates muted ringing. When the station goes on-hook the DND button is extinguished and DND is canceled.

### 200.56 DTMF SENDING

Each CO interface circuit for outside lines can be individually programmed to send DTMF (tone) or dial pulse signals.

### 200.57 EMERGENCY TRANSFER

Each OPX box will provide power transfer to specified customer provided SLT's, or up to 12 CO lines using the Power Failure Transfer Unit (PFTU).

### 200.58 END TO END SIGNALING

This feature indicates the capability of the system to accept DTMF tones from stations, send them through the public network and have them received at the distant end for computer access, or a variety of control functions or inward call completion at a distant switching system.

### 200.59 EXCLUSIVE HOLD

When a line is placed on Exclusive Hold, no other station in the system can retrieve this call. Hold may be programmed to be activated on the first or second depression of the Hold button. CO Lines while in a transfer hold are always placed in an Exclusive Hold condition.

### 200.60 EXECUTIVE OVERRIDE

This feature allows certain stations to be designated as executive stations with the ability to "override" and "Barge in" on other keysets engaged in conversation on a CO line or intercom call.

In addition to the station programmable option, a system programmable option will enable or disable a warning tone when the station marked as an executive is cut-thru to the conversation. This is useful for an ACD agent supervisors or training personnel who require a service observing option.

A separate condition has been added to this feature which will allow or disallow an Executive to override an extension. This prevents an extension with override capability from overriding an Executive's station.

| CAUTION |
| --- |
| USE OF THIS FEATURE WHEN THE EXECUTIVE OVERRIDE WARNING TONE IS DISABLED MAY BE INTERPRETED AS A VIOLATION OF FEDERAL OR STATE LAWS, AND AN INVASION' OF PRIVACY. CONSULT COUNSEL WITH RESPECT-TO APPLICABLE LAW BEFORE INTRUDING ON CALLS USING THIS FEATURE- |

**NOTE** *A change in volume may occur on the CO line or intercom call after the barge-in occurs.*

### 200.61 EXECUTIVE/SECRETARY TRANSFER

There are four sets of Executive/ Secretary pairings available. When the Executive station is busy or in DND, the Secretary station -will receive intercom calls and transfers. The Secretary station can signal the Executive in DND by using the Camp On feature.

### 200.62 EXTERNAL NIGHT RINGING

The system can be programmed so that CO lines marked for UNA will provide ringing out the external page ports when the system is placed into Night mode.

### 200.63 FLASH

Provides telephone users with the ability to terminate an outside call or transfer a call behind a PBX or Centrex and restore dial tone without hanging up the handset. A FLASH button is located on each Digital Terminal.

### 200.64 FLASH ON INTERCOM

This feature enables key station users to utilize the Flash Key to terminate pages and intercom calls. While connected to a page zone or another internal station pressing the Flash key will terminate the call and return intercom dial tone.

### 200.65 FLASH RATES (Programmable)

The flash rates for the following features can now be programmed to 16 different options in admin programming:

- Incoming CO line ringing: defaults to 30 ipm flash
- Incoming intercom ringing: defaults to 120 ipm flutter
- Call Forward: defaults to 30 ipm flash
- Message Waiting: defaults to 15 ipm flash

All other flash rates in the system are fixed at the rates shown in Table 400-I 3 DSS/BLF Button Visual Indicators, Table 400-14 CO Line Button Visual indicators, and Table 400-I 5 Function Button Visual Indicators.

### 200.66 FLASH WITH SPEED DIAL

A flash can be programmed within a speed dial number. When this is done, a pause will automat-

ically be inserted before the remaining speed dial digits are sent.

### 200.67 FLEXIBLE ATTENDANT

Any three Digital Terminals in the system can be assigned as attendant stations. These stations will receive recalls and can place the system into Night Service. The attendant stations must be either Enhanced or Executive stations.

### 200.68 FLEXIBLE BUTTON ASSIGNMENT

Each 34-button digital terminal has 28 flexible buttons which can be individually programmed. Each Basic Digital Terminal has 8 flexible buttons which can be individually programmed. One of the following operations can be selected for each button. Refer to Section 300.37, Flexible Button Assignment.

- Outside line: Automatically accesses assigned line. (Assigned in database)

- DSS/BLF: Automatically signal assigned station and provides BLF for off-hook and DND. (User programmable)

- Feature: Any feature with a dialing code (i.e.: Personalized Messages, Paging, Account Code, Call Park, Music, etc.) can be assigned to a flexible button. (User programmable)

- Group Access: (i.e. ACD, UCD, Hunt, Voice Mail group pilot numbers) (User programmable)

- Speed dial: Automatically dials a Speed number. (System, Station, Saved Number Redial, Last Number Redial) (User programmable)

- Pooled group access: Some or all outside lines can be grouped: pressing this button accesses the highest numbered unused **CO** line in that group. (Assigned in database)

- Loop: Used to answer a transferred call on a line for which a user does not have a button assigned. (Assigned in database)

### 200.69 FLEXIBLE PORT ASSIGNMENTS

The Flexible Port Assignment feature will provide a means to assign stations and CO line numbers to any station or CO line port in the system. This provides complete flexibility in determining station and CO line numbers within the system as long as they stay within the system numbering plan. Therefore a station can be assigned any number between 100 and 195 on the Starplus SPD 4896 system. A CO line can be assigned any number between 01 and 48 on the Starplus SPD 4896 system. This restriction is required to minimize memory requirements on the smaller systems.

### 200.70 FORCED ACCOUNT CODES
***This feature is available with optional software.***

The Starplus Digital Key Telephone System allows the system to be arranged so that station users must enter an account code before placing an outside call. Account codes can also be used as a Traveling Class-of-Service to upgrade a restricted stations class-of-service for unrestricted dialing. Account codes must be entered before the call when forced.

### 200.71 FORCED LEAST COST ROUTING (LCR)
***This feature is available with optional software.***

The Starplus Digital Key Telephone System may be programmed on a per station basis to force the use of LCR for outgoing accessed. This allows the system administrator to maintain greater control over dialing patterns and the lines used for placing outgoing CO calls.

### 200.72 GROUP CALL PICK-UP

Stations can be placed in one or more of four pick-up groups. Stations within a group can pick up tone-ringing intercom calls, transferred, incoming, or recalling outside line calls for another station in that group.

### 200.73 GROUP LISTENING

All digital key stations have built-in speakerphones. Station users may use the speaker to monitor a call while using the handset to converse with the outside party. This enables other people in the room to listen to both parties in the conversation.

> **NOTE** *This feature is not available when the station is in headset mode.*

### 200.74 HANDSET RECEIVER GAIN

This feature provides the user with a flexible button that can be programmed on their keyset. When programmed, allows the user to increase/decrease the handset receiver gain while on a CO call or intercom call. This volume setting is stored on a per station basis until changed.

### 200.75 HEADSET COMPATIBILITY

The Starplus Digital Terminals are designed to allow the connection of an industry standard, electret mic compatible, modular headset. The user connects the modular headset to the handset jack on the telephone leaving the handset in place. The ON/OFF button on the Digital Terminal is then used to activate the headset.

## 200.76 HEADSET MODE

Each digital terminal can be individually programmed for headset operation. When programmed, an industry standard headset with it's adapter box may be connected to a digital terminal for headset use. This allows handset or headset operation by switching the selector switch on the adapter box. Speakerphone operation and call announce on intercom are disabled while a station has enabled headset mode.

Once programmed in station programming, the user may then select between headset mode or normal handset/speakerphone mode by simply dialing a code or pressing a user programmable flex button.

## 200.77 HEARING AID COMPATIBLE

All Electronic Digital Terminals and Single Line Telephones are hearing aid compatible in compliance with the FCC Part 68, Section 68.316. This allows the telephone to be used inconjunction with users wearing hearing aids.

## 200.78 HOLD PREFERENCE

This allows either Exclusive or System hold as the primary hold on the first depression of the HOLD button, depending on programming.

## 200.79 HOLD RECALL

When an outside call has been on Hold for a programmable length of time, recall ringing tone is sent to the station placing the call on Hold. If this station does not answer the recall, a recall tone is sent to the attendant(s).

## 200.80 HOT LINE/RING DOWN

Digital terminals may be programmed to immediately call or ring down a particular station or outside number upon going off hook. This is done by programming the stations Off-Hook preference to activate a DSS or Speed dial feature key. This feature can be overridden if the station user selects a CO line first when going off-hook.

## 200.81 HUNT GROUPS

The system can be arranged for up to eight Hunt groups. Each Hunt group can contain up to eight stations each. Each Hunt group is independently arranged to utilize either a pilot hunting technique or station hunting technique.

### A. Hunt Group Chaining

Hunt Groups can be chained or joined together forming larger Hunt Groups. This is accomplished by assigning a piiot hunt group number as the iast member of a group.

### B. Pilot Hunting

Incoming CO, transferred CO, and intercom calls can be directed to a pilot extension number of a Hunt group. The system will search sequentially (in the order the extensions were entered in the database programming) for an idle station in the group and will ring that station. Calls directed directly to stations (by calling the extension number) within the hunt group will not hunt but receive call progress tones of the extension dialed.

### C. Station Hunting

Incoming CO, transferred CO, and intercom calls that are presented to a busy, or DND station, that is a member of a Station Hunt group, will search sequentially (in the order the extensions were entered in database programming) for an idle station in the group and will ring that station. Calls can also be directed to the groups pilot number for hunting.

## 200.82 ICLID FEATURE

*This feature is available with optional software.*

The ICLID (Incoming Calling Line IDentification) feature has been added to the Starplus Digital Key Telephone System. However, in order for this feature to operate properly, it must be activated from the central office so that the numbers of the calling party will be delivered over the individual tip and ring of the CO lines during the first silent interval between ringing. The following features have been implemented:

### A. Calling Number/Name Display

This feature is intended as the basic offering of the ICLID service when associated with the Starplus Digital Key Telephone System. Whenever an incoming call is received at the system, the number received along with the ringing signal will be stored in the line control tables and used at various points in the processing of the call.

The primary function will be that the calling number will be displayed (if available) at any point at which the "LINE RINGING" is displayed in the system.

In addition, with the availability of the calling name feature, if the calling name is provided, the system will deliver that to the display instead of the calling number.

### B. Incoming Number/Name for SMDR Records

This feature will operate normally in the absence of ICLID information or the failure of the ICLID equipment. If the information is present at the time that an SMDR record is generated

for a call, it will alter the content and format of the SMDR output record.

If the calling number is available, the number will be output in the SMDR record in the same location as the dialed number is located in the outgoing calls.

If the calling name is present, an additional line will be output in the SMDR record identifying the name. This record will immediately follow the normal SMDR record. The normal SMDR record will include an indicator which identifies that a following record with name identification is present.

Unanswered calls will be recorded in the SMDR record for incoming with an indicator to allow the identification of callers for statistical and call-back purposes.

### C. Unanswered Call Management

An Unanswered Call Management Table with 100 entry capacity is maintained in the system database. The calling number/name information pertaining to any unanswered call will be placed in this table at the time the system has determined that the call has been abandoned.

This table may be interrogated from any station so that the unanswered calls may be reviewed and handled by the end user. Only the 1st Attendant station can delete an entry from this table.

### 200.83    IDLE SPEAKER MODE

This feature allows the system to determine whether the first digit dialed is heard over the digital terminal speaker. This feature is allowed or denied on a system-wide basis in programming.

### 200.84    INCOMING CO LINES OFF-NET FOR-WARD (VIA SPEED DIAL)

Allows the first attendant to forward incoming CO calls to an off-net location. The attendant can forward a group of CO lines, all CO lines, or an individual CO line to a off-net location. The attendant must have a direct appearance of the CO line(s) to be forwarded. Off-net forwarding is accomplished via use of a speed dial bin,

### 200.85    INTERCOM CALLING

The system's architecture allows non-blocking of intercom calls. A station is reached on intercom by dialing the associated three-digit number.

### 200.86    INTERCOM SIGNALING SELECT

Users can control the method by which they receive intercom calls and signals. A convenient intercom signal switch is located on each Digital Terminal for easy selection. The choices are:

- Handsfree (H)(left position). The station user, upon hearing a tone burst and voice announcement over the speaker, can reply handsfree.

- Tone Ringing (T)(center position). A standard tone ring notifies the party of an incoming intercom call. The called party answers by lifting the handset or moving the switch to the handsfree (H) position or pressing the ON/OFF button.

- Privacy (P)(right position). The station user receives a burst of tone and a voice announcement over his/her speaker. The microphone is deactivated for privacy. The called party must lift the handset or press the MUTE button to answer the call.

### 200.87    KEYSET SELF TEST

The Starplus Digital Key Telephone System contains a test mode feature that supports the off-line. testing of digital terminals and DSS consoles. The term off-line means that the unit under test is disconnected from the system during the test operation. Digital terminals not under test continue to operate in the normal manner. Tests are provided to verify the keyset and DSS LED, LCD, and keypad button operations.

### 200.88    LAST NUMBER REDIAL (LNR)

Permits the automatic redialing of the last telephone number dialed on an outside line. Up to 32 digits can be stored. Outside line selection of the same line used is automatic.

### 200.89    LCD INTERACTIVE DISPLAY

The 34-button Executive Digital Terminal provides the user with visual indication of call status, Calls to and from other extensions, number dialed, line used and camp-on are some of the features displayed.

### 200.90    LEAST COST ROUTING (LCR)

*This feature is available with optional software.*

Allows the system to automatically select the least costly route available according to the number dialed, the time of day/day of week, the class of service (COS) assigned to the station/trunk-group priority level assigned.

### A. 3-Digit Table

This table is divided into 2 sections: "Leading 1" ("1" is dialed before the number) and "Non Leading 1" (no "1" is dialed before the number). This gives the system the ability to handle call routing in areas that require a "1" before a long distance number as well as in areas that do not require the "1".

**B. 6-Digit Table (Office Codes)**

The 6-Digit Table can include 20 office code maps. Each map can be programmed to route up to 800 office codes to one of the 16 possible route lists. Each map must be associated with a specific area code in the 3-Digit Table. Several different office code maps can be used with the same area code to provide additional routing flexibility.

**C. Route List Tables**

Up to 16 different routes can be programmed. Each route can contain up to four route lists - one for each of the 4 time periods. Up to seven CO line groups (routing choices) and their corresponding Insert/Delete Tables may be programmed within each route list.

**D. Insert/Delete Tables**

There are 20 Insert/Delete Tables. Up to 20-digits, including pauses, can be inserted and up to 16-digits deleted. Digits can be inserted before or after the number dialed, but can be deleted only from the beginning of a number dialed.

**E. Weekly Time Tables**

The least costly route for a particular dialed number may be different at different times of the day and on different days of the week. To accommodate this situation, there are two Time-of-Day tables: a Daily Start Time Table and a Weekly Schedule Table.

The Weekly Time table determines which one of the four Routes LCR should use based on the Time-of-Day and Day-of-the-Week.

**F. Daily Start Time Tables**

The Daily Stan Time tables allow the user to match the Time Periods discount structure to the carriers rate schedule.

**G. Exception Tables**

This table is used to route operator assisted calls and any other calls which would use a one- or two-digit number rather than a three-digit area code.

**H. Default LCR Data Base**

In an effort to decrease installation and set up time usually associated with LCR a default LCR database has been incorporated. The default LCR database will provide basic routing for all local and long distance dialing.

**I. LCR Routing for Toll Information**

This feature adds provisions to the LCR call processing which will allow common call routing for all toll information calls.

1 -(XXX)555-1 212, (XXX)555-1 212, I-555-121 2 and 555-I **212 calls will** ail be intercepted and sent to a selected route in the Route List Table. Numbers dialed will be integrated and if it is determined to be a toll information call, either preceded with an area code or without or with a leading digit 1 or not, the call will be sent to the route designated in programming.

**200.91 LOCAL NUMBER/NAME TRANSLATION TABLE**

**An** administerable table provides a local translation from a received calling number to a name. This 200 entry table can be administered by the customer from the attendant console location. This table is also shared by the ICLID features. In cases of conflict between the name delivered from the CO and that in the local translation table, the local translation table shall rule.

**200.92 LOOP BUTTON CO LINE ACCESS**

A station not having a direct appearance for a CO line will receive incoming CO calls and transferred CO calls under the loop button. Only one call at a time can be connected to a keyset on the loop button. if more than one loop button is on a key set, the loop buttons may be conferenced together. If ail programmed Loop buttons on a keyset are busy or have a CO call on hold, the party attempting to transfer a CO line to that station will receive busy tone and cannot transfer the call to that station. If a transfer is attempted, the CO line will recall the initiator immediately.

CO lines are also presented to a Loop when dialing out using LCR or when using speed dial to dial out and the line chosen does not appear on the key station.

**200.93 MEET ME PAGE**

Users may answer a page call from any phone in the system by dialing a special code. The party who initiated the page must remain off-hook.

**200.94 MESSAGE WAITING**

Stations that are busy, unattended, or in DND can be left a message indication by other stations in the system. Up to five messages can be left at one keyset. Upon return to the station, the user can press the flashing MSG WAIT button to ring each party in sequential order.

**200.95 MESSAGE WAITING REMINDER TONE**

A key station with a message waiting can be reminded at a programmed timed interval with a tone.

## 200.96 MESSAGES - PERSONALIZED

Each station (Key and SLT) can select a pre-assigned message to be displayed on the LCD of the digital key terminal calling that station. There are ten possible messages which can be displayed:

- 00= Clears Messages
- 01= ON VACATION
- 02= RETURN AM
- 03= RETURN P.M.
- 04= RETURN TOMORROW
- 05= RETURN NEXT WEEK
- 06= ON TRIP
- 07= IN MEETING
- 08= AT HOME
- 09= ON BREAK
- 1 0= AT LUNCH

### A. Date and Time Entry to Personalized Message(s)

As an enhancement to the original personalized message(s), station users can activate certain messages that will allow the user to enter a specific time or a date of return. These messages will appear on calling stations display to alert them of the desired party's return time or date.

- 1 1= ON VACATION UNTIL: MM/DD
- 12= RETURN: HH:MM xm or MM/DD
- 13= ON TRIP UNTIL: MM/DD
- 14= MEETING UNTIL: HH:MM xm
- 15= AT HOME UNTIL: HH:MM xm
- 16= ON BREAK UNTIL: HH:MM xm
- 17= AT LUNCH UNTIL: HH:MM xm

### 3. Messages - Custom

This feature allows the system administrator to enter up to ten custom messages for use by station users of the system. These messages may be specified and customized by the customer on a system-wide basis.

### C. Personalized Message Code on a Flex Key

This feature allows a key station user to program the personalized message code [633#] onto a flex button. This speeds **access** of the pre-selected messages.

## 200.97 MUSIC ON HOLD

A music source, when connected to the system, provides music to all lines on Hold, parked calls, transferred calls and calls waiting to be answered by Automatic Call Distribution (ACD) or Uniform Call Distribution (UCD). This feature can be allowed or denied on a system-wide basis in programming.

## 200.98 MUTE KEY

Pressing the MUTE button while in the speakerphone mode or using the handset will disable the microphone but not affect the speech coming over the speaker or handset. Pressing the illuminated **MUTE** button again will reactivate the microphone.

## 200.99 NAME IN DISPLAY

This feature allows every extension (Key or SLT) the capability to program the users name, for that station, so that people using display telephones will see the name instead of the station number on their display. The name is programmed at each station by the user and may be up to seven letters in length.

## 200.100 NIGHT SERVICE FEATURE

The Night Service feature will provide a means to put the system in night mode from any keyset or remove the system from night mode from any keyset as long as the system was put in night mode by the night service feature flex button. If the system was placed in night mode by the attendant using her DND button or if the system was placed in night mode by the automatic schedule, the night service flex button can not remove the system from night mode.

## 200.101 NIGHT SERVICE MODE

### A. Automatic Night Mode Operation

The Starplus Digital Key Telephone System can be programmed so that the system is automatically placed into night mode.

The Attendant(s) can override the Automatic Night mode schedule simply by pressing the NIGHT (DND) button.

### B. External Night Ringing

The system can be programmed so that CC lines marked for UNA will ring on the external page speakers.

### C. Manual Operation

The Attendant(s) can control the use of Night Mode manually by pressing the NIGHT (DND) button. An LED will indicate when the system is in Night Mode operation.

### D. Night Class of Service (COS)

The system allows each station to be assigned a different COS for night operation. The night COS goes into effect when the system is put into night mode manually or via the automatic schedule. Prevents the misuse of phones after hours.

### E. Night Ringing Assignments

Each CO line may be individually programmed for Night ringing to other stations, to Hunt groups, ACD groups, UCD groups, Voice Mail

groups, or off-net via speed dial. When the system is placed into night mode, manually or automatically, ringing will follow the night ringing assignments for each CO line.

**F.   Universal Night Answer (UNA)**

Incoming CO lines can be programmed for Universal Night Answer (UNA). Stations which do not have access to a line during the day can answer that line while the System is in the Night Mode by. dialing a UNA code.

**G.   Weekly Night Mode Schedule**

A programmable weekly night mode schedule provides for 24 hour, 7 day a week automatic night mode operation. The system can be put into and out of night mode automatically on a daily basis.

## 200.102   OFF HOOK VOICE OVER

This feature allows users, off-hook on a call (CO or Intercom), to receive a voice announcement through the handset receiver without interrupting the existing call. The Voice Over is muted so **as** not to "override" or "drown" out the existing conversation. The over-ridden party may then respond to the calling party using CAMP-ON procedures to talk to the calling party or use Silent Text Messaging to respond to the calling party via LCD displays. The calling (originating) station and receiving station MUST be a digital terminal. The receiving station MUST also be programmed to receive OHVO calls.

> **NOTE**  *The calling station is placed in a one-time DND mode upon initiating the Voice Over. One-Time DND cannot be toggled during the OHVO call. The station receiving the OHVO call must be off-hook and in the "H" mode.*

## 200.103   OFF-HOOK PREFERENCE

**A.   Auto Feature Access**

In addition to auto line access Digital Terminals have the ability to have their off-hook preference select a DSS or feature button upon going off-hook or pressing the ON/OFF button.

**B.   Auto Line Access**

Each station, key or SLT, may have their phone programmed to access a particular CO Line such as a private line or a line from a Group of CO lines upon going off-hook. This is useful in Centrex or PBX applications when station users have dedicated lines. Outside line dial tone is received just by going off-hook, without the need to dial an access code.

**C.   Hot Line/Ring Down**

Electronic Digital Terminals may be programmed to immediately call or ring down a particular station or outside number upon going off hook. This is done by programming the **stations** Off-Hook **preference to activate a DSS or Speed dial feature key.** This feature can be overridden if the station user selects a CO line first when going off-hook.

## D. Intercom Access

When off-hook preference is enabled, at a key station, that station may still obtain intercom dial tone for accessing internal stations or other system features. This is done either by pressing an intercom button or dialing their own intercom station number prior to going off-hook.

## E. User Programmable Preference

Based on a station programmable option Digital Terminals may be given the ability to enable, disable or change their off-hook preference by dialing a code. This option can be denied in station programming on a per key station basis.

## 200.104 OFF-HOOK SIGNALING

If a station has been programmed to receive direct outside line ringing and is busy on another call, the call rings at the station using a muted ring signal. This option allows a user to receive a reminder ring at his busy station, instead of muted ringing. In addition, a reminder ring timer has been added to the system to provide the reminder ring every time the timer expires, as long as the incoming CO line remains connected. The system defaults this option to muted ringing. Additionally CO calls may be "camped-on" to a busy station and receive muted ringing.

## 200.105 OFF-PREMISE EXTENSIONS (OPX)

The Off-Premise Extension Box (OPX) provides one FCC registered 2500-type single line interface port. This enables the use of one Off-Premise 2500 telephone set. A precise tone plan is provided to OPX stations. A 48v powersupply is required when installing an OPX box.

## 200.106 ON-HOOK DIALING

The Digital Terminal user can place calls without lifting the handset. If the speakerphone is disabled, the handset must be lifted to converse.

## 200.107 ON LINE PROGRAMMING

Changes to the system database can be made without interrupting normal system operation. Programming may be performed using a key station terminal connected to the system (Station 100) or via a external terminal either on-site or remotely.

## 200.108 PAGE/RELAY CONTROL

The Starplus Digital Key Telephone System offers relays that may be individually programmed for: External Page, Loud Bell Control, CO Line Control, Power Failure Transfer, and Recorded Announcement uses. Up to four Relay/Sensor interface modules may be installed on the system. Each relay/sensor interface module contains three independent relays and three sensing input circuits.

## 200.109 PAGING

### A. External Paging

There are seven external paging zones available in the Starplus SPD 4896 system. External Paging requires a three-digit dialing code. External paging requires an externally provided amplifier and paging system. Since no "on-board" relay contacts are available on the SPD 4896 for external paging, the Relay/Sensor Interface module is used for this purpose.

### B. Internal Paging

There are four internal paging zones available in the Starplus Digital Key Telephone System. A station can be in any or all zones or in no zone at ail. Stations not assigned to a page group can still make page announcements, if allowed in station programming. Stations can be assigned to a page group in order to receive pages but not allowed to make page announcements.

### c. Paging Access Restriction

Programming on a per-station basis, can deny any station the ability to make any type of page.

## 200.17 0 PAUSE TIMER

When dialing a speed number, a timed pause between digit sending can be placed in the number. The length of this pause can be programmed in the system database.

## 200.111 PERSONAL PARK

Each digital terminal in the system can place a call into a personal park location and then later retrieve that call from the originating station. intercom calls and CO line calls can be placed into the stations' personal park location. Calls parked in a personal park location are subject to the "system" call park recall timer. A station retrieving a personal parked CO call must have either a direct CO line appearance or an available loop button to retrieve the parked call.

> **NOTE** *Only one call can be parked in a Personal Call Park location at one time. When dialing the Personal Park location and the location is already occupied, the initiating station will receive the previously parked call and the second call is then parked.*

## 200.112 PBX DIALING CODES

The System will allow five one or two-digit access codes to be entered into memory. When one of these codes is dialed, this signals the KSU that the user is dialing a PBX access code and not dialing directly over an outside CO line and that toil restriction is to be applied to the next dialed digits after the code. Therefore, toil restriction will not be applied to the station unless one of these five PBX codes is dialed first. This allows the dialing of PBX extensions 100, 110, 111, etc. This functions on lines marked as PBX type lines in programming.

## 200.113 POOL BUTTON OPERATION

The Pool Group Key is used primarily to access CO lines that do not appear on a station so that outgoing calls may be made. Pooled group keys are associated to CO line groups and may be programmed for use on any of the flexible line buttons. CO lines are accessed in descending order of priority starting with the highest numbered available (not busy) CO line in a CO line group.

Stations may have as many POOL buttons as their are CO line groups. Multiple POOL buttons for the same group are also allowed.

## 200.114 PREFERRED LINE ANSWER

A station with Preferred Line Answer can answer any assigned outside, transferred, or recalling line, or queue callbacks by lifting the handset or pressing the ON/OFF button. The station MUST be physically ringing, to function properly.

## 200.115 PRIVACY RELEASE

Privacy is insured on ail communications in the system. if desired, the customer may elect to disable the Automatic Privacy feature, thus allowing up to three other stations to join in on an existing CO Line conversations.

> **NOTE** *Disabling of the privacy feature may be limited by federal, state or local law, so check the relevant laws in your area before disabling privacy.*

### A. Per CO Line Option

This feature allows each CO line to be individually programmed for privacy. This feature is useful for maintaining security on such lines as Data lines, Private fines, or special circuits requiring privacy. if privacy is disabled on a CO line then, while in use, another station may enter the conversation simply by pressing the CO line button. A programmable warning tone is presented to ail parties prior to actual cut-thru. The station attempting to enter the conversation must also have privacy disabled.

## B. Per Station Option

Each station may be programmed to give the station the capability to join an existing conversation simply by pressing the CO line button that is in use. A programmable warning tone is presented to all parties when the station enters the conversation. The CO line must also have privacy disabled to allow the cut-thru.

## 200.116 PRIVATE LINE

Private line programming allows certain lines to ring at a specific station only. When placed on Hold, these lines are active at the programmed station only. A private line can be transferred to other stations, provided the station receiving the call has a loop button or direct appearance of that CO line.

## 200.117 PULSE-TO-TONE SWITCHOVER

When commanded, the system will change the signaling on an outside line from dial pulse to DTMF (tone), allowing the use of common carriers behind a dial pulse outside line. This can be done manually when dialing, or can be stored within a speed dial number.

## 200.118 RANGE PROGRAMMING

The Starplus Digital Key Telephone System allows for range programming when programming CO lines and Stations. Range programming allows you to program all parameters alike for the entire range or you can change or modify a few items that will be copied to all members in the range.

## 200.119 RELEASE KEY

Allows the station and attendant users to disconnect calls while off-hook, speeding up call handling time.

## 200.120 REMOTE ADMINISTRATION

The Remote Administration feature allows authorized personnel to access the administration programming via a terminal device (portable terminal device or personal computer with communications software package).

The feature permits the review and entry of the customer database in the same manner as via the digital terminal at "ADMIN" Station 100. The terminal device can be connected directly to the RS-232C connector on the Central Processor Unit (CPU), or can be accessed by a telephone modem linking the CPU's RS-232C connector (via a CO line) to a remote location. When entering the system remotely via a terminal device, access to the on-board 1200 modem (future) is accomplished by accessing Port 499 either through a direct ringing assignment or through DISA or by being transferred to Port 499 by any internal station.

## A. Database Upload/Download

DataBase Upload/Download provides a maintenance facility which will be added to the Remote Administration routine. This routine permits the database to be downloaded to a PC, when a software changes is made or when the system needs to be initialized and re-programmed. In addition, the routine facilitates the programming of a database on an in-house system which can be downloaded to a PC and then uploaded to a system in the field. After the system maintenance is completed, the file saved in the PC can then be uploaded to the system.

## 200.121 REMOTE SYSTEM MONITOR AND MAINTENANCE

## A. Remote System Maintenance

The Remote Maintenance feature allows the Interconnects' technical staff to review the systems configuration data and individual card slot configuration data. This can be done "on site" using a data terminal or remotely using a modem to access a remote data terminal. When entering the system remotely via a terminal device, access to the on-board 1200 modem (future) is accomplished by accessing Port 499 either through a direct ringing assignment or through DISA or by being transferred to Port 499 by any internal station.

## B. Remote System Monitor

The Remote Monitor feature provides remote access to the installed system for diagnostic purposes. These capabilities benefit Service personnel enabling them to support the end user remotely. Different levels of access, via password, allows authorized personnel to trace, monitor and "up-load" critical information directly from the Star-plus Digital Key Telephone System. This provides a more accurate means of acquiring system information that leads to a quick resolution of problems that may occur. This is all done without interfering with ongoing call processing or normal system operation, and in many cases may be performed without a site visit.

Capabilities allowed and reserved for this "High level troubleshooting" in addition are:

- Monitor Mode
- Enable & Disable Event "Trace'
- Dump "Trace Buffer" (up-load)

## 200.122 SAVE NUMBER REDIAL (SNR)

Any number dialed on an outside line can be saved permanently to be used at any time. This number is saved until a new number is stored.

## 200.123 SINGLE LINE TELEPHONE (SLT) COMPATIBILITY

The Starplus Digital Key Telephone System supports industry standard 2500 Type (DTMF) single line instruments. When the Single Line Telephone Board (SL12) is installed, a maximum of 12 single line telephones may be supported. The Starplus SPD 4896 system will support up to 84 single line telephones through the use of single line boards and/or SWOPX boxes.

## 200.124 SPEAKERPHONE

Both Enhanced and Executive Digital Terminals are equipped with a speakerphone. However, the speakerphone can be programmed to work in one of three ways:

- Normal speakerphone operation.
- Disabled for outgoing and incoming CO calls but handsfree on intercom allowed.
- Headset operation allowed.

## 200.125 STATION CLASS OF SERVICE (COS)

Each station is assigned a Class of Service which governs that stations dialing privileges. Day Class of Service and Night Class of Service assignments to stations provide the system administrator additional control over station dialing, preventing misuse of phones after hours. Six uniquely defined Classes of Service are available for assignment to stations on a per station basis and all six are available for day and night assignment. Station Class of Service works in conjunction with CO line Class of Service to provide the most flexible means for offering custom toll restriction. As a part of the Dialing privilege assignment through Class of Service the system offers two programmable Allow and Deny tables for additional customization of a toll restriction plan for a particular customer. In addition, each station can reference up to four special area code tables.

## 200.126 STATION MESSAGE DETAIL RE-CORDING (SMDR)

***This feature is available with optional software.***

The Starplus Digital Key Telephone System provides one industry standard RS-232C port for dual purpose use and a second port is optional for SMDR output, each allowing connection to an external printer or call accounting device. The system provides details on both incoming and outgoing calls. This feature is programmable to allow all calls or just outgoing long distance calls to be recorded. The system tracks calls by outside line, number dialed, time of day, date, station that placed the call and duration of call. Account codes may also be entered and recorded.

## 200.127 STATION RELOCATION FEATURE

The Station Relocation feature provides a means to allow a user to unplug their station and plug it in at another location. Then by dialing a code followed by the old station number, all station attributes, including extension number, button mapping, speed dial, and class of service are transferred to the new location.

> **NOTE** If a station is assigned to a specific port and that station user unplugs their station and plugs it in at another location, the database administration programming will be updated to reflect the new port change.

## 200.128 STATION SPEED DIAL

Each station user can program up to 20 frequently dialed numbers of up to 24-digits in length. Pauses, flash commands, pulse-to-tone switchover, and NO-DISPLAY characters take up digit spaces. In the Starplus SPD 4896 system, there are a total of 1920 speed locations to be divided among all telephones.

Numbers are dialed by use of the SPEED button and a two-digit code. This feature can additionally be assigned to any of the buttons in the flexible button field on each keyset for one-button activation.

## 200.129 SYSTEM CAPACITY

**A.** **Up** to **48x96 Configuration**

The SPD 4896 system will support a maximum of 48 outside CO circuits and 96 station circuits,

## 200.130 SYSTEM HOLD

When a line is placed on System Hold? any station in the system with an appearance of that line can retrieve the call.

## 200.131 SYSTEM SPEED DIAL

Up to 80 commonly dialed numbers can be programmed into System Speed Dial for use by stations allowed this feature. These numbers can be up to 24-digits including pauses, flash commands, pulse-to-tone switchover, and no-display characters. The last 40 numbers will not be monitored by toll restriction.

## 200.132 TEXT MESSAGING (Silent Response)

This feature allows a station user to use text messages to respond to a caller that has either Camped-On or has used the Off-Hook Voice Over (OHVO) feature to alert a busy station of a waiting call or message. The "camped-on" station may respond to the caller via the personalized, custom, and re-

sponse text (LCD) messages. The text messages appear on the calling party LCD display. The calling (originating) station and receiving station MUST be a digital terminal. The receiving station MUST also be programmed to allow OHVO calls.

### 200.133 TOLL RESTRICTION (TABLE DRIVEN)

The system provides a flexible means of providing toll restriction to internal stations of the Starplus Digital Key Telephone System. Each station is assigned a Class of Service for day mode operation and one for night mode operation these station COS's work in conjunction with a CO line Class of service to allow for customized toll restriction. Two Allow and Deny tables along with four special tables afford the system administrator to devise a variety of complex toll restriction or dialing privilege schemes.

### 200.134 TRANSFER RECALL

Screened and unscreened transfers will recall the initiating party if unanswered for a programmable length of time, and then if unanswered, will recall the attendant.

### 200.135 UNIFORM CALL DISTRIBUTION (UCD)

Eight Uniform Call Distribution (UCD) groups can be programmed, each containing up to eight three-digit station numbers. Each group is assigned a pilot number. When this number is dialed, the first available agent in that group is rung. Calls are routed to the station that has been on-hook for the longest period of time.

#### A. Alternate UCD Group Assignments

An alternate UCD group can be programmed so that if stations in one group are busy, the alternate group will be checked for an available station.

#### B. Auto Wrap-Up w/Timer

After completion of a UCD call (on-hook) the agent will not be subjected to another UCD call for the duration of the Auto Wrap-Up timer (regardless of the number of calls in queue), allowing the agent to finish call related work or access other facilities. This will allow agents to remove themselves from the group (i.e.. DND, Unavailable, Call Forward or originate another call). The auto wrap-up timer is programmed as part of the UCD database. (System-wide)

#### C. Available/Unavailable Mode

Stations programmed into a UCD group may log off and on to their assigned UCD group by dialing an Available/Unavailable code. When an agent is in the Available mode that agent will receive UCD calls in the normal manner. When

an agent is in the Unavailable mode that **agent** will no longer receive UCD type calls, however may receive non-UCD calls. Agents that have logged off by going Unavailable will receive a visual reminder that they are logged off with a flashing LED and or a LCD display message.

#### D. Incoming CO Direct Ringing

CO Lines can be programmed to ring directly into a UCD group. When all agents are busy and RAN is enabled, the system will answer the caller and present the 1st RAN announcement automatically.

#### E. No-Answer Recall Timer

If a call routed to a station via UCD is not answered by the UCD Agent/Station before the No-Answer Recall timer expires, the call will be returned to UCD Queue with the highest priority. In addition, the station that failed to answer the ringing UCD call will be placed into an Out-Of-Service (OOS) state.

#### F. No-Answer Retry Timer

When the No-Answer Recall timer expires, a station that failed to answer the ringing UCD call is placed into an out of service (OOS) state. The station that was taken out of service (OOS) will be placed back in service if the agent hits his available flex button or dials the available flex code. In addition, the agent will be placed back in service if the No-Answer Retry timer expires. If the agent does not answer his next UCD call, he will again be taken out of service. This cycle will continue until the station answers calls, logs out, or goes unavailable.

#### G. Overflow Station Assignments

An overflow station may be assigned to route callers in queue to a designated station after a specified time. The overflow station may not be one of the UCD group stations.

#### H. Recorded **Announcements (RAN)**

Recorded announcement devices can be assigned to provide up to eight different messages, if all stations in a UCD group are busy. The eight messages are available to all eight UCD groups in different configurations. A RAN table can be the answer port for unanswered incoming calls to a UCD group, while another table can provide the secondary message. Each RAN device can provide an announcement to one caller at a time. Subsequent callers will be queued onto the message on a first-in basis.

#### I. Agent Queue Status Display

The Agent Queue Status feature provides a means for an agent and UCD supervisor to view

the status of their UCD group. This display is an idle state display and will prompt a supervisor that Agents in a group are having problems answering all their calls. The display will tell the agent and his supervisor how many calls are in queue, how many agents are available or logged into the group, and the length of time in minutes that the oldest call has been in queue. The agent will receive the calls in queue display whenever there is a call in queue.

There are two methods of viewing UCD Group call queue status.

1. In-service UCD agents and the assigned overflow station will see the quantity of calls in queue on the LCD of their station for the UCD group of which they are a member. If every member of a UCD group is busy and calls are in queue, the Supervisor/Agent Queue Status display will be seen at all UCD members of that group.

> **NOTE** *If a UCD member is taken out of the group (i.e.. DND; All Call Forward, Unavailable, etc.) they will not receive calls in queue information.*

2. Any station not assigned in a UCD group can view the number of calls in queue for any given UCD Group. To view the number of calls in queue the station user dials the Calls In Queue code (or presses a programmed FLEX button with this code) then enters the UCD group desired. The LCD will display, on a real time basis, the number of calls in queue for that group.

## 200.136 UNIVERSAL NIGHT ANSWER (UNA)

Incoming CO lines can be programmed for Universal Night Answer (UNA). Stations which do not have access to a line during the day can answer that line while the System in the Night Mode by dialing a UNA code. In order to utilize this feature, a loop button or an appearance of the trunk must be present on the station.

## 200.137 VOICE MAIL GROUPS (VM)

*This feature is available with optional software.*

The Voice Mail feature automatically handles unanswered calls. Stations may forward calls to a voice mail group (for leaving mail) or may call the voice mail group directly (to retrieve mail) with no assistance from the attendant. Up to eight voice mail groups can be configured, each group containing up to eight voice mail stations. Each station interfaces with a port on the Single Line Board (SLI2) on the SPD 4896 system. Each voice mail "station" can be shared by a number of actual users. A Single Line Board (SL12) is required when utilizing the Starplus

Digital Key Telephone System Voice Mail "In-Band" integration.

In addition, calls that are transferred from a Voice Mail group will NOT recall to the VM group. Instead, the call will recall to the Attendant station. If no Attendant station is programmed in the system, the call wiil continue to recall this station. This is useful for Voice Mail system that only provides unsupervised transfer capability.

> **NOTE** *By default, all Voice Mail stations are placed into Pickup Grwp 1. You may need to change the default setting.*

### A. VM Disconnect Signal - Pass Thru

To avoid Voice Mail ports from being tied up, as a result of CO line callers abandoning the call or not exiting the VM system properly, a disconnect signal has been provided to notify the VM system that a CO or intercom caller has hung up or abandon the call. 'Silence" is provided to the VM port followed by "busy tone" to aid the VM system to recognize that an intercom caller has abandoned the call.

### B. VM In-Band Signaling Integration

The Starplus Digital Key Telephone System allows the system to be programmed so that if a station programmed to receive incoming CO line ringing is forwarded to Voice Mail they may have direct incoming callers routed directly into their stations voice mail box through the use of "In-Band" signaling. Alternately, incoming CO lines can be programmed to ring directly into the Voice Mail system. In this case, callers will be answered by the Voice Mail or Auto Attendant Main greeting.

Incoming CO callers can be Station Call Forwarded into voice mail only when the ringing CO line is programmed to ring at one station. Additionally CO lines programmed to ring at an attendant station will station call forward into the Voice Mail system (if programmed to ring only at one attendant station) and be presented to the main greeting (not the attendant stations mail box) even when ID digits are enabled.

### C. VM Message Waiting Indication

When Voice Mail has received a voice message for a user who has a station on the Starplus Digital Key Telephone System, the VM connected to the system can leave a message waiting indication at the VM users station. When the station user retrieves their mail, the VM system can cancel the message waiting indication left at a station via a VM port.

The message waiting indication will appear on the programmed Voice Mail (group) button. If

such a button has not been programmed, a voice mail message waiting indication will appear on the MSG WAIT button as a normal message waiting signal.

**D.   VM Tone Mode Calling Option**

Voice mail systems and/or Automated Attendants can utilize the Calling Station Tone Mode option. This is useful when using supervised transfer or call screening options on voice mail or auto attendant(s) requiring ring back tone for proper call handling.

**E.   VM Transfer/Forward**

This feature allows Voice Mail calls, upon reaching a forwarded to VM station, to forward back into the Voice Mail unit. This is useful when VM ports are being used as both Auto Attendant and VM ports. This feature can be enabled/disabled for all VM groups.

F.   **VM Transfer with ID Digits**

This feature provides an attendant or station user a way to transfer a caller directly into a voice mail box. This allows the station identification digits to be entered by the transferring party. Using this feature, a caller can be transferred to a voice mail box when 1) a station user on the system is not forwarded to VM or 2) the destination voice mail box owner is not a station user. CO trunks and internal calls may be transferred into voice mail using this feature. If no voice mail ID digits are dialed by the transferring station, then the identification digits of the transferring station will be sent to the voice mail.

## 200.136 VOLUME CONTROLS

Both speaker and tone ringing volumes can be separately adjusted by utilizing the two slide switches on the front of the digital terminal.

## Table 210-I SLT Station Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|:---:|:---:|:---:|:---:|:---:|:---:|
| **A** | | | | | | |
| Account Code .................................................... 210-I | | ● | ● | ● | ● | N |
| Automatic Line Access .......................................... 210-I | ● | ● | ● | ● | ● | N |
| **C** | | | | | | |
| Call Forward ................................................ 210-I | ● | ● | ● | ● | ● | N |
| Camp-On .................................................... 210-1 | ● | ● | ● | ● | ● | N |
| Conference .................................................. 210-I | ● | ● | ● | ● | ● | N |
| Conference w/Personal Park ................................ 210-1 | ● | ● | ● | ● | ● | N |
| **D** | | | | | | |
| Direct Outside Line Access ................................... 210-I | ● | ● | ● | ● | ● | N |
| Direct Outside Line Ringing .................................. 210-I | ● | ● | ● | ● | ● | N |
| Directed Call Pick-Up ........................................ 210-I | ● | ● | I. | ● | ● | N |
| Do Not Disturb (DND) ........................................ 210-I | ● | I. | ● | ● | ● | N |
| **G** | | | | | | |
| Group Call Pick-Up ......................................... 210-I | ● | ● | ● | ● | ● | N |
| **H** | | | | | | |
| Handset Receiver Gain ...................................... 210-2 | ● | ● | ● | ● | ● | N |
| **I** | | | | | | |
| Intercom Calling ............................................ 210-2 | ● | ● | ● | ● | ● | N |
| **L** | | | | | | |
| Interrupt Option ............................................ 210-2 | ● | ● | ● | ● | ● | N |
| **M** | | | | | | |
| Message Waiting/Call Back .................................. 210-2 | ● | ● | ● | ● | ● | N |
| Messages - Personalized ..................................... 210-2 | ● | ● | ● | ● | ● | N |
| Custom Messages .......................................... 210-2 | ● | ● | ● | ● | ● | N |
| **N** | | | | | | |
| Night Service .............................................. 210-2 | ● | ● | ● | ● | ● | N |

N=No additional hardware required

Table 210-1 SLT Station Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **O** | | | | | | |
| Off-Hook Preference ...............210-2 | ● | ● | ● | ● | ● | N |
| **P** | | | | | | |
| Personal Park ...............210-2 | ● | ● | ● | ● | ● | N |
| **Q** | | | | | | |
| Queuing ...............210-2 | ● | ● | ● | ● | ● | N |
| **S** | | | | | | |
| Station Speed Dial ...............210-2 | ● | ● | ● | ● | ● | N |
| System Speed Dial ...............210-2 | ● | ● | ● | ● | ● | N |
| **T** | | | | | | |
| Transfer ...............210-2 | ● | ● | ● | ● | ● | N |

N=No additional hardware required

# SECTION 210

# SINGLE LINE TELEPHONE FEATURE DESCRIPTION

Single Line telephones have access to most of the system and station features listed in the previous section, however, the additional features listed below are unique to Single Line Telephones. The Single Line Telephone Board (SL12) is required in the Starplus SPD 4896 System for proper SLT operation. A Single Line Adapter (OPX) box and 48v Power Supply may also provide single line operation. An abbreviated feature index is provided in Table 21 O-1 SLT Station Features/Software Packages.

## 210.1    ACCOUNT CODE

*This feature is available with optional software.*

SLJ stations may enter an account code, up to 12-digits in length, to identify calls for billing/tracking purposes. The account code may be entered either before the call or during the call (the outside caller is placed on hold while the account code is entered if during the call.). The account code is recorded on the SMDR printout. Account codes are non-verified and can vary in length from 1 to 12 digits.

## 210.2    AUTOMATIC LINE ACCESS

SLT's may have their station programmed to access a particular CO Line such as a private line or a line from a Group of CO lines upon going off-hook. This is useful in Centrex or PBX applications when station users have dedicated or individual lines. Outside line dial tone is received just by going off-hook, without the need to dial access codes.

## 210.3    CALL FORWARD

Single line telephones may direct intercom calls and transferred CO lines to be forwarded to another station. SLTs have access to all forwarding options that Key station users have:

- Call Forward - All Calls
- Call Forward - No Answer [7]
- Call Forward - Busy [8]
- Caii Forward - Busy/No Answer [9]
- Call Forward - Off-Net [✳]
- Preset Caii Forward

## 210.4    CAMP ON

A busy station can be notified that an outside line is on hold and waiting for them. The busy station is notified of this by a beep tone. Single line telephones can receive a camp on indication or initiate one by using-an access code.

## 210.6    CONFERENCE

An SLT user can initiate a conference with an outside line and one other internal station.

## 210.6    CONFERENCE /WITH PERSONAL PARK

Single Line Telephones (SLT) can initiate a conference between two outside (CO) calls. The Personal Park feature is used in conjunction with the SLT conference code to make this possible. A combination of features are derived from these dial codes (Personal Park, Flip/Flop, and Multi-line Conference).

## 210.7    DIRECT OUTSIDE LINE GROUP ACCESS

Single line telephones can access outside lines by dialing CO line group access codes 9 or 81-87.

## 210.8    DIRECT OUTSIDE LINE RINGING

Single line telephones can be set up to receive direct outside line ringing. SLTs may be programmed to receive incoming CO Ringing on more than one CO line. However, an SLT can answer only ONE call at a time. if a SLT is busy when a CO call rings in, camp-on tone will be given to that SLT station.

## 27 0.9    DIRECTED CALL PICK-UP

Tone ringing intercom calls, initial Ringing CO caiis and transferred outside line calls to specific stations can be picked up by single line telephones. For this type of pickup, the stations do not have to be in the same pickup group.

## 210.10    DO NOT DISTURB (DND)

Each telephone user can be allowed to place their phone in Do Not Disturb. The user will receive error tone if they are not allowed this feature. They will also receive a confidence tone when lifting the handset to remind them they are in Do Not Disturb. The attendant can override a station in DND.

## 210.11    GROUP CALL PICK-UP

Tone ringing intercom calls, transferred outside line calls, and initially ringing calls can be picked up by single line telephones by dialing a special pickup code. The telephones must be in the same pickup group.

## 210.12    HANDSET RECEIVER GAIN

This feature allows an SLT user while on a CO call to hookflash and dial a code to increase/decrease the handset volume.

## 210.13    INTERCOM CALLING

Single line telephones can make and receive intercom calls.

## 210.14    LOOP INTERRUPT OPTION

This feature allows Single Line telephone ports to provide a Loop Disconnect signal to any devices that are connected to an SLT port. This is an inherent operation, no programming is necessary.

The signal is provided when a CO line, marked with Loop Supervision, connected to an slt port receives Loop Supervision from the Central Office.

When an internal call to an SLT is terminated, the SLT will provide the Loop Interrupt signal.

The Loop Interrupt signal consists of an open for 700ms with less than 5ma.

## 210.15    MESSAGE WAITING/CALL BACK

Single Line Telephones calling a station that is busy, idle, or in Do Not Disturb can leave a message waiting indication to signal the station to call back.

## 210.16    MESSAGES - PERSONALIZED

Each SLT station can select a pre-assigned message to be displayed on the LCD of the Digital Terminal receiving that message. There are ten possible messages which can be displayed:

- 00= Clears Messages
- 01= ON VACATION
- 02= RETURN AM
- 03= RETURN PM
- 04= RETURN TOMORROW
- 05= RETURN NEXT WEEK
- 06= ON TRIP
- 07= IN MEETING
- 08= AT HOME
- 09= ON BREAK
- 10= AT LUNCH

### A.    Messages - Custom

This feature allows the system administrator to enter up to ten custom messages for use by station users of the system. These messages may be specified and customized by the customer on a system-wide basis.

## 210.17    NIGHT SERVICE

When outside lines are marked UNA and the system is placed into night service, a single line telephone can answer incoming calls on lines it does not nor-mally have access to by dialing [#5]. When External Night Ringing is enabled in database programming, ringing is outputted on the external page ports.

## 210.18    OFF-HOOK PREFERENCE

SLT's may have their station programmed to access a particular CO Line such as a private line or a line from a Group of CO lines upon going off-hook. This is useful in Centrex or PBX applications when station users have dedicated lines. Outside line dial tone is received just by going off-hook, without the need to dial access codes.

## 210.19    P E R S O N A L   P A R K

Single line telephones can be connected to two calls (Intercom or CO lines) at the same time and "'flip/flop" between the two calls. This can be performed with originated or received calls. This feature is also used with SLT multi-line conference feature.

## 210.20    QUEUING

Singie line telephones can be placed in a queue awaiting the first available outside line in a group to become available.

## 210.21    STATION SPEED DIAL

Each SLT user may program up to 20 individual speed dial numbers. Each speed dial number can be up to 24-digits in length.

## 210.22    SYSTEM SPEED DIAL

Each SLT user can be allowed access to system speed dial numbers on a programmable basis. The last forty system speed numbers override toll restriction.

## 210.23    TRANSFER

Outside lines may be transferred by or to single line telephones. These transfers can be either announced or unannounced.

# Table 220-I Attendant Features/Software Packages

| FEATURE | STANDARD FEATURES | ENHANCED FEATURES | CALL PROCESSING FEATURES | NETWORK & TRUNKING | COMBINATION PKG | ADDITIONAL EQUIPMENT REQUIRED |
|---|---|---|---|---|---|---|
| **A** | | | | | | |
| Attendant Disable Outgoing Access ...................... 220-I | ● | ● | ● | ● | ● | N |
| Attendant Overflow ........................ 2 2 0 - I | ● | ● | ● | ● | 0 | N |
| Attendant Override ...................... 220-I | ● | ● | ● | ● | ● | N |
| Attendant Position ...................... 220-I | ● | ● | ● | ● | ● | N |
| Attendant Recall ...................... 220-I.- | ⊠ | ⑤ | ● | ● | ● | N |
| Attendant Search ...................... 220-2 | ● | ● | ● | ● | ● | N |
| Automatic Night Mode ...................... 220-I | ● | ● | ● | ● | ● | N |
| **B** | | | | | | |
| Busy Lamp Field ...................... 220-2 | ⑪ | ● | ● | ● | ● | N |
| **D** | | | | | | |
| Direct Station Calling ...................... 220-2 | ● | ● | ● | ● | ⑤ | N |
| **H** | | | | | | |
| Handset Receiver Gain ...................... 220-I | ● | ● | ● | ● | ● | N |
| **I** | | | | | | |
| Incoming CO Line Off-Net Forward ...................... 220-I | ● | ● | ● | ● | ● | N |
| **M** | | | | | | |
| Mapping Options ...................... 220-2 | ● | ● | ● | ● | ● | N |
| Messages - Custom ...................... 220-2 | ● | ● | ● | ● | ● | N |
| **N** | | | | | | |
| Night Service Feature ...................... 220-I | ● | ● | ● | | ● | N |
| **R** | | | | | | |
| Release Key ...................... 220-2 | ● | ● | ● | ⑤ | ⑤ | N |
| **T** | | | | | | |
| Time and Date Programming ...................... 220-I | ● | ● | ● | ● | ● | N |

N=No additional hardware required

STARPLUS ® SPD 4696
**Digital Key Telephone System**                                          **ATTENDANT FEATURE DESCRIPTION**

# SECTION 220
# ATTENDANT FEATURE DESCRIPTION

The Attendant and Attendant(s) with DSS/DLS features of the Starplus Digital Key Telephone System are listed and described below in alphabetical order. An abbreviated feature index is provided in Table 220-I Attendant Features/Software Packages.

## 220.1    ATTENDANT DISABLE OUTGOING ACCESS
The first attendant can disable CO lines, preventing outgoing access to those lines. This is useful for removing a faulty line from service, or for reserving CO lines for important use. All stations that can normally make calls on the lines are affected, but incoming calls are not affected. A CO line may be disabled while it is being used. When the trunk becomes idle, further outgoing access will be prevented.

## 220.2    ATTENDANT OVERFLOW
System programming allows the attendant station to be programmed so that if the attendant is busy or not there, the call will be automatically forwarded to another predetermined station, VM Group, Hunt Group, ACD or UCD group after a programmed period of time. (Refer to Call Forward, Station and Preset)

## 220.3    ATTENDANT OVERRIDE
Attendant stations may override a busy station or ring a station in DND. While busy, pressing the override key provides override tone and a five second delay before voice cut-through to the called party occurs, automatically placing any outside line call on Hold. The Attendant Override function may be programmed on to a flex button and can be enabled or disabled in programming.

## 220.4    ATTENDANT POSITION
The system identifies a maximum of three programmable stations as attendants for line recalls and attendant features. The first programmed attendant can enter system date and time information as well as System Speed numbers from this position without entering the programming mode. The Starplus Digital Key Telephone System is placed in Night Service by any programmed attendant pressing the NIGHT (DND) button or dialing the NIGHT code.

## 220.6    ATTENDANT RECALL
A held CO call left unattended by a station will recall the attendant(s) after a programmable period of time has elapsed. A recalling CO line flashes at a distinc-

tive rate and has an LCD display that identifies the originating station of the unanswered call.

## 220.6    AUTOMATIC NIGHT MODE
In addition to the attendants capability to place the system into and out of night mode manually, by pressing the Night key, an automatic night mode schedule has been added to the system. The automatic schedule is determined in database programming on a weekly basis, including Saturday and Sunday. The Attendant can override the automatic schedule by pressing the NIGHT (DND) button.

## 220.7    HANDSET RECEIVER GAIN
This feature provides the user with a flexible button that can be programmed on their keyset. When programmed, allows the user to increase/decrease the handset receiver gain while on a CO call or intercom call.

## 220.8    INCOMING CO LINE OFF-NET FORWARD
Allows the first attendant to forward incoming CO calls to an Off-Net location. The attendant must have a direct appearance of the CO line to be forwarded. Forwarding can be established on a per CO line group basis, all CO lines, or an individual CO line may be simultaneously forwarded to an off-net location.

## 220.9    NIGHT SERVICE FEATURE
The Night Service feature will provide a means to put the system in night mode from any keyset or remove the system from night mode from any keyset as long as the system was put in night mode by the night service feature flex button. If the system was placed in night mode by the attendant using her DND button or if the system was placed in night mode by the automatic schedule, the night service flex button can not remove the system from night mode.

## 220.10    TIME AND DATE PROGRAMMING
This feature allows the first programmed attendant to set the time and date without entering the programming mode.

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## ATTENDANT W/DSS/DLS FEATURES

### 220.11 ATTENDANT SEARCH

Allows a user to make a series of intercom calls without hanging up the handset. An intercom connection is switched to another station whenever a DSS key is pressed. Pressing the next DSS key terminates the previous intercom call.

### 220.12 BUSY LAMP FIELD INDICATORS

Each station key on the DSS console has a corresponding indicator which shows whether the station is idle or busy. The indicator is lit when the station is busy and unlit if the station is idle. A station in DND mode is shown by a flashing indicator.

### 220.13 DIRECT STATION CALLING

Enables the user to make an intercom voice call to any Digital Terminal in the system. Permits you to automatically put an outside caller on hold and simultaneously make an intercom call to an internal station. Also allows you to transfer an intercom call or outside call that is on hold to another station.

### 220.14 MAPPING OPTIONS

The DSS/DLS Console unit can access Stations, Direct Appearing CO Lines, or features that may be assigned to any of the flexible buttons.

A DSS/DLS unit may be assigned to one of the different MAP configurations available. Any one of the four MAP configurations may be assigned to the DSS/DLS and any number of maps may be assigned to one station. However, MAPs that have buttons assigned as CO lines cannot be changed, buttons assigned as Stations can be changed by the user. Up to three maps may be assigned to one station.

There are four pre-defined MAPs for the DSS/DLS console with default button programming. Refer to Figure 220-l DSS Console Map 1, Figure 220-2 DSS Consoie Map 2 and Map 3, and Figure 220-3 DSS Console Map 4 for a button layout of each DSS Console Map. Each Attendant may have up to three DSS/DLS Consoles assigned to work with one Attendant station.

### 220.15 MESSAGES - CUSTOM

This feature allows the first programmed attendant (system administrator) to enter up to ten custom messages for use by station users of the system. Up to 24-characters may be entered as the custom message (this will represent 48 digits entered). A station user may store any of the available messages under a flexible button assigned as a Message Access button. These messages may be specified and customized by the customer on a system-wide basis. Message status is stored in battery protected area of memory for retention in the event of a power failure or system reset (soft or hard).

### 220.16 RELEASEKEY

Allows the user to disconnect calls while off-hook, speeding up call handling time.

**MAP #1** has by default the first 12 CO lines and the first 36 Stations, 100-135. This provides a default layout of a 12x36 configuration.



**Figure 220-I DSS Console Map 1**

**MAP #2** has by default the first 48 Stations, 100-147. All buttons on Map #2 are flexible and can be changed by the station user. This map can be duplicated on another DSS/DLS Console and assigned to the same station.

**MAP #3** by default is intended to be used with Map #2 in that it has the remaining stations, 148-195 to provide a full Station mapping. All of the buttons on Map #3 are flexible and can be changed by the user. This map can be duplicated on another DSS/DLS Console and assigned to the same station.

| STA 100 | STA 116 | STA 132 | STA 148 | STA 164 | STA 180 |
| STA 101 | STA 117 | STA 133 | STA 149 | STA 165 | STA 181 |
| STA 102 | STA 118 | STA 134 | STA 150 | STA 166 | STA 182 |
| STA 103 | STA 119 | STA 135 | STA 151 | STA 167 | STA 183 |
| STA 104 | STA 120 | STA 136 | STA 152 | STA 168 | STA 184 |
| STA 105 | STA 121 | STA 137 | STA 153 | STA 169 | STA 185 |
| STA 106 | STA 122 | STA 138 | STA 154 | STA 170 | STA 186 |
| STA 107 | STA 123 | STA 139 | STA 155 | STA 171 | STA 187 |
| STA 108 | STA 124 | STA 140 | STA 156 | STA 172 | STA 188 |
| STA 109 | STA 125 | STA 141 | STA 157 | STA 173 | STA 189 |
| STA 110 | STA 126 | STA 142 | STA 158 | STA 174 | STA 190 |
| STA 111 | STA 127 | STA 143 a | STA 159 | STA 175 | STA 191 |
| STA 112 | STA 128 | STA 144 | STA 160 | STA 176 | STA 192 |
| STA 113 | STA 129 | STA 145 | STA 161 | STA 177 | STA 193 |
| STA 114 | STA 130 | STA 146 | STA 162 | STA 178 | STA 194 |
| STA 115 | STA 131 | STA 147 | STA 163 | STA 179 | STA 195 |

**Figure 220-2 DSS Console Map 2 and Map 3**

**MAP #4** by default contains all 48 CO tines to provide a full **CO Line mapping.**

| | | |
|---|---|---|
| LINE 1 | LINE 17 | LINE 33 |
| LINE 2 | LINE 18 | LINE 34 |
| LINE 3 | LINE 19 | LINE 35 |
| LINE 4 | LINE 20 | LINE 36 |
| LINE 5 | LINE 21 | LINE 37 |
| LINE 6 | LINE 22 | LINE 38 |
| LINE 7 | LINE 23 | LINE 39 |
| LINE 8 | LINE 24 | LINE 40 |
| LINE 9 | LINE 25 | LINE 41 |
| LINE 10 | LINE 26 | LINE 42 |
| LINE 11 | LINE 27 | LINE 43 |
| LINE 12 | LINE 28 | LINE 44 |
| LINE 13 | LINE 29 | LINE 45 |
| LINE 14 | LINE 30 | LINE 46 |
| LINE 15 | LINE 31 | LINE 47 |
| LINE 16 | LINE 32 | LINE 48 |

**Figure 220-3 DSS Console Map 4**

# SECTION 300

# STATION FEATURE OPERATION

## 300.1    INTRODUCTION

The Starplus Digital Key Telephone System has a wide variety of features and flexible programming, allowing each telephone user to program his/her telephone to meet his/her own individual needs.

This section of the manual contains the operating instructions for Digital Key Terminals and includes an illustration of the key telephone used in the Starplus Digital Key Telephone System and description of the keys on the telephones and their functions. It is designed to provide step-by-step instructions for operating the Digital Key Terminals in the system. Visual and audible cues which accompany the various steps in the operation of the features are also included.

Literature similar to these operating instructions has been prepared for use by the customer in the form of a Station User's Guides.

## 300.2    KEY TELEPHONE STATION FEATURES

Each Starplus Digital Key Telephone System provides the following keys, indicators and features:

**HANDSET AND SPEAKER** are located at the left side of the front panel. A handset is provided to allow confidential conversation when desired. Lifting the handset from its cradle (going off-hook) disengages the station's built-in speaker.

The speaker is located directly below the center portion of the handset. The station may be operated with the handset on-hook. When this occurs, audio is transmitted to the station userthrough the station's speaker.

FLEXIBLE BUTTONS are used to access idle outside lines, provide DSS/BLF for internal stations, access speed dial number and activate features. These buttons are programmed by the individual station user. The default flex feature buttons are described below:

  **CAMP-ON** (flex) button enables you to alert a busy party that an outside line is on hold and waiting for them. A flex button must be assigned to use this feature.

  **LINE QUEUE** (flex) button allows you to queue onto an outside line when all lines in a group are busy. Your station is placed in queue awaiting a line in the same group to become available. A flex button must be assigned to use this feature.

**CALL BACK** (flex) button allows you to initiate an automatic call back request to another busy station. As soon as that station becomes idle, the station that left the call back request is signalled. A flex button must be assigned to use this feature.

**PICK UP** (flex) button allows you to pickup a tone ringing intercom call, transferred, incoming, or recalling outside line call to a specific unattended station either by group or directed call pick-up.

**MSG WAIT (MESSAGE WAIT)** (flex) button allows you to initiate a message waiting indication at stations that are busy, unattended, or in Do Not Disturb. Message Waiting Callback request left at your station will indicated by a flashing Msg Wait LED.

**FWD (CALL FORWARD)** (flex) button allows you to forward your calls to another station.

**DND (DO NOT DISTURB)** (flex) button allows the user to place his/her telephone into a Do Not Disturb mode to eliminate incoming outside line ringing, intercom calls, transfers and paging announcements. The station in DND can use the telephone to make normal outgoing calls. On Attendant stations, this button becomes the system Night Mode button. A flex button must be assigned to use this feature.

**CONF (CONFERENCE)** (flex) button is used to establish and build conference calls.

### FIXED FEATURE BUTTONS:

  **HOLD** button enables you to place an outside caller on hold.

  **TRANSFER (TRANS)** button is used to transfer an outside call from one station to another.

  **FLASH** button is used to terminate an outside call and restore dial tone without having to hang up the handset. It is also used to transfer calls behind a PBX or Centrex within those systems.

  **SPEED** button provides you with access to speed dialing, save number redial and last number redial. This button is also used to access speed dial and flex button programming.

  **MUTE** button allows you to switch the built-in microphone on or off when using the speakerphone, or the handset microphone when using the handset. A flex button must be assigned to use this feature.

**ON/OFF** button enables you to make a telephone call without lifting the handset. It turns the telephone on and off when using the speakerphone.

**OUTSIDE CALLS** are announced by a tone signal repeated every 3.2 seconds. The corresponding outside line indicator will flash slowly.

**INTERCOM CALLS** can be tone ringing or voice announce. If it is voice announced, the receiving station will receive 2 bursts of tone prior to the announcement. If it is a tone ringing call, the receiving station will hear a tone ring every 2.4 seconds.

**Figure 300-I Executive Digital Display Terminal**

## Table 300-I Digital Terminal Numbering Plan

| | | | | |
|---|---|---|---|---|
| loo-195 | Station intercom Numbers | | [FWD]+[9] | Busy/No Answer - Call Forward |
| 420 [XXX] | Voice Mail* enable MSG Wait | | [FWD]+[*] | Off-Net - Call Forward |
| 421 [XXX] | Voice Mail* cancel MSG Wait | | 641 | Release Key (Key and Attendant) |
| 43 [C] | Call Park Location O-7 (system) | | 662 | Clear Call Fwd, DND, Personalized Msgs |
| 438 | Personal Park | | 680 | Dial Speed Directory |
| 44 [V] | Voice Mail* Group Pilot Numbers O-7 | | 690 | Name in Display Programming |
| 45 [H] | Hunt Group Pilot Numbers O-7 | | 691 [BB] | Off-Hook Preference Programming |
| 499 | Modem via DISA access or transfer | | 692 | Time & Date Programming (1st programmed Attendant) |
| 55 [U] | ACD* Group Pilot Numbers O-9 | | | |
| 55 [U] | UCD Group Pilot Numbers O-7 | | 695 | Distinctive Ringing |
| 56 [U] | ACD* Group Pilot Numbers IO-15 | | 70 | All Call Page (internal & External) |
| 566 | ACD* or UCD Available/Unavailable | | 71 | Internal Page Zone 1 |
| 567 55 [U] | ACD* or UCD Calls in Queue Display | | 72 | Internal Page Zone 2 |
| 570 [BB] | ACD* Call Qualifier | | 73 | Internal Page Zone 3 |
| 571 | ACD' Agent Logout | | 74 | Internal Page Zone 4 |
| 572 55 [U] | ACD* Agent Login | | 75 | internal All Call Page |
| 573 | ACD* Group Member Status | | 76 [O] | External All Call Page (All Zones) |
| 574 | ACD* Agent Help | | 76 [P] | External Page Zones 1-7 |
| 575 | ACD* Supervisor Logout | | 77 | Meet-Me-Page Answer |
| 576 55 [U] | ACD* Supervisor Login | | 81 | CO Line Group 1 (if LCR* is enabled) |
| 577 55 [U] | ACD' Supervisor Queue Status Display | | | |
| 578 | ACD* Overflow Sta Available/Unavailable | | 82 | CO Line Group 2 |
| 6# [XXX] | Tone Mode Ring Option | | 83 | CO Line Group 3 |
| 6* | Dial By Name | | 84 | CO Line Group 4 |
| 601 | Attendant Override | | 85 | CO Line Group 5 |
| 602 | Disable Outgoing CO Line Access | | 86 | CO Line Group 6 |
| 603 | CO Line Off-Net Forward | | 87 | CO Line Group 7 |
| 604 | Night Service | | 88 | All CO line Groups (CO Line Off-Net Forward) |
| 620 | Camp-On | | | |
| 621 | Line Queue | | g | LCR* or CO Line Group 1 (if LCR' is disabled) |
| 622 | Call Back | | | |
| 623 | Message Wait | | 0 | Attendant |
| 624 | Conference | | #0 | Group Call Pick Up (Key & SLT) |
| 625 | Executive Override/ ACD* Supervisor Monitor Barge-in | | #43 [C] | Call Park Pickup (Key and SLT) |
| | | | #5 | Universal Night Answer |
| 626 | LCR* Queue Cancel | | [SPEED] [YY] | Speed Dial Access (00-I 9 Station) (20-99 System) |
| 627 | Account Code* Enter | | | |
| 628 | OHVO Enable | | [SPEED]+[*] | Save Number Redial |
| 629 | MUTE feature | | [SPEED]+[#] | Last Number Redial |
| 631 | Do Not Disturb | | | |
| 632 | Background Music | | XXX = Intercom Station Numbers | |
| 633 [#] | Personalized Message on a Flex Button | | YY = Speed Dial Bin numbers | |
| 633 [ZZ] | Personalized Messages | | ZZ = Personalized Messages | |
| 633 [00] | Clear Personalized Messages | | BB = Button Number | |
| 634 | Headset Mode | | U = ACD* (O-15) or UCD (O-7) Group Number | |
| 635 | ICLID* Display - (unanswered calls) | | C = Call Park Location O-7 | |
| 636 [XXX] | Station Relocate | | H = Hunt Group Number O-7 | |
| 638+0 | Handset Receiver Gain w/display | | V = Voice Mail* Group Number O-7 | |
| [FWD] | All Call Forward | | P = External Page Zone Number I-7 | |
| [FWD]+[7] | No Answer - Call Forward | | | |
| [FWD]+[8] | Busy - Call Forward | | * Features available with optional software | |

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## 300.3    ANSWERING AN OUTSIDE CALL

a. Lift handset or press ON/OFF button.

b. Press slow flashing outside line button, or Loop button. (If your telephone is programmed with Preferred Line Answer, you may answer an outside line by lifting the handset, or pressing the ON/OFF button.)

## 300.4    PLACING AN OUTSIDE CALL ON HOLD

a. If your system is programmed for Exclusive Hold Preference, press HOLD button once for Exclusive Hold and twice for System Hold.

b. If your system is programmed for System Hold Preference, press HOLD button once for System Hold and twice for Exclusive Hold.

## 300.5    ANSWERING A RECALL

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring. (If Preferred Line Answer is enabled, skip step a.)

a. Press outside line, Loop or Pool button flashing at very fast rate.

b. Lift handset or press ON/OFF button to converse.

## 300.6    ACCOUNT CODES

*This feature available with optional software.*

When connected to an outside line call:

a. Press pre-programmed* ACCOUNT CODE button.

b. Dial account code up to 12-digits. (The other party will not hear the digits being dialed).
  – if account code is less than 12-digits, an [✻] must be entered to return to the call.
  – If account codes are forced the account code must be entered prior to dialing the outside number.

> **NOTE**  *SMDR must be enabled in order for the account code to become part of the SMDR record.*

*Refer to Sec. 300.37: Flexible Button Assignment.

## 300.7    DISABLE OUTGOING CO LINE ACCESS

The first attendant station can disable CO lines, preventing outgoing CO calls.

a. Lift handset or press ON/OFF button.

b. Dial [602] on the dial pad. Confirmation tone is heard

c. Depress the line button(s) of the CO Line(s) to be disabled. Confirmation tone is heard and the CO Line Button LED is flashing.

To re-activate the CO Line(s), repeat the steps followed to disable it.

## 300.8    PLACING AN OUTSIDE CALL (Automatic Line Selection)

a. Press outside line or Pool button. ON/OFF button LED will light and dial tone will be heard.

b. Dial the desired party.

c. When called party answers, lift handset to converse or use speakerphone.

Station user may also dial the individual trunk group access code to access an outside line.

## *300.9    AUTOMATIC CALL DISTRIBUTION (ACD)*

***This feature available with optional software.***

When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. 16 Automatic Call Distribution (ACD) groups can be programmed, each containing up to 16 three-digit station numbers.

### A.    Agent Login/Logout Feature

The Agent Login/Logout feature provides a means for an agent to log into one of the ACD groups and receive calls. For an agent to be placed into an active ACD state, the agent must first login. The agent logs in by performing the following steps:

1  Dial the LOGIN CODE [572] on the dial pad, followed by the ACD group number (5xx) that the agent is going to log into.
   or
   Press a pre-programmed* LOGIN flex button.

2.  The agent enters his unique AGENT ID code (0000-9999). The LOGIN flex button LED will be lit steady. Confirmation tone is heard and the agent is logged onto the ACD group. The ON/OFF LED will extinguish if the agent started the sequence in the handsfree mode. When the agent logs in, an ACD login event is sent to the SMDR port, if active.

> **NOTE**  *The ACD Agent Log-in LED will only light for the ACD group that is assigned to that button.*

> **NOTE**  *If a member is assigned to a specific ACD group and uses the login-logout codes to enter and exit an ACD group other than his assign& group, the database is changed to reflect the different group.*

For an agent to remove himself from the ACD group as an active agent:

1. Dial the LOGOUT CODE [571] on the dial pad,
   or
   Press a pre-programmed* LOGOUT flex button. LOGIN flex button LED will extinguish.

When the agent logs out and removes himself from the ACD group, an ACD logout event is sent to the SMDR port, if active.

> **NOTE** *When an ACD agent has a Login flex button programmed onto his et&ion, that flex button can be used to Login and Logout of the assigned ACD group.*

Conditions:

- If an agent logs into an ACD group from a station that is logged into another ACD group, the station will be automatically removed from the previous ACD group.

- An agent may log out while in wrap-up, or unavailable.

- An agent logging in will first be placed in wrap-up mode before receiving an ACD call.

- If an agent attempts to log into an ACD group that already has 16 members, that agent will receive error tone.

- The Starplus Digital System will not verify agent's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 300.37, Flexible Button Assignment.

### B. ACD Agent "HELP" button

The ACD Agent "HELP" feature provides a means for an ACD agent to signal his assigned supervisor for assistance. A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

While on a call in progress, the agent:

1. Presses his pre-programmed* "HELP" flex button. Confirmation tone will be heard by the agent. The agent will see his "HELP" button illuminate if a supervisor is logged into his ACD group. If no supervisor is logged in, the agent will receive a burst of error tone and his "HELP" button will not illuminate.
   The ACD supervisor station receives a "HELP" message if a member of one of the ACD groups he is assigned to initiates a "HELP" request. The "HELP" function also sends a Camp-On tone to the speaker of the supervisors keyset. The "HELP" message takes precedence over any other message and can be cleared by the supervisor by pressing his "HELP" button.
   At the time the supervisor receives a "HELP" request, he can press his "HELP" flex button followed by his override feature button to bridge onto the ACD group memberscall. The "HELP" button will place an intercom call to the station requesting "HELP". The "HELP" message will be cleared after the supervisor's

"HELP" button is depressed. In addition, the "HELP" message will be **cleared** if the agent was on a call and **went back on** hook before the supervisor could respond. In this case, the "HELP" message will be converted to a message wait indication. The agent can also clear the "HELP" request by hitting his "HELP" button a second time.'

Conditions:

- Up to five messages can be left at any supervisor station.

- The supervisor can cancel the "HELP" request signal by depressing his flashing "HELP" button. In addition, a call will be placed to the agent requesting "HELP". If the agent is on a call, the supervisor can press his barge-in button to monitor the call or give assistance on the call.

> **NOTE** *Only digital terminals can utilize this feature, since a flexible button is required to be programmed.*

### C. ACD Call Qualification

The CALL QUALIFICATION feature provides a means for an Agent to enter codes on ACD type calls that identify the call. This feature provides up to four digits for the ACD SMDR reporting function. This feature permits up to 12 digits to be entered, however only the first four digits are provided for in the SMDR Record.

The QUALIFY button is programmed using flex code [570#]. If the agent wishes to enter his qualify code in a speed bin, he can do so using the standard speed bin programming sequence. Then when he programs his flex button, he can enter 570 followed by the bin number. This will provide an agent with a series of buttons with qualify codes under them. Refer to Sec. 300.37, Flexible Button Assignment.

While on a call, the agent:

1. Presses the pre-programmed CALL QUALIFY flex button, followed by the four-digit qualify code. Enter a [✳] to complete the sequence. A short burst of confirmation tone will be heard thru the keyset_speaker, if programmed.

Conditions:

- The outside party will not hear the (qualify code) account code being entered.

- The qualify code uses the first four digits of the account code. Therefore the account code record in the SMDR will contain the qualify code in the first four digits.

- The qualify code must be entered during CO talk state.

- Speed dial entries can contain all digits including the [✳], which will terminate the entry and return the ACD agent to his CO party.

**D. ACD Agent** Queue **Status Display**

From an idle key telephone:

1. Dial [567] on the dial pad,
   or
   press pre-programmed* flex button.

2. Dial the three-digit ACD group number (5xx). ON/OFF button LED lights steady.
   - The Agent Queue Status display shows the following information:

> **ACD5xx 00 CALLS IN QUEUE**
> **MM/DD/YY        HH:MM am**

Where

&#8211; 5xx = ACD Group (550-565)
The above display is an idle state display and will tell the agent and/or his supervisor how many calls are in queue.

3. Replace the handset or press the ON/OFF button to terminate the display.

> **NOTE** *This feature cannot be used with a call in progress and the station will be considered busy for incoming calls during this operation.*

The agent will automatically receive an enhanced Calls in Queue display whenever there is a call in queue.

The display shows the following information:

> **5xx: CIQ: xx AL: xx OC:. MMM**
> **MM/DD/YY        HH:MM am**

Where

&#8211; 5xx = ACD Group (550-565)
&#8211; CIQ:xx = Calls in queue
&#8211; AL:xx = Agents logged in
&#8211; OC:mmm = Oldest call in minutes

*Refer to Sec. 300.37, Flexible Button Assignment.

**E. ACD Available/Unavailable &lode**

If you are a ACD agent, you may place your station in the Available mode to receive ACD type of calls or you may place your station in the Unavailable mode to block ACD type calls from ringing your station.

To go Available:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You may now receive ACD calls.

To go Unavailable:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You are now blocked from receiving ACD calls.

*Refer to Sec. 300.37, Flexible Button Assignment.

**F. ACD Overflow Station &#8211; Available/Unavailable Mode**

If you are a ACD Overflow station, you may place your station in the Available mode to receive ACD type of calls or you may place your station in the Unavailable mode to block ACD type calls from ringing your station.

To go Available:

1. Dial [578] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You may now receive ACD calls.

To go Unavailable:

1. Dial [578] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You are now blocked from receiving ACD calls.

> **NOTE** *If no stations are logged into the ACD Group, ACD calls will overflow to the Attendant station,*

*Refer to Sec. 300.37, Flexible Button Assignment.

**G. Supervisor Login/Logout** Feature

The Supervisor Login/Logout feature provides a means for an supervisor to log into one of the ACD groups and monitor calls.

1. Dial the LOGIN CODE [576] on the dial pad, followed by the ACD group number (5xx) that the supervisor is going to log into,
   or
   Press a pre-programmed* LOGIN flex button. (Flex button must have 576+5xx programmed onto it.)

2. The supervisor enters his unique SUPERVISOR ID code (0000-9999). The LOGIN flex button LED will be lit steady. Confirmation tone is heard and the supervisor is logged onto the ACD group. The ON/OFF LED will extinguish if the supervisor started the sequence in the handsfree mode. When the supervisor logs in, an ACD login event is sent to the SMDR port, if active.

For an supervisor to remove himself from the ACD group as an active supervisor:

1. Dial the LOGOUT CODE [575] on the dial pad, followed by the ACD group number (5xx)

that the supervisor is going to log out of,
or
Press a pre-programmed* LOGOUT flex button. (Flex button must have 575+5xx programmed onto it). The LOGIN flex button LED will extinguish. When the supervisor logs out and removes himself from the ACD group, an ACD logout event is sent to the SMDR port, if active.

> **NOTE** *The ACD Supervisor Log-in LED will only light for the ACD group that is assigned to that button.*

> **NOTE** *When an AC5 Login flex button is programmed in the system, that same flex button can be used to toggle the Login/Logout feature.*

Conditions:

- If a supervisor logs into an ACD group from a station that is logged into another ACD group, the station will remain in the previous ACD group.

- A supervisor may log out while in wrap-up, or unavailable.

- A supervisor logging in will first be placed in wrap-up mode before receiving an ACD call.

- If a supervisor attempts to log into an ACD group as an agent and that group already has 16 members, the supervisor will receive error tone.

- The Starpius Digital System will not verify supervisor's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 300.37, Flexible Button Assignment.

**H.  Supervisor Monitor With Barge-in**

The Supervisor Monitor with Barge-In feature will provide a means for an ACD supervisor to monitor an agent's call in progress in order to coach sales techniques or customer relations skills. When used, a supervisor may intrude onto an agent's call in a listen only mode or in a true conference mode by use of the barge-in feature. This feature is available with or without a warning tone.

> **NOTE** *The use of silent monitor and barge-in is limited by federal law and may also be limited or prohibited by state or local law, so check the relevant laws in your area before employing these features.*

The ACD supervisor can intrude on an agent's call in the listen only mode by:

1. Dial the three-digit station number of the agent's station. Upon hearing busy tone, press the pre-programmed* Barge-in flex button. The conversation in progress will be

heard by the Supervisor on the handset receiver and the **Supervisor's MUTE** button **LED is lit indicating that the** Supervisor's transmit is muted. If the Supervisor wishes to participate in the conversation in a true conference mode, he can depress his MUTE **button** which removes mute.

> **NOTE** *The Executive Override Code, [625] is used to program Supv Monitor with Barge-In feature onto a flex button.*

> **NOTE** *Only digital terminals or SLT stations may be intruded using this feature.*

Conditions:

- **Supervisors are granted the Barge-In op**tion if they log in at a station with the Supervisor Barge-In/Executive Override enabled in programming.

- Supervisors can only Barge-In on calls of members of the ACD group(s) that they are logged into.

- Warning tone is enabled and disabled using the Executive override warning tone option (FLASH 05, button 4).

- Supervisor stations must be digital terminals.

**I.  Supervisor Queue Status Display**

The Supervisor Queue Status feature will provide a means for an ACD supervisor to view the status of their ACD group. This display is an idle state display and will prompt a Supervisor that a group is having problems answering all their calls. The display will tell the supervisor how many calls are in queue, how many agents are logged into the ACD group, and the length of time in minutes that the oidest call has been in queue.

The supervisor station logged onto the ACD group can obtain the Queue Status display by:

1. Dialing the Queue Status code [577] on the dial pad, followed by the ACD group (5xx) the supervisor wants to observe,
or
Press the pre-programmed* flex button.
The Queue Status display show the following information:

> **5xx: CIQ: xx AL: xx OC: MMM**
> **MM/DD/YY        HH:MM am**

Where
- 5xx = ACD Group (550-565)
- CIQ:xx = Cails in queue
- AL:xx = Agents logged in
- OC:mmm = Oldest call in minutes

If the supervisor wants to change the display to a different group:

1. Dials the Queue Status code [577] on the dial pad, followed by the ACD group that he wishes to observe,
   or

   Presses the pre-programmed* flex button.

Conditions:

- To receive the Supervisor's Queue Status display, the station must be logged in as a Supervisor and dial the flex code for the appropriate group.

- ACD Supervisors will receive the Queue Status display in real time.

- The Queue Status display is only given when the **ACD** group member or Supervisor's station is not receiving a higher priority display, such as "H E L P" or Out-Of-Service, or other applicable off-hook events are taking place at the station.

- The Supervisor's Queue Status display is saved in battery backed memory.

- When a Supervisor logs out of the group he is presently displaying, he must enter a new request for Queue Status display.

**J. ACD Group Member Status**

The ACD Group Member Status feature provides a means for an ACD Supervisor/Agent to view the status of the eight ACD groups in the system. This display will tell the Supervisor/Agent which stations are logged into the group, and if the station logged in is Available/ Unavailable, Out-Of-Service, in DND, or busy on a call. The Supervisor/Agent could use this display to determine why there are a lot of queued calls in a specific group.

Any station (Supervisor or Agent) logged onto the ACD group can bring up the group members display by:

1. Dialing the ACD Group Member Status code [573] on the dial pad,
   or

   Pressing the pre-programmed* flex button. The display now shows ACD Group 550.

The status of the ACD agents will be displayed with a letter following the station number that the agent is logged in at.

```
ACD5xx: 110A 111A 112A
1130 114U 115D 116B 117N
```

The status will be displayed with the following priority:

Where:

- (N) = Not Equipped
- (D) = Do not Disturb
- (0) = Out of service
- (U) = Unavailable
- (B) = Busy on a-call
- (A) = Available

i.e.: If an agent made a call while out of service his status would be out of service, not busy.

2. Dial an [✳] on the dial pad to scroll up to the next **ACD** Group. If more than eight members are in the ACD group, the next depression of the [✳] will display the additional members,
   or

   Dial **a** [#] on the dial pad to scroll down to the previous ACD Group. To return to an idle display, the Supervisor/Agent station returns to on-hook condition.

Conditions:

- The ACD Group Members Status display will be updated at the time the code is dialed.

**300.10 BACKGROUND MUSIC (Optional)**

a. Dial [632] 'on the dial pad,
   or

   press the pre-programmed* flexible button. (music is heard)

b. Dial [632] on the dial pad again,
   or

   press the pre-programmed* flexible button again, and music is discontinued.

c. When you pick up the handset
   or

   Press the ON/OFF button, music is discontinued automatically.

*Refer to Sec. 300.37, Flexible Button Assignment.

**300.11 AUTOMATIC SELECTION**

Pressing an outside line button, or pool button; a speed button: a station button; or dialing a number in the Starplus Digital Key Telephone System numbering plan, will automatically activate the speakerphone and light the ON/OFF button, if your keyset is programmed as a speakerphone.

**300.12 CALL BACK**

If you dial a telephone that is busy and want to activate Call Back:

a. Press the pre-programmed* CALL BACK button.

b. Hang up.

c. When busy station hangs up, you will be signaled.

d. Answer the call; station you called will then be signaled. (If your station is busy when signaled, an automatic MSG will be left at your phone.)

> **NOTE** *When the Automatic Call Back Timer is enabled, a call back request will automatically be invoked anytime a user listens to intercom busy tone for a preset period of time.*

> **NOTE** *Only one Call Back request can be left at a station; the second request will be converted to a message wait call back request*

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

## 300.13    CALL FORWARD: STATION

### A.    Call Forward - All Calls

If you have been given the ability to forward your calls:

1.   Lift handset or press ON/OFF button.

2.   Press the pre-programmed* FWD button.

3.   Press DSS button of desired station, or
     Dial the three-digit extension number where calls are to be forwarded, including ACD or UCD, Voice Mail, and Hunt group pilot numbers.

4.   Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

Conditions:

- Line Queue, Call back requests, message wait requests, and pre-selected messages are canceled when a station activates call forward.

- Call back requests are not allowed at a station where a call is forwarded.

- CO Line calls can be transferred by the receiving station back to the original forwarded station.

- A station in the call forward mode may still make outgoing calls.

To remove Call Forwarding:

1.   Lift handset or press ON/OFF button.

2.   Press the pre-programmed* FWD flex button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### B.    Call Forward - No Answer

If you have been given the ability to forward your calls:

1.   Lift the handset or press ON/OFF button.

2.   Press the pre-programmed* FWD button.

3. 'Dial the Call Forward No-Answer code [7] on the dial pad.

4.   Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

To remove Call Forwarding:

1.   Lift the handset or press the ON/OFF button.

2. Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### C.    Call Forward - Busy

If you have been given the ability to forward your calls:

1.   Lift the handset or press ON/OFF button.

2.   Press the pre-programmed* FWD button.

3.   Dial the Call Forward Busy code [8] on the dial pad.

4.   Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5.   Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

To remove Call Forwarding:

1.   Lift the handset or press the ON/OFF button.

2. Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### D.    Call Forward - Busy/No Answer

If you have been given the ability to forward your calls:

1.   Lift handset or press ON/OFF button.

2.   Press the pre-programmed* FWD button.

3.   Dial the Call Forward Busy/No Answer code [9] on the dial pad.

4. Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

To remove Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### E. Call Forward - Off-Net (via speed dial)

This feature allows stations to forward intercom and transferred CO calls to an off-net location.

In a speed dial bin, store the number of the off-net location where calls are to be forwarded. Follow instructions provided for storing station or system speed dial numbers.

1. Lift handset or press ON/OFF button.

2. Press the pre-programmed* FWD button.

3. Dial [X] on the dial pad. Dial the speed bin number that contains the number where calls are to be forwarded. Confirmation tone is heard. FWD button LED is flashing.

4. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

Conditions:

- Line Queue, Call back requests, message wait requests, and pre-selected messages are canceled when a station activates call forward.

- Call back requests are not allowed at a station where a call is forwarded.

- CO Line calls can be transferred by the receiving station back to the original forwarded station.

- A station in the call forward mode may still make outgoing calls.

To remove Off-Net Forwarding

1. Lift handset or press ON/OFF button.

2. Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD button LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### F. Call Forward - ACD or UCD Groups

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Press the pre-programmed* FWD button.

3. Dial the desired code:
   - [7] = no answer calls
   - [8] = busy calls
   - [9] = busy and no answer calls.

| NOTE | *Skip the preceding step for immediate forwarding.* |
|------|---|

4. Dial the three-digit ACD or UCD group pilot number (550-565) for the group (I-1 6) where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

*Refer to Sec. 300.37, Flexible Button Assignment.

To remove Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

'Refer to Sec. 300.37, Flexible Button Assignment.

### G. Call Forward - Voice Mail Groups

Intercom and Transferred CO callers may be routed directly to your mail box by forwarding your phone to a voice mail group. Callers will then be greeted by your personal voice mail greeting if available.

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Press the pre-programmed* FWD button.

3. Dial the desired code:
   - [7] = no answer calls
   - [8] = busy calls
   - [9] = busy and no answer calls.

| NOTE | *Skip the preceding step for immediate forwarding.* |
|------|---|

4. Dial the three-digit Voice Mail group pilot number (440-447) for the group (1-8) where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

To remove Call Forwarding:

1.  Lift the handset or press the ON/OFF button.

2.  Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

**H.    Call Forward - Hunt Groups**

If you have been given the ability to forward your calls:

1.  Lift the handset or press ON/OFF button.

2.  Press the pre-programmed* FWD button.

3.  Dial the desired code:
    - [7] = no answer calls
    - [8] = busy calls
    - [9] = busy and no answer calls.

> **NOTE** *Skip the preceding step for immediate forwarding.*

4.  Dial the three-digit Hunt group pilot number (450-457) for the group (1-8) where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

Refer to Sec. 305.4, Call Forward-Stations for 8-button operation of this feature.

To remove Call Forwarding:

1.  Lift the handset or press the ON/OFF button.

2.  Press the pre-programmed* FWD button. Confirmation tone will be heard and the FWD LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

**300.14    CALL FORWARD: PRESET**

If a CO Line forwarded by Preset Call Forward encounters a manually forwarded station (Call Forward - Station), or a station in DND, then the incoming CO Line will bypass that station and forward to the next in the chain. If that station is the last in the chain, then the call will not forward any further and will continue to ring at that station until answered or terminated.

**300.15    CALL FORWARD: CO LINES**

**A.    Incoming CO Lines Off-Net (via speed dial)**

This feature allows the first attendant station to forward incoming CO calls to an off-net location.

In a speed dial bin, store the number of the off-net location where calls are to be forwarded.

Follow instructions provided for storing station or system speed dial numbers.

1.   Dial [603] on the dial pad.

2.   Dial the CO group access code for the CO Line group to be forwarded,
or
Press an individual CO Line button.
- [81] = CO Group 1
- [82] = CO Group 2
- [83] = CO Group 3
- [84] = CO Group 4
- [85] = CO Group 5
- [86] = CO Group 6
- [87] = CO Group 7
- [88] = All CO Lines

3.   Dial the speed bin number that contains the number where calls are to be forwarded. Confirmation tone is heard.

To remove Off-Net Forwarding

a. Dial [603] on the dial pad.

b. Dial the CO group access code,
or
press an individual CO Line button.

c. Dial [#] on the dial pad. Confirmation tone is heard.

**300.16    CALLING STATION TONE MODE OPTION**

Allows a calling station to override a called stations "H" or "P" intercom switch settings.

When placing a call to a station and Tone ringing is desired:

a. Dial [6#] on the dial pad.

b. Dial the three-digit extension number,
or
Press DSS button of desired station. (call tone rings station).

**300.17    CALL PARK**

To place an outside call in park and consult with. page, or call an internal party:

While connected to an outside line:

a. Press TRANS button. The caller is put on Exclusive hold.

b. Dial parking location (430 to 437). Confirmation tone is heard.

c. If you hear busy tone, press TRANS twice and dial another parking location.

Retrieving a Parked Call

a. Lift handset or press ON/OFF button.

b. Press the pound [#] button.

c. Dial parking location (430 to 437) where the call was parked.

## 300.18 CALL PICK-UP: GROUP

When intercom tone ringing, transferred outside line ringing, recall ringing or initially ringing call is heard at an unattended telephone:

a. Lift the handset or press the ON/OFF button.

b. Dial [#0] on the dial pad,
or
press the pre-programmed* PICK UP button to be connected to the calling party.

| NOTE | You must be in the same pick up group as the ringing telephone to pickup the call. |
| --- | --- |

## 300.19 CALL TRANSFER

Outside lines can be transferred from one phone to another within the system. The transfer can be either screened (announced) or unscreened to either an idle or busy station, ACD or UCD Group, or Hunt Group.

Screened Transfer

While connected to an outside line:

a. Press station button where call is to be transferred (if programmed on your telephone),
or
press TRANS button and dial three-digit station number (100 to 195).

b. The called extension signals according to the intercom signal switch position.

c. When that extension answers, announce the transfer.

d. Hang up to complete transfer.

Unscreened Transfer

When the called extension begins to signal, hang up to transfer the call (Recall timer starts).

Transfer Search

When attempting to locate a party:

a. Press a station button to signal the desired station.

b. If the party is not located, press another station button to continue the search.

If the party is not located:

c. Press another station button to continue the search.

d. When the called party answers, hang up to complete the transfer.

Answering a Screened Transfer

a. Your intercom will be signaling according to the intercom signal switch position.

b. Answer the intercom and receive the transfer notice.

c. Press the outside line button or loop button flashing on hold.

## 300.20 TRANSFERRING CO CALLS TO A STATION FORWARDED TO VM

While connected to a CO line:

a. Press the TRANS button and dial the extension number of the station forwarded to voice mail.

b. The transferring station hangs up. The CO call will be directed to the mailbox of the forwarded station.

| NOTE | If the transferring station attempts to supervise the transfer or just waits until the voice mail system answers, then it becomes necessary to m-access the CO line and re-transfer them and. go on-hook before the voice mail system answers, This will ensure that the CO party will hear the personal greeting of the mailbox user and any applicable instructions. |
| --- | --- |

## 300.21 CAMP-ON

If you call a station that is busy and wish to alert them to your call:

a. Press the CAMP-ON button. Called station will receive one-burst of ringing. Wait for their response

b. When called party answers, consult with them or hang up to transfer the call.

| NOTE | If a station is in DND, on/y the attendant can Camp On using the attendant override feature. |
| --- | --- |

Answering a Camp-On

If you are on a connected call, hear one burst of muted ringing, and your CAMP-ON button is flashing, you have a call waiting for you.

To answer:

a. Press the CAMP-ON button. Any outside line you are connected to will be placed on hold. You may converse with the station placing the call.

b. Press flashing outside line button, if a call is being transferred.

If you do not have a Camp-On button either:

a. Go on-hook with present call. Camp-On will ring through,
or
place present call on hold. Then go on-hook. Camp-On will ring through.

## 300.22 CO LINE ACCESS

To access outside line:

    a. Press idle CO line button, Pool button,
       or
       dial CO line group access code or LCR access code.

    b. Dial number desired for outside call.

    c. Lift handset to converse or use speakerphone.

## 300.23 CO LINE QUEUING

A station can queue only one line at a time. If you see that a particular outside line is busy and you wish to be placed on a list waiting for that line to become available:

To Place a Queue:

    a. Press desired busy outside line button,
       or
       pool button. (Busy tone is heard)

    b. Press pre-programmed* LINE QUEUE button.

    c. Replace handset or press ON/OFF button.

To Answer a Queue:

If you hear ringing and an outside line of the line group (or **a** Loop or Group Key), you queued onto is rapidly flashing:

    a. Lift handset or press ON/OFF button.

    b. Press flashing outside line button to answer.

> **NOTE** *If your station has been programmed for Preferred Line Answer, you will have the line automatically upon lifting the handset.*

**\*A** flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

## 300.24 CONFERENCE COMBINATIONS

Only stations that have conference enabled will be able to institute a conference.

- Add-on Conference: Four internal and one external or five party internal

- Multi-Line Conference: One internal and two external.

> **NOTE** *A maximum of five parties can be included in a conference.*

Establishing a Conference

    a. Lift handset.

    b. Select intercom station or dial desired outside party.

    c. When called party answers, press the pre-programmed* CONF button.

    d. Add next conference party by selecting another outside line or intercom station.

    e. When party answers, press the pre-programmed* CONF button twice.

    f. All parties are connected.

Exiting a Conference (Controller only)

There are three methods of exiting a conference:

    1. -Press the ON/OFF button to ON, press the MUTE button; and replace the handset (to monitor a conference).

Use the following method only if multi-line conference is in progress:

    2. Press HOLD button to place outside parties on hold. Hold timer starts. If one of the two parties is internal, that party will be dropped.

    3. Press the pre-programmed* CONF and hang up or press the ON/OFF button to leave the other conference parties still connected in an unsupervised conference. CONF button will flash and timer will start. There will be a warning tone before the other parties are dropped.

Re-entering a Conference

When the controller re-enters the conference, the disconnect timer is reset.

    a. Lift handset to re-enter a monitored conference.

    b. To re-enter a conference placed on hold, repeat steps for establishing a conference.

    c. To re-enter an unsupervised conference, lift handset and press flashing pre-programmed* CONF button. The CONF button lights steady and confirmation tone will be heard.

Terminating a Conference

To terminate a conference, the conference initiator who is actively in the conference:

    a. Replaces handset or push ON/OFF button to OFF.

To terminate an unsupervised conference:

    a. Pressing the flashing pre-programmed* CONF button while on hook, all parties will be dropped.

*Refer to Sec. 300.37, Flexible Button Assignment.

## 300.25 DATA FEATURE

The Data Feature is a time division switched, point to point data transmission capability-which permits simultaneous voice and data communications (within the same system but not the same port). The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports.

To establish a Data call a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. Data information can be switched through the system at speeds of 300, 1200,

2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

To establish a connection to any idle data port:

a. A user with an associated DDIU dials the station number of the DDIU or the group access number of the groups that the DDIU has been inserted into or depresses a DSS button representing the DDIU. The key system will then determine the baud rate setting for the called DDIU and convert the user's associated DDIU to the same baud rate. The system will then complete the connection,

A second method to establish a connection between two DDIU is done by the first attendant.

a. The first attendant dials the extension number of one data unit. Dial tone is received and the display will show the BAUD RATE.

b. The first attendant then dials the station number of the second data unit. Confirmation tone is heard. This connection will be maintained until the first attendant dials the station number of one DDIU followed by pressing the FLASH button.

To break down an established connection:

a. The user dials his associated DDIU number or depress the DSS button for the associated DDIU.

b. Press the "FLASH" button.

A station user can configure his associated DDIU by:

a. Dialing the DDIU access code [637] on the dial pad.

b. Enter the ?hree-digit extension number of the DDIU. The display will show the Baud Rate setting, the character length (8 or 9), and the number of stop bits (1 or 2).

To change the Baud Rate:

a. Press the HOLD button, Then enter the desired one-digit Baud Rate.
  - [1] = 300
  - [2] = 1200
  - [3] = 2400
  - [4] = 4800
  - [5] = 9600
  - [6] = 19.2K
  - [7] = 38.4K

b. Press the SPEED button to save any changes made.

To change the character length:

a. Press the TRANS button. Then enter the desired one-digit character length, either 8 or 9.

b. Press the SPEED button to save any changes made.

To change the number of stop bits:

a. Press the MUTE button. Then enter the desired one-digit stop bit, 1 or 2.

b. Press the SPEED button to save any changes made.

Refer to Station Attributes Programming, 630.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 630.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

Conditions:

- The system is transparent to the devices being connected. Therefore each DDIU must be configured with a specific baud rate, number of data bits and number of stop bits. This configuration will be done by the first attendant or in the case of an associated data unit can be configured by the user.

- Data ports can be arranged in ACD/UCD Groups or Hunt Groups.

- Data ports do not have to be associated with a keyset, however to connect two DDIU devices one of them must be associated with a keyset unless the connection is made by the first attendant.

- When the data connection has been completed, the baud rate used in the connection will be displayed on the keyset.

- Non associated DDIU connections can be broken down by the first attendant.

- A DDIU has a DCE interface. Therefore a straight through RS-232C cable can be used connect to a DTE device (printer, PC, etc.).

- Each DDIU requires a digital terminal port.

### 300.26    DIAL BY NAME

The system will allow station users to dial extension numbers by entering a name of a person that has been programmed for that station. The system database will allow entry of a name (alphanumeric) up to 24-characters in length for each station. This programmed name can be used for dialing-by-name station users and in some cases LCD displays.

To dial a station user by name:

a. Dial the Dial-By-Name code [6*] on the dial pad, or

press the pre-programmed* DIAL-BY-NAME flex button.

b. Dial the desired person's name using the keys on the key pad. For example: if you wanted to call Linda Murphy, and last names were entering into the directory dialing list, you would press the digit 6 (M), then the digit 8 (U), then the digit 7 (R), the digit 7 again (P), the digit 4 (H) and finally the digit 9 (Y).

| ALPHA NUMERIC CHARACTER | DIGIT |
|---|---|
| A,B,C | 2 |
| D,E,F | 3 |
| G,H,I | 4 |
| J,K,L | 5 |
| M,N,O | 6 |
| P,Q*,R,S | 7 |
| T,U,V | 8 |
| W,X,Y,Z* | 9 |
| *does not appear on dial pad. | |

- When the system finds a unique numeric match (MURPHY=687749) to the name being dialed, the call will be placed to the station matching the name. The intercom call will signal the station according to the H-T-P switch setting. If fewer than 8 digits are dialed, the numeric match will be dialed after a 10 sec. interdigit time-out occurs, or if a "#" (pound), is pressed.

*Refer to Sec. 300.37, Flexible Button Assignment.

Conditions:

- The system will dial the station that matches the dialed name when a unique match is found. If multiple names are located (found) after 8 digits, the first one is dialed.

- The names will be entered as a part of the system attributes database. Numbers may be entered as part of a name. To avoid conflicts, all names must have a unique numerical sequence.

## 300.27 DIRECTED **CALL PICK-UP**

When incoming, transferred, or recalling outside line ringing, intercom ringing, or Camp On ringing is heard at an unattended telephone:

a. Dial the station number of the known ringing telephone. Receive ringback tone, or call announce tone.

b. Press the pre-programmed* PICK UP button to answer the call.

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

Conditions:

- User must have access to the specific outside line or a Loop button to do a directed call pickup.

## 300.28 **DIRECTORY DIALING - Stations**

Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The Starplus SPD 4896 system provides locations for up to 200 names.

Directory dialing also allows users to program a "name" along with a speed dial bin for use in later locating a speed dial number. When prompted to do so, the system will display the name associated with a speed dial number on the LCD display so that when the desired name is shown, the user may then have the system dial the number.

Directory dialing also allows users to associate a "name" with an entry in the local number/name translation table. When prompted to do so, the system will display the name associated with the table on the LCD display so that when the desired name is shown, the user may then have the system dial the number. The Starplus SPD 4896 system provides locations for up to 200 names.

The Directory Dialing list may be programmed and maintained at the first assigned attendant station in one of two ways, however this admin routine provides a means for the directory list to be maintained by the system programmer either locally (at Station 100) or remotely via modem access.

Directory dialing may also be used to transfer a call from one station to another.

To view the directory list:

a. Dial the Directory List dial code [680] on the dial pad,
or
press the pre-programmed* flex button programmed as a directory dialing button.

b. Press a button on the key pad, once, twice or three times, to represent the letter of the alphabet, to begin viewing the list of names. (i.e. the first depression of the digit "2" produces the names beginning with an "A". The second depression of the digit "2" produces the names beginning with a "B", while the third depression of the digit "2" produces the names beginning with a "C".) The letters of the alphabet are represented on the key pad as follows:

| ALPHA NUMERIC CHARACTER | DIGIT |
|---|---|
| A,B,C | 2 |
| D,E,F | 3 |

| G,H,I | 4 |
|-------|---|
| J,K,L | 5 |
| M,N,O | 6 |
| P,Q*,R,S | 7 |
| T,U,V | 8 |
| ~~W,X,Y,Z*~~ | ~~9~~ |
| *does not appear on dial pad. | |

c. Names beginning with the letter chosen will appear on the LCD display.

> **NOTE** *If there are no names in the Directory List beginning with the desired letter, a name with the next higher letter will be shown on the LCD display.*

d. Dial an [✳] on the dial pad to scroll up (next entry) through the list,
   or
   Dial a [#] on the dial pad to scroll down (previous entry) through the list,
   or
   press another button to view the list for a different letter of the alphabet.

e. When the desired name is shown on the LCD display, pressing the SPEED button will automatically dial the destination station or outside phone number (via speed dial).

Conditions:

• If the desired party is an intercom station, that station will be signaled according to that station's intercom selector switch (SLT stations will tone ring).

• If the desired party is associated to a speed dial bin, the system will select a CO line and dial the number programmed into the speed dial bin. Call progress tones will then be heard.

To Transfer a Call using Directory Dialing:

While on a call:

a. Press the TRANS button.

b. Dial the Directory Dial Code [680] on the dial pad,
   or
   press a pre-programmed* flex button programmed for directory dialing.

c. Press the digit associated with the person's name and when it is displayed, press the SPEED button to automatically dial the destination station.

d. Hang up to complete the transfer.

> **NOTE** *Calls may only be transferred to internal stations only. An attempt to transfer a call off-net (via a Speed dial bin) will result in the call recalling upon going on-hook*

*Refer to Sec. 300.37, Flexible Button Assignment.

## 300.29  DIRECT INWARD SYSTEM ACCESS (DISA)

a. Call the phone number the system administrator specified as the DISA line. The system answers and returns intercom dial tone.

b. Enter the DISA access code also specified by the system administrator; if applicable. Dial tone is returned.

To place an outgoing call:

a. Dial a group access code: 9, 81 - 87. CO Dial tone is returned.

b. Dial the desired telephone number.

> **NOTE** *LCR cannot be accessed from DISA. If LCR is enabled, DISA users may dial 81 to access lines in trunkgroup 1.*

> **NOTE** *The conference timer (Refer to Sec. 610.1, System Timers) will monitor a DISA "trunk-to-trunk" call and release the lines one (1) minute after the time expires.*

To reach an internal station:

a. Dial the three-digit station number. Ringback tone will be heard.

b. Converse when party answers.

> **NOTE** *If the station dialed is unattended, busy or in DND, intercom dial tone will be returned. (after the Preset Call Forward Timer expires) Refer to Sec. 610.7, System Timers.*

## 300.30  DISTINCTIVE RINGING

The tone ring signal used to notify stations of an incoming call can be changed by each station user to provide distinctive ringing among a group of stations. Each station user may select a distinctive ringing tone that will be used to ring their station. The system provides 81 different ring patterns that each station user may select from.

To select a distinctive ring tone for a station:

a. Dial the Tone Ring program code [695] on the dial pad.

b. Enter the two-digit tone number. The telephone speaker will sound a steady tone that correlates to the two digit entry.

c. When the desired tone is selected, press the SPEED button to save this as the tone to be presented when the station is tone rung. Confirmation tone will be heard. This tone will be presented as a result of an incoming CO or intercom call, recalling CO line or Transferred CO line or at any other time the station is tone rung (refer to conditions that follow).

The 81 ringing choices are as follows:

| TONE # | FREQ | DURATION |
|---|---|---|
| 00 | 1209/1477 | 50ms/50ms |
| 01 | 697'770 | 50ms/50ms |
| 02 | 6971852 | 50ms/50ms |
| 03 | 697'941 | 50ms/50ms |
| 04 | 697'1209 | 50ms/50ms |
| 05 | 697/1336 | 50ms/50ms |
| 06 | 697/1477 | 50ms/50ms |
| 07 | 697'1633 | 50ms/50ms |
| 08 | 697'OFF | burst |
| 10 | 770'697 | 50ms/50ms |
| 11 | 770'770 | 50ms/50ms |
| 12 | 770'852 | 50ms/50ms |
| 13 | 770'941 | 50ms/50ms |
| 14 | 770'1209 | 50ms/50ms |
| 15 | 770/1336 | 50ms/50ms |
| 16 | 770'1477 | 50ms/50ms |
| 17 | 770'1633 | 50ms/50ms |
| 18 | 770'OFF | burst |
| 20 | 852'697 | 50ms/50ms |
| 21 | 852'770 | 50ms/50ms |
| 22 | 852'852 | 50ms/50ms |
| 23 | 852'941 | 50ms/50ms |
| 24 | 852'1209 | 50ms/50ms |
| 25 | 852'1336 | 50ms/50ms |
| 26 | 852'1477 | 50ms/50ms |
| 27 | 852'1633 | 50ms/50ms |
| 28 | 852/OFF | burst |
| 30 | 941'697 | 50ms/50ms |
| 31 | 941'770 | 50ms/50ms |
| 32 | 941'852 | 50ms/50ms |
| 33 | 941'941 | 50ms/50ms |
| 34 | 941'1209 | 50ms/50ms |
| 35 | 941'1336 | 50ms/50ms |
| 36 | 941'1477 | 50ms/50ms |
| 37 | 941'1633 | 50ms/50ms |
| 38 | 941'OFF | burst |
| 40 | 12091697 | 50ms/50ms |
| 41 | 1209'770 | 50ms/50ms |
| 42 | 12091852 | 50ms/50ms |
| 43 | 1209/941 | 50ms/50ms |
| 44 | 1209'1209 | 50ms/50ms |
| 45 | 1209'1336 | 50ms/50ms |
| 46 | 1209'1477 | 50ms/50ms |
| 47 | 1209/1633 | 50ms/50ms |
| 48 | 1209/OFF | burst |
| 50 | 1336'697 | 50ms/50ms |
| 51 | 1336'770 | 50ms/50ms |
| 52 | 1336/852 | 50ms/50ms |
| 53 | 1336/941 | 50ms/50ms |
| 54 | 1336/1209 | 50ms/50ms |
| 55 | 1336/1336 | 50ms/50ms |
| 56 | 1336/1477 | 50ms/50ms |
| 57 | 1336/1633 | 50ms/50ms |
| 58 | '1336'OFF | burst |
| 60 | 1477'697 | 50ms/50ms |
| 61 | 1477/770 | 50ms/50ms |
| 62 | 1477'852 | 50ms/50ms |
| 63 | 1477'941 | 50ms/50ms |
| 64 | 1477'1209 | 50ms/50ms |
| 65 | 1477'1336 | 50ms/50ms |
| 66 | 1477'1477 | 50ms/50ms |
| 67 | 1477'1633 | 50ms/50ms |
| 68 | 1477/OFF | burst |
| 70 | 1633'697 | 50ms/50ms |
| 71 | 1633'770 | 50ms/50ms |
| 72 | 1633'852 | 50ms/50ms |
| 73 | 1633'941 | 50ms/50ms |
| 74 | 1633'1209 | 50ms/50ms |
| 75 | 1633'1336 | 50ms/50ms |
| 76 | 1633'1477 | 50ms/50ms |
| 77 | 1633'1633 | 50ms/50ms |
| 78 | 1633'OFF | burst |
| 80 | OFF/697 | 50ms/50ms |
| 81 | OFF'770 | 50ms/50ms |
| 82 | OFF'852 | 50ms/50ms |
| 83 | OFF/941 | 50ms/50ms |
| 84 | OFF'1 209 | 50ms/50ms |
| 85 | OFF/I 336 | 50ms/50ms |
| 86 | OFF'1 477 | 50ms/50ms |
| 87 | OFF'1 633 | 50ms/50ms |
| 88 | No ring | No ring |

Conditions:

- Station users may listen to all tones by dialing the two-digit codes one after another. The tone that is sounding when the SPEED button is pressed will be saved as that station's tone ringing selection.

- A station's tone ringing selection will be maintained in a battery protected area of memory. Therefore if a system experiences a power failure, or a soft or hard restart, a station's tone ringing selection will be restored.

- The tone selected will be used to provide "TONE" ringing normal or muted to the station whenever the station is commanded to tone ring. (i.e. this does not apply to

camp-on tone programming confirmation tone or other specific tones that are not considered "TONE" ringing.)

The selected tone will be used to notify the station in the following cases:
Incoming CO Call
Incoming Intercom Call
Transferred CO Line
Recalling CO Line
Call Back Notification
Message Wait Call Back
All types of forwarded calls
Executive/Secretary calls
Line Queue Call Back
LCR Queue Call Back

### DO **NOT DISTURB**

If you have been given the ability to place your phone in Do Not Disturb:

a. Press the pre-programmed* DND button. DND button lights steady.

The DND button can be pressed while the phone is ringing to stop the ringing. (Refer to One-Time Do Not Disturb below.)

Removing Do Not Disturb

a. Press the pre-programmed* DND button. The button LED extinguishes and DND is canceled.

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

#### A.   **One-Time Do Not Disturb**

Allows you to prevent calls from ringing at your station while you're on a call. The One-Time DND condition will automatically cancel when you end your call.

a. Press the pre-programmed* DND button while you're off-hook and connected to a CO line or intercom call. The DND button LED lights and off-hook tones at your station are canceled.

To cancel:

a. Replace the handset. The DND button LED extinguishes and DND is canceled.

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

### 300.32   **EXCLUSIVE HOLD**

When a line is placed on Exclusive Hold, no other station in the system can retrieve this call. Exclusive Hold may be programmed to be activated on the first or second depression of the Hold button. CO Lines

while in a transfer hold are always placed in an Exclusive Hold condition.

### 300.33   **EXECUTIVE OVERRIDE**

Allows stations designated as "Executive" the ability to override and "barge in" on other keysets engaged in conversation.

If you call a busy station:

a. Press the pre-programmed* EXECUTIVE OVERRIDE button. Executive station will be bridged onto the CO line conversation in progress at the called station. Optional warning tone is heard and presented to all parties prior to cut-thru.

b. Replace handset at Executive station to terminate the override.

Conditions:

- An error tone will occur:
- – if the called party is in a conference.
- – if the called party is already on an OHVO call.
- – if the called party has a Camp-On at his station

- If the Executive joins a call and one of the members does a hook-flash or depresses his transfer button, the Executive will be dropped.

- If the Executive does a hook-flash or depresses his transfer button, it will be ignored.

- When the Executive jumps in on an intercom call or CO call and the Executive is not in a mute condition, and any member of the party hangs up, the call will be converted to a two-party conversation.

- When the Executive jumps in on an intercom call or CO call and the Executive is in the mute condition and either of the two parties in the intercom call hang up, the call will be dropped. If the Executive hangs up, the call will remain as a two-party conversation.

*A Flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

---
**CAUTION**

USE OF THIS FEATURE WHEN THE EXECUTIVE OVERRIDE WARNING TONE IS DISABLED MAY BE INTERPRETED AS A VIOLATION OF FEDERAL, STATE OR LOCAL LAWS, AND AN INVASION OF PRIVACY. CHECK APPLICABLE LAWS IN YOUR AREA BEFORE INTRUDING ON CALLS USING THIS FEATURE.

| NOTE | *A change in volume may occur on the CO line or intercom call after the barge-in occurs.* |

## 300.34 EXECUTIVE/SECRETARY TRANSFER

• If you are designated the Executive station and your phone is busy or in DND, all calls will be routed to the Secretary station.

• If you are the designated Secretary station, you can signal the Executive that is busy or in DND by using the Camp On feature.

## 300.35 FLASH

When connected to an outside line:

    a. Press FLASH button to disconnect outside line and reseize outside line dial tone.

## 300.36 FLASH ON INTERCOM

When connected to a page zone or another internal party, press FLASH button to disconnect page or intercom call. Intercom dial tone will be heard.

## 300.37 FLEXIBLE BUTTON ASSIGNMENT

If you have buttons on your telephone which have NOT been assigned as CO lines, Pooled group, or Loop buttons, you may program them to suit your own individual needs. There are five possible functions you may assign to these buttons:

• DSS/BLF: This button,. when pressed, will automatically signal the assigned intercom station. DSS/BLF buttons are programmed by the station user.

**Table 300-2** Flex Button Programming Codes

| | | | |
|---|---|---|---|
| 100-195 | Station intercom Numbers | 633+[ZZ] | Personalized Messages |
| 43 [C] | Call Park Location 1-7 (system) | 633+00 | Clear Personalized Messages |
| 438 | Personal Park | 634 | Headset Mode |
| 44 [V] | Voice Mail* Group Pilot Numbers O-7 | 635 | ICLID* Display (unanswered calls) |
| 45 [H] | Hunt Group Pilot Numbers O-7 | 638+[0] | Handset Receiver Gain w/Display |
| 55 [U] | ACD* Group Pilot Numbers O-09 | 640 | All Call Forward |
| 55 [U] | UCD Group Pilot Numbers O-7 | 641 | Release Key (Stations/Attendants) |
| 56 [U] | ACD* Group Pilot Numbers 10-15 | 680 | Dial Speed Directory |
| 566 | ACD*/UCD Available/Unavailable | 6.95 | Distinctive Ringing |
| 567 | ACD*/UCD Calls in Queue Display | 70 | All Call Page (Internal & External) |
| 571 | ACD* Agent Logout | 71 | internal Page Zone 1 |
| 572 55 [U] | ACD* Agent Login | 72 | Internal Page Zone 2 |
| 573 | ACD* Group Member Status Display | 73 | Internal Page Zone 3 |
| 574 | ACD' Agent Help | 74 | Internal Page Zone 4 |
| 575 | ACD* Supervisor Logout | 75 | Internal All Call Page |
| 576 55 [U] | ACD* Supervisor Login | 76 [0] | External All Call Page (All Ext Zones) |
| 577 55 [U] | ACD* Supervisor Queue Status Display | 76 [P] | External Page I-7 |
| 578 | ACD* Overflow Avail/Unavailable | 77 | Meet-Me-Page Answer |
| 601 | Attendant Override | 9 | Least Cost Routing* (LCR) Access |
| 602 | Disable Outgoing CO Line Access | #0 | Group Call Pick Up |
| 603 | CO Line Off-Net Forward | #5 | Universal Night Answer (UNA) |
| 604 | Night Service | [SPEED]+YY | Speed Dial Access |
| 620 | Camp-On | | (00-I 9 Station) (20-99 System) |
| 621 | Line Queue | [SPEED]+[✻] | Save Number Redial |
| 622 | Call Back | [SPEED]+[#] | Last Number Redial |
| 623 | Message Wait | | |
| 624 | Conference | YY = Speed Dial Bin numbers | |
| 625 | Executive Override/Monitor Barge-in | ZZ = Personalized Messages, | |
| 626 | LCR* Queue Cancel | U = ACD* (O-15) or UCD (O-7) Group Number | |
| 627 | Account Code* Enter | C = Call Park Location O-7 | |
| 628 | OHVO On | H = Hunt Group Number O-7 | |
| 629 | MUTE feature | V = Voice Mail* Group Number O-7 | |
| 631 | Do Not Disturb | P = External Page Zone Number I-7 | |
| 632 | Background Music | *Features available with optional software. | |

- FEATURES: This button can be programmed so that when pressed it will activate a particular feature, thus eliminating the need for dialing the feature code. Some features require a flex button to be programmed for that feature to be accessible to the station user. Where this is the case, it is so designated in this Feature Operation Section and user guide. Feature buttons are programmed by the station user. Refer to Table 300-2 Flex Button Programming Codes for a complete listing of code/features that may be programmed onto a flexible button.

- SPEED DIAL: This button can be programmed to automatically access a speed number location for one-step operation. PBX and **Centrex** codes can be programmed into a speed dial bin and accessed by one button depression.

- POOLED GROUP ACCESS: A group of outside lines can be placed under one button. When this button is pressed, the system will select an available line from this group for the user to place a call on. Pool buttons are assigned in database administration.

- LOOP: This button will act as the direct appearing button for outside lines that do not appear on the user's individual telephone. Any phone that doesn't have all lines appear on it must have a loop button. There is NO limit to the number of LOOP buttons a station may have. Loop buttons are assigned in database administration.

To program flexible buttons:

 a. Press the SPEED button twice.

 b. Press the assigned button to be programmed (it must be programmed in database as a multi-function button).

 c. Dial the desired code. Refer to Table 300-2 Flex Button Programming Codes.

To erase a flexible button:

 a. Press the SPEED button twice.

 b. Press the button to be erase

 c. Press the FLASH button. Confirmation tone will be heard.

 d. Replace the handset or press the ON/OFF button.

### 300.38    GROUP LISTENING

All digital key stations have built in speakerphones. Station users may use the speaker to monitor a call while using the handset to converse with the outside party. This enables other people in the room to listen to both parties in the conversation.

 a. While conversing, on the handset, press the ON/OFF button. Both parties of the conversation can then be heard on the digital station's

speaker. The speakerphone microphone will be muted while the handset is off-hook.

To deactivate Group Listening while off-hook, the ON/OFF button must be depressed.

Conditions:

- While talking using the speakerphone, then lifting the handset will turn off of the speakerphone. To activate group listening, the ON/OFF button must be pressed (to ON) while the handset is off-hook.

- While in group listening mode, pressing the MUTE button will cause the transmit from the handset to be muted (the speakerphone microphone is already muted). However the distant end can still be heard over both the handset receiver and the station speaker.

- If full speakerphone operation is' desired while in group listening mode, simply set the handset on-hook.

- Group listening is not available when the station is in headset mode.

- When placing the handset on-hook to go to full speakerphone operation, it is normal for a "squeal" caused by audio feedback to be heard.

### 300.39    HANDSET RECEIVER GAIN

This feature provides the user with a flexible button that can be programmed on their keyset. When programmed, allows the user to increase/decrease the handset receiver gain while on a CO or intercom call.

While on a CO call:

 a. Press pre-programmed* Handset Receiver Gain flex button to enter the volume adjustment mode.

 b. Dial a one-digit entry [0] through [9] (O=iowest, 9=highest) on the dial pad,
    or
    Press the [#] to increase or [✳] to decrease one levei at a time.

 c. Two volume settings are stored in the system. One level for CO calls, another level for intercom calls. The LCD will display the settings as they occur, if the flex button has been programmed using the code [638]+[0].

 d. Press pre-programmed* Handset Receiver Gain flex button again to exit the volume adjustment mode.

> **NOTE** *When the above procedure is used, your transmit path is momentarily interrupted as the dial pad button is depressed.*

- A flex button can be programmed to decrease the Handset Receiver Gain using the code [638]+[✳].

- Another flex button can be programmed to increase the Handset Receiver Gain using the code [638]+[#].

- A flex button can also be programmed to have a certain volume setting using the code [638]+[0 thru 9].

*A Flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

### 300.40 HEADSET MODE

If you wish to use a headset and have been given the ability to do so in programming.

To activate Headset Mode:

a. Dial [634] on the dial pad,
   or
   press pre-programmed* HEADSET MODE button. LED will light steady.

> **NOTE** *While Headset mode is active, the ON/OFF button will activate the headset and disable speakerphone and intercom call announce operation at your station.*

To de-activate Headset Mode:

a. Dial [634] on the dial pad,
   or
   press the pre-programmed* HEADSET MODE button. LED will extinguish.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 308.41 ICLID UNANSWERED CALL MANAGEMENT TABLE
**This feature available with optional software.**

An Unanswered Call Management Table with 100 entry capacity for the Starplus SPD 4896 system is maintained in the system. The calling number/name information pertaining to any unanswered call will be placed in this table at the time the system has determined that the call has been abandoned.

This table may be interrogated from any station user so that the unanswered calls may be reviewed and handled by the end user. Only the 1st Attendant station can delete an entry from the table, one entry at a time. Upon entry into the review process, the functions available to a phone are:

| Function | Function Button |
|---|---|
| 1. Go to beginning of table | Dial Code **635** |
| **2.** Review next item in this table entry | MUTE |
| 3. Step to next table entry. | HOLD |
| 4. Delete this table entry. | FLASH [1] |
| 5. Exit table review function. | ON/OFF |
| 6. Step to previous table entry. | TRANS |
| 7. Call Back | SPEED |

[1] Only the 1st Attendant station can delete an entry from this table.

To interrogate the ICLID Unanswered Call Management Table from any station in the system:

a. Dial the access code [635] on the dial pad.

b. When the desired table entry is displayed on the LCD, press the SPEED button to automatically dial the table entry.

To review the next item in this entry:

a. Press the MUTE button to toggle to the next item.

b. Press the ON/OFF button to exit the review function.

To review the next table entry:

a. Press the HOLD button.

To review the previous table entry:

a. Press the TRANS button.

### 300.42 I N T E R C O M  CALLING

Placing an Intercom Call

a. Press the DSS button of the party to be called (if programmed at your phone),
   or
   Dial the three-digit extension number (100 to 195).

> **NOTE** *Dialing a number in the numbering plan activates the telephone automatically.*

b. You will hear ringing if called station is in the "T" answering mode; or two bursts of tone if called station is in the "H" or "P" position.

c. Lift the handset or use the speakerphone, after the two tone bursts stop.

d. Hang up to end the call.

Answering an Intercom Call

With your intercom signal switch in the "T" (center) mode, you will hear repeated bursts of intercom tone ringing and the HOLD button will slow flash.

a. Lift the handset or press the ON/OFF button to answer,
   or
   Move the intercom signal switch to the "H" mode to reply.

b. Replace the handset to end the call.

In the "P" mode, you will hear two bursts of tone and one-way announcement. The calling party cannot hear conversations in progress.

a. Lift the handset or press the ON/OFF button to answer,
or
Move the intercom signal switch to the "H" mode to reply.

In the "H" mode, you will hear two bursts of tone and an announcement. Reply handsfree or lift the handset for privacy.

## 300.43    INTERCOM TRANSFER

Intercom transfer without DSS buttons:

a. Receive or make an intercom call.

b. Press the TRANS button. Intercom dial tone is heard.

c. Dial the station where the call is to be transferred.

d. When the 2nd station answers, you are in a supervised transfer mode (1 st station is staged for transfer).

e. Hang up (station 1 and 2 are connected).

Intercom transfer using DSS buttons:

a. Receive or make an intercom call using a DSS button.

b. Press the TRANS button. intercom dial tone is heard.

c. Press the DSS button where call is to be transferred.

d. Hang up (station 1 and 2 are connected).

## 300.44    KEYSET SELF TEST

The Starplus Digital Key System contains a test mode feature that supports the off line testing of digital keysets and DSS units. The term off line means that the unit under test is disconnected from the switch during the test operation. Keysets not under test continue to operate in the normal manner. Tests are provided to verify the keyset and DSS LED, LCD, and keyboard button operations.

a. The test mode is entered by taking a keyset's handset off hook.

b. Press the SPEED button and dial [7#] on the dial pad. This keystroke sequence disconnects the keyset from the system and brings up the Test Mode Menu on the keyset's LCD. The test mode is exited by putting the handset back on hook. This reconnects the keyset to the system.

```
SELECT 1:LCDLED 2:KEYBTN
3: DSSBTN
```

Test Mode Menu: The menu allows the operator to select a test mode by pressing the mode number at the dial pad. The operator can al-

ways return to the main test menu by pressing [##].

**A.   Keyset LCD/LED Test**

This test outputs a series of continuously repeated LCD string messages to LCD lines I and 2. The set of strings consists of the letters 'A' through 'X' and 'a' through 'x'. The next set of strings are:

```
"PICKUP TRUCK SPEED ZONE!"
"*** STANDING BACK ***"
```

- The strings are alternately displayed on lines 1 and 2 of the LCD display.

- In addition, all the LEDs are flashed at the rate of 15 IPM.

**B.   Keyset Button Test**

1. Pressing a keyset button turns on the LED and displays an LCD message identifying the button number.

```
PRESS KEYSET BUTTONS
*******          *******
```

In addition switching the "H-T-P" switch from one position to another will cause the letter "H_POS", "T_POS", or "P_POS" to be displayed.

2. Pressing dial pad keys displays an LCD message that indicates which digit was pressed.

3. LEDs can be tested independently of the KEYS by pressing the flex LED number at the dial pad. For example, LED 10 is turned on by pressing dial pad digits "1" "0". As each set of new numbers is entered the previously lit LED is turned off and the new LED is turned on. Invalid flexvalues (ex. 00,99) turn off currently lit LED.

**C.   DSS LED/Button Test**

When the DSS test is selected and a DSS test is invoked ALL DSSs associated with the keyset running the test are placed in test mode.

```
PRESS DSS BUTTONS
*******          *******
```

If no DSS unit is associated wit the keyset, the keyset display will indicate "NO DSS". The DSS LED test will cause all the LEDs to flash at a 15 IPM rate. Once started the DSS LED test will continue until a DSS flex button is depressed. Pressing a DSS flex button turns on the flex key LED and displays an LCD message on the associated keyset identifying the flex button number (01 to 48). In addition, it turns off the previously selected flex LED.

Conditions

- Test mode interrupts the normal operation of a keyset or DSS.

### 300.45  LAST NUMBER REDIAL

a. Press the SPEED button.

b. Press the pound [#] key. The last number dialed over an outside line will be automatically re-dialed.

- The system will automatically select the original line used to place the call and redial the number.

- If that line is busy, the system will automatically select another line from the same group and redial the number.

- If no lines are available in the same group, station will receive busy tone and can queue for a line.

- If the station user preselects a line before activating LNR, the preselection will override the line which was used originally.

### 300.46  LEAST COST ROUTING

*This feature available with optional software.*

To place an outside call when LCR has been enabled in the system:

a. Dial [9] on the dial pad.

b. Dial the desired seven-digit telephone number (i.e.: 1+ area code+7-digit number).

c. Wait for an answer. lift the handset or use the speakerphone to converse.

If all lines available to you are busy, remain off-hook for four seconds to automatically be queued onto LCR for an available line.

If an LCR Queue Callback has been activated:

a. When telephone is signaled, answer the call.

b. Desired telephone numberwill automatically be re-dialed.

| NOTE | *Only one LCR Queue Call Back request may be initiated by a station. When a second request is made, the first request is canceled.* |
|---|---|

If an LCR Queue Callback has been activated and you wish to cancel that callback request:

a. Dial the LCR Queue Cancel code, [626] on the dial pad.

b. Replace the handset or press the ON/OFF button.

### 300.47  MEET ME PAGE

To request another party to meet you on a page:

a. Dial the desired two-digit or three-digit paging code,

or
press pre-programmed* PAGING button.

b. Request that party meet you on the page.

c. Do not hang up; wait for the requested party to answer. As soon as the paged party answers and is connected to you, the page circuit is r e l e a s e d .

Answering a Meet Me Page

a. Go to the nearest telephone and dial [77] on the dial pad,
or
press the pre-programmed* MEET ME PAGE ANSWER button. You will be connected to the party that paged you.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 300.48  MESSAGE WAITING

Leaving a Message Waiting Indication:

If you dial a station that is busy, unattended, or in DND, you can leave a message waiting indication.

a. Lift the handset or press the ON/OFF button.

b. Dial the desired intercom station. Busy tone or DND tone is heard.

c. Press the pre-programmed MSG button. Confirmation tone is heard. Called party's MSG button will slow flash.

d. Replace the handset or press the ON/OFF button to end the call.

| NOTE | *Up to five messages can be left at any Station.* |
|---|---|

Answering a Message Waiting Indication:

If your MSG button is flashing at a slow rate, you have a message waiting for you. The first message left will be the first one called.

a. Press flashing MSG button. Station that left message will be signaled with tone ringing.

b. If called station does not answer, press MSG button once to leave message.

### 300.49  MUTE KEY

The MUTE button provides privacy during speakerphone or handset operation by disabling the microphone.

a. Press the MUTE button while off-hook on speakerphone or handset to activate.

b. Press the MUTE button again to deactivate.

The mute feature automatically deactivates upon call termination.

### 300.50  NIGHT SERVICE FEATURE

The Night Service feature will provide a means to put the system in night mode from any keyset or remove the system from night mode from any keyset as long

as the system was put in night mode by the Night Service feature flex button. If the system was placed in night mode by the attendant using her Night Service (DND) button or if the system was placed in night mode by the automatic schedule, the Night Service flex button can not remove the system from night mode.

From an idle station:

a. Press the pre-programmed* Night Service flex button. The system is now in the Night Service Mode.

To remove the Night Service Mode:

b. Press the pre-programmed* Night Service flex button again. The system is now removed from the Night Service Mode.

*A Flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

## 300.51    OFF-HOOK PREFERENCE

If your phone has been programmed for Off-Hook Preference, you will access an outside line, or a feature by going off-hook or pressing the ON/OFF button.

While Off-Hook Preference is enabled, you may access internal intercom dial tone by:

a. Pressing your pre-programmed* ICM button, or

dial your own three-digit intercom number. (Do not lift handset or press ON/OFF button before dialing intercom number.) LED lights steady and intercom dial tone will be heard.

b. You may now dial an internal station or Feature Access code.

*Refer to Sec. 300.37, Flexible Button Assignment.

## 300.52    OFF **HOOK VOICE OVER (OHVO)**

This feature allows users, off-hook on a call (CO or Intercom), to receive a voice announcement through the handset receiver without interrupting the existing call. The Voice Over is muted so as not to "override" or "drown" out the existing conversation. The over-ridden party may then respond to the calling party using CAMP-ON procedures to talk to the calling party or may use Silent Text Messaging to respond to the calling party via LCD Displays,

Placing an Off-Hook Voice Over (OHVO) call:

When an OHVO station calls a busy OHVO station, and busy tone is received,

a. The calling OHVO station dials the OHVO code [628] on the dial pad, or

presses a pre-programmed* OHVO button to initiate an OHVO announcement. The HOLD button LED will flash at the called **OHVO** station.

b. The **OHVO** receiving station will receive a one-beep warning tone. The station receiving the OHVO call must be off-hook and in the "H" mode, and, then the calling OHVO party may begin the voice announcement to the called OHVO party. The called OHVO station's existing conversation will not be interrupted and the voice over announcement will not "drowned" out the existing conversation. The calling OHVO station will not be connected to or otherwise be able to hear the-called station's conversation (the connection will only allow the calling station to transmit to the called station).

> **NOTE** *The calling station is placed in a one-time DND mode upon initiating the Voice Over. One-Time DND cannot be toggled during the OHVO call. The station receiving the OHVO call must be off-hook and in the "H" mode.*

Responding to an Off-Hook Voice Over (OHVO):

After receiving an OHVO announcement, two options are available to respond to the calling party;

1. The called OHVO station may respond to the calling OHVO station by using the Camp-On feature. The called OHVO station presses the flashing HOLD button to consult with the calling station. The existing call (CO line) goes on Exclusive Hold automatically. This method, then follows Camp-On procedures and operation.

2. The called station may respond to the calling station by using the Silent Text Messaging (this feature is only available to digital key terminals, and the calling station must be a digital display terminal.) The called OHVO station may press pre-programmed Message button to respond to the voice over announcement without being released from the current call, (i.e. by pressing a flex button pre-programmed for the message "IN MEET-ING"), the calling station will receive this message on the calling station's LCD display.

Conditions

- The station receiving the OHVO call MUST be off-hook and in the "H" mode,

- The receiving station must have OHVO enabled.

- When the dialed station responds via Camp-On all conditions and options available to Camp-On apply (refer to the feature description for Camp-On).

- OHVO may be used to notify the called party of a transferred call (CO Line or Intercom) by announcing the call, then releasing

to complete the transfer. When this occurs, the receiving station does not need to respond to the OHVO.

• When a call is transferred via OHVO, the receiving station will receive muted ringing after the transfer is complete.

• Any messages including "CANNED", "CUSTOM", or "SILENT RESPONSE" text messaging may be used to respond to an OHVO call. The message will appear on the calling station and called station LCD displays.

• If the calling station is a non-LCD terminal, the called station will receive error tone when responding via text messaging.

• The called station may press a flex button programmed as a Text Message button, [633+XX]. This flex button can be pressed and the two-digit message number dialed to respond to the calling station. DTMF digits will not be heard by either party.

• The receiving station must be programmed to allow OHVO calls.

• When silent messaging is used to respond to an OHVO call, the existing call on the called station will not be disconnected, while the messages are being sent to the calling station.

• The calling station of an OHVO call must remain off-hook to receive silent messages. The calling station's voice transmit will remain connected to the called station and may respond verbally to the text messages. The OHVO call ends when the calling station goes on-hook.

• If the receiving station is on-hook in speakerphone mode and a calling party initiates OHVO, the receiving station will receive a Camp-On warning tone and normal Camp-On procedures are followed.

• The called station may send (multiple messages) and even after sending a message, may press the Camp-On button to talk to the calling station. Each time a message is sent, the splash tone will be heard and both displays will be updated.

• LEDs will follow Camp-On LED lamping sequences.

Each station can be programmed to allow receiving OHVO calls as part of Station Programming. Each station may be programmed for OHVO in one of two ways, as follows:

– OHVO disallowed (may not receive OHVO calls).

– May receive OHVO calls.

### 300.53   PAGING

If you have. been given the ability to make page announcements:

a. Lift the handset. or press the ON/OFF button.

b. Dial the two-digit or three-digit paging code, or press pre-programmed* PAGE button.
   - [70] = All Call - Internal & External
   - [71] = Internal Zone 1
   - [72] = Internal Zone 2
   - [73] = Internal Zone 3
   - [74] = Internal Zone 4
   - [75] = Internal All Call
   - [76[0] = External All Call (All Ext Zones)
   - [76[Z] = External Zones l-7)

c. Speak in normal tone of voice to deliver message.

> **NOTE** Stations off-hook or in DND will not hear the internal page announcement.

> **NOTE** When making a wne page or All Call page and the zone is busy, the page initiator will receive ringback tone until the wne becomes available. You will then hear a warning tone and can make the page announcement.

### 300.54   PBX/CENTREX TRANSFER

While connected to an outside line (PBX/Centrex):

a. Press the FLASH button. Receive transfer dial tone.

b. Dial a PBX/Centrex station number.

c. Hang up to complete transfer.

### 300.55   PERSONAL PARK

Each station in the system can place a call into a personal park location and then later retrieve that call from the originating station.

While connected to an outside line:

a. Press the TRANS button. The caller is put on Exclusive Hold.

b. Dial the Personal Park location [438] on the dial pad,
   or
   Press the pre-programmed* PERSONAL PARK button. Dial tone will be heard.

> **NOTE** When dialing the personal park location and that location is already occupied, the initiating station will receive the previously parked call and the second call is parked.

Retrieving a Parked Call:

  a. Dial the Personal **Call** Park location code [438] on the dial pad,

    or

  Press the pre-programmed* PERSONAL PARK button.

  A talk path is established between the two parties.

Conditions:

- Intercom calls and CO line calls can be placed into the station's personal park location.

- Calls parked in a personal park location are subject to the "system" call park recall timer.

- A CO call parked in a personal call park location will recall to the station that parked the call when the call park recall timer expires. The CO call will ring into this station until the system hold timer expires. The CO call will then recall to the attendant(s) (at this point, the attendant station and the initiating station are ringing), and the attendant recall timer is initiated. When the attendant recall timer expires, the CO call will be disconnected.

## 300.56 PERSONALIZED MESSAGES

Each station can select a pre-assigned message to be displayed on the LCD of any key telephone calling that station.

There are ten possible messages which can be left.

  a. Dial [633] on the dial pad,

    or

  press a pre-programmed* MSG button.

  b. Dial the two-digit code for the message which will appear. Confirmation tone will be heard and the DND button LED will be flashing.

    - [00] = clears message
    - [01] = ON VACATION
    - [02] = RETURN AM
    - [03] = RETURN PM
    - [04] = RETURN TOMORROW
    - [05] = RETURN NEXT WEEK
    - [06] = ON TRIP
    - [07] = IN MEETING
    - [08] = AT HOME
    - [09] = ON BREAK
    - [IO] = AT LUNCH

**NOTE.** *This feature is not available to the attendant(s).*

### A. Personalized Message - Date & Time Entry

As an enhancement to the original canned messages, station users can activate certain messages that will allow the user to enter a specific time or a date of return. These messages will appear on calling station's display to alert them of the desired party's return time or date.

To activate a message with a custom return time or date, the station user:

  a. Dials the Message Access code [633] on the dial pad.

  b. Then dial the desired message number [11 - 17].

  Users may activate the following messages and be prompted to enter a time or date of return:

    - [11] = VACATION UNTIL: *MM/DD*
    - [12] = RETURN: *HH:MM xm* or *MM/DD*
    - [13] = ON TRIP UNTIL: *MM/DD*
    - [14] = MEETING UNTIL: *HH:MM xm*
    - [15] = AT HOME UNTIL: *HH:MMxm*
    - [16] = ON BREAK UNTIL: *HH:MM xm*
    - [17] = AT LUNCH UNTIL: *HH:MM xm*

  c. Enter the date/time by using buttons on the dial pad as follows:

| | | | |
|---|---|---|---|
| A =21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
| | Y =93 | - =13 | # =## |
| | Z =94 | ' =14 | |

  d. Press HOLD to enter message. Confirmation tone is received and DND button LED is flashing.

To cancel the message:

  a. Dials the Message Access Code [633] + [00] and replace handset. DND button LED is extinguished.

### B. Personaiized Messages - Custom

Each station can select from ten possible custom messages to be displayed on the LCD of any key telephone calling that station. These messages are programmed from the first attendant station.

1. Dial [633] on the dial pad,
   or
   press a pre-programmed* MSG button.

2. Dial the desired two-digit code (21-30) for the custom message desired. The first attendant should provide a list of messages to each station user.

**C.** **Personalized Message** Code **On A Flex Button**

You can program the code [633] onto a flexibie button to speed access of preselected messages.

1. Press the SPEED button twice.

2. Press the desired flex button. LED flashes.

3. Dial [633] + [#] on the dial pad. Confirmation tone is heard. The user can now press that flex button and dial the two-digit canned message number (00-I 0), or the two-digit custom message number (21-30), two-digit text message number (31-51) to activate the message. Confirmation tone will be heard and DND button LED is flashing.

Conditions:

- The telephone receiving the message must be a display telephone.

- Both key telephones and SLT's may activate the message. SLT's are notified that they have an active message with a warning tone when going off-hook.

- Incoming and outgoing calls are not inhibited in any way with a message displayed.

- When a message is displayed by a key telephone, the DND button LED flashes at 15 ipm.

- When DND is invoked on the telephone the message is canceled.

- Message Access (with a desired message) may be assigned to a flex button.

- Messages may be entered while off-hook on a call if an intercom call has camped-on to the station. This will cause the station calling to see the message.

- Messages are retained in battery protected area of memory in the event of powerfailure or system reset.

**300.57** **PRIME** FLEX BUT-TON **PROGRAMMING**

If your phone is programmed for Off-Hook Preference and have been given the ability to enable or change the prime flex button.

a. Dial [691] on the dial pad

b. Dial the two-digit button number. Refer to following chart.



To disable Off-Hook Preference:

a. Dial [691] on the dial pad.

b. Dial [00] on the dial pad.

**300.58** **PROGRAMMING YOUR NAME INTO THE** LCD **DISPLAY**

Every extension (key and SLT) has the capability to program the users name so that people using display telephones will see the name instead of the station number.

a. Dial [690] on the dial pad.

b. Enter the name (up to 7 characters may be entered) by using keys on the dial pad as follows:

| | | | | |
|---|---|---|---|---|
| A=21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# , | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | W =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
| | Y =93 | - =13 | # =## |
| | z =94 | ' =14 | |

c. Press the SPEED button to complete the programming process.

To erase your name:

a. Dial [690] on the diai pad.

b. Press the SPEED button to complete the erasing process.

## 300.59 PULSE-TO-TONE SWITCHOVER

The signaling on an outside line can be changed from dial pulse to tone (DTMF) manually while dialing out.

To perform the change-over

a. Dial an [✳] on the dial pad. The remaining digit(s) will be sent using DTMF.

The Pulse to Tone Switchover command may also be included into a speed dial bin. Refer to Sec. 300.65, Storing Speed Numbers for Speed Dial programming.

## 300.60 SAVE NUMBER REDIAL

If you wish to save the last number you dialed for use later:

a. After placing an outside call, keep handset off-hook.

b. Press the SPEED button twice.

To Dial a number that was saved using the steps above:

a. Press the SPEED button.

b. Dial the asterisk [✳] button.

 − System will automatically select the original line used to place the call and redial the number.

 − If that line is busy, the system will automatically select another line from the same group and redial the number.

 − If no lines are available in the same group, station will receive busy tone and can queue for a line.

 − If the station user preselects a line before activating SNR, the preselection will override the line which was used originally.

## 300.61 PROGRAMMING PBX/CENTREX CODES ONTO FLEX BUTTON

For easy one-button access to Centrex or PBX features, perform the following steps:

a. Program the Centrex or PBX code into a station or system speed dial bin, including hook-flash (flash key), [✳], and [#] commands. Refer to station or system speed dial programming.

b. Program that speed bin onto a flexible* button.

*Refer to Sec. 300.37, Flexible Button Assignment.

## 300.62 SPEAKERPHONE

a. Press ON/OFF button to "ON". Intercom dial tone will be heard.

b. Press the DSS button of the desired party, or press an available outside line button and dial number. Speakerphone is activated.

c. Press ON/OFF button to "OFF" to end the call.

> **NOTE**
> *For further references in this section where "lift handset" is specified, you may also use the method of pressing the "ON/OFF" button, if the telephone is programmed to be 8 true two-way speakerphone.*

## 300.63 STATION RELOCATION FEATURE

The Station Relocation Feature will provide a means to allow a user to unplug their station and plug it in at another location. Then by dialing a simple code followed by his old station number, bring all the station attributes including extension number, button mapping, speed dial, and class of service to the new location.

a. A station can be relocated by unplugging it and then plugging it in at a new location.

b. Dial [636] on the dial pad. Then dial the extension number of the station being relocated. Once this is done, all station attributes are copied to the current station.

> **NOTE**
> *If a station is assigned to a specific port and that user unplugs his station and plugs it in at another location, the database administration programming will be updated to reflect the new port change.*

Conditions:

 • The station number that is dialed as the relocated station must be currently out of service.

 • The relocated station will be given the station attributes of the station doing the relocating. The two stations have traded station numbers and station attributes.

 • If a keyset is plugged into the relocated position it will have all the station attributes of the relocating station.

 • This feature only is applicable to keysets.

 • If the relocated station is in service, error tone will be received.

## 300.64 STATION SPEED DIAL

If no outside line has been specified in programming, one will be chosen automatically or you can choose one now.

a. Press the SPEED button and dial bin location, or

press the pre-programmed* speed bin button. Station Speed numbers are 00 to 19.

b. When the called party answers, pick up the handset or use the speakerphone to converse.

*Refer to Sec. 300.37, Flexible Button Assignment.

## 300.65 STORING SPEED NUMBERS

Station Speed numbers can be entered by keyset users. System Speed numbers must be entered by the first programmed attendant. If no attendant is specified, enter at Station 100.

a. Press the SPEED button once.

b. Press a desired outside line button or pool button
or
select an outside line automatically by pressing the SPEED button a second time.

c. Dial the speed bin location.
   - 00 to 19 for Station Speed numbers;
   - 20 to 99 for System Speed numbers.

d. Dial the desired telephone number. (including special codes described below)
   - TRANS - Pressing the TRANS button during number entry initiates a Pulse-To-Tone switchover.
   - HOLD - Pressing the HOLD button during number entry inserts a Pause.
   - FLASH - Pressing the FLASH button inserts a Flash into the speed number.
   - TRANS - Pressing the TRANS button as the first entry in the speed bin inserts a no-display character causing the numbers stored in the bin not to appear on the Digital Terminals display when the bin is accessed.

e. Press the SPEED button.

f. Replace the handset to end the speed bin programming.

To program several speed numbers in a row, press the SPEED button twice to conclude programming a number and then just enter the next speed number bin to be programmed. If the station has no line appearance for the line programmed into the speed bin, that line will come up under the Loop button or Pool button when accessed.

To erase an existing speed bin:

1. Press the SPEED button twice.

2. Dial the speed bin location:
   - 00 to 19 for Station speed numbers
   - 20 to 99 for System speed numbers

3. Press the SPEED button again. Confirmation tone will be heard.

## 300.66 SYSTEM SPEED DIAL

If no outside line has been specified in programming, one will be chosen automatically or you can choose one now.

a. Press the SPEED button.

b. Dial the speed bin location,
   or
   press the pre-programmed* speed bin button.
   - System Speed numbers are 20 to 99.

c. When the called party answers, pick up the handset or use the speakerphone to converse.

*Refer to Sec. 300.37, flexible Button Assignment.

## 300.67 TEXT MESSAGING (Silent Response)

This a feature allows a station user to use text messages to respond to a caller that has either Camped-On or has used the Off-Hook Voice Over feature to alert a busy station user of a waiting call or message. The "camped-on" station may respond to the caller via the canned, custom, and silent response text (LCD) messages. The text messages appear on the calling party LCD Display.

While receiving a Camp-On, or OHVO call:

a. The called party may press a pre-programmed* Text Message button with a specific message [633+xx]. Example : [633] + [38] means that a telephone calling the station will receive the message 'WHO IS IT?".

The additional messages (with their codes) listed below can also be sent as a text response:
   - [31] = I WILL TAKE CALL
   - [32] = TAKE MESSAGE
   - [33] = TRANSFER TO SECRETARY
   - [34] = PUT CALL ON HOLD
   - [35] = CALL BACK
   - [36] = ONE MOMENT PLEASE
   - [37] = I WILL CALL BACK
   - [38] = WHO IS IT?
   - [39] = IS IT LONG DISTANCE?
   - [40] = IS IT PERSONAL?
   - [41] = IS IT AN EMERGENCY?
   - [42] = IS IT IMPORTANT?
   - [43] = IS IT URGENT?
   - [44] = SEND CALL TO VOICE MAIL
   - [45] = PARK CALL
   - [46] = OUT OF OFFICE
   - [47] = PUT CALL THROUGH
   - [48] = I AM BUSY
   - [49] = O.K.
   - [50] = NO
   - [51] =YES

Conditions:

- If the station receiving the text message response was doing a camp-on, he will first receive a short burst of tone on the speaker, then the display will show the message that has been activated by the called station.

- If the station receiving the text message response is on an OHVO call, no tone will be received.

- All canned and custom messages may be used to respond to a calling party.

- Text response messages will automatically clear when the calling station (station receiving the messages) goes on-hook.

- A station can receive only one message at a time.

- Text messages may be chained (i.e. multiple messages sent to one caller).

- Text message responses may only be activated by digital terminals and the receiving station must be a Digital Display telephone.

- The text message responses will appear on both the calling station and the called station (station activating) text responses) LCD displays.

- If the calling station is a non-LCD terminal, the called station will receive error tone when responding via text messaging.

- The called station may press a flex button programmed as a Text Message button, [633+XX]. This flex button can be pressed and two-digit message number dialed to respond to the calling station. DTMF digits will not be heard by either party.

- When silent messaging is used to respond to a call, the existing call of the called station will not be disconnected while the messages are being sent to the calling station.

- The calling station must remain off-hook to receive silent messages.

- If the called station responds with a text message, the text message will appear on the LCD.

- LEDs will follow that of the CAMP-ON or OHVO.

- Each individual message may be programmed onto a flexible button including a flex button on a DSS/BLF console.

| NOTE | The calling: station must be a digital display telephone and the called station- must be a keyset. |

## 300.68 UNIFORM CALL DISTRIBUTION (UCD)

Eight Uniform Call Distribution (UCD) groups can be programmed, each containing up to eight three-digit station numbers. Each group is assigned a pilot number. When this number is dialed, the first available agent in that group is rung. Calls are routed to the station that has been on-hook for the longest period of time.

### A. UCD Calls In Queue Display

From an idle display key telephone:

1. Dial [567] on the dial pad, followed by the three-digit UCD group number (55x),
   or
   press pre-programmed* flex button. ON/OFF button LED lights steady.
   This display is an idle state display and will prompt a Supervisor that a group is having problems answering all their calls. The display will tell the agent and his supervisor how many calls are in queue, how many agent are available or logged into the group, and the length of time in minutes that the oldest call has been in queue. The agent will automatically receive the calls in queue display whenever their is a call in queue.

2. Hang up the handset or press the ON/OFF button to terminate the display.

| NOTE | This feature cannot- be used with a call in progress and the station will be consideredbusy for incoming calls during this operation. |

*Refer to Sec. 300.37, Flexible Button Assignment.

### B. UCD Available/Unavailable Mode

If you are a UCD agent, you may place your station in the Available mode to receive UCD type of calls or you may place your station in the Unavailable mode to block UCD type calls from ringing your station.

To go Available:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You may now receive UCD calls.

To go Unavailable:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You are now blocked from receiving UCD calls.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 300.69 UNIVERSAL NIGHT ANSWER (UNA)

If you hear outside line ringing at another station and wish to answer it:

a. Dial [#5] on the dial pad. The connected outside line can be transferred or disconnected.

> **NOTE** *Each telephone utilizing Universal Night Answsf must have a loop button appearance if the ringing outside line does not appear at their phone.*

### 300.70 VOICE MAIL OPERATION (VM)

**This feature available with optional *software*.**

Forward Callers to your Mail box

Intercom and Transferred CO callers may be routed directly to your mail box by forwarding your phone to a voice mail group. Callers will then be greeted by your personal voice mail greeting if available (Refer to Call Forward - Voice Mail Operation)

Retrieving Voice Messages

If your Message Waiting button or programmed Voice Mail group button is flashing, you may have a voice message waiting for you.

To enter the voice mail system to check for mail:

a. Dial the Voice Mail group number,
or
press the pre-programmed* voice mail group button or flashing Message Wait button.

b. You will immediately be prompted to enter your password for your mail box.

Receiving a Voice Mail Message Wait

To receive a message waiting indication that a voice message has been taken for you, the Voice Mail system must be programmed to provide such an indication.

After the voice mail system receives a voice message for a station user:

a. The voice mail must go off-hook and dial the voice mail message wait code [420] on the dial pad.

b. Dial the three-digit extension number of the station user who received a voice message.

Turning the Message Waiting Lamp Off

When a station user retrieves the voice messages from the voice mail system, the voice mail system must:

a. Be programmed to go off-hook and dial the message cancel code [421] on the dial pad.

b. Dial the three-digit extension number of the station user who retrieved the voice message.

*Refer to Sec. 300.37, Flexible Button Assignment.

### A. Voice Mail Transfer with ID

This feature provides an Attendant or station user a way to transfer a caller directly into a voice mail box. This allows the station identification digits to be entered by the transferring party. Using this feature a caller can be transferred to a voice mail box when: 1) a station user on the system is not forwarded to VM, or 2) the destination Voice Mail Box owner is not a station user.

When a caller wishes to be transferred into a users Voice Mail box and the desired user's station is not forwarded into voice mail, then the attendant or a station user may initiate a Voice Mail Transfer.

While on a call and the distant end wishes to leave a Voice Message for a VM user

a. The initiating station presses the TRANS button.

b. Dial the Voice Mail Group number,
or
press the pre-programmed* VM group button.

c. Dial the VMID (Mail Box location) of the desired party and go on-hook. The system will then make the connection to an available Voice Mail port and send the Leave Mail Prefix (if any) + the digits dialed as the VM ID number + then the Leave Mail Suffix digits (if any). The system will then cut through the transferred caller.

> **NOTE** *The VMID (mail box location) can be any number betwesn 100 through 227.*

Conditions:

- CO Trunks and Internal Calls may be transferred into Voice Mail using this feature.

- If no VM ID digits are dialed by the transferring station then the identification digits of the transferring station will be sent to the VM.

### B. VM Tone Mode Calling Option

Allows the Voice Mail system to override a called stations "H" or "P" intercom switch settings.

When placing a call to a station and Tone ringing is desire (the Voice Mail system MUST be programmed to:

a. Dial [6#] on the dial pad.

b. Dial the three-digit station extension (call tone rings station).

### 300.71 RELEASE BUTTON

Allows the station user to disconnect calls while off-hook (on handset, not speakerphone), speeding up call handling time.

While off-hook (on handset, not speakerphone), on an intercom call, transfer sequence, page announcement or CO call:

1. Press the pre-programmed RELEASE button to terminate intercom call, transfer sequence, page announcement or CO call.

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Sutton Assignment.

300.72 **VOLUME CONTROLS**

There are two volume control slide switches on the front of the **34-button** digital key terminal. Sliding the switch to the left decreases the volume. The left slide switch controls the volume for voice, background music, and speakerphone volume. The right slide switch controls the volume for tone ringing volume.

# SECTION 305
# BASIC KEYSET FEATURE OPERATION

## 305.1 INTRODUCTION

The Starplus Digital Key Telephone System has a wide variety of features and flexible programming, allowing each telephone user to program his/her telephone to meet his/her own individual needs.

This section of the manual contains the operating instructions for features that work differently on the Basic Digital Terminal than on the 34-button display telephone. Also included is an illustration of the Basic Digital Key telephone used in the Starplus Digital Key Telephone System and description of the keys on the telephone and its functions. It is intended that this section be used in conjunction with the Station Operation section to provide a complete set of instructions to all features in the system. Visual and audible cues which accompany the various steps in the operation of the features are also included.

Literature similar to these operating instructions has been prepared for use by the customer in the form of a Station Users Guide.

## 305.2 BASIC KEY STATION FEATURES

The Starplus Digital Key Telephone System provides the following keys, indicators and features on the Basic Digital terminal:

**HANDSET AND SPEAKER** are located at the left side of the front panel. A handset is provided to allow confidential conversation when desired. Lifting the handset from its cradle (going off-hook) disengages the station's built-in speaker.

The speaker is located directly below the center portion of the handset. The station may be operated with the handset on-hook. When this occurs, audio is transmitted to the station userthrough the station's speaker.

FLEXIBLE BUTTONS are used to access idle outside lines, provide DSS/BLF for internal stations, access speed dial number and activate features. These buttons are programmed by the individual station user. The default flex feature buttons are described below:

> **DSS/BLF** (flex) button allows you to automatically signal the assigned intercom station. DSS/BLF buttons are programmed by the station user. By default, flex buttons 1 and 2 are set for Stations 100 and 101.

> **LOOP** (flex) button will act as the direct appearing button for outside lines that do not appear on the user's individual telephone. Any digital

terminal that doesn't have all lines appear on it must have a loop button. There is NO limit to the number of LOOP buttons a station may have. Loop buttons are assigned in database administration.

**POOL** (flex) button enables a group of outside lines to be placed under one button. When this button is pressed, the system will select an available line from this group for the user to place a call on. Pool buttons are assigned in database administration.

**MSG (MESSAGE WAIT)** (flex) button allows you to initiate a message waiting indication at stations that are busy, unattended, or in Do Not Disturb. Message Waiting Callback request left at your station will indicated by a flashing Msg Wait LED.

**FWD (CALL FWD)** (flex) button allows you to forward your calls to another station.

**DND (DO NOT DISTURB)** (flex) button allows the user to place his/her telephone into a Do Not Disturb mode to eliminate incoming outside line ringing, intercom calls, transfers and paging announcements. The station in DND can use the telephone to make normal outgoing calls. On Attendant stations, this button becomes the system Night Mode button. A flex button must be assigned to use this feature.

**CONF (CONFERENCE)** (flex) button is used to establish and build conference calls.

**FIXED FEATURE BUTTONS:**

> **HOLD** button enables you to place an outside caller on hold.

> **TRANS (TRANSFER)** button is used to transfer an outside call from one station to another.

> **FLASH** button is used to terminate an outside call and restore dial tone without having to hang up the handset. It is also used to transfer calls behind a PBX or Centrex within-those systems.

> **SPEED** button provides you with access to speed dialing, save number redial and last number redial. This button is aiso used to access flex button programming.

> **MUTE** button allows you to switch the built-in microphone on or off when using the speakerphone, or the handset microphone when using the handset.

**ON/OFF** button enables you to make a telephone call without lifting the handset. It turns the telephone on and off when using the speakerphone.

**OUTSIDE CALLS** are announced by a tone signal repeated every 3.2 seconds. The corresponding outside line indicator will flash slowly.

**INTERCOM CALLS** can be tone ringing or voice announce If it is voice announced, the receiving station will receive 2 bursts of tone prior to the announcement. If it is a tone ringing call, the receiving station will hear a tone ring every 2.4 seconds.

**Figure 305-I Basic Digital Terminal**

## Table 305-I Basic Keyset Numbering Plan

| | | | | |
|---|---|---|---|---|
| 100-195 | Station Intercom Numbers | | 664 | Conference W/ Personal Park |
| 43 [C] | Call Park Location O-7 (system) | | 690 | Name in Display Programming |
| 438 | Personal Park | | 691 [BB] | Off-Hook Preference |
| 44 [V] | Voice Mail* Group Pilot Numbers O-7 | | 695 | Distinctive Ringing |
| 45 [H] | Hunt Group Pilot Numbers O-7 | | 70 | All Call Page (Internal & External) |
| 55 [U] | ACD* Group Pilot Numbers O-Q | | 71 | Internal Page Zone 1 |
| 55 [U] | UCD Group Pilot Numbers O-7 | | 72 | Internal Page Zone 2 |
| 56 [U] | ACD' Group Pilot Numbers 1 O-I 5 | | 73 | Internal Page Zone 3 |
| 566 | ACDYUCD Available/Unavailable | | 74 | Internal Page Zone 4 |
| 570 [BB] | ACD* Call Qualifier | | 75 | internal All Call Page |
| 571 | ACD' Agent Logout | | 76 [O] | External All Call Page (All Zones) |
| 572 55 [U] | ACD* Agent Login | | 76 [P] | External Page Zones I-7 |
| 573 | ACD* Group Member Status | | 77 | Meet-Me-Page Answer |
| 574 | ACD* Agent Help Request | | 81 | CO Line Group 1 (if LCR* is enabled) |
| 578 | ACD* Overflow Sta Available/Unavailable | | 82 | CO Line Group 2 |
| 6# [XXX] | Tone Mode Ring Option | | 83 | CO Line Group 3 |
| 604 | Night Service Feature | | 84 | CO Line Group 4 |
| 620 | Camp-On | | 85 | CO Line Group 5 |
| 621 | Line Queue | | 86 | CO Line Group 6 |
| 622 | Call Back | | 87 | CO Line Group 7 |
| 623 | Message Wait | | 88 [YY] | All CO line Groups (CO Line Off-Net Forward) |
| 624 | Conference | | 9 | LCR* or CO Line Group 1 (if LCR* is disabled) |
| 626 | LCR* Queue Cancel | | 0 | Attendant |
| 627 | Account Code' enter | | #0 | Group Call Pick Up |
| 629 | MUTE Button | | #43 [C] | Call Park Pickup |
| 631 | Do Not Disturb | | #5 | Universal Night Answer |
| 632 | Background Music | | [SPEED][YY] | Speed Dial Access (00-I 9 Station)(20-99 System) |
| 633 [ZZ] | Personalized Messages | | [SPEED]+[*] | Save Number Redial |
| 633 [00] | Clear Personalized Messages | | [SPEED]+[#] | Last Number Redial |
| 634 | Headset Mode | | | |
| 636 [XX] | Station Relocation | | XXX = intercom Station Numbers | |
| 638+[0] | Handset Receiver Gain | | YY = Speed Dial Bin numbers | |
| 638+[*] | Handset Receiver Gain Increase | | ZZ = Personalized Messages | |
| 638+[#] | Handset Receiver Gain Decrease | | U = ACD* (O-I 5) or UCD (O-7) Group Number | |
| 640 | All Call Forward | | C = Call Park Location O-7 | |
| 640 [7] | No Answer - Call Forward | | H = Hunt Group Number O-7 | |
| 640 [8] | Busy - Call Forward | | V = Voice Mail* Group Number O-7 | |
| 640 [9] | Busy/No Answer - Cail Forward | | P = External Page Zone Number 1-7 | |
| 640 [*] | Off-Net - Call Forward | | | |
| 641 | Release Button (Key and Attendant) | | | |
| 660 | Flash Command to CO Line | | *Features available with optional software. | |
| 662 | Clear - Call Forward, DND, Personal Messages | | | |
| 663 | Message Wait return | | | |

## 305.3    AUTOMATIC CALL DISTRIBUTION (ACD)

*This feature is available with optional software.*

When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. 16 Automatic Call Distribution (ACD) groups can be programmed, each containing up to 16 three-digit station numbers.

### A.  Agent Login/Logout Feature

The Agent Login/Logout feature provides a means for an agent to log into one of the ACD groups and receive calls. For an agent to be placed into an active ACD state, the agent must first login. The agent logs in by performing the following steps:

1.  Dial the LOGIN CODE [572] on the dial pad, followed by the ACD group number (5xx) that the agent is going to log into.
    or
    Press a pre-programmed* LOGIN flex button.

2.  The agent enters his unique AGENT ID code (0000-9999). The LOGIN flex button LED will be lit steady. Confirmation tone is heard and the agent is logged onto the ACD group. The ON/OFF LED will extinguish if the agent started the sequence in the handsfree mode. When the agent logs in, an ACD login event is sent to the SMDR port, if active.

> **NOTE** *If a member is assigned to a specific ACD group and uses the login-logout codes to enter and exit an ACD group other than his assigned group, the database is changed to reflect the different group.*

For an agent to remove himself from the ACD group as an active agent:

1.  Dial the LOGOUT CODE [571] on the dial pad,
    or
    Press a pre-programmed* LOGOUT flex button. The LOGIN flex button LED will extinguished. When the agent logs out and removes himself from the ACD group, an ACD logout event is sent to the SMDR port, if active.

> **NOTE** *When an ACD Agent has a Login flex button programmed onto his station, that same flex button can be used to Login and Logout of the assigned ACD group.*

Conditions:

- If an agent logs into an ACD group from a station that is logged into another ACD group, the station will be automatically removed from the previous ACD group.

- An agent may log out while in wrap-up, or unavailable.

- An agent logging in will first be placed in wrap-up mode before receiving an ACD call.

- If an agent attempts to log into an ACD group that already has 16 members, that agent will receive error tone.

- The Starplus Digital System will not verify agent's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 300.37, Flexible Button Assignment.

### B.    ACD Agent "HELP" button

The ACD Agent "HELP" feature provides a means for an ACD agent to signal his assigned supervisor for assistance. A flex button must be programmed for this feature to operate.

*Refer to Sec. 300.37, Flexible Button Assignment.

While on a call in progress, the agent:

1.  Presses his pre-programmed* "HELP" flex button. Confirmation tone will be heard by the agent. The agent will see his "HELP" button illuminate if a supervisor is logged into his ACD group. If no supervisor is logged in, the agent will receive a burst of error tone and his "HELP" button will not illuminate.
    The ACD supervisor station receives a "HELP" message if a member of one of the ACD groups he is assigned to initiates a "HELP" request. The "HELP" function also sends a Camp-On tone to the speaker of the supervisors keyset. The "HELP" message takes precedence over any other message and can be cleared by the supervisor by pressing his "HELP" button.
    At the time the supervisor receives a "HELP" request, he can press his "HELP" flex button followed by his override feature button to bridge onto the ACD group members call. The "HELP" button will place an intercom call to the station requesting "HELP". The "HELP" message will be cleared after the supervisor's "HELP" button is depressed. In addition, the "HELP" message will be cleared if the agent was on a call and went back on hook before the supervisor could respond. In this case, the "HELP" message will be converted to a message wait indication. The agent can also clear the "HELP" request by hitting his "HELP" button a second time.

Conditions:

- Up to five messages can be left at any supervisor station.

- The supervisor can cancel the "HELP" request signal by depressing his flashing "HELP" button. In addition, a call will be placed to the agent requesting "HELP". If the agent is on a call, the supervisor can press his barge-in button to monitor the call or give assistance on the call.

| NOTE | *Only digital terminals can utilize #is feature, since a flexible button is required to be programmed.* |
|------|---|

### C. ACD Call Qualification

The CALL QUALIFICATION feature provides a means for an Agent to enter codes on ACD type calls that identify the call. This feature provides up to four digits for the ACD SMDR reporting function. This feature permits up to 12 digits to be entered, however only the first four digits are provided for in the SMDR record.

The QUALIFY button is programmed using flex code [570#]. If the agent wishes to enter his qualify code in a speed bin, he can do so using the standard speed bin programming sequence. Then when he programs his flex button, he can enter 570 followed by the bin number. This will provide an agent with a series of buttons with qualify codes under them. Refer to Sec. 300.37, Flexible Button Assignment.

While on a call, the agent:

1. Presses the pre-programmed CALL QUAL-I FY flex button, followed by the four-digit qualify code. Enter a [✳] to complete the sequence. A short burst of confirmation tone will be heard thru the keyset speaker, if programmed.

Conditions:

- The outside party will not hear the (qualify code) account code being entered.

- The qualify code uses the first four digits of the account code. Therefore the account code record in the SMDR will contain the qualify code in the first four digits.

. The qualify code must be entered during CO talk state.

- Soeed dial entries can contain all digits including the [✳], which will terminate the entry and return the ACD agent to his CO party.

### D. ACD Available/Unavailable Mode

If you are a ACD agent, you may place your station in the Available mode to receive ACD type of calls or you may place your station in the Unavailable mode to block ACD type calls from ringing your station.

To go Available:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You may now receive ACD calls,

To go Unavailable:

1. Dial [566] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You are now blocked from receiving ACD calls.

*Refer to Sec. 300.37, Flexible Button Assignment.

### E. ACD Overflow Station - Available/Unavailable Mode

If you are a ACD Overflow station, you may place your station in the Available mode to receive ACD type of calls or you may place your station in the Unavailable mode to block ACD type calls from ringing your station.

To go Available:

1. Dial [578] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You may now receive ACD calls.

To go Unavailable:

1. Dial [578] on the dial pad,
   or
   press the pre-programmed* Available/Unavailable button. You are now blocked from receiving ACD calls.

| NOTE | *If no stations are logged into the ACD Group, ACD calls will overflow to the Attendant station.* |
|------|---|

*Refer to Sec. 300.37, Flexible Button Assignment.

### 305.4    CALL FORWARD: STATION

#### A. Call Forward - All Calls

If you have been given the ability to forward your calls:

1. Lift handset or press ON/OFF button.

2. Dial the Call Forward code [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Press DSS button of desired station,
   or
   dial the three-digit extension number where calls are to be forwarded, including ACD or UCD Group, Voice Mail Group, and Hunt group pilot numbers.

4. Replace the handset or press the ON/OFF button.

Conditions:

- tine Queue, Call back requests, message wait requests, and pre-selected messages are canceled when a station activates call forward.

- Call back requests are not allowed at a station where a call is forwarded.

- CO Line calls can be transferred by the receiving station back to the original forwarded station.

- A station in the call forward mode may still make outgoing calls.

To Remove Call Forwarding:

1. Lift handset or press ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### B. Call Forward - No Answer

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Dial the Call Forward code [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial the Call Forward No-Answer code [7] on the dial pad.

4. Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### C. Call Forward - Busy

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Dial the Call Forward code, [640] on the dial pad,
   or
   Press the pre-programmed' FWD flex button.

3. Dial the Call Forward Busy code [8] on the dial pad.

4. Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### D. Call Forward - Busy/No Answer

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Dial the Cail Forward code, [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial the Call Forward Busy/No Answer code [9] on the dial pad.

4. Dial the three-digit extension number where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button,

2. Dial the Cail Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### E. Call Forward - Off-Net (via speed-dial)

In a speed dial bin, store the number of the off-net location where calls are to be forwarded. Follow instructions provided for storing station or system speed dial numbers.

This feature allows stations to forward intercom and transferred CO calls to an off-net location.

1. Lift handset or press ON/OFF button.

2. Dial the Call Forward code, [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial [✱] on the dial pad. Then dial the speed bin number that contains the number where calls are to be forwarded. Confirmation tone is heard. FWD button LED is flashing.

4. Replace the handset or press the ON/OFF button.

Conditions:

- Line Queue, Call back requests, message wait requests, and pre-selected messages are canceled when a station activates call forward.

- Call back requests are not allowed at a station where a call is forwarded.

- CO Line calls can be transferred by the receiving station back to the original forwarded station.

- A station in the call forward mode may still make outgoing calls.

Canceling Off-Net Forwarding

1. Lift handset or press ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. CALL FWD button LED is extinguished.

*Refer to Sec. 300.37, Flexible Button Assignment.

### F. Call Forward - ACD or UCD Groups

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Dial the Call Forward code, [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial the desired code:
   - [7] = no answer calls
   - [8] = busy calls
   - [9] = busy and no answer calls.

> **NOTE** *Skip the preceding step for immediate fonvarding.*

4. Dial the three-digit ACD Group Pilot number (550-565) for groups I-I 6, or UCD group pilot number (550-557) for the groups 1-8 where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

*Refer to Sec. 300.37, Flexible Button Assignment.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### G. Call Forward - Voice Mail Groups

*This feature is available With optional software.*

Intercom and Transferred CO callers may be routed directly to your mail box by forwarding your phone to a voice mail group. Callers will then be greeted by your personal voice mail greeting if available.

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

2. Dial the Cail Forward code, [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial the desired code:
   - [7] = no answer calls
   - [8] = busy calls
   - [9] = busy and no answer calls.

> **NOTE** *Skip the preceding step for immediate forwarding.*

4. Dial the three-digit Voice Mail group pilot number (440-447) for the group (I-8) where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button. Confirmation tone will be heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

### H. Call Forward - Hunt Groups

If you have been given the ability to forward your calls:

1. Lift the handset or press ON/OFF button.

z. Dial the Call Forward code, [640] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

3. Dial the desired code:
   - [7] = no answer calls
   - [8] = busy calls
   - [9] = busy and no answer calls.

> **NOTE** *Skip the preceding step for immediate forwarding.*

4. Dial the three-digit Hunt group pilot number (450-457) for the group (1-8) where calls are to be forwarded. Confirmation tone will be heard.

5. Replace the handset or press the ON/OFF button.

To cancel Call Forwarding:

1. Lift the handset or press the ON/OFF button.

2. Dial the Call Forward Cancel code, [662] on the dial pad,
   or
   Press the pre-programmed* FWD flex button.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 305.5    CONFERENCE WITH PERSONAL PARK

While connected to an outside line:

a. Press the TRANS button. Transfer dial tone is heard.

b. Dial [438] on the dial pad. (1st call is placed in personal park).

c. Dial desired number for 2nd call.

d. Press the TRANS button again. Transfer dial tone is heard.

e. Dial [664] on the dial pad. All three parties are conferenced.

f. Replace the handset to terminate conference.

### 305.6    CO LINE QUEUING

A station can queue only one line at a time. If you see that a particular outside line is busy and you wish to be placed on a list waiting for that line to become available:

To Place a Queue:

a. Press the Pool button. Busy tone is heard.

b. Press the pre-programmed* LINE QUEUE button.

c. Replace the handset.

To Answer a Queue:

If you hear ringing and an outside line of the line group (or a Loop or Group Key), you queued onto is rapidly flashing:

a. Lift handset or press ON/OFF button.

b. Press flashing Pool button to answer.

> **NOTE** *If your station has been programmed for Preferred Line Answer, you will have the line automatically upon lifting the handset.*

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

### 305.7    DIRECTED CALL PICK-UP

When incoming, transferred, or recalling outside line ringing, intercom ringing, or Camp On ringing is heard at an unattended telephone:

a. Dial the station number of the known ringing telephone. Receive ringback tone, or call announce tone.

b. Press the pre-programmed* PICK UP button to answer the call.

*A flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

Conditions:

- User must have access to the specific outside line or a Loop button to do a directed call pickup.

### 305.8    DO NOT DISTURB

If you have been given the ability to place your phone in Do Not Disturb:

a. Lift the handset or press the ON/OFF button.

b. Dial the Do Not Disturb code [631] on the dial pad,
   or
   Press the pre-programmed* DND button. DND button lights steady.

Removing Do Not Disturb

a. Dial the Do Not Disturb code [631] on the dial pad,
   or
   Press the pre-programmed* DND button. The button LED extinguishes and DND is canceled.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 305.9    MESSAGE WAITING

If you dial a station that is busy, unattended, or in DND, you can leave a message waiting indication.

a. Lift the handset or press the ON/OFF button.

b. Dial the desired intercom station. Busy tone or DND tone is heard.

c. Press the TRANS button. Transfer dial tone is heard.

d. Dial the Message Wait code [623] on the dial pad. Confirmation tone is heard.

e. Replace the handset or press ON/Off button to end the call.

| NOTE | *Up to five messages can be left at any Station.* |
|------|---------------------------------------------------|

Answering a Message Waiting Indication

If your MSG WAIT lamp is flashing, you have a message waiting for you. The first message left will be the first one called.

    a. Lift the handset or press the ON/OFF button.

    b. Dial the message wait return code [663] on the dial pad. Station that left message will be signaled with tone ringing.

    c. If called station does not answer, press the TRANS button. After receiving transfer tone, dial the message wait code [623] to leave message.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 305.10    MUTE KEY

The MUTE feature provides privacy during speakerphone or handset operation by disabling the microphone.

To activate the Mute feature:

    a. Press the pre-programmed* MUTE button while off-hook on speakerphone or handset to activate.

To de-activate the Mute feature:

    a. Press the pre-programmed* MUTE button again to deactivate.

| NOTE | *The mute feature automatically deactivates upon call termination.* |
|------|---------------------------------------------------------------------|

### 305.11    PBX/CENTREX TRANSFER

While connected to an outside line (PBX/Centrex):

    a. Press the TRANS button. Receive transfer diai tone.

    b. Dial [660] on the dial pad. A flash command will be presented to the PBX or Centrex line. PBX or Centrex studder tone will be heard.

    c. Dial desired outside number.

    d. Replace handset to complete transfer.

### 305.12    PERSONAL PARK (Flip-Flop)

While connected to first call:

    a. Press the TRANS button. The caller is put on Exclusive Hold.

    b. Dial the Personal Park code [438] on the dial pad,
    or
    Press a pre-programmed* flex button. (call is placed in personal park). Dial tone will be heard.

| NOTE | *The user can alternately connect to the other call by pressing the TRANS button and dialing [438] as many times as necessary.* |
|------|--------------------------------------------------------------------------------------------------------------------------------|

Retrieving a Parked Call:

    a. Dial the Personal Call Park location code [438] on the dial pad,
    or
    Press the pre-programmed* PERSONAL PARK. button.
    Both the station and the call will receive a warning tone and then a talk path is established between the two parries.

### 305.13    PROGRAMMING YOUR NAME INTO THE LCD DISPLAY

The Basic Digital terminal has the capability for the user to program his name so that people using display telephones will see the name instead of the station number.

    a. Lift handset.

    b. Dial [690] on the dial pad.

    c. Enter your name (up to 7 letters) using the pattern shown below.

| A =21 | M =61 | 1 =1# | " =01 |
|-------|-------|-------|-------|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | J =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | S =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | W =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
|       | Y =93 | - =13 | # =## |
|       | z =94 | ' =14 |       |

    d. Press the SPEED button to complete the programming process.

### 305.14    VOLUME CONTROL

A "slide" switch is provided on the front of the Starplus Basic Digital Terminal to adjust the volume of the voice and tones presented to the terminal speaker.

    – The "slide" switch controls the speaker volume which controls ail voice signals sent to the speaker i.e. Speaker Phone conversations, BGM, and Page announcements,

    – The same "slide" switch also controls the ringing volume which controls all tone signals presented to the speaker i.e. Ringing, splash tones, Camp-On etc... Muted ringing is also controlled by the slide switch. The

muted ringing volume will be proportion-
ately quieter than normal ringing based on
the current switch setting.

# SECTION 310
# SLT FEATURE OPERATION

## 310.1    INTRODUCTION

This section of the manual contains the operating instructions for Single Line users. It is designed to provide step-by-step instructions for operating the Single tine telephones in the system.

Literature similar to these operating instructions has been prepared for use by the customer in the form of a Single Line Telephone Users Guide.

## 310.2    ACCOUNT CODE

*This feature is available with optional software.*

SLT stations can enter an account code to identify the call or calling station.

Entering Account Code before a call:

   a. Lift the handset.

   b. Dial [627] on the dial pad.

   c. Dial the account code. If the account code contains fewer than 12-digits, dial [*] to return to intercom dial tone. Dial tone is heard.

   d. Dial [9] or CO Access code and the desired number.

Entering Account Code during a call:

   a. Depress the hookswitch momentarily. Your call will be placed on hold while you enter your account code.

   b. Dial [627] on the dial pad.

   c. Dial the account code. If the account code contains fewer than 12-digits, dial [*] to return automatically to the call.

## 310.3    AUTOMATIC CALL DISTRIBUTION (ACD)

*This feature available with optional software.*

When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. 16 Automatic Call Distribution (ACD) groups can be programmed, each containing up to 16 three-digit station numbers.

## A. Agent Login/Logout Feature

The Agent Login/Logout feature provides a means for an agent to log into one of the ACD groups and receive calls. For an agent to be placed into an active ACD state, the agent must first login.

   1. Dial the LOGIN CODE [572] on the dial pad, followed by the ACD group number (5xx) that the agent is going to log into.

   2. The agent enters his unique AGENT ID code (0000-9999). Confirmation tone is heard and the agent is logged onto the ACD group. When the agent logs in, an ACD login event is sent to the SMDR port, if active.

> **NOTE** *If a membarisssigned to aspecific ACD group and uses the login-logout codes to enter and exit an ACD group other than his assigned group, the database is changed to reflect the different group.*

For an agent to remove himself from the ACD group as an active agent:

   1. Dial the LOGOUT CODE [571] on the dial pad. When the agent logs out and removes himself from the ACD group, an ACD logout event is sent to the SMDR port, if active.

Conditions:

   • If an agent logs into an ACD group from a station that is logged into another ACD group, the station will be automatically removed from the previous ACD group.

   • An agent may log out while in wrap-up, or unavailable.

   • An agent logging in will first be placed in wrap-up mode before receiving an ACD call.

   • If an agent attempts to log into an ACD group that already has 16 members, that agent will receive error tone.

   • The Starplus Digital System will not verify agent's ID codes, other than requiring four digits to be entered.

## B. ACD Agent "HELP" button

The ACD Agent "HELP" feature provides a means for an ACD agent to signal his assigned supervisor for assistance.

While on a call in progress, the agent:

   1. After hook-flashing, dial the "HELP" code on the dial pad. The agent must hook-flash again to return to his call after the code is dialed. If no supervisor is logged in, the agent will receive one-burst of error tone.
   The ACD supervisor station receives a "HELP" message if a member of one of the ACD groups he is assigned to initiates a "HELP" request. The "HELP" function also sends a Camp-On tone to the speaker of the supervisors keyset. The "HELP" message

**2500 Type**



**2500 Type w/Msg Waiting Lamp on Top**



**2500 Type Wall Phone**



**2500 Type w/Message Waiting Lamp**



**2500 Type w/Flash Key**

## Table 310-I SLT Numbering Plan

| | | | | |
|---|---|---|---|---|
| 100-195 | Station intercom Numbers | | 668 [YY] | SLT Speed Dial Access |
| 420 [XXX] | Voice Mail* Enable MSG Wait | | 690 | Name in Display Programming |
| 421 [XXX] | Voice Mail' Cancel MSG Wait | | 70 | All Call Page (Internal & External) |
| 43 [C] | Call Park Location O-7 (system) | | 71 | Internal Page Zone 1 |
| 438 | Personal Park | | 72 | internal Page Zone 2 |
| 44 [V] | Voice Mail* Group Pilot Numbers O-7 | | 73 | Internal Page Zone 3 |
| 45 [H] | Hunt Group Pilot Numbers O-7 | | 74 | Internal Page Zone 4 |
| 55 [U] | ACD* Group Pilot Numbers O-9 | | 75 | Internal All Call Page |
| 55 [U] | UCD Group Pilot Numbers O-7 | | 76 [0] | External Aii Call Page (All Zones) |
| 56 [U] | ACD* Group Pilot Numbers 1 O-15 | | 76 [P] | External Page Zones 1-7 |
| 566 | ACD*/UCD Available/Unavailable | | 77 | Meet-Me-Page Answer |
| 571 | ACD* Agent Logout | | 81 | CO Line Group 1 (if LCR* is enabled) |
| 57255 [U] | ACD' Agent Login | | | |
| 6# [XXX] | Tone Mode Ring Option | | 82 | CO Line Group 2 |
| 620 | Camp-On | | 83 | CO Line Group 3 |
| 621 | Line Queue | | 84 | CO Line Group 4 |
| 622 | Call Back | | 85 | CO Line Group 5 |
| 623 | Message Wait | | 86 | CO Line Group 6 |
| 624 | Conference | | 87 | CO Line Group 7 |
| 625 | Executive Override | | 88 | All CO line Groups (CO Line Off-Net Forward) |
| 626 | LCR* Queue Cancel | | | |
| 627 | Account Code* Enter | | 9 | LCR* or CO Line Group 1 (if LCR* is disabled) |
| 631 | Do Not Disturb | | | |
| 633 [ZZ] | Personalized Messages | | 0 | Attendant |
| 633 [00] | Clear Personalized Messages | | #0 | Group Call Pick Up (Key & SLT) |
| 638+[0] | Handset Receiver Gain | | #1 [XXX] | Directed Call Pick-up (SLT) |
| 638+[*] | Handset Receiver Gain Decrease | | #43 [C] | Call Park Pickup (Key and SLT) |
| 638+[#] | Handset Receiver Gain increase | | #5 | Universal Night Answer |
| 640 | All Call Forward | | | |
| 640 [7] | No Answer - Call Forward | | XXX = Intercom Station Numbers | |
| 640 [8] | Busy - Call Forward | | YY = Speed Dial Bin numbers | |
| 640 [9] | Busy/No Answer - Call Forward | | ZZ = Personalized Messages | |
| 640 [*] | Off-Net - Call Forward | | U = ACD* (0-15), UCD (O-7) Group Number | |
| 660 | SLT Flash Command to CO Line | | C = Call Park Location O-7 | |
| 661 [YY] | SLT Station Speed Dial Programming | | H = Hunt Group Number O-7 | |
| 662 | SLT Clear - Call Forward, DND, Personal Messages | | V = Voice Mail' Group Number O-7 | |
| | | | P = External Page Zone Number I-7 | |
| 663 | Message Wait return | | | |
| 664 | SLT Conference W/ Personal Park | | *Features available with optional software. | |

takes precedence over any other message and can be cleared by the supervisor by pressing his "HELP" button.

At the time the supervisor receives a "HELP' request, he can press his "HELP" flex button followed by his override feature button to bridge onto the ACD group members call. The "HELP" button will place an intercom call to the station requesting "HELP". The "HELP" message will be cleared after the supervisor's "HELP" button is depressed. In addition, the "HELP" message will be cleared if the agent was on a call and went back on hook before the supervisor could respond. In this case, the "HELP' message will be converted to a mes-**sage** wait indication.

Conditions:

- Up to five messages can be left at any supervisor station.

- The supervisor can cancel the "HELP" request signal by depressing his flashing "HELP" button. In addition, a call will be placed to the agent requesting "HELP". If the agent is on a call, the supervisor can press his barge-in button to monitor the call or give assistance on the call.

**C. ACD Available/Unavailable** Mode

If you are a ACD agent, you may place your station in the Available mode to receive ACD type of calls or you may place your station in the Unavailable mode to block ACD type calls from ringing your station.

To go Available:

1. Dial [566] on the dial pad. Confirmation tone will be heard through the handset. You may now receive ACD calls.

To go Unavailable:

1. Dial [566] on the dial pad. Confirmation tone will be heard through the handset. You are now blocked from receiving ACD calls.

310.4     CALL BACK

You call a busy station and receive busy:

a. Briefly depress and release the hookswitch.

b. Dial [622] on the dial pad.

c. Replace handset.

| NOTE | *Only one Call Back request can be left at a Station; the second request will convert to Message Waiting Request* |
|------|------|

310.5     CALL FORWARDING

To call forward calls to another station:

a. Lift handset.

b. Dial [640] on the dial pad.

c. Skip Step c. for immediate forwarding, otherwise dial the appropriate code:
   - [7] = Call Forward No Answer
   - [8] = Call Forward Busy
   - [9] = Call Forward Busy/No Answer
   - [*] = Call Forward Off-Net (via speed dial)

d. Dial the three-digit extension number or speed bin number where calls are to be forwarded. Confirmation tone will be heard.

e. Replace handset.

To Remove Call Forwarding:

a. Lift handset.

b. Dial [640] on the dial pad or [662] on the dial pad. Confirmation tone will be heard.

c. Replace the handset.

**310.6     CALLING STATION TONE MODE OP-TION**

Allows a calling station to override a called key station's "H" or "P" intercom switch setting.

When placing a call to a key station and Tone ringing is desired:

a. Dial [6#] on the dial pad.

b. Dial three-digit station extension (call tone rings station).

310.7     CAMP-ON

After receiving intercom busy tone:

a. Briefly depress and release the hookswitch.

b. Dial [620] on the dial pad. When the called party answers, consult with them.

While on a CO line you receive a Camp-on warning tone through handset:

a. Choose desired call (hang up on present call and take the new one, or ignore the Camp-on signal). (also see Personal Park)

310.8     CALL PARK (System)

To place an outside call on hold and consult with, page, or call an internal party before transferring the outside call.

While connected to an outside line:

a. Depress and release the hookswitch. The caller is put on Exclusive hold.

b. Dial parking location (430 to 437) on the dial pad. Confirmation tone is heard.

c. If you hear busy tone, depress and release the hookswitch and dial another parking location.

Retrieving a Parked Call

a. Lift handset.

b. Dial a pound [#] on the dial pad.

c. Dial parking location (430 to 437) where the call was parked.

### 310.9    CALL TRANSFER:

Making an Unscreened Transfer

a. Briefly depress and release the hookswitch.

b. Dial desired intercom number.

c. Hang up to complete the transfer.

Making a Screened Transfer:

a. Briefly depress and release the hookswitch.

b. Dial desired telephone number. Announce the call.

c. Hang up to complete the transfer.

### 310.10    CLEAR CALL FORWARD, DND, PER-SONALIZED MESSAGES

SLTs can activate and cancel call forward by dialing [640] on the dial pad and DND by dialing [631] and enable and cancel personalized messages by dialing [633xx].

A convenient code [662] has been incorporated to cancel either Call forwarding, DND, or Personalized Messages when the SLT user has forgotten which code has been programmed on the phone

To cancel Call Forward, DND, Personalized Messages:

a. Lift handset. Notification tone will be heard.

b. Dial [662] on the dial pad. Confirmation tone will be heard.

c. Replace the handset.

### 310.11    CO LINE QUEUING

a. Dial outside line access code. Receive busy tone.

b. Briefly depress and release the hookswitch.

c. Dial [621] on the dial pad. Confirmation tone is heard.

### 310.12    CONFERENCE

You may set up a conference of 1 external and 1 other internal station.

a. Lift handset.

b. Make outside call.

c. Briefly depress and release the hookswitch to put the call on hold.

d. Dial number of internal station you wish to add.

e. When that station answers, briefly depress and release the hookswitch again and all 3 parties will be connected.

### 310.13    CONFERENCE WITH PERSONAL PARK

While connected to an outside line:

a. Depress the hookswitch momentarily. Intercom dial tone is heard.

b. Dial [438] on the dial pad. (1st call is placed in personal park).

c. Dial desired number for 2nd call.

d. Depress the hookswitch momentarily. intercom dial tone is heard.

e. Dial [664] on the dial pad. Ail three parties are conferenced.

f. Hang up to terminate conference.

### 310.14    DIRECT OUTSIDE LINE ACCESS

a. Lift handset.

b. Dial access code (9, 81 - 87) on the dial pad.

c. Dial desired telephone number.

### 310.15    DIRECTED CALL PICK-UP

Upon hearing an unattended telephone ring:

a. Lift handset.

b. Dial [#1] on the dial pad.

c. Dial station number of ringing telephone. You will be connected to intercom, incoming, recalling or transferred outside line.

### 310.16    DO NOT DISTURB

Activating Do Not Disturb:

**a.** Lift handset.

b. Dial [631] on the dial pad.

c. Replace handset.

To cancel Do Not Disturb:

a. Lift handset.

b. Dial [631] on the dial pad or [662] on the dial pad.

c. Replace handset.

### 310.17    PBX/CENTREX TRANSFER (Flash Command to CO Line)

To initiate a PBX or Centrex Transfer command from an SLT.

While connected to a PBX or Centrex line:

a. Briefly depress and release the hookswitch. Intercom dial tone will be heard.

b. Dial [660] on the dial pad. A Flash command will be presented to the PBX or Centrex line.

c. PBX or Centrex studder tone wiii be heard. Dial number of desired extension.

d. Replace handset to complete transfer.

310.18    **GROUP CALL PICK-UP**

Upon hearing an unattended telephone ringing:

a. Lift the handset.

b. Dial [#0] on the dial pad. You will be connected to intercom or transferred or recalling outside line call.

| NOTE | *You must be in the same pickup group.* |
|---|---|

**310.19    PLACING CALLS ON EXCLUSIVE HOLD**

While connected to an outside line:

a. Briefly press and release the hookswitch. (Call is placed on Exclusive Hold).

To retrieve the call:

a. Press and release the hookswitch again.

**310.20    HANDSET RECEIVER GAIN**

This feature allows an SLT user to increase/decrease the handset volume while on a CO or intercom call.

While on a CO or intercom call:

a. Hookflash and dial the Handset Receiver Gain code [638] on the dial pad.

b. Dial a one-digit entry [0] through [9] on the (0=lowest, 9=highest) on the dial pad,
or
Press the [#] to increase or [✳] to decrease the gain, one level at a time.

c. Hookflash again to return to call.

d. Repeat above procedures, if necessary.

e. Replace the handset to end the call.

310.21    **INTERCOM CALLING**

a. You will hear ringing if called station is in the "T" answering mode; or two bursts of tone if called station is in the "H" or "P" position.

b. Lift the handset.

c. Dial the three-digit intercom number:
   – 100-I 95 for Starplus SPD 4896 system

d. Converse after the two tone bursts stop.

e. Replace the handset to end the call.

Answering an Intercom Call

a. Lift handset to converse.

b. Replace handset to end call

310.22    LEAST COST ROUTING

*This feature is available with optional software.*

To place an outside call when LCR has been enabled in the system:

a. Lift the handset.

b. Dial [9] on the dial pad.

c. Dial the desired seven-digit telephone number (i.e.: 1+ area code+7-digit number).

d. Wait for an answer, then converse.

If all lines available to you are busy, remain off-hook for four seconds to automatically be queued onto LCR for an available line.

If an LCR Queue Callback has been activated:

a. When telephone is signaled, answer the call.

b. Desired telephone number will automatically be re-dialed.

| NOTE | *Only one LCR Queue Cali Back request may be initiated by a station When a second request is made, the first request is canceled* |
|---|---|

If an LCR Queue Callback has been activated and you wish to cancel that callback request:

a. Dial the LCR Gueue Cancel code, [626] on the dial pad.

b. Replace the handset.

310.23    **MESSAGE WAITING**

Leaving a Message Waiting Indication

a. Lift handset.

b. Dial the desired intercom station. Receive no answer, or DND tone.

c. Briefly depress and release the hookswitch.

d. Dial [623] on the dial pad.

e. Replace handset.

Answering a Message Waiting Indication.

Your message waiting lamp is flashing:

a. Lift handset.

b. Dial [663] on the dial pad. Station that left the message will ring.

| NOTE | *Oniy SLT's equipped with message waiting lamp wili have access to this feature. OPXstations do not have message waiting capability.* |
|---|---|

310.24    OFF-HOOK PREFERENCE

If your phone has been programmed for Off-Hook Preference, you will hear outside line dial tone when lifting the handset.

When this operation is enabled, you may not have access to all features contained in this User Guide. However, consult your Centrex or PBX User's Guide for additional features you may have.

310.25    PERSONALIZED MESSAGES

Each station can select a pre-assigned message to be displayed on the LCD of any Key Telephone calling that station. To select one of the ten available messages:

a. Dial [633] on the dial pad.

b. Dial the two-digit code for the message which will appear.
  - [00] = clears message
  - [01] = ON VACATION
  - [02] = RETURN AM
  - [03] = RETURN PM
  - [04] = RETURN TOMORROW
  - [05] = RETURN NEXT WEEK
  - [06] = ON TRIP
  - [07] = IN MEETING
  - [08] = AT HOME
  - [09] = ON BREAK
  - [10]= AT LUNCH

**NOTE** *This feature is not available to the attendants).*

c. Replace the handset. (Activating DND or Call Forwarding cancels selected message.)

### 310.26 PAGING

a. Lift handset.

b. Dial the two-digit paging code. Wait for page warning tone
  - [70] = All Call - Internal & External
  - [71] = Internal Zone 1
  - [72]= Internal Zone 2
  - [73] = Internal Zone 3
  - [74] = Internal Zone 4
  - [75] = Internal All Call
  - [76](O) = External All Call (All Ext Zones)
  - [76](Z) = External Zones 1-7)

c. Speak in normal tone of voice to deliver message.

Stations off-hook or in DND will not hear the internal page announcement.

**NOTE** *When making a Zone Page or All Call Page and the zone is busy, the page initiator will receive ringback tone until the zone becomes available. You will then hear a warning tone and can make the page announcement.*

d. Deliver page in normal tone of voice.

e. Replace handset to terminate page.

### 310.27 MEET ME PAGE

To request another party to meet you on a page:

a. Dial the desired two-digit or three-digit paging code.

b. Request that party meet you on the page.

c. Do not hang up: wait for the requested party to answer. As soon as the paged party answers and is connected to you, the page circuit is released.

Answering a Meet Me Page

a. Go to the nearest telephone and dial [77] on the dial pad. **You** will be connected to the patty that paged you.

### 310.28 PERSONAL PARK (Flip-Flop)

While connected to first call:

a. Depress the hookswitch momentarily. Intercom dial tone is heard.

b. Dial [438] on the dial pad. (call is placed in personal park).

c. Dial desired number for 2nd call.

d. Depress the hookswitch momentarily. Intercom dial tone is heard.

e. Dial [438] on the dial pad. (1st call is returned and 2nd call is placed in personal park.

**NOTE** *The user can alternately connect to the other call by doing a hook-flash and dialing [438] as many times as necessary.*

### 310.29 PROGRAMMING YOUR NAME INTO THE LCD DISPLAY

Every SLT extension has the capability to program the users name so that people using display telephones will see the name instead of the station number.

a. Lift handset.

b. Dial [690] on the dial pad.

c. Enter your name (up to 7 letters) using the uattern shown below.

| A=21 | M =61 | 1 =1# | " =01 |
|------|-------|-------|-------|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
| | Y =93 | - =13 | # =## |
| | z =94 | ' =14 | |

d. Press the hookswitch to complete the programming process.

**310.30**   **STATION SPEED** DIAL

a. Lift handset.

b. Dial`[668] on the dial pad.

c. Dial desired station speed bin number (00-l 9).

310.31     STORING STATION SPEED NUM-
              BERS

a. Lift handset.

b. Dial [661] on the dial pad.

c. Dial desired station speed bin number (00-l 9).

d. Dial telephone number you wish to store.

e. Briefly depress and release the hookswitch.
   (Confirmation tone is heard.)

> **NOTE**  *Line Group 1 will be programmed along with SLT speed numbers and thus Line Group 1 will be used when activating station speed dial from an SLT.*

**310.32**   **SYSTEM** SPEED **DIAL**

a. Lift handset.

b. Dial [668] on the dial pad.

c. Dial desired system speed bin number (20-99).

310.33     **UNIVERSAL NIGHT ANSWER (UNA)**

Upon hearing an incoming signal:

a. Lift handset.

b. Dial the UNA access code [#5] on the dial pad.
   You will be connected to ringing outside line.

310.34     **UCD AVAILABLE/UNAVAILABLE**

If you are a UCD Agent, you may place your station
in the Available mode to receive UCD type of calls
or you may place your station in the Unavailable
mode to block UCD type of calls from ringing at your
station.

To go Available:

a. Dial [566] on the dial pad. You may now receive
   calls.

To go Unavailable:

a. Dial [566] on the dial pad, You are now blocked
   from receiving UCD calls.

# SECTION 320
# ATTENDANT FEATURE OPERATION

## 320.1    INTRODUCTION

The Starplus Digital Key Telephone System has a wide variety of features and flexible programming, allowing each telephone user to program his/her telephone to meet his/her own individual needs.

This section of the manual contains the operating instructions for Attendant Key Telephone user(s) and includes an illustration of the 34-button digital key telephone used in the Starplus Digital Key Telephone System and description of the keys on the telephones and their functions. It is intended that this section be used in conjunction with the Station Operation section to provide step-by-step instructions for operating the Attendant(s) Digital Terminal(s) in the system. Visual and audible cues which accompany the various steps in the operation of the features are also included.

Literature similar to these operating instructions has been prepared for use by the customer in the form of an Attendant Users Guide.

## 320.2    ATTENDANT KEY TELEPHONE STATION FEATURES

Each Starplus Digital Key Telephone System provides the following keys, indicators and features:

**HANDSET AND SPEAKER** are located at the left side of the front panel. A handset is provided to allow confidential conversation when desired. Lifting the handset from its cradle (going off-hook) disengages the station's built-in speaker.

The speaker is located directly below the center portion of the handset. The station may be operated with the handset on-hook. When this occurs, audio is transmitted to the station user through the station's speaker.

>  **CAMP-ON** (flex) button enables you to alert a busy party that an outside line is on hold and waiting for them. A flex button must be assigned to use this feature.

>  **LINE QUEUE** (flex) button allows you to queue onto an outside line when all lines in a group are busy. Your station is placed in queue awaiting a line in the same group to become available. A flex button must be assigned to use this feature.

>  **CALL BACK** (flex) button allows you to initiate an automatic call back request to another busy station. As soon as that station becomes idle, the station that left the call back request is

signaled. A flex button must be assigned to use this feature.

>  PICK UP (flex) button allows you to pickup a tone ringing intercom call, transferred, incoming, or recalling outside line call to a specific unattended station either by group or directed call pick-up.

>  **MSG WAIT (MESSAGE WAIT)** (flex) button allows you to initiate a message waiting indication at stations that are busy, unattended, or in Do Not Disturb. Message Waiting Callback request left at your station will indicated by a flashing Msg Wait LED.

>  **FWD (CALL FORWARD)** (flex) button allows you to forward your calls to another station.

>  **DND (DO NOT DISTURB)** (flex) button allows the user to place his/her telephone into a Do Not Disturb mode to eliminate incoming outside line ringing, intercom calls, transfers and paging announcements. The station in DND can use the telephone to make normal outgoing calls. On Attendant stations, this button becomes the system Night Mode button. A flex button must be assigned to use this feature.

>  **CONF (CONFERENCE)** (flex) button is used to establish and build conference calls.

**FIXED FEATURE BUTTONS:**

>  **HOLD** button enables you to place an outside caller on hold.

>  **TRANSFER (TRANS)** button is used to transfer an outside call from one station to another.

>  **FLASH** button is used to terminate an outside call and restore dial tone without having to hang up the handset. It is also used to transfer calls behind a PBX or Centrex within those systems.

>  SPEED button provides you with access to speed dialing, save number redial and last number redial. This button is also used to access speed dial and flex buttonprogramming.

>  **MUTE** button allows you to switch the built-in microphone on or off when using the speakerphone, or the handset microphone when using the handset. A flex button must be assigned to use this feature.

ON/OFF button enables you to make a teiephone call without lifting the handset. it turns the telephone on and off when using the speakerphone.

**OUTSIDE CALLS** are announced by a tone signal repeated every 3.2 seconds. The corresponding outside line indicator will flash slowly.

**INTERCOM CALLS** can be tone ringing or voice announce. if it is voice announced, the receiving station will receive 2 bursts of tone prior to the announcement. if it is a tone ringing call, the receiving station will hear a tone ring every 2.4 seconds.

Figure **320-I Attendant Display Terminal**

## Table 320-I Attendant Numbering Plan

| | | | | |
|---|---|---|---|---|
| 100-195 | Station Intercom Numbers | | 680 | Dial Speed Directory |
| 43 [C] | Call Park Location O-7 (system) | | 6  9  0 | Name in Display Programming |
| 438 | Personal Park | | 691 [BB] | Off-hook Preference Programming |
| 44 [V] | Voice Mail* Group Pilot Numbers O-7 | | 692 | Time & Date Programming (1 st programmed Attendant) |
| 45 [H] | Hunt Group Pilot Numbers O-7 | | | |
| 499 | Modem via DISA access or transfer | | 693 | Directory List program code |
| 55 [U] | ACD* Group Pilot Numbers O-9 | | 694 | Custom Message(s) program code |
| 55 [U] | UCD Group Pilot Numbers O-7 | | 695 | Distinctive Ringing |
| 56 [U] | ACD* Group Pilot Numbers 10-15 | | 70 | All Call Page (Internal & External) |
| 566 | ACD*/UCD Available/Unavailable | | 71 | Internal Page Zone 1 |
| 567 55 [U] | ACD*/UCD Calls in Queue Display | | 72 | Internal Page Zone 2 |
| 570 [BB] | ACD* Call Qualifier | | 73 | Internal Page Zone 3 |
| 571 | ACD* Agent Logout | | 74 | Internal Page Zone 4 |
| 572 55 [U] | ACD* Agent Login | | 75 | Internal All Call Page |
| 573 | ACD* Group Member Status | | 76 [O] | External All Call Page (All Zones) |
| 574 | ACD* Agent Help Request | | 76 [P] | External Page Zones I-7 |
| 575 | ACD' Supervisor Logout | | 77 | Meet-Me-Page Answer |
| 576 | ACD* Supervisor Login | | 81 | CO Line Group 1 (if LCR* is enabled) |
| 577 | ACD* Supervisor Queue Status Display | | | |
| 578 | ACD* Overflow Sta Available/Unavailable | | a2 | CO Line Group 2 |
| 6# [XXX] | Tone Mode Ring Option | | a3 | CO Line Group 3 |
| 6✳ | Dial By Name | | a4 | CO Line Group 4 |
| 601 | Attendant Override | | a5 | CO Line Group 5 |
| 602 | Disable Outgoing CO Line Access | | 86 | CO Line Group 6 |
| 603 | CO Line Off-Net Forward | | a7 | CO Line Group 7 |
| 604 | Night Service | | 88 [YY] | All CO line Groups (CO Line Off-Net Forward) |
| 620 | Camp-On | | | |
| 621 | Line Queue | | 9 | LCR* or CO Line Group 1 (if LCR* is disabled) |
| 622 | Call Back | | | |
| 623 | Message Wait | | 0 | Attendant |
| 624 | Conference | | #0 | Group Call Pick Up (Key & SLT) |
| 625 | Executive Override/Monitor Barge-in | | #43[C] | Call Park Pickup (Key and SLT) |
| 626 | LCR* Queue Cancel | | #5 | Universal Night Answer |
| 627 | Account Code* Enter | | [SPEED] YY | Speed Dial Access (00-I 9 Station) (20-99 System) |
| 628 | OHVO Enable | | | |
| 631 | Do Not Disturb | | [SPEED]+[✳] | Save Number Redial |
| 632 | Background Music | | [SPEED]+[#] | Last Number Redial |
| 633+[ZZ] | Personalized Messages | | | |
| 633+[00] | Clear Personalized Messages | | XXX = Intercom Station Numbers | |
| 634 | Headset Mode | | YY = Speed Dial Bin numbers | |
| 635 | ICLID* Unanswered Calls Display | | ZZ = Personalized Messages | |
| 636 [XXX] | Station Relocate | | BB = Button Number | |
| 638+[0] | Handset Receiver Gain w/display | | U = ACD* (O-15) or UCD (O-7) Group Number | |
| FWD | All Call Forward | | C = Call Park Location O-7 | |
| [FWD]+[7] | No Answer - Call Forward | | H = Hunt Group Number O-7 | |
| [FWD]+[8] | Busy - Call Forward | | V = Voice Mail* Group Number O-7 | |
| [FWD]+[9] | Busy/No Answer - Call Forward | | P = External Page Zone Number I-7 | |
| [FWD]+[✳] | Off-Net - Call Forward | | | |
| 641 | Release Button (Key and Attendants) | | *Features available with optional software. | |

### 320.3    ANSWERING AN OUTSIDE CALL

a. Lift handset.

b. Press slow flashing outside line button. (If your telephone is programmed with Preferred Line Answer, you may answer an outside line by lifting the handset.)

### 320.4    PLACING OUTSIDE LINE ON HOLD

a. if your system is programmed for Exclusive Hold Preference, press HOLD button once for Exclusive Hold and twice for System Hold.

b. If your system is programmed for System Hold Preference, press HOLD button once for System Hold and twice for Exclusive Hold.

### 320.5    ANSWERING A RECALLING OUTSIDE LINE

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring.

a. Press outside line button flashing at very fast rate.

b. Lift handset to converse.

### 320.6    ATTENDANT DISABLE OUTGOING ACCESS

The attendant station can disable CO lines, preventing outgoing CO calls.

a. Lift handset or press ON/OFF button.

b. Dial [602] on the dial pad. Confirmation tone is heard.

c. Depress the line button(s) of the CO tine(s) to be disable. Confirmation tone is heard and the CO Line Button(s) LED is flashing.

d. To re-activate the CO Line(s), repeat the steps followed to disable it.

### 320.7    ATTENDANT OVERRIDE

If Attendant Override is allowed, Attendant(s) stations may override or call stations that are either busy or in Do Not Disturb.

If the Attendant calls a station that is busy on a CO call and wishes to alert them of a waiting call:

a. Press the pre-programmed* ATTN OVERRIDE button. Three short tone bursts will be presented to the called party.

b. After five (5) seconds, the station's CO line will automatically be placed on hold and the Attendant will be cut-thru.

If the Attendant calls a station that is in Do Not Disturb mode and wishes to alert them of a call;

a. Press the pre-programmed* ATTN OVERRIDE button. The station will be signaled with a Camp-on tone.

*Refer to Sec. 300.37, Flexible Button Assignment.

### 320.6    ATTENDANT RECALL

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring.

a. Press outside line button flashing at a very fast rate.

b. Lift handset to converse.

### 320.9    DATA FEATURE

The Data Feature is a time division switched, point to point data transmission capability which permits simultaneous voice and data communications (within the same system but not the same port). The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports.

To establish a Data call, a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

To establish a connection between two DDIU:

a. The first attendant dials the extension number of one data unit. Dial tone is received and the display will show the BAUD RATE.

b. The first attendant then dials the station number of the second data unit. Confirmation tone is heard. This connection will be maintained until the first attendant dials the station number of one DDIU followed by pressing the FLASH button.

To break down an established connection:

a. The first attendant dials one of the DDIU extension numbers
or
Presses the DSS button for the DDIU.

b. Press the "FLASH" button. The connection is removed.

The first attendant can configure any DDIU by:

1. Dial the DDIU access code [637] on the dial pad.

2. Enter the three-digit extension number of the DDIU. The display will show the BAUD rate setting, the data length (8 or 9), and the number of stop bits (1 or 2).

To change the baud rate:

1. Press the "HOLD" button. Then enter the one-digit baud rate desired.
   -- [1] = 300

## 320.3    ANSWERING AN OUTSIDE CALL

a. Lift handset.

b. Press slow flashing outside line button. (if your telephone is programmed with Preferred Line Answer, you may answer an outside line by lifting the handset.)

## 320.4    PLACING OUTSIDE LINE ON HOLD

a. If your system is programmed for Exclusive Hold Preference, press HOLD button once for Exclusive Hold and twice for System Hold.

b. If your system is programmed for System Hold Preference, press HOLD button once for System Hold and twice for Exclusive Hold.

## 320.5    ANSWERING A RECALLING OUTSIDE LINE

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring.

a. Press outside line button flashing at very fast rate.

b. Lift handset to converse.

## 320.6    ATTENDANT DISABLE OUTGOING ACCESS

The attendant station can disable CO lines, preventing outgoing CO calls.

a. Lift handset or press ON/OFF button.

b. Dial [602] on the dial pad. Confirmation tone is heard.

c. Depress the line button(s) of the CO tine(s) to be disable. Confirmation tone is heard and the CO Line Button(s) LED is flashing.

d. To re-activate the CO Line(s), repeat the steps followed to disable it.

## 320.7    ATTENDANT OVERRIDE

If Attendant Override is allowed, Attendant(s) stations may override or call stations that are either busy or in Do Not Disturb,

If the Attendant calls a station that is busy on a CO call and wishes to alert them of a waiting call:

a. Press the pre-programmed* ATTN OVERRIDE button. Three short tone bursts will be presented to the called party.

b. After five (5) seconds, the station's CO line will automatically be placed on hold and the Attendant will be cut-thru.

If the Attendant calls a station that is in Do Not Disturb mode and wishes to alert them of a call;

a. Press the pre-programmed* ATTN OVERRIDE button. The station will be signaled with a Camp-on tone.

*Refer to Sec. 300.37, Flexible Button Assignment.

## 320.8    ATTENDANT RECALL

When an outside line has remained on hold for an extended period of time, you will be reminded with a recalling ring..

a. Press outside line button flashing at a very fast rate;

b. Lift handset to converse.

## 320.9    DATA FEATURE

The Data Feature is a time division switched, point to point data transmission capability which permits simultaneous voice and data communications (within the same system but not the same port). The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports.

To establish a Data call, a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

To establish a connection between two DDIU:

a. The first attendant dials the extension number of one data unit. Dial tone is received and the display will show the BAUD RATE.

b. The first attendant then dials the station number of the second data unit. Confirmation tone is heard. This connection will be maintained until the first attendant dials the station number of one DDIU followed by pressing the FLASH button.

To break down an established connection:

a. The first attendant dials one of the DDIU extension numbers
   or
   Presses the DSS button for the DDIU.

b. Press the "FLASH" button. The connection is removed.

The first attendant can configure any DDIU by:

1. Dial the DDIU access code [637] on the dial pad.

2. Enter the three-digit extension number of the DDIU. The display will show the BAUD rate setting, the data length (8 or 9), and the number of stop bits (1 or 2).

To change the baud rate:

1. Press the "HOLD" button. Then enter the one-digit baud rate desired.
   – [1] = 300

- [2] = 1200
- [3] = 2400
- [4] = 4800
- [5] = 9600
- [6] = 19.2K
- [7] = 38.4K

2. Press the SPEED button to save any changes made.

To change the character length:

1. Press the TRANS button. Then enter the one-digit character length desired, either 8 or 9.

2. Press the SPEED button to save any changes made.

To change the number of stop bits:

1. Press the MUTE button. Then enter the one-digit stop bit desired.

2. Press the SPEED button save any changes made.

Refer to Station Attributes Programming, 630.2, Station identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 630.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

Conditions:

- The system is transparent to the devices being connected. Therefore each DDIU must be configured with a specific baud rate, number of data bits and number of stop bits. This configuration will be done by the first attendant or in the case of an associated data unit can be configured by the user.

- Data ports can be arranged in ACD or UCD Groups, or Hunt Groups.

- Data ports do not have to be associated with a keyset, however to connect two DDIU devices one of them must be associated with a keyset unless the connection is made by the first attendant.

- When the data connection has been completed, the baud rate used in the connection will be displayed on the keyset.

- Non associated DDIU connections can be broken down by the first attendant.

- A DDIU has a DCE interface. Therefore a straight through RS-232C cable can be used connect to a DTE device (printer, PC, etc.).

- Each DDIU requires a digital terminal port.

## 320.10 DIAL BY NAME

The system will allow station users to dial extension numbers or speed bin by entering a name of a person that has been programmed for that station. The system database will allow entry of a name (alphanumeric) up to 24 characters in length for each station. This programmed name can be used for dialing-by-name station users and in some cases LCD displays.

To dial a station user by name:

a. Dial the Dial-By-Name code [6✻] on the dial pad,
   or
   press the pre-programmed* DIAL-BY-NAME flex button.

b. Dial the desired person's name using the keys on the key pad. For example: if you wanted to call Linda Murphy, and last names were entering into the directory dialing list, you would press the digit 6 (M), then the digit 8 (U), then the digit 7 (R), the digit 7 again (P), the digit 4 (H) and finally the digit 9 (Y).

| ALPHA NUMERIC CHARACTER | DIGIT |
|---|---|
| A,B,C | 2 |
| D,E,F | 3 |
| G,H,I | 4 |
| J,K,L | 5 |
| M,N,O | 6 |
| P,Q*,R,S | 7 |
| T,U,V | 8 |
| W,X,Y,Z* | 9 |

*does not appear on dial pad.

When the system finds a unique numeric match (MURPHY=687749) to the name being dialed, the call will be placed to the station matching the name. The intercom call will signal the station according to the H-T-P switch setting. If fewer than eight digits are dialed, the numeric match will be dialed after a 10 sec. interdigit time-out occurs, or if a"[#]" (pound), is pressed.

*Refer to Sec. 300.37, Flexible Button Assignment.

Conditions:

- The system will dial the station that matches the dialed name when a unique match is found. If multiple names are located (found) after eight digits, the first one is dialed.

- The names will be entered as a part of the system attributes database. Numbers may be entered as part of a name. To avoid conflicts, all names must have a unique numerical sequence.

## 320.11 DISTINCTIVE RINGING

The tone ring signal used to notify stations of an incoming call can be changed by each station user to provide distinctive ringing among a group of stations. Each station user may select a distinctive ringing tone that will be used to ring their station. The system provides 81 different ring patterns that each station user may select from.

To select a distinctive ring tone for a station:

a. Dial the Tone Ring program code [695] on the dial pad.

b. Enter the two-digit tone number. The telephone speaker will sound a steady tone that correlates to the two digit entry.

c. When the desired tone is selected, press the SPEED button to save this as the tone to be presented when the station is tone rung. Confirmation tone will be heard. This tone will be presented as a result of an incoming CO or intercom call, recalling CO line or Transferred CO line or at any other time the station is tone rung (refer to conditions below).

The 81 ringing choices are as follows:

| TONE # | FREQ | DURATION |
|---|---|---|
| 00 | 1209/477 | 50ms/50ms |
| 01 | 697/770 | 50ms/50ms |
| 02 | 697/852 | 50ms/50ms |
| 03 | 697/941 | 50ms/50ms |
| 04 | 697/1209 | 50ms/50ms |
| 05 | 697/1336 | 50ms/50ms |
| 06 | 697/1477 | 50ms/50ms |
| 07 | 697/1633 | 50ms/50ms |
| 08 | 697/OFF | burst |
| 10 | 770/697 | 50ms/50ms |
| 11 | 770/770 | 50ms/50ms |
| 12 | 770/852 | 50ms/50ms |
| 13 | 770/941 | 50ms/50ms |
| 14 | 770/1209 | 50ms/50ms |
| 15 | 770/1336 | 50ms/50ms |
| 16 | 770/1477 | 50ms/50ms |
| 17 | 770/1633 | 50ms/50ms |
| 18 | 770/OFF | burst |
| 20 | 852/697 | 50ms/50ms |
| 21 | 852/770 | 50ms/50ms |
| 22 | 852/852 | 50ms/50ms |
| 23 | 852/941 | 50ms/50ms |
| 24 | 852/1209 | 50ms/50ms |
| 25 | 852/1336 | 50ms/50ms |
| 26 | 852/1477 | 50ms/50ms |
| 27 | 852/1633 | 50ms/50ms |
| 28 | 852/OFF | burst |

| | | |
|---|---|---|
| 30 | 941/697 | 50ms/50ms |
| 31 | 941/770 | 50ms/50ms |
| 32 | 941/852 | 50ms/50ms |
| 33 | 941/941 | 50ms/50ms |
| 34 | 941/1209 | 50ms/50ms |
| 35 | 941/1336 | 50ms/50ms |
| 36 | 941/1477 | 50ms/50ms |
| 37 | 941/1633 | 50ms/50ms |
| 38 | 941/OFF | burst |
| 40 | 1209/697 | 50ms/50ms |
| 41 | 1209/770 | 50ms/50ms |
| 42 | 1209/852 | 50ms/50ms |
| 43 | 1209/941 | 50ms/50ms |
| 44 | 1209/1209 | 50ms/50ms |
| 45 | 1209/1336 | 50ms/50ms |
| 46 | 1209/1477 | 50ms/50ms |
| 47 | 1209/1633 | 50ms/50ms |
| 48 | 1209/OFF | burst |
| 50 | 1336/697 | 50ms/50ms |
| 51 | 1336/770 | 50ms/50ms |
| 52 | 1336/852 | 50ms/50ms |
| 53 | 1336/941 | 50ms/50ms |
| 54 | 1336/1209 | 50ms/50ms |
| 55 | 1336/1336 | 50ms/50ms |
| 56 | 1336/1477 | 50ms/50ms |
| 57 | 1336/1633 | 50ms/50ms |
| 58 | 1336/OFF | burst |
| 60 | 1477/697 | 50ms/50ms |
| 61 | 1477/770 | 50ms/50ms |
| 62 | 1477/852 | 50ms/50ms |
| 63 | 1477/941 | 50ms/50ms |
| 64 | 1477/1209 | 50ms/50ms |
| 65 | 1477/1336 | 50ms/50ms |
| 66 | 1477/1477 | 50ms/50ms |
| 67 | 1477/1633 | 50ms/50ms |
| 68 | 1477/OFF | burst |
| 70 | 1633/697 | 50ms/50ms |
| 71 | 1633/770 | 50ms/50ms |
| 72 | 1633/852 | 50ms/50ms |
| 73 | 1633/941 | 50ms/50ms |
| 74 | 1633/1209 | 50ms/50ms |
| 75 | 1633/1336 | 50ms/50ms |
| 76 | 1633/1477 | 50ms/50ms |
| 77 | 1633/1633 | 50ms/50ms |
| 78 | 1633/OFF | burst |
| 80 | OFF/697 | 50ms/50ms |
| 81 | OFF/770 | 50ms/50ms |
| 82 | OFF/852 | 50ms/50ms |
| 83 | OFF/941 | 50ms/50ms |

| 84 | OFF/1209 | 50ms/50ms |
|----|----------|-----------|
| 85 | OFF/1336 | 50ms/50ms |
| 86 | OFF/1477 | 50ms/50ms |
| 87 | OFF/1633 | 50ms/50ms |
| 88 | No ring | No ring |

Conditions:

- Station users may listen to all tones by dialing the two-digit codes one after another. The tone that is sounding when the SPEED button is pressed will be saved as that station's tone ringing selection.

- A station's tone ringing selection will be maintained in a battery protected area of memory. Therefore if a system experiences a power failure, or a soft or hard restart, a station's tone ringing selection will be restored.

- The tone selected will be used to provide "TONE" ringing normal or muted to the station whenever the station is commanded to tone ring. (i.e. this does not apply to camp-on tone programming confirmation tone or other specific tones that are not considered 'TONE" ringing.)

- The selected tone will be used to notify the station in the following cases:
  Incoming CO Call
  incoming Intercom Call
  Transferred CO Line
  − Recalling CO Line
  Call Back Notification
  Message Wait Call Back
  All types of forwarded calls
  Executive/Secretary calls
  Line Queue Call Back
  LCR Queue Call Back

### 320.12    EXECUTIVE OVERRIDE

Allows stations designated as "Executive" the ability to override and "barge in" on other keysets engaged in conversation.

If you call a busy station:

a. Press pre-programmed* EXECUTIVE OVERRIDE button. Executive station will be bridged onto the CO conversation in progress at the called station. Optional warning tone is heard and presented to all parties prior to cut-thru.

b. Replace handset at Executive station to terminate the override.

*Refer to Sec. 300.37, Flexible Button Assignment.

---

**CAUTION**

USE OF THIS FEATURE WHEN THE EXECUTIVE OVERRIDE WARNING TONE IS DISABLED MAY BE INTERPRETED AS A VIOLATION OF FEDERAL OR STATE LAWS, AND AN INVASION OF PRIVACY.. CONSULT COUNSEL WITH RESPECT TO APPLICABLE LAWS BEFORE INTRUDING ON CALLS USING THIS FEATURE.

**NOTE** A change in volume may occur on the CO line or intercom call after the barge-in occurs.

### 320.13    HANDSET RECEIVER GAIN

This feature provides the Attendant station with a flexible button that can be programmed on their keyset. When programmed, allows the user to increase/decrease the handset receiver gain while on a CO call or intercom call.

While on a CO call:

a. Press pre-programmed* Handset Receiver Gain flex button to enter the volume adjustment mode.

b. Dial a one-digit entry [0] through [9] (0=lowest, 9=highest) on the dial pad,
   or
   Press the [#] to increase or [✶] to decrease one level at a time.

c. Two volume settings are stored in the system. One level for CO calls, another level for intercom calls. The LCD will display the settings as they occur, if the flex button was programmed using the code [638]+[0].

d. Press pre-programmed* Handset Receiver Gain flex button again to exit the volume adjustment mode.

**NOTE** When the above procedure is used, your transmit path is momentarily interrupted when the dial pad button is depressed.

- A flex button can be programmed to decrease the Handset Receiver Gain using the code [638]+[✶].

- Another flex button can be programmed to increase the Handset Receiver Gain using the code [638]+[#].

- A flex button can also be programmed to have a certain volume setting using the code [638]+[0 thru 9].

*A Flex button must be programmed for this feature to operate. Refer to Sec. 300.37, Flexible Button Assignment.

### 320.14    ICLID UNANSWERED CALL MANAGEMENT TABLE
*This feature available with optional software.*

An Unanswered Call Management Table with 100 entry capacity for the Starplus SPD 4896 system is maintained in the system. The calling number/name information pertaining to any unanswered call will be

placed in this table at the time the system has determined that the call has been abandoned.

This table may be interrogated from any station user so that the unanswered calls may be reviewed and handled by the end user. Upon entry into the review process, the functions available to a phone are:

| Function | Function Button |
|---|---|
| 1. Go to beginning of table | Dial Code 635 |
| 2. Review next item in this table entry | MUTE |
| 3. Step to next table entry. | HOLD |
| 4. Delete this table entry. | FLASH [1] |
| 5. Exit table review function. | ON/OFF |
| 6. Step to previous table entry. | TRANS |
| 7. Call Back | SPEED |
| [1] Only the 1st Attendant station can delete an entry from this table. | |

To interrogate the ICLID Unanswered Call Management Table from any station in the system:

 a. Dial the access code [635] on the dial pad.

 b. When the desired table entry is displayed on the LCD, press the SPEED button to automatically dial the table entry.

To review the next item in this entry:

 a. Press the MUTE button to toggle to the next item.

 b. Press the ON/OFF button to exit the review function.

To review the next table entry:

 a. Press the HOLD button.

To review the previous table entry:

 a. Press the TRANS button.

The 1 st Attendant is the only station that can delete an individual table entry.

At the first Attendant:

 a. Dial the access code [635] on the dial pad.

 b. When the desired table entry is displayed on the LCD, press the FLASH button to delete this entry.

To review the next table entry:

 a. Press the HOLD button,

To review the previous table entry:

 a. Press the TRANS button.

### 320.15    INTERCOM CALLING

Placing an Intercom Call

 a. Press station key of party to be called (if programmed at your phone); or dial station number (100 to 195).

 b. You will hear tinging if called station is in the "T" answering mode; or two bursts of tone if called station is in the "H" or "P" position.

 c. Lift handset or use speaker-phone, when tone bursts stop.

 d. Hang up to end call.

Answering an Intercom Call

With your intercom signal switch in the "T" mode, you will hear repeated bursts of intercom tone ringing and the HOLD button will slow flash.

 a. Lift handset or press ON/OFF button to answer.

 b. Hang up to end call.

In the "P" mode, you will hear two bursts of tone and one-way announcement. The HOLD button will slow flash and the calling party cannot hear conversations in progress.

in the "H" mode, you will hear two bursts of tone and an announcement. Reply handsfree or lift handset for privacy.

### 320.16    **INCOMING CO LINES OFF-NET (via speed dial)**

Allows the first attendant station to forward incoming CO calls to an off-net location.

In a speed dial bin, store the number of the off-net location where calls are to be forwarded. Follow instructions provided for storing station or system speed dial numbers.

 a. Dial [603] on the dial pad,
   or
   Press pre-programmed* CO Off-Net Forward button.

 b. Dial the CO group access code of the group to be forwarded,
   or
   Press the CO Line button for an individual CO Line for Off-Net forward.
   – [81] = CO Group 1
   – [82] = CO Group 2
   – [83] = CO Group 3
   – [84] = CO Group 4
   – [85] = CO Group 5
   – [86] = CO Group 6
   – [87] = CO Group 7
   – [88] = All CO Line

c. Dial the speed bin number that contains the number where calls are to be forwarded. Confirmation tone is heard.

*Refer to Sec. 300.37, Flexible Button Assignment.

Canceling Off-Net Forwarding

a. Dial [603] on the dial pad,
or
Press pre-programmed* CO Off-Net Forward button.

b. Dial the CO group access code,
or
Press the CO tine button.

c. Dial [#] on the dial pad. Confirmation tone is heard.

### 320.17 KEYSET SELF TEST

The Starplus Digital Key System contains a test mode feature that supports the off line testing of Digital keysets and DSS units. The term off line means that the unit under test is disconnected from the switch during the test operation. Keysets not under test continue to operate in the normal manner. Tests are provided to verify the keyset and DSS LED, LCD, and keyboard button operations.

a. The test mode is entered by taking a keyset's handset off hook.

b. Press the SPEED button and dial [7#] on the dial pad. This keystroke sequence disconnects the keyset from the system and brings up the Test Mode Menu on the keyset's LCD. The test mode is exited by putting the handset back on hook. This reconnects the keyset to the system.

> **SELECT 1:LCDLED 2:KEYBTN**
> **3:DSSBTN**

Test Mode Menu: The menu allows the operator to select a test mode by pressing the mode number at the dial pad. The operator can always return to the main test menu by pressing [##].

### A. Keyset LCD/LED Test

This test outputs a series of continuously repeated LCD string messages to LCD lines 1 and 2. The set of strings consists of the letters 'A' through 'X' and 'a' through 'x'. The next set of strings are:

> **: "PICKUP TRUCK SPEED ZONE!"**
> **"*** STANDING BACK ***"**

- The strings are alternately displayed on lines 1 and 2 of the LCD display.

- In addition, all the LEDs are flashed at the rate of 15 IPM.

### B. Keyset Button Test

a. Pressing a keyset button turns on the LED and displays an LCD message identifying the key number.

> **PRESS KEYSET    BUTTONS**
> ********          ******

In addition switching the HTP switch from one position to another will cause the letter "H_POS", "T_POS", or "P_POS" to be displayed.

b. Pressing dial pad keys displays an LCD message that indicates which digit was pressed.

c. LEDs can be tested independently of the KEYS by pressing the flex LED number at the dial pad. For example, LED 10 is turned on by pressing dial pad digits "1" "0". As each set of new numbers is entered the previously lit LED is turned off and the new LED is turned on. Invalid flex values (ex. 00,99) turn off currently lit LED.

### C. DSS LED/Button Test

When the DSS test is selected and a DSS test is invoked ALL DSSs associated with the keyset running the test are placed in test mode.

> **PRESS DSS BUTTONS**
> ********          ******

If no DSS unit is associated wit the keyset, the keyset display will indicate "NO DSS". The DSS LED test will cause all the LEDs to flash at a 15 IPM rate. Once started the DSS LED test will continue until a DSS flex button is depressed. Pressing a DSS flex button turns on the flex key LED and displays an LCD message on the associated keyset identifying the flex key number (01 to 48). In addition, it turns off the previously selected flex LED.

Conditions

- Test mode interrupts the normal operation of a keyset or DSS.

### 320.18 MESSAGES - CUSTOM

This feature allows the system administrator to enter up to ten custom messages for use by station users of the system. These messages may be specified and customized by the customer on a system wide basis.

A station wishing to select a message:

a. Dial the Message Code [633] on the dial pad,
or
press the pre-programmed Message Access flexible button.

b. Enter the two-digit Custom Message bin number and hang up.

Example: [633]+[21-30] means that a telephone calling the station will receive the custom message programmed at the attendant station by the system administrator.

*Refer to Sec. 300.37, Flexible Button Assignment.

To cancel the message:

a. Dials the Message Access Code [633] + [00] and hang up.

The system administrator (Station 100) programs the ten custom messages at the first attendant station as follows:

a. Dial the Custom Message program code [694] on the dial pad.

The following message is shown on the display phone:

```
        ENTER MSG NO
MM/DD/YY              HH:MM am
```

b. Enter the two-digit message bin number [21-30].

Then the following display will be shown after the bin # has been selected.

```
      mmmmmmmmmm...
      ENTER MSG:
```

c. Enter the custom message using the dial pad keys to enter the letters as follows:

| | | | |
|---|---|---|---|
| A =21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | • =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | W =91 | Space =11 | + =#3 |
| L =53 | X =92 | : =12 | = =#4 |
| | Y =93 | - =13 | # =## |
| | Z =94 | ' =14 | |

Up to 24-characters may be entered as the custom message (this will represent 48 digits entered).The actual Alpha-Numeric characters will be displayed as the digits are being entered while programming the messages. The attendant must go idle after programming a message before another message may be programmed.

d. The user then presses the HOLD button to enter the message and confirmation tone will be heard.

Conditions:

- The telephone receiving the message must be a display telephone.

- Both key telephones and SLT can leave the message. SLT's are notified that they have left a message with a warning tone when going off-hook.

- incoming and outgoing calls are not inhibited in any way with a message displayed.

- When a message is displayed by a key telephone, the DND button LED flashes at the 15 ipm rate.

- When DND is invoked on the telephone, the message is canceled.

- Message Access (with a desired message) may be assigned to a flex button.

- Message status is stored in battery protected area of memory for retention across a power failure or system reset (soft or hard).

- The function of Message Access is assigned to a station flexible button in database admin.

- A station user may store any of the available messages under a flexible button assigned as a Message Access button.

- The ten Custom Messages will be displayed in a similar fashion as the "Canned" messages. The idle station display will show the message that has been activated at the station and a calling station will receive the STA XXX or name-in-display followed by the programmed custom messages.

### 320.19    DIRECTORY DIALING - Attendant

Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The Starplus SPD 4896 system provides locations for up to 200 names.

Directory dialing also allows users to program a "name" along with a speed dial bin for use in later locating a speed dial number. When prompted to do so, the system will display the name associated with a speed dial number on the LCD display so that when the desired name is shown, the user may then have the system dial the number.

Directory dialing also allows users to associate a "name" with an entry in the local number/name trans-

lation table. When prompted to do so, the system will display the name associated with the table on the LCD display so that when the desired name is shown, the user may then have the system dial the number. The Starplus SPD 4896 system provides locations for up to 200 names.

The Directory Dialing list may be programmed and maintained at the first assigned attendant station in one of two ways, however this admin routine provides a means for the directory list to be maintained by the system programmer either locally (at Station 100) or remotely via modem access.

Directory dialing may also be used to transfer a call from one station to another.

To view the directory list:

a. Dial the Directory List dial code [680] on the dial pad,
   or
   press the pre-programmed* flex button programmed as a directory dialing button.

b. Press a button on the key pad, once, twice or three times, to represent the letter of the alphabet, to begin viewing the list of names. (i.e. the first depression of the digit 2 produces the names beginning with an "A". The second depression of the digit 2 produces the names beginning with a "B", while the third depression of the digit 2 produces the names beginning with a "C".) The letters of the alphabet are represented on the key pad as follows:

| ALPHA NUMERIC CHARACTER | DIGIT |
|---|---|
| A,B,C | 2 |
| D,E,F | 3 |
| G,H,I | 4 |
| J,K,L | 5 |
| M,N,O | 6 |
| P,Q*,R,S | 7 |
| T,U,V | 8 |
| W,X,Y,Z* | 9 |

"does not appear on dial pad.

c. Names beginning with the letter chosen will appear on the LCD display.

> **NOTE** *If there are no names in the Directory List beginning with the desired letter, a name with the next higher letter will be shown on the LCD display.*

d. Dial an [✳] on the dial pad to scroll up (next entry) through the list,
   or
   Dial a [#] on the dial pad to scroll down (previous entry) through the list,
   or

Press another key to view the list for a different letter of the alphabet.

e. When the desired **name** is shown in the LCD display, pressing the SPEED button will automatically dial the destination station or outside phone.number (via speed dial).

Conditions:

• If the desired party is an intercom station, that station will be signaled according to that station's intercom selector switch (SLT stations will **tone** ring).

• If the desired party is associated to a speed dial bin, the system will select a CO line and dial the number programmed into the speed dial bin. Call progress tones will then be heard.

To Transfer a Call using Directory Dialing:

While on a call:

a. Press the TRANS button.

b. Dial the Directory Dial Code [680] on the dial pad,
   or
   press a pre-programmed* flex button programmed for directory dialing.

c. Press the SPEED button to automatically dial the destination station.

d. Hang up to complete the transfer.

> **NOTE** *Calls may only be transferred to internal stations only. An attempt to transfer a call off-net (via a Speed dial bin) will result in the call recalling upon going on-hook*

### A. Programming - Attendant

Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The Starplus SPD 4896 system provides locations for up to 200 names.

Directory dialing also allows users to program a "name" along with a speed dial bin for use in later locating a speed dial number. When prompted to do so, the system will display the name associated with a speed dial number on the LCD display so that when the desired name is shown, the user may then have the system dial the number.

Directory dialing also allows users to associate a "name" with an entry in the local number/name translation table. When prompted to do so, the system will display the name associated with the table on the LCD display so that when the desired name is shown, the user may then have the system dial the number. The Starplus SPD 4896 system provides locations for up to 200 names.

The Directory Dialing list may be programmed and maintained at the first assigned attendant station in one of two ways, however this admin routine provides a means for the directory list to be maintained by the system programmer either locally (at Station 100) or remotely via modem access.

Directory dialing may also be used to transfer a call from one station to another.

**Method One:**

To enter, edit or erase names that appear in the Directory List for stations or speed dial numbers:

  a. Dial the Directory List program code [693] on the dial pad. The first entry (entry 000) in the Directory List will then be shown on the display phone as follows:

> **DIR LST AAA BIN/ICM: XXX**
> nnnnnnnnnnnnnnnnnnnnnnnn

    − AAA = Directory List entry number (000-199)
    − XXX = Either a Station Number, System Speed dial bin Number, or Local Number/Name Translation Table number
    − nnn = Programmed Name (blank if none)

To Select a different entry in the Directory List:

  a. Press the HOLD button.

  b. Enter the three-digit (000-l 99) entry number on the dial pad and press the SPEED button,
    or
    dial [✳] to scroll up (next entry) through the list,
    or
    Dial [#] to scroll down (previous entry) through the list.

To Enter or Change the current name shown on the display:

  a. Press the MUTE button,

  b. Enter the name (up to 24-characters may be entered) by using keys on the dial pad as follows:

| | | | |
|---|---|---|---|
| A=21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | O =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | • =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =1 1 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |

| | | |
|---|---|---|
| Y =93 | - =13 | # =## |
| z =94 | ' =14 | |

  c. Press the SPEED button when finished. Confirmation tone will be heard and the display will update.

To enter the intercom number to be associated to the name:

  a. Press the TRANS button.

  b. Enter the three-digit station intercom number (100-195)

  c. Press the SPEED button to save the entry. Confirmation tone will be heard and the display will update.

To clear an entry:

  a. Press the TRANS button. Then press the FLASH button.

  b. Press the SPEED button. Confirmation tone will be heard and the entry will be erased.

**Method Two:**

This method may be used to enter names that will be associated to the Local Number/Name Translation Table only.

To Select a different entry in the Directory List:

  a. Press the HOLD button.

  b. Enter the three-digit (000-l 99) entry number on the dial pad and press the SPEED button,
    or
    dial [✳] to scroll up (next entry) through the list,
    or
    Dial [#] to scroll down (previous entry) through the list.

To enter a name along with a local number/name translation table number:

  1. Press the TRANS button.

  2. Dial the three-digit local number/name translation table number (300-499) that represents the desired telephone number.

To Enter or Change the current name shown on the display:

  1. Press the MUTE button.

  2. Then enter the name (up to 24-characters may be entered) by using keys on the dial pad as follows: The display will update as the name is entered.

| | | | |
|---|---|---|---|
| A=21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | O =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |

| F =33 | R =72 | 6 =6# | $ =*2 |
|-------|-------|-------|-------|
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
|       | Y =93 | - =13 | # =## |
|       | Z =94 | ' =14 |       |

3. Press the SPEED button when finished. Confirmation tone will be heard.

**NOTE**

The Local Number/Name Translation Table can be used to enter additional speed dial numbers which can be used for directory dial or dial by name. The name entered into the local number/name translation table is- not relevant when used with directory dialing and dial by name. In addition, it should be noted that the numbers entered into this table are limited to 14 digits and will be covered by toll restriction rules.

**Method Three:**

This method may be used to enter names that will be associated to a system speed dial bin only.

To enter a name along with a system speed dial number:

1. Press the SPEED button once.

2. Press a desired outside line key;
   or
   Press the SPEED button a second time to have an outside line selected automatically.

3. Dial the system speed dial bin location (20 to 99).

4. Dial the telephone number (including special characters TRANS, HOLD and FLASH).

5. Press the SPEED button to store the telephone number,

To enter a name:

1. Press the MUTE button.

2. Enter the name (up to 24 characters may be entered) by using keys on the dial pad as follows:

| A =21 | M =61 | 1 =1# | " =01 |
|-------|-------|-------|-------|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | g =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |

| K =52 | W =91 | Space =11 | + =#3 |
|-------|-------|-----------|-------|
| L =53 | X =92 | : =12 | = =#4 |
|       | Y =93 | - =13 | # =## |
|       | Z =94 | ' =14 |       |

3. Press. the SPEED button when finished. Confirmation tone will be heard and the display will update.

4. Either hang up to end programming or begin at step "2" to program another System Speed Dial bin/Name combination.

**320.20 NIGHT SERVICE**

a. Any designated attendant can place the system into Night Service by pressing the pre-programmed Night Service button (DND).

b. Pressing the pre-programmed Night Service button again removes the system from Night Service.

**320.21 OFF HOOK VOICE OVER (OHVO)**

This feature allows users, off-hook on a call (CO or Intercom), to receive a voice announcement through the handset receiver without interrupting the existing call. The Voice Over is muted so as not to "override" or "drown" out the existing conversation. The overridden party may then respond to the calling party using CAMP-ON procedures to talk to the calling party or may use Silent Text Messaging to respond to the calling party via LCD Displays.

Placing an Off-Hook Voice Over (OHVO) call:

a. When an OHVO station calls a busy OHVO station, and busy tone is received, the calling OHVO station can dial the OHVO code [628] on the dial pad,
   or
   press a pre-programmed* OHVO button to initiate an OHVO announcement. The HOLD button LED will flash at the called OHVO station.

b. The OHVO receiving station will receive a one-beep warning tone. The station receiving the OHVO call must be off-hook and in the "H" mode, and then the calling OHVO party may begin the voice announcement to the called OHVO party. The called OHVO station's existing conversation will not be interrupted and the voice over announcement will not "drowned" out the existing conversation. The calling OHVO station will not be connected to or otherwise be able to hear the called station's conversation (the connection will only allow the calling station to transmit to the called station).

> **NOTE**
> *The calling station is placed in a one-time DND mode upon initiating the Voice Over. One-Time DND cannot be toggled during the OHVO call. The station receiving the OHVO call must be off-hook and in the "H" mode.*

Responding to an Off-Hook Voice Over (OHVO):

After receiving an OHVO announcement, two options are available to respond to the calling party;

1. The called OHVO station may respond to the calling OHVO station by using the Camp-On feature. The called OHVO station presses the flashing HOLD button to consult with the calling station. The existing call (CO line) goes on Exclusive Hold automatically. This method, then follows Camp-On procedures and operation.

2. The called station may respond to the calling station by using the Silent Text Messaging (this feature is only available to digital key terminals, and the called station must be a digital display terminal.) The called OHVO station may press pre-programmed Message button to respond to the voice over announcement without being released from the current call, (i.e. by pressing a flex button pre-programmed for the message "IN MEETING"), the calling station will receive this message on the calling station's LCD display.

> **NOTE**
> *If the call is an intercom call, the intercom call will be dropped and an intercom call wilt be established between the calling and called stations*

Conditions

- The station receiving the OHVO call MUST be off-hook and in the "H" mode.

- The receiving station must have OHVO enabled.

- When the dialed station responds via Camp-On all conditions and options available to Camp-On apply (refer to the feature description for Camp-On).

- OHVO may be used to notify the called party of a transferred call (CO Line or Intercom) by announcing the call, then releasing to complete the transfer. When this occurs, the receiving station does not need to respond to the OHVO.

- When a call is transferred via OHVO, the receiving station will receive muted ringing after the transfer is complete.

- Any messages including "CANNED", "CUSTOM", or "SILENT RESPONSE" text messaging may be used to respond to an OHVO call. The message will appear on the calling station and called station LCD displays.

- If the calling station is a non-LCD terminal, the called station will receive error tone when responding **via** text messaging.

- The called station may press a flex button programmed as a Text Message button, [633+XX]. This flex button can be pressed and two-digit message number dialed to respond to the calling station. DTMF digits will not be heard by either party.

- The receiving station must be programmed to allow OHVO calls.

- When silent messaging is used to respond to an OHVO call, the existing call on the called station will not be disconnected, while the messages are being sent to the calling station.

- The calling station of an OHVO call must remain off-hook to receive silent messages. The calling station's voice transmit will remain connected to the called station and may respond verbally to the text messages. The OHVO call ends when the calling station goes on-hook.

- If the receiving station is on-hook in speakerphone mode and a calling party initiates OHVO, the receiving station will receive a Camp-On warning tone and normal Camp-On procedures are followed.

- The called station may send (multiple messages) and even after sending a message, may press the Camp-On button to talk to the calling station. Each time a message is sent, the splash tone will be heard and both displays will be updated.

- LEDs will follow Camp-On LED lamping sequences.

Each station can be programmed to allow receiving OHVO calls as part of Station Programming. Each station may be programmed for OHVO in one of two ways, as follows:
- OHVO disallowed (may not receive OHVO calls).
- May receive OHVO calls.

### 320.22  SETTING SYSTEM TIME AND DATE

Must be set by the first programmed attendant.

a. Dial [692] on the dial pad. Confirmation tone is heard.

b. Enter date and time as foilows:
YYMMDDHHMM
- [W] = year (00-99)

- [MM] = month (01-12)
- [DD] = day (01-31)
- [HH] = hour (00-23)
- [MM] = minute (00-59)

When the correct number of digits are entered, confirmation tone will be heard and the display will update.

### 320.23  STORING SYSTEM SPEED NUMBERS

System Speed numbers must be entered by the first programmed attendant. If no attendant is specified, enter at Station 100.

a. Press SPEED once, then press a desired outside line key or select an outside line automatically by pressing the SPEED button a second time.

b. Dial the System speed bin location (20 to 99).

c. Dial telephone number.

d. Press the SPEED button.

e. Hang up.
   - Pressing the TRANS button during number entry initiates a Pulse-To-Tone switchover. Pressing the HOLD button during number entry inserts a Pause. Pressing the FLASH key inserts a Flash into the speed number.
   - Pressing the TRANS button as the first entry in the speed bin inserts a no-display character causing the numbers stored in the bin not to appear on the Digital Terminals display when the bin is accessed.

Speed Bin numbers 60-99 are NOT monitored by Toll Restriction.

### 320.24  TEXT MESSAGING (Silent Response)

This a feature allows a station user to use text messages to respond to a caller that has either Camped-On or has used the Off-Hook Voice Over feature to alert a busy station user of a waiting call or message. The "camped-on" station may respond to the caller via the canned, custom, and silent response text (LCD) messages. The text messages appear on the calling party LCD Display.

While receiving a Camp-On, or OHVO call:

a. The called party may press a flexible button programmed for message access, then dial the two digit message code (or press a pre-programmed flex button for a particular message). Example : [633] + [38] means that a telephone calling the station will receive the message "WHO IS IT?".

The additional messages (with their codes) listed below can also be sent as a text response:
   - [31] = I WILL TAKE CALL
   - [32] = TAKE MESSAGE

- [33] = TRANSFER TO SECRETARY
- [34] = PUT CALL ON HOLD
- [35] = CALL BACK
- [36] = ONE MOMENT PLEASE
- [37] = I WILL CALL BACK
- [38] = WHO IS IT?
- [39] = IS IT LONG DISTANCE?
- [40] = IS IT PERSONAL?
- [41] = IS IT AN EMERGENCY?
- [42] = IS IT IMPORTANT?
- [43] = IS IT URGENT?
- [44] = SEND CALL TO VOICE MAIL
- [45] = PARK CALL
- [46] = OUT OF OFFICE
- [47] = PUT CALL THROUGH
- [48] = I AM BUSY
- [49] = O.K.
- [50] = NO
- [51] = YES

Conditions:

- If the station receiving the text message response was doing a camp-on he will first receive a short burst of tone on the speaker, then the display will show the message that has been activated by the called station.

- If the station receiving the text message response is on an OHVO call, no tone will be received.

- All canned and custom messages may be used to respond to a calling party.

- Text response messages will automatically clear when the calling station (station receiving the messages) goes on-hook.

- A station can receive only one message at a time.

- Text messages may be chained (i.e. multiple messages sent to one caller).

- Text message responses may only be activated by key stations and the receiving station must be a Digital Display telephone.

- The text message responses will appear on both the calling station and the called station (station activating) text responses) LCD displays.

- If the calling station is a non-LCD terminal, the called station will receive error tone when responding via text messaging.

- The called station may press a flex button programmed as a Text Message button, [633+XX]. This flex button can be pressed and two-digit message number dialed to

respond to the calling station. DTMF digits will not be heard by either party.

- When silent messaging is used to respond to a call, the existing call of the called station will not be disconnected while the messages are being sent to the calling station.

- The calling station must remain off-hook to receive silent messages.

- If the called station responds with a text message, the text message will appear on the LCD.

- LEDs will follow that of the CAMP-ON or **OHVO.**

- Each individual message may be programmed onto a flexible button including a flex button on a DSS/BLF console.

| NOTE | *The calling station must be a digital display telephone and the called station must be a keyset.* |
|------|---|

## ATTENDANT with DSS/DLS FEATURES

The attendant console may be programmed in one of five different ways. Therefore, you may not have all of the features listed below on your console. Refer to Sec. 220.14 for a description of each map.

### 320.25   ATTENDANT TRANSFER SEARCH

When attempting to locate a patty:

a. Press a station button to signal that station. If the party is not located, press another station button to continue the search.

### 320.26   PLACING AN OUTSIDE CALL (Automatic Line Selection)

a. Press outside line button. ON/OFF button LED will light and dial tone will be heard.

b. Dial desired party.

c. When called party answers, lift handset to converse or use speakerphone

### 320.27   CALL PARK

While connected to an outside line:

a. Press programmed CALL PARK button. The caller is put on Exclusive hold.

b. At this time, you can page or call another internal station.

c. When the party you called responds, announce the call park location and replace handset.

### 320.28   DO NOT DISTURB INDICATION

The associated station button will flash at a medium rate to indicate that station is in Do Not Disturb.

### 320.29   RETRIEVING A PARKED CALL

a. Lift handset or press ON/OFF button.

b. Dial [#] on the dial pad.

c. Dial the parking location (430 to 437) where the call was parked.

### 320.30   CALL TRANSFER

Outside lines can be transferred from one phone to another within the system. The transfer can be either screened (announced) or unscreened to either an idle or busy station.

Screened Transfer:

While connected to an outside line:

a. Press station button where call is to be transferred (if programmed on your telephone),
or
press TRANS button and dial station number (100 to 195).

b. The called extension signals according to the intercom signal switch position.

c. When that extension answers, announce the transfer.

d. Hang up to complete transfer.

Unscreened Transfer:

When the called extension begins to signal, hang up to transfer the call (Recall timer starts).

Transfer Search:

When attempting to locate a party:

a. Press a station key to signal a station.

b. If the party is not located, press another station key to continue the search.

If the party is not located:

c. Press another station button to continue the search.

d. When the called party answers, hang up to complete the transfer.

### 320.31   CAMP-ON

While connected to an outside line:

a. Press desired station button.

b. When busy tone is heard, press CAMP-ON button. Wait for response.

c. Replace handset, access another CO Line or press RELEASE button (if you have one).

320.32    **FLEXIBLE BUTTON PROGRAMMING**

a. Press SPEED button twice.

b. Press FLEX button to be programmed (it must be programmed in database as a flexible button).

c. Dial desired code (Refer to Table 300-2 Flex Button Programming Codes).

320.33    MEET **ME PAGE**

To request another party meet you on a page:

a. Dial the desired two-digit paging code
or
press pre-programmed* flex button.

b. Request that party meet you on the page.

c. Do not hang up; wait for the requested party to answer.

Answering a Meet Me Page

a. Go to the nearest telephone and dial [77] on the dial pad.

b. You will be connected to the party that paged you.

*Refer to Sec. 300.37, Flexible Button Assignment.

320.34    **PAGING**

**A. External Paging**

1. Dial the two-or three-digit External paging code. Wait for page warning tone.
   - [76]+[0] = External Ail Call (Zones l-7)
   - [76]+[1] = External Zone 1
   - [76]+[2] = External Zone 2
   - [76]+[3] = External Zone 3
   - [76]+[4] = External Zone 4
   - [76]+[5] = External Zone 5
   - [76]+[6] = External Zone 6
   - [76]+[7] = External Zone 7

2. Speak in normal tone of voice to deliver message.

Stations off-hook or in DND will not hear the internal page announcement.

| NOTE | *When making a zone page or All Call page and the zone is busy, the page initiator will receive ringback tone until the zone becomes available. You will then hear a warning tone and can make the page announcement.* |
|------|---|

3. Deliver page in normal tone of voice.

4. Replace handset to terminate page announcement.

**B. Internal Paging**

Stations off-hook or in DND will not receive the page announcement.

1. Press the pre-programmed* PAGE button, or dial one of the following codes:
   - [70] = Ail Call · internal & External
   - [71] = internal **Zone** 1
   - [72] = internal Zone 2
   - [73] = internal Zone 3
   - [74] = internal Zone 4
   - [75] = internal All Call

2. Speak in normal tone of voice to deliver message.

3. Replace handset to terminate page announcement.

**C. All Call Paging (Internal/External)**

1. Dial [70] on the dial pad,
   or
   press the pre-programmed* PAGE button.

2. Speak in normal tone of voice to deliver message.

3. Replace handset to terminate page announcement.

*Refer to Sec. 300.37, Flexible Button Assignment.

320.35    **RELEASE BUTTON**

The 34-button Attendant Digital Terminal contain a Release button that may be pressed to disconnect or terminate an intercom call, transfer sequence, page announcement or CO call.

## 330.1   LCD   DISPLAYS

The display is arranged into an upper and lower field. The upper field displays the current activity of the telephone. The lower field is divided into two  sections. The left section of the lower field displays the date, speed bin number, connected intercom station or outside line number. The right section of the lower field displays the current time or elapsed time on an outside call. The following Table shows what will appear on the LCD displays based on the function performed..

**Table 330-I Liquid Crystal Displays (LCD)**

| FUNCTION | CALLING   STATION'S   DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Idle   Station | **STATION XXX**<br>**MM/DD/YY          HH:MM am** | |
| Manually   Dialing<br>Outgoing   Calls | **18005551212**<br>**LINE XX          HH:MM :SS** | |
| Recalling   Line<br>from   Hold | **LINE XX RECALLING**<br>**MM/DD/YY          HH:MM am** | |
| Recalling   Line<br>from   Another   Station | **RECALL FROM STA XXX**<br>**LINE XX          HH:MM:SS**<br><br>**RECALL FROM ..(name)..**<br>**LINE XX          HH:MM:SS** | |
| Connected   to   an<br>Incoming   CO   Line | | **STATION XXX**<br>**LINE XX          00:00:10** |
| Intercom   Call | **CALL TO STA XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**CALL TO ..(name)..**<br>**MM/DD/YY          HH:MM am** | **CALL FROM STA XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**CALL FROM ..(name)..**<br>**MM/DD/YY          HH:MM   am** |

**Table 330-I LCD Displays (Cont'd)**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Camp-on | **CALL TO STA XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**CALL TO ..(name)..**<br>**MM/DD/YY          HH:MM am** | **CAMP-ON BY STA XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**CAMP-ON BY ..(name)..**<br>**MM/DD/YY          HH:MM am** |
| Conference | **CONFERENCE**<br>**MM/DD/YY          HH:MM am** | **CONFERENCE**<br>**MM/DD/YY          HH:MM am** |
| Internal Page | **INTERNAL PAGE**<br>**ZONE X          HH:MM am** | **PAGE FROM STA XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**PAGE FROM ..(name)..**<br>**MM/DD/YY          HH:MM am** |
| External Zone Page and External All Call Page | **EXTERNAL PAGE**<br>**ZONE X          HH:MM am**<br><br>**EXTERNAL PAGE**<br>**MM/DD/YY          HH:MM am** | |
| All Call Page | **ALL CALL PAGE**<br>**MM/DD/YY          HH:MM am** | **PAGE FROM STA XXX**<br>**MM/DD/YY          HH:MM am** |
| Meet Me Page | **ALL CALL PAGE**<br>**MM/DD/YY          HH:MM am**<br><br>**CALL FROM XXX**<br>**MM/DD/YY          HH:MM am** | **PAGE FROM XXX**<br>**MM/DD/YY          HH:MM am**<br><br>**CALL TO XXX**<br>**MM/DD/YY          HH:MM am** |

**Table 330-I LCD Displays (Cont'd)**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Station Call Forward (Originating Station) (Name in Display) | FORWARDED TO STA XXX<br>MM/DD/YY    HH:MM am<br><br>FORWARDED TO ..(name)..<br>MM/DD/YY    HH:MM am | |
| Station No-Answer Call Forward (Originating Station) | NO ANS FWD TO STA XXX<br>MM/DD/YY    HH:MM am<br><br>NO ANS FWD TO ..(name)..<br>MM/DD/YY    HH:MM am | |
| Station Busy/No-Answer Call Forward (Originating Station) | BSY/NA FWD TO STA XXX<br>MM/DD/YY    HH:MM am<br><br>BSY/NA FWD TO ..(name)..<br>MM/DD/YY    HH:MM am | |
| Station Busy Call Forward (Originating Station) | BUSY FWD TO STA XXX<br>MM/DD/YY    HH:MM am<br><br>BUSY FWD TO ..(name)..<br>MM/DD/YY    H H : M M  a m | |
| Forwarded Call (Name in Display) | FORWARDED TO STA XXX<br>VIA STA XXX    HH:MM am<br><br>FORWARDED TO ..(name)..<br>VIA STA XXX    HH:MM am | CALL FROM STA XXX<br>VIA STA XXX    HH:MM am<br><br>CALL FROM ..(name)..<br>VIA STA XXX    HH:MM am |

**Table 330-I LCD Displays (Cont'd)**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Forwarded Intercom Call | FORWARDED TO STA XXX<br>VIA STA XXX   HH:MM am | CALL FROM STA XXX<br>VIA STA XXX   HH:MM am |
| Station Forwarding to a Voice Mail Group* (Station Idle) | FORWARDED TO VOICE MAIL<br>MM/DD/YY   HH:MM am | |
| Station Forwarding to an ACD* or UCD Group (Station Idle) | FORWARDED TO ACD 55X<br>MM/DD/YY   HH:MM am | |
| Preset Forward | | FORWARD RING<br>LINE XX   HH:MM am |
| Station calling a Station Forwarded to a Voice Mail' Group | FORWARDED TO VOICE MAIL<br>VIA STA XXX   HH:MM am | FORWARDED TO VOICE MAIL<br>MM/DD/YY   HH:MM am |
| Cail Pickup | CALL TO STA XXX PICKED UP<br>BY STA XXX   HH:MM am | CALL TO STA XXX<br>FROM STA XXX HH:MM am<br><br>TRANSFER FROM STA XXX<br>LINE XX   HH:MM am |
| Exclusive Hold | LINE HOLDING<br>LINE XX   HH:MM am | |

*Features available with optional software.

**Table 330-I LCD Displays (Cont'd)**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Do Not Disturb | DO NOT DISTURB STA XXX<br>MM/DD/YY     HH:MM am<br><br>DO NOT DISTURB ..(name)..<br>MM/DD/YY     HH:MM am | STA IN DO NOT DISTURB<br>MM/DD/YY     HH:MM am |
| Call Back | CALL BACK FROM STA XXX<br>MM/DD/YY     HH:MM am<br><br>CALL BACK FROM ..(name)..<br>MM/DD/YY     HH:MM am | CALL FROM STA XXX<br>MM/DD/YY     HH:MM am<br><br>CALL FROM ..(name)..<br>MM/DD/YY     HH:MM am |
| Outside Line Transfer | | TRANSFER FROM STA XXX<br>LINE XX     HH:MM am<br><br>TRANSFER FROM ..(name)..<br>LINE XX     HH:MM am |
| Message Waiting | | MSG: XXX XXX XXX XXX XXX<br>MM/DD/YY     HH:MM am |
| Reply to a Message Waiting | CALL TO STA XXX<br>MM/DD/YY     HH:MM am<br><br>CALL TO ..(name)..<br>MM/DD/YY     HH:MM am | CALL BACK FROM STA XXX<br>MM/DD/YY     HH:MM am |

**Table 330-I LCD Displays (Cont'd)**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Programmed Flash Command (F) | F*12 | |
| Programmed Pause Command (P) | 950777P1234567<br>SPEED XX ████ MM am | |
| Programmed Pulse-To-Tone Switchover (S) | 950777S1234567<br>SPEED XX　　HH:MM am | |
| CO Line Queuing | PLACED IN QUEUE FOR<br>LINE XX　　HH:MM am<br><br>QUEUE CALL BACK<br>LINE XX　　HH:MM am | |
| Hunt Groups | CALL TO STA XXX<br>VIA HUNT　　HH:MM am<br><br>CALL TO ..(name)..<br>VIA HUNT　　HH:MM am | |
| ACD* or UCD Groups | CALL TO STA XXX<br>VIA ACD　　HH:MM am<br><br>CALL TO ..(name)..<br>VIA ACD　　HH:MM am | |

*Features available with optional software.

**Table 330-I LCD Displays (Cont'd**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Ringing CO Lines | | **LINE RINGING**<br>**LINE XX          HH:MM am** |
| Display Security Feature | **DISPLAY SECURITY**<br>**LINE XX          HH:MM:SS** | |
| Station Forwarding Off-Net | **FORWARDED TO SPEED XX**<br>**MM/DD/YY          HH:MM am** | |
| Calling a Station Forwarded Off-Net (before and after call is answered) | **FORWARDED OFF NET**<br>**LINE XX          CALLED 102**<br><br>**2331234**<br>**LINE XX          HH:MM:SS** | **FORWARDED TO SPEED XX**<br>**MM/DD/YY          HH:MM am** |
| Calls in Queue (Supervisor) | **55X: CIQ: XX AL: XX OC: MMM**<br>**MM/DD/YY          HH:MM am** | |
| Cails in Queue (using Dial Code) ACD* or UCD | **ACD 55X 02 CALLS IN QUEUE**<br>**MM/DD/YY          HH:MM am** | |
| Unavailable Mode (Agent Station) ACD*orUCD | **UNAVAILABLE ACD * XXX ***<br>**MM/DD/YY          HH:MM am** | |
| Station calling a Voice Mail* Group Pilot Number | **CALL TO VOICE MAIL**<br>**MM/DD/YY          HH:MM am** | |

*Features available with optional software.

**Table 330-I LCD Displays (Cont'd**

| FUNCTION | CALLING STATION'S DISPLAY | CALLED STATION'S DISPLAY |
|---|---|---|
| Dial By Name | DIAL NAME:<br>MM/DD/YY    HH:MM pm | |
| Off-Hook<br>Voice Over (OHVO) | ANNOUNCE TO STA XXX<br>MM/DD/YY    HH:MM am | ANNOUNCE FROM STA XXX<br>MM/DD/YY    HH:MM am |
| Executive Override | MONITORING STA XXX<br>MM/DD/YY    HH:MM am | |
| Voice Mail* Transfer with ID Digits | CALL TO VOICE MAIL<br>VIA XXX    MM/DD/YY<br><br>ENTER VM ID:<br>MM/DD/YY    HH:MM am | |

*Features available with optional software.

# SECTION 400

# GENERAL  DESCRIPTION

## 400.1    SYSTEM  TECHNOLOGY

The Starplus family of digital key telephone systems is comprised of four fully digital hybrid key telephone systems, the SPD 612, SPD 1428, SPD 2856, and SPD 4896. These systems are designed to meet the telecommunications needs of small to medium sized business offices. All systems incorporate state of the art digital technology for command processing and voice switching utilizing a Pulse Code Modulation/Time Division Multiplexing (PCM/TDM) voice control module. The family of Starplus Digital systems are also engineered to allow migration of the family of Starplus digital terminals and terminal accessories throughout the entire product line. in addition, standard 2500-type telephone devices are supported by use of a 2x4 SLT Expansion Module on the Starplus SPD 612 and SPD 1428 systems, a 4x8 SLT Interface Board (CSB) on the Starplus SPD 2856 system, and a Single tine Interface Board (SL12) on the SPD 4896 system, or SLA (OPX) adapters on ail systems.

The SPD 612 is the smallest member of the Star-plus Digital family and fully configured supports a maximum of six CO/PBX/Centrex lines and 12 digital terminal devices. The SPD 612 is a 'flat pack", or single mother board system with plug-on modules expanding the system via expander modules configured with two CO/PBX/Centrex lines by four stations/single line telephones. A complete system capacity allows for use of up to 112 time slots for stations, CO Lines, and a DTMF Receiver. This extends non-blocking access to all system resources.

The SPD 612 Basic KSU comes fully configured with power supply, common control processor, PCM/TDM Voice switching matrix and interface circuits for four CO/PBX/Centrex lines and interface circuits for eight Digital terminal devices. The Basic system can be equipped with one DTMF receiver (on either the 2x4 Expander Module or 2x4 SLT Expander Module), a connector for one Music-On-Hold channel that also provides for background music.

The SPD 1428 is the second member of the Starplus Digital family and fully configured supports a maximum of 14 CO/PBX/Centrex lines and 28 digital station devices. The SPD 1428 is a "flat pack", or single mother board system with plug on modules expanding the system via expansion and expander modules configured with either two CO/PBX/Centrex lines by four stations or four CO/PBX/Centrex lines by eight stations. A complete system capacity

allows for use of up to 112 time slots for stations,CO Lines, DTMF Receivers, or data switching modules. This extends non-blocking access to all system resources.

The SPD 1428 Basic KSU comes fully configured with power supply, Common control processor, PCM/TDM Voice switching matrix and interface circuits for four CO/PBX/Centrex lines and interface circuits for eight Digital terminal stations. The Basic system is also equipped with one RS-232C I/O port, one DTMF receiver, a connector for one Music-On-Hold channel that also provides for background music, and an on-board 300 baud modem that provides access to the system for data base programming or remote maintenance and or diagnostics. Modules to provide additional I/O ports, and an optional 1200 baud modem module can also be added to the system.

The SPD 2856 system is the third system in a family of Digital Hybrid Key Telephone systems and supports a maximum configuration of 28 CO/PBX/Centrex lines and 56 digital station devices. The SPD 2856 is atypical KSU system with plug in PCB's. The system capacity is expanded by installing four circuit CO/PBX/Centrex lines by eight circuit station expansion PCB's. The complete system capacity allows for use of up to 112 time slots for stations, CO Lines, DTMF Receivers, or data switching Modules. This extends virtual non-blocking access to all system resources.

A Basic SPD 2856 KSU ships complete with an on-board power supply. The CPB which is the only common equipment required for operation provides the microprocessor for command processing and Voice PCM/TDM switching. The CPB is also equipped with one modular RS-232C I/O port, a connector for one Music On Hold channel that also provides for background music, and an on-board 300 baud modem that provides access to the system for data base programming or remote maintenance and or diagnostics. Modules to provide additional I/O ports, and an optional 1200 baud modem module can also be added to the CPB.

The SPD 4896 is the fourth and largest member of the Starplus family of Digital Systems and when fully configured supports a maximum of 48 CO/PBX/Centrex lines and 96 digital station devices. The SPD 4896 is card slot cabinet oriented with plug in modules (cards) expanding the system via station boards and CO boards. The boards are configured as 12 CO/PBX/Centrex lines, 12 digital stations, or 12

single line stations. **A** complete system capacity allows for use of up to 144 ports for Stations, CO Lines, or Data switching Modules. This extends non-blocking access to all system resources. In its initial release the system is configured in a pre mapped arrangement, where peripheral boards are plugged into designated slots. In future releases, the peripheral boards will be universally assignable. The hardware architecture is built so that future expansion in both CO lines and Stations can be accomplished by upgrading software and adding plug in boards.

The system KSU is powered by modular power supplies that are mounted on the sides of the cabinet. The cabinet is divided so that one power supply will support a system configured with up to 48 CO lines and 60 stations (key or SLT). If the CO line or station requirements exceed the aforementioned configuration, the second power supply is needed. The second power supply will support the 48x96 configuration as well as possible future expansion requirements.

The digital systems are installed using industry standard blocks, jacks and skinny wire cabling. This combined with the ability to program the system using a key terminal (digital display terminal) reduces installation cost and maintenance requirements.

All CO interfaces are equipped with transformer barriers, for system classification as an FCC fully protected system. Each CO circuit supports rotary (out-pulse) dialing and loop supervision (disconnect detection) under software control. The DTMF tone signals and system supervisory tones can be generated in each keyset or on the main PCB. All Starplus Digital systems use a proprietary tone plan for providing internal progress tones with the exception of OPX stations which are provided with a "precise" tone plan.

The Starplus family of digital terminals include an Executive (display), Enhanced (non-display) Digital Terminals, and a Basic (non-display) Digital terminal. Optional station terminals include a Digital DSS Console, and a Single Line Adapter (Off-Premise Extension (OPX) adapter) which are all upward and downward compatible to the entire Starplus digital product line.

The system architecture allows system programming changes to be made without interrupting state event software control of normal communications. Call processing continues while the customer data base is updated. All programming changes to the customer data base programming are made either from a digital terminal (digital display terminal) connected to Port 01 or from a data terminal or PC connected (except in the SPD 612) to either a I/O port or remotely via the on-board modem.

The Starplus product line is tailored to meet immediate and long term customer needs. Most commonly used features are activated by direct button selection. However, **many functions** may be alternately accessed by dialing specific codes or as another option by assigning these dial codes to a flex button on a digital terminal. This permits flexible use of the Starplus Digital systems.

Future software enhancements and upgrades are easily retrofitted and installed in the systems. This will, in most cases provide backward compatibility with existing Starplus Digital hardware further reducing the cost to upgrade or add features to an installed system.

## 400.2 COMMON EQUIPMENT FOR THE SPD 4986 SYSTEM

The following components are necessary to operate the Starplus Digital Key Telephone System. Refer to Appendix B for a complete Starplus Digital Key Telephone System component list with Part #'s.

- Equipment Cabinet w/Power Supply (KSU)
- Central Processor Unit (CPU)
- Voice Control Board **(VCB)**
- CO Line (Loop) Board (C012)
- Key Telephone Board (KT12)
- Single Line Board (SL12)

### A. Equipment Cabinet With Power Supply (KSU)

The KSU is wall mounted. It is of metal construction with a backplane motherboard that has 23 card slots. The CPU card is inserted into the CPU slot. Slots 2, 3, and 4 are reserved for future common cards. The VCB card is inserted into the VCB slot. The remaining slots are designated Slots 1 thru 19 for peripheral cards. The system defaults to a configuration that designates peripheral slots 1, 2, 3 and 4 for Station boards, peripheral slots 5, 6, 7, and 8 for CO boards, and peripheral slots 9, 10, 11 and 12 for the remaining station boards. Refer to Figure 400-I Basic KSU Cabinet.

### Grounding:

A No. 14 AWG copper wire should be used to connect a ground between the ground source and the KSU (25 feet maximum). A two-position terminal strip (J25) is located on the lower right corner of the backplane and is accessible through the right side of the KSU. One terminal position can be used to connect the ground wire from a ground source.

**Figure 400-I Basic KSU Cabinet**

## Power Supply

The system KSU is powered by modular power supplies that are mounted on the sides of the cabinet. The cabinet is divided so that one power supply will support a system configured with up to 48 CO lines and 60 stations (key or SLT). If the CO line or station requirements exceed the aforementioned configuration, the second power supply is needed. The power supplies provide the system with 24V power. They are plugged into a 120V ac circuit. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

## B. Central Processor Unit (CPU)

This plug-in card is one of two common equipment cards required to make the system operational. The CPU card controls all system activity. The CPU contains the main microprocessor a 16-bit (68302), the slave microprocessor (another 68302), and a real time clock. The master and slave CPU chips are connected via a serial communications link. The CPU is responsible for all control functions, execution of all logic operations, and control of system modules. The master CPU also provides software and hardware support to ensure the following:

- Watch dog timer and recovery.
- State/Event software design.
- Battery Backup of Customer Database RAM memory.

The slave CPU ensures the following signal processing functions are done:

- PCB status as to presence/absence of cards for automatic software configuration setup.
- Interpret an ID code from each PCB so that card type can be determined automatically.
- Process interrupts from peripheral cards and scan VCB.

In addition there is one RS-232 (modular connector) input/output port on the CPU and a connector to support the use of an optional Backplane I/O expansion module. The Backplane I/O Expansion Module adds two RS-232C I/O ports to the system for a system total of three I/O ports. A reset (halt) push button switch is located on the front of the PCB.

System software is provided in EPROM memory and is installed on the CPU. The CPU contains 512 kilobytes (expandable to 4MB) of EPROM memory storage and is equipped with 256K of battery-backed static RAM (expandable to 2MB). Provisions have been made on the card to address up to four megabytes of EPROM memory and up to two megabytes of static RAM.

- A Battery jumper strap is located on the CPU board. Jumpering from pins 1 & 2 disables the Battery Backup. Between pins 2 & 3 enables the Battery Backup option.
- The CPU allows the use of either 1 Megabit or 4 megabit static RAM chips to be used for RAM memory.

## LEDs & Indicators

Three green LEDs located along the front edge of the CPU provide an indication of the presence of -12V dc, +12V dc & -5V dc. Two red LEDs provide the system heartbeat indication.

## I/O Ports - Wiring/Pinouts/Connections

The Central Processor Unit contains one RS-232C, 8-pin modular jack type connector, I/O port (future) located near the front edge of the PCB. This I/O port will be capable of transmitting and receiving data at 300, 1200, 2400, 4800, and 9600 baud rates.

In the future, this I/O port can be used for SMDR output, Remote programming thru a data terminal or PC, ICLID output, or interfacing with a customer provided ACD Reporting package.

**Figure 400-2 Central Processing Unit (CPU)**

**C.** **Voice Control Board (VCB)**

The Voice Control Board (VCB) provides the time slot switch to control the digital switching information. The system tones are also generated on this board.

**LEDs & Indicators**

There are two LEDs on the board to indicate the +5V dc and - 5V dc.

**Modem Interface**

The Voice Control Board **(VCB)** contains an "On-Board" modem that is capable of transmitting data at a rate of 1200 baud. The modem supports and is compatible with the Hayes command protocol.

The Bell System (Western Electric) standards 103 and 212A for modem design is incorporated into the design of this modem. The modem operates on-line in both Full and Half duplex modes.

**Wiring / Pinouts / Connections**

There are two phono input connectors on the board. One connector is for background music and the other is 'for music on hold. There are also two potentiometers to adjust each music source.

+5V
-5V

Background
Music Input

Music-On-
Hold Input

BGM
Adjust
MOH
Adjust
T1 Clock
(future)

Not
Used

MODEM

**Figure 400-3 Voice Control Board (VC8)**

### D.   Key Telephone Board (KT12)

The Key Telephone Board (KT12) provides the interface to twelve digital telephones. This board can be plugged into any designated station slot.

### LEDs & Indicators

The Key Telephone Board (KT12) contains two LEDs to indicate the presence of +5V dc and -5V dc. The LEDs are located on the top portion of the board.

### Line/Station  Interfaces

The Key Telephone Board (KT12) has one male 50-pin amphenol connector on the front edge. This will interface the circuits on the board to the MDF.

The board also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards.

A Digital DSS Console, a Single Line Telephone Adapter (OPX), or other specifically designed adapter with a digital interface can be assigned to ariy one of the interface circuits. The Key Station interface circuits are protected from mis-wiring and over-current.

> **NOTE**
> **1**
> *External Paging Zones start from Card Slots 1 thru 4. for External Paging Zones 1 thru 4. Card Slots 9 thru 11 represent External Paging Zones 5 thru 7. If a Single Line Board (SL12) is inserted between two Key Staffon Boards (KT12), the External Paging Zone associated wifh fhsf card slat becomes unusable.*



Figure 400-4 Key Telephone Board (KT12)

E.  **Single Line Board (SL12)**

The Single Line Telephone board provides the interface for 12 2500-type single line telephones. This board can be plugged into any designated station slot. It is recommended that the Tri-Output Power Supply be used with this card to provide the 90V ac and -48V dc voltages.

> **NOTE**
> *Only one Ring Generator is required per system. One Tri-Output Power Supply will accommodate two SL12 boards. When an SL12 board is installed, it is recommended that the DTM4 DTMF Receiver Module be installed at the same time. If 3 or more SL12 boards are installed in the system, at least 1 DTM4 should be installed. However, no more than 3 SL12 boards with DTM4 receivers on them can be installed in the system.*

Message Waiting capability comes installed on the Single Line Telephone Board. This circuitry provides message waiting lamps to single line telephones equipped with message waiting lamps and supports up to 12 Single Line Telephone Message Waiting lamps at 90V dc typically across tip and ring.

**LEDs & Indicators**

The board contains three LEDs to indicate the presence of +5V dc, - 5V dc and -48V dc. The LEDs are located on the top portion of the board.

**Line/Station Interfaces:**

The Single Line Telephone board has one female 50-pin amphenol connector on the front edge. This interfaces the circuits on the board to the MDF. The board has one two-conductor molex connector to provide an input for 90V ac ring. A second two-conductor molex connector interfaces -48V dc to the card. Each SL12 installed in the system must have both 90V ac and -48V dc applied to it via these connectors. The card also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards.

These single line telephones can be equipped with a standard Message Waiting Lamp (90V T & R) that operate on the "tip" and "ring" leads. Additionally each circuit provides a loop interrupt of 700ms duration. This is the duration of loop interrupt provided to a single line port if loop interrupt is detected on a CO line that the single line port was connected to. Also provided if a station calls an SLT port and hangs up. The card will support single line telephones up to 2000 feet from the Basic KSU cabinet. Refer to Table 400-4 Loop Limits for additional wiring information. On-premise single line telephones should present a load to the port totaling a maximum ringer equivalence of 2.5.



**Figure** 400-5 Single Line Telephone **Board (SL12)**

## F. CO Loop Interface Board (C012)

This board interfaces 12 Loop Start CO lines to the system. This board can be plugged into any designated trunk slot.

### LEDs & Indicators

The board contains two LEDs to indicate the presence of -5V dc and +5V dc. In addition, the board has 12 red LEDs to provide the status of each CO line on the board. A lighted LED will indicate an in-use condition, while an un-lit LED reflects an idle state.

### Line/Station Interfaces

The board has one female 50-pin amphenol connector on the front edge. This will interface the circuits on the board to the MDF.

Figure 400-S 1 P-Circuit CO Line Board (CO1 2)

## 400.3    APPLICATION MODULES

### A.    4-Circuit DTMF Receiver Module (DTM4)

This board provides four DTMF receivers for SL12 boards. This board is connected onto each SL12 board. Each SL12 board may contain 1 DTM4 board. No more than 3 SL12 boards with DTM4 Receiver Modules on them can be installed in the system.

### Wiring / Pinouts / Connections

The board has one molex connector at each end that plugs onto metal pins located on each SLT board.

Generally, one receiver will support DISA and/or eight SLT stations under light to moderate traffic. If SLT and or DISA traffic is heavy, additional DTMF receivers should be added. It is also recommended to add additional DTMF Receivers when a Voice Mail or Auto Attendant is connected to the system.

### B.    Tri-Output Power Supply

The Tri-Output power supply interfaces with the Single Line Board (SL12) and contains a -48V dc supply, 24V dc supply, and a Ring Generator. This is a wall mountable unit and contains screw type terminals for its connections. Each Tri-Output power supply can accommodate two SL12 boards for the -48V supply. The Ring Generator portion of the Tri-Output power supply can accommodate all SL12 boards installed in the system.

The Tri-Output power supply can provide a -48V dc source up to 1 amp of current. The 24V dc source will handle up to 1 amp of current. The Ring Generator can supply up to 5 watts of Ring voltage.

### C.    Backplane I/O Expansion Module

The Backplane I/O Expansion Module is a wall mount unit with a 36-pin input connector and four RS-232C output connectors.

The Backplane I/O Expansion kit consists of one connecting cable and the I/O Expansion Module.

Locate the Backplane I/O Expansion Module in a location on the MDF backboard convenient to the KSU.

## 400.4 DIGITAL TERMINALS

### A. Executive (Display) Terminal

The 34-button Digital Terminal is one in a line of Digital electronic telephone terminals. The line consists of an Executive (Display) telephone, an Enhanced (non-display) telephone and a Basic telephone. These telephones are designed to operate with the new line of Starplus Digital Key Systems and PBX Systems.

The digital terminals are connected to the KSU via a four wire (two twisted pair) connection from an appropriate electronic terminal interface board.

### LCD Display:

The Executive Digital Display Terminal has a 48 character Liquid Crystal Display. The display provides information such as station extensions calling, Line ringing information, camp-on information, Message waiting information and so on. The LCD Display is a 48-character display divided into 3 fields:

- Field 1 = Current Status (top line, 24- characters)
- Field 2 = Date (Left half of bottom line, 12-characters)
- Field 3 = Time of day (Right half of bottom line, 12-characters)

These fields are separately maintained by the KSU processing to show current and pending station activity. Each field is re-created upon any display change except additional digits which are added to the end of the existing display.

The terminal communicates to the KSU through two 64K digital channel arrangements. One channel is used as the primary voice channel, a second is used for terminal to KSU command transmission. Power is also provided to the terminal via the four wire connection.

### Buttons and LEDs:

The Executive Digital Terminal printed circuit board provides long life "super bright" Light Emitting Diodes (LEDs) and button assemblies that protrude through the top housing. The buttons are small rectangular in shape with a clear end for proper LED visibility and diffusion. The Executive Digital Terminal has 34-buttons all containing LEDs plus a 12-key dial pad.

The Executive Digital Terminal scans the key board for dial pad and button debounces and depressions for command transmission to the KSU. The keyset has the following buttons defined as follows:

### Display and Non-Display:

I2 Dial Key Pad*

28 Flexible Buttons, of which there is:
- 1 Camp-On button (flexible)
- 1 Line Que button (flexible)
- 1 Call Back button (flexible)
- 1 Pick-up button (flexible)
- 1 MSG button (flexible)
- 1 FWD button (flexible)
- 1 DND button (flexible)
- 1 **CONF** button (flexibie)

6 Fixed Feature buttons:
- 1 **HOLD** button (fixed)
- 1 **TRANS** button (fixed)
- 1 FLASH button (fixed)
- 1 **SPEED** button (fixed)
- **1 MUTE** button (fixed)
- 1 ON/OFF button (fixed)

\* All buttons except the 12-key dial pad have an LED associated with it. Refer to Figure 400-7 Starplus Executive Digital Terminal.

### Speakerphone:

Each Executive Digital Terminal is equipped with a unit that enables the telephone to be used handsfree in two-way conversations. The user activates the speakerphone by pressing the ON/OFF button (LED lights steady). To terminate a speakerphone call, the ON/OFF button is toggled OFF (LED extinguished). The MUTE feature is used in conjunction with the speakerphone option. To mute the speakerphone microphone, the MUTE button is pressed (LED lights steady). To reactivate the microphone, the MUTE button is pushed again (LED extinguished).

Several programmable options control the speakerphone operation. Each digital terminal can be programmed for full speakerphone operation, or monitor/On-Hook dialing capabilities with no full speaker phone operation.

When Automatic Pre-selection is enabled at the station when any button is pressed (i.e. CO, DSS, Page etc...) the station- and speakerphone is automatically activated.

### Volume Controls:

Separate "slide" switches are provided on the front of the Starplus Digital Terminal to adjust the volume of the voice and tones presented to the terminal speaker.

**Figure 400-7 Executive Digital Terminal**

- The "SPKR VOL" will control all voice signals sent to the speaker i.e. Speaker Phone conversations, BGM, and Page announcements.
- The "RING VOL" will control all tone signals presented to the speaker i.e. Ringing, splash tones, Camp-On etc... Muted ringing will also be controlled by the ringing volume slide switch. The muted ringing volume will be proportionately quieter than normal ringing based on the current switch setting.

### H-T-P Switch:

A three position slide switch is located on the front of the Digital Display Terminal that controls the method of receiving intercom calls.

- The "H" position allows intercom call announce with hands free reply.
- The "T" position provides Tone only intercom ringing
- The "P" position allows Call Announce intercom calls only.

This switch allows users to set and control the method in which they receive their intercom calls. However, a dial code that users can dial before placing an intercom call can override a called station's switch setting of H or P to force the station to Tone ring.

### Directory Tray:

Each Executive Digital Terminal is equipped with a slide-out Directory Tray accessed from the front of the digital terminal.

### Wall Mounting:

The Executive Digital Terminal was designed with a reversible base that will allow the terminal to be wall mounted on industry on industry standard 630 type wall jacks. A 4-inch line cord is also provided as a standard item with each phone (the line cord is placed inside the reversible wall mount base).

### Handset/line Cords:

The Executive Digital Terminal uses a color coordinated K-Style handset with a matching 12-foot handset cord. A 9-foot four conductor base line cord is included with every Terminal.

The Executive Digital Terminal uses an electret-type transmitter. Compatible headsets can be plugged into the Terminals handset jack for headset operation.

8.  Executive/PC **interface Terminal (ICLID)**

The Executive/PC Interface Terminal is similar to the Executive Display model and all of the information listed above applies to the Executive/PC Interface model except this terminal is

used to deliver specific data messages identifying call states to a device attached to the phone via a serial channel following the data transmission requirements of RS-232C. The interface parameters to be used are 2400bps, no parity, 8 data bits, and 1 stop bit. This feature will deliver ICLID data to a Personal Computer attached to the phone for look-up of customer records and subsequent processing by the individual answering the telephone call. Calls can also originate from the Personal Computer through the digital terminal.

The Executive/PC Interface terminal provides transmit, receive, and ground data lines from the phone micro-processor which are used on command from the KSU to output information. The use of this capability would be to output the ICLID information to a PC attached to the phone. The VODAVI Call Tracker software program is available to support these Caller ID applications. Future use could be made of this capability for low speed data provided to equipment attached to the phone.

C.  **Enhanced Digital Terminal**

The Enhanced Digital Terminal is similar to the Executive Digital Terminal and all of the information listed above applies except there is no LCD display.

Figure 400-8 Enhanced Digital Terminal

### D. Basic Digital Terminal

The Basic Digital Terminal is one in a line of digital electronic telephone terminals. This new telephone is designed to operate with the line of Starplus Digital Key Systems and PBX Systems.

### Buttons and LEDs:

The Basic Digital terminal key board PCB provides long life "super bright" Light Emitting Diodes (LEDs) and button assemblies that protrude through the top housing. The buttons are small rectangular in shape with a clear end for proper LED visibility and diffusion. The 14-button Digital Terminal has eight buttons all containing LEDs plus a 12-key dial pad.

The Basic Digital Terminal scans the key board for dial pad and button debounces and depressions for command transmission to the KSU. The keyset has the following buttons defined as follows:

12 Dial Key Pad*

14 buttons, 8 of which are flexible
- 1 CO tine 1 button (flexible)
- 1 CO tine 2 button (flexible)
- 1 LOOP button (flexible)
- 1 POOL button (flexible)
- 1 MSG button (flexible)
- 1 FWD button (flexible)
- 1 DND button (flexible)
- 1 CONF button (flexible)

6 Fixed Feature buttons:
- 1 HOLD button (fixed)
- 1 TRANS button (fixed)
- 1 FLASH button (fixed)
- 1 SPEED button (fixed)
- 1 MUTE button (fixed)
- 1 ON/OFF button (fixed)

* All buttons except the 12 key dial pad, have an LED associated with it. Refer to Figure 400-9 Starplus Basic Digital Terminal.

Speakerphone:

Each Basic Digital Terminal is equipped with a unit that enables the telephone to be used handsfree in two-way intercom conversations only. The user activates the speakerphone by pressing the ON/OFF button (LED lights steady). To terminate a speakerphone call, the ON/OFF button is toggled OFF (LED extinguished). The MUTE feature is used in conjunction with the speakerphone option. To mute the speakerphone microphone, the pre-programmed MUTE flex button is pressed (LED lights steady). To reactivate the microphone, the MUTE button is pushed again (LED extinguished).

### Volume Control:

Separate "slide" switches are provided on the front of the Starplus BasicDigital Terminal to 'adjust the volume of the voice and tones presented to the terminal speaker.
- The "SPKR" slide switch controls the speaker volume which controls all voice signals sent to the speaker i.e. intercom conversations, BGM, and Page announcements.
- The "RING" slide switch controls the ringing volume which controls all tone signals presented to the speaker i.e. Ringing, splash tones, Camp-On etc... Muted ringing is also controlled by the slide switch. The muted ringing volume will be proportionately quieter than normal ringing based on the current switch setting.

### H-T-P Switch:

A three position slide switch is located on the front of the Basic Digital Terminal that controls the method of receiving intercom calls,
- The "H" position allows intercom call announce with hands free reply.
- The "T" position provides Tone only intercom ringing
- The "P" position allows Call Announce intercom calls only.

This switch allows users to set and control the method in which they receive their intercom calls. However, a dial code that users can dial before placing an intercom call can override a called station's switch setting of H or P to force the station to Tone ring.

### Directory Tray:

Each Basic Digital Terminal is equipped with a slide-out Directory Tray accessed from the front of the digital terminai.

### Wall Mounting:

The Basic Digital Terminal was designed with a reversible base that allows the terminal to be wall mounted on industry standard 630 type wall jacks. A 4-inch line cord is also provided as a standard item with each bracket.

### Handset/ line Cords:

The Basic Digital Terminal uses a color coordinated K-Style handset with a matching 12-foot handset cord. A 9-foot four conductor base line cord is included with every Terminal.

Figure 400-9 Basic Digital Terminal

The Basic Digital Terminal uses an <u>electret-type</u> transmitter. Compatible headsets can be plugged into the Terminals handset jack for headset operation.

### E. Digital DSS/DLS Console

The Digital Direct Station Selector /Direct Line Selector (DSS/DLS) Consoles can be installed in place of any digital terminal circuit. The DSS/DLS Digital Console was designed in a housing similar in looks to the 34-button digital terminal.

The Direct Station Selector/Direct tine Selector (DSS/DLS) Console to be used with the family of Starplus digital systems is modular in nature. The DSS/BLF console provides 48 buttons (3 columns of 16 buttons) and requires a separate four-conductor line cord each connected to a digital terminal station port.

The DSWDLS Console unit can access Stations, Direct Appearing CO tines, or features that may be assigned to any of the flexible buttons.

A DSS/DLS unit may be assigned to one of the different MAP configurations available. Any one of the four MAP configurations may be assigned to the DSS/DLS and any number of maps may be assigned to one station. However, MAPs that have buttons assigned as CO lines cannot be changed, buttons assigned as Stations can be changed by the user. Up to three DSS/DLS units may be assigned to one station.

### DSS/DLS Console Button Mapping

The buttons on the DSS/DLS console can be mapped with either a combination of fixed and flexible or completely flexible buttons where the station user may change the button programming to suit their needs.

There are four pre-defined MAPs for the DSWDLS Console with default Button Programming. Refer to Figure 400-I 1 DSS Console Map 1, Figure 400-12 DSS Console Map 2 and Map 3, and Figure 400-13 DSS Console Map 4 for a button layout of each DSS Console Map.

Figure 400-I 0 48-Button DSS/DLS Console

**MAP #1** has by default the first 12 CO lines and the first 36 Stations 100-135. This provides a default layout of a 12x36 configuration.

| LINE 1 | STA 104 | STA 120 |
| LINE 2 | STA 105 | STA 121 |
| LINE 3 | STA 106 | STA 122 |
| LINE 4 | STA 107 | STA 123 |
| LINE 5 | STA 108 | STA 124 |
| LINE 6 | STA 109 | STA 125 |
| LINE 7 | STA 110 | STA 126 |
| LINE 8 | STA 111 | STA 127 |
| LINE 9 | STA 112 | STA 128 |
| LINE 10 | STA 113 | STA 129 |
| LINE 11 | STA 114 | STA 130 |
| LINE 12 | STA 115 | STA 131 |
| STA 100 | STA 116 | STA 132 |
| STA 101 | STA 117 | STA 133 |
| STA 102 | STA 118 | STA 134 |
| STA 103 | STA 119 | STA 135 |

**Figure 400-I 1 DSS Consoie Map 1**

**MAP #2** has by default the first 48 Stations, 100-l 47. All buttons on Map #2 are flexible and can be changed by the station user. This map can be duplicated on another DSS/DLS Console and assigned to the same station.

**MAP #3** by default is intended to be used with Map #2 in that it has the remaining stations, 148-195 to provide a full Station mapping. All of the buttons on Map #3 are flexible and can be changed by the user. This map can be duplicated on another DSS/DLS Console and assigned to the same station.

| STA 100 | STA 116 | STA 132 | STA 148 | STA 164 | STA 180 |
| STA 101 | STA 117 | STA 133 | STA 149 | STA 165 | STA 181 |
| STA 102 | STA 118 | STA 134 | STA 150 | STA 166 | STA 182 |
| STA 103 | STA 119 | STA 135 | STA 151 | STA 167 | STA 183 |
| STA 104 | STA 120 | STA 136 | STA 152 | STA 168 | STA 184 |
| STA 105 | STA 121 | STA 137 | STA 153 | STA 169 | STA 185 |
| STA 106 | STA 122 | STA 138 | STA 154 | STA 170 | STA 186 |
| STA 107 | STA 123 | STA 139 | STA 155 | STA 171 | STA 187 |
| STA 108 | STA 124 | STA 140 | STA 156 | STA 172 | STA 188 |
| STA 109 | STA 125 | STA 141 | STA 157 | STA 173 | STA 189 |
| STA 110 | STA 126 | STA 142 | STA 158 | STA 174 | STA 190 |
| STA 111 | STA 127 | STA 143 | STA 159 | STA 175 | STA 191 |
| STA 112 | STA 128 | STA 144 | STA 160 | STA 176 | STA 192 |
| STA 113 | STA 129 | STA 145 | STA 161 | STA 177 | STA 193 |
| STA 114 | STA 130 | STA 146 | STA 162 | STA 178 | STA 194 |
| STA 115 | STA 131 | STA 147 | STA 163 | STA 179 | STA 195 |

**Figure 400-12 DSS Console Map 2 and Map 3**

**MAP #4** by default contains all 48 CO tines to provide a full CO Line mapping.

| | | |
|---|---|---|
| LINE 1 | LINE 17 | LINE 33 |
| LINE 2 | LINE 18 | LINE 34 |
| LINE 3 | LINE 19 | LINE 35 |
| LINE 4 | LINE 20 | LINE 36 |
| LINE 5 | LINE 21 | LINE 37 |
| LINE 6 | LINE 22 | LINE 38 |
| LINE 7 | LINE 23 | LINE 39 |
| LINE 8 | LINE 24 | LINE 40 |
| LINE 9 | LINE 25 | LINE 41 |
| LINE 10 | LINE 26 | LINE 42 |
| LINE 11 | LINE 27 | LINE 43 |
| LINE 12 | LINE 28 | LINE 44 |
| LINE 13 | LINE 29 | LINE 45 |
| LINE 14 | LINE 30 | LINE 46 |
| LINE 15 | LINE 31 | LINE 47 |
| LINE 16 | LINE 32 | LINE 48 |

**Figure 400-13 DSS Console Map 4**

## 400.5    SLT ADAPTER / OFF-PREMISE EXTENSION MODULE

This external module provides the interface for one long loop (OPX) single line telephone (2500 type) extension. This module requires a separately provided -48V dc power supply to provide the necessary current for long loop applications and to support ring generation. This module is wired to and interfaces with a digital terminal (key station) port from the Starplus SPD 4896 System.

The OPX box meets the requirements of the FCC for connection to the telephone (Telco) network. Telephones connected to the OPX box must be DTMF only (2500 type).

This module also provides for one Power Fail circuit in the event of an AC power failure and contains its own DTMF receiver..

Figure 400-14 Off-Premise Extension (OPX) Module

400.6 **RELAY / SENSOR INTERFACE MOD-
ULE**

The Relay Sensor Interface Module connects to the Starplus SPD 4696 System using one digital station port and provides three relay activated contacts and three sensing circuits. The system will support up to 4 Relay/Sensor Modules. The relays provide for applications such as Loud Bell Control contacts, CO Line control contacts, RAN Start contacts, Page Relays, Power Fail contact

and additional applications as software will permit. The sensing circuits provide for such applications as RAN Stop (end of message) and other applications as developed and allowed by software.

An external power source is required to drive equipment connected to the relay contacts. The contacts are rated at 24V dc max. at 1 amp.

Figure 400-15 Relay / **Sensor** Interface Module

### 400.7 POWER FAILURE TRANSFER UNIT (PFTU)

This unit provides the relay transfer circuits for up to 12 CO lines in the event of a power or processor failure. The unit is housed in its own enclosure and mounts external to the KSU. Activation of the PFT relays is controlled by the Relay/Sensor Interface Module that is programmed for PFT. A customer provided 12V dc power supply is required to operate the unit. There is a manual switch that activates the PFTU for testing purposes.

With loss of power to the system or a failure of system processing, the PFTU will automatically connect up to twelve CO lines to prewired 500/2500 type telephones. When power is restored, the PFTU will automatically restore the CO trunks and stations to normal operation. These SLT stations do not have to be used for'intercom, but can be if so desired.



Figure 400-16 Power Failure Transfer Wiring Options

POWER FAILURE TRANSFER UNIT (PFTU)

CHAMP CONN 1

RJ21X
(TELCO)

CO1 TIP IN — W/BL

CO1 RING IN — BL/W

MDF

W/OR

SPARE — OR/W

CO12

STA1 TIP OUT — W/GN

NOTE: Contacts are
shown in power
fail mode

STA1 RING OUT — GN/W

SINGLE LINE
INTERFACE BOARD (SL12)
(SEE NOTE)

STA1 TIP IN — W/BN

STA1 RING IN — BN/W

SIX CIRCUITS

NOTE: Connection to SL12 Interface is optional

CHAMP CONN 2

SIX CIRCUITS

**Figure 400-17 Power Failure Transfer Circuit**

## 400.8 DATA FEATURE

The Data Feature is a time division switched, point to point data transmission capability which permits simultaneous (on the same system but not the same port) voice and data communications. The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports.

To establish a Data call, a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous. Refer to Figure 400-18 Digital Data interface Unit (DDIU) wiring

The Digital Data interface Unit (DDIU) is wired to the infinite Digital Key Telephone Systems like a digital telephone, and requires one station port.

All connections to the DDIU are made on the back panel. The back panel has a modular jack and a DB-25 type connector. The modular jack, labeled KSU, is used to connect the DDIU to the station port of the system. The DB-25 connector supports an RS-232C connection and is used to connect the data device to the system.

A green LED lights to indicate the DDIU is properly wired to the system.

Connection of the individual data communication devices requires that the installer be familiar with data communications terms, and has access to the appropriate information for connecting the variety of data communications devices that may be encountered. This information consists of, but is not limited to:

1. Is the device configured as data terminal equipment (DTE), or data communications equipment (DCE.

2. What pin on the RS-232C type connector performs what function?

3. What signal leads are required to make the device operate?

When planning the installation of the data feature, use a digital display phone at any location that is to originate a data connection. A DDIU can only be called; it cannot originate a connection. A DDIU would typically be used in conjunction with the digital display phone. A DDIU would typically be connected to a printer, or a MODEM.

The station wiring for a digital display phone and a DDIU are identical.

The data connector of the Digital Data Interface Unit (DDIU) is a 25-pin, type D connector which is configured as Data Communications Equipment with the following pin configurations.

| PIN # | USE | DIRECTION |
|---|---|---|
| 2 | Receive Data | DDIU |
| 3 | Transmit DATA | DDIU |
| 4 | Request To Send | DDIU |
| 5 | Clear To Send | DDIU |
| 6 | Data Set Ready | DDIU |
| 7 | Signal Ground | |
| 8 | Data carrier detect | DDIU |
| 20 | Data Terminal Ready | DDIU |

The following diagram will aid in the design of cables to connect the many different configurations of data communications devices.



Digital **Systems Data Switching**



**Modem to DDIU Cable**

**Figure 400-18 Digital Data Interface Unit (DDIU) wiring**

```
        P C                              DDIU

       GND 1  ────────────────────  1 GND
        TD 2  ──────────────────▶   2 RD
        RD 3  ◀──────────────────   3 TD
        SG 7  ────────────────────  7 SG
       RTS 4  ──────────────────▶   4RT. S
       CTS 5  ────────────────────  5 CTS
      DTR 20  ──────────────────▶   20 DTR
       DSR 6  ◀──────────────────   6 DSR
       DCD 8  ◀──────────────────   8 DCD
       RI 22  ◀──────────────────   22 RI
     TX CLK 15 ◀─────────────────   15 TX CLK
     RX CLK 17 ◀─────────────────   17 RX TLK
```

### Computer to DDIU Cable

To establish a connection to any idle data port:

1. A user with an associated DDIU dials the station number of the DDIU or the group access number of the group that the DDIU has been inserted into or presses a DSS button representing the DDIU. The digital key system will then determine the baud rate setting for the called DDIU and convert the users associated DDIU to the same baud rate. The system will then complete the connection.

A second method to establish a connection between two DDIUs is done by the first attendant.

1. The first attendant dials the extension number of one data unit. Dial tone is received and the display will show the BAUD RATE.

2. Then dials the station number of the second data unit, confirmation tone is heard.

To break down an established connection:

1. The station user dials his associated DDIU number or press the DSS button for the associated DDIU followed by pressing the FLASH button. The first attendant can also force a disconnect by dialing one of the DDIUs, followed by pressing the FLASH button,

Conditions:

- The System is transparent to the devices being connected. Therefore each DDIU must be configured with a specific baud rate, number of data bits and number of stop bits. This configuration will be done by the first attendant or in the case of an associated data unit can be configured by the user.

- Data switching is accomplished using the same wiring the telephone station uses for voice switching.

- Data ports can be arranged in UCD Groups or Hunt Groups.

- Data ports do not have to be associated with a keyset, however to connect two DDIU devices one of them must be associated with a keyset unless the connection is made by the first attendant.

- When the data connection has been completed, the baud rate used in the connection will be displayed on the keyset.

- Non associated DDIU connections can be broken down by the first attendant.

- A DDIU has a DCE interface. Therefore a straight through RS-232C cable can be used connect to a DTE device (printer, PC, etc.).

- Each DDIU requires a digital terminal port.

Refer to Station Attributes Programming, 630.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 630.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

### 400.9   SYSTEM SPECIFICATIONS AND CAPACITY

The Starplus SPD 4896 system is card slot cabinet oriented with plug in modules (cards) expanding the system via station boards and CO boards. The boards are configured as 12 CO/PBX/Centrex lines, 12 digital stations, or 12 single line stations. A complete system capacity allows for use of up to 144 ports for Stations, CO Lines, or Data switching Modules.

DSS/DLS's can be installed in place of any Digital Key terminal. Standard single line telephones (2500 type) can be supported instead of key stations by installing single line boards (SL1 2) in place of the key station board (KTI2). Twelve single line telephones can replace 12 Digital Display Terminals for each board exchanged. An ON/OFF switch is located on the front of the power supply.

- The system capacities are listed in Table 400-l Digital System Capacities.

- Electrical specifications are listed in Table 400-2 Electrical Specifications.

- Environmental specifications are iisted in Table 400-3 Environmental Specifications.

- Loop limits are listed in Table 400-4 Loop Limits.

- Dialing specifications are listed in Table 400-5 Dialing Specifications.

- FCC Registrations Numbers are listed in Table 400-6 FCC Registration Numbers.

- Trunk Ordering information for Public Network Lines are listed in Table 400-7 Trunk Ordering Info: Public Network Lines

- Miscellaneous Specifications are listed in Table 400-9 Miscellaneous Specifications.

- Key telephone, Single Line Telephone and OPX Audible Indications are listed in Table 400-10 Digital Terminal Audible Signals, Table 400-l 1 Single tine Telephone Audible Signals and Table 400-12 OPX Telephone Audible Signals.

- Key Telephone Visual Indications are listed in Table 400-l 3 DSS/BLF Button Visual Indicators, Table 400-14 CO Line Button Visual Indicators, and Table 400-15 Function Button Visual Indicators.

**Table 400-l Digital System Capacities**

| | |
|---|---|
| Time Slots: | 144 PCM/TDM time slots |
| Ports: | |
| CO/PBX/Centrex Lines | 48 (max.) loop start (12 per CO1 2 board) |
| Digital Terminal Stations | 96 (max.) Digital Terminals (12 per KT12 board) |
| Standard Single Line Telephones | 84 (max.) Standard 2500 type SLTs (12 per SL12 board) |
| Off-Premise Extensions | 96 (max.) OPX Stations (1 per single line adapter (OPX)) |
| Paging: (one way paging) | |
| Internal Paging | 4 (max.) internal Page Zones (software controlled) |
| External Paging | 7 (max.) One zone per KT12 board. |
| DTMF Receivers: | 12 (max.) per system (one 4-ckt card on each SL12 board) (up to a max of 3 SL12 boards w/DTM4's can be installed in the system) |
| DTMF Sender: | 1 per system (time shared) |
| I/O Ports: | 3 (max.) per system (one RS-232C included on CPU) and two RS-232C on optional Backplane I/O module |
| Contacts/Sensors (Relay Sensor Module) | 4 Relay/Sensor Modules per system. Each Relay/Sensor Module has 3 relays and 3 sensing circuits. |
| Conference: | |
| Circuits | 31 Conference "bridges" per system |
| Parties per "bridge" | 5 parties per "bridge" |
| DISA Circuits: | An unlimited number of CO Lines may be programmed simultaneously. |
| Attendants: | Up to 3 stations can be designated as attendant(s). |
| Digital DSS/DLS Consoles: | 72 (max.) Up to 3 DSS/DLS units can be programmed to function with each station. Each DSS/DLS unit reduced station capacity by 1. (96 Ports ÷ 4= 24 ports. 24 ports x 3 = 72 ports used for DSS Consoles) |
| Hunt Groups: | |
| Groups: | Software supports up to 8 groups. |
| Members: | Software supports up to 8 stations in each group. |
| Types: | Station or Pilot Hunting |
| ACD Groups: | |
| Groups: | Software supports 16 Groups. |
| Members: | Software supports up to 16 stations per group. |
| RAN Announcements: | Eight RAN Announcements with any two per ACD Group. |
| Calls in Queue: | All CO Lines may be in queue for an ACD Group. |
| UCD Groups: | |
| Groups: | Software supports 8 Groups. |
| Members: | Software supports up to 8 stations per group. |
| RAN Announcements: | Eight RAN Announcements per UCD Group. |
| Calls in Queue: | All CO Lines may be in queue for an UCD Group. |
| Voice Mail Groups: | |
| Groups: | Software supports 8 Groups. |
| Members: (ports) | Software supports up to 8 stations per group. |
| Integration Method: | In-Band Signaling. (DTMF) |
| VM Message Wait: | [420] to turn message waiting on, [421] to turn message waiting off. |
| VM Disconnect Signal: | Programmable 12-digit (DTMF) string. If no digits are programmed, 15 seconds of silence followed by busy tone. |
| Loop Supervision Disconnect | 700 msec duration.(CO or Internal call to SLT) |

**Table 400-2 Electrical Specifications**

| | |
|---|---|
| **AC** Input to **Power** Supply: | 117V ac ±10%, 60 Hz single phase |
| Power Consumption: | **120V** ac @750VA max.<br>430 watts maximum (per power supply) |
| Power Supply Fuse - AC input | 1 OA, 250V ac |
| Longitudinal Balance: | Better than 60db from 200 Hz to 1,000 Hz<br>Better than 40db from 1,000 Hz to 4,000 Hz |
| Idle Channel Noise: | Less than 15 dbrnc for all connections |
| Cross Talk Attenuation: | Greater than 75dbm Station to CO and Station to Station |
| Single Frequency Distortion:<br>   (300 Hz - 3400 Hz) | Station to CO Line and Station to Station:<br>Better than 2.0% or 34db<br>Output level -30 dbm to 0 dbm |
| Ringing Sensitivity: | 16 Hz to 30 Hz at 40 VRMS minimum<br>30 Hz to 67 Hz at 50 VRMS minimum |
| Ringer Equivalence Number: (REN) | 1.9B |
| CO Line Signaling - DTMF: | Frequency pair at -5 dbm to 0 dbm<br>Frequency tolerance, better than ±1.5% |
| Music Source (input) | 0 dBm max. at 600 ohms input impedance |
| Contact Rating<br>   Multi Purpose Relay | 1 .OA, 24V dc |
| External Page Port<br>   Output Impedance<br>   Output Power w/o compression | <br>600 ohms @ 0 dBm<br>1 mW Maximum |
| Single Line Adapter (OPX) | Each OPX box requires .5 amps of current. |
| Battery Backup (UPS) Specifications*:<br>   Maximum Current Drain: (per system) | 750VA min., Sine-wave output, on-line type<br>550 watts |
| UL File Number: | EI 09461 |

\* End user must determine battery size needed for desired backup time.

**Table 400-3 Environmental Specifications**

| | |
|---|---|
| Operating Temperature | 32° to 104° F |
| Recommended Operating Temperature | 60° to 80° F |
| Storage Temperature | -40° to 140° F |
| Relative Humidity | 5% to 95% non-condensing |
| Heat Dissipation (BTU's) | 1200 BTU's per power supply (maximum) |

## Table 400-4 Loop Limits

| | |
|---|---|
| Electronic Telephone: (including DSS/DLS Console) | 1000 feet of 26 **AWG** Cable 1000 feet of 24 **AWG** Cable 1000 feet of 22 **AWG** Cable |
| Standard Single Line Telephones | **2000** feet of 24 AWG Cable |
| Off-Premise Extensions (OPX) (Adapter to SLT) | 1400 Ohms maximum loop, not including telephone. |

## Table 400-5 Dialing Specifications

| | |
|---|---|
| DTMF Dialing Frequency Deviation Rise Time Duration of DTMF Signal Interdigit Time | ±1.5% 5 msec. 7.5 msec. minimum 75 msec. minimum |
| PULSE Dialing Pulse Dialing Rate Pulse Break/Make Duration | 10 or 20 pps. 60/40 or 66/33 |
| CO Type | Loop Start, 600 ohm, current sensing |

## Table 400-6 FCC Registration Numbers

| | |
|---|---|
| For Systems configured as a key system (button appearance) use: | DLPHKG-74722 KF-E |
| For Systems configured as a hybrid system (dial access codes) use: | DLPHKG-74723-MF-E |

## Table 400-7 Trunk Ordering Info: Public Network Lines

| SYSTEM PORT IDENTIFICATION, FACILITY INTERFACE & SERVICE ORDER CODES | | | |
|---|---|---|---|
| INTERFACE CARD | RINGER EQUIVALENT NUMBER (REN) | FACILITY LINE INTERFACE | JACK TYPE |
| co Port: | 1.9 | 02LS2 | RJ21 X |
| Off-Premise Extension: (OPX) | | OL13C | RJ21 X |

**Table 400-8 Dimensions and Weight**

| KEY SERVICE UNIT | | 34-BUTTON ENHANCED TERMINAL | |
|---|---|---|---|
| Height | 16" | Height | 3.5" |
| Width | 26" | Width | 7.625" |
| Depth | 15" | Depth | 9.625". |
| Weight | 42 lbs. (unloaded) | Weight | 3 lbs. |
| POWER SUPPLY | | 34-BUTTON EXECUTIVE DISPLAY TERMINAL | |
| Height | 14.5" | Height | 3.5" |
| Width | 7.25" | Width | 7.625" |
| Depth | 6" | Depth | 9.625" . |
| Weight | 19.5 lbs. | Weight | 3 lbs. |
| OFF-PREMISE EXTENSION MODULE (OPX) | | 14-BUTTON BASIC TERMINAL | |
| Height | 1.75" | Height | 3.5" |
| Width | 7.625" | Width | 7.625" |
| Length | 8.0" | Depth | 9.625" |
| Weight | 3.5 lbs. | Weight | 2.0 lbs. |
| RELAY/SENSOR MODULE/DDIU UNIT | | DSS/DLS CONSOLE | |
| Height | 1.75" | Height | 3.0" |
| Width | 7.625" | Width | 7.625" |
| Length | 8.0" | Depth | 9.625" |
| Weight | 3.5 lbs. | Weight | 2 lbs. |
| TRI-OUTPUT SUPPLY | | | |
| Height | 9" | | |
| Width | 4" | | |
| Length | 8.25" | | |
| Weight | 10 lbs. | | |

**Table 400-9 Miscellaneous Specifications**

| Memory: | |
|---|---|
| Programmable Read-Only Memory (EPROM) | 512K expandable to 4 Megabytes |
| Random Access Memory (RAM): | 256K expandable to 2 Megabytes |
| Telephone Transmitter: | Electret mic compatible. |
| Talk Paths: | |
| CO/PBX/Centrex paths: | 48 CO/PBX Centrex talk paths (non-blocking) |
| Intercom Paths: | Non blocking |
| Music Channels: | 2 channels provides for music-on-hold and background music |
| Account Codes: | |
| Number of digits per account code: | up to 12 unverified digits |
| Number of Account Codes: | unlimited (unverified) |
| Speed Dialing Memory: | |
| Station Speed Dial: | 20 bins per station (24-digits) |
| System Speed Dial: | 80 bins per system (24-digits) |
| Total speed dial bins: | 1980 speed locations to be divided among all telephones. |

**Table 400-10 Digital Terminal Audible Signals**

| TYPE OF SIGNAL | FREQUENCY | SIGNAL DURATION |
|---|---|---|
| Key Teleohone Sianals: | | |
| Incoming CO tine | 1215/1471 | 0.8s on/2.4s off; repeated |
| Intercom Tone Ringing | 1215/1471 | 0.4s on/0.4s off/0.4s on/2.0s off |
| Intercom Call Announce (H-P) | 935 | 0.2s on/0.2s off (2 bursts) |
| Transferred CO Line | 1215/1471 | 0.8s on/2.4s off |
| CO Line Recall | 1215/1147 1 | 0.2s on/.6s off, repeated |
| Message Wait Call Back | 1215/1 471 | 0.4s on/0.4s off/0.4s on/2.0s off |
| Message Wait Reminder Tone | 771 | 0.6s on (timed) |
| CO Queue Call Back | 1215/1471 | 0.2s on/0.6s off; repeated |
| Camp-on | 1215/1471 | 0.2s on (1 burst) |
| Paging Alert Tone | 935 | 1 sec. (1 burst) |
| | | |
| Key Teleohone Confidence Tones: | | |
| Intercom Ringback | 701 | 0.4s on/0.4s off/0.4s on/2.0s off |
| Call Announce | 935 | 0.2s on/0.2s off (2 bursts) |
| Busy Tone | 701 | 0.4s on/0.4s off, repeated |
| Error Tone | 701 | 0.2s on/0.2s off, repeated |
| Intercom Dial Tone | 421 | Continuous |
| DND Tone | 701 | 0.2s on/0.2s off, repeat 3x's. pause, 0.6s repeat |
| Paging Confirmation | 935 | 1 sec burst |
| Programming Confirmation | 1471 | 1.4 sec burst |
| Programming Error | 1471 | 0.2s on/0.2s off, 6x's |
| Confirmation Tone | 1471 | 1.4 sec burst. 1 time |

**Table 400-I 1 Single Line Telephone Audible Signals**

| TYPE OF SIGNAL | FREQUENCY | SIGNAL DURATION |
|---|---|---|
| Single Line Sianals: | | |
| incoming CO Line | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| Intercom Tone Ringing | 30 Hz, 50-90V AC | 1.0s on/0.2s off/0.8s on/4.0s off |
| Transferred CO Line | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| CO Line Recall | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| CO Queue Call Back | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| | | |
| Single Line Confidence Tones: | | |
| Intercom Ringback | 440+480 | 1.0s on/3.0s off; repeated |
| Call Announce | 420 | 0.2s on/0.2s off (3 bursts) |
| Busy Tone | 480+620 | 0.5s on/0.5s off; repeated |
| Error Tone | 480+620 | 0.25s on/0.25s off; repeated |
| intercom Dial Tone | 420 | Continuous |
| DND Tone | 480+620 | 0.2s on/0.2s off, repeat 3x's, pause, 0.5s; repeated |
| Paging Time-out | 480+620 | 0.5s on/0.5s off; repeated |
| Call FWD Warning Tone | 420 | 0.2s on/0.2s off (six times) |
| Camp-on Tone | 420 | 0.2s burst (1 time) |
| Conference Warning Tone | 420 | 1 sec burst (1 time) |
| Confirmation Tone | 420 | 1.4 sec burst (1 time) |
| DND Warning Tone | 420 | 0.2s on/0.2s off (6 bursts) |

**Table 400-12 OPX Telephone Audible Signals**

| TYPE OF SIGNAL | FREQUENCY | SIGNAL DURATION |
|---|---|---|
| OPX Signals: | | |
| incoming CO tine | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| Intercom Ringing | 30 Hz, 50-90V AC | 2.0s on/4s off |
| Transferred CO Line | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| CO Line Recall | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| CO Queue Call Back | 30 Hz, 50-90V AC | 2.0s on/4.0s off |
| | | |
| OPX Confidence Tones:* | | |
| Intercom Ringback | 440+480 | 1 s on/3s off |
| Busy Tone | 480+620 | 0.5s on/0.5s off; repeated |
| Error Tone | 480+620 | 0.25s on/0.25s off, repeated |
| intercom Dial Tone | 350+440 | Continuous |
| DND Tone | 480+620 | 0.2s on/0.2s off, repeat 3x's, pause, 0.5s; repeated |
| Paging Time-out | 420 | 0.5s on/0.5s off |
| Call FWD Warning Tone | 420 | 0.2s on/0.2s off (six times) |
| Camp-on Tone | 420 | 0.2s burst (1 time) |
| Conference Warning Tone | 420 | 1 sec burst (1 time) |
| Confirmation Tone | 420 | 1.4 sec burst (1 time) |
| DND Warning Tone | 420 | 0.2s on/0.2s off (6 bursts) |
| *Precise Tone Plan | | |

**Table 400-13 DSS/BLF Button Visual Indicators**

| TYPE OF SIGNAL | INDICATOR FLASH RATES |
|---|---|
| Off-Hook/Busy (All Stations) | Steady |
| Incoming Intercom Ring (Destination) | 120 ipm flutter (Default) |
| Call Announce (Destination) | steady |
| Message Waiting Call Back (Destination) | 120 ipm flutter |
| Do Not Disturb (All Stations) | 480 ipm triple wink |
| Automatic Call Back (Destination) | 120 ipm flash |
| ACD/UCD Available/Unavailable | 60 ipm flash |
| ACD Overflow Station Available/Unavailable | 60 imp flash |

**Table 400-I 4 CO Line Button Visual Indicators**

| TYPE OF SIGNAL | INDICATOR FLASH RATES |
|---|---|
| Incoming CO Ring | 30 ipm flash (Default) |
| Transferred CO Ring | 120 ipm flash |
| Recall | 480 ipm flutter |
| Queued Line | 480 ipm flutter |
| Exclusive Hold | 120 ipm flash |
| System Hold | 60 ipm double wink |
| I-Hold (only when hold preference is system) | 60 ipm wink |
| In Use | Steady |

**Table 400-I 5 Function Button Visual Indicators**

| TYPE OF SIGNAL | INDICATOR FLASH RATES |
|---|---|
| Call Forward (active) | 30 imp flash (Default) |
| Message Waiting (active) | 15 ipm flash (Default) |
| Camp-on (active) | 120 ipm flash |
| Call Back (active-initiator) | 120 ipm flash |
| CO Line Queue (active) | 480 flutter |
| Do Not Disturb (DND active) | 60 ipm flash |
| Mute (microphone off, handset xmit off) | Steady |
| ON/OFF (speakerphone on/on-hook dialing | Steady |
| Conference (active) | Steady |
| Speed (momentarily ON until bin address dialed) | Steady |
| Personalized Messages | 15 ipm flash |
| Intercom Call (Hold Button) | 15 ipm flash |
| Loop | Same as CO Line buttons |
| Pool | Same as CO Line buttons |
| Transfer | Steady until transfer complete |

# SECTION 500

# INSTALLATION

## 500.1  SITE PLANNING

Selection of a suitable location is the most basic, yet most critical consideration in the installation of a telephone system. The following should be considered when choosing an appropriate location for equipment installation:

- Ample space must be allowed to remove the KSU cover, to access assemblies and cards within the cabinet and allow space for the MDF (Main Distribution Frame).

- Location of CO/PBX line terminations must be considered when selecting a location for the KSU. In the case of telephone company line, FCC approved connectors supplied by the telephone company, should be within 5 feet (1.5 meters) of the cabinet/main distribution frame.

- To minimize the length of cable runs between the stations and the system KSU, the location of the majority of the telephone sets (stations) should be taken into consideration when selecting a location for the cabinet.

- A well ventilated, and well lighted area having an optimum temperature range of 60 degrees to 80 degrees F and a relative humidity range of 5 to 90% (non-condensing) must be provided.

- Area lighting should be adequate for installation and maintenance of the system. Hazardous or flammable materials should be removed from the vicinity. The immediate area must not be subject to flooding or excess moisture. The KSU should be isolated from areas of moving machinery or equipment. It is also recommended that static electricity-producing carpets not be installed in this area.

- A separately fused, dedicated 117V ac, ±10%, 15 Amp., 60 Hz, single phase, 3-wire (parallel blade with ground) power outlet should be located within 5 feet (1.5 meters) of the system power supply.

- The KSU and main distribution frame should be placed in an electrically noise free environment, isolated and shielded from equipment that causes electro-magnetic interference (EMI) or radio frequency interference (RFI). Examples of electrical

noise are rotating electrical machinery and arc welding equipment, refrigerators, copy machines, etc. Floor coverings that generate static electricity should also be avoided.

- The system KSU should not be installed close to any equipment which may produce RFI (Radio Frequency Interference) such as a radio frequency transmitter, or microwave oven.

- If the system is to be installed in a location prone to lightning strikes, provide lightning protection on the power line, any station cable runs outside the building, and CO lines.

### A. System Grounding

To ensure that the system will operate properly, a good earth ground is required. Use of the Telco ground (source not demark) or a metallic COLD water pipe usually provides a reliable ground path. Carefully check that the pipe does not contain insulated joints that could isolate the ground. In the absence of the COLD water pipe, a ground rod or other source may be used. A No.14 AWG copper wire should be used between the ground source and the KSU (25 feet maximum). The farther from the ground source, the larger the ground wire used should be. The wire should be kept as short as possible and can be connected to the ground lug provided on the lower left side of the backplane on the KSU with the cover off.

### B. Lightning Protection

The Starplus Digital Key Telephone System should have Central Office lines, Single Line Telephones and Off-Premise Extension stations protected with proper lightning surge arrestors. This will provide protection from damaging surges on sensitive cabling by non-direct lightning strikes.

The protection should contain a compliment of three-element gas-discharge tubes to ground high potential surges, and associated circuits to absorb and filter lower level surges. This type of lightning protection is available through telephone equipment supply houses. Care should be taken to ensure that such protection devices are installed in accordance with the manufacturers instructions and to ensure that no more than one set of protectors be installed on central office lines at the installation premises. Im-

proper installation can be a serious safety hazard.

Failure to provide the proper lightning protection will increase maintenance expense and require more available spare parts.

## 500.2   INSTALLATION PLANNING FOR THE SPD 4696 SYSTEM

Prior planning of the installation will aid in a smooth cut-over and a satisfied customer. Select a suitable location for the system. Determine the number of telephones of each type, and the number of Key Telephone Boards (KT12), Single tine Telephone Boards (SL12) from the sales contract and discussions with the customer. Refer to Figure 500-l Basic KSU Cabinet Mounting Arrangement for additional information.

> **NOTE** *Only one station set is- allowed per digital extension number. it is not possible to bridge digital station ports so that an extension number may appear in more than one location.*

- Programming information should also be gathered from the customer at this time so that the system may be programmed either before, or while the system is being installed.

- Determine the location and type of each telephone, and mark floor plans accordingly.

- Determine the location for the operator stations, and mark the floor plans.

- Arrange for power cabling (if necessary) and station cabling of the site.

- If the system is to be installed in an area subject to frequent lightning storms, consideration should be given to providing additional lightning protection on the CO lines beyond what is provided by the local telephone operating company.

> **NOTE** Installers *should be trained and thoroughly familiar with the &sic components of the system before attempting installation of this product*

## 500.3   SYSTEM COMPONENTS FOR THE SPD 4696 SYSTEM

### A.   Equipment Cabinet With Power Supply (KSU)

The KSU is wall mounted. It is of metal construction with a backplane motherboard that has 23 card slots. The CPU card is inserted into the CPU card slot. Slots 2, 3, and 4 are reserved for future common cards. The VCB card is inserted into the VCB slot. The remaining slots are designated Slots 1 thru 19 for peripheral cards. The system defaults to a configuration

that designates peripheral slots 1, 2, 3 and 4 for Station boards, peripheral slots 5, 6, 7 and 8 are for CO boards, and peripheral slots 9, 10, 11 and 12 for the remaining station boards. Refer to figure 500-2 Basic KSU Equipment Cabinet for circuit board layout and location of connectors.

**Grounding:**

A No. 14 AWG copper wire should be used to connect a ground between the ground source and the KSU (25 feet maximum). A two position terminal strip (J25) is located on the lower left corner of the mother board and is accessible through the right side of the KSU. One terminal position can be used to connect the ground wire from a ground source.

**Power Supply:**

The system KSU is powered by modular power supplies that are mounted on the sides of the cabinet. The cabinet is divided so that one power supply will support a system configured with up to 48 CO lines and 60 stations (key or SLT). If the CO line or station requirements exceed the aforementioned configuration, the second power supply is needed. The power supplies provide the system with 24V power. They are plugged into a 120V ac circuit. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

The power supply is recognized under the Component Program of Underwriters Laboratories Inc.

### B.   Cabinet Installation

Once the area for the telephone equipment has been selected, mount a plywood back board to the wall. The back board size will vary depending upon the size of the MDF. The entire system and frame can be mounted on a 4' x 6' x 3/4" plywood. A fully loaded cabinet can weigh approximately 130 lbs. Make certain proper mounting procedures are followed.

> **NOTE** *Check local building and electrical codes before mounting the system. Forexample, certain areas may require a flame retardant plywood back board.*

1.   Mount the cabinet to the plywood using 3/4" #12 pan-head sheet metal screws such that the top of the cabinet is approximately three feet (1 meter) from the ceiling, and bottom is at least six feet (1.8 meters) from the floor. Make certain before mounting the cabinet that circuit cards slide easily in and out of their respective card slots.

2.   Use the mounting template supplied with the

**Figure 500-I Basic KSU Cabinet Mounting Arrangement**

**Figure 500-2 Basic KSU Equipment Cabinet**

**Figure 500-3 Basic KSU Cabinet Mounting Dimensions**

cabinet to locate the mounting holes. Also refer to Figure 500-3 Basic KSU Cabinet Mounting Dimensions.

> **NOTE** This mi construction techniques fur mounting-to concrete, plasterboard, or wooden surfaces. Proper mounting is the responsibility of the installer.

3. Drill the holes and mount the cabinet.

## C.  Central Processor Unit (CPU)

This plug-in card is one of two common equipment cards required to make the system operational. The CPU card controls all system activity. The CPU contains the main microprocessor a 16-bit (68302), the slave microprocessor (another 68302), and a real time clock. The master and slave CPU chips are connected via a serial communications link. The CPU is responsible for all control functions, execution of all logic operations, and control of system modules. Refer to Figure 500-4 Central Processor Unit (CPU). The master CPU also provides software and hardware support to ensure the following:

- Watch dog timer and recovery.
- State/Event software design.
- Battery Backup of Customer Database RAM memory.

The slave CPU ensures the following signal processing functions are done:

- PCB status as to presence/absence of cards for automatic software configuration setup.
- Interpret an ID code from each PCB so that card type can be determined automatically.
- Process interrupts from peripheral cards and scan VCB.

In addition, there is one RS-232C (modular connector) input/output port on the CPU and a connector to support the use of an optional Backplane I/O Expansion Module. The Backplane I/O Expansion Module adds two RS-232C I/O ports to the system for a system total of three I/O ports. A reset (halt) push button switch is located on the front of the PCB.

System software is provided in EPROM memory and is installed on the CPU. The CPU contains 512 kilobytes (expandable to 4MB) of EPROM memory storage and is equipped with 256K of battery-backed static RAM (expandable to 2MB). Provisions have been made on the card to address up to four megabytes of EPROM memory and up to two megabytes of

static RAM.

- A Battery jumper strap is located on the CPU board. Jumpering from pins 1 & 2 disables the Battery Backup. Between pins 2 & 3 enables the Battery Backup option.
- The CPU allows the use of either 1 Megabit or 4 megabit static RAM chips to be used for RAM memory.

> **NOTE** When two power supplies are installed on the same system and you want to remove the Central Processor Unit from service, *BOTH* power supplies MUST be turned off!

### LEDs & Indicators:

Three green LEDs located along the front edge of the CPU provide an indication of the presence of -12V dc, +12V dc & +5V dc. Two red LEDs provide the system heartbeat indications.

### I/O Ports - Wiring/Pinouts/Connections:

The Central Processor Unit contains one RS-232C, 8 pin modular jack type connector, I/O port (future) located near the front edge of the PCB. This I/O port will be capable of transmitting and receiving data at 300, 1200, 2400, 4800, and 9600 baud rates.

In the future, this I/O port can be used for SMDR output, Remote programming thru a data terminal or PC, ICLID output, or interfacing with a customer developed ACD Reporting software package. Refer to Figures 500-5 and 500-6 for additional information.

**Figure 500-4 Central Processor Unit (CPU)**

Pin #1
Pin #2
Pin #3
Pin #4
Pin #5
Pin #6
Pin #7
Pin #8

CPU I/O 8 Pin Modular Jack Pinout

| KSU (DCE) | | PRINTER TERMINAL (DTE) | |
|---|---|---|---|
| Pin # 8 Pin Mad Jack | | Pin # DB-25 | Pin # DB-9 |
| 6 | Transmit Data | 2 | 3 |
| 5 | Receive Data | 3 | 2 |
| | RTS (Request to Send) | 4 | 7 |
| | CTS (Clear to Send) | 5 | 8 |
| 7 | DSR (Data Set Ready) | 6 | 6 |
| 4 | GND | 7 | 5 |
| 3 | DTR (Data Terminal Ready) DTR must be held high or data from the KSU will stop | 20 | 4 |

RS-232C PINOUT

Data Communication Requirements are:

A) Serial Port Compatible
B) ASCII Code Compatible
C) 8 Data Bits and 1 Stop Bit
D) No Parity
E) Flow Control Method: Xon/Xoff

NOTE: Arrows show flow control direction.

**Figure 500-5 RS-232C Printer Connections on CPU Board**

Pin #1
Pin #2
Pin #3
Pin #4
Pin #5
Pin #6
Pin #7
Pin #8

CPU I/O 8 Pin Modular Jack Pinout

KSU
(DCE)

COMPUTER
CONNECTION
(DTE)

Pin #
8 Pin Mod Jack

Pin #
DB-25

Pin #
DB-9

| 8 Pin Mod Jack | Signal | DB-25 | DB-9 |
|---|---|---|---|
| 6 | Transmit Data | 2 | 3 |
| 5 | Receive Data | 3 | 2 |
| 3 | CTS (Clear to Send) | 4 | 7 |
| 7 | RTS (Request to Send) | 6 | 8 |
| 4 | GND | 7 | 5 |

RS-232C PINOUT

Data Communication Requirements are:

A) Serial Port Compatible
B) ASCII Code Compatible
C) 8 Data Bits and 1 Stop Bit
D) No Parity
E) Flow Control Method: Xon/Xoff

NOTE: Arrows show flow control direction.

**Figure 500-6 RS-232C Computer Connections on CPU Board**

D. **Voice Control Board (VCB)**

The Voice Control Board (VCB) provides the time siot switch to control the digital switching information. The system tones are also generated on this board.

**LEDs & Indicators:**

There are two LEDs on the board to indicate the +5V dc and • 5V dc.

**Modem Interface:**

The Voice Control Board (VCB) contains an "On-Board" modem that is capable of transmitting data at a rate of 1200 baud. The modem supports and is compatible with the Hayes command protocol.

The Bell System (Western Electric) standards 103 and 212A for design is incorporated into the design of this . The operates on-line in both Full and Half duplex modes.

**Wiring / Pinouts / Connections:**

There are two phono input connectors on the board. One connector is for background music and the other is for music on hold. There are also two potentiometers to adjust each music source.

| NOTE | When two power supplies are installed on the samesystemandyou want to remove the Central Processor Unit from. *service, BOTH* power supplies MUST be turned off! |
|---|---|



**Figure 500-7 Voice Control Board (VCB)**

### E. Key Telephone Board (KT12)

This board provides the interface to twelve digital telephones. This board can be plugged into any designated station slot. Refer to Figure 500-8 Key Telephone Board (KT12) for location of connectors.

### LEDs & Indicators:

The board contains two LEDs to indicate the presence of +5V dc and -5V dc. The LEDs are located on the top portion of the board.

### Line/Station Interfaces:

The board has one mate 50-pin amphenol connector on the front edge. This will interface the circuits on the board to the MDF.

The card also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards.

A Digital DSS Console, a Single Line Telephone Adapter (OPX), or other specifically designed adapter with a digital interface can be assigned to any one of the interface circuits. The Key Station interface circuits are protected from mis-wiring and over-current.

| NOTE | *External Paging Zones start from Card Slots 1 thru 4 for External Paging Zones 1 thru 4. Card Slots 9 thru 11 represent External Paging Zones 5 thru 7. If a Single Line Board (SL12) is inserted between two Key Station Boards (KT12), the External Paging Zone associated with that card slot becomes unusable.* |
|---|---|

**Table 500-I Key Telephone Board (KT12)**

| PAIR | PIN | COLOR | DESIG | |
|---|---|---|---|---|
| 1 | 26 | WH/BL | Port 001 | Xmt Tip |
| | 1 | BL/WH | | Xmt Ring |
| 2 | 27 | WH/OR | | Rcve Tip |
| | 2 | OR/WH | | Rcve Ring |
| 3 | 28 | WH/GN | Port 002 | Xmt Tip |
| | 3 | GN/WH | | Xmt Ring |
| 4 | 29 | WH/BN | | Rcve Tip |
| | 4 | BN/WH | | Rcve Ring |
| 5 | 30 | WH/SL | Port 003 | Xmt Tip |
| | 5 | SL/WH | | Xmt Ring |
| 6 | 31 | RD/BL | | Rcve Tip |
| | 6 | BL/RD | | Rcve Ring |
| 7 | 32 | RD/OR | Port 004 | Xmt Tip |
| | 7 | OWRD | | Xmt Ring |
| 8 | 33 | RD/GN | | Rcve Tip |
| | 8 | GN/RD | | Rcve Ring |
| 9 | 34 | RD/BN | Port 005 | Xmt Tip |
| | 9 | BN/RD | | Xmt Ring |
| 10 | 35 | RD/SL | | Rcve Tip |
| | 10 | SL/RD | | Rcve Ring |
| 11 | 36 | BWBL | Port 006 | Xmt Tip |
| | 11 | BL/BK | | Xmt Ring |
| 12 | 37 | BK/OR | | Rcve Tip |
| | 12 | OR/BK | | Rcve Ring |
| 13 | 38 | BK/GN | Port 007 | Xmt Tip |
| | 13 | GN/BK | | Xmt Ring |
| 14 | 39 | BWBN | | Rcve Tip |
| | 14 | BN/BK | | Rcve Ring |
| 15 | 40 | BK/SL | Port 008 | Xmt Tip |
| | 15 | SL/BK | | Xmt Ring |
| 16 | 41 | YL/BL | | Rcve Tip |
| | 16 | BL/YL | | Rcve Ring |
| 17 | 42 | YL/OR | Port009 | Xmt Tip |
| | 17 | OR/YL | | Xmt Ring |
| 18 | 43 | YL/GN | | Rcve Tip |
| | 1 8 | GNNL | | Rcve Ring |
| 19 | 44 | YUBN | Port010 | Xmt Tip |
| | 19 | BNNL | | Xmt Ring |
| 20 | 45 | YL/SL | | Rcve Tip |
| | 20 | SL/YL | | Rcve Ring |
| 21 | 46 | VI/BL | Port011 | Xmt Tip |
| | 21 | BL/VI | | Xmt Ring |
| 22 | 47 | VI/OR | | Rcve Tip |
| | 22 | OR/VI | | Rcve Ring |
| 23 | 48 | VI/GN | Port 012 | Xmt Tip |
| | 23 | GN/VI | | Xmt Ring |
| 24 | 49 | VI/BN | | Rcve Tip |
| | 24 | BN/VI | | Rcve Ring |
| 25 | 50 | VI/SL | External Page Tip | |
| | 25 | SL/VI | External Page Ring | |

**Figure 500-8 Key Teiephone Board (KT1 2)**

SEE DETAIL A

66M1-50 BLOCKS

PC BOARD

STATION CABLE

PORT CARD
TO MDF CABLE

BOTTOM PLATE,
FEED CABLE BETWEEN
SQUARE KNOCKOUTS
AS SHOWN

EXPOSED BRAIDED
PORTION OF CABLES
IS TO BE GROUNDED
BY CABLE TIE AS
SHOWN

CABLE TIE

DETAIL A

**Figure 500-9 Shielded Cable Terminations**

## F. Single Line Board (SL12)

The Single Line Telephone board (SL12) provides the interface for 12 2500-type single line telephones. This board can be plugged into any designated station slot. It is recommended that the Tri-Output Power Supply be used with this card to provide the 90V ac and -48V dc voltages.

> **NOTE**
> *Only ons Ring Generator is required per system One Tri-Output Power Supply will accommodate two SL12 boards. When an SL12 board is installed, it is recommended that the DTM4 DTMF Receiver Module be installed at the same time. if 3 or more SL12 boards are installed in the system, at least 1 DTM4 should be installed. However, no more than 3 SL12 boards with DTM4 receivers on them can be installed in the system;*

Message Waiting capability comes installed on the Single Line Telephone Board (SL12). This circuitry provides message waiting lamps to single line telephones equipped with message waiting lamps and supports up to 12 Single Line Telephone Message Waiting lamps at 90V dc typically across tip and ring.

### LEDs & indicators:

The board contains three LEDs to indicate the presence of +5V dc, - 5V dc and -48V dc. The LEDs are located on the top portion of the board.

### Line/Station Interfaces:

The board has one female 50-pin amphenol connector on the front edge. This interfaces the circuits on the board to the MDF. The board has one two- conductor molex connector to provide an input for 90V ac ring. A second two-conductor molex connector interfaces -48V dc to the card. Each SL12 installed in the system must have both 90V ad and -48V dc applied to it via these connectors. The card also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards.

These single line telephones can be equipped with a standard Message Waiting Lamp (90V T & R) that operate on the "tip" and "ring" leads. Additionally each circuit provides a loop interrupt of 700ms duration. This is the duration of loop interrupt provided to a single line port if loop interrupt is detected on a CO line that the single line port was connected to. Also provided if a station calls an SLT port and hangs up. The card will support single line telephones up to 2000 feet from the Basic KSU cabinet. Refer to Table 400-4 Loop Limits for additional wiring information. On-premise single line telephones should present a load to the port totaling a maximum ringer equivalence of 2.5.



**Figure 500-I 0 Single Line Telephone Board (SL12)**

### Table 500-2 Single Line Telephone Board
### (SL12)

| PAIR | PIN | COLOR | DESIG | | |
|------|-----|-------|-------|---|---|
| 1 | 26 | WH/BL | Port 001 | SLT Tip | |
| | 1 | BL/WH | | SLT Ring | |
| 2 | 27 | WH/OR | | | |
| | 2 | OR/WH | | | |
| 3 | 28 | WH/GN | Port 002 | SLT Tip | |
| | 3 | GN/WH | | SLT Ring | |
| 4 | 29 | WH/BN | | | |
| | 4 | BN/WH | | | |
| 5 | 30 | WH/SL | Port 003 | SLT Tip | |
| | 5 | SL/WH | | SLT Ring | |
| 6 | 31 | RD/BL | | | |
| | 6 | BURD | | | |
| 7 | 32 | RD/OR | Port 004 | SLT Tip | |
| | 7 | OWRD | | SLT Ring | |
| 8 | 33 | RD/GN | | | |
| | 8 | GN/RD | | | |
| 9 | 34 | RD/BN | Port 005 | SLT Tip | |
| | 9 | BN/RD | | SLT Ring | |
| 10 | 35 | RD/SL | | | |
| | 10 | SL/RD | | | |
| 11 | 36 | BK/BL | Port 006 | SLT Tip | |
| | 11 | BUBK | | SLT Ring | |
| 12 | 37 | BK/OR | | | |
| | 12 | OR/BK | | | |
| 13 | 38 | BK/GN | Port007 | SLT Tip | |
| | 13 | GN/BK | | SLT Ring | |
| 14 | 39 | BWBN | | | |
| | 14 | BN/BK | | | |
| 15 | 40 | BWSL | Port 008 | SLT Tip | |
| | 15 | SL/BK | | SLT Ring | |
| 16 | 41 | YUBL | | | |
| | 16 | BL/YL | | | |
| 17 | 42 | YL/OR | Port 009 | SLT Tip | |
| | 17 | OR/YL | | SLT Ring | |
| 18 | 43 | YUGN | | | |
| | 18 | GNNL | | | |
| 19 | 44 | YUBN | Port 010 | SLT Tip | |
| | 19 | BNNL | | SLT Ring | |
| 20 | 45 | YL/SL | | | |
| | 20 | SL/YL | | | |
| 21 | 46 | VI/BL | Port011 | SLT Tip | |
| | 21 | BL/VI | | SLT Ring | |
| 22 | 47 | VI/OR | | | |
| | 22 | OR/VI | | | |
| 23 | 48 | VI/GN | Port 012 | SLT Tip | |
| | 23 | GN/VI | | SLT Ring | |
| 24 | 49 | VI/BN | | | |
| | 24 | BN/VI | | | |
| 25 | 50 | VI/SL | | | |
| | 25 | SL/VI | | | |

## G. CO Loop interface Board (C012)

This board interfaces 12 Loop start CO lines to the system. This board can be plugged into any designated trunk slot. Refer to Figure 500-I 1 CO Line Board (C012) for location of connectors.

### LEDs & Indicators:

The board contains two LEDs to indicate the presence of -5V dc and +5V dc. In addition, the board has 12 red LEDs to provide the status of each CO line on the board. The status shall be lit is in use and unlit is idle.

### Line/Station Interfaces:

The board has one female 50-pin amphenol connector on the front edge. This will interface the circuits on the board to the MDF.

**Table 500-3 CO Line Board (C012) Connections**

| PAIR | PIN | COLOR | DESIG | | |
|------|-----|-------|-------|---|---|
| 1 | 26 | WH/BL | Port 001 | Tip | |
| 1 | 1 | BL/WH | | Ring | |
| 2 | 27 | WH/OR | Port 002 | Tip | |
| | -2 | OR/WH | | Ring | |
| 3 | 28 | WH/GN | Port 003 | Tip | |
| | 3 | GN/WH | | Ring | |
| 4 | 29 | WH/BN | Port004 | Tip | |
| | 4 | BN/WH | | Ring | |
| 5 | 30 | WH/SL | Port 005 | Tip | |
| | 5 | SUWH | | Ring | |
| 6 | 31 | RD/BL | Port 006 | Tip | |
| | 6 | BL/RD | | Ring | |
| 7 | 32 | RD/OR | Port 007 | Tip | |
| | 7 | OWRD | | Ring | |
| 8 | 33 | RD/GN | Port 008 | Tip | |
| | 8 | GN/RD | | Ring | |
| 9 | 34 | RD/BN | Port009 | Tip | |
| | 9 | BN/RD | | Ring | |
| 10 | 35 | RD/SL | Port 010 | Tip | |
| | 1 0 | SL/RD | | Ring | |
| 11 | 36 | BWBL | Port 011 | Tip | |
| | 11 | BL/BK | | R i n g | |
| 12 | 37 | BK/OR | Port 012 | Tip | |
| | 12 | OR/BK | | Ring | |
| 13 | 38 | BK/GN | | | |
| | 13 | GN/BK | | | |
| 14 | 39 | BWBN | | | |
| | 14 | BN/BK | | | |
| 15 | 40 | BK/SL | | | |
| | 15 | SL/BK | | | |
| 16 | 41 | YUBL | | | |
| | 16 | BL/YL | | | |
| 17 | 42 | YL/OR | | | |
| | 17 | OR/YL | | | |
| 18 | 43 | YUGN | | | |
| | 18 | GNNL | | | |
| 19 | 44 | YUBN | | | |
| | 19 | BNNL | | | |
| 20 | 4.5 | YL/SL | | | |
| | 20 | SL/YL | | | |
| 21 | 46 | VI/BL | | | |
| | 21 | BL/VI | | | |
| 22 | 47 | VI/OR | | | |
| | 22 | OR/VI | | | |
| 23 | 48 | VI/GN | | | |
| | 23 | GN/VI | | | |
| 24 | 49 | VI/BN | | | |
| | 24 | BN/VI | | | |
| 25 | 50 | VI/SL | | | |
| | 25 | S WI | | | |

+ 5 V
-5V

a
a

12th Ckt

CO In Use
LED's

1st Ckt

a

**Figure 500-I 1 CO Line Board (CO1 2)**

## 500.4    APPLICATION  MODULES

### A.  4-Circuit DTMF Receiver Module (DTM4)

This board provides four DTMF receivers for SL12 boards. This board is connected onto each SL12 board. Each SL12 board may contain 1 DTM4 board.

```
                DTM4 DTMF RCVR CARD
               ▓▓▓▓▓▓▓▓▓▓▓
               ▓▓▓▓▓▓▓▓▓▓▓




               ▓▓▓▓▓▓▓▓▓▓▓
               ▓▓▓▓▓▓▓▓▓▓▓
```

### Wiring / Pinouts / Connections:

The board has a female molex connector at each end that plugs onto metal pins located on each SLT board.

Generally, one receiver will support DISA and/or eight SLT stations under light to moderate traffic. If SLT and or DISA traffic is heavy, additional DTMF receivers should be added. It is also recommended to add additional DTMF Receivers when a Voice Mail or Auto Attendant is connected to the system.

### 500.5    Tri-Output **Power Supply Installation**

The Tri-Output power supply interfaces with the Single Line Board (SLl2) and contains a -48V dc supply, 24V dc supply, and a Ring Generator. This is a wall mountable unit and contains screw type terminals for its connections. Each Tri-Output power supply can accommodate two SL12 boards for the -48V supply. The Ring Generator portion of the Tri-Output power supply can accommodate all SL12 boards installed in the system.

The Tri-Output power supply can provide a -48V dc source up to 1 amp of current. The 24V dc source will handle up to 1 amp of current. The Ring Generator can supply up to 5 watts of Ring voltage.

The Tri-Output Power Supply must be mounted within 3 feet of the telephone system. It also must be within 5 feet of a 120V ac, 60Hz, Parallel blade, grounding type outlet. The Power Supply must be provided free air movement at top and bottom.

The Tri-Output Power Supply is designed for fixed wall mounting.

1. Position the Tri-Output Power Supply on wall where it is to be mounted and mark four centers for screw locations.

2. Attach Power Supply to wall using four, hex, pan or round head fasteners listed below:
   - Plaster/Wallboard: #8 Toggle bolts
   - Wood: #8 by 1 in. wood screws
   - Block: #8 Toggle bolts
   - Concrete: #8 by 1 in. lag shields with
      #8 by 1 in. lag screws

### Field Wiring Output Connections:

The unit MUST be unplugged from the line before proceeding.

Output connections must be installed in conformance with all state and local electrical codes by a licensed   electrician.

Output connections are made by means of a barrier strip inside the Power Supply.

1. Loosen (do not remove) the two screws on top and two screws at bottom to remove cover.

2. Locate the output barrier strip and wire feed-thru hole at lower right side respectively.

3. Feed approved wiring through bushing and connect to proper terminals using ring or locking spade type terminals. Terminal legend is near barrier strip and on cover.

4. After properly securing field wiring, replace cover and tighten four cover screws.

### AC  Input  Connection:

All output connections must be made before plugging in the Power Supply. The Power Supply may now be plugged into a 120V ac, 60Hz, 15a outlet. If an outlet is not available, a UL listed receptacle of proper type and configuration must be installed in conformance with all state and local electrical codes.

500.6 **Backplane I/O Expansion Module In-stallation**

The Backplane I/O **Expansion** Module is a wall mount unit with a 36-pin input connector and four RS-232C output connectors.

The Backplane I/O Expansion kit consists of one connecting cable and the I/O Expansion Module.

1. Locate the Backplane I/O Expansion Module in a location on the MDF backboard convenient to the KSU.

2. Locate the J24 connector on the backplane of the KSU cabinet.

3. Locate the connecting cable that comes with the Backplane I/O Expansion Module. This cable has a male and female 50-pin amphenol connector on it.

4. Connect one end of the cable to the J24 connector on the backplane of the KSU cabinet.

5. Connect one end of that cable into the connector marked "SVC J1" on the Backplane I/O Expansion Module.

Backplane I/O Expansion Module Wiring **Pinouts**

| KSU (DCE) | | COMPUTER or PRINTER (DTE) | |
|---|---|---|---|
| Pin # DB-25 | | Pin # DB-25 | Pin # DB-9 |
| 2 | Transmit Data | 2 | 3 |
| 3 | Receive Data | 3 | 2 |
| 20* | DTR (Data Terminal Ready) | 20 | 4 |
| 6* | RTS (Request to Send) | 6 | 8 |
| 7 | GND | 7 | 5 |
| 5 | DSR (Data Set Ready) | 5 | 8 |

RS-232C PINOUT

Data Communication Requirements are:

A) Serial Port Compatible
B) ASCII Code Compatible
C) 8 Data Bits and 1 Stop Bit
D) No Parity
E) Flow Control Method: Xon/Xoff

NOTE: Arrows show flow control direction.

* If your Personal Computer does not provide DTR, you MUST jumper pins 6 & 20 together on the KSU side.

**Figure 500-12 Backplane I/O Expansion Module Connections**

## 500.7    DIGITAL TERMINALS

### A. Digital Terminals Installation:

The Digital Terminals are interfaced with the Starplus SPD 4896 Key Station Board (KT12) which has 12 circuits per board. Each 12-circuit Key Station Board interface is extended from the Basic KSU to the MDF through the front edge connector on the key Station Board.

At the MDF are the terminated distribution cables that are run from each key telephone location. Each Key Telephone requires two-pair twisted cable wiring to connect the digital terminals to the system on a "home run" basis. The telephone end of the cable is terminated on a modular jack and the MDF end of the cable should terminate on a punchdown block making up the MDF. Refer to Figure 500-2 Basic KSU Equipment Cabinet.

Telephones are connected to the station interfaces via industry-standard twisted, e-pair, 22 or 24 gauge wire. The station cable run from the main distribution frame to the station wall jack should not exceed 1000 feet. Refer to Figure 500-I 3 Digital Terminal Modular Block Wiring.

Station cable is connected to the MDF at one end, and a modular connecting block at the other end. The modular line cord of the telephone is then plugged into the connecting block.

| **NOTE** | *Only one station may be connected to a port. It is NOT possible to bridge station ports.* |
|---|---|

The system communicates with each phone using 4 wires. Two of the wires are used to send digital information (voice and control signals) from the system to the telephone, and two wires are used by the telephone to send digital information to the system. All 4 wires are necessary for the telephone to function. Each telephone connected to a station port has two digital channels. The primary channel is used for voice communications only. The secondary channel is used to provide a secondary path for data switching applications (future).

The installer should exercise caution when connecting a digital terminal while system power is on. Each digital terminal station circuit is overload protected by internal circuitry on the 12-circuit Key Station Board (KT12) or 12-circuit Single Line Telephone Board (SL12), however the proper polarity of the wired connections must be maintained for proper operation.

The standard Single Line Telephone, Single Line Telephone Adapter (OPX), and Digital DSS Console are all considered to be telephones by the system. These interfaces are all wired to digital key station ports the same as a digital telephone.

### B.    Digital DSS Console Installation:

The Digital DSS/DLS Console is assigned to operate with a digital terminal. Up to three DSS/DLS Console units can be assigned to any one station. There are a maximum of 72 DSS/DLS Consoles that can be installed on the Starplus SPD 4896 System. Each unit uses a digital terminal interface circuit and reduces station capacity on a one-per-one basis.

A two-pair twisted cable is required for connecting the DSS/DLS Console unit to the MDF. The cable should be run from the DSS/DLS Console to the MDF in a "home run" manner. The DSS/DLS Console end of the cable is terminated on a three-pair modular jack and the MDF is "punched down" on a terminal block for cross connection to the appropriate station cable. Refer to Figure 500-13 Digital Terminal Modular Block Wiring.

Since the system supplies power to the DSS/DLS Console, no transformer or external power device is required.

### Installing an Expanded DSS/DLS Module:

a. Unplug the line cord from the DSS/DLS Console.

b. Using a screw driver, remove the solid plastic overlay from the right side of the DSS/DLS Console and discard.

c. Using a phillips screwdriver, remove the four screws from the filler panel. Discard the filler panel. The screws will be used to secure the expansion module.

d. Tilt the expansion module down and insert into the top of the opening in the console.

e. Work the expansion module into place, and secure with the four screws from step c.

f. Place the blank label overlay over the buttons on the expansion module.

g. Place the new button overlay over the buttons and secure into the two indents at the top of the opening, two indents on each side and two indents on the bottom.

h. Turn the DSS/DLS Console over and connect the provided line cord into the bottom of the Expansion Module. Also re-connect the line cord to the other module in the DSS/DLS Console.

GREEN — XMT TIP
RED — XMT RING
BLACK — RCVE TIP
YELLOW — RCVE RING

GN    RD
BK    YL

Key Telephone Wiring

GREEN — XMT TIP
RED — XMT RING
BLACK — RCVE TIP
YELLOW — RCVE RING

GN    RD
BK    YL

DSS/DLS Console Wiring

GREEN — XMT TIP
RED — XMT RING

GN    RD
BK    YL

Single Line Telephone Wiring

**Figure 500-13 Digital Terminal Modular Block Wiring**

## C. Wall Mounting the Executive Telephone

All connections to the Digital Terminal are fully modular. To wall mount the Digital Terminal, it is necessary to use the Wall Mount bracket that comes with each Digital Terminal and one standard-type jack assembly designed for normal wall hanging applications.

  a. Unplug the line cord from the phone. This line cord will be re-used and should be retained.

  b. Using a screw driver, remove the plastic number retainer by inserting the screw driver underneath the middle of the retainer and prying upwards. Remove the screw and the handset tab. Be careful to position the tab so that the protrusion faces the hookswitch. This will allow the handset to remain secure when the telephone is on the wall. Replace the screw and snap the number retainer back into place.

  c. Reverse the back plate on the telephone for wall mounting.

  d. Line up the hooks at the bottom of the bracket so that they engage with the slots cut in the bottom of the telephone base. Tilt the telephone back and lock the telephone into the hooks at the top of the bracket. The bracket will snap in place.

  e. Route the line cord from the wall jack and plug into the connector on the back of the telephone. Now match the two key hole slots on the base plate with the lugs on the 630-A type jack. Align the modular connector and slide telephone into place. Refer to Figure 500-l 4 Digital Terminal Wall Mounting.

## D. Single Line Telephone Installation

Single Line Telephones (SLT's) can be exchanged for digital terminals on a one-for-one basis with an OPX box.

The Single Line Telephone Board (SL12) can be plugged into any designated card slot. Each Single Line Telephone board supports 12 standard single line telephones (standard DTMF Single Line Telephones and message waiting DTMF SLTs). It is recommended that the Tri-Output Power Supply be used with this card to provide the 90V ac and -48V dc voltages.

> **NOTE**
> *Only one Ring Generator is required per system. One Tri-Output Power Supply will accommodate two SL12 boards. When an SL12 board is installed, it is recommended that the DTM4 DTMF Receiver Module be installed at the same time. If 3 or more SL12 boards are installed in the system, at least 1 DTM4 should be installed. No more than 3 SL12 boards with DTM4 receivers on them can be installed in the system.*

The DTMF Receiver Module (DTM4) may be installed on each Single tine Telephone Board installed. The DTMF Receiver Module (DTM4) installs onto a Single tine Telephone Board (SL12) and provides 4 DTMF receivers. DTMF receivers can be added to the system to support Single Line Telephones. If SLT traffic is heavy or a Voice Mail system is being installed, it is recommended that additional DTMF Receiver Modules be installed in the system.

Each SLT requires one-pair cable. The cable should be placed from the telephone location to the MDF in a "home run" manner. The telephone end of the cable run should be terminated in a modular jack. Refer to Figure 500-2 Basic KSU Equipment Cabinet. The MDF end should be "punched down" on a terminal block for cross connection to the appropriate station cable. Refer to Figure 500-13 Digital Terminal Modular Block Wiring for SLT wiring connections.

## E. SLT Adapter / Off-Premise Extension Module (OPX)

This external module provides the interface for one long loop (OPX) single line telephone (2500 type) extension. This module requires a separately provided -48V dc power supply to provide the necessary current for long loop applications and to support ring generation. This module is wired to and interfaces with a digital key terminal port on the Starplus SPD 4896 system. The OPX box meets the requirements of the FCC for connection to the telephone (Telco) network. Telephones must be DTMF only (2500 type). Refer to Figure 500-l 5 Off-Premise Extension (OPX) Module

The OPX module also provides for one Power Fail circuit in the event of an AC power failure and contains its own DTMF receiver.

## Buttons and LEDs:

An LED located on the back of the unit indicates correct connection and will light when the SLT station is taken off-hook.

## Connections:

All connections to the SLA (OPX) adapter are made on the back of the unit. Two modular jacks and a two-wire cable are located on the back of the unit for connection to the KSU and power supply. The two wire cable connects to a 48V dc power supply. The modular jack marked KSU is connected to a KSU Digital terminal station port. This connection requires all four wires and wires the same as a key station. The modular jack marked OPX is wired to the SLT station (2500 type), OPX circuit or

**Figure 500-14 Digital Terminal Wall Mounting**

SLT device. Additionally, a CO line may be wired to the second pair of the SLT modular connector for Power fail operation.

**Cable Loop Limits:**

The maximum loop limit from the KSU to the SLA (OPX) adapter is 1000 feet.

The maximum loop limit from the SLA (OPX) adapter to the connected SLT or device is 1400 ohms not including the telephone or device.

### 500.6 POWER FAILURE TRANSFER

#### A. Relay / Sensor Interface Module

The Relay Sensor Interface Module connects to the system using one digital station port and provides three relay activated contacts and three sensing circuits. The relays provide for applications such as Loud Bell Control contacts, CO Line control contacts, RAN Start contacts, Page Relays, Power Fail contact and additional applications as software will permit. The sensing circuits will provide for such applications as RAN Stop (end of message).

**Connections:**

All connections to the Relay Sensor Module are made on the back of the unit. Two terminal strips with screw terminals each provide connection to the ancillary devices for relay control or sensing monitoring. The Modular jack marked KSU is connected to a KSU Digital terminal station port. This connection requires all four wires and wires the same as a key station. Refer to Figure 500-l 6 Relay / Sensor Interface Module for wiring information.

An external power source may be required to drive equipment connected to the relay contacts. The contacts are rated at 24Vdc max. at 1 amp.

**Cable Loop Limits:**

The maximum loop limit from the KSU to the relay Sensor Module is 1000 feet.

#### B. Power Failure Transfer Unit (PFTU)

This unit provides the relay transfer circuits for up to 12 CO lines in the event of a power or processor failure. The unit is housed in its own enclosure and mounts external to the KSU. Activation of the PFT relays is controlled by the Relay/Sensor Interface Module that is programmed for PFT. A customer provided 12V dc power supply is required to operate the unit. There is a manual switch that activates the PFTM for testing purposes.

With loss of power to the system or a failure of system processing, the PFTU will automatically connect up to twelve CO lines to prewired

500/2500 type telephones. When power is restored, the PFTU will automatically restore the CO trunks and stations to normal operation. These SLT stations do not have to be used for intercom, but can be if so desired. Refer to Figure 500-17 Power Failure Transfer Wiring Options.

**Wiring / Pinouts / Connections:**

The PFTU has two 50-pin male amphenol connectors labeled CONN1 and CONN2 located on the front of the unit. Each connector wires six CO lines for power fail transfer. Refer to Table 500-4 PFTU Conn A Connecting Block and Table 500-5 PFTU Conn B Connecting Block for pin-outs of each of the connectors.

The PFTU is connected to the KSU via the modular connector on the side of the unit. This is connected in series to a customer provided 12V dc supply. and to a multi use relay programmed as a power failure relay.

STATION CABLE

GREEN
RED
BLACK
YELLOW

l-r
T R
RT
R R

MDF

STATION CONNECTING BLOCK

PFT Ring     PFT Tip

**SLT Ring**     SLT Tip

MODULAR CABLE

KSU

OFF
HOOK

Customer Provided
-48V dc Power Supply
1/2 amp per OPX unit

OPX

Green to Phone     Black to Trunk Tip

Red to Phone     Yellow to Trunk Ring

**Figure 500-15 Off-Premise Extension (OPX) Module**

STATION CABLE

GREEN
RED
BLACK
YELLOW

XMIT TIP
XMIT RING
RCVE TIP
RCVE RING

STATION
CONNECTING
BLOCK

MODULAR
CABLE

RELAY

SENSOR

1    2    3

1    2    3

Device Output Relay
(dry contacts)
(ie: RAN Device)

Loud Bell Control
External Page Device
RAN Device
Power Failure Transfer

Starplus Tri-Output
Power Supply ,

**24** VDC
1 Amp Max.

or 24VDC 1 Amp Power Supply
(Customer Provided)

NOTE: RAN device does not
require external power supply

**Figure 500-16 Relay / Sensor Interface Module**

CO 1 TIP IN

CO 1 RING IN

OPX

Basic KSU Cabinet

PFT TIP IN

PFT RING IN

SLT RING IN    SLT TIP IN

MOD BLK

# Method #1

(SLT or DEVICE)

# Method #2

Power Failure Transfer Unit    (PFTU)

Customer Provided Battery

**RELAY / SENSOR INTERFACE MODULE**

CRAMP CONN 1    CRAMP CONN 2

12VDC
1 AMP

MODULAR JACK

COM

N.C.    CONTACT

Multi-Purpose Relay

**Figure 500-17 Power Failure Transfer Wiring Options**

**Figure 500-18 Power Failure Transfer Circuit**

## Table 500-4 PFTU Conn A Connecting Block

| PAIR | PIN | COLOR | DESIG |
|---|---|---|---|
| 1 | 26 | WH/BL | 1 TIT |
|  | 1 | BUWH | 1 TIR |
| 2 | 27 | WH/OR | 1 STAIN TIP |
|  | 2 | OR/WH | 1 STA IN RING |
| 3 | 28 | WH/GN | 1 TRK OUT TIP |
|  | 3 | GN/WH | 1 TRK OUT RING |
| 4 | 29 | WH/BN | 1 STOT |
|  | 4 | BN/WH | 1 STOR |
| 5 | 30 | WH/SL | 2 TIT |
|  | 5 | SL/WH | 2 TIR |
| 6 | 31 | RD/BL | 2 STAIN TIP |
|  | 6 | BL/RD | 2 STA IN RING |
| 7 | 32 | RD/OR | 2 TRK OUT TIP |
|  | 7 | OR/RD | 2 TRK OUT RING |
| 8 | 33 | RD/GN | 2 STOT |
|  | 8 | GN/RD | 2 STOR |
| 9 | 34 | RD/BN | 3 TIT |
|  | 9 | BN/RD | 3 TIR |
| 10 | 35 | RD/SL | 3 STAIN TIP |
|  | 10 | SL/RD | 3 STAIN RING |
| 11 | 36 | BK/BL | 3 TRK OUT TIP |
|  | 11 | BUBK | 3 TRK OUT RING |
| 12 | 37 | BK/OR | 3 STOT |
|  | 12 | OR/BK | 3 STOR |
| 13 | 38 | BK/GN | 4 TIT |
|  | 13 | GN/BK | 4 TIR |
| 14 | 39 | BK/BN | 4 STA IN TIP |
|  | 14 | BN/BK | 4 STA IN RING |
| 15 | 40 | BWSL | 4 TRK OUT TIP |
| 16 | 15 | SUBK | 4 TRK OUT RING |
|  | 41 | YUBL | 4 STOT |
|  | 16 | BL/YL | 4 STOR |
| 17 | 42 | YUOR | 5 TIT |
|  | 17 | OR/YL | 5 TIR |
| 18 | 43 | YUGN | 5 STA IN TIP |
| 19 | 18 | GNNL | 5 STAIN RING |
|  | 44 | YUBN | 5 TRK OUT TIP |
|  | 19 | BNNL | 5 TRK OUT RING |
| 20 | 45 | YL/SL | 5 STOT |
|  | 20 | SL/YL | 5 STOR |
| 21 | 46 | VI/BL | 6 TIT |
|  | 21 | BWI | 6 TIR |
| 22 | 47 | VI/OR | 6 STA IN TIP |
|  | 22 | OR/VI | 6 STA IN RING |
| 23 | 48 | VI/GN | 6 TRK OUT TIP |
|  | 23 | GN/VI | 6 TRK OUT RING |
| 24 | 49 | VI/BN | 6 STOT |
|  | 24 | BNNI | 6 STOR |
| 25 | 50 | VI/SL |  |
|  | 25 | SL/VI |  |

## Table 500-5 PFTU Conn B Connecting Block

| PAIR | PIN | COLOR | DESIG |
|---|---|---|---|
| 1 | 26 | WH/BL | 7 TIT |
|  | 1 | BL/WH | 7 TIR |
| 2 | 27 | WH/OR | 7 STA IN TIP |
|  | 2 | OR/WH | 7 STA IN RING |
| 3 | 28 | WH/GN | 7 TRK OUT TIP |
|  | 3 | GN/WH | 7 TRK OUT RING |
| 4 | 29 | WH/BN | 7 STOT |
|  | 4 | BN/WH | 7 STOR |
| 5 | 30 | WH/SL | 8 TIT |
|  | 5 | SUWH | 8 TIR |
| 6 | 31 | RD/BL | 8 STAIN TIP |
|  | 6 | BL/RD | 8 STA IN RING |
| 7 | 32 | RD/OR | 8 TRK OUT TIP |
|  | 7 | OR/RD | 8 TRK OUT RING |
| 8 | 33 | RD/GN | 8 STOT |
|  | 8 | GN/RD | 8 STOR |
| 9 | 34 | RD/BN | 9 TIT |
|  | 9 | BN/RD | 9 TIR |
| 10 | 35 | RD/SL | 9 STA IN TIP |
|  | 10 | SL/RD | 9 STAIN RING |
| 11 | 36 | BWBL | 9 TRK OUT TIP |
|  | 11 | BUBK | 9 TRK OUT RING |
| 12 | 37 | BK/OR | 9 STOT |
|  | 12 | OWBK | 9 STOR |
| 13 | 38 | BWGN | 10 TIT |
|  | 13 | GN/BK | 10 TIR |
| 14 | 39 | BK/BN | 10 STA IN TIP |
|  | 14 | BN/BK | 10 STA IN RING |
| 15 | 40 | BWSL | 10 TRK OUT TIP |
|  | 15 | SUBK | 10 TRK OUTRIN G |
| 16 | 41 | YL/BL | 10 STOT |
|  | 16 | BL/YL | 10 STOR |
| 17 | 42 | YUOR | 11 TIT |
|  | 17 | OR/YL | 11 TIR |
| 18 | 43 | YL/GN | 11 STA IN TIP |
|  | 18 | GNNL | 11 STA IN RING |
| 19 | 44 | YUBN | 11 TRK OUT TIP |
|  | 19 | BNNL | 11 TRK OUT RING |
| 20 | 45 | YL/SL | 11 STOT |
|  | 20 | SL/YL | 11 STOR |
| 21 | 46 | VI/BL | 12 TIT |
|  | 21 | BL/VI | 12 TIR |
| 22 | 47 | VI/OR | 12 STA IN TIP |
|  | 22 | OR/VI | 12 STA IN RING |
| 23 | 48 | VI/GN | 12 TRK OUT TIP |
|  |  | GN/VI | 12 TRK OUT RING |
| 24 |  | VI/BN | 12 STOT |
|  | 24 | BNNI | 12 STOR |
| 25 | 50 | VI/SL |  |
|  | 25 | SL/VI |  |

## 500.9 **INSTALLING RECORDED AN-NOUNCEMENT DEVICE (RAN)**

The Recorded Announcement feature (RAN) is used with either the Automatic Call Distribution (ACD) or Uniform Call Distribution (UCD) features to provide unanswered incoming CO calls or calls in queue with a Recorded Announcement while waiting for an available ACD or UCD station. The system may be programmed to provide this announcement on specified RAN output ports on the system (unused SLT and CO **ports).** The system can be programmed to connect the waiting caller to a different RAN port for the second, and subsequent RAN messages.

When a CO line **port** is used for a ground start application, a 24V dc power source must be connected to the CO line port for talk battery. **A** Page/Relay contact assigned to an announcement table in programming would provide contact closure to start the Recorded Announcement device.

When an SLT port is used, the RAN device must be configured for ring trip operation (loop start). The 90V ac voltage sent to the SLT port will be recognized by the RAN device which will then answer the call.

CO RAN CONNECTIONS

Customer Provided
Talk Battery
**24V** DC
**300 OHM**

CO Line Board
(CO12)

CO TIP
CO RING

MDF

VOICE TIP
VOICE RING

RAN DEVICE

SLT RAN CONNECTIONS

Single Line Telephone
**Board** (SL12)

TIP
RING

MDF

VOICE TIP
VOICE RING

RAN DEVICE

**LOOP START APPLICATIONS**

CO LINE
OR
SLT PORT

3 RAN VT
4 RAN VR

VOICE IN

RAN DEVICE

INPUT FROM RECORDED ANNOUNCEMENT DEVICE

RELAY OUTPUT

2 RAN CTL
5 RAN CTL

MAKE CONTROL

START CONTROL TO RAN DEVICE

**RELAY SENSOR MODULE**

SENSOR INPUT

1 RAN SNS
6 RAN SNS

SENSE

STOP CONTROL FROM RAN DEVICE

**"E&M" TYPE RAN SIGNALING**

**Figure** 500-I 9 CO and SLT **RAN** Connections

## 500.10    DATAFEATURE

The Data Feature is a time division switched, point to point data transmission capability which permits simultaneous (on the same system but not the same port) voice and data communications. The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, CRT terminals, and main frame computer ports.

To establish a Data call, a Digital Data interface Unit (DDIU) is required to be connected to each data communications device. Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

The Digital Data Interface Unit (DDIU) is wired to the Starplus Digital Key Telephone System like a digital telephone, and requires one station port.

All connections to the DDIU are made on the back panel. The back panel has a modular jack and a DB-25 type connector. The modular jack, labeled KSU, is used to connect the DDIU to the station port of the system. The DB-25 connector supports an RS-232C connection and is used to connect the data device to the system.

A green LED lights to indicate the DDIU is properly wired to the system.

**Figure 500-20 Digital Data interface Unit (DDIU) wiring**

Connection of the individual data communication devices requires that the installer be familiar with data communications terms, and has access to the appropriate information for connecting the variety of data communications devices that may be encountered. This information consists of, but is not limited to:

1. Is the device configured as data terminal equipment (DTE), or data communications equipment (DCE.

2. What pin on the RS-232C type connector performs what function?

3. What signal leads are required to make the device operate?

When planning the installation of the data feature, use a digital display phone at any location that is to originate a data connection. A DDIU can only be called; it cannot originate a connection. A DDIU would typically be used in conjunction with the digital display phone. A DDIU would typically be connected to a printer,or a MODEM.

The station wiring for a digital display phone and a DDIU are identical.

The data connector of the Digital Data Interface Unit (DDIU) is a 25-pin, type D connector which is configured as Data Communications Equipment with the following pin configurations.

| PIN # ! | USE | DIRECTION |
|---|---|---|
| 2 | Receive Data | DDIU |
| 3 | Transmit DATA | DDIU |
| 4 | Request To Send | DDIU |
| 5 | Clear To Send | DDIU |
| 6 | Data Set Ready | DDIU |
| 7 | Signal Ground | |
| 8 | Data carrier detect | DDIU |
| 20 | Data Terminal Ready | DDIU |
| 22 | Ring Indicator | DDIU |

The following diagram will aid in the design of cables to connect the many different configurations of data communications devices.



**Digital Systems Data Switching**



Modem to **DDIU Cable**

```
           P C                          DDIU

         GND 1  ─────┬──────────────────┬──  1 GND
          TD 2  ─────┼──────────────►───┼──  2 RD
          RD 3  ──◄──┼──────────────────┼──  3 TD
          SG 7  ─────┼──────────────────┼──  7 SG
         RTS 4  ─────┼──────────────►───┼──  4 RTS
         CTS 5  ──◄──┼──────────────────┼──  5 CTS
        DTR 20  ─────┼──────────────●───┼── 20 DTR
         DSR 6  ──◄──┼──────────────────┼──    DSR
         DCD 8  ──◄──┼──────────────────┼──  8 DCD
         RI 22  ──◄──┼──────────────────┼── 22 RI
       TX CLK 15 ──◄─┼──────────────────┼── 15 TX CLK
       RXCLK17  ──◄──┴──────────────────┴── 17 RX TLK
```

### Computer to Phone Cable

To establish a connection to any idle data port:

1. A user with an associated DDIU dials the station number of the DDIU or the group access number of the group that the DDIU has been inserted into or presses a DSS button representing the DDIU. The digital key system will then determine the baud rate setting for the called DDIU and convert the user's associated DDIU to the same baud rate. The system will then complete the connection.

A second method to establish a connection between two DDIUs is done by the first attendant.

1. The first attendant dials the extension number of one data unit. Dial tone is received and the display will show the BAUD RATE.

2. Then dials the station number of the second data unit, confirmation tone is heard.

To break down an established connection:

1. The station user dials his associated DDIU number or press the DSS button for the associated DDIU followed by pressing the FLASH button. The first attendant can dial one of the DDIUs, followed by pressing the FLASH button.

Conditions:

• The System is transparent to the devices **being** connected. Therefore each DDIU must be configured with a specific baud rate, number of data bits and number of stop bits. This configuration will be done by the first attendant or in the case of an associated data unit can be configured by the user.

• Data switching is accomplished using the same wiring the telephone station uses for voice switching.

• Data ports can be arranged in UCD Groups or Hunt Groups.

• Data ports do not have to be associated with a keyset, however to connect two DDIU devices one of them must be associated with a keyset unless the connection is made by the first attendant.

• When the data connection has been completed, the baud rate used in the connection will be displayed on the keyset.

• Non associated DDIU connections can be broken down by the first attendant.

• A DDIU has a DCE interface. Therefore a straight through RS-232C cable can be used connect to a DTE device (printer, PC, etc.).

• Each DDIU requires a digital terminal port.

Refer to Station Attributes Programming, 630.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 630.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

## Table 500-6 SMDR Printout

The SMDR feature provides detailed records of all outgoing and/or incoming, long distance only or all calls. The SMDR Qualification Timer determines the length of time that is needed to determine a valid SMDR call for reporting purposes. By default, this timer is set to 30 seconds and is variable from 00 to 60 seconds in 1 sec. increments. This feature is enabled or disabled in system programming. By default, SMDR is not enabled and is set to record long distance calls only. A printout format of 80 characters maximum or 29 character maximum may be selected in system programming. The standard format is 80 characters on a single line. A 29 character format will generate 3 lines per message. If the SMDR feature is enabled, the system starts collecting information about the call as soon as it starts and terminates when the call ends. If the call was longer then 30 seconds, the following information is printed:

**29 character format selected:**

```
          1              2              3
12345678901234567890123456789O
AAA BB HH:MM:SS HH:MM MM/DD/YY(CR)(LF)
HCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
GGGGGGGGGGGG

STA  CO  TOTAL     START    DATE
116  08  00:02:00  14:13  05/11/90(CR)(LF)
0123456789012345678901234(CR)(LF)
123456789012(CR)(LF)
```

**80 character format selected:**

```
          1         2         3         4         5         6         7         8
1234567890123456789012345678901234567890123456789012345678901234567890123456789O
AAA BB HH:MM:SS HH:MM MM/DD/YY HCCCCCCCCC CCCCCCCCCCCCCC GGGGGGGGGGGG (CR) (LF)


STA CO TOTAL     START    DATE    DIALED                 ACCOUNT CODE  COST
116 08 00:02:00  14:13  05/11/90  0123456789012345678901234  123456789012(CR)(LF)
```

**80 character format with Call Cost Display feature enabled:**

```
          1         2         3         4         5         6         7         8
1234567890123456789012345678901234567890123456789012345678901234567890123456789O
AAA BB HH:MM:SS HH:MM MM/DD/YY HCCCCCCCCCCCCCCCCCCCCCCCCCCC GGGGGGGGGGGG (CR)(LF)


STA CO TOTAL     START    DATE    DIALED                 ACCOUNT CODE  COST
116 08 00:02:00  14:13  05/11/90  0123456789012345678901234  123456789012 000.00 (CR)(LF)
```

**80 character format for DISA Calls:**

```
                    2         3         4         5         6         7         8
1234567890123456789012345678901234567890123456789012345678901234567890123456789O
AA BB HH:MM:SS HH:MM MM/DD/YY HCCCCCCCCCCCCCCCCCCCCCCCCCCC GGGGGGGGGGGG (CR)(LF)


STA CO TOTAL     START    DATE    DIALED                 ACCOUNT CODE  COST
04  01 00:02:00  14:13  05/11/90  I                      123456789012 000.00(CR)(LF)
01  04 00:04:54  14:15  05/11/90  0012345678901234567890 1234
```

**Table 500-6 SMDR Printout (Cont'd)**

```
ICLID 60 character format selected:
          1               2           3           4           5           6           7           8
~2345678901234567890123456789012345678901234567890~234567890~23456789012345678901234567890

STA co  TOTAL    START   DATE   DIALED                      ACCOUNT CODE   COST
100 01 00:00:36 04:37 06/19/92 I1-602-443-6000**                          (CR)(LF)
  **VODAVI                   (CR)(LF)
    01 00:00:00 04:38 06/19/92 U1-602-443-6000**
  **VODAVI
```

AAA = Station originator or Trunk on DISA and Off-Net (CO Line) calls.
BB = Outside line number
HH:MM:SS = Duration of call in Hours, Minutes and Seconds
HH:MM = Time of day (start time) in Hours and Minutes
MM/DD/YY = Date of Call
H = Indicates call type:
        "I" = Incoming*
        "O" = Outgoing
        "T" = Transferred*
        "U" = Unanswered calls for ICLID SMDR call records
CC....CC = Number dialed
GG....GG = Last Account code entered (optional)
(CR) = Carriage return
(LF) = Line Feed


*When ACD features are present in the system, the "I", and "T" are replaced with the letter "A".

# SECTION 600
# CUSTOMER DATA BASE PROGRAMMING

## 600.1    INTRODUCTION

The Starplus Digital Key Telephone system can be programmed to meet each customer's individual needs. All programming is done either at Station 100 using the 34-button display digital terminal as the programming instrument or an ASCII terminal or PC. The digital display model is suggested since the display is designed to assist in programming.

When the program mode is entered, the Digital Terminal being used no longer operates as a terminal but as a programming instrument with all of the buttons redefined. The keys of the dial pad are used to enter data fields (Program Codes) associated with system, station, and CO line features as well as enter specific data that requires a numeric entry. Flexible buttons are used to toggle on or off features or allow entry into specific data fields. LED's and the LCD display provide visual indication of entered data and their value.

Programming can also be performed by using an ` SCII terminal, or a computer capable of emulating ι ASCII terminal. This form of programming can be done either locally (on-site) by connecting the terminal directly to the RS-232C connector on the Central Processor Unit (CPU) or can be performed remotely (off-site) through the use of the on-board 1200 Baud modem (future) located on the CPU. The method and steps to program the system via a terminal are identical to that used when programming from a digital keyset. A button to keyboard mapping has been incorporated (see Figure 600-l) to help minimize familiarization and training time.

At the time the system is installed it must be initialized to load default data into memory. If this pre-programming suits the customer, initialization is all that is needed. Refer to Table 600-l for a listing of all the default values.

Any time data is to be changed, the program mode must be entered and then the individual data field (program code). A data field can be entered to determine current programming or to change a specific feature within that field.

During programming, the other Digital Terminals in the System operate normally. If a data field is entered but nothing is changed, or changed but not entered, the previous data will remain intact upon ᴧnving that data field. Data fields can be entered at ᴧandom.

In many of the data fields, programming is performed by toggling LED's on or off, or entering digits on the keypad. If no changes are to be made to the line or station, exit the data field by either leaving the program mode (pressing the ON/OFF button to OFF) or entering another data field (pressing the FLASH button and entering that program code).

When features are being programmed, tones are provided to help the programmer determine if a correct or incorrect entry has been made. A solid one second tone indicates the data was accepted. An interrupted tone means an error was made.

When this occurs, re-enter the data field and re-enter the information. Until new data is entered and accepted, the system will continue to operate under default or previously entered values.

The system database is updated on a real-time basis as new data is entered, by pressing the Hold button. The system continues to operate with the current database and is updated with any newly entered or changed data without interruption to telephone operation or call processing in progress. However, if for example a station's attributes are changed while that station is off-hook on an active call, the newly entered data will not take effect until the station goes on-hook or becomes idle.

> **NOTE** *Some features must have more than one data field programmed for that feature to work. Where this is the case, it will be stated in the instructions.*

## 600.2    PROGRAM MODE ENTRY (Key Station)

Programming a digital terminal is performed at Port 01 (Station 100) using a 34-button Digital Display Terminal. Programming is always done at this port regardless of the class of service or which station has been assigned the attendant(s).

Before entering the program mode, the programmer must first verify that the Digital Terminal is properiy connected to Port 01 (Station 100).

To enter the program mode:

   a. Press ON/OFF button. (optional) LED lights and intercom dial tone is heard.

   b. On the dial pad, press the asterisk (✳) twice.

   c. On the dial pad, enter the digits [3][2][2][6] (DBAM)*. Confirmation tone is heard.

*  This is a default setting. However, it may be changed after entering programming.

   d. The ON/OFF button LED is lit. The system is ready to program.

When using a data terminal (I/O device) to program the system, the following chart presents the data terminal characters that are equivalent to the keyset buttons.

```
adm>?
   REMOTE ADMIN KEY DEFINITIONS

   Keyset Term   Keyset    Term  Keyset      Term
   ----e----s--  ----------------------------
   0      0      FLEX 1    Q     FLEX   11   A
   1      1      FLEX  2   W     FLEX   12   S
   2      2      FLEX  3   E     FLEX 13     D
   3      3      FLEX  4   R     FLEX   14   F
   4      4      FLEX  5   T     FLEX 15     G
   5      5      FLEX  6   Y     FLEX   16   H
   6      6      FLEX  7   U     FLEX   17   J
   7      7      FLEX  8   U     FLEX   1%   K
   8      8      FLEX 9    P     FLEX 19     L
   9      9      FLEX 10         FLEX 20     ;
   *      <      FLASH     ,     ON-UFF      M
   #      #      HOLD      CR    SPEED       Z
   TRANS  X      DND       C     MUTE        U

adm>
```

**Figure 600-I Data Terminal Program Codes** *Cross* **Reference**

In place of keyset button toggling to enable/disable a feature, the associated data terminal key can be toggled (pressed again) to enable/disable a feature, or the plus (+) character can be used to turn on or enable a feature and the minus (-) character can be used to turn off or disable a feature.

| 1 STA 100 | CO 1 11 |
| 2 STA 101 | CO 2 12 |
| 3 STA 102 | CO 3 13 |
| 4 STA 103 | CO 4 14 |
| 5 STA 104 | CO 5 15 |
| 6 STA 105 | CO 6 16 |
| 7 STA 106 | CO 7 17 |
| 8 STA 107 | CO 8 18 |
| 9 STA 108 | LOOP 19 |
| 10 STA 109 | POOL 20 |

| CAMP ON | LINE QUE | CALL BACK | PICK UP |
| MSG | FWD | DND | CONF |

| 1 | ABC 2 | DEF 3 | HOLD |
| GHI 4 | JKL 5 | MNO 6 | TRANS |
| PRS 7 | TUV 8 | WXY 9 | FLASH |
| ✳ | OPER 0 | # | SPEED |
| | | | MUTE |
| | | | ON/OFF |

H T P        SPKR VOL        RING VOL

**Figure 600-2 Programming Button Mapping**

**Table 600-I Default Values**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| **SYSTEM TIMERS:** | Flash 01 | | |
| System Hold Recall Timer | | Button 1 | 060 sec. |
| Exclusive Hold Recall Timer | | Button 2 | 180 sec. |
| Attendant Recall Timer | | Button 3 | 01 min. |
| Transfer Recall Timer | | Button 4 | 045 sec. |
| Preset Forward Timer | | Button 5 | 10 sec. |
| Call Forward No/Answer Timer | | Button 6 | 15 sec. |
| Pause Timer | | Button 7 | 2 sec. |
| Call Park Timer | | Button 8 | 180 sec. |
| Conference/DISA Timer | | Button 9 | 10 min. |
| Paging Timeout Timer | | Button 10 | 15 sec. |
| CC Ring Detect Timer | | Button 11 | 3 (100 msec.) |
| SLT DTMF Receiver Timer | | Button 12 | 020 |
| MSG Waiting Reminder Tone | | Button 13 | 000 min. |
| Hookflash Timer | | Button 14 | 10 (1 sec.) |
| Hookflash Debounce Timer | | Button 15 | 010 msec. |
| SMDR Call Qualification Timer* | | Button 16 | 30 sec. |
| Auto Call Back Timer | | Button 17 | 00 sec. |
| Reminder Ring Timer | | Button 18 | 00 sec. |
| Release Guard Timer | | Button 19 | 3 (300 msec.) |
| SYSTEM FEATURES: | Flash 05 | | |
| Attendant Override | | Button 1 | Disabled |
| Hold Preference | | Button 2 | System |
| External Night Ring | | Button 3 | Disabled |
| Executive Override Warning Tone | | Button 4 | Enabled |
| Page Warning Tone | | Button 5 | Enabled |
| Background Music | | Button 6 | Enabled |
| *LCR Enable* * | | *Button 7* | *Disabled* |
| *Forced Account Codes* * | | *Button 8* | *Disabled* |
| Group Listening | | Button 9 | Disabled |
| Idle Speaker Mode | | Button 10 | Disabled |
| *Call Cost Display Feature* * | | *Button II* | *Disabled* |
| Music-On-Hold | | Button 12 | Enabled |
| Handset Receiver Gain | | Button 13 | Disabled |
| Call Qualifier Tone Option | | Button 14 | Disabled |
| Privacy Release Tone Option | Flash 06 | Button 1 | Enabled |
| SYSTEM FLASH RATES: | Flash 07 | | |
| incoming CO Ringing | | Button 1 | 30 ipm flash |
| Incoming Intercom Ringing | | Button 2 | 120 ipm flutter |

*Features available with optional software.

**Table 600-I Default Values (Cont'd)**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| Call Forward | | Button 3 | 30 ipm flash |
| Message Waiting | | Button 4 | 15 ipm flash |
| Attendant Station Assignment (3 Stations) | Flash 10 | | 100 |
| Set Date and Time | Flash 11 | Button I-4 | MM/DD/YY, 12 Hr |
| PBX Dialing Codes | Flash 12 | Buttons 1-5 | None |
| Executive/Secretary Assignments | Flash 13 | Buttons I-4 | None |
| Relay/Sensor Programming | Flash 14 | Buttons 1-7 | None |
| Baud Rate Assignments | Flash 15 | | |
| Port #1 (CPU "On-Board" RS-232C)(Future) | | Button 1 | 2400 Baud |
| Port #2 ("On-Board" 1200 Baud Modem) | | Button 2 | 1200 Baud |
| Port #3 (Backplane RS-232C) | | Button 3 | 2400 Baud |
| Port #4 (Backplane RS-232C) | | Button 4 | 2400 Baud |
| ACCESS CODES | Flash 20 | | |
| DISA Access Code | | Button 1 | 100 |
| Admin Password for Digital Key Terminal | | Button 2 | 3226 |
| *SMDR* PROGRAMMING | *Flash 2 1* | | |
| *SMDR* | | *Button I* | *Disabled* |
| *Call Type* | | *Button 2* | *LD* |
| *Print Format* | | *Button 3* | *80* |
| *Baud Rate* | | *Button 4* | *2400* |
| *Port #* | | *Button 5* | *Port #1* |
| NIGHT MODE PROGRAMMING: | Flash 22 | | |
| Auto/Manual | | Button 1 | Manual |
| Days of the Week Schedule | | Buttons 2-8 | O-4 08:00-1 7:00 |
| | | | 5-6 ####-#### |
| DIRECTORY DIALING TABLE | Flash 23 | | |
| Bin/ICM | | Button 1 | |
| Name | | Button 2 | |
| Clear Entry | | Button 3 | |
| Back space | | Button 4 | |
| Next Entry | | Button 18 | |
| Previous Entry | | Button 19 | |
| New Entry | | Button 20 | |
| FLEXIBLE CARD ASSIGNMENTS | Flash 24 | Buttons I-I 2 | 4 Sta/4 CO/4 Sta |
| HUNT GROUP PROGRAMMING: | Flash 30 | | |
| Groups I-8 | | Buttons I-8 | |
| Pilot/Circular | | Button 9 | |
| **CO LINE GROUP PROGRAMMING:** | Flash 40 | | |
| DTMF/Dial Pulse Signaling | | Button 1 | DTMF |

*Features available with optional software.

## Table 600-l Default Values (Cont'd)

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| CO/PBX Flag | | Button 2 | CO |
| Universal Night Answer (UNA) | | Button 3 | Enabled |
| Conference | | Button 4' | Enabled |
| Privacy | | Button 5 | Enabled |
| Loop Supervision | | Button 6 | Disabled |
| DISA | | Button 7 | Disabled |
| Flash Timer | | Button 8 | 10 |
| CO Line Group | | Button 9 | 1 |
| Line COS | | Button 10 | 1 |
| Ringing Assignment | | Button 11 | None |
| CO Line Identification Display | | Button 12 | |
| Trunk Direction | | Button 13 | Incoming-Outgoing |
| Ring Delay Timer | | Button 14 | 00 sec. |
| Display Ring Assignment(s) | | Button 17 | Ring at Sta 100 |
| Next (forward) CO | | Button 18 | |
| Next (backward) CO | | Button 19 | |
| New Range | | Button 20 | |
| Dial Pulse, Speed/Ratio Programming | Flash 41 | | |
| Break/Make | | Button 1 | 60/40 |
| Dial Speed | | Button 2 | 10 pps |
| Flexible Port Assignment Feature - CO Lines | Flash 42 | Buttons l-7 | Cards l-7 |
| ICLID* Ringing Assignment Feature | Flash 43 | Button 1 | |
| **STATION PROGRAMMING:** | Flash 50 | | |
| Page Access | Page A | Button 1 | Enabled |
| DND Access | | Button 2 | Enabled |
| Conference | | Button 3 | Enabled |
| Executive Override | | Button 4 | Disabled |
| Privacy | | Button 5 | Enabled |
| System Speed | | Button 6 | Enabled |
| Queuing | | Button 7 | Enabled |
| Preferred Line Answer | | Button 8 | Disabled |
| OHVO | | Button 9 | Disabled |
| Call Forward | | Button 10 | Enabled |
| Forced LCR* | | Button 11 | Disabled |
| Supervisor Barge-in for ACD* | | Button 12 | Disabled |
| Executive Override Blocking | | Button 13 | Enabled |
| CO Ringing Options | | Button 14 | Disabled |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |

*Features available with optional software.

**Table 600-l Default Values (Cont'd)**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| New Station Range (#ls) | | Button 20 | |
| Station Programming (Cont'd) | Flash 50 | | |
| Station ID | Page B | Button 1 | 0 (Keyset) |
| | | | 5(SLT w/o MWt) |
| Class of Service | | Button 2 | 1 |
| Speakerphone/Headset | | Button 3 | 0 |
| Group Pickup | | Button 4 | 1 |
| Paging Zones | | Button 5 | 1 |
| Preset Forward | | Button 6 | None |
| CO Line Group Access | | Button 7 | 1 |
| LCR Class of Service* | | Button 8 | 0 |
| Off-Hook Preference | | Button 9 | 0 (keyset) |
| Flexible Button Assignments | | Button 10 | |
| Display Button Assignments | | Button 17 | |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |
| New Station Range (#'s) | | Button 20 | |
| DIGITAL DATE INTERFACE UNIT (DDIU) | Flash 51 | | |
| Baud Rate | | Button 1 | **9600** |
| Character Length | | Button 2 | 8 characters |
| Stop Bit | | Button 3 | 1 stop bit |
| Flexible Port Assignment Feature - Stations | Flash 52 | Buttons l-7 | Cards l-7 |
| Local Number/Name Translation Table | Flash 55 | Buttons l-4 | |
| ICLID FEATURES* | Flash 56 | | |
| Enable/Disable | | Button 1 | Disabied |
| Name in Display | | Button 2 | |
| Baud Rate | | Button 3 | 2400 |
| Port # | | Button 4 | Port #1 |
| ACD* GROUP PROGRAMMING: | Flash 60 | | |
| ACD Groups 550-557 | Page A | Buttons l-8 | None |
| Alternate ACD Group | | Button 11 | None |
| Overflo w Assignment | | Button 12 | None |
| Announcement Table(s) Entries | | Button 13 | None |
| ACD Supervisor Programming | | Button 14 | |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |
| ACD Groups (550-557) | Page B | Buttons 1-8 | None |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |

*Features available with optional software.

**Table 600-I Default Values (Cont'd)**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| *ACD* TIMERS:* | *Flash 61* | | |
| *Ring Timer* | | *Button 1* | 60 sec. |
| MIT Timer | | *Button 2* | 60 sec. |
| Over Flow *Timer* | | *Button 3* | 60 sec. |
| *Wrap-Up Timer* | | *Button 4* | 04 sec. |
| *No-Answer Recall Timer* | | *Button 5* | 000 sec. |
| *No-Answer Retry Timer* | | *Button 6* | 30 sec. |
| *Guaranteed Message Timer* | | *Button 7* | 10 sec. |
| **UCD GROUP PROGRAMMING:** | Flash 60 | | |
| UCD Groups 550-557 | Page A | Buttons 1-8 | None |
| Alternate UCD Group | | Button 11 | None |
| Overflow Assignment | | Button 12 | None |
| Announcement Table(s) Entries | | Button 13 | None |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |
| UCD Groups (l-8) | Page B | Buttons l-8 | None |
| Select Page A | | Button 18 | |
| Select Page B | | Button 19 | |
| UCD TIMERS: | Flash 61 | | |
| Ring Timer | | Button 1 | 60 sec. |
| MIT Timer | | Button 2 | 60 sec. |
| Over Flow Timer | | Button 3 | 60 sec. |
| Wrap-Up Timer | | Button 4 | 04 sec. |
| No-Answer Recall Timer | | Button 5 | 000 sec. |
| No-Answer Retry Timer | | Button 6 | 300 sec. |
| UCD RAN Announcement Tables | Fiash 62 | | None |
| *ACD* Event Trace* | *Flash 63* | | |
| *Event Record* | | *Button 1* | *Disabled* |
| *Port #* | | *Button 2* | *Port #1* |
| *ACD* GROUP PROGRAMMING:* | *Flash 64* | | |
| *ACD Groups 558-565* | *Page A* | *Buttons l-8* | *None* |
| *Alternate ACD Group* | | *Button ll* | *None* |
| *Overflow Assignment* | | *Button 12* | *None* |
| *Announcement Table(s) Entries* | | *Button 13* | *None* |
| *ACD Supervisor Programming* | | *Button 74* | |
| *Select Page A* | | *Button 18* | |
| *Select Page B* | | *Button 19* | |
| *ACD Groups (558-565)* | *Page B* | *Buttons i-8* | *None* |
| *Select Page A* | | *Button 18* | |
| *Select Page B* | | *Button 19* | |

*Features available with optional software.

**Table 600-I Default Values (Cont'd)**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| *VOICE MAIL\* GROUP PROGRAMMING:* | *Flash 65* | | |
| *VM Groups (I-8)* | | *Buttons 1-8* | *None* |
| *Alternate VM Group* | | *Buttons 9* | *None* |
| *Leave Mail Table entry* | | *Button 10* | *None* |
| *Retrieve Mail Table entry* | | *Button 11* | *None* |
| *Station Assignments* | | *Button 12* | *None* |
| *VM Leave/Retrieve Disconnect Tables* | *Flash 66* | *Buttons 1-9* | |
| *VM\* In-Band Digits* | *Flash 67* | | |
| *VM\* ID on Incoming CO Calls* | | *Button 1* | *Enabled* |
| *Allow Call Forward to Voice Mail\** | | *Button 2* | *Disabled* |
| **ALLOW/DENY & SPECIAL TABLES:** | Flash 70 | | |
| Allow Table A | | Button 1 | None |
| Deny Table A | | Button 2 | None |
| Allow Table B | | Button 3 | None |
| Deny Table B | | Button 4 | None |
| Special Table 1 | | Button 5 | All Codes Allowed |
| Special Table 2 | | Button 6 | All Codes Allowed |
| Special Table 3 | | Button 7 | All Codes Allowed |
| Special Table 4 | | Button 8 | All Codes Allowed |
| Area Code for Special Table 1 | | Button 9 | |
| Area Code for Special Table 2 | | Button 10 | |
| Area Code for Special Table 3 | | Button 11 | |
| Display Tables | | Button 12 | |
| *LCR\* PROGRAMMING:* | *Flash 75* | | |
| *3-Digit Routing Table* | | *Button 1* | *Default* |
| *6-Digit Routing Table* | | *Button 2* | *None* |
| *Exception Code Table* | | *Button 3* | |
| *Route List Table* | | *Button 4* | |
| *Insert/Delete Table* | | *Button 5* | |
| *Daily Start Time Table* | | *Button 6* | |
| *Weekly Schedule Table* | | *Button 7* | |
| *Route for 555-1212* | | *Button 8* | |
| **INITIALIZE DATA BASE PARAMETERS:** | Flash 80 | | |
| Init System Parameters | | Button 1 | |
| Init CO Line Attributes | | Button 2 | |
| Init Station Attributes | | Button 3 | |
| Init CO/Station Port Parameters | | Button 4 | |
| Init Exception Tables | | Button 5 | |
| Init System Speed | | Button 6 | |

\*Features available with optional software.

**Table 600-I Default Values (Cont'd)**

| FEATURE | PROGRAM CODE | FLEX BUTTON | DEFAULT VALUE |
|---|---|---|---|
| hit LCR* Tables | | Button 7 | |
| Init Entire System Database and Reset | | Button 8 | |
| Init ICLID* Parameters | | Button 9' | |
| Init Directory Dialing Table | | Button 10 | |
| Init Hunt Group Parameters | | Button 11 | |
| Init ACD* or UCD Group Parameters | | Button 12 | |
| Init VM* Group Parameters | | Button 73 | |
| System Reset | | Button 20 | |
| **PRINT DATA BASE PARAMETERS:** | Flash 85 | | |
| Print System Parameters | | Button 1 | |
| Print CO Line Attributes | | Button 2 | |
| Print Station Attributes | | Button 3 | |
| Print CO/Station Port Parameters | | Button 4 | |
| Print Exception Tables | | Button 5 | |
| Print System Speed | | Button 6 | |
| Print LCR* Tables | | Button 7 | |
| Print Entire System Database | | Button 8 | |
| Print ICLID* Parameters | | Button 9 | |
| Print Directory Dialing Table | | Button 10 | |
| Print Hunt Group Parameters | | Button 11 | |
| Print ACD* or UCD Group Parameters | | Button 12 | |
| Print VM* Group Parameters | | Button 13 | |
| Abort Printing | | Button 20 | |

*Features available with optional software.

Other telephones connected to the system continue to function normally.

### 600.3 PROGRAM MODE ENTRY (Data Terminal or PC)

A data terminal connected to the RS-232C port on the CPU or remotely through the on-board 1200 Baud Modem (future) can be used for database programming.

When using a data terminal (ASCII or PC capable of emulating an ASCII terminal) on-site or locally, to program the System:

    a. Press the [Enter] key on the terminal.

    b. Enter the password [VODAVI], and press return again. Proper entry of the password will result in the ADM> prompt. Proceed with programming referring to Figure 600-I for terminal characters that represent the keyset buttons. By entering a [?] from the terminal, a HELP screen will appear.

When entering the system remotely via a data terminal, access to the on-board 1200 Baud Modem (future) is accomplished by accessing Port 499 either through a direct ringing assignment or through DISA or by being transferred to Port 499 by any internal station.

Proper entry of the password will result in the ADM> prompt. Proceed with programming referring to Figure 600-I for terminal characters that represent the keyset buttons. By entering a [?] from the terminal, a HELP screen will appear, similar to that shown in Figure 600-I.

Using the Remote Admin Key Definitions follow the same steps and procedures to program the Starplus Digitai Key Telephone System when using a terminal (as outlined in the following sections).

### 600.4 BEGINNING TO PROGRAM

Once the program mode has been entered via a digital terminal or via an ASCII terminal, you may proceed with programming by:

> **NOTE** *Initialize here if necessary. Refer to the following section for initialization instructions.*

    a. Press the FLASH button.

    b. Dial the two-digit program code for the desired data field.

    c. Enter customer data.

    d. To permanently store the entered data, press the HOLD button. A burst of one second confirmation tone should be heard. If an interrupted (error) tone is heard, re-enter the data starting with step a.

    e. Repeat from step a. until all data has been entered into memory.

### 600.5 INITIALIZATION

The system has been pre-programmed with certain features which are called default data (Refer to Table 600-I). These features are loaded into memory when the system is initialized.

> **NOTE** *The system should be initialized when installed of st any time the database has been corrupted.*

Use the procedures below to return the system database to default values:

    a. Enter the programming mode.

    b. Press FLASH button and dial [80].

    c. Press the System & Reset flexible button (Button #8).

    d. Press HOLD button to initialize the system database to default values. Confirmation tone will be heard upon completion of the initialization process.

    e. Repeat from step c. to return only parts of the database to default values using the following flexible buttons:

| | | | | | |
|---|---|---|---|---|---|
| 1 Q | SYSTEM PARAMETERS | | HUNT GROUPS | A | 11 |
| 2 W | CO LINE ATTRIBUTES | | ACD* or UCD GROUPS | S | 12 |
| 3 E | STATION ATTRIBUTES | | VOICE MAIL* GROUPS | D | 13 |
| 4 R | PORT - STA/CO | | | F | 14 |
| 5 T | EXCEPTION TABLES | | | G | 15 |
| 6 Y | SYSTEM SPEED NUMBERS | | | H | 16 |
| 7 U | LCR* TABLES | | | J | 17 |
| 8 I | SYSTEM & RESET | | | K | 18 |
| 9 O | ICLID* TABLES | | | L | 19 |
| 10 P | DIRECTORY DIAL TABLES | | | ; | 20 |

*Features available with optional software.

> **NOTE** *Buttons I-7 DO NOT Initialize the database.*

### 600.6 CUSTOMER DATA WORKSHEETS

Before any attempt at programming is made, it is strongly recommended that customer data worksheets be prepared (Refer to Appendix A). These worksheets should become part of the permanent record of customer programming. Refer to the following sections when preparing the worksheets.

### 600.7 DATA BASE FIELDS

The data fields are used to set system timers, determine central office line features and Key Telephone features. When entering CO line data and station data, be sure to enter the exact number of digits specified. The data fields and features are further described in the following sections.

## 600.6 DATABASE UPLOAD/DOWNLOAD ROUTINE

The Database Upload/Download database feature provides a maintenance facility which permits the user to download the database to a PC, when a software change is made or when the system needs to be initialized and re-programmed. In addition, the routine will facilitate the programming of a database on an in-house system which can be downloaded to a PC and then uploaded to a system in the field. After the system maintenance is completed, the file saved in the PC can then be uploaded to the system.

> **NOTE** *All trace modes (SMDR, ICLID Event, Maintenance Event Traces, etc.) MUST be turned off before any download is performed!*

### A. Using the PC to Upload/Download thru Remote Administration

A Personal Computer must be connected to the RS-232C port on the Central Processor Unit (CPU) on the Starplus SPD 4896 system that can be used for database programming.

When entering the system remotely via a Personal Computer, access to the on-board 1200 Baud Modem (future) is accomplished by using Port 499 either through a direct ringing assignment, DISA or by being transferred to Port 499 by any internal station.

1. Connect one end of an RS-232C Serial cable from the RS-232C connector on the Central Processor Unit (CPU) of the SPD 4896 system to the desired Comm Port on the Personal Computer.

> **NOTE** *Pins 2 & 3 on the Personal Computer end of the RS-232C serial cable MUST be reversed. Pins 6 & W MUST be jumpered together fur proper operating of the upload/download routing.*

2. Load a communication software package (i.e. Procomm) into the Personal Computer. Make the necessary changes to the following areas of the communications package. Save these permanent settings.

| ITEMS TO CHANGE | CHANGE |
|---|---|
| Parameters: Alt + [P] | |
| Baud Rate | 2400 Baud, N for Parity, 8 Bits, 1 Stop Bit |
| SETUP OPTIONS: Alt + [S] | |
| Terminal Options: | |
| Item C: Soft flow ctrl (XON/XOFF) | ON |
| Protocol Options: | |
| Item A: Echo Locally | OFF |
| Item D: Character Pacing | 0 |

| i Item E: Line Pacing | 0 |
|---|---|
| Item F: Pace Character | 0 |
| Item I: CR Translation (upload) | None |
| Item J: LF Translation (upload) | None |
| Item K: CR Translation (download) | None |
| Item L: LF Translation (download) | None |
| PROTOCOL OPTIONS | |
| General Protocol Options: | |
| Item C: Abort xfer if CD lost | NO |

NOTE: Item C appears in Procomm Plus Version 2.01 or higher

> **NOTE** *There should NOT be a problem downloading from an Starplus SPD 2856 system and uploading that data file to a Starplus SPD 4696 system.*

3. Press the [Enter] key on the PC. The following display will be seen on the Personal Computer monitor.

```
4896 Digital Key-System
Eng. Ver. 0.0711  DATE: 06/09/93  TIME: 13:12:59
ENTER  PASSWORD:
```

4. Enter the password [VODAVI], and press the [Enter] key again. Proper entry of the password will result in the ADM> prompt. Proceed with programming referring to Figure 600-I for terminal characters that represent the keyset buttons. By entering a [?] from the terminal, a HELP screen will appear.

5. Enter the information on the following screen capture.

```
4896 Digital Key-System
Eng. Ver. 0.071F DATE: 06/09/93  TIME: 13:12:59
ENTER PASSWORD:
adm>,
      ENTER PROGRAM NO
adm>86
 LOAD DATABASE ROUTINE
ENTER BUTTON NUMBER
adm>w
 DOWNLOAD DATABASE
 PRESS HOLD
adm>
```

6. Press the Alt + F1 keys. This will bring up the log screen on the PC monitor. Enter a path for the database file to be sent to or press [Enter] and the database file will be sent to the desti-

nation shown in the communications package default settings area.

```
.....................................................................
:                                                                   :
: Enter LOG FILE name, or CR for default:                           :
.....................................................................
```

> **NOTE** *The downloaded database can not be changed in the P6. The Upload/download routine is only a method to save an existing database. Any database changes can be made using the remote admin capabilities.*

7. On the PC, press the [Enter] key to begin the downloading routine. Confirmation tone will be heard when the database is completely downloaded.

8. After the file is downloaded from the system and no more data is seen on the screen, press the [Alt] + [F1] keys again to turn the log file off.

9. Enter an "M" or a "," and press the [Enter] key.

10. On the PC, press the [Alt] + [X] keys. Press the [Enter] key to exit Procomm and return to the DOS prompt.

The download file will contain a series of ASCII strings which will contain a checksum at the end of the string. The checksum will be verified when the system receives the string back. An error in the checksum will result in rejection of the string. In addition an error message will be sent to the PC when a string is received with an error. The user must watch for no more data on the screen to determine when the transmission of the download file is complete.

The following is a list of strings and the order that they will received in:

| 1. | DB_VERSION |
|---|---|
| 2. | SYS_TIMERS |
| 3. | DB_VERSION |
| 14. | RELAY-BOX (1 thru 4) |
| 5. | NIGHT-MODE |
| 6. | HUNT-GROUP (450 thru 457) |
| 7. | CO-LINE (l thru 48) |
| 8. | STATION (100 thru 195) |
| 9. | KEYSET_BUTTONS (100 thru 195) where equipped |
| 10. | DSS_BUTTONS (100 thru 195) where equipped |
| 11. | UCD_GRP (550 thru 557) |

| 12. | ACD GRP (558 thru 565) |
|---|---|
| 13. | UCD_TIMERS |
| 14. | VOICE_MAIL_GRP (440 thru 448) |
| 15. | VOICE-MAIL-OUTPULSE |
| 16. | ALLOW-TABLE-A |
| 17.. | ALLOW-TABLE-B |
| 18. | DENY-TABLE-A |
| 19. | DENY-TABLE-B |
| 20. | OFFICE-CODE TABLE |
| 21. | AREA-CODE-TABLE |
| 22. | 3_DIGIT_ROUTE_TABLE |
| 23. | G-DIGIT-ROUTE-TABLE (table entry) |
| 24. | EXCEPTION-CODE-TABLE |
| 25. | ROUTE-LIST-TABLE (table entry) |
| 26. | INS/DEL-TABLE (table entry) |
| 27. | DAILY-START-TABLE |
| 28. | WEEKLY-START TABLE |
| 29. | ROUTE-FOR-555-l 212 |
| 30. | SYSTEM-SPEED-BIN |
| 31. | STA_SPEED_BIN (station 100 thru 195) |
| 32. | SPEED-DIR (directory entry) |
| 33. | ICLID_TRANS_TABLE (trans table entry) |
| 34. | ICLID_UAC_TABLE uac table entry |
| 35. | SPECIAL-TABLE |
| 36. | PORT TO-STATION |
| 37. | PORT-TO-CO-LINE |
| 38. | STATUS-REQUEST |
| 39. | END-OF-FILE |

Forward and backward compatibility is maintained. If the file being uploaded from the PC contains less information in a string than is required by the system database, the system will maintain default information in the area not covered by the string. If the file being uploaded from the PC contains more information in a string than is required by the system database, the system will ignore the additional information.

To upload a database file:

1. On the PC, enter the following information after the first ADM> Prompt. Then press the Enter key.

```
4896 Digital Key-System
Eng. Ver. 0.071F DATE: 06/09/93   TIME: 13:23:19
ENTER PASSWORD:
adm>,
      ENTER PROGRAM NO
adm>86
  LOAD DATABASE ROUTINE
ENTER BUTTON NUMBER
adm>q
  UPLOAD DATABASE
  PRESS HOLD
adm>
```

2. On the PC, press the Alt + [C] keys to clear the screen. Press the PgUp key to bring up the upload screen. Enter an "A" to set the upload as an ASCII upload file.

3. This will bring up the ASCII upload file screen on the PC monitor.

```
Upload Protocols
  X) XMODEM                    A) ASCII
  Z) ZMODEM                    R) RAW ASCII
  Y) YMODEM (Batch)            T) TELINK
  G) YMODEM-G (Batch)          M) MODEM7
  O) 1K-XMODEM                 W) WXMODEM
  Z) 1K-XMODEM-G               I) IMODEM
  C) COMPUSERVE B-             1) [EXT 1]
  K) KERMIT                    2) [EXT 2]
  S) SEALINK                   3) [EXT 3]

Your Selection:    (press ENTER for ZMODEM)
```

4. Enter the path for the file to be uploaded to the system and press the Enter key. The file will now be uploaded to the system. Confirmation tone will be heard at the completion of the upload routine. If the Enter key was pressed during the download routine without a filename entered, the default filename will be: PCPLUS.LOG.

> **NOTE** *If the PCPLUS.LOG file is not renamed or deleted before the next download routine is performed, the downloaded information will append the existing .LOG file instead of over-writing it*

5. After the file is uploaded to the system, the ADM> prompt will be returned to the PC monitor. Enter an "M" at the prompt and press the Enter key.

```
adm>,
      ENTER PROGRAM NO
adm>m
exiting  admix...


DATE:  06/09/93  TIME:  13:25:11
exiting maintenance utility...
```

6. On the PC, press the Alt + [X] keys. Press the Enter key to exit Procomm and return to the DOS prompt.

7. After the upload procedure is completed. the system MUST be reset for full activation of the database programming to take effect.

# TABLE OF CONTENTS FOR SECTION 610

# SECTION 610
# SYSTEM PARAMETERS PROGRAMMING

**610.1     SYSTEM TIMERS**

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2 , Program Mode Entry (Key Station).

If any System Timers are to be changed:

1. Press FLASH and dial [01]. The following message is shown on the display phone:

```
SYSTEM TIMERS
ENTER BUTTON NUMBER
```

Description

This section describes the procedures and steps necessary to program system timers.

The buttons on the digital terminal are defined as shown below when entering the System Timers programming.

| 1 Q | SYSTEM HOLD RECALL | CO RING DETECT | 11 A |
|---|---|---|---|
| 2 W | EXCL HOLD RECALL | DISA/SLT RCVR | 12 S |
| 3 E | ATTENDANT RECALL | MSG WAIT REMINDER | 13 D |
| 4 R | TRANSFER RECALL | HOOKFLASH | 14 F |
| 5 T | PRESET FORWARD | HKFLASH DEBOUNCE | 15 G |
| 6 Y | CALL FWD NO/ANS | SMDR CALL QUALIFICATION | 16 H |
| 7 U | PAUSE TIMER | AUTO CALLBACK TIMER | 17 J |
| 8 I | CALL PARK TIMER | REMINDER RING TIMER | 18 K |
| 9 O | CONF/DISA TIMER | RELEASE GUARD TIMER | 19 L |
| 10 P | PAGING TIMEOUT | | 20 ; |

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| SYSTEM TIMERS: | | | |
| FLASH 01 | 1 | System Hold Recall | 060 seconds |
| | 2 | Exclusive Hold Recall | 180 seconds |
| | 3 | Attendant Recall Timer | 01 minutes |
| | 4 | Transfer Recall Timer | 045 seconds |
| | 5 | Preset Forward Timer | 10 seconds |
| | 6 | Call Forward No Answer | 015 seconds |
| | 7 | Pause Timer | 2 seconds |
| | 8 | Call Park Timer | 180 seconds |
| | 9 | Conference/D&A Timer | 10 minutes |
| | 10 | Paging Timeout Timer | 15 seconds |
| | 11 | CO Ring Detect Timer | 300 milliseconds |
| | 12 | SLT DTMF Receiver Timer | 020 seconds |
| | 13 | MSG Wait Reminder Tone | 000 minutes |
| | 14 | SLT Hook-flash Timer | 10 (1 seconds) |
| | 15 | SLT Hook-flash Debounce | 010 (.1 second) |
| | 16 | SMDR Call Qualification Timer | 30 seconds |
| | 17 | Auto Call Back Timer | 00 seconds (disabled) |
| | 18 | Reminder Ring Timer | 00 seconds (disabled) |
| | 19 | Release Guard Timer | 300 milliseconds |

## SYSTEM TIMERS (Cont'd)

### A. System Hold Recall Timer

Programming Steps

Description

If this timer is to be changed:

1. Press the SYSTEM HOLD RECALL TIMER flexible button (Button #1). The following message is shown on the display phone:

```
SYS HOLD RECALL        000-300
             060
```

2. Enter a three-digit timer value on the dial pad which corresponds to 001-300 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the amount of time before a call placed on System Hold will recall the station placing the hold. If unanswered by that station, the call will recall the attendant.

**Default:** By default, the System Hold Recall Timer is set for 60 seconds and is variable from 001 to 300 seconds.

An entry of 000 will disable the timer and there will be no recall.

**Related Programming:** Refer to Sec. 610.2, Hold Preference for selecting System Hold Preference; Refer to Sec. 610.5, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

### B. Exclusive Hold Recall Timer

Programming Steps

Description

If this timer is to be changed:

1. Press the EXCLUSIVE HOLD RECALL TIMER flexible button (Button #2). The following message is shown on the display phone:

```
EXC HOLD RECALL        000-300
             180
```

2. Enter a three-digit timer value on the dial pad which corresponds to 001-300 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the amount of time before a call placed on Exclusive Hold recalls the station placing the Hold. If unanswered by that station, the call recalls the attendant.

**Default:** By default, the Exclusive Hold Recall Timer is set for 180 seconds and is variable from 001 to 300 seconds.

An entry of 000 will disable the timer and there will be no recall.

**Related Programming:** Refer to Sec. 610.2, Hold Preference for selecting Exclusive Hold Preference; Refer to Sec. 610.5, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

**EM T'''ERS (Cont'd)**

**ᴬttendant Recall Timer**

| Programming Steps | Description |
|---|---|

timer is to be changed:

Press the **ATTENDANT** RECALLTIMER flexible button (Button **#3**). The following message is shown on the display phone:

```
ATND RECALL TIMER    00-60
              01
```

Enter a two-digit timer value on the dial pad which corresponds to 00-60 minutes.

Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the amount of time a recalling call will ring at the attendant station(s) before the system will release the line.

When a CO Line recalls to the Attendant station and is still unanswered, the system will release the line at the expiration of this timer and automatically place the line back to an idle condition.

**Default:** By default, the Attendant Recall **Timer** is set for 1 minute and is variable from 00 to 60 minutes.

An entry of 00 will cause the Attendant(s) to ring until answered.

**Related Programming:** Refer to Sec. 610.5, Attendant Station Assignment; Refer to Sec. 610.1, System Timers for the System Hold Recall Timer, Exclusive Hold Recall Timer, Call Park Recall Timer, and Transfer Recall Timer. Refer to Sec. 620 , CO Line Programming for Loop Supervision programming.

**ransfer Recall Timer**

| Programming Steps | Description |
|---|---|

timer is to be changed:

Press the TRANSFER RECALL TIMER flexible button (Button 64). The following message is shown on the display phone:

```
TRANSFER  RECALL       000-300
           045
```

Enter a three-digit timer value on the dial pad which corresponds to 001-300 seconds.

Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the amount of time a transferred call rings at the station receiving the transfer before it recalls the station making the transfer. If unanswered by that station, the call recalls the attendant.

**Default:** By default, the Transfer Recall Timer is set for 45 seconds and is variable from 001 to 300 seconds.

A 000 entry disables the timer and there will be no recall.

**Related Programming:** Refer to Sec. 610.5, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

## SYSTEM TIMERS (Cont'd)

### E. Preset Forward Timer

| Programming Steps | Description |
|---|---|

Programming Steps

If this timer is to be changed:

1. Press the PRESET FORWARD TIMER flexible button (Button #5). The following message is shown on the display phone:

```
PRESET FWD TIMER     00-99
               10
```

2. Enter a two-digit timer value on the dial pad which corresponds to 01-99 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

This timer determines the amount of time an outside line will ring before being forwarded to a predetermined station. This entry works with Preset Forward station assignments in Station Programming. More than one station can be forwarded to the same party.

This timer also governs the time the DISA call will ring at a station before being returned to intercom dial tone, if not answered.

**Default:** By default, the Preset Forward Timer is set at 10 seconds and is variable from 01 to 99 seconds.

A 00 entry disables the timer and there will be no forward.

**Related Programming:** Refer to Sec. 630.1, Station Attributes Programming , Preset Call Forward Programming for instruction on assigning a preset forward destination to a station.

### F. Call Forward No/Answer Timer

Programming Steps

If this timer is to be changed:

1. Press the CALL FORWARD NO/ANSWER TIMER flexible button (Button #6). The following message is shown on the display phone:

```
CALL FWD NO ANS     000-600
               015
```

2. Enter a three-digit timer value on the dial pad which corresponds to 000-600 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

This timer is used when a station in the system specifies that "no answer" calls be forwarded to another station. The timer determines how long an intercom or transferred call will ring before it is considered a "no-answer" call. The call will then forward to the designated station for handling.

| NOTE | *Initial incoming CO lines will follow the Preset Call Forward Timer when encountering a station in the Forward/No answer mode. Refer to Section 610.1 for instructions on setting the Preset/Forward Timer* |
|---|---|

**Default:** By default, the Call Forward No/Answer Timer is set for 15 seconds and is variable from 000-600 seconds.

**Related Programming:** Refer to Sec. 610.1, System Timers, Preset Forward Timer; Refer to 630.1, Station Attributes Programming, Call Forwarding option.

**SYSTEM TIMERS (Cont'd)**

**G. Pause Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If this timer is to be changed:

1.  Press the PAUSE TIMER flexible button (Button #7). The following message is shown on the display phone:

```
┌─────────────────────────────────────┐
│  PAUSE TIMER            1-9          │
│              2                      │
└─────────────────────────────────────┘
```

2.  Enter a one-digit timer value on the dial pad which corresponds to l-9 seconds.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the length of the pause when programmed for use with speed dialing and LCR Insert Tables.

**Default:** By default, the Pause Timer is set at 2 seconds and is variable from 1 to 9 seconds. There is no 0 entry.

**H.   Call Park Recall Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If this timer is to be changed:

1.  Press the CALL PARK RECALL TIMER flexible button (Button #8). The following message is shown on the display phone:

```
┌─────────────────────────────────────┐
│  CALL  PARK  TIMER       000-600    │
│                 180                 │
└─────────────────────────────────────┘
```

2.  Enter a three-digit timer value on the dial pad which corresponds to 001-600 seconds.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

This timer determines the amount of time before a call placed in the call park location will recall the station placing the call park. If unanswered by that station, the call will recall the attendant.

**Default:** By default, the Call Park Recall Timer is set at 180 seconds and is variable from 001 to 600 seconds.

A 000 entry disables the timer and there will be no recall.

**Related Programming:** Refer to Sec. 610.5, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

## SYSTEM TIMERS (Cont'd)

### I. Conference/DISA Timer

**Programming Steps**

If this timer is to be changed:

1. Press the CONFERENCE/DISA TIMER flexible button (Button #9). The following message is shown on the display phone:

```
CONFERENCE TIMER    00-99
            10
```

2. Enter a two-digit timer value on the dial pad which corresponds to 01-99 minutes.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Description**

This timer determines the amount of time an unsupervised conference can continue after the initiator of the conference has exited the conference.

**Default:** By default, the Conference/DISA Timer is set at 10 minutes and is variable from 01 to 99 minutes.

A 00 entry disables the timer and means no automatic disconnect occurs.

> **NOTE** The Conference Timer also allows the system administrator to control the length of time a DISA caller is allowed after establishing a "Trunk-to-Trunk" call. At the expiration of the Conference Timer, a tone wilt be presented to both DISA pattles, then one minute later the system will automatically release both trunks. The Conference Timer does not affect or control a DISA-to-Station call.

**Related Programming:** Refer to Sec. 620, CO Line Programming for DISA Trunk-to-Trunk (Per CO Line) programming; Loop Supervision Programming; and DISA Programming. Also refer to Sec. 630.1 , Station Attributes Programming, Conference Enable/Disable (Per Station) option.

### J. Paging Timeout Timer

**Programming Steps**

If this timer is to be changed:

1. Press the PAGING TIMEOUTTIMER flexible button (Button #10). The following message is shown on the display phone:

```
PAGING  TIME-OUT      00-60
            15
```

2. Enter a two-digit timer value on the dial pad which corresponds to 01-60 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Description**

This timer determines the maximum length of a page announcement (internal, external or all call). The system will automatically disconnect the page at the end of this time unless the person making the page has already hung up.

**Default:** By default, the Paging Timeout Timer is set at 15 seconds and is variable from 01 to 60 seconds.

A 00 entry disables the timer and pages will not be limited in length.

**Related Programming:** Refer to Sec. 630.1, Station Attributes Programming for allowing stations access to the system paging resources.

**SYSTEM TIMERS (Cont'd)**

**K. CO Ring Detect Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

| Programming Steps | Description |
|---|---|
| If this timer is to be changed:<br><br>1. Press the CO RING DETECT TIMER flexible button (Button #1 1). The following message is shown on the display phone: | This timer controls the time necessary to detect an outside line as ringing into the system.<br>**Default:** By default, the CO Ring Detect Timer is set at 3 (300 msec), and is variable from 2 to 9 (200msec. to 900msec). There is no 0 or 1 entry. |

```
CO RING DETECT        2-9
          3
```

2. Enter a one-digit timer value on the dial pad which corresponds to 2-9 (200 msec. to 900 msec) .

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**L. SLT DTMF Receiver Timer**

| Programming Steps | Description |
|---|---|
| If this timer is to be changed:<br><br>1. Press the SLT DTMF RECEIVER TIMER flexible button (Button #12). The following message will be shown on the display. | Single line telephones require the use of a DTMF receiver when going off-hook and dialing. When SMDR or toll restriction, (via COS assignments) is enabled in the system a DTMF receiver will monitor and screen an SLT's digits for the duration of this timer. By adjusting this timer the system administrator may either free up system DTMF receivers sooner if system SLT traffic is heavy or provide for a longer monitoring period if toll restriction becomes **a** problem. It should be understood that when LCR is enabled the DTMF receivers are released when the expected number of digits are dialed as entered in the LCR database. |

```
SLT  RCVR TIMER          0 0 5 1 0 0
          020
```

2. Enter a three-digit timer value on the dial pad which corresponds to 005-l 00 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Default:** By default, the SLT DTMF Receiver Timer is set at 20 seconds and is variable from 005 to 100 seconds.

**Related Programming:** Refer to Sec. 610.12, SMDR Programming; Sec. 620.1, CO Line Programming, Class of Service (COS) Programming; Sec. 630.1, Station Attributes Programming, Station Class of Service (COS) Options. Also refer to Sec. 665.2, LCR Tables Programming.

**SYSTEM TIMERS (Cont'd)**

**M.   Message Wait Reminder Tone**

Programming Steps | Description
---|---

If this feature is to be changed:

1. Press the MESSAGE WAIT REMINDER TONE flexible button (Button #13). The following message is shown on the display phone:

```
M/W TONE TIMER        000-104
             000
```

2. Enter a three-digit timer value on the dial pad which corresponds to 000 to 104 minutes.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Description**

This timer determines the amount of time between repeated reminder tones to a key telephone with a message waiting.

Digital key station users may be reminded of a message waiting on their telephone with an audible signal presented at a timed interval.

**Default:** By default, the Message Wait Reminder Tone is set at 000 (disabled) and is variable from 000 to 104 minutes.

**N.   SLT Hook Flash Timer**

Programming Steps

If this timer is to be changed:

1. Press the SLT HOOK FLASH TIMER flexible button (Button #14). The following message is shown on the display phone:

```
HOOK SWITCH TIME      05-20
             10
```

2. Enter a two-digit timer value on the dial pad which corresponds to 0.520 seconds in 1/10 sec. increments.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the displaywill now update.

Description

This timer determines how long an SLT user should press the hook switch in order for it to be considered a valid on hook (disconnect) request. An on-hook shorter in duration (but longer than the Hook Switch Bounce Timer) will be considered a Hook Flash (transfer) request. Refer to Figure 610-l Hook Switch Activity.

**Default:** By default, the SLT Hook Flash Timer is set at 10 (one second) and is variable from 0.5 to 20 seconds.

**NOTE** *Some Single time telephones have a fixed or programmable Flash Timer (Flash or Tap button). This Hook Switch Timer must be set longer than the SLT Flash timer to allow Hook Flash transfer.*

## SYSTEM TIMERS (Cont'd)

### O.   SLT Hook Flash Debounce Timer

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

Programming Steps

If this timer is to be changed:

1. Press the SLT HOOK FLASH DEBOUNCE
   TIMER flexible button (Button #15). The fol-
   lowing message is shown on the display
   phone:

```
HOOK SWT BOUNCE       000-100
              010
```

2. Enter a three-digit timer value on the dial pad
   which corresponds to O-l second in 10 msec
   increments.

3. Press the HOLD button to save the entry.
   Confirmation tone is heard and the display will
   now update.

Description

This timer determines the length of time that is
needed to determine a valid on-hook or off-hook
condition for single line' telephones. On-Hook or
Off-Hooksignals that are shorter in duration than this
timer will be ignored by the system. Refer to Figure
61 O-l Hook Switch Activity.

**Default:** By default, the SLT Hook Flash Debounce
Timer is set to 0.10 sec. and is variable from 0 to 1
second in 10 msec increments. This entry is a three-
digit entry where 010 equals .1 second.



Figure 61 O-1 Hook Switch Activity

**SYSTEM   TIMERS   (Cont'd)**

**P.   SMDR   Call   Qualification   Timer**

Programming Steps

If this timer is to be changed:

1.   Press the SMDR CALL QUAL TIMER flexible
     button (Button #16). The following message
     is shown on the display phone:

```
SMDR CALL QUAL        00-60
              30
```

2.   Enter a two-digit timer value on the dial pad
     which corresponds to 00-60 seconds in 1 sec.
     increments.

3.   Press the HOLD button to save the entry.
     Confirmation tone is heard and the displaywill
     now update.

Description

*This feature is available with optional software.*
This timer determines the length of time that is
needed to determine a valid SMDR call for SMDR
reporting   purposes.

**Default:** By default, the SMDR Call Qualification
Timer is set to 30 sec. and is variable from 00 to 60
seconds in 1 sec. increments.

**Q.   Automatic   Call   Back   Timer**

Programming Steps

If this timer is to be changed:

1.   Press the AUTO CALL BACK TIMER flexible
     button (Button #17). The following message
     is shown on the display phone:

```
00-99AUTO CALL BACK
             00
```

2.   Enter a two-digit timer value on the dial pad
     which corresponds to 00-99 seconds in 1 sec.
     increments.

3.   Press the HOLD button to save the entry.
     Confirmation tone is heard and the displaywill
     now update.

Description

To accommodate the reduced number of buttons on
the Starplus Basic Keyset, a Call Back Feature has
been added to system. This feature will invoke a call
back anytime a user listens to busy tone for a preset
period of time.

**Default:** By default, the Automatic Call Back Timer
is set for 00 seconds (disabled), and is variable from
00 to 99 seconds.

An Automatic Call Back will not occur when this timer
is   disabled.

**SYSTEM  TIMERS  (Cont'd)**

**R.   Reminder Ring Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If this timer is to be changed:

1.  Press the REMINDER RING flexible button
    (Button #18). The following message is
    shown on the display phone:

```
┌──────────────────────────────────┐
│                                  │
│  REMINDER RING         00-99     │
│              00                  │
│                                  │
└──────────────────────────────────┘
```

2.   Enter a two-digit timer value on the dial pad
     which corresponds to 00-99 seconds in 1 sec.
     increments. A value of 00 disables the timer,
     therefore the user will only receive one burst
     of ring at the beginning of the call.

3.  Press the HOLD button to save the entry.
    Confirmation tone is heard and the display will
    now update.

When a Cd line rings at a busy station, the call rings
at the station using muted ringing. The CO Ringing
Option feature allows a user to receive reminder ring
at his station instead of muted ring. This timer pro-
vides a reminder ring every time the timer expires,
as long as the incoming CO line remains connected.

If the user continues his present conversation and
the CO party does not hang up, the Reminder Ring
timer will expire and the user will receive another
burst of ring. When the keyset user hangs up on his
existing call, the ringing for the CO call will revert to
normal ringing.

When the reminder ring option is used, the type of
reminder ring tone is determined by the Tone Ring
Option code [695] programmed on that keyset. It is
also possible that this tone or a portion of this tone
could be heard in the handset, depending on the
keyset ring volume setting.

**Default:** By default, the Reminder Ring Timer is set
to 00 sec. and is variable from 00 to 99 seconds in
1  sec.  increments.

**Related Programming:** Refer to Sec. 630.1 , CO
Line Ringing Options.

**S.   Release Guard Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If this timer is to be changed:

1.   Press the RELEASE GUARD TIMER flexible
     button (Button #19). The following message
     is shown on the display phone:

```
┌──────────────────────────────────┐
│                                  │
│  RELEASE   GUARD       01-50     │
│              3                   │
│                                  │
└──────────────────────────────────┘
```

2.   Enter a two-digit timer value on the dial pad
     which corresponds to 01-50 (0.1 sec. to 5.0
     sec.)

3.  Press the HOLD button to save the entry.
    Confirmation tone is heard and the display will
    now update.

The Release Guard Timer is designed for the CO
Line loop interface to accommodate the variations
found from one Central Office to another. The timer
is started whenever a CO line is released. If a user
attempts to access a CO line before the Release
Guard timer expires, his LED will illuminate indicat-
ing the CO line has been seized, however the CO
line will not be seized until the timer expires. The user
WILL NOT receive busy tone, but may get delayed
CO dial tone if the timer is set to a large value.

**Default:** By default, the Release Guard timer is set
for 3 for 300 milliseconds, and is variable from 100
milliseconds  to  5  seconds.

## 610.2   SYSTEM FEATURES PROGRAMMING

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

### Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station)

If any System Features are to be changed:

1. Press FLASH and dial [05]. The following message is shown on the display phone:

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

### Description

This section describes the procedures and steps necessary to program System Features.

The buttons on the digital terminal are defined as shown below when entering the System Features programming area.

| 1 | Q | ATTN OVERRIDE | | CALL COST DISPLAY | 11 | A |
|---|---|---------------|---|-------------------|----|---|
| 2 | W | HOLD PREF | | MUSIC ON HOLD | 12 | S |
| 3 | E | EXT NIGHT RING | | HANDSET RECEIVER | 13 | D |
| 4 | R | EXEC OVER WARN TONE | | CALL QUALIFIER TONE OPTION | 14 | F |
| 5 | T | PAGE WARN TONE | | | 15 | G |
| 6 | Y | BACKGROUND MUSIC | | | 16 | H |
| 7 | U | LCR ENABLE | | | 17 | J |
| 8 | I | ACCOUNT CODES | | | 18 | K |
| 9 | O | GROUP LISTENING | | | 19 | L |
| 10 | P | IDLE SPEAKER MODE | | | 20 | : |

| PROG CODE | FLEX BTN | FUNCTION | DEFAULT | CUSTOMER DATA |
|-----------|----------|----------|---------|---------------|
| FLASH 05 | 1 | Attendant Override | Disabled | |
| | 2 | Hold Preference | System | |
| | 3 | External Night Ring | Disabled | |
| | I 4 | Executive Warning Tone | Enabled | |
| | 5 | Page Warning Tone | Enabled | |
| | 6 | Background Music | Enabled | |
| | 7 | LCR Enable | Disabled | |
| | 8 | Account Codes | Disabled | |
| | 9 | Group Listening | Disabled | |
| | 10 | Idle Speaker Mode | Yes | |
| | 11 | Call Cost Display Feature | Disabled | |
| | 12 | Music On Hold | Enabled | |
| | 13 | Handset Receiver Gain | Disabled | |
| | 14 | Call Qualifier Tone Option | Disabled | |

**SYSTEM  FEATURES  (Cont'd)**

**A.  Attendant  Override**

<div align="center">Programming Steps</div>

If this feature is to be changed:

1. Press the ATTN OVERRIDE flexible button (Button #1). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED off = Attendant Override is disabled
   - LED on = Attendant Override is enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<div align="center">Description</div>

When this feature is enabled, it allows the attendant to override a busy station or a station in DND.

**Default:** By default, Attendant Override is disabled.

**Related Programming:** Refer to Sec. 610.5, Attendant Station Assignment for designating a station as an Attendant.

> **NOTE** Attendent override will function ONLY when the Attendant station is assigned a flex button assigned as Attendant Override.

**B.  Hold  Preference**

<div align="center">Programming Steps</div>

If this feature is to be changed:

1. Press the HOLD PREF flexible button (Button #2). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED off = Exclusive Hold is preferred
   - LED on = System Hold is preferred
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<div align="center">Description</div>

The system may be programmed to have either Exclusive or System Hold preferred. If Exclusive Hold is preferred, the user will press the HOLD button once for Exclusive Hold and twice for System Hold. If System Hold is preferred, the user will press the HOLD button once for System Hold and twice for Exclusive Hold.

Refer to System Timer programming for recall times for both System and Exclusive Hold.

**Default:** By default, Hold Preference is System Hold.

**Related Programming:** Refer to- Sec. 610.1, System Timers for the System Hold Recall Timer and Exclusive Hold Recall Timer.

## SYSTEM FEATURES (Cont'd)

### C. External Night Ring

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

Programming Steps

If this feature is to be changed:

1. Press the EXT NIGHT RING flexible button (Button #3). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED off = Ext. Night Ring is disabled
   - LED on = Ext. Night Ring is enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

Description

When this feature is set to yes, it activates external night ring which produces a tone that is sent over all external page groups. When outside lines are marked UNA, ringing will activate a tone over external paging when an incoming call occurs on those lines during night service.

**Default:** By default, External Night Ring is disabled.

**Related Programming:** Refer to Sec. 610.9, Relay/Sensor Programming; Refer to Sec. 620.1, CO Line Programming for assigning UNA status to a CO Line(s).

### D. Executive Override Warning Tone

Programming Steps

If this feature is to be changed:

1. Press the EXEC OVER WARN TONE flexible button (Button #4). This feature wiil toggle on and off with each depression, and the display will update with each depression.
   - LED off = Executive Override Tone disabled
   - LED on = Executive Override Tone enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

Description

A Station programmable option allows stations to be designated as "Executive" stations with the ability to override and "barge-in" on other keysets engaged in conversation on a CO line. Prior to actual cut through of the third party, a warning tone is presented to all parties notifying them of the "barge-in".

This warning tone however is a programmable option, on a system wide basis, that either enables or disables the tone. When the tone is disabled no audible signal is presented to the parties to signal the "barge-in".

**CAUTION:**

USE OF THIS FEATURE WHEN THE EXECUTIVE OVERRIDE WARNING TONE IS DISABLED MAY BE INTERPRETED AS A VIOLATION OF FEDERAL, STATE OR LOCAL LAWS, AND AN INVASION OF PRIVACY. CHECK APPLICABLE LAWS IN YOUR AREA BEFORE. INTRUDING ON CALLS USING THIS FEATURE.

**Default:** By default, Executive Override Warning Tone is enabled.

**Related Programming:** Refer to Sec. 630.1, Executive Override.

## SYSTEM FEATURES (Cont'd)

### E. Page Warning Tone

<u>Programming Steps</u>

If this feature is to be changed:

1. Press the PAGE WARN TONE flexible button (Button #5). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Page Warning Tone is enabled
   - LED off = Page Warning Tone is disabled
2. Press the HOLD button to **save** the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

Determines whether a page warning tone will be sounded over the Key Telephone speakers or external paging speakers, prior to a page announcement.

**Default:** By default, Page Warning Tone is enabled.

**Related Programming:** Refer to Sec. 630.1, Station Attributes Programming for Paging Access and Page Group Assignments.

### F. Background Music Channel

<u>Programming Steps</u>

If Background Music is to be enabled/disabled:

1. Press the BACKGROUND MUSIC flexible button (Button #6). This feature will toggle on and off with each depression, and the display will update with each depression.
   . LED on = Background Music is enabled
   . LED off = Background Music is disabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

The system can be programmed to allow stations to activate Background Music at their stations, in addition to Music-On-Hold. A music source must be connected to the BGM/MOH connector on the CPU.

**Default:** By default, the Background Music channel is enabled.

**Related Programming:** Refer to Sec. 610.2, System Features Programming, Music On Hold for the Music-On-Hold assignment.

## SYSTEM FEATURES (Cont'd)

### G. LCR Enable

<u>Programming Steps</u>

If this feature is to be assigned:

1. Press the LCR ENABLE flexible button (Button #7). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = LCR is enabled
   - LED off = LCR is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

***This feature is available with optional software.*** If Least Cost Routing is to be used, it must be enabled here. Before enabling LCR, refer to the Least Cost Routing section and programming tables (Appendix A). When the tables have all been programmed, you may then enable LCR for the system. After system initialization, a default LCR database is loaded into the LCR section of memory. Refer to Figure 675-8 DB Printout of LCR Default.

**Default:** By default, LCR is disabled.

**Related Programming:** Refer to Sec. 665.1, LCR Tables Programming.

### H. Account Codes - Forced

<u>Programming Steps</u>

1. Press ACCOUNT CODES flexible button (Button #8) to determine whether the use of Account Codes will be forced or optional. This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED ON = Account Codes are forced
   - LED OFF = Account Codes are optional

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

***This feature is available with optional software.***

The system can force the use of account codes on all restricted calls.

If forced account code option is enabled, then a stations Class of Service is upgraded to day COS1, night COS1, when the account code is entered.

If forced account code option is disabled, then a stations Class of Service is not upgraded but the account code continues to be part of the SMDR record.

**Default:** By default, the use of account codes is not forced but optional.

**Related Programming:** Refer to Sec. 610.12, SMDR Programming

**SYSTEM FEATURES (Cont'd)**

**I.    Group Listening**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If Group Listening is to be assigned:

1.   Press the GROUP LISTENING flexible button (Button #9). This feature will toggle on and off with each depression, and the display will update with each depression.

   - LED on = Group Listening is enabled

   - LED off = Group Listening is disabled

2.   Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT  AO  SY  ENR  EO  PW
BGM  LCR  AC  G  S  CC  MH  V  Q
```

All digital key terminals have built-in speakerphones. Station users may use the speaker to monitor a call while using the handset to converse with the outside party. This enables other people in the room to listen to both parties in the conversation. Group listening is not available when the station is in the headset mode.

**Default:** By default, Group Listening is disabled.

**J.    idle Speaker Mode**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If the speaker mode needs to be assigned.

1.   Press the IDLE SPEAKER MODE flexible button (Button #10). This feature will toggle on and off with each depression, and the display will update with each depression.

   - LED on = 1st digit dialed is heard.

   - LED off = 1 st digit dialed is muted.

2.   Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT  AO  SY  ENR  EO  PW
BGM  LCR  AC  G  S  CC  MH  V  Q
```

This feature allows the system to determine whether the first digit dialed is heard over the digital key terminai speaker. This feature can be allowed or denied on a system-wide basis in programming.

Default: By default, idle speaker mode is disabled.

## SYSTEM FEATURES (Cont'd)

K. **Call Cost Display Feature**

<u>Programming Steps</u>

If Call Cost Display Feature is to be enabled:

1. Press the CALL COST DISPLAY flexible button (Button #11). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Call Cost Display is enabled
   - LED off = Call Cost Display is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

***This feature available with optional software.***

The Call Cost Display Feature provides a means for a user to view the approximate cost of each call made. This approximate cost Will also be printed as part of the SMDR record.

The Call Cost Display will replace the call duration display when a call is made using LCR. This display is enabled in programming.

The cost information is programmable by selecting one of the 16 route list tables and one of the four time periods. This allows the user to program four separate costs based on the time of day for each of 16 routes. The costs entered in the tables will be a cost for one minute, however, costs are calculated using a l/l 0th of a minute value. These costs are rounded down and are based on the start time of the call, even if the call extends into a different time period. The SMDR printout will contain a cost calculated using a 1/10th of a minute increment, however the station display will update approximately every 30 seconds. The user must use LCR to get the call cost display.

**Default:** By default, the Call Cost Display Feature is disabled.

**Related Programming:** Refer to Sec. 610.2, System Features Programming, LCR Enable.

L. Music On Hold

<u>Programming Steps</u>

If Music On Hold is to be disabled:

1. Press the MUSIC ON HOLD flexible button (Button #12). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Music On Hold is enabled
   - LED off = Music On Hold is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

A music source, when connected to the system, provides music to all lines on Hold, parked calls, transferred calls and calls waiting to be answered by Automatic Call Distribution (ACD) or Uniform Call Distribution (UCD). This feature can be allowed or denied on a system-wide basis in programming.

**Default:** By default, Music On Hold is enabled.

## SYSTEM FEATURES (Cont'd)

### M. Handset Receiver Gain

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

Programming Steps

If Handset Receiver Gain feature is to be enabled:

1. Press the HANDSET RECEIVER GAIN flexible button (Button #13). This feature will toggle on and off with each depression, and the display will update with each depression.
    - LED on = Handset Receiver Gain is enabled
    - LED off = Handset Receiver Gain is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT  AO  SY  ENR  EO  PW
BGM  LCR  AC  G  S  CC  MH  V  Q
```

Description

The Handset Receiver Gain adjustment feature provides the user with a flexible button that allows the user to increase/decrease the receiver volume on his handset while on a CO call or intercom call.

While on a CO or intercom call, the user can depress the Handset Receiver Gain button. This flex button LED will illuminate. The user can then dial a number from O-9, where 0 is the minimum setting and 9 is the maximum setting. If the user wishes, he can depress his [#] digit to increment his volume, one setting at a time, or his [✶] digit to decrease his volume, one setting at a time. The top line of the LCD display will display his present volume setting while the flex button is active. The user then depresses his flex button a second time when he has completed setting his volume and the LCD display will return to the normal CO or intercom display and the flex button LED will extinguish.

- A flex button can be programmed to decrease the Handset Receiver Gain using the code [638]+[✶].
- Another flex button can be programmed to increase the Handset Receiver Gain using the code [638]+[#].
- A flex button can also be programmed to have a certain volume setting using the code [638]+[1 thru 9].

**Default:** By default, the Handset Receiver Gain feature is disabled.

## SYSTEM FEATURES (Cont'd)

### N. Call Qualifier Tone Option

<u>Programming Steps</u>

If the Call Qualifier Confirmation Tone is to be en-abled:

1. Press the CALL QUALIFIER TONE OPTION flexible button (Button #14). This feature will toggle on and off with each depression, and the display will update with each depression.

    • LED on = Confirmation tone is enabled

    • LED off = Confirmation tone is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH V Q
```

<u>Description</u>

This feature is associated with the ACD Call Qualifier code and determines if a confirmation tone will be heard after the ACD Call Qualifier code is dialed. The ACD Call Qualifier code will permit up to 12-digits to be entered, however only the first four digits are provided for in the SMDR record.

**Default:** By default, the Call Qualification Confirmation tone is disabled.

**610.3 ADDITIONAL SYSTEM FEATURES PROGRAMMING**

<div style="display:flex">

**Programming Steps**

If the system is in the programming mode, continue using the program codes. If stating to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station)

If any System Features are to be changed:

1. Press FLASH and dial [06]. The following message is shown on the display phone:

> **SYSTEM FEATURES
> ENTER BUTTON NUMBER**

**Description**

This section describes the procedures and steps necessary to program System Features.

The buttons on the, digital terminal are defined as shown below when entering the System Features programming area:

| Q 1 PRIVACY RELEASE TONE OPTION | | 11 A |
|---|---|---|
| W 2 | | 12 S |
| E 3 | | 13 D |
| R 4 | | 14 F |

</div>

**A. Privacy Release Tone Option**

<div style="display:flex">

**Programming Steps**

If the Privacy Release Tone is to be changed:

1. Press the PRIVACY RELEASE TONE OPTION flexible button (Button #1). The following message is shown on the display phone:

> **BARGE IN WARN TONE 0-1
> ENABLED**

2. Enter a one-digit value on the dial pad to enable or disable the conference tone.
   – [0] = Disabling of conference tone
   – [1] = Enabling of conference tone
3. Press the HOLD button to save the entry. Confirmation tone is heard.

> **NOTE** *Display stations will continue to receive the "CONFERENCE" display regardless of the warning tone setting.*

**Description**

Privacy is insured on all communications in the system. If desired, the customer may elect to disable the Automatic Privacy feature, thus allowing up to three other stations to join in on an existing CO Line conversations.

> **NOTE** *Disabling of the privacy feature may be limited by federal, state or local law, so check the relevant laws in your area before disabling privacy.*

• Per CO Line Option: This feature allows each CO line to be individually programmed for privacy. This feature is useful for maintaining security on such lines as Data lines, Private lines, or special circuits requiring privacy. If privacy is disabled on a CO line then, while in use, another station may enter the conversation simply by pressing the CO line button. A programmable warning tone is presented to all parties prior to actual cut-thru. The station attempting to enter the conversation must also have privacy disabled.

• Per Station Option: Each station may be programmed to give the station the capability to join an existing conversation simply by pressing the CO line button that is in use. A programmable warning tone is presented to all parties when the station enters the conversation. The CO line must also have privacy disabled to allow the cut-thru.

**Default:** By default, the Privacy Release tone is enabled.

</div>

**MISC. SYSTEM PARAMETERS**

**610.4    FLASH RATES (Programmable)**

Programming Steps

If the system is in the programming mode, continue using the program codes, If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station)

If Flash Rate(s) are to be changed:

a. Press FLASH and dial [07]. The following message is shown on the display phone:

```
SYSTEM FLASH RATES
ENTER BUTTON NUMBER
```

Description

This section describes the procedures and steps necessary to program the Flash Rates.

The buttons on the digital terminal are defined as shown below when entering the Flash Rates programming area:

| Q 1 | INCOMING CO RINGING | | 11 A |
|---|---|---|---|
| W 2 | INCOMING INTERCOM RINGING | | 12 S |
| E 3 | CALL FORWARD | | 13 D |
| R 4 | MESSAGE WAITING | | 14 F |

The available flash rates are as follows:

| | |
|---|---|
| 00 = Off | |
| 01 = Steady On | |
| 02 = 30 ipm flash | |
| 03 = 60 ipm flash | |
| 04 = 240 ipm double wink | |
| 05 = 240 ipm flash | |
| 06 = 240 ipm flutter | |
| 07 = 480 ipm flash | |
| 08 = 480 ipm flutter | |
| 09 = 15 ipm flash | |
| 10 = 120 ipm flash | |
| 11 = 120 ipm flutter | |
| 12 = 480 ipm wink | |
| 13 = 240 ipm wink | |
| 14 = 240 ipm quad wink | |
| 15 = 480 ipm triple wink | |

**A.    incoming CO Line Ringing**

Programming Steps

If Incoming CO Line Ringing flash Rate is to be changed:

a. Press the INCOMING CO RINGING flexible button (Button #1). The following message is shown on the display phone:

```
INC CO RING          00-15
        30 IPM FLASH
```

b. Enter a two-digit value on the dial pad to correspond to one of the 16 available options. Refer to flash rate table.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display wiil now update.

Description

The Incoming CO Line Ringing flash rate can be programmed to 16 different options identified in the flash rate table. This allows the user to customize the key system configuration to desired flash rates.

**Default:** By default, the Incoming CO Ringing is set for a 30 ipm flash rate.

## FLASH RATES (Cont'd)

### B. Incoming Intercom Ringing

#### Programming Steps

a. Press the INCOMING INTERCOM RINGING flexible button (Button #2). The following message is shown on the display phone:

```
INC ICM RING         00-15
     120 IPM FLUTTER
```

b. Enter a two-digit value on the dial pad to correspond to one of the 16 available options. Refer to flash rate table.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

#### Description

The Incoming Intercom Ringing flash rate can be programmed to 16 different options identified in the flash rate table. This allows the user to customize the key system configuration to desired flash rates.

**Default:** By default, the Incoming Intercom Ringing is set for a 120 ipm flutter rate.

### c. Call Forward

#### Programming Steps

a. Press the CALL FORWARD flexible button (Button #3). The following message is shown on the display phone:

```
CALL FORWARD         00-15
     30 IPM FLASH
```

b. Enter a two-digit value on the dial pad to correspond to one of the 16 available options. Refer to flash rate table.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

#### Description

The Call Forward flash rate can be programmed to 16 different options identified in the flash rate table. This allows the user to customize the key system configuration to desired flash rates.

**Default:** By default, Call Forward is set for a 30 ipm flash rate.

### D. Message Waiting

#### Programming Steps

a. Press the MESSAGE WAITING flexible button (Button #4). The following message is shown on the display phone:

```
MESSAGE  WAITING     00-15
     15 IPM FLASH
```

b. Enter a two-digit value on the dial pad to correspond to one of the 16 available options. Refer to flash rate table.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

#### Description

The Message Wait flash rate can be programmed to 16 different options identified in the flash rate table. This allows the user to customize the key system configuration to desired flash rates.

**Default:** By default, Message Waiting is set for a 15 ipm flash rate.

## MISC. SYSTEM PARAMETERS

### 610.5   ATTENDANT STATION ASSIGNMENT

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If Attendant Station(s) are to be changed:

a. Press FLASH and dial [10]. The following message is shown on the display phone:

```
ATND STA ASSIGNMENT
100, ###, ###
```

b. Enter up to three three-digit station number(s) on the dial pad.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

The system will identify an attendant station for the purpose of receiving recalls and activating night service. The system can have up to three attendant(s) programmed.

Entering three pounds [###] will remove that attendant assignment or different station numbers can be programmed.

**Default:** By default, Station 100 is assigned as the first attendant.

**Related Programming:** Refer to Sec. 610.1, System Timers for the System Hold Recall Timer, Exclusive Hold Recall Timer, Call Park Recall Timer, and Attendant Recall Timer: Sec. 610.2, System Features Programming, Attendant Override; Sec. 610.13, Weekly Night Mode Schedule programming.

### 610.6   SYSTEM TIME AND DATE

Programming Steps

To set the time and date which appears on display Digital Terminals:

a. Press FLASH and dial [11]. The following message is shown on the display phone.

```
DATE & TIME
MM/DD/YY      HH:MM am
```

b. Choose display format by pressing the appropriate button in the flexible button field.

c. Press the HOLD button or dial in the time and date as follows (twelve digits):

YYMMDDHHMMSS

d. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

| NOTE | The Time and Date can be changed or set by the First Attendant station using dial code [692] |
|------|---|

Description

The date can be displayed in either the US (month/day) format or the European (day/month) format on Executive Display stations. In addition, the time can be displayed in either the standard 12 hour format or the 24 hour format.

The buttons on the digital terminal are defined as shown below when entering the System Time and Date programming area:

| Q  1 | MONTH/DAY: 12 HR | | 11 A |
|------|------------------|--|------|
| W  2 | DAY/MONTH: 12 HR | | 12 s |
| E  3 | MONTH/DAY: 24 HR | | 13 D |
| R  4 | DAY/MONTH: 24 HR | | 14 F |

When entering the time and date, use the following data:

- YY (year) = 00 to 99
- MM (month) = 01 to 12
- DD (day)=01 to 31
- HH (hour) = 00 to 23
- MM (minute) = 00 to 59
- SS (second) = 00 to 59 (optional)

Default: By default, the date is set for month/day format and the time is in the 12 hour format.

**Related Programming: Sec. 320.22,** Setting System Time and Date from the first programmed attendant

**MISC. SYSTEM PARAMETERS (Cont'd)**

**610.7     PBX DIALING CODES**

<u>Programming Steps</u>

If PBX Diaiing Codes are to be assigned:

a. Press FLASH and dial [12]. The following message is shown on the display phone:

```
PBX DIAL CODES
##, ##, ##, ##, ##
```

b. Enter five two-digit code numbers, one right after the other, on the dial pad up to a maximum of ten digits.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

<u>Description</u>

Five one or two-digit PBX access codes can be programmed into memory. When dialed, these codes signal the system so that toll restriction is applied at the next dialed digit. When a single digit code [9] is entered, it must be followed by the pound [#] as the second digit.

To delete an entry, enter two pounds [##] and press the HOLD button.

Lines must be programmed as PBX lines before these codes will apply.

**Default:** By default, no PBX dialing codes are assigned.

**Related Programming:** Refer to Sec. 620, CO Line Programming for assigning a CO Line(s) as PBX Line(s).

**610.8     EXECUTIVE/SECRETARY   PAIRS**

<u>Programming Steps</u>

If Executive/Secretary pairs are to be assigned:

a. Press FLASH and dial [I 3]. The following message is shown on the display phone:

```
EXEC  SECY  PAIRINGS
###, ###          PAIR 1
```

b. The top left button in the flexible button field will be lit indicating the first pair may be programmed.

c. Enter the three-digit Executive station number.

d. Enter the three-digit Secretary station number.

e. Press the HOLD button to save the data. Confirmation tone is heard and the display will now update.

f. To program a second pair, press the second flexible button in the flexible button field and enter station numbers as in steps c., d., and e.

g. To program a third pair, press the third button in the flexible button field and enter station numbers as in steps c., d., and e.

h. To program a fourth pair, press the fourth button in the flexible button field and enter station numbers as in steps c., d., and e.

<u>Description</u>

There are four Executive/Secretary pairs avaiiable. When an Executive station is busy or in DND, intercom calls and transfers will be automatically routed to the designated Secretary.

The buttons on the key telephone are defined as shown belowwhen entering the Executive/Secretary programming area:

| Q  1 | EXEC/SEC'Y PAIR 1 | | 11  A |
|------|-------------------|--|-------|
| W  2 | EXEC/SEC'Y PAIR 2 | | 12  S |
| E  3 | EXEC/SEC'Y PAIR 3 | | 13  D |
| R  4 | EXEC/SEC'Y PAIR 4 | | 14  F |

The assigned secretary may, however, Camp-On to the Executive Station when the station is busy or in Do-Not-Disturb.

There can be only one pairing of stations, with no duplicates. You cannot pair Executive 100 to Secretary 101 and then pair Secretary 101 to Executive 100. You can have the same Secretary station for more than one Executive station (101 to 105 and 102 to 105).

An entry of six pounds [######] will remove the assignments. Individual pairs may be changed by pressing the associated flexible button.

**Default:** By default, no Exec/Sec'y pairs are assigned.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.9     RELAY/SENSOR  PROGRAMMING

Programming Steps

| NOTE | *It is necessary to assign a Station ID to the station. port used for a Relay/Sensor Interface Module. Refer ta Sec. 630.2, Item A. Station Identification before proceeding.* |
|---|---|

If Relays **are** to be assigned:

a. Press FLASH and dial [14]. Relay #1 (Flex Button #1) and Relay/Sensor #1 (Flex Button #12) LEDs will be lit indicating the system is in the programming mode. The following message is shown on the display phone:

```
RELAY/SENSOR   YYY
RELAY 1 = NONE
```

| NOTE | *It is necessary to assign a station number to the Relay/Sensor Interface Module. Refer to "F" in this section.* |
|---|---|

Description

The Starplus SPD 4896 system offers relays that may be individually programmed for: External Page, Loud Bell Control, CO Line Control, Power Failure Transfer, and Recorded Announcement uses. Up to four Relay/Sensor interface modules may be installed on the system. Each Relay/Sensor Interface module contains three independent relays and three sensing input circuits.

The buttons on the digital terminal are defined as shown below when entering the Relay/Sensor programming area:

| Q  1 | RELAY 1 | | | 11  A |
|---|---|---|---|---|
| W 2 | RELAY 2 | | RELAY/SENSOR #1 | 12  S |
| E  3 | RELAY 3 | | RELAY/SENSOR #2 | 13  D |
| R  4 | RELAY 4/SENSOR 1 | | RELAY/SENSOR #3 | 14  F |
| T  5 | RELAY 5/SENSOR 2 | | RELAY/SENSOR #4 | 15  G |
| Y  6 | RELAY 6/SENSOR 2 | | | |
| U  7 | | 1 | | 17 J |
| I  8 | STATIONS | | | 18  K |

Where:
- Button #12 = Relay/Sensor Interface Module #1 programming
- Button #13 = Relay/Sensor Interface Module #2 programming
- Button #14 = Relay/Sensor Interface Module #3 programming
- Button #15 = Relay/Sensor Interface Module #4 programming

**Default:** By default, there is no relay programming.

**Related Programming:** Refer to Sec. 645.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 650.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

**RELAY/SENSOR PROGRAMMING (Cont'd)**

**A. Programming relay for External Paging:**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td valign="top">

1. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor interface Module is to be programmed.

2. Press flex buttons (I-3) to indicate the desired relay to be programmed.

3. Dial [1] on the dial pad.

4. Enter a one-digit page zone number (I-7)

5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</td><td valign="top">

**EXTERNAL PAGE RELAY:** When assigning a relay as an External Page relay, the relay will activate when the external page zone the relay is assigned to is accessed. The relay will remain activated during the page announcement until the station hangs up or the page timer expires and releases the page zone.

To disable a relay or sensor circuit:

a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.

b. Dial [0] on the dial pad.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</td></tr>
</table>

```
RELAY SENSOR  YYY
RELAY 1 = EXT PAGE 76X
```

Where:
- X= Page Zones 1 thru 7

**B. Programming relay for RAN Starting:**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td valign="top">

1. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor interface Module is to be programmed.

2. Press flex buttons (I-3) to indicate desired relay to be programmed.

3. Dial [2] on the dial pad.

4. Enter a one-digit RAN Table number (1 thru 8) the relay should be associated to.

5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</td><td valign="top">

**RAN START RELAY:** When a CO line port is used for a ground start application, a 24V dc power source must be connected to the CO line portfortalk battery.

When an SLT port is used, the RAN device must be configured for ring trip operation (loop start). The 90V ac voltage sent to the SLT port will be recognized by the RAN device which will then answer the call.

To disable a relay or sensor circuit:

a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.

b. Dial [0] on the dial pad.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Related Programming:** Refer to Sec. 645.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 650.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

</td></tr>
</table>

```
RELAY/SENSOR  YYY
RELAY 1 = RAN START X
```

Where:
- X= RAN Table number

## RELAY/SENSOR PROGRAMMING (Cont'd)

**C. Programming relay for Power Failure Transfer:**

Programming Steps

1. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor interface Module is to be programmed.
2. Press flex buttons (I-3) to indicate desired relay to be programmed.
3. Dial [3] on the dial pad.
4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
RELAY/SENSOR  YYY
RELAY 1 = POWER FAIL
```

Description

**POWER FAILURE TRANSFER:** When the Starplus Power Failure Transfer Unit is used for Power Failure, it provides the relay transfer circuits for up to 12 CO lines in the event of a power or processor failure. Activation of the PFT relays is controlled by the Relay/Sensor Module. **A** customer provided 12 volt DC power supply is required to operate the unit.

With loss of power to the system or a failure of system processing, the PFTU will automatically connect up to 12 CO lines to pre-wired 500/2500 type telephones. When power is restored, the PFTU will automatically restore the CO trunks and stations to normal operation. These SLT stations do not have to be used for intercom, but can be if so desired.

To disable a relay or sensor circuit:

a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.
b. Dial [0] on the dial pad.
c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**RELAY/SENSOR   PROGRAMMING   (Cont'd)**

**D.   Programming relay for Loud Bell Control:**

<u>Programming Steps</u>

1.  Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor Interface Module is to be programmed.

2.  Press flex buttons (I-3) to indicate desired relay to be programmed.

3.  Dial [4] on the dial pad.

4.  Enter the three-digit station number (100-l 95)

5.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
RELAY/SENSOR    YYY
RELAY 1 = LOUD BELL XXX
```

Where:
-  XXX=  Station  number

<u>Description</u>

LOUD BELL **CONTROL:** There are three control contacts on the Relay/Sensor Module, which can be individually programmed as Loud Bell Control to control a customer provided ringing device to external areas.

Loud Bell Control contacts can be assigned to any station and will follow the ringing assignments of that station including tone tinging intercom, and transferred CO lines.

Remember to assign ringing to any station programmed for Loud Bell Control.

To disable a relay circuit:

a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.

b. Dial [0] on the dial pad.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**RELAY/SENSOR PROGRAMMING (Cont'd)**

**E.   Programming relay for CO Line Control:**

Programming Steps

1.  Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor Interface Module is to be programmed.

2.  Press flex buttons (l-3) to indicate desired relay to be programmed.

3.  Dial [5] on the dial pad.

4.  Enter a two-digit CO Line number (O-i-48)

5.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
RELAY/SENSOR   YYY
RELAY 1 = CO LINE XX
```

Where:
   - XX= CO Line number

Description

**CO LINE CONTROL:** There are three control contacts on the Relay/Sensor Module, which can be individually programmed as CO Line Control to control customer provided ancillary equipment.

When programmed as CO Line Control and assigned to a CO line, the corresponding contact will close whenever that CO line is accessed.

To disable **a** relay or sensor circuit:
   a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.
   b. Dial [0] on the dial pad.
   c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**F.   Assign Relay/Sensor Interface Module to a station:**

Programming Steps

1.  Press the STA flex button (Button #8).

2.  Enter the three-digit station assignment of the relay sensor.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
RELAY/SENSOR    YYY
SENSOR 1 = NONE
```

Where:
   - YYY= Station Assignment

Description

**STATION ASSIGNMENTS:** The programming of this station represents the station port that the Relay/Sensor Module is connected to.

To delete a station assignment:
   a. Press the STA flex button (Button #8).
   b. Dial three pounds [###] on the dial pad.
   c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Related Programming:** It is necessary to assign a station ID to the station pot-t used for a Relay/Sensor Interface module first in Sec. 630.1, Station Attributes Programming.

## RELAY/SENSOR PROGRAMMING (Cont'd)

**G. Program sensing circuit as a RAN Sensing (RAN END) circuit:**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td valign="top">

1. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor interface Module is to be programmed.

2. Press flex buttons (4-6) to select the sensing circuit to be programmed.

3. Dial [6] on the dial pad.

4. Enter a one-digit RAN Table number (I-8) the sensing circuit should be associated to.

5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</td><td valign="top">

**RAN SENSING (RAN END):** The Recorded Announcement feature (RAN) is used with the Automatic Call Distribution (ACD) feature or the Uniform Call Distribution (UCD) feature to provide unanswered incoming CO calls or calls in queue with a Recorded Announcement while waiting for an available ACD or UCD station. The system may be programmed to provide this announcement on specified RAN output ports on the system (unused SLT and CO ports). The system can be programmed to connect the waiting caller to a different RAN port for the second, and subsequent RAN messages.

When a CO line port is used for a ground start application, a 24V dc power source must be connected to the CO line port for talk battery. A relay contact on the Relay/Sensor Module assigned to an announcement table in programming would provide the contact closure to start the Recorded Announcement device.

</td></tr>
</table>

```
RELAY/SENSOR  YYY
SENSOR 1 = RAN END X
```

Where:
  ➡ X= RAN Table number

To disable a sensor circuit:

  a. Press the desired flex button that corresponds to the relay or sensor circuit to be disabled.

  b. Dial [0] on the dial pad.

  c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Related Programming:** Refer to Sec. 645.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 650.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.10    BAUD RATE ASSIGNMENTS

| Programming Steps | Description |
|---|---|

If Baud Rate(s) are to be assigned:

1.    Press FLASH and dial [15]. The first button will be lit and ready for programming Port #1. The following message is shown on the display phone:

```
PORT  BAUD
1        2400
```

The Starplus Digital Key Telephone System provides outputs such as SMDR or ICLID to the standard RS-232C "On-Board" connector (future) on the Central Processor Unit (CPU) or to the optional Backplane RS-232C I/O Expander Module connector(s). When features such as SMDR or ICLID are desired, the Baud Rate(s) need to be programmed to determine how the information will be distributed.

The buttons on the digital terminal are defined as shown below when entering the Baud Rate assignments programming area.

| Q | 1 | PORT #1-CPB RS-232C | | | If A | |
| W | 2 | PORT #2-MODEM | | | 12 S | |
| E | 3 | PORT #3-I/O RS-232C | | | 13 | |
| R | 4 | PORT #4-I/O RS-232C | | | 14 F | |

To program the Baud Rate(s) for Ports #1, #3, #4:

| Programming Steps | Description |
|---|---|

1. Press the desired PORT # flexible button (Buttons #1, #3, or #4) to determine the port to be programmed.

2.    Enter a one-digit number for the Baud Rate:

– [1] = 300 Baud
– [2] = 1200 Baud
– [3] = 2400 Baud
– [4] = 4800 Baud
– [5] = 9600 Baud

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**PORT #1:** Port #1 is the "On-Board" RS-232C port on the SPD 4896 system.(Future use)

**PORT #3:** Port #3 is the RS-232C connector on the Backplane I/O Expander Module used in the Starplus Digital Key Telephone system.

**PORT #4:** Port #4 is the RS-232C connector on the Backplane I/O Expander Module used in the Starplus Digital Key Telephone system.

**Default:** By default, Port #1 (CPU RS-232C), Port #3 (RS-232C) and Port #4 (RS-232C) Baud Rates are 2400 Baud.

**Related Programming:** Refer to Sec. 610.12, SMDR Programming features; Refer to Sec. 640.1, ICLID Programming.

To verify Port #2 Baud Rate:

| Programming Steps | Description |
|---|---|

1. Press the PORT #2 flexible button (Button #2). to verify the baud rate of the "On-Board" modem (future). The following message is shown on the display phone:

```
PORT  BAUD
2       1200
```

PORT #2: Port #2 is the "On-Board" 1200 Baud modem which is included in the SPD 4896 Digital system.

**Default:** By default, the "On-Board" modem Baud Rate is 1200 Baud.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.11   ACCESS CODES

| Programming Steps | Description |
|---|---|
| If the system is in the programming mode, continue using program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station). | This section describes the procedures and steps necessary to program **Access** codes. |

If Access Codes are to be changed:

1. Press FLASH and dial [20]. The following message is shown on the display phone:

The buttons on the digital terminal are defined as shown below when entering the **Access** Codes programming area:

```
ACCESS CODES
ENTER BUTTON NUMBER
```

| | Q   1 | DISA ACCESS CODE | | | 11   A | |
| | W   2 | ADMIN PASSWORD | | | 12   S | |

### A.   DISA Access Code

| Programming Steps | Description |
|---|---|
| If this feature is to be assigned: | This allows a three-digit access code to be assigned to the system. Anyone calling in on a DISA line must use the access code in order to gain access to system features. |

1. Press the DISA ACCESS CODE flexible button (Button #1). The following message is shown on the display phone:

To disable the DISA access code, enter three pounds (###).

```
DISA ACCESS CODE
100
```

**Default:** By default, 100 is assigned as the access code.

2. Enter a three-digit value on the dial pad for the DISA access code.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Related **Programming:** Refer to Sec. 610.1, System Timers for the Preset Forward Timer, and Conference/DISA Timer; Sec. 620.1, CO Line Programming, for DISA Trunk-to-Trunk (Per CO Line). A CO Line(s) must be assigned for DISA operation. Also refer to Sec. 620.1, CO Line Programming for CO Line Privacy and Conference options.

## ACCESS CODE PROGRAMMING (Cont'd)

### B. Database Admin. Password

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If this feature is to be assigned:

1. Press the **ADMIN** PASSWORD flexible button (Button #2). The following message is shown on the display phone:

```
ADMIN PASSWORD
3226
```

2. Enter a four-digit value on the dial pad which corresponds with 0000-9999.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

The password used to enter customer database programming can be individualized by each customer. This allows the system administrator to block unauthorized personnel from entering database admin.

| CAUTION |
|---|
| Cars should **be** taken when changing the programming , password so **not** to "lockout" **authorized personnel** that **may** prevent or: delay them from making necessary programming changes. |

**Default:** By default, the Admin password [3226] (DBAM) is assigned.

**MISC. SYSTEM PARAMETERS (Cont'd)**

**610.12    STATION MESSAGE DETAIL RE-
             CORDING (SMDR)**

Programming Steps

If Station Message Detail Recording is to be used:

1. Press FLASH and dial [21]. The following
   message is shown on the display phone:

```
┌────────────────────────────────────┐
│  SDR TPE PNT BAUD PORT              │
│   NO  LD  80  2400  1               │
└────────────────────────────────────┘
```

2. To program SMDR features, use the flexible
   button(s) as defined in the following proce-
   dures.

3. The SMDR, TYPE, and PRINT features will
   toggle on and off with each depression, and
   the display will update with each depression.

4. After all entries are made, press the HOLD
   button to save the entry. Confirmation tone is
   heard.

Description

***This' features is available with optional software.***

The Starplus Digital Key Telephone System can
provide SMDR output to the standard RS-232C "On-
Board" connector (future) on the Central Processor
Unit (CPU) or to the optional Backplane RS-232C
I/O Expander Module connector(s). When SMDR is
desired, the following system-wide parameters will
determine how the SMDR information will be re-
ported.

The buttons on the digital terminal are defined as
shown below when entering the SMDR program-
ming area.

| Q  1 | SMDR | | 11  A |
|------|------|------|-------|
| "  W  2 | CALL TYPE | | 12  S |
| E  3 | PRINT FORMAT | | 13  D |
| R  4 | BAUD RATE | | 14  F |
| T  5 | PORT | | 15  G |

**Related Programming:** Refer to Sec. 610.7, PBX
Dialing Codes; Sec. 610.1, SLT DTMF Receiver
timer; Sec. 630.1, Station Class of Service (COS);
and Sec. 660.1, Exception Tables Programming.

**A.  SMDR  Enable/Disable**

Programming Steps

1. Press the SMDR flexible button (Button #1).
   This feature will toggle on and off with each
   depression, and the display will update with
   each depression.
   • LED ON = SMDR is enabled
   • LED OFF = SMDR is disabled

2. Press the HOLD button to save the entry.
   Confirmation tone is heard

Description

A call accounting device can be installed allowing
the system to track calls by outside line number,
number dialed, time of day, date, station that placed
or received the call, and duration of the call.

Refer to Sec. 610.1 for further instruction regarding
the relationship between SLT Receivers and SMDR.

**Default:** By default, SMDR is disabled.

**B.  Long Distance/Local Assignment**

Programming Steps

1. Press the CALL TYPE flexible button (Button
   #2) to determine the type of calls to be re-
   corded. This feature will toggle on and off with
   each depression, and the display will update
   with each depression,
   • LED ON = Long Distance is enabled
   • LED OFF = All Calls is enabled

2. Press the HOLD button to save the entry.
   Confirmation tone is heard.

Description

The system can be set to record either all outgoing
calls or only outgoing long distance calls. Long Dis-
tance calls are defined as either beginning with a '1'
or '0' or containing 8 or more digits. Incoming calls
are only recorded if TYPE is set for all calls.

Default: By default, the system is set to record long
distance (LD) calls only.

**STATION MESSAGE DETAIL RECORDING**
**(Cont'd)**

**C.    Character Print Assignment**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td>

1.  Press PRINT FORMAT flexible button (Button #3) to determine the print format of SMDR records. This feature will toggle on and off with each depression, and the display will update with each depression.

    •  LED ON = 80-Character is enabled

    •  LED OFF = 29-Character is enabled

2.  Press the **HOLD** button to save the entry. Confirmation tone is heard.

</td><td>

The system can be programmed to print individual SMDR records in either a 1-line 80-character format or a 3-line 29 character format.

**Default:** By default, the 1-line 80-character format is selected.

</td></tr>
</table>

**D.    Baud Rate Display**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td>

The SMDR Baud Rate is programmed using Flash 15, Baud Rate Assignments. Button #4 will return error tone when pressed. The LCD displays the current baud rate based on which Port number is assigned to the SMDR Port number.

</td><td>

The Starplus Digital Key Telephone System provide **SMDR** output to the standard RS-232C "On-Board" connector (future) Central Processor Unit (CPU) or to the optional Backplane RS-232C I/O Expander Module connector(s). The Baud Rate will be displayed as either 300 baud, 1200 baud, 2400 baud, 4800 baud, or 9600 baud.

**Related Programming:** Refer to 610.10, Baud Rate Assignments for programming SMDR Baud Rate Assignment.

</td></tr>
</table>

**E.    SMDR Port Assignments**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
<tr><td>

1.  Press the PORT flexible button (Button #5) to determine which port is to be used for SMDR information.

2.  Enter a one-digit number for the SMDR Port number:

    - [1] = Port #1 (CPU "On-Board" RS-232C) (Future Use)
    - [2] = Port #2 ("On-Board" Modem)
    - [3] = Port #3 (Backplane RS-232C)
    - [4] = Port #4 (Backplane RS-232C)

3.  The LCD displays the current baud rate based on which Port number is assigned to the SMDR Port number.

4.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</td><td>

Port #1 refers to the standard RS-232C "On-Board" connector on the Central Processor Unit (CPU).(Future use)

Port #2 refers to the "On-Board" 1200 Baud modem provided with the system.

Port #3 refers to the RS-232C connector on the Backplane I/O Expander Module.

Port #4 refers to the RS-232 connector on the same Backplane I/O Expander Module used in the Starplus Digital system.

**Default:** By default, Port #1 is used for SMDR.

</td></tr>
</table>

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.13    WEEKLY  NIGHT  MODE  SCHEDULE

Programming Steps

If entries or changes need to be made to this schedule:

a. Press FLASH and dial [22]. The following message will then be shown on the display:

```
DAY  END  START'  AUTO
MON  0800  1700  YES
```

### A.  Automatic/Manual  Operation

Programming Steps

1. Press the AUTO/MANUAL flexible button (Button #1). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on= Automatic Night Mode
   - LED off= Manual operation.

2. If no other changes are to be made, press the HOLD button to save the entry. Confirmation tone is heard.

### B.  Day of Week programming

Programming Steps

1. The MONDAY flexible button (Button #2) LED is lit.

2. To change days of the week, press the appropriate flexible button (buttons 3-8) and perform the following procedures.

3. Enter the four-digit entry to indicate the hour and minutes to end night mode.

4. Enter the four-digit entry to indicate the hour and minutes for the system to go into the night mode for that particular day.

5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

The Starplus Digital Key Telephone System can be programmed so that the system is automatically placed into and out of night mode. A programmable weekly time schedule allows the system administrator to preset the time the system is put into night mode and the time to remove night mode on a daily basis including weekend operation.

The buttons on the digital terminal are defined as shown below when entering the Weekly Night Mode Schedule programming area.

| Q | 1 | A U - L | | | 11 | A |
|---|---|---|---|---|---|---|
| W | 2 | MONDAY | | | 12 | S |
| E | 3 | TUESDAY | | | 13 | D |
| R | 4 | WEDNESDAY | | | 14 | F |
| T | 5 | THURSDAY | | | 15 | G |
| Y | 6 | FRIDAY | | | 16 | H |
| U | 7 | SATURDAY | | | 17 | J |
| I | 8 | SUNDAY | | 18 | K | |

Description

If the system is operated in the automatic night mode the attendant(s) can override the automatic mode by pressing the night key on the attendant(s) phone. The schedule will not go back into effect until the attendant(s) press the night key again.

When the system is placed into night mode CO line ringing will follow the Night ringing assignments and stations will be governed by their respective night COS.

**Default:** The default times for automatic night mode is as follows:

Monday thru Friday 08:00 17:00
(day time operation 8:00am to 5:00pm)

Saturday and Sunday ##:## ##:##
(24 hour night mode operation)

An entry of "00:00 23:59" would indicate 24 hours of day mode

**Related Programming:** Refer to Sec. 620.1, CO Line Programming, CO Line Ringing Assignments; Sec. 630.1, Station Attributes Programming, Station Class of Service (COS) assignments. Also refer to Sec. 610.5, Attendant Station Assignment for Attendant station assignments.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.14    DIRECTORY  DIALING

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Enter, Change, Erase or to just View entries in the Directory Dialing list:

1.  Press FLASH and dial [23].The following message will then be shown on the display:

> **DIR LST AAA BIN/ICM:   XXX**
> **nnnnnnnnnnnnnnnnnnnnnnnnn**

Where:

- AAA= Directory List Entry Number (000-l 99)
- XXX= Either a Station Number, a System Speed dial bin Number, or Local Number/Name Translation Table number.
- nnn= Programmed Name (blank if none).

To select a particular list entry:

1.  Press Flexible Button #20 for a directory list entry.
2.  Dial the three-digit directory list entry number (000-l 99)
3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To scroll through the list:

1.  Press the NEXT flexible button (Button #18) to scroll up (next entry);
    or
    Press the PREV flexible button (Button #19) to scroll backwards (previous entry).

Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The Starplus SPD 4896 system provides locations for up to 200 names.

Directory dialing also allows users to program a "name" along with a speed dial bin for use in later locating a speed dial number. When prompted to do so, the system will display the name associated with a speed dial number on the LCD display so that when the desired name is shown, the user may then have the system dial the number.

Directory dialing also allows users to associate a "name" with an entry in the local number/name translation table. When prompted to do so, the system will display the name associated with the table on the LCD display so that when the desired name is shown, the user may then have the system dial the number. The Starplus SPD 4896 system provides locations for up to 200 names.

The Directory Dialing list may be programmed and maintained at the first assigned attendant station in one of two ways, however this admin routine provides a means for the directory list to be maintained by the system programmer either locally (at Station 100) or remotely via modem access.

The buttons on the digital terminal are defined as shown below when entering the Directory Dialing programming area.

| Q 1 | BIN/ICM | | | 11 A |
| --- | --- | --- | --- | --- |
| W 2 | NAME | | | 12 S |
| E 3 | CLEAR | | | 13 D |
| R 4 | BACK SPACE | | | 14 F |
| T 5 | | | | 15 a |
| | | | | 16 H |
| U 7 | | | | 17 J |
| I 8 | | | NEXT ENTRY | 18 K |
| O 9 | | | PREV ENTRY | 19 L |
| P 10 | | | NEW ENTRY | 20 ; |

**MISC. SYSTEM PARAMETERS (Cont'd)**

**DIRECTORY DIALING (Cont'd)**

To enter the intercom number or system speed dial bin to be associated to the name:

| Programming Steps | Description |
|---|---|

Programming Steps

1. Press the BIN/ICM flexible button (Button #1).

2. Enter a three-digit station intercom number (100-195), a three-digit System speed dial number (020-099), or a three-digit Local Number/Name Translation Table number (300-499).

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**BIN/ICM** - Each entry in the directory dialing list must be associated to either a system speed dial bin (for calling a destination outside of the system) or to an intercom station (for calling internal station including CO line transfers).

Programming Steps

To Enter or Change the current name shown on the display:

1. Press the NAME flexible button (Button #2).

2. Enter the name (up to 24-characters may be entered) by using keys on the dial pad as follows:

| A =21 | M =61 | 1 =1# | " =01 |
|---|---|---|---|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | O =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | W =91 | Space =11 | + =#3 |
| L =53 | X =92 | : =12 | = =#4 |
|  | Y =93 | - =13 | # =## |
|  | z =94 | ' =14 |  |

3. If an error is made while entering the name, press the BACK SPACE flexible button (Button #4). This button may be pressed to backspace one character at a time.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**NAME** - A name of up to 24-characters may be entered into each directory dial list entry. The names will appear alphabetically when accessed by a station user. It is possible t have multiple entries that are associated to the same station number or system speed dial bin. This allows the same name to be entered into the list several times, for example by last name and by first name, pointed to a station number and a speed dial bin (home, or mobile phone number) or to have several different names all associated to the same speed dial bin.

**MISC. SYSTEM PARAMETERS (Cont'd)**

**DIRECTORY DIALING (Cont'd)**

To clear an entry:

<div style="display:flex; justify-content:space-between;">

**Programming Steps**

**Description**

</div>

1. Press the CLEAR flexible button (Button #3).

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. The entry will be erased (both the BIN/ICM assignment and the programmed name).

**CLEAR** --Entries in the table may be erased and cleared from the table allowing another entry to be placed into the list. When a system speed dial bin has been deleted or changed the name associated to the bin must also be erased. As multiple table listing may be associated to one system speed dial bin it may be necessary to clear more than one entry.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.15  FLEXIBLE CARD ASSIGNMENTS

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

I. Press FLASH and dial [24]. The following message will be shown on the display:

```
SLOT - S S S S C C C
S S S # # # # # # #
```

Where:
- S= Station Board (KT12)
- C= CO Line Board (CO12)
- #= Blank (unused card slot)

2. The buttons I through I2 indicate peripheral card slots I through 12. When the Flexible Card Assignments program is initially entered, Flex Button #1 LED will be lit indicating that the user is programming the card in peripheral card slot I. Press the appropriate flex button for a different peripheral card slot.

3. Enter a one-digit to indicate the type of card is plugged into the current peripheral card slot.
- 0= Key Telephone Board (KT12) or Single Line Board (SLI 2)
- I= CO Loop Interface Board (CO12)
- #= Delete slot

4. Press the HOLD button to complete the entry. Confirmation tone will be heard and the display will now update.

| NOTE | *After the card siots have been re-arranged, the system MUST be reset for full activation of the database programming to take effect.* |
|------|------|

Description

The Flexible Card Assignments feature will provide a means to assign the peripheral cards to alternative peripheral card slots. This provides complete flexibility in determining station numbers and CO line numbers as long as they stay within the system numbering plan. A station can be assigned any number between 100 and-I 95, while a CO line can be assigned any number between 1 and 48. Station numbering is determined by this programming, not physical cards installed in the system.

The buttons on the key telephone are defined as shown below when entering the Flexible Card Assignments feature programming area:

All Flexible Card Assignment(s) entered are stored in a temporary database area which is uploaded to the main database when the system is reset.

| CARD SLOT # | STATION # | PORT # |
|------|------|------|
| I | 100-111 | I-12 |
| 2 | 112-123 | 13-24 |
| 3 | 124-135 | 25-36 |
| 4 | 136-147 | 37-48 |
| 5 | CO Lines I - 1 2 | I-12 |
| 6 | CO Lines 13-24 | 13-24 |
| 7 | CO Lines 25-36 | 25-36 |
| 8 | CO Lines 37-48 | 37-48 |
| 9 | 148-159 | 49-60 |
| IO | 160-171 | 61-72 |
| 11 | 172-183 | 73-84 |
| 12 | 184-195 | 85-96 |

Default: The system defaults to a configuration that designates peripheral slots 1,2,3 and 4 for Station boards, peripheral slots 5,6,7 and 8 for CO boards, and peripheral slots 9, IO, 1 I and 12 for the remaining station boards.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.16    HUNT GROUPS

#### A.  Hunt Group Programming

<u>Programming Steps</u>

If Hunt Groups are to be assigned:

1. Press FLASH and dial [30]. The following message will be shown on the display:

```
HUNT GROUP 450 P ###, ###
###, ###, ###, ###, ###, ###
```

2. The top left button in the flexible button field will be lit for programming Hunt Group 1 (450). To change Hunt Groups or enter a different Hunt Group, press the appropriate flexible button 1-8 (450-457) and perform the following procedures.

3. Enter the three-digit station numbers up to a maximum of 24-digits (8 stations). Hunt groups are joined together by entering another Hunt Group Pilot Number as the last entry of the group.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To remove stations from a hunt group:

1. Enter three [###] (pounds) on the dial pad.

2. Press the HOLD button. Confirmation tone is heard and the display will now update. This will remove all stations previously programmed in that group.

#### B.  Station/Pilot Hunting Assignment

<u>Programming Steps</u>

1. Press the STATION/PILOT flexible button (Button #9) to indicate Station Hunting or Pilot Hunting.
   - LED on= Station Hunting enabled
   - LED off= Pilot Hunting enabled

<u>Description</u>

The system can be arranged for up to eight hunt groups. Each hunt group can contain up to eight stations each. Each hunt groups can be independently arranged to utilize either a pilot hunting technique or station hunting technique. Hunt groups may also be chained together when larger Hunt groups are desired.

Hunt groups can be joined together by programming another hunt group number as the last member of a hunt group.

If a station is in DND or is forwarded to another station, it is considered busy.

The buttons on the digital terminal are defined as shown below when entering the Hunt Group programming area.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Q 1 | HUNT GROUP 450 | | | 11 | A | |
| W 2 | HUNT GROUP 451 | | | 12 | S | |
| E 3 | HUNT GROUP 452 | | | 13 | D | |
| R 4 | HUNT GROUP 453 | | | 14 | F | |
| T 5 | HUNT GROUP 454 | | | 15 | G | |
| Y 6 | HUNT GROUP 455 | | | 16 | H | |
| U 7 | HUNT GROUP 456 | | | 17 | J | |
| I 8 | HUNT GROUP 457 | | | 18 | K | |
| O 9 | STATION/PILOT | | | 19 | L | |

<u>Description</u>

**PILOT HUNTING:** Incoming CO, transferred CO, and intercom calls can be directed to a pilot number of a hunt group. The system will search sequentially (in the order the extensions were entered in the database programming) for an idle station in the group and will ring that station. Calls directly to stations (by calling the extension number) within the hunt group will not hunt but receive call progress tones from the extension.

**STATION HUNTING:** Incoming CO, transferred CO, and intercom calls that are presented to a busy, or DND station, that is a member of a Station Hunt group, will search sequentially (in the order the extensions were entered in database programming) for an idle station in the group and will ring that station. Calls will still be allowed to be directed to the groups pilot number for pilot type hunting.

## MISC. SYSTEM PARAMETERS (Cont'd)

### 610.17    LOCAL NUMBER/NAME TRANSLA-
### TION TABLE

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If changes need to be made to Local Number/Name Translation Table:

1. Press FLASH and dial [55]. The following message is shown on the display phone:

```
S - XXX ###
```

Where:

- XXX= Table Number 300-499
- ###= Route Number 000-l 99

2. The ROUTE NUMBER LED is lit. Enter the three-digit Route Number (000-l 99) from what was entered in program code, FLASH **43.**

To erase a current phone number and name entry:

1. Press the CLEAR ENTRY flexible button (Button #4) to clear an entire phone number and name from the current index.

2. Press the NEXT TABLE flexible button (Button #18) to advance to the next index and continue entering information into the translation table, or

3. Press the PREV TABLE flexible button (Button #19) to go back to a previous index that is already programmed.

To locate an existing index for editing:

1. Press the TABLE NUMBER flexible button (Button #20). The following message is shown on the display phone:

```
ENTER  TABLE  NUMBER
```

2. Enter a three-digit number which corresponds to the table numbers 300-499.

3. Press the HOLD button to complete the entry.

Description

An administerable table in the KSU provides a local translation from a received calling number to a name. This is administerable by the customer from the attendant console position. This table is also shared by the ICLID features. In cases of conflict between the name delivered from the CO and that in the local translation table, the local translation table shall rule. 200 entries are provided in this table for the Starplus SPD 4696 system.

The buttons on the digital terminal are defined as shown below when entering the Local Number/Name Translation programming area:

<table>
<tr><td>Q 1</td><td>ROUTE NUMBER</td><td></td><td></td><td>11 A</td></tr>
<tr><td>W 2</td><td>PHONE NUMBER</td><td></td><td></td><td>12 S</td></tr>
<tr><td>E 3</td><td>NAME</td><td></td><td></td><td>13 D</td></tr>
<tr><td>R 4</td><td>CLEAR ENTRY</td><td></td><td></td><td>14 F</td></tr>
<tr><td>T 5</td><td></td><td></td><td></td><td>15 G</td></tr>
<tr><td>Y 6</td><td></td><td></td><td></td><td>16 H</td></tr>
<tr><td>U 7</td><td></td><td></td><td></td><td>17 J</td></tr>
<tr><td>I 8</td><td></td><td></td><td>NEXT TABLE</td><td>18 K</td></tr>
<tr><td>O 9</td><td></td><td></td><td>PREV TABLE</td><td>19 L</td></tr>
<tr><td>P 10</td><td></td><td></td><td>NEW TABLE</td><td>20 ;</td></tr>
</table>

**NOTE** *If a match is found between a number in the translation table and an incoming call record, the translated name is displayed and/or stored in the unanswered call table.*

**NOTE** *Entry of phone numbers and names from a terminal require keystrokes corresponding to a keyset keystroke. Example: to enter a "1" from the terminal, an entry of "1#" is required or to enter an "A", the terminal programmer must enter "21".*

**Related Programming:** Refer to Sec. 640.1, ICLID Programming for additional information about ICLID features.

## MISC. SYSTEM PARAMETERS (Cont'd)

### LOCAL NAME TRANSLATION (Cont'd)

Programming Steps

To program a phone number into the Local Number/Name Translation table:

1. Press the PHONE NUMBER flexible button (Button #2) to enter the desired phone number into the translation table. Maximum length of phone number is 14-digits, including hyphens. Numbers entered must be in the format: 1-602-XXX-XXXX.

| | | | |
|---|---|---|---|
| A =21 | M =61 | 1 =1# | " =01 |
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
| | Y =93 | - =13 | # =## |
| | z =94 | ' =14 | |

2. Press the HOLD button to update the database. The BACK SPACE flexibie button (Button #5) can be used to erase the current number to correct for errors.

Example:

- If 602-443 is entered in the translation table with a route number, any call received from ICLID will be routed per this partial entry. It is important to note that if a partial entry is inserted in the table, entries that begin with the partial entry, such as 602-443-6000 will cause confusion, Call in this scenario can be routed per either entry depending on the search. This is considered a duplicate entry and should be avoided. It should also be noted that calls will still require exact entries therefore a caller entered number of 602443 needs a separate route entry from 602-443 since there is no dash.

Description

An option has been added to the Local Number/Name translation table to route an ICLID or Caller Entered ID Digits based on a partial compare with the number entered in the translation table.

The Guaranteed Message announcement provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with a message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety, or after the incoming caller dials up to 14 digits followed by a pound (#). These digits will be inserted as ICLID incoming number identification.

If the Guaranteed Message announcement is programmed in Admin, incoming ACD calls will be routed to the Guaranteed Message RAN before going to the ACD Group. If the ICLID option is selected, digits received before the announcement time-out will be captured and inserted as incoming ICLID number information.

When the ICLID option is selected, a [#] will be recognized as a termination of the announcement and a [✳] will be recognized as an entry error. An entry error will cause the ICLID number to be removed and the incoming caller can re-enter his phone number.

**MISC.  SYSTEM  PARAMETERS  (Cont'd)**

**LOCAL  NAME  TRANSLATION  (Cont'd)**

Programminq   Steps

To program a name into the translation table:

1.  Press the NAME flexible button (Button #3) to enter the desired name into the translation table. Maximum length is 24-characters.

| A =21 | M =61 | 1 =1# | " =01 |
|-------|-------|-------|-------|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | 0 =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | 8 =8# | * =*# |
| I =43 | U =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
|       | Y =93 | - =13 | # =## |
|       | z =94 | ' =14 |       |

2.  Press the HOLD button to update the database. The BACK SPACE flexible button (Button #5) can be used to erase the current letter to correct for errors.

Description

The Guaranteed Message announcement provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with a message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled-will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety or after the incoming caller dials up to 14 digits followed by a pound (#). These digits will be inserted as ICLID incoming number identification.

If the Guaranteed Message announcement is programmed in Admin, incoming ACD calls will be routed to the Guaranteed Message RAN before going to the ACD Group. If the ICLID option is selected, digits received before the announcement time-out will be captured and inserted as incoming ICLID number information.

When the ICLID option is selected, a [#] will be recognized as a termination of the announcement and a [*] will be recognized as an entry error. An entry error will cause the ICLID number to be removed and the incoming caller can re-enter his phone number.

# TABLE OF CONTENTS FOR SECTION 620

# SECTION 620
# CO LINE ATTRIBUTES PROGRAMMING

## 620.1    INTRODUCTION

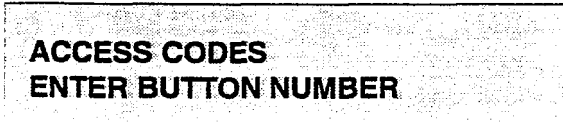### Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If any CO line features are to be changed:

a. Press FLASH and dial [40]. The following message is shown on the display phone:

```
CO LINE ATTRIBUTES
SELECT A CO LINE RANGE
```

b. Enter a four-digit number for the range of lines being programmed. If only one line is being programmed, enter that number twice (0101).

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. Flexible button #20 (New Range) will be lit. The following message is shown on the display phone to indicate current programming of that line or group of lines.

```
CO XX-XX DT CO UNA C P
LS0 DSX FL10 GRPX COSX
```

Where:
- XX-XX = CO Line Range (01-48)
- DT = DTMF or Dial Pulse
- CO = Line Type, CO or PBX
- UNA = Universal Night Answer enabled
- C = DISA/Trk-to-Trk enabled
- P = Privacy feature enabled
- LSX = Loop Supervision
- DSX = Type of DISA options
- FLXX = Flash Timer
- GRPX = CO Line Group
- COSX = CO Line Class of Service

### Description

This section describes the procedures and steps necessary to program CO Line attributes. When entering the CO line attributes portion of the database, the programmer may decide to enter information for either a range of CO lines or one specific CO Line.

Range programming allows the programmer to change a specific parameter or a few parameters for an entire range of CO Lines leaving intact the remaining data fields that do not require change. Those data fields will continue to operate with the previously programmed data. For example if CO lines are programmed into several CO line groups with different Class of service etc... but it is desired to enable Loop Supervision (SUPV) on all CO Lines the programmer may enter as the range ALL CO lines (01-48) and enable loop supervision, then exit programming. This will enable loop supervision for all CO lines leaving intact the various CO line group programming and COS data for the range.

The buttons on the digital terminal are defined as shown below when entering the CO Line Attribute programming area.

| 1 | Q | DTMF/DIAL PULSE | | RING ASSIGNMENTS | 11 | A |
|---|---|---|---|---|---|---|
| 2 | W | CO/PBX | | CO LINE IDENTIFICATION | 12 | S |
| 3 | E | UNA | | TRUNK DIRECTION | 13 | D |
| 4 | R | DISA TRK-TO-TRK | | RING DELAY TIMER | 14 | F |
| 5 | T | PRIVACY | | | 15 | G |
| 6 | Y | LOOP SUPV | | | 16 | H |
| 7 | U | DISA | | DISPLAY RING ASSIGN | 17 | J |
| 8 | I | FLASH TIMER | | NEXT (FORWARD) | 18 | K |
| 9 | 9 | CO LINE GROUP | | NEXT (BACKWARD) | 19 | L |
| 10 | P | LINE COS | | NEW RANGE | 20 | ; |

- Button #17 [Ring Display] will display the ringing assignments for the CO line.
- Button #18 [Next Entry] will take you to the next higher CO line.
- Button #19 [Previous Entry] will take you to the next lower CO line.
- Button #20 [Select Range] will prompt for a new CO Line range.

## CO LINE ATTRIBUTES (Cont'd)

### A. DTMF/Dial Pulse Programming

| Programming Steps | Description |
|---|---|
| 1. Press the DTMF/DIAL PULSE flexible button (Button #1). This feature will toggle on and off with each depression, and the display will update with each depression.<br>• LED on = DTMF enabled<br>. LED off= Dial Pulse enabled<br><br>2. Press the HOLD button to save the entry. Confirmation tone is heard. | **DTMF/DIAL PULSE.** Each individual outside line can be programmed to be either DTMF (tone) or dial pulse. When a line is assigned as dial pulse, you can program the break/ make ratio and dial speed.<br><br>**Default:** By default, all lines are set for DTMF.<br><br>**Related Programming:** Refer to Sec. 620.2, Dial Pulse Parameters; and Sec. 610.1, System Timers, CO Ring Detect Timer. |

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

### B. CO/PBX Programming

| Programming Steps | Description |
|---|---|
| 1. Press the CO/PBX flexible button (Button #2). This feature will toggle on and off with each depression, and the display will update with each depression.<br>• LED on = CO type is enabled<br>• LED off= PBX is enabled<br><br>2. Press the HOLD button to save the entry. Confirmation tone is heard. | **CO/PBX.** Each individual outside line connected to the system may be programmed as either a CO or PBX line. Also use the PBX mark when identifying Centrex lines.<br><br>**Default:** By default, all lines are assigned as CO lines.<br><br>Related **Programming:** Refer to Sec. 610.7, PBX Dialing Codes; Sec. 610.1, System Timers, CO Ring Detect Timer; Also refer to Sec. 620.1, CO Line Programming, Flash Timer Programming later in this section. |

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

## CO LINE ATTRIBUTES (Cont'd)

### C. UNA Programming

<u>Programming Steps</u>

1. Press the UNA flexible button (Button #3).
   This feature will toggle on and off with each
   depression, and the display will update with
   each depression.
   - LED on = UNA is enabled
   - LED off= UNA is disabled
2. Press the HOLD button to save the entry.
   Confirmation tone is heard.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

<u>Description</u>

**UNA.** If a line is marked UNA, and if the system is in
night service mode and if UNA is enabled in system
parameters, then when 'a CO line rings into the
system, a ring tone is generated over all external
page zones.

**Default:** By default, UNA is enabled

**Related Programming:** Refer to Sec. 610.2,
System Features Programming, External Night
Ring; and Sec. 610.9, Relay/Sensor Programming.

### D. DISA Trunk-to-Trunk (Per CO Line)

<u>Programming Steps</u>

If the CO line DISA Trunk-to-Trunk (Conference)
attributes is to be changed:

1. Press the DISA IRK-TO-TRK flexible button
   (Button #4). This feature will toggle on and off
   with each depression, and the display will
   update with each depression.
   - LED on = DISA Trunk-to-Trunk is enabled
     (a "C" is displayed)
   - LED off = DISA Trunk-to-Trunk is disabled
2. Press the HOLD button to save the entry.
   Confirmation tone is heard.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

<u>Description</u>

**DISA TRK-TO-TRK.** The DISA Trunk-to-Trunk (or
Conference) mark on the CO line governs a DISA
callers ability to access other outside lines. CO lines
must have DISA Trunk-to-Trunk enabled to allow a
DISA caller to establish an outgoing trunk-to-trunk
connection. This allows for specific CO line access
restriction on DISA calls.

A station with conference enable will be allowed to
initiate a Conference on CO lines regardless of the
CO line DISA Trunk-to-Trunk marking.

**Default:** By default, DISA Trunk-to-Trunk is enabled
for all CO lines.

**Related Programming:** Refer to Sec. 630.1, Station
Attributes Programming, Conference
Enable/Disable (Per Station).

The CO line DISA Trunk-to-Trunk flag affects a DISA callers ability to access outgoing CO
lines as shown in the following table:

| Incoming DISA Trunk | | Trunk DISA caller attempts to access | |
|---|---|---|---|
| | | T-t-T Enabled | T-t-T Disabled |
| T-t-T | Enabled | Call Allowed | Call Denied |
| T-t-T | Disabled | Call Denied | Call Denied |

## CO LINE **ATTRIBUTES** (Cont'd)

### E. Privacy

<div style="text-align:center">Programming Steps</div>

If CO Line privacy is to be changed:

1. Press the PRIVACY flexible button. (Button #5. This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Privacy is enabled
   - LED off = Privacy is disabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

**NOTE** *Disabling of the privacy feature may be limited by federal, state or local law, so check the relevant laws in your area before disabling privacy*

<div style="text-align:center">Description</div>

**PRIVACY.** If desired, the system can be programmed to eliminate CO Line privacy, allowing another station to join in on existing outside line conversations.

- Stations must have a direct CO line appearance to join CO line conversations in progress.
- A station must also have Privacy disabled before the system will allow that station to enter into an existing conversation.
- If privacy is disabled and a station joins an existing call, a programmed warning tone will be presented to both parties prior to actual cut-thru.
- When privacy is disabled, up to three other stations may join in on an existing conversation.

**Default:** By default, Privacy is enabled for all CO Lines.

**Related Programming:** Refer to Sec. 610.3, Additional System Features, Privacy Release Tone Option for disabling of the conference tone. Also refer to Sec. 630.1, Station Attributes Programming, Privacy (Per Station) option and Sec. 630.2, Page "B" Programming, Flexible Button Programming for button assignments.

The CO line Privacy flag affects a station users ability to access CO lines already engaged in conversation by another station in the system as shown in the following table:

| Station Attempting to Access CO Line | CO Line In use by another Station | |
|---|---|---|
| | Privacy Enabled | Privacy Disabled |
| Privacy Enabled | Private (No Cut-through) | Private (No Cut-through) |
| Privacy Disabled | Private (No Cut-through) | Privacy Released (Cut-through Allowed) |

## CO LINE **ATTRIBUTES** (Cont'd)

**F. Loop Supervision Programming**

<u>Programming Steps</u>

1. Press the LOOP SUPV flexible button (Button #6).

2. Enter a one-digit timer value on the dial pad between 1 and 9 which corresponds to 100-900 msec.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
CO XX-XX DT CO UNA C P
LS0 DSX FL10 GRPX COSX
```

<u>Description</u>

**LOOP SUPV.** Loop supervision is used primarily with DISA, Voice Mail/Auto Attendant and with un-supervised conference applications. It provides the system with the ability to detect when loop current has been broken and an outside line is no longer being used. To determine timer value for loop supervision, consult your local serving central office for type and duration of loop supervision signal.

It is recommended that Loop Supervision be enabled, especially when connecting a Voice Mail or Auto Attendant to the Starplus Digital Key Telephone Systems.

**Default:** By default, Loop Supervision is disabled for all CO Lines.

**Related Programming:** Refer to Sec. 610.1, System Timers, CO Ring Detect Timer; Sec. 620.1, CO Line Programming, DISA Programming; Sec. 655.1, Voice Mail Groups (VM), and Sec. 655.2, Voice Mail Outpulsing Table.

## CO LINE ATTRIBUTES (Cont'd)

### G. DISA Programming

<u>Programming Steps</u>

1. Press the DISA flexible button (Button #7).

2. Enter a one-digit value on the dial pad to indicate type of DISA desired.
   - 0= No DISA (disable DISA)
   - 1= 24-Hour DISA
   - 2= Night DISA only
   - 3= 24-Hour DISA with forwarding
   - 4= Night DISA only with forwarding

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

Where:
   - X= 0 through 4

| NOTE | *When a Single Line Board (SL12) is installed in the system, it is recommended that the DTM4 DTMF Receiver be installed. If 3 or more SL12 boards are installed in the system, additional DTM4 DTMF Receiver modules should be installed. However, no more than 3 SL12 boards with DTM4 receivers on them can be installed in the system.* |
|------|---|

<u>Description</u>

**DISA.** A line can be assigned as a DISA line during night service only or on a 24- hour basis. Additionally, a DISA line is allowed to follow station forwarding during night service only or on a 24-hour basis.

An unlimited number of DISA lines can be programmed into the system. A DISA access code can also be programmed. Incoming DISA callers may dial any valid internal station or access outside line groups. When a CO line ringing at a station will follow preset forward or no-answer call forward using the preset forward timer the same as an initially ringing CO call does. It will follow direct forward and busy forward the same as an initially ringing CO call. If the preset forward timer is set to 00, the first forward of the DISA ringing call at a station will take 15 seconds. DISA callers will be subjected to the Class of Service placed on the line accessed for outdialing. It is recommended that Loop Supervision be enabled when setting up DISA line(s). Sec. 610.1, System Timers , Conference/DISA Timer allows the system administrator to control the length of time a DISA caller is allowed after establishing a "Trunk-to-Trunk" call. After expiration of the Conference Timer, a tone will be presented to both DISA parties, then one minute later the system will automatically release both trunks. The Conference Timer does not affect or control a DISA-to-Station call.

**Default:** By default, there are no outside lines assigned as DISA lines.

Related **Programming:** Refer to Sec. 620.1, CO Line Programming, Conference/DISA Timer; Sec. 610.11, Access Codes; Sec. 620.1, CO Line Programming, Loop Supervision Programming, DISA Trunk-to-Trunk (Per CO Line), and Class of Service (COS) Programming. Also refer to Sec. 660.1, Exception Tables Programming.

## CO LINE ATTRIBUTES (Cont'd)

### H. Flash Timer Programming

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

1. Press the FLASH TIMER flexible button (Button #8).
2. Enter a two-digit timer value on the dial pad between 01-20 which corresponds to 100 msec-2 seconds.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

Description

**FLASH TIMER.** Flash is a programmable opening on a line for signaling. When using an outside line, flash allows a user 'to obtain new dial tone without losing the line. This is particularly useful behind a PBX or Centrex. Each individual CO line can be programmed for a flash time.

**Default:** By default, the Flash Timer is set for 10 (1.O seconds) and is variable from 01 to 20 (100 msec. to 2 seconds).

**Related Programming:** Refer to Sec. 620.1, CO Line Programming, CO/PBX Programming.

### I. Line Group Programming

Programming Steps

1. Press the CO LINE GROUP flexible button (Button #9).
2. Enter a one-digit value on the dial pad between O-7 which corresponds to Groups O-7.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

Description

**CO LINE GROUP.** Eight line groups are available for CO line assignment. Groups should be assigned according to type (local, FX, WATS, etc.)

All unassigned CO lines should be programmed into a different group so they won't be accessed by Line Queuing, Pooled Group access (Pool Buttons), Speed Diai, or LCR features.

Line group 0 is used for programming a line(s) as a private line.

**Default:** By default, All lines are placed in Line Group 1.

**Related Programming:** Refer to Sec. 630.1, Station Attributes Programming, Flexible Button Programming - Pool Buttons. Also refer to Sec. 665.2, LCR Route List Table.

## CO LINE ATTRIBUTES (Cont'd)

### J.   Class of Service (COS) Programming

Programming Steps

1.  Press the LINE COS flexible button (Button #10).
2.  Enter a one-digit value on the dial pad between I-5 which corresponds to five possible class of service to which a line may be assigned:
    - COS1 = No restrictions.
    - COS2 = Table **A** governs, Station COS 2 and 4 are monitored.
    - COS3 = Table B governs, Station COS 3 and 4 are monitored.
    - COS4 = Restricts 0,1,*,# dialed as first digit and places a seven digit dialing limitation. In addition, I-800, 1911, and 1611 are allowed and 411, 976, and 555 numbers are denied.
    - COS5 = Overrides station COS 2,3,4, and 5 and allows unrestricted dialing.
3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
CO XX-XX DT CO UNA C P
LSO DSX FL10 GRPX COSX
```

Description

**LINE** COS. Through assignments of a CO Class of Service the assigned CO line will either interact with a station Class of Service, provide a "canned" restriction or provide unrestricted dialing capabilities. (When a CO line is marked PBX, COS restrictions apply to the station only if one of five PBX codes are dialed first.)

Refer to Table 620-I Class of Service (COS) for CO to Station Class Of Service relationship.

**Default:** By default, all CO lines are assigned Class of Service 1.

**Related Programming:** Refer to Sec. 610.7, PBX Dialing Codes, Sec. 630.1, Station Attributes Programming, Station Class of Service (COS) options. Also refer to Sec. 660.1, Exception Tables Programming.

Table 620-I **Class** of **Service (COS)**

| | | CO LINE CLASS OF SERVICE | | | | |
|---|---|---|---|---|---|---|
| | | I \| | 2 | 3 | 4 | 5 |
| S T A T I O N C O S | 1 | Unrestricted , | Unrestricted | Unrestricted | Canned Restriction* | Unrestricted |
| | 2 | Table A | Table A | Unrestricted | Canned Restriction* | Unrestricted |
| | 3 | Table B | Unrestricted | Table B | Canned Restriction* | Unrestricted |
| | 4 | Tables A&B | Table A | Table B | Canned Restriction* | Unrestricted |
| | 5 | Canned Restriction* | Canned Restriction* | Canned Restriction* | Canned Restriction* | Unrestricted |
| | 6 | Intercom only | Intercom only | Intercom only | Intercom only | Intercom only |

* Canned Restriction= No '0', 1, #, '*' as a first dialed digit, and 7 digits maximum plus 1-800, 1911, 1611 are allowed and 411,976, and 555 numbers are denied.

## CO LINE ATTRIBUTES (Cont'd)

### K.  CO Line Ringing Assignments

#### Programming Steps

Each CO line in the system may be assigned initial incoming ringing to one of the following destinations:

- one or more stations (keyset or SLT)
- to an ACD, UCD, Voice Mail or Hunt Group
- Off-Net (via speed dial)

1.  Press the RING ASSIGNMENT flexible button (Button #1 1) to toggle to the Ringing Assignment display. The display will show the following information:

```
CO XX-XX  RING ASSIGNMENTS
ENTER DDDR
```

2.  Enter the three-digit destination (DDD) and the one-digit ring type (R) followed by the HOLD button. Confirmation tone is heard and the display will now update.

3.  Press Button #1 7 to display ring assignments. Assignments will be displayed in sets of 8 up to the number programmed. Press Button #1 7 additional times to cycle to the next group of 8 ring assignments.

The following format is used to display the assignments:

```
DDDR   DDDR   DDDR   DDDR
DDDR   DDDR   DDDR   DDDR
```

Where:
- DDD= Destination
- R= D for Day
- N= Night
- B= Both Day & Night.

Deleting a station (entering a 0 for ring type) only removes that station from the ring assignment.

Ring assignments will be continuous and will be displayed in order of the destination number from **001** to **557.**

#### Description

**RING ASSIGNMENT.** When ringing is assigned as a part of the CO line parameters, ringing of a station is independent of that stations button configuration. However, Stations that are assigned for initial ring-in **MUST HAVE** a LOOP button(s) to answer the call(s) if a direct CO appearance is not available.

Multiple station assignments are allowed for a particular CO line in a mixture of Day, Night, or Day & Night ring types. **An** incoming CO line may be programmed to any number of stations but it cannot be programmed to ring a mixture of stations and groups (i.e.. a Hunt Group and four stations, or more than one Hunt Group).

Incoming calls directed Off-Net will be connected to an outgoing system speed bin.

CO lines assigned to ring multiple stations will not follow any stations' forward to a UCD, ACD, Voice Mail, Hunt Group or Off-Net Forwarding to another station will be allowed.

Valid three-diait destinations are:
- 020-099 = System Speed Bins 20-99, for off-net ringing.
- 100-I 95 = Station extension Numbers
- 440-447 = Voice Mail Groups I-8
- 450-457 = Hunt Groups I-8
- 499 = Direct Ringing to Modem
- 550-565 = ACD Groups I-1 6
- 550-557 = UCD Groups 1-8

Valid Rina types are:
- 0 = unassigned (to delete a station)
- 1 = Day Ringing
- 2 = Night Ringing
- 3 = Day & Night Ringing

Multiple station assignments are accomplished by assigning another destination with ring status, DDDR, and pressing the HOLD button. This can be done for up to the maximum number of stations on the system.

**Default:** By default, all CO lines are assigned to ring at the first programmed attendant, Station 100.

**Related Programming:** Refer to Sec. 640.2, ICLID Ringing Assignment.

## CO LINE ATTRIBUTES (Cont'd)

L.    CO **Line Identification Display**

<u>Programming Steps</u>

Each CO line in the system can be programmed to have a name associated to it in database programming.

1.    Press the CO LINE IDENTIFICATION flexible button (Button #12). The following message is shown on the display phone:

```
CO XX-XX ENTER CO ID
LINE 01
```

2.    Enter the name by using keys on the dial pad as follows. Valid alpha-numeric characters are: A-Z, O-9, *, #, · [spaces] and other ASCII characters as listed below. The name may be entered in any combination up to 12-characters in length (this represents 24-digits entered).

| A =21 | M =61 | 1 =1# | " =01 |
|-------|-------|-------|-------|
| B =22 | N =62 | 2 =2# | , =02 |
| C =23 | O =63 | 3 =3# | ? =03 |
| D =31 | P =71 | 4 =4# | / =04 |
| E =32 | Q =74 | 5 =5# | ! =*1 |
| F =33 | R =72 | 6 =6# | $ =*2 |
| G =41 | s =73 | 7 =7# | & =*4 |
| H =42 | T =81 | a =8# | * =*# |
| I =43 | u =82 | 9 =9# | ( =#1 |
| J =51 | V =83 | 0 =0# | ) =#2 |
| K =52 | w =91 | Space =11 | + =#3 |
| L =53 | x =92 | : =12 | = =#4 |
|       | Y =93 | · =13 | # =## |
|       | z =94 | ' =14 |       |

> **NOTE** *Entries can be made using a keyboard by following the same outlined procedures using the above chart.*

3.   Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

<u>Description</u>

This feature allows a name to be entered into the database programming for each individual line (trunk) connected to the system.

Once entered into the database, LCD phones including the attendant stations will receive the programmed line "name" in place of the default "LINE XX" message. This applies to all line call processing conditions where the current "LINE XX" message appears.

SMDR will continue to print out the line number in place of the programmed name.

If the line name has not been programmed, then the current "LINE XX" display will be used as the default.

A programmable data field is available for each line in the system. Line names may be programmed using the range programming.

A message similar to the following will be used for all CO line displays when a name has been programmed for a CO line.

```
LINE RINGING
nnnnnnnnnnnn          HH:MM am
```

## CO LINE ATTRIBUTES (Cont'd)

### M. Trunk Direction

<div style="display:flex">
<div>

Programming Steps

1. Press the TRUNK DIRECTION flexible button. (Button #13). The following message is shown on the display phone:

```
CO XX-XX TRK DIR      0-3
   INCOMING-OUTGOING
```

2. Enter a one-digit value on the dial pad which corresponds to the desired trunk type:
   - [0] = Out-of-Service (OOS)
   - [l] = Incoming only
   - [2] = Outgoing only
   - [3] = Both Incoming and Outgoing

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</div>
<div>

Description

CO Lines can be programmed on a per CO Line basis for the type of CO Line desired: Incoming, Outgoing, or Both incoming and outgoing.

- Incoming: Restricts the CO Line for incoming calls only.
  - Users can press a CO line button or dial CO line access code. to access a CO line.
  - Users can answer a CO call and then transfer the call.
  - Users can place call on hold, park the call, and other stations can pick-up the call.
- Outgoing restricts the CO Line to outgoing calls only.
  - Users cannot press a CO line button or dial CO line **access** code to access a CO line.
  - Users can place call on hold, park the call, and other stations can pick-up the call.
  - Incoming calls to this CO type are ignored. Callers receive ringback, no answer.
- Both incoming and outgoing type allows calls to be received or dialed out.

**Default:** By default, all CO lines default to both incoming & outgoing type.

</div>
</div>

### N. Ring Delay Timer

<div style="display:flex">
<div>

Programming Steps

1. Press the RING DELAY TIMER flexible button (Button #14). The following message is shown on the display phone:

```
CO XX-XX RING DLY     00-20
          00
```

2. Enter a two-digit timer value on the dial pad between 00-20 which corresponds to 00 seconds to 20 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</div>
<div>

Description

The Ring Delay timer has been added to the Starplus Digital Systems to accommodate ICLID interface requirements.

The Ring Delay timer is started whenever a CO Line detects incoming ringing. When the timer expires, CO line ringing will be detected by digital terminals and Single Line telephones. The purpose of this timer is to wait until after the first ring cycle to be detected by the digital system in order for ICLID information to be passed down the CO line prior to being answered.

**Default:** By default, the Ring Delay timer is set at 00 (disabled) and is variable from 00 to 20 seconds.

</div>
</div>

## CO LINE ATTRIBUTES (Cont'd)

**620.2    DIAL PULSE PARAMETERS**

Programming Steps                                          Description

If this feature is to be assigned:

  a. Press FLASH and dial [41]. The following mes-
     sage is shown on the display phone:

```
DIAL PULSE RATIO SPEED
              6040  10PPS
```

  b. The Dial Pulse features will toggle on and off
     with each depression, and the display will up-
     date with each depression.

      • LED on = 60/40 (RATIO), 1 Opps (SPEED)

      • LED off = 66/33 (RATIO), 20pps (SPEED)

  c. Press the HOLD button to save the entry. Con-
     firmation tone is heard and the display will now
     update.

By default all 'lines are DTMF (tone) signaling. If
outpulsing is required, the individual outside line
must be programmed for pulse. The break/make
ratio and the dial speed can be programmed at this
time.

The buttons on the digital terminal are defined as
shown below when entering the Dial Pulse Parame-
ter programming **area:**

| Q  1 | BREAK/MAKE RATIO | | | 11  A |
| W  2 | SPEED | | | 12  S |

**Default:** By default, the break/make ratio (RATIO) is
set at 60/40 but can be changed to 66/33. By default,
the dialing speed (SPEED) is 10pps but can be
changed to 20pps.

**Related Programming:** Refer to Sec. 620.1, CO
Line Programming for DTMF/Dial Pulse
Programming.

| NOTE | *This program code is only used when an outside (CO,) line has been programmed for dial pulse.* |

## CO LINE ATTRIBUTES (Cont'd)

### 620.3 FLEXIBLE PORT ASSIGNMENT FEATURE

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

**Programming Steps**

If the CO Line numbers need to be relocated to different ports:

a. Press FLASH and dial [42]. The following message is shown on the display phone:

```
CO 01 02 03 04 05 06 07
   08 09 10 11 12
```

b. The buttons 1 through 4 indicate cards 1 through 4. When the relocation program is initially entered, Button #1 will be lit indicating that the user is programming the CO Line numbers on the first card (CO Ports 1 through 12). The LCD will display the CO line numbers presently assigned to the first 12 ports.

To change the CO Line number assigned to any port:

a. Dial the position number on the display (01 through 12), followed by the CO Line number desired.

Example:

- if 0103 were dialed, the CO line number of the first entry on the display would be changed to 03. In addition, since 03 was shown as the third entry on the display, that entry would be blank (##).

To select another card in the system:

a. Press the button associated with that card. For example, if Button #3 were pressed (CO ports 25 through 36), the CO Line numbers assigned to the third card would be displayed. CO Line numbers on the third card are changed in the same manner by entering the position number (01 through 12), followed by the CO Line number desired.

> **NOTE** *When all the CO Line numbers desired have been programmed, the system will have to be reset to update the data. This is done so that the programming of CO tines can be done while the system is in use.*

**Description**

The Flexible Port Assignment feature will provide a means to assign CO line numbers to any CO line port in the system. This provides complete flexibility in determining CO line numbers within the system as long as they stay within the system numbering plan. A CO line can be assigned any number between 01 and 48 on the Starplus SPD 4896 system. This restriction is required to minimize memory requirements on the smaller systems.

The buttons on the digital terminal are defined as shown below when entering the Flexible Port Assignment feature programming area:

<table>
<tr><td>1 Q</td><td>CARD #1</td><td></td><td>11 A</td></tr>
<tr><td>2 W</td><td>CARD #2</td><td></td><td>12 S</td></tr>
<tr><td>3 E</td><td>CARD #3</td><td></td><td>13 D</td></tr>
<tr><td>4 R</td><td>CARD #4</td><td></td><td>14 F</td></tr>
<tr><td>5 T</td><td>CARD #5</td><td></td><td>15 G</td></tr>
<tr><td>6 Y</td><td>CARD #6</td><td></td><td>16 H</td></tr>
<tr><td>7 U</td><td>CARD #7</td><td></td><td>17 J</td></tr>
</table>

All CO line numbers entered are stored in a temporary database area which is uploaded to the main database when the system is reset.

| CARD # | CO LINE # | PORT # |
|--------|-----------|--------|
| 1 | i-12 | 1-12 |
| 2 | 13-24 | 13-24 |
| 3 | 25-36 | 25-36 |
| 4 | 37-48 | 37-48 |

> **NOTE** *If a CO Loop Interface Board (CO12) is not in Card Slot #1, and Button #1 is pressed, pound (#'s) will appear on the display instead of CO Line numbers.*

# TABLE OF CONTENTS FOR SECTION 630

# SECTION 630
# STATION ATTRIBUTES PROGRAMMING

**630.1 INTRODUCTION**

<u>Prog.ramming Steps</u>

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to 600.2, Program Mode Entry **(Key** Station).

If station features are to be changed:

a. Press FLASH and dial [50]. The following message is shown on the display phone:

---

**STATION ATTRIBUTES**
**SELECT A STATION RANGE**

---

b. Enter a six-digit number (100-195) for station range being programmed. If only one station is being programmed, enter that numbertwice i.e. (100100).

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. Flexible button #20 (New Range) will be lit. The display updates to current programming for Page A:

---

**XXX-XXX A PA DD CF _A PR**
**SP QU PL OH FW LC SB M**

---

Where:

- XXX = Station Range (100-195)
- A= Page "A" Features
- PA = Paging Access is allowed
- DD = Do Not Disturb is allowed
- CF = Conference is allowed
- _A = Executive Override is disabled
       Exec Override Blocking is allowed
- PR = Privacy is enabled
- SP =System Speed Dial is allowed
- QU = Queuing is allowed
- PL = Preferred Line Answer is enabled
- OH= Off-Hook Voice Over is allowed
- FW=Call Forward is allowed
- LC = Forced LCR Enabled
- SB = ACD* Supervisor Barge-in*
- M= CO Ringing option is muted

<u>Description</u>

This section describes the steps and procedures necessary to program station attributes for stations connected to the **Starplus** Digital Key Telephone system. When entering the Station attributes portion of the database, the programmer may decide to enter information for either a range of stations or one specific station.

Range programming allows the programmer to change a specific parameter or a few parameters for an entire range of stations leaving intact the remaining data fields that do not require change. Those data fields will continue to operate with the previously programmed data.

Station Attributes are divided between those features that require either a simple allow/deny or Enable/Disable (toggle) operation and those that require a numeric entry. The allow/deny (toggle) type features are programmed on page "A".

When programming the Page "A" features, the flexible buttons are mapped as follows:

| 1 | Q | PAGE ACCESS | FORCED LCR | 11 | A |
|---|---|---|---|---|---|
| 2 | W | DO NOT DISTURB | ACD SUPV BARGE-IN | 12 | S |
| 3 | E | CONFERENCE | EXEC OVERRIDE BLOCKING | 13 | D |
| 4 | R | EXECUTIVE OVERRIDE | CO LINE RING OPTIONS | 14 | F |
| 5 | T | PRIVACY | | 15 | G |
| 6 | Y | SYSTEM SPEED | | 16 | H |
| 7 | U | LINE QUEUING | | 17 | J |
| 8 | I | PREF LINE ANSWER | SELECT PAGE A | 18 | K |
| 9 | O | OHVO | SELECT PAGE B | 19 | L |
| 10 | P | CALL FORWARD | NEW STATION RANGE | 20 | ; |

- Button #18 [PAGE "A'] selects Page "A" and displays Page "A" parameters..
- Button #19 [PAGE "B"] selects Page "B" and displays Page "B" parameters..
- Button #20 [Select Range] will prompt for a new Station range.

* Features available with optional software.

## PAGE "A" STATION ATTRIBUTES (Cont'd)

### A. Paging Access

<u>Programming Steps</u>

1. Press the PAGE ACCESS flexible button (Page A, Button #1). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Paging is allowed
   - LED off= Paging is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

<u>Description</u>

**PAGE ACCESS.** Stations can individually be allowed or denied the ability to make pages. This applies to all internal and external zone paging. A station denied access to paging may still answer a meet-me page announcement. (Station COS 6 will not deny a station the ability to make a page.)

**Default:** By default, Paging is allowed at all stations.

### B. Do Not Disturb

<u>Programming Steps</u>

1. Press the DO NOT DISTURB flexible button (Page A, Button #2). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Do Not Disturb is allowed
   - LED off= Do Not Disturb is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

<u>Description</u>

DO **NOT DISTURB.** Stations can be individually allowed or denied the ability to place their telephone in Do Not Disturb.

**Default:** By default, Do Not Disturb is allowed at all stations.

## PAGE "A" STATION ATTRIBUTES (Cont'd)

### C. Conference Enable/Disable (Per Station)

<table>
<tr><td style="text-align:center">Programming Steps</td><td style="text-align:center">Description</td></tr>
</table>

1. Press the CONFERENCE flexible button (Page A, Button #3). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Conference is enabled
   - LED off = Conference is disabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

**CONFERENCE.** This feature allows the system to be programmed on a per Station basis for the ability to initiate a conference.

Only stations that have Conference enabled will be able to initiate a conference.

A station that is denied conferencing capabilities in programming can be a party to another stations conference provided that station does have conferencing privileges.

**Default:** By default, Conference is enabled for all stations.

### D. Executive Override

<table>
<tr><td style="text-align:center">Programming Steps</td><td style="text-align:center">Description</td></tr>
</table>

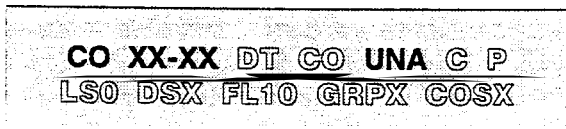1. Press the EXECUTIVE OVERRIDE flexible button (Page A, Button #4). This feature will toggle on and off with each depression, and the display will update with each depression.
   - **LED** on = Executive Override is allowed
   - LED off= Executive Override is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

**EXECUTIVE OVERRIDE.** This feature allows certain stations to be designated as "Executive" stations with the ability to override and "barge-in" on other keysets engaged in a CO line or intercom conversation.

An optional warning tone is programmed on a system wide basis to either enable or disable the tone. This tone will be presented to all parties prior to actual cut thru of the third party.

| NOTE | *A separate condition has been added fo this feature which will allow or disallow an Executive to override an extension. This prevents an extension with override capability from overriding an Executive's station. Refer to Item M. Executive Override Blocking later in this section.* |
|------|------|

**Default:** By default, Executive Override is disabled for all stations.

**Related Programming:** Refer to Sec. 610.2, System Features Programming, Exec Override Warning Tone. Also refer to Sec. 630.1, ACD Supervisor Monitor w/Barge-in.

---

**CAUTION**

USE OF THIS FEATURE WHEN THE EXECUTIVE OVERRIDE WARNING TONE IS DISABLED MAY BE INTERPRETED AS A VIOLATION OF FEDERAL, STATE OR LOCAL LAWS, AND AN INVASION OF PRIVACY. CHECK APPLICABLE LAWS IN YOUR AREA BEFORE INTRUDING ON CALLS USING THIS FEATURE.

---

**PAGE "A" STATION ATTRIBUTES (Cont'd)**

**E.  Privacy (Per Station)**

<u>Programming Steps</u>

To program station(s) for Automatic Privacy:

1.  Press the PRIVACY flexible button (Page A, Button #5). This feature will toggle on and off with each depression, and the display will update with each depression.
    - LED on = Privacy is enabled on Stations(s)
    - LED off = Privacy is disabled on Station(s)
2.  Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF A PR
SP QU PL OH FW LC SB M
```

| NOTE | *Disabling of the privacy feature may be iimited by federal, state or local law, so check the* relevant laws *in your area before disabling privacy.* |
|------|---|

<u>Description</u>

**PRIVACY.** The system provides privacy on all communications in the system which prevents other stations from accidentally entering an existing conversation. However, if desired,, the system will allow on a per station basis the ability for a station to join an existing outside CO line conversation. Each station can be granted the privilege to join an existing CO line conversation by simply pressing the CO line button of a CO line in use.

- Both the station and the CO line must have privacy disabled before the system will allow cut-thru.
- If privacy is disabled and a station joins an existing call, a programmable warming tone is presented to both parties prior to actual cut-thru.
- If privacy is disabled, up to three other stations may join in on an existing conversation.

**Default:** Privacy is enabled for all stations in default.

**Related Programming:** Refer to Sec. 610.3, Additional System Features, Privacy Release Tone Option for disabling of the conference tone. Also refer to Sec. 620.1, CO Line Programming, Privacy in CO Line Attributes programming.

The Station Privacy flag affects a station users ability to access CO lines already engaged in conversation by another station in the system as shown in the following table:

| Station Attempting to Access CO Line | CO Line in Use by Another Station | |
|---|---|---|
| | Privacy      Enabled | Privacy Disabled |
| Privacy   Enabled | Private<br>(No      Cut-through) | Private<br>(No  Cut-through) |
| Privacy Disabled | Private<br>(No  Cut-through) | Privacy Released<br>(Cut-through  Allowed) |

## PAGE "A" STATION ATTRIBUTES (Cont'd)

### F. System Speed Dial Access

Programming Steps

1. Press the SPEED flexible button (Page A, Button #6). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = System Speed Dialing access is allowed
   - LED off= System Speed Dialing access is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

Description

**SYSTEM SPEED DIALING ACCESS.** Stations can be individually allowed or denied the ability to use system speed dial '(20-99) numbers. The last 40 system speed numbers are not monitored by toll restriction. Stations can not be prevented from using station speed dial.

**Default:** By default, System Speed Dialing is allowed at all stations.

**Related Programming:** Refer to Sec. 660.1, Exception Tables Programming.

### G. Line Queuing

Programming Steps

1. Press the QUEUING flexible button (Page A, Button #7). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Queuing is allowed
   - LED off= Queuing is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

Description

**LINE QUEUING.** Stations can be allowed or denied the ability to manually queue for a busy group of CO lines. Even when disabled, stations will have automatic LCR queuing privileges.

**Default:** By default, CO Line Queuing is allowed at all stations.

## PAGE "A" STATION ATTRIBUTES (Cont'd)

### H. Preferred Line Answer

Programming Steps

1. Press the PREF LINE ANSWER flexible button (Page A, Button #8). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Preferred Line Answer is allowed
   - LED off= Preferred Line Answer is denied

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

Description

**PREF LINE ANSWER.** Stations can be given the ability to answer incoming outside line calls, transferred and recalling lines and line queues by simply going off-hook. (Preferred Line Answer)

**Default:** By default, Preferred Line Answer is disabled on all stations.

### I. Off-Hook Voice Over

Programming Steps

1. Press the OHVO flexible button (Page A, Button #9). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Off-Hook Voice Over is allowed
   - LED off= Off-Hook Voice Over is denied

2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

Description

**OHVO.** This feature allows a station to receive OHVO calls. Only OHVO Digital Terminals may receive an OHVO call. A station can be denied the ability to receive OHVO calls by disabling the OHVO option.

**Default:** By default, Off-Hook Voice Over is disabled for all stations.

## PAGE "A" STATION ATTRIBUTES (Cont'd)

### J. Call Forwarding

| Programming Steps | Description |
|---|---|

**Programming Steps**

1. Press the CALL FORWARD flexible button (Page A, Button #10). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Call Forwarding is allowed
   - LED off= Call Forwarding is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

**Description**

**CALL FORWARD.** Stations can be allowed or denied the ability to have incoming CO calls, intercom, transferred outside'lines forwarded to another station, ACD, UCD, Hunt or Voice Mail group or Off-Net Forward via speed dial.

**Default:** By default, Call Forwarding is allowed at all stations.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

### K. Forced Least Cost Routing (LCR)

**Programming Steps**

1. Press the FORCED LCR flexible button (Page A, Button #1 1). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Least Cost Routing is forced
   - LED off= Least Cost Routing is optional
2. Press the HOLD button to save the entry. Confirmation tone is heard.

**Description**

*This feature is available with optional software.*

**FORCED LCR.** Stations may be forced to place outgoing CO calls by use of LCR (dial [9]) to access an outside line). This allows the system administrator to control dialing patterns and the lines used for outgoing CO calls more effectively. This can be enabled/disabled on a per station basis for additional flexibility and control.

**Default:** Forced LCR is optional for all stations.

**Reiated Programming:** Refer to Sec. 630.1, LCR Class of service (COS); Sec. 610.2, LCR Enable; 665.1, Least Cost Routing (LCR) Programming.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

## PAGE "A" STATION **ATTRIBUTES** (Cont'd)

### L. ACD Supervisor Monitor w/Barge-in

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

1. Press the **SUPV BARGE-IN flexible button** (Page A, Button #12). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = ACD Supv Barge-in is allowed
   - LED off= ACD Supv Barge-in is denied
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

> **NOTE** *The use of silent monitor and barge-in is limited by federal law and may also be limited or prohibited by state or local law, so check the relevant laws in your area before employing these features.*

Description

***This feature is available with optional software.***

The ACD Supervisor Monitor with Barge-In feature provides a means for an ACD Supervisor to monitor an agents call in progress in' order to coach sales techniques or customer relations skills. When used, a supervisor may intrude onto an agents call in a listen only mode or in a true conference mode. This feature is available with or without .a warning tone.

> **NOTE** *Executive Override is a System feature and therefore takes precedence over-this feature. if Supervisor Monitor with Barge-In is to be used properly, Executive Override MUST be disabled otherwise the Barge-In is performed with the MUTE button OFF!*

**Default:** By default, the Supervisor Monitor w/Barge-In feature is not allowed.

**Related Programming:** Refer to Sec. 630.1, Executive Override.

### M. Executive Override Blocking

Programming Steps

1. Press the EXECUTIVE OVERRIDE BLOCK-ING flexible button (Page A, Button #13). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Blocking is denied.
   - LED off= Blocking is allowed.
2. Press the HOLD button to save the entry. Confirmation tone is heard.

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M
```

Description

The Executive Override Feature has a separate condition added to it which will allow or disallow an Executive to override an extension. This prevents an extension with override capability from overriding an Executive's station.

> **NOTE** *The Executive Override Blocking feature will also block an ACD Supervisor 'Monitor w/Barge-in.*

**Default:** By default, Executive Override is allowed at all stations.

**Related Programming:** Refer to Sec. 610.2, System Features Programming,- Executive Override.

**PAGE "A" STATION ATTRIBUTES (Cont'd)**

**N. CO Line Ringing Options**

| Programming Steps | Description |
|---|---|

Programming Steps

1. Press the **RINGING** OPTIONS flexible button (Page A, Button #14). This feature will toggle on and off with each depression, and the display will update with each depression.
   - LED on = Reminder Ring is allowed
   - LED off= Muted Ringing is allowed
2. Press the HOLD button to save the entry. Confirmation tone is heard.

XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB M

Description

When a CO call rings at a busy station, the call rings at the station using a muted ring signal. This option allows a user to receive a reminder ring at his station, instead of muted ring. In addition, a reminder ring timer has also been added to the system to provide the reminder ring every time the timer expires, for as long as the incoming CO line has not been disconnected.

When the reminder ring option is used, the type of reminder ring tone is determined by the Tone Ring Option code [695] programmed on the keyset. It is also possible that this tone or a portion of this tone could be heard in the handset, depending on the keyset ring volume setting.

**Default:** By default, Muted Ringing is allowed at ail stations.

**Related Programming:** Refer to Sec. 610.1, Reminder Ring Timer

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### 630.2 PAGE "B" INTRODUCTION

| Programming Steps | Description |
|---|---|

**Programming Steps**

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to 600.2, Program Mode Entry (Key Station).

If station features are to be changed:

a. Press FLASH and dial [50]. The following message is shown on the display phone:

> **STATION ATTRIBUTES**
> **SELECT A STATION RANGE**

b. Enter a six-digit number (100-l 95) for station range being programmed. If only one station is being programmed, enter that number twice i.e. (100100).

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. Flexible button #20 (New Range) will be lit.

d. Press [PG B] button. The display of current programming for those features will appear as follows:

> **XXX-XXX B ID0 COS1 1 SP0**
> **AAAA BBBB CCC DDDDDDD L0**

> XXX = Station Range (100-l 95)
> B = Page "B" Features
> ID = Station Identification (O-7)
> COS = Class of Service (l-6)
> SPK = Spkrphone/Headset Option (O-2)
> AAAA = Pickup Group (1-4)
> BBBB = Paging Zone (l-4)
> CCC = Preset Forward Destination
> DD....DD = CO Line Group access(0-7)
> LO = LCR Class of Service (O-6)

**Description**

This section describes the steps and procedures necessary to program the Page "B" station attributes for stations connected to the Star-plus Digital Key Telephone System. When entering the Station attributes portion of the database, the programmer may decide to enter information for either a range of stations or one specific station.

Range programming allows the programmer to change a specific parameter or a few parameters for an entire range of stations leaving intact the remaining data fields that do not require change. Those data fields will continue to operate with the previously programmed data.

| NOTE | *Features programmed in Page "B" require a numeric entry after pressing the flexible button.* |
|---|---|

When programming the Page "B" features, the flexible buttons are mapped as follows:

| 1 Q | STATION ID | | 11 A |
|---|---|---|---|
| 2 W | CLASS OF SERVICE | | 12 S |
| 3 E | SPEAKERPHONE | | 13 D |
| 4 R | GROUP PICKUP | | 14 F |
| 5 T | PAGING ZONES | | 15 G |
| 6 Y | PRESET FORWARD | | 16 H |
| 7 U | CO LINE GP ACCESS | DISPLAY BUTTONS | 17 J |
| 8 I | LCR COS | SELECT PAGE A | 18 K |
| 9 O | OFF-HOOK PREF | SELECT PAGE B | 19 L |
| 10 P | BUTTON ASSIGN | NEW STATION RANGE | 20 ; |

- Button #18 [PAGE "A"] selects Page "A" and displays Page "A" parameters.
- Button #19 [PAGE "B"] selects Page "B" and displays Page "B" parameters.
- Button #20 [Select Range] will prompt for a new Station range.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### A. Station Identification

Programming Steps

1. Press the STATION ID flexible button (Page B, Button #1).

To program the Station **ID** for a Digital Terminal:

1. Dial a [0] on the dial pad.

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB CCC DDDDDDD L0
```

Description

**STATION ID.** Each system port must be programmed to identify the type of station that will operate on that port. Each station type must be identified.

**Default:** By default, all Key Telephone Boards (KT12) default to ID 0 (Digital Terminal), all Single Line Boards (SL12) default to ID 5 (SLT or OPX).

| NOTE | *When identifying a station as a DSS/DLS Console, you must also enter the station number of the Key Telephone the DSS/DLS Console is associated with.* |
|------|---|

To program the Station **ID** for a DSS/DLS Console with Map 1, Map 2, Map 3, or Map 4:

Programming Steps

1. Dial either a [1],[2] [3], or [4] on the dial pad.

2. Enter the three-digit station number (100-l 95) which the DSS/DLS Console is associated with.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID1 COS1 1 SP0
AAAA BBBB CCC DDDDDDD L0
```

Description

**MAP #1.** By default, the first 12 CO Lines and the first 36 Stations, 100-135. This provides a default layout for a 12x36 configuration. Only Station buttons are flexible and can be changed by the station user. CO Line buttons are NOT changeable.

**MAP #2.** By default, the first 48 Stations, 100-147. All buttons **are** flexible and can be changed by the station user.

**MAP #3.** By default, is intended to be used with Map #2 in that it has the remaining stations, 148-l 95 to provide a full Station mapping. All of the buttons on Map #3 are flexible and can be changed by the user.

**MAP #4.** By default, contains all 48 CO Lines to provide a full CO mapping.

**Related Programming:** Refer to Sec. 620.1, CO Line Programming, CO Line Programming for CO Line ringing assignments on Maps 1 and 4.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### Station Identification (Cont'd)

To program the Station ID for a SLT or OPX Station:

| Programming Steps | Description |
|---|---|
| 1. Dial a [5] on the dial pad.<br><br>2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.<br><br>XXX-XXX B ID5 COS1 1 SPO<br>AAAA BBBB CCC DDDDDDD L0 | **SLT/OFF PREMISE EXTENSION (OPX):** This external module provides the interface for one long loop (OPX) single line telephone (2500 type) extension. This module requires a separately provided -48V dc power supply to provide the necessary current for long loop applications and to support ring generation. This module is wired to and interfaces with a digital key station port on the Starplus SPD 4896 system. The OPX card meets the requirements of the FCC for connection to the telephone (Telco) network. Telephones must be DTMF only (2500 type).<br><br>**Related Programming:** Refer to Figure 500-15 Off-Premise Extension (OPX) Module.<br><br>This module also provides for one Power Fail circuit in the event of an AC power failure. |

To program the Station ID for a SLT w/Message Waiting Lamp:

| Programming Steps | Description |
|---|---|
| 1. Dial a [6] on the dial pad.<br><br>2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.<br><br>XXX-XXX B ID6 COS1 1 SPO<br>AAAA BBBB CCC DDDDDDD L0 | **SINGLE LINE TELEPHONE (SLT):** The Starplus Digital Key Telephone System supports industry standard 2500 Type (DTMF) single line instruments. When the Single Line Board (SL12) is installed in the system, a maximum of 12 single line telephones may be supported. The Starplus SPD 4896 system will support up to 84 single line telephones through the user of single line boards and/or SLA/OPX boxes, |

**PAGE "B" STATION ATTRIBUTES (Cont'd)**

**Station Identification (Cont'd)**

To program the Station ID for a Relay/Sensor Module:

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

1. Dial a [7] on the dial pad.

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID7 COS1 1 SPO
AAAA BBBB CCC DDDDDDD L0
```

Description

**RELAY/SENSOR MODULE:** The Relay Sensor Interface Module connects to the system using one digital station port and provides three relay activated contacts and three sensing circuits. The relays provide for applications such as Loud Bell Control contacts, CO Line control contacts, RAN Start contacts, Page Relays, Power Fail contact and additional applications as software will permit. The sensing circuits will provide for such applications as RAN Stop (end of message).

To program the Station ID for a Digital Data Interface box (DDIU):

Programming Steps

1. Dial a [8] on the dial pad.

2. Enter the three-digit associated station number. (100-l 95) or
Enter ### in the case of a DDIU without an associated station.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID8 COS1 1 SPO
AAAA BBBB CCC DDDDDDD L0
```

Description

**DIGITAL DATA INTERFACE BOX:** The Data Feature is a time division, point to point data transmission capability which permits simultaneous voice and data communications (within the same system but not the same port). The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports.

To establish a data call, a Digital Data Interface box (DDI) is required to be connected to each data communications device. The DDIU allows any serial data communications device (which conforms to RS-232C) to be connected to the Starplus Digital system. Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### B. Station Class of Service (COS)

| Programming Steps | Description |
|---|---|
| 1. Press the CLASS OF SERVICE flexible button (Page B, Button #2). | **CLASS OF SERVICE.** Each stations must be assigned a certain COS for day mode operation, and also be assigned a COS for night mode operation. The night COS goes into affect when the system is placed into the night mode, manually or automatically. This prevents the misuse of phones after hours. |

2. Enter a two-digit Class of Service entry as follows:
   • 1st digit is day COS
   • 2nd digit is night COS

The six classes of service are:
- [1] = unrestricted
- [2] = governed by Table A
- [3] = governed by Table B
- [4] = governed by Tables A and B
- [5] = no 0,1,*,# as first digit, 7 digits max.
- [6] = intercom only (no CO Line access)

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Class** of service (COS) determines the stations dialing privileges. Refer to Table 630-I Class of Service (COS).

Default: By default, all stations are assigned a COS 1 for day mode and COS 1 for night mode.

**Related Programming:** Refer to Sec. 620.1, CO Line Programming, Class of Service (COS) Programming; and Sec. 660.1, Exception Tables Programming.

```
XXX-XXX B IDO COS1 1 SPO
AAAA BBBB CCC DDDDDDD LO
```

### Table 630-I Class of Service (COS)

| | | CO LINE CLASS OF SERVICE | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 i | 3 | 4 | 5 |
| **S T A T I O N   C O S** | 1 | Unrestricted | Unrestricted | Unrestricted | Canned Restriction* | Unrestricted |
| | 2 | Table A | Tabie A | Unrestricted | Canned Restriction* | Unrestricted |
| | 3 | Table B | Unrestricted | Table B | Canned Restriction* | Unrestricted |
| | 4 | Tables A&B | Table A | Table B | Canned Restriction* | Unrestricted |
| | 5 | Canned Restriction* | Canned Restriction* | Canned Restriction* | Canned Restriction* | Unrestricted |
| | 6 | Intercom only | Intercom only | Intercom only | Intercom only | Intercom only |

* Canned Restriction= No '0', 1, #, '*' as a first dialed digit, and 7 digits maximum plus 1-800, 1911, 1611 are allowed and 411,976, and 555 numbers are denied.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### C. Speakerphone/Headset Programming

Programming Steps

1. Press the SPEAKERPHONE flexible button (Page B, Button #3).
2. Enter a one-digit number on the dial pad between 0 and 2 to identify the speakerphone operation.
   - [0] = works as normal speakerphone. Full speakerphone capabilities on both CO lines and Intercom.
   - [I] = Speakerphone enabled for intercom calls only. Speakerphone capabilities disabled for outgoing CO line calls (monitoring and on-hook dialing are still allowed.
   - [2] = Speakerphone is disabled completely. Allows for headset operation.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SPO
AAAA BBBB CCC DDDDDDD L0
```

Description

**SPEAKERPHONE.** Each telephone's speakerphone ability is programmable in one of three ways.

A speakerphone Id of 2 will allow the station user to enable headset mode by dialing a code. The station user may then return to full speakerphone operation by dialing the same code again.

**Default:** By default, ail stations are assigned an ID of 0.

This feature is NOT available on the Starplus 14-Button Basic telephone. The Basic telephone has handsfree answer-back on intercom only!

### D. Pick-Up Group(s) Programming

Programming Steps

1. Press the GROUP PICKUP flexible button (Page B, Button #4).
2. Enter a one-to-four digit number to program pickup groups.
   - [0] = no group
   - [1] = Group 1
   - [2] = Group 2
   - [3] = Group 3
   - [4] = Group 4
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SPO
AAAA BBBB CCC DDDDDDD L0
```

Description

**GROUP PICKUP.** Each station is assigned into pick up groups. Stations can be in any combination of the four groups or in no group at all.

**Default:** By default, all stations are in group 1.

**PAGE "B" STATION ATTRIBUTES (Cont'd)**

**E.    Paging Zone(s) Programming**

<u>Programming Steps</u>

1.    Press the PAGING ZONES flexible button (Page B, Button #5).

2.    Enter a one-to-four digit number to program paging zone(s).
    - [0] = no zone (no pages received)
    - [1] = Zone 1
    - [2] = Zone 2
    - [3] = Zone 3
    - [4] = Zone 4

3.    Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SPO
AAAA BBBB CCC DDDDDDD L0
```

<u>Description</u>

**PAGING ZONES.** Each station is assigned to internal paging zones. A station can be in any or all zones or in no zone at all.

All Call is all page zones combined. If a station is not in any internal zone, it will not receive any all call pages.

Stations not assigned to a page group can still make page announcements if allowed in station programming. Stations can be assigned to a page group in order to receive pages but not allowed to make pages.

**Default:** By default, all stations are in Page Zone 1.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### F. Preset Call Forward Programming

<u>Programming Steps</u>

1. Press the PRESET FORWARD flexible button (Page B, Button #6).

2. Enter a three-digit number to determine the destination where calls are to be routed when the preset forward timer expires.

<u>Valid 3 digit destinations are:</u>

[020-099] = System Speed Bins 20-99 for off-net forwarding

[100-195] = Station Numbers

[440-447] = Voice Mail Groups 1-8

[450-457] = Hunt Groups 1-8

[550-557] = UCD Groups 1-8

[550-565] = ACD Groups 1-16

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB CCC DDDDDDD L0
```

<u>Description</u>

**PRESET FORWARD.** This feature allows the system database to be configured so that incoming CO Lines, which are programmed to ring at a particular station, can be forwarded elsewhere in the system predetermined by programming. This feature is active if the station ringing is not answered in a specified time. This is particularly useful in "overflow applications where a Voice Mail or **Auto** Attendant may be in use.

A station may have one designated preset forward location defined in the database.

Preset Call Forward is chainable only to other predetermined preset forward stations specified in the database up to a chain of 5 stations. If a CO Line forwarded by Preset Call Forward encounters a manually forwarded station (Call Forward - Station), or a station in DND, then the incoming CO Line will bypass that station and forward to the next in the chain. If that station is the last in the chain, then the call will not forward any further and will continue to ring at that station until answered or terminated.

Chainable Preset Call Forwarding will force the incoming CO Line to ring at each station preassigned in the database for the Preset Forward Ring Timer, specified in the database, before forwarding.

CO Lines can be preset forwarded to ring into an ACD, UCD, Voice Mail, Hunt Group or Off-Net via speed dial from any station. A CO line will not preset forward to a busy hunt, voice mail, ACD, or UCD group, however each time the preset forward timer expires (for a total of five attempts) the group will be checked for an idle station. If a member of the group is idle the call will then be presented to that member.

**Default: By** default, no preset forward destinations are programmed.

**Related Programming:** Refer to Sec. 610.1, System Timers, Preset Forward Timer.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### G.   CO Line Group Access

#### Programming Steps

1.   Press the CO LINE GROUP ACCESS flexible button (Page B, Button #7).

2.   Enter up to seven digits (0, or I-7) for the outside line groups the station will have access to.
   - [0] = no access
   - [I] = access to Group 1, Code 9 or 81
   - [2] = access to Group 2, Code 82
   - [3] = access to Group 3, Code 83
   - [4] = access to Group 4, Code 84
   - [5] = access to Group 5, Code 85
   - [6] = access to Group 6, Code 86
   - [7] = access to Group 7, Code 87

3.   Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB CCC DDDDDDD L0
```

#### Description

**CO LINE GROUP ACCESS. A** station is allowed access to any combination of outside line groups. Or a station may not be allowed any access to outside lines. The following are the line group numbers and their access codes.

CO line groups are used primarily by single line telephones or for flexible buttons assigned as pooled group buttons on a Key Telephone.

**Default: By** default, all stations are allowed access to Group 1.

**Related Programming:** Refer to Sec. 620.1, CO Line Programming, CO Line Group Programming.

### H.   LCR Class of Service (COS)

#### Programming Steps

1.   Press the LCR COS flexible button (Page B, Button #8).

2.   Enter a one-digit number between 0 and 6 to correspond to the LCR Class of Service desired.

3.   Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
XXX-XXX B ID0 COS1 1 SP0
AAAA BBBB CCC DDDDDDD L0
```

#### Description

*This feature is available with optional software.*

**LCR** COS. Stations can be given a class of service assignment for Least Cost Routing. The range is between 0 and 6 with 0 being unrestricted and 6 being the most restricted. A station will be allowed use of LCR routes with a priority number equal to or higher than the stations LCR COS assignment.

**Default:** By default, all stations are given unrestricted access (0).

**Related Programming:** Refer to Sec. 865.2, LCR Tables Programming .

**PAGE "B" STATION ATTRIBUTES (Cont'd)**

**I.    Off-Hook Preference Programming**

Programming Steps

To program a station for Off-Hook Preference;

1.    Press the OFF-HOOK PREF flexible button
(Page B, Button #9). The following message
is shown on the display phone:

```
PRIME FLEX BUTTON
00 YES
```

2.    Enter the two-digit button number (01-48) or
(00) to indicate no specific button is preferred.
SLT's use 01 to enable or 00 to disable.

3.    Then, enter either 0 or 1 where:

- [0] = Disable user programmable prefer-
ence so that users may not change the
off-hook preference as set in programming.
Also use for SLT stations.

- [1] = Enable user programmable preference
to key station users so that they may change
the off-hook preference through a user dial
code.

4.  Press the HOLD button to save the entry.
Confirmation tone is heard and the display will
now update.

Description

**OFF HOOK PREF.** This allows **a** key station user to
automatically have a flex button selected when going
off-hook or when pressing the ON/OFF button. SLT
user may have a particular CO line or a CO line group
selected automatically when going off-hook.

This may be established in programming so that key
station users may select and/or change their off-
hook preference through the use of a dial code. This
user programmable preference may be allowed or
denied in programming.

When establishing an off-hook preference for SLT
stations, it is necessary to program the SLTs CO line,
or line group, to be accessed when going off-hook,
first using a flex button programming procedure.

**Default:** By default, all digital terminals are allowed
to change their preference but no button is assigned
(00). SLT stations are not allowed this feature.

**Related Programming:** Refer to Sec. 630.1, Station
Attributes Programming, Flexible Button
Programming later in this section.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### J. Flexible Button Programming

| Programming Steps | Description |
|---|---|

1. Press the BUTTON ASSIGN flexible button (Page B, Button #10). The following message is shown on the display phone:

```
FLEX BUTTON PROG
ENTER BUTTON DATA
```

**BUTTON ASSIGN.** Each 34-button Digital terminal has 28-flexible buttons which can be individually programmed. Each 14-button Digital terminal has 8-flexible 'buttons which can be individually programmed. One of the following five operations can be selected in programming for each button.

2. Enter the two-digit button number [BB] to be programmed followed by the desired button function as follows:
where: BB= Button number (01-28)

**MULTI:** To assign a button as a multi-function button (user programmable) enter:

   BB [0] HOLD

**MULTI.** When a button is assigned as a multi-function button [0], the user then has the ability to program any features or functions on the buttons that the user has access to. For a complete list of user programmable code (functions and features), refer to Table 630-2 Flexible Button Display Designations.

**CO LINE:** To assign a button as a CO Line button, enter:

   BB [1] LL HOLD   (LL= CO Line 01-48)

CO. Buttons assigned as specific CO lines will provide direct access and appearance of the CO line at the station. The station will receive all call status indications such as LED flash rates for incoming ringing, when the line has been placed on HOLD, etc... CO Line ringing is programmed in CO line Attribute Programming.

**LOOP:** To assign a button as a Loop button, enter:
   BB [2] HOLD

**LOOP.** Used for a station without a direct CO Line appearance to answer the line ringing in or transferred to the station. It is recommended that all stations be given a loop button so they can receive a transferred call on a line for which they have no button access.

**POOL:** To assign a button as a pooled group button, enter:

   BB [3] G HOLD   (G= Line Group # 1-7)

**POOL.** Some or all outside CO Lines may be grouped together and accessed via a POOL button for the purpose of placing an outgoing CO call. Pressing this button accesses the highest numbered unused CO line in that CO Line group. When programming a button as a pooled group button, refer to CO Line group programming. Pooled group numbers match CO Line group numbers.

**PAGE "B" STATION ATTRIBUTES (Cont'd)**

**Flexible Button Programming (Cont'd)**

<u>Programming Steps</u>

**UNASSIGN:** To unassign a button, enter:

    BB [#] HOLD

If SLT stations are to be programmed for Off-Hook Preference, it is necessary to program the desired CO line, or CO line group, the SLT is to access when going off-hook.

To assign a CO Line for a SLT with Off-Hook Preference, enter:

    00 [1] LL HOLD (LL= CO Line 01-48)

To assign a CO tine group for an SLT with Off-Hook Preference, enter:

    00 [3] G HOLD (G= Line Group # l-7)

<u>Description</u>

**UNASSIGN (locked out).** Specific buttons may be designated as unused or locked out. When a button is programmed as unused, the button may not be programmed by the station user using flex button programming procedures.

**Default:** By default, Station 100 will ring on a line. However, if Station 100 is not given button access to a line, another station must be programmed to ring on that line.

**Related Programming:** When programming a button as a CO Line button, refer to Sec. 620.1, CO Line Programming, CO Line Ringing Assignments; and Sec. 630.1, Station Attributes Programming ,Off-Hook Preference Programming.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### K. Display Flexible Buttons

<u>Programming Steps</u>

If the flexible buttons are to be viewed:

1. Press the DISPLAY BUTTONS flexible button (Page B, Button #17). The programming assignment on four buttons will be displayed starting with the lowest button number. With each sub-sequent depression of the DISPLAY BUTTONS button, the next four buttons will be displayed. The following message is shown on the display:

```
BUTTONS XXX-XXX BBWY
BBYYY BBYYY BBYYY
```

Where:
- XXX= Station number
- BB= Button Number
- YYY= Button function (see table below)

<u>Description</u>

**DISPLAY BUTTONS.** Any time a display of button programming (default or changed) is needed, press the DISPLAY BUTTONS button (button 17) on Page B and it will display four buttons' programming assignments (starting with the lowest button number). With each subsequent depression of the DISPLAY BUTTONS button, the next four buttons will be displayed.

When a button is assigned as a multi-function button [0], the user then has the ability to program any features or functions on the buttons that the user has access to. When the buttons are programmed with user programmed functions, the display will show the function that has been assigned to the button.

For a complete list of user programmable code (functions and features), refer to Sec. 300.37, Flexible Button Assignment.

### Table 630-2 Flexible Button Display Designations

| | | | |
|---|---|---|---|
| MUL | = Multi Function button. | MUS | = BackGround Music button |
| CO[LL] | = CO Line button (for CO line [LL]) | HST | = Headset mode button |
| LP | = LOOP Button | PPK | = Personal Park button |
| PL[G] | = POOL Button with CO Line group number | AVL | = ACD or UCD Available/Unavailable button |
| D[XXX] | = Station DSS/BLF button | OFD | = ACD Overflow Station Avail/Unavailable button |
| H[HHH] | = Hunt Group with pilot number | CIQ | = ACD or UCD Calls in queue button |
| P[CCC] | = Call Park with park location | EOR | = Executive Override button |
| A[AAA] | = ACD Group with pilot numbers | LCR | = LC R Access |
| U[UUU] | = UCD Group with pilot number | AL0 | = Agent Logout |
| V[VVV] | = VM Group with pilot number | ALI | = Agent Login |
| M[ZZ] | = Personalized Message with message number | AMD | = Agent Member Display |
| S[YY] | = Speed Dial button with bin number | HLP | = Agent Help |
| LNR | = Last Number Redial button | SLO | = Supervisor Logout |
| SNR | = Save Number Redial button | SLI | = Supervisor Login |
| IP[N] | = Internal Page with Zone | STS | = Supervisor Status Display |
| IAC | = Internal All Call Page button | DUA | = Display unanswered calls |
| EP[N] | = External Page with Zone | DRG | = Distinctive Ringing |
| EAC | = External All Call button | OHV | = Off_Hook Voice Over |
| ACP | = All Call Page button | MUT | = MUTE button |
| MMP | = Meet Me Page button | FLA | = FLASH button |
| AOR | = Attendant Override button (attn) | REL | = Release button |
| CPO | = Camp-On button | VOL | = Handset Receiver Gain |
| LQU | = Line Gueue button | | |
| LQC | = LCR Queue Cancel | | **Key** |
| CBK | = Call Back Button | LL | = CO Line number |
| PKU | = Pick Up button | G | = Pool or CO Line Group number |
| MSG | = Message Wait button | XXX | = Station Number |
| FWD | = Call Forward button | HHH | = Hunt Group number |
| DND | = Do Not Disturb button | CCC | = Call Park location |
| CNF | = Conference button | AAA | = ACD Group pilot numbers |
| UNA | = Universal Night Answer | UUU | = UCD Group pilot number |
| ACC | = Account Code enter button | VVV | = Voice Mail Group number |
| | | ZZ | = Personalized Message number |
| | | YY | = Speed Dial Bin |
| | | N | = Page Zone number |

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### 630.3 DIGITAL DATA INTERFACE UNIT (DDIU)

#### Programming Steps

To program a Digital Data interface (DDIU) unit:

a. Press FLASH and dial [51]. The following message is shown on the display phone:

```
DATA BOX  BAUD  DATA  STOP
  WWW     XXXXX  Y      Z
```

Where:
- WWW = Station Number (100-l 95)
- XXXXX= Baud Rate
- Y= Data Parity
- Z= Data Stop Bits

b. Enter the three-digit station number of the DDIU unit.

c. Press the HOLD button to save the entry. The display will now update.

#### Description

The Data Feature offers the ability to transmit data information between personal computers, printers, plotters, modems, CRT terminals, and main frame computer ports. To establish a data call, a Digital Data Interface Unit (DDIU) is required to be connected to each data communications device. The DDIU allows any serial data communications device (which conforms to RS-232C) to be connected to the Starplus Digital system.

The buttons on the digital terminal are defined as shown below when entering the Digital Data Interface Unit (DDIU) programming area:

| 1  Q | BAUD RATE | | | 11  A |
| 2  W | CHARACTER LENGTH | | | 12  S |
| 3  E | STOP BITS | | | 13  D |
| 4  R | | | | 14  F |
| | | | | 15  G |
| 6  Y | | | | 16  H |
| 7  U | | | | 17  J |
| 8  I | | | | 18  K |
| 9  O | | | | 19  L |
| 10  P | | | NEW DDIU UNIT | 20  ; |

### A. Baud Rate Options

#### Programming Steps

1. Press the BAUD RATE flexible button (Button #1).

2. Enter a one-digit number for the desired baud rate:
   - [1] = 300 Baud
   - [2] = 1200 Baud
   - [3] = 2400 Baud
   - [4] = 4800 Baud
   - [5] = 9600 Baud
   - [6] = 19.2K Baud
   - [7] = 38.4K Baud

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

#### Description

**BAUD RATE:** Data information can be switched through the system at speeds of 300, 1200, 2400, 4800, 9600, 19.2K and 38.4K baud asynchronous.

**Default:** By default, the DDIU Baud Rate is 9600 Baud.

**Related Programming:** Refer to Sec. 630.2, Page "B" Programming, Station identification for associating a DDIU to a station.

**Digital Data Interface Unit (DDIU) (Cont'd)**

**B. Character Length Option**

<u>Programming Steps</u>

1. Press the CHARACTER LENGTH flexible button (Button #2).
2. Enter a one-digit number for the character length of the digit string.
   - [8] = 8 character length
   - [9] = 9 character length
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

<u>Description</u>

**CHARACTER LENGTH:** Eight bit characters are typically used; without the need for parity. The important point is that the character length settings match those of the attached computer or terminal. If the computer is set up for 8-bit data characters with parity, set the printer the same way. Otherwise, the data may be garbled due to incompatible formats.

Default: By default, 8-character length is selected.

**C. Stop Bit(s) Option**

<u>Programming Steps</u>

1. Press the STOP BITS flexible button (Button #3).
2. Enter a one-digit number for the number of stop bits desired.
   - [1] = 1 Stop Bit
   - [2] = 2 Stop Bits
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

<u>Description</u>

**STOP BIT(S):** The stop bit indicates that all the data bits have been sent and the transmission of the character is complete.

**Default:** By default, 1 stop bit is selected.

## PAGE "B" STATION ATTRIBUTES (Cont'd)

### 630.4 FLEXIBLE PORT ASSIGNMENT FEATURE

<u>Programming Steps</u>

If the Station numbers need to be relocated to different ports:

a. Press FLASH and dial [52]. The following message is shown on the display phone:

```
100 101 102 103 104 105
106 107 108 109 110 111
```

b. The buttons 1 through 8 indicate cards 1 through 8. When the relocation program is initially entered, Button #1 will be lit indicating that the user is programming the Station numbers on the first card (Station Ports 1 through 12). The LCD will display the Station numbers presently assigned to the first eight ports.

To change the Station number assigned to any port:

a. Dial the position number on the display (01 through 12), followed by the Station number desired. For example: if 01105 were dialed, the station number of the first entry on the display would be changed to 105. In addition, since 105 was shown as the sixth entry on the display, that entry would be blank (###).

To select another card in the system:

a. Press the button associated with that card. For example, if Button #3 were pressed (Station ports 25 through 36), the station numbers assigned to the third card would be displayed. Station numbers on the third card are changed in the same manner by entering the position number (01 through 12), followed by the station number desired.

| NOTE | *When all the station numbers desired have been programmed, the system will have to be reset to update the data. This is done so that the programming of stations can be done whik the system is in use.* |
|------|------|

<u>Description</u>

The Flexible Port Assignment feature will provide a means to assign Station numbers to any Station port in the system. This provides complete flexibility in determining station numbers within the system as long as they stay within the system numbering plan. A Station can be assigned any number between 100 and 195 on the Starplus SPD 4896 system. This restriction is required to minimize memory requirements on the smaller systems.

The buttons on the key telephone are defined as shown below when entering the Flexible Port Assignment feature programming area:

| 1 Q | CARD #1 | | 11 A |
|-----|---------|---|------|
| 2 W | CARD #2 | | 12 S |
| 3 E | CARD #3 | | 13 D |
| 4 R | CARD #4 | | 14 F |
| 5 T | CARD #5 | | 15 G |
| 6 Y | CARD #6 | | 16 H |
| 7 U | CARD #7 | | 17 J |
| 8 I | CARD #8 | | 18 K |
| 9 O | | | 19 L |
| 10 P | | | 20 ; |

All Station numbers entered are stored in a temporary database area which is uploaded to the main database when the system is reset.

| CARD # | STATION # | PORT # |
|--------|-----------|--------|
| 1 | 100-111 | 1-12 |
| 2 | 112-123 | 13-24 |
| 3 | 124-135 | 25-36 |
| 4 | 136-147 | 37-48 |
| 5 | 148-159 | 49-60 |
| 6 | 160-171 | 61-72 |
| 7 | 172-183 | 73-84 |
| 8 | 184-195 | 85-96 |

| NOTE | *If a Key Telephone Board (KT12) or Single tine Board (SL 12) is not in card slot #1, and Button #1 is pressed, pound (#'s) will appear in the display instead of Station numbers.* |
|------|------|

**CAUTION**

**If Station 100 is moved or removed, make certain that a physical port is assigned to that station.**

# TABLE OF CONTENTS FOR SECTION 640

# SECTION 640
# ICLID PROGRAMMING

## 640.1 INTRODUCTION

*This feature is available with optional software.*

The ICLID (Incoming Calling Line IDentification) feature has been added to the Starplus Digital Key Telephone System. However, these features are not available unless the Basic ICLID Software package has been purchased separately. The operation of this feature is dependent on the feature first being activated from the central office so that the numbers or name, if available, of the calling party will be delivered over the individual tip and ring of the CO lines during the first silent interval between ringing. The features implemented are:

### A. Calling Number/Name Display

This feature is intended as the basic offering of the ICLID service when associated with the Starplus Digital Key Telephone system. Essentially, whenever an incoming call is received at the system, the number received along with the ringing signal will be stored in the line control tables and used at various points in the processing of the call.

The primary function will be that the calling number is displayed (if available) at any point at which the "LINE RINGING" message is displayed in the system.

In addition, with the availability of the *calling name* feature, if the calling name is provided, the system will deliver that to the display instead of the calling number.

Note that although the Central Office delivery of the calling name is 15 characters, the internal table used to store the name for translation of a received number is 24-characters in length. If the Central Office delivers a name , it will be positioned left justified in the 24-character field on the display. If a number is received which matches a number/name translation, the translated name will be used and the name delivered from the Central Office will be effectively discarded.

If no name is available, either supplied from the Central Office or internally from the translation table, the delivered number will be positioned centered in the display as shown above for the 14 N's.

### B. Incoming Number/Name for SMDR

When this feature is implemented, the system will operate normally in the absence of ICLID

information or the failure of the ICLID equipment. If the information is present at the time that an SMDR record is generated for a call, it will alter the content and format of the SMDR output record.

- If the calling number is available, the number will be output in the SMDR record in the same location as the dialed number is located in the outgoing call record.

- If the calling name is present, an additional line will be output in the SMDR identifying the name. This record will immediately follow the normal SMDR record. The normal SMDR record will include an indicator which identifies that a following record with name identification is present.

Unanswered calls will be recorded in the SMDR record for incoming calls with a "U" indicator to allow the identification of callers for statistical and call-back purposes.

### C. Unanswered Call Management

An Unanswered Call Management Table with 100 entry capacity for the Starplus SPD 4896 system is maintained in the system. The calling number/name information pertaining to any unanswered call will be placed in this table at the time the system has determined that the call hasbeenabandoned.

This table may be interrogated from any station user so that the unanswered calls may be reviewed and handled by the customer. Only the 1st Attendant station can delete an entry from this table, one entry at a time. Upon entering into the review process, the functions available to a phone are:

| Function | Function Button |
|---|---|
| 1. Go to beginning of table. | Dial Code 635 |
| 2. Review next item in this table entry | MUTE |
| 3. Step to next table entry. | HOLD |
| 4. Delete this table entry. | FLASH¹ |
| 6. Exit table review function. | ON/OFF |
| 7. Step to previous table entry. | TRANS |
| 8. Call Back. | SPEED |
| ¹ Only the 1 st Attendant station can delete an entry from this table. | |

## ICLID PROGRAMMING (Cont'd)

640.2    **ICLID RINGING ASSIGNMENT**

### Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to 600.2, Program Mode Entry (Key Station).

If ICLID Ringing Assignments need to be assigned or changed:

1. Press FLASH and dial [43]. The following message is shown on the display phone:

ROUTE 000 XXXY

Where:
- 000= ICLID Route Number 000-I 99
- XXX= ICLID Ringing Destination
- Y= Ringing Type

2. Press the RING ASSIGNMENT flexible button (Button #1). LED #1 is lit indicating Route 000 is ready for programming.

3. Enter the three-digit destination (XXX) and the one-digit ring type (Y) followed by the HOLD button. Confirmation tone is heard and the display will now update.

4. Press Button #17 to display ring assignments. Assignments will be displayed in sets of 8 up to the number programmed. Press Button #1 7 additional times to cycle to the next group of 8 ring assignments.

The following format is used to display the assignments:

| | | | |
|---|---|---|---|
| **DDDR** | **DDDR** | **DDDR** | **DDDR** |
| **DDDR** | **DDDR** | **DDDR** | **DDDR** |

Where:
- DDD= Destination
- R= D for Day
    N = Night
    B = Both Day & Night.

Deleting a station (entering a 0 for ring type) only removes that station from the ring assignment.

Multiple station assignments are accomplished by assigning another destination with ring status, DDDR, and pressing the HOLD button. This can be done for up to the maximum number of stations on the system.

### Description

***This feature is available with optional software.***

ICLID Ringing Assignments will provide a means to change the ring assignment based on the incoming number received. This feature permits the user to select one of 200 ringing routes for each entry in the name to number translation table. For example, this feature could be **used** to re-route selected customers to a specific ACD or UCD group and bypass the general attendant.

The buttons on the digital terminal are defined as shown below when entering the ICLID Ringing Assignment programming area:

| | | | | |
|---|---|---|---|---|
| 1 Q | RINGING ASSIGNMENTS | | | 11 A |
| 2 W | | | | 12 S |
| 3 E | | | | 13 D |
| 4 R | | | | 14 F |
| 5 T | | | | 15 G |
| 6 Y | | | | 16 H |
| 7 U | | DISPLAY RINGING ASSIGNMENTS | | 17 J |
| 8 I | | NEXT ROUTE NUMBER | | 18 K |
| 9 O | | PREVIOUS ROUTE NUMBER | | 19 L |
| 10 P | | SELECT ROUTE NUMBER | | 20 ; |

Valid three-digit destinations are:
- 020-099 = System Speed Bins 20-99, for off-net ringing.
- 100-I 95 = Station extension Numbers
- 440-447 = Voice Mail Groups 1-8
- 450-457 = Hunt Groups 1-8
- 499 = Direct Ringing to Modem
- 550-565 = ACD Groups I-16
- 550-557 = UCD Groups I-8

Valid Ring types are:
- 0 = unassigned (to delete a station)
- 1 = Day Ringing
- 2 = Night Ringing
- 3 = Day & Night Ringing

Keysets designated to ring on an incoming CO line but not designated to ring on the ICLID ring, may receive a ring cycle before the call is moved. The same ringing restrictions applied to CO line ringing will be applied to ICLID ringing.

**Default:** By default, no destinations or ringing assignments exist.

## ICLID  PROGRAMMING  (Cont'd)

## ICLID  Ringing  Assignment(s)  (Cont'd)

Programming  Steps                                              Description

Ring assignments will be continuous and will be displayed in order of the destination number from 001 to 557.

5.  Repeat Step 3 to program additional stations and ringing assignments. A maximum of eight stations will display on the LCD display. Additional stations and ringing assignments can be displayed using Button #17.

To advance to the next Route:

1.  Press the NEXT flexible button (Button #18) to advance to the next ICLID Route number,

To go to a previous Route:

1.  Press the PREVIOUS flexible button (Button #19) to go to the previous ICLID Route number.

To select a different Route:

1.  Press the SELECT ROUTE NUMBER to select the desired route number.

2.  Enter the three-digit ICLID route number.

   – 000-199 for SPD 4896 System.

3.  Press the HOLD button to change to the different route entered. Confirmation tone will be heard.

## ICLID PROGRAMMING (Cont'd)

### 640.3 ICLID FEATURES

| Programming Steps | Description |
|---|---|

Programming Steps

If ICLID is to be used:

1. Press FLASH and dial [56]. The following message is shown on the display phone:

```
ICLID  NAME  BAUD  PORT
 NO    YES   2400    1
```

2. To program ICLID features, use the flexible button(s) as defined in the following procedures. The ICLID, NAME buttons toggle on and off.

3. After all entries are made, press the HOLD button to accept the data.

Description

*This feature is available with optional software.*

The Starplus Digital Key Telephone Systems can receive ICLID input on the standard RS-232C connector (future) on the Central Processor Unit (CPU) or to the optional RS-232C Backplane Expander connector(s). When ICLID is desired, the following system-wide parameters will determine how the ICLID information will be distributed.

The buttons on the digital terminal are defined as shown below when entering the ICLID Features programming area:

| Q 1 | ICLID | | | 11 A |
|---|---|---|---|---|
| W 2 | FORMAT | | | 12 S |
| E 3 | BAUD RATE | | | 13 D |
| R 4 | PORT | | | 14 F |

**Related Programming:** Refer to Sec. 610.15, Local Number/Name Translation Table.

### A. Enable/Disable

Programming Steps

1. Press the ICLID ENABLE flexible button (Button #1), This feature will toggle on and off with each depression, and the display will update with each depression.

   • LED ON = ICLID is enabled

   • LED OFF = ICLID is disabled

2. Press the HOLD button to save the entry. Confirmation tone is heard.

Description

The ICLID (Incoming Calling Line IDentification) feature has been added to the Starplus Digital Key Telephone Systems. However, these features are not available unless the Basic ICLID Software package has been purchased separately. In order for this feature to operate properly, it must be activated from the central office so that the numbers of the calling party will be delivered over the individual tip and ring of the CO lines during the first silent interval between ringing.

**Default:** By default, ICLID is disabled.

### B. Name in Display

Programming Steps

1. Press the NAME flexible button (Button #2) to determine whether the name will appear in the LCD display instead of the incoming telephone number. This feature will toggle on and off with each depression and the display will update with each depression.

   • LED ON = Name will appear in display

   • LED OFF = Telephone number will appear in display

2. Press the HOLD button to save the entry. Confirmation tone is heard.

Description

The system can be set to display either the incoming telephone number or the person's name on the LCD display.

**Default:** By default, the system will show the telephone number on the LCD display.

## ICLID PROGRAMMING (Cont'd)

## ICLID Features (Cont'd)

| Programming Steps | Description |
|---|---|
| **C.** **Baud Rate Display**<br>The ICLID Baud Rate is programmed using Flash 15 Baud Rate Assignments. Button X3 will return error tone when pressed. The LCD displays the current baud rate based on which Port number is assigned to the ICLID Port number. | The Starplus Digitai Key Telephone Systems can receive ICLID input on the standard RS-232C "On-Board" connector (future) on the Central processor Unit (CPU) or to the optional RS-232C Backplane Expander Module connector(s). The Baud Rate will be displayed as either 300 baud, 1200 baud, 2400 baud, 4800 baud, or 9600 baud.<br><br>**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments. |

**D. Port Assignment**

| Programming Steps | Description |
|---|---|
| 1. Press the PORT flexible button (Button #4) to determine which port is to be used for ICLID information. | **Port #1** refers to the standard RS-232C "On-Board" connector on the Central Processor Unit (CPU). (Future use) |
| 2. Enter a one-digit number for the ICLID Port number:<br>– [1] = Port #1 (CPU "On-Board" RS-232C)(Future use)<br>– [2] = Port #2 ("On-Board" 1200 Baud Modem)<br>– [3] = Port #3 (Back Plane RS-232C)<br>– [4] = Port #4 (Back Plane RS-232C) | Port #2 refers to the "On-Board" 1200 Baud modem provided with the system.<br><br>Port #3 refers to the RS-232C connector on the Backplane I/O Expander Module.<br><br>Port #4 refers to the RS-232C connector on the same Backplane I/O Expander Module. |

The LCD displays the current baud rate based on which Port number is assigned to the ICLID Port number.

3. Press the HOLD button to accept the data. The display will now update.

**Default:** By default, Port #1 is used for ICLID operation.

# TABLE OF CONTENTS FOR SECTION 645

# SECTION 645
# AUTOMATIC CALL DISTRIBUTION (ACD)

### 645.1 ACD GROUP PROGRAMMING

| Programming Steps | Description |
|---|---|

**Programming Steps**

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If ACD Groups are to be assigned:

1.  Press FLASH and dial [60]. The following message is shown on the display phone:

```
ACD 5XX A ALT OVR AN SUPV
       AAA BBB CC DDD
```

Where:

- 5XX = ACD Group Number (550-557)
- A = Page A Parameters
- AAA = Alternate ACD Group Assignment
- BBB = ACD Overflow Assignment
- CCC = ACD Announcement Tables
- DDD = ACD Supervisor Programming

2.  The top left button in the flexible button field will be lit for programming ACD group 1 (550). To change ACD groups or enter further ACD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

**Description**

*This feature is available with optional software.* There can be 16 ACD groups of no more than 16 stations each. The ACD groups use a pilot hunting technique. If the pilot number is dialed, the assigned stations in that **ACD** group are searched for the station which has been in an idle condition for the longest period of time.

Each ACD Group may have an assigned Alternate ACD Group, an Overflow station and up to 16 stations as ACD members. The eight system RAN ports (tables) may also be referenced on a per ACD group basis.

The buttons on the digital terminal are defined as shown below when entering the ACD Group(s) programming area:

| | | | | |
|---|---|---|---|---|
| 1 Q | ACD GROUP 550 | ANNOUNCEMENT TBLS | 11 A |
| 2 W | Am GROUP 551 | | 12 S |
| 7 E | ACD GROUP 552 | | 13 D |
| 4 R | ACD GROUP 553 | | 14 F |
| 5 T | ACD GROUP 554 | | 15 G |
| 6 Y | ACD GROUP 555 | | 16 H |
| 7 U | ACD GROUP 556 | | 17 J |
| 8 I | ACD GROUP 557 | SELECT PAGE A | 18 K |
| 9 O | ALTERNATE ACD GROUP | SELECT PAGE B | 19 L |
| 10 P | OVERFLOW ASSIGNMENTS | | 20 ; |

**Default:** By default, ACD Group Tables are empty.

**Related Programming:** Refer to Sec. 645.2, ACD Timers for setting the ACD Ring Timer, ACD Message Interval Timer, ACD Overflow Timer, ACD No-Answer Recall Timer, ACD No-Answer Retry Timer, and Guaranteed Message Timer: Also refer to Sec. 645.3, ACD RAN Announcement Tables for assigning RAN device ports and message times.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### A.  Alternate ACD Group Assignment

#### Programming Steps

To program an alternate group:

1.  Press the ALTERNATE ACD GROUP flexible button (Button #9).

2.  Enter the three-digit pilot number (550 to 557) of the desired alternate ACD group.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD 5XX A ALT OVR AN SUPV
             AAA BBB CC DDD
```

#### Description

**ALTERNATE ACD GROUP.** An alternate ACD group can be programmed so that if no station in one group is available, the alternate group will be checked for an available station. This provides a means to chain or link ACD groups together.

To delete an Alternate ACD Group, press the pound key three times [###] and press the HOLD button.

### B.  ACD Overflow Station Assignment

#### Programming Steps

To program ACD Overflow station:

1.  Press the OVERFLOW ASSIGN flexible button (Button #10).

2.  Enter the three-digit station number (100 to 195) to designate the ACD Groups overflow station.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD 5XX A ALT OVR AN SUPV
              AAA BBB CC DDD
```

#### Description

**ACD OVERFLOW ASSIGN.** When an overflow station is assigned, callers that have remained in queue for a specified amount of time will be routed to the assigned overflow station. The overflow station may not be one of the ACD group stations. Only CO calls transferred to a ACD group will overflow to the overflow station when RAN tables have not been assigned.

To delete an Overflow Station, press the pound key three times [###] and press the HOLD button.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### C. ACD Recorded Announcement Assignment(s) (RAN)

| Programming Steps | Description |
|---|---|

Programming Steps

To program a Recorded Announcement:

1. Press the ANNOUNCEMENT TBLS flexible button (Button #11).

2. Enter a three-digit sequence:
   - 1st Digit = Guaranteed Message.
   - 2nd Digit = RAN port specified for primary message.
   - 3rd Digit =RAN port specified for secondary message.

3. Press the pound [#] key once as the 1st digit if no Guaranteed Message is desired.

Example:

- an entry of #,2,3 = No Guaranteed Message will be heard. Port 2 will provide a primary message and Port 3 will provide a secondary message.

- an entry of 1,2,3 = Port 1 will provide the Guaranteed Message upon initial answering of the call, Port 2 will provide a primary message and Port 3 will provide a secondary message.

- an entry of 8,1,2 = Port 8 will provide the Guaranteed Message upon initial answering of the call, Port 1 will provide a primary message and Port 2 will provide a secondary message.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To erase Recorded Announcement(s), press the pound key three times [###] and press HOLD.

```
ACD 5XX  A  ALT  OVR  AN  SUPV
            AAA  BBB  CC  DDD
```

Description

**ACD ANNOUNCEMENT TABLES.** Optional Recorded Announcement device(s) may be connected to the system to provide an announcement if all stations in a ACD group are busy. Up to eight ports in the system may be assigned to provide a path to Recorded Announcement devices.

Incoming CO Callers will only be answered and routed to the Overflow assignment if a RAN Table is assigned.

The Guaranteed Message announcement provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with a message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety, or after the incoming caller has dialed up to 14 digits followed by a pound (#). These digits will be inserted as ICLID incoming number identification.

If the Guaranteed Message announcement is programmed in Admin, incoming ACD calls will be routed to the Guaranteed Message RAN before going to the ACD Group.

**Related Programming:** Refer to Sec. 645.3, ACD RAN Announcement Tables programming for further information regarding each RAN Table. Also refer to Sec. 610.15, Local Number/Name Translation Table.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### D. ACD Supervisor Programming

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

**Programming Steps**

To program an ACD Supervisor:

1. Press the ACD SUPV flexible button (Button #12.

2. Enter the three-digit station number of the desired ACD Supervisor station.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD 5XX A ALT OVR AN SUPV
         AAA BBB CC DDD
```

**Description**

**ACD SUPERVISOR.** The ACD Supervisor Station assignment feature provides a means to assign each ACD group a supervisor. This Supervisor Station can receive the calls in queue display in real time, receives No Answer/Out of Service conditions, "HELP" displays from the groups that the supervisor is assigned to and can barge-in on active calls in his ACD Group or groups.

A supervisor can be assigned in ADMIN to a group or groups to receive the help request and out of service (OOS) messages. If a supervisor station is assigned in ADMIN, it is considered logged in. In addition, a supervisor can dial a supervisor login code followed by the ACD group that the supervisor is logging into and his four-digit ID number.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### E. ACD Station Assignment(s)

| Programming Steps | Description |
|---|---|

To program stations into a ACD group:

1. Press the Page "B" flexible button (Button #19). The following message is shown on the display phone.

```
ACD 5XX  B  ###  ###  ###  ###
            ###  ###  ###  ###
```

Where:
- 5XX = ACD Group Number (550-557)
- B = Page "B" parameters
- ### = ACD Station assignments

2. The top left button in the flexible button field will be lit for programming ACD group 1 (550).

   To change ACD groups or enter further ACD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

3. Enter the three-digit station numbers of the stations in the ACD group in the order in which they will be checked. The order is only relevant for the first call. After that, the rule is oldest idle. A maximum of 16 stations may be entered.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**ACD STATION ASSIGNMENTS.** Any type of station (excluding DSS/DLS Consoles) may be entered as valid ACD stations.' Calls will be routed to station in the order they are entered for the first round of calls only. After that the calls are routed to stations based on On-Hook time. The station with the longest On-Hook time will receive the next call.

If a specific station number is dialed, only that station is rung; no distribution will be done if that station is busy.

The buttons on the digital terminal are defined as shown below when entering the ACD Station Assignments programming area:

| 1  Q | ACD GROUP 550 | | 11  A |
| 2  W | ACD GROUP 551 | | 12  S |
| 3  E | ACD GROUP 552 | | 13  D |
| 4  R | ACD GROUP 553 | | 14  F |
| 5  T | ACD GROUP 554 | | 15  G |
| 6  Y | ACD GROUP 555 | | 16  H |
| 7  U | ACD GROUP 556 | | 17  J |
| 8  I | ACD GROUP 557 | SELECT PAGE A | 18  K |
| 9  O | | SELECT PAGE B | 19  1 |
| 10  P | | | 20  ; |

To erase all stations, press the pound key three times [###] and press HOLD.

> **NOTE** *If an ACD member is assigned to a specific ACD group and uses the login-logout codes to enter and exit an ACD group other than his own assigned group, the database programming for ACD stations will be automatically changed to reflect the different group.*

If ACD Station assignments in the 2nd Group of eight (Stations 9 thru 16) are to be viewed:

1. Press the DISPLAY STATIONS flexible button (Page B, Button #17). The 2nd group of station assignments will be displayed. If no additional stations are assigned, beyond the 1st eight stations, the display will show pound signs (#) instead of station assignments. Press the Page "B" flexible button (Button #19) again to return and view the 1st group of eight stations in the same ACD group.

DISPLAY STATIONS. Any time a display of the 2nd group of ACD Station assignments (default or changed) is needed, press the DISPLAY STATIONS button (Button #17). It will display the 2nd group of station assignments up to eight stations at a time. Button #19 will always show the 1st eight stations programmed in the ACD Group. Button #17 will always display the 2nd group of eight stations programmed in the same ACD group.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### 646.2    ACD TIMERS

| Programming Steps | Description |
|---|---|
| if ACD timers are to be changed: | Seven timers for ACD operation are programmable on a system-wide basis. The ACD timers include: A Ring Timer, Message Interval Timer, an Overflow Timer, an Auto Wrap-Up Timer, a No/Answer Recall Timer, a No/Answer Retry Timer, and a Guaranteed Message Timer. Each timer is described in the following section: |

a. Press FLASH and dial [61]. The following message is shown on the display phone:

```
ACD TIMERS
ENTER BUTTON NUMBER
```

**Related Programming:** Refer to Sec. 645.1, ACD Group Programming; and ACD Recorded Announcement Assignment(s); Also refer to Sec. 500.3, System Components, Voice Control Board (VCB) for Background Music/Music-On-Hold connections, and Installing Recorded Announcement Device (RAN).

The buttons on the digital terminal are defined as shown below when entering the ACD Timers programming area.

| 1 | Q | RING TIMER | | | 11 | A |
|---|---|---|---|---|---|---|
| 2 | W | MIT TIMER | | | 12 | S |
| 3 | E | OVERFLOW TIMER | | | 13 | D |
| 4 | R | WRAP-UP TIMER | | | 14 | F |
| 5 | T | NO-ANSWER RECALL | | | 15 | G |
| 6 | Y | NO-ANSWER RETRY | | | 16 | H |

### A. ACD Ring Timer

| Programming Steps | Description |
|---|---|
| To make a change to the ACD Ring Timer: | ACD RING TIMER. The ACD Ring Timer determines how long a call will ring into a busy ACD group before being presented to the first recorded announcement. |

1. Press the RING TIMER flexible button (Button #1). The following message is shown on the display phone:

```
RING                    000-300
    060
```

**Default:** By default, the ACD Ring Timer is set for 60 seconds, and is variable from 000 to 300 seconds.

> **NOTE** *A RAN Table must be specified in ACD programming. Refer to Sec. 645.3, ACD RAN Announcement Tables fur the ACD ring timer to be in effect. If a RAN Table is NOT specified, incoming CO callers will not be answered but will continue to receive ringback.*

2. Enter the three-digit timer value on the dial pad which corresponds to 000-300 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### ACD TIMERS (Cont'd)

**B.   ACD Message interval Timer**

Programming Steps | Description
---|---

To make a change to the ACD Message Interval Timer:

1.   Press the MIT TIMER flexible button (Button #2). The following message is shown on the display phone:

```
MESSAGE              000-600
     060
```

2.   Enter the three-digit timer value on the dial pad which corresponds to 000-600 seconds.

3.   Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

> NOTE    *The ACD Ring and Message Interval Timers only apply when RAN ports have been specified. If RAN ports are notspectfted, incoming callers wilt continue to receive ringbacktone.*

**ACD MIT TIMER.** The ACD Message Interval Timer (MIT) determines the length of time a caller remains in queue (listening to MOH, if provided) between recorded announcements.

**Default:** By default, the- ACD Message Interval Timer is set for 60 seconds and is variable from 000 to 600 seconds.

C.   ACD   Overflow   Timer

Programming Steps | Description
---|---

To make a change to the ACD Overflow Timer:

1.   Press the OVERFLOW TIMER flexible button (Button #3). The following message is shown on the display phone:

```
OVERFLOW             000-600
    060
```

2.   Enter the three-digit value on the dial pad which corresponds to 000-600 seconds.

3.   Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**ACD OVERFLOW TIMER.** The ACD Overflow Timer determines the total length of time a caller will remain in queue for a particular ACD group. When the timer expires, the caller will be routed to the designated overflow station. The timer starts when an incoming call is answered and presented to the first recorded announcement. Transferred CO callers will overflow at the expiration of the Overflow Timer.

Default: By default, the ACD Overflow Timer is set for 60 seconds and is variable from 000 to 600 seconds.

## **AUTOMATIC** CALL DISTRIBUTION (Cont'd)

### ACD TIMERS (Cont'd)

#### D.    ACD Auto Wrap-Up Timer

Programming Steps | Description
--- | ---

**Programming Steps**

To make a change to the ACD Auto Wrap-up Timer:

1.    Press the AUTO-WRAP TIMER flexible button (Button #4). The following message is shown on the display phone:

```
┌─────────────────────────────────────┐
│  WRAP-UP              000-999        │
│     004                              │
└─────────────────────────────────────┘
```

2.    Enter the three-digit value on the dial pad which corresponds to 000-999 seconds.

3.    Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**Description**

**ACD AUTO-WRAP TIMER.** After completion of a ACD call (on-hook) the agent will not be subjected to another ACD call for the duration of the Auto Wrap-Up timer allowing the agent to finish call related work or access other facilities. This will allow agents to remove themselves from the group (i.e.. DND, Call Forward) or originate another call.

**Default:** By default, the ACD Auto Wrap-up Timer is set for 04 seconds and is variable from 000 to 999 seconds.

#### E.    ACD No-Answer Recall Timer

**Programming Steps**

To make a change to the ACD No-Answer Recall Timer:

1.    Press the NO-ANSWER RECALL TIMER flexible button (Button #5). The following message is shown on the display phone:

```
┌─────────────────────────────────────┐
│  NO-ANS RECALL        000-300        │
│     000                              │
└─────────────────────────────────────┘
```

2.    Enter the three-digit value on the dial pad which corresponds to 000-300 seconds.

3.    Press the HOLD button to save the entry. Confirmation tone is heard and the displaywill now update.

**Description**

**ACD NO-ANSWER RECALL TIMER.** if a call routed to a station via ACD is not answered by the ACD Agent/Station before the No-Answer Recall timer expires, the call will be returned to ACD Queue with the highest priority. In addition, the station that failed to answer the ringing ACD call will be placed into an out of service (OOS) state.

**Default:** By default, the ACD No-Answer Timer is at 000 (disabled) and is variable from 000 to 300 seconds.

**AUTOMATIC CALL DISTRIBUTION (Cont'd)**

## ACD TIMERS (Cont'd)

### F. ACD No-Answer Retry Timer

Programming Steps

To make a change to the ACD No-Answer Retry Timer:

1. Press the NO-ANSWER RETRY TIMER flexible button (Button #6). The following message is shown on the display phone:

```
NO ANSWER RETRY      000-999
300
```

2. Enter the three-digit value on the dial pad which corresponds to 000-999 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the displaywill now update.

Description

**ACD NO-ANSWER RETRY TIMER.** When the No-Answer Recall timer expires, a station that failed to answer the ringing ACD call is placed into an out-of-service (OOS) state. The station that was taken out-of-service (OOS) will be placed back in service if the agent hits his available flex button or dials the available flex code. In addition, the agent will be placed back in service if the No-Answer Retry timer expires. If the agent does not answer his next ACD call, he will again be taken out-of-service. This cycle will continue until the station answers calls, logs out, or goes unavailable.

**Default:** By default, the ACD No-Answer Retry Timer is set for 300 seconds and is variable from 000 to 999 seconds.

### G. Guaranteed Message Timer

Programming Steps

To make a change to the ACD Guaranteed Message Timer:

1. Press the GUARANTEED MESSAGE TIMER flexible button (Button #7). Thefollowing message is shown on the display phone.

```
GUARANTEED  MSG       000-300
005
```

2. Enter the three-digit value on the dial pad which corresponds to 000-300 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**GUARANTEED MESSAGE TIMER.** This timer determines how long a call rings before being answered by Guaranteed Message RAN when the Guaranteed Message RAN feature is added to an ACD Group.

**Default:** By default, the Guaranteed Message Timer is set for 5 sec. and is variable from 000 to 300 seconds.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### 646.3     ACD RAN ANNOUNCEMENT TABLES

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If Recorded Announcement devices are installed to operate with ACD, these tables must be programmed:

a. Press FLASH and dial [62]. The following message is shown on the display phone:

```
ANNOUNCEMENT  TABLE 1
TYPE # INDX ## TIME ###
```

b. The top left button in the flexible button field will be lit for programming ACD RAN Announcement Table 1. To change to ACD RAN Announcement Table 2, press flexible button #2. Repeat above for Tables 3 through 8.

c. Enter a string of six, or seven digits on the dial pad. The order of data entry will be:

Type Number:
- [1] = CO Port interface
- [2] = SLT Port interface

Index (port) Number:
- [01-48] = CO Line Port
- [100-195] = SLT Station Port

Message Time:
- **000-300** seconds

d. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

> **NOTE** When a CO port is designated as a RAN port, a relay and/or sensor should be programmed as a *RAN start* for *Announcement Table 1 through 8.*

To clear entries in a Table:

a. Press the pound key once [#] followed by the HOLD button.

Description

Determines the type, index (port) number and message length for the eight available Recorded Announcements (RAN). There are eight RAN tables that can be programmed. Table 1 can be the answer port for unanswered incoming calls to a ACD group. Table 8 can provide the secondary message or vice versa.

The buttons on the digital terminal'are defined as shown below when entering the ACD RAN Announcement Tables programming area:

| | | | | | |
|---|---|---|---|---|---|
| 1 Q | ANNOUNCEMENT TABLE #1 | | | 11 A | I- |
| 2 W | ANNOUNCEMENT TABLE #2 | | | 12 S | |
| 3 E | ANNOUNCEMENT TABLE #3 | | | 13 D | |
| 4 R | ANNOUNCEMENT TABLE #4 | | | 14 F | |
| 5 T | ANNOUNCEMENT TABLE #5 | | | 15 G | |
| 6 Y | ANNOUNCEMENT TABLE #6 | | | 16 H | |
| 7 U | ANNOUNCEMENT TABLE #7 | | | 17 J | |
| 8 I | ANNOUNCEMENT TABLE #8 | | | 18 K | |

The type can be either a CO line port, or a SLT port. The index number specifies which circuit for the type of interface.

The message length is used to match the maximum length of the message to the device that is used.

Example:

To program a table for CO line port:

a. Press the TABLE X flexible button (Buttons I-8).

b. Dial [1] for CO port interface.

c. Dial [01 to 48] for CO line used.

d. Enter message duration (000-300 sec.)

Example:

To program a table for an SLT port:

a. Press the TABLE X flexible button (Buttons I-8).

b. Dial [2] for SLT port interface.

c. Dial [100 to 195] for SLT station used.

d. Enter Message duration (000-300 sec.)

**Related Programming:** Refer to Sec. 645.1, ACD Group Programming; 645.2, ACD Timers; Also refer to Sec. 500.9, Installing Recorded Announcement Device (RAN).

**AUTOMATIC CALL DISTRIBUTION (Cont'd)**

**646.4    ACD EVENT TRACE**

Programming Steps

To enable ACD Event Trace options:
1. Press FLASH and dial [63]. The following message will be shown on the display phone:

```
ACD_EVT_TRACE I/O BAUD
       NO      X   YYYY
```

Where:
  - X= Port for ACD Event Trace
  - YYYY= Baud Rate of desired port.

Description

***This feature is available with optional software.***

The ACD Event Trace feature provides an event trace output which interfaces with a customer-developed ACD Reporting package

The buttons on the digital terminal are defined **as** shown below when entering the **ACD** Event Trace feature programming area:

| | 1 | Q | ACD EVENT TRACE | | | 11 | A |
|---|---|---|---|---|---|---|---|
| | 2 | W | ACD PRINT PORT | | | 12 | S |

**A.   ACD Event Trace Enable/Disable**

Programming Steps

1. Press the ACD EVENT TRACE flexible button (Button #1). It will toggle on and off with each depression.
   - LED on = Event trace is enabled
   - LED off = Event trace is disabled
2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD_EVT_TRACE I/O BAUD
       NO      X   YYYY
```

Description

The ACD Event Trace provides a series of events trace output which interfaces with a customer-developed ACD Reporting package.

**Default:** By default, the ACD Event Trace is disabled.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### ACD EVENT TRACE (Cont'd)

**B. Trace Port Assignment**

| Programming Steps | Description |
|---|---|
| 1. Press the ACD PRINT PORT flexible button (Button #2) to determine which port is to be used for the ACD Event Trace. | **Port #1** refers to the standard RS-232C "On-Board" connector on the Central Processor Unit (CPU). (Future use) |
| 2. Enter a one-digit number for the ACD Event Trace Port number:<br>– [1] = Port #1 (CPU "On-Board" RS-232C) (Future Use)<br>– [2] = Port #2 ("On-Board" Modem)<br>– [3] = Port #3 (Backplane RS-232C)<br>– [4] = Port #4 (Backplane RS-232C) | **Port #2** refers to the "On-Board" 1200 Baud modem provided with the system.<br><br>**Port #3** refers to the RS-232C connector on the Backplane I/O Expander Module.<br><br>**Port #4** refers to the RS-232C connector on the same Backplane I/O Expander Module. |

The LCD displays the current baud rate based on which Port number is assigned to the ACD SMDR Port number.

**Default:** By default, Port #1 is used for Basic ACD SMDR purposes.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD_EVT_TRACE I/O BAUD
       NO      X  YYYY
```

**C. Baud Rate Display**

| Programming Steps | Description |
|---|---|
| The ACD Port Baud Rate is programmed using Flash 15 Baud Rate Assignments. The LCD displays the current baud rate based on which Port number is assigned to the ACD SMDR Port number. The following message will be shown on the display phone: | The Starplus Digital Key Telephone Systems can provide ACD Reporting output to the standard RS-2326 "On-Board" connector (future) on the Centrai Processor Unit (CPU) or to the optional Backplane I/O Expander Module connector(s). The Baud Rate will be displayed as either 300 baud, 1200 baud, 2400 baud, 4800 baud, or 9600 baud. |

```
ACD_EVT_TRACE I/O BAUD
       NO      X  YYYY
```

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments.

**AUTOMATIC CALL DISTRIBUTION (Cont'd)**

### 645.5    ACD GROUP PROGRAMMING
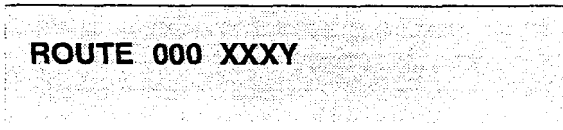
Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If ACD Groups are to be assigned:

1. Press FLASH and dial [64]. The foilowing message is shown on the display phone:

```
ACD 5XX A ALT OVR AN SUPV
        AAA BBB CC DDD
```

Where:

- 5XX = ACD Group Number (558-565)
- A ≃ Page A Parameters
- AAA = Alternate ACD Group Assignment
- BBB = ACD Overflow Assignment
- CCC = ACD Announcement Tables
- DDD = ACD Supervisor Programming

2. The top left button in the flexible button field will be lit for programming ACD group 9 (558). To change ACD groups or enter further ACD groups (558 to 565), press the appropriate flexible button and perform the following procedures.

Description

*This feature is available with optional software.* There can be 16 ACD groups of no more than 16 stations each. The ACD groups use a pilot hunting technique. If the pilot number is dialed, the assigned stations in that ACD group are searched for the station which has been in an idle condition for the longest period of time.

Each ACD Group may have an assigned Alternate ACD Group, an Overflow station and up to 16 stations as ACD members. The eight system RAN ports (tables) may also be referenced on a per ACD group basis.

The buttons on the digital terminal are defined as shown below when entering the ACD Group(s) programming area:

| | | | | | |
|---|---|---|---|---|---|
| 1 | Q | ACD GROUP 558 | ANNOUNCEMENT TBLS | 11 | A |
| 2 | W | ACD GROUP 559 | | 12 | s |
| 3 | E | ACD GROUP 560 | | 13 | D |
| 4 | R | ACD GROUP 561 | | 14 | F |
| 5 | T | ACD GROUP 562 | | 15 | G |
| 6 | Y | ACD GROUP 563 | | 16 | H |
| 7 | U | ACD GROUP 564 | | 17 | J |
| 8 | I | ACD GROUP 565 | SELECT PAGE A | 18 | K |
| 9 | O | ALTERNATE ACD GROUP | SELECT PAGE B | 19 | L |
| 10 | P | OVERFLOW ASSIGNMENTS | | 20 | ; |

**Default:** By default, ACD Group Tables are empty.

**Related Programming:** Refer to Sec. 645.2, ACD Timers for setting the ACD Ring Timer, ACD Message Interval Timer, ACD Overflow Timer, ACD No-Answer Recall Timer, ACD No-Answer Retry Timer, and Guaranteed Message Timer; Also refer to Sec. 645.3, ACD RAN Announcement Tables for assigning RAN device ports and message times.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### A. Alternate ACD Group Assignment

| Programming Steps | Description |
|---|---|
| To program an alternate group: | **ALTERNATE ACD GROUP.** An alternate ACD group can be programmed so that if no station in one group is available, the alternate group will be checked for an available station. This provides a means to chain or link ACD groups together. |

Programming Steps

To program an alternate group:

1. Press the ALTERNATE ACD GROUP flexible button (Button #9).
2. Enter the three-digit pilot number (558 to 565) of the desired alternate ACD group.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**ALTERNATE ACD GROUP.** An alternate ACD group can be programmed so that if no station in one group is available, the alternate group will be checked for an available station. This provides a means to chain or link ACD groups together.

To delete an Alternate ACD Group, press the pound key three times [###] and press the HOLD button.

```
ACD 5XX A ALT OVR AN SUPV
          AAA BBB CC DDD
```

### B. ACD Overflow Station Assignment

Programming Steps

To program ACD Overflow station:

1. Press the OVERFLOW ASSIGN flexible button (Button #10).
2. Enter the three-digit station number (100 to 195) to designate the ACD Groups overflow station.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**ACD OVERFLOW ASSIGN.** When an overflow station is assigned, callers that have remained in queue for a specified amount of time will be routed to the assigned overflow station. The overflow station may not be one of the ACD group stations. Only CO calls transferred to a ACD group will overflow to the overflow station when RAN tables have not been assigned.

To delete an Overflow Station, press the pound key three times [###] and press the HOLD button,

```
ACD 5XX A ALT OVR AN SUPV
              AAA BBB CC DDD
```

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### C. ACD Recorded Announcement Assignment(s) (RAN)

Programming Steps

To program a Recorded Announcement:

1. Press the ANNOUNCEMENT TBLS flexible button (Button #11.

2. Enter a three-digit sequence:
   - 1st Digit = Guaranteed Message
   - 2nd Digit = RAN port specified for primary message.
   - 3rd Digit = RAN port specified for secondary message.

3. Press the pound [#] key as the 1st digit if no guaranteed message is desired.

Example:

   - an entry of #,2,3 = No Guaranteed Message will be heard. Port 2 will provide a primary message and Port 3 will provide a secondary message.

   - an entry of 1,2,3 = Port 1 will provide the Guaranteed Message upon initial answering of the call, Port 2 will provide a primary message and Port 3 will provide a secondary message.

   - an entry of 8,1,2 = Port 8 will provide the Guaranteed Message upon initial answering of the call, Port 1 will provide a primary message and Port 2 will provide a secondary message.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To erase Recorded Announcement(s), press the pound key three times [##] and press HOLD.

```
ACD 5XX  A  ALT OVR AN SUPV
            AAA BBB CC DDD
```

Description

**ACD ANNOUNCEMENTTABLES.** An optional Recorded Announcement device(s) may be connected to the system to provide an announcement if all stations in a ACD group are busy. Up to eight ports in the system may be assigned to provide a path to Recorded Announcement devices.

Incoming CO Callers will only be answered and routed to the Overflow assignment if a RAN Table is assigned.

The Guaranteed Message announcement provides a means to force incoming callers to an announcement before being placed into an ACD Queue or routed to an agent. The outside callers are presented with a message before being routed to the ACD Group. Agents in an ACD Group with a Guaranteed Message enabled will receive incoming callers only after the caller has heard the designated recorded announcement in its entirety, or after the incoming caller has dialed up to 14 digits followed by a pound (#). These digits will be inserted as ICLID incoming number identification.

If the Guaranteed Message announcement is programmed in Admin, incoming ACD calls will be routed to the Guaranteed Message RAN before going to the ACD Group.

**Related Programming:** Refer to Sec. 645.3, ACD RAN Announcement Tables programming for further information regarding each RAN Table. Also refer to Sec. 610.15, Local Number/Name Translation Table.

**AUTOMATIC CALL DISTRIBUTION (Cont'd)**

D. **ACD Supervisor Programming**

Programming Steps

To program an ACD Supervisor:

1. Press the ACD SUPV flexible button (Button #12.

2. Enter the three-digit station number of the desired ACD Supervisor station.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ACD 5XX A ALT OVR AN SUPV
         AAA BBB CC DDD
```

Description

**ACD SUPERVISOR.** The ACD Supervisor Station assignment feature provides a means to assign each ACD group a supervisor. This Supervisor Station can receive the calls in queue display in real time, receives No Answer/Out of Service conditions, "HELP" displays from the groups that the supervisor is assigned to and can barge-in on active calls in his ACD Group or groups.

A supervisor can be assigned in ADMIN to a group or groups to receive the help request and out of service (OOS) messages. If a supervisor station is assigned in ADMIN, it is considered logged in. In addition, a supervisor can dial a supervisor login code followed by the ACD group that the supervisor is logging into and his four-digit ID number.

## AUTOMATIC CALL DISTRIBUTION (Cont'd)

### E. ACD Station Assignment(s)

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

**Programming Steps**

To program stations into a ACD group:

1. Press the Page "B" flexible button (Button #19). The following message is shown on the display phone.

```
ACD 5XX  B  ###  ###  ###  ###
              ###  ###  ###  ###
```

Where:

- 5XX = ACD Group Number (558-565)
- B = Page "B" parameters
- ### = ACD Station assignments

2. The top left button in the flexible button field will be lit for programming ACD group 9 (558). To change ACD groups or enter further ACD groups (558 to 565), press the appropriate flexible button and perform the following procedures.

3. Enter the three-digit station numbers of the stations in the ACD group in the order in which they will be checked. The order is only relevant for the first call. After that, the rule is oldest idle. A maximum of 16 stations may be entered.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

If ACD Station assignments in the 2nd Group of eight (Stations 9 thru 16) are to be viewed:

1. Press the DISPLAY STATIONS flexible button (Page B, Button #17). The 2nd group of station assignments will be displayed. If no additional stations are assigned, beyond the 1 st eight stations, the display will show pound signs (#) instead of station assignments. Press the Page "B" flexible button (Button #19) again to return and view the 1 st group of eight stations in the same ACD group.

**Description**

**ACD STATION ASSIGNMENTS.** Any type of station (excluding DSS/DLS Consoles) may be entered as valid ACD stations. 'Calls will be routed to station in the order they are entered for the first round of calls only. After that the calls are routed to stations based on On-Hook time. The station with the longest On-Hook time will receive the next call.

If a specific station number is dialed, only that station is rung; no distribution will be done if that station is busy.

The buttons **on** the digital terminal are defined as shown below when entering the ACD Station Assignments programming area:

| 1 Q | ACD GROUP 558 | | 11 A |
|---|---|---|---|
| 2 W | ACD GROUP 559 | | 12 S |
| 3 E | ACD GROUP 560 | | 13 D |
| 4 R | ACD GROUP 561 | | 14 F |
| 5 T | ACD GROUP 562 | | 15 G |
| 6 Y | ACD GROUP 563 | | 16 H |
| 7 U | ACD GROUP 564 | | 17 J |
| 8 I | ACD GROUP 565 | SZLECTPAGE 4 | 18 K |
| 9 O | | SELECT PAGE B | 19 L |
| 10 P | | | 20 ; |

To erase all stations, press the pound key three times [###] and press HOLD.

> **NOTE**
> *If an ACD member is assigned to a specific ACD group and uses the login-logout codes to enter and exit an ACD group other than his own assigned group, the database programming for ACD stations will be automatically changed to reflect the different group.*

**DISPLAY STATIONS.** Any time a display of the 2nd group of ACD Station assignments (default or changed) is needed, press the DISPLAY STATIONS button (Button #17). It will display the 2nd group of station assignments up to eight stations at a time. Button #19 will always show the 1 st eight stations programmed in the ACD Group. Button #17 will always display the 2nd group of eight stations programmed in the same ACD group.

# TABLE OF CONTENTS FOR SECTION 650

# SECTION 650
# UNIFORM CALL DISTRIBUTION (UCD)

## 650.1    UCD GROUP PROGRAMMING

Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If UCD Groups are to be assigned:

1. Press FLASH and dial [60]. The following message is shown on the display phone:

```
UCD 5XX A ALT OVR AN
        AAA BBB CC
```

Where:

- XX = UCD Group Number (550-557)
- AAA = Alternate UCD Group Assignment
- BBB = UCD Overflow Assignment
- CC = UCD Announcement Tables

2. The top left button in the flexible button field will be lit for programming UCD group 1 (550). To change UCD groups or enter further UCD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

Description

There can be eight UCD groups of no more than eight stations each. The UCD groups use a pilot hunting technique. If the pilot number is dialed, the assigned stations in that UCD group are searched for the station which has been in an idle condition for the longest period of time.

Each UCD Group may have an assigned Alternate UCD Group, an Overflow station and up to eight stations as UCD members. The two system RAN ports (tables) may also be referenced on a per UCD group basis.

The buttons on the digital terminal are defined as shown below when entering the UCD Group(s) programming area:

| 1 Q | UCD GROUP 550 | ANNOUNCEMENT TABLES | 11 A |
| 2 W | UCD GROUP 551 | | 12 S |
| 3 E | UCD GROUP 552 | | 13 D |
| 4 R | UCD GROUP 553 | | 14 F |
| ST | UCD GROUP 554 | | 15 G |
| 6 Y | UCD GROUP 555 | | 16 H |
| 7 U | UCD GROUP 556 | | 17 J |
| 8 I | UCD GROUP 557 | SELECT PAGE A | 18 K |
| 9 O | ALTERNATE UCD GROUP | SELECT PAGE B | 19 L |
| 10 P | OVERFLOW ASSIGNMENTS | | 20 ; |

**Default:** By default, UCD Group Tables are empty.

**Related Programming:** Refer to Sec. 650.2, UCD Timers for setting the UCD Ring Timer, UCD Message Interval Timer, UCD Overflow Timer, UCD Answer Recall Timer, and UCD No-Answer Retry Timer; Also refer to Sec. 650.3, UCD RAN Announcement Tables for assigning RAN device ports and message times.

## UNIFORM CALL DISTRIBUTION (Cont'd)

### A. Alternate UCD Group Assignment

| Programming Steps | Description |
|---|---|
| To program an alternate group:<br><br>1. Press the ALTERNATE UCD GP flexible button (Button #9).<br><br>2. Enter the three-digit pilot number (550 to 557) of the desired alternate UCD group.<br><br>3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. | **ALTERNATE UCD GROUP.** An alternate UCD group can be programmed so that if no station in one group is available, the alternate group will be checked for an available station. This provides a means to chain or link UCD groups together.<br><br>To delete an Alternate UCD Group, press the pound key three times [###] and press the HOLD button. |

```
UCD 5XX A ALT OVR AN
         AAA BBB CC
```

### B. UCD Overflow Station Assignment

| Programming Steps | Description |
|---|---|
| To program UCD Overflow station:<br><br>1. Press the OVERFLOW ASSIGN flexible button (Button #10).<br><br>2. Enter the three-digit station number (100 to 195) to designate the UCD Groups overflow station.<br><br>3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. | **UCD OVERFLOW ASSIGN.** When an overflow station is assigned, callers that have remained in queue for a specified amount of time will be routed to the assigned overflow station. The overflow station may not be one of the UCD group stations. Only CO calls transferred to a UCD group will overflow to the overflow station when RAN tables have not been assigned.<br><br>To delete an Overflow Station, press the pound key three times [###] and press the HOLD button. |

```
UCD 5XX A ALT OVR AN
             AAA BBB CC
```

## UNIFORM CALL DISTRIBUTION (Cont'd)

### C. UCD Recorded Announcement Assignment(s) (RAN)

| Programming Steps | Description |
|---|---|

**Programming Steps**

To program a Recorded Announcement:

1. Press the ANNOUNCEMENT TBLS flexible button (Button #11).
2. Enter a two-digit sequence:
   - 1st Digit = RAN port specified for primary message.
   - 2nd Digit = RAN port specified for secondary message.

Example:

- an entry of 1,2 = Port 1 will answer the call, Port 2 will provide a secondary message.
- an entry of 8,1 = Port 8 will answer the call, Port 1 will provide a secondary message.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will *now* update.

```
UCD 5XX  A  ALT  OVR  AN
              AAA  BBB  CC
```

**Description**

**UCD ANNOUNCEMENT TABLES.** An optional Recorded Announcement device may be connected to the system to provide an announcement if all stations in a UCD group are busy. Up to eight ports in the system may be assigned to provide a path to Recorded Announcement devices.

Incoming CO Callers will only be answered and routed to the Overflow assignment if a RAN Table is assigned.

To erase Recorded Announcement(s), press the pound key two times [##] and press HOLD.

**Related Programming:** Refer to Sec. 650.3, UCD RAN Announcement Tables programming for further information regarding each RAN Table.

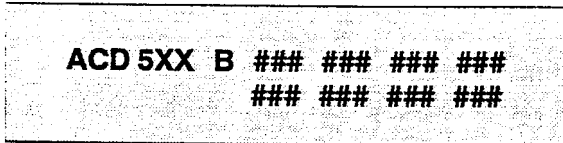## UNIFORM CALL DISTRIBUTION (Cont'd)

### D.   UCD Station Assignment(s)

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

To program stations into a UCD group:

1.  Press the Page "B" flexible button (Page A, Button #19). The following message is shown on the display phone.

```
UCD 5XX  B  ###  ###  ###  ###
            ###  ###  ###  ###
```

Where:
- 5XX = UCD Group Number (550-557)
- B = Page "B" parameters
- ### = UCD Station assignments

2.  The top left button in the flexible button field will be lit for programming UCD group 1 (550). To change UCD groups or enter further UCD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

3.  Enter the three-digit station numbers of the stations in the UCD group in the order in which they will be checked. The order is only relevant for the first call. After that, the rule is oldest idle. A maximum of eight stations may be entered.

4.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**UCD STATION ASSIGNMENTS.** Any type of station (excluding DSS/DLS Consoles) may be entered as valid UCD stations. Calls will be routed to station in the order they are entered for the first round of calls only. After that the calls are routed to stations based on On-Hook time. The station with the longest On-Hook time will receive the next call.

If a specific station number is dialed, only that station is rung; no distribution will be done if that station is busy.

The buttons on the digital terminal are defined as shown below when entering the UCD Station Assignment(s) programming area.

| | | | | |
|---|---|---|---|---|
| 1 Q | UCD GROUP 550 | | 11 A | |
| 2 W | UCD GROUP 551 | | 12 S | |
| 3 E | UCD GROUP 552 | | 13 D | |
| 4 R | UCD GROUP 553 | | 14 F | |
| 5 T | UCD GROUP 554 | | 15 G | |
| 6 Y | UCD GROUP 555 | | 16 H | |
| 7 U | UCD GROUP 556 | | 17 J | |
| 8 I | UCD GROUP 557 | SELECT PAGE A | 18 K | |
| 9 O | | SELECT PAGE B | 19 L | |
| 10 P | | | 20 : | |

To erase all stations, press the pound key three times [###] and press HOLD.

## UNIFORM CALL DISTRIBUTION (Cont'd)

### 660.2    UCD TIMERS

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If UCD timers are to be changed:

   a. Press FLASH and dial [61]. The following message is shown on the display phone:

```
UCD TIMERS
ENTER BUTTON NUMBER
```

Description

, Six timers for UCD operation are programmable on a system-wide basis. The UCD timers include: A Ring Timer, Message Interval Timer, an Overflow Timer, a Auto Wrap-Up Timer, a No/Answer Recall Timer, and a No/Answer Retry Timer. Each timer is described below:

**Related Programming:** Refer to Sec. 650.1, UCD Group Programming; and UCD Recorded Announcement Assignment(s); Also refer to Sec. 500.3, System Components, Voice Control Board (VCB) for Background Music/Music-On-Hold Connections, and Installing Recorded Announcement Device (RAN).

The buttons on the digital terminal are defined as shown below when entering the UCD Timers programming area.

| 1   Q | RING TIMER | | 11   A |
|---|---|---|---|
| 2   W | MIT TIMER | | 12   S |
| 3   E | OVERFLOW TIMER | | 13   D |
| 4   R | WRAP-UP TIMER | | 14   F |
| 5   T | WRAP-UP TIMER | | 15   G |
| 6   Y | NO-ANSWER RETRY | | 16   H |

### A.  UCD  Ring  Timer

Programming Steps

To make a change to the UCD Ring Timer:

  1.  Press the RING TIMER flexible button (Button #1). The following message is shown on the display phone:

```
RING                       000-300
     060
```

  2.  Enter the three-digit timer value on the dial pad which corresponds to 000-300 seconds.

  3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**UCD RING TIMER.** The UCD Ring Timer determines how long a call will ring into a busy UCD group before being presented to the first recorded announcement.

Default: By default, the UCD Ring Timer is set for 60 seconds, and is variable from 000 to 300 seconds.

> **NOTE** *A RAN Table must be specified in UCD programming. Refer to Sec. 650.3, UCD RAN Announcement Tables for the ring timer to be in effect. If a RAN Table is NOT specified, incoming CO callers will not be answered but will continue to receive ringback.*

## UNIFORM CALL DISTRIBUTION (Cont'd)

### UCD TIMERS (Cont'd)

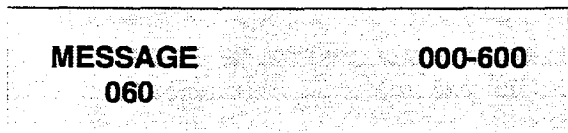**B.    UCD Message Interval Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

To make a change to the UCD Message Interval Timer:

1.   Press the MIT TIMER flexible button (Button #2). The following message is shown on the display phone:

```
MESSAGE            000-600
   060
```

2.   Enter the three-digit timer value on the dial pad which corresponds to 000-600 seconds.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

> **NOTE** *The UCD Ring and Message Interval Timers only appiy when RAN ports have been specified. If RAN ports are not specified, incoming callers will continue to receive ringback tone.*

**UCD MIT TIMER.** The UCD Message Interval Timer (MIT) determines the length of time a caller remains in queue (listening to MOH, if provided) between recorded announcements.

**Default:** By default, the UCD Message Interval Timer is set for 60 seconds and is variable from 000 to 600 seconds.

**C.    UCD Overflow Timer**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

To make a change to the UCD Overflow Timer:

1.   Press the OVERFLOW TIMER flexible button (Button #3). The following message is shown on the display phone:

```
0  OVERFLOW    -    6    0    0
      060
```

2.  Enter the three-digit value on the dial pad which corresponds to 000-600 seconds.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**UCD OVERFLOW TIMER.** The UCD Overflow Timer determines the total length of time a caller will remain in queue for a particular UCD group. When the timer expires, the caller will be routed to the designated overflow station. The timer starts when an incoming call is answered and presented to the first recorded announcement. Transferred CO callers will overflow at the expiration of the Overflow Timer.

Default: By default, the UCD Overflow Timer is set for 60 seconds and is variable from 000 to 600 seconds.

**UNIFORM CALL DISTRIBUTION (Cont'd)**

**UCD TIMERS (Cont'd)**

**D. UCD Auto Wrap-Up Timer**

| Programming Steps | Description |
|---|---|

To make a change to the UCD Auto Wrap-up Timer:

1. Press the AUTO-WRAP TIMER flexible button (Button #4). The following message is shown on the display phone:

```
WRAP-UP            000-999
   004
```

2. Enter the three-digit value on the dial pad which corresponds to 000-999 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**UCD AUTO-WRAP TIMER.** After completion of a UCD call (on-hook) the agent will not be subjected to another UCD call for the duration of the Auto Wrap-Up timer allowing the agent to finish call related work or access other facilities. This will allow agents to remove themselves from the group (i.e. DND, Call Forward) or originate another call.

**Default:** By default, the UCD Auto Wrap-up Timer is set for 04 seconds and is variable from 000 to 999 seconds.

**E. UCD No-Answer Recall Timer**

| Programming Steps | Description |
|---|---|

To make a change to the UCD No-Answer Recall Timer:

1. Press the NO-ANSWER RECALL TIMER flexible button (Button #5). The following message is shown on the display phone:

```
NO-ANS  RECALL        000-300
    000
```

2. Enter the three-digit value on the dial pad which corresponds to 000-300 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

**UCD NO-ANSWER RECALL TIMER.** If a call routed to a station via ACD is not answered by the ACD Agent/Station before the No-Answer Recall timer expires, the call will be returned to ACD Queue with the highest priority. In addition, the station that failed to answer the ringing ACD call will be placed into an out of service (OOS) state.

**Default:** By default, the UCD No-Answer Timer is set at 000 (disabled) and is variable from 000 to 300 seconds.
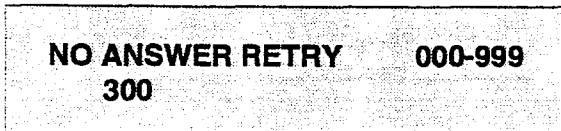
## UNIFORM CALL DISTRIBUTION (Cont'd)

### UCD TIMERS (Cont'd)

**F.** **UCD No-Answer Retry Timer**

Programming Steps

To make a change to the UCD No-Answer Retry Timer:

1. Press the NO-ANSWER RETRY TIMER flexible button (Button #6). The following message is shown on the display phone:

```
NO ANSWER RETRY      000-999
    300
```

2. Enter the three-digit value on the dial pad which corresponds to 000-999 seconds.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**UCD NO-ANSWER RETRY TIMER.** When the No-Answer Recall timer expires, a station that failed to answer the ringing ACD call is placed into an out-of-service (OOS) state. The station that was taken out-of-service (OOS) will be placed back in service if the agent hits his available flex button or dials the available flex code. In addition, the agent will be placed back in service if the No-Answer Retry timer expires. If the agent does not answer his next ACD call, he will again be taken out-of-service. This cycle will continue until the station answers calls, logs out, or goes unavailable.

**Default:** By default, the UCD No-Answer Retry Timer is set for 300 seconds and is variable from 000 to 999 seconds.

## UNIFORM CALL DISTRIBUTION (Cont'd)

### 650.3    UCD RAN ANNOUNCEMENT TABLES

Programming Steps

If Recorded Announcement devices are installed to operate with UCD, these tables must be programmed:

a. Press FLASH and dial [62]. The following message is shown on the display phone:

```
ANNOUNCEMENT  TABLE 1
TYPE # INDX ## TIME ###
```

b. The top left button in the flexible button field will be lit for programming UCD **RAN** Announcement Table 1. To change to UCD **RAN** Announcement Table 2, press flexible button #2. Repeat above for Tables 3 through Tables 8.

c. Enter a string of six, or seven digits on the dial pad. The order of data entry will be:

Type Number:
- [1] = CO Port interface
- [2] = SLT Port interface
Index (port) Number:
- [01-48] = CO Line Port
- [100-195] = SLT Station Port
Message Time:
- **000-300** seconds

d. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

> **NOTE** When a CO port is designated as a RAN port, a relay and/or sensor should be programmed as a RAN start for Announcement Table 1 through 8.

To clear entries in a Table:

a. Press the pound key once [#] followed by the HOLD button.

Description

Determines the type, index (port) number and message length for the eight available Recorded Announcements (RAN). There are eight RAN tables that can be programmed. **A** table can be the answer port for unanswered incoming calls to a UCD group, while another table can provide the secondary message.

The buttons **on** the digital terminal are defined as shown below when entering the UCD RAN Announcement Tables programming area.

| | | | | | |
|---|---|---|---|---|---|
| , | Q | ANNOUNCEMENT TABLE #1 | | 11 | A |
| 2 | W | ANNOUNCEMENT TABLE #2 | | 12 | S |
| 3 | E | ANNOUNCEMENT TABLE #3 | | 13 | D |
| 4 | R | ANNOUNCEMENT TABLE #4 | | 14 | F |
| 5 | T | ANNOUNCEMENT TABLE #5 | | | |
| 6 | Y | ANNOUNCEMENT TABLE #6 | | 16 | H |
| 7 | U | ANNOUNCEMENT TABLE #7 | | 17 | J |
| 8 | I | ANNOUNCEMENT TABLE #8 | | 18 | K |

The type can be either a CO line port, or a SLT port. The index number specifies which circuit for the type of interface.

The message length is used to match the maximum length of the message to the device that is used.

Example:

To program a table for a CO line port:

a. Press the TABLE "X" flexible button (Buttons I-8).

b. Dial [1] for CO port interface.

c. Dial [01 to 48] for CO line used.

d. Enter message duration (000-300 sec.)

Example:

To program a table for an SLT port:

a. Press the TABLE "X" flexible button (Buttons I-8).

b. Dial [2] for SLT port interface.

c. Dial [100 to 195] for SLT station used.

d. Enter Message duration (000-300 sec.)

**Related Programming:** Refer to Sec. 650.1, UCD Group Programming; 650.2, UCD Timers; Also refer to Sec. 500.9, Installing Recorded Announcement Device (RAN).

# TABLE OF CONTENTS FOR SECTION 655

# SECTION 655
# VOICE MAIL GROUPS (VM)

## 655.1 VOICE MAIL PROGRAMMING

### Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If Voice Mail Groups are to be programmed:

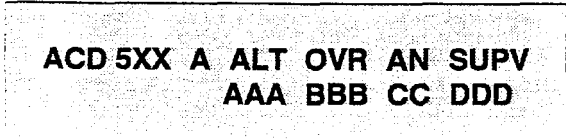1. Press FLASH and dial [65]. The following message is shown on the display phone.

```
VM 44G AAA LLL R XXX, XXX,
XXX, XXX, XXX, XXX, XXX, XXX
```

Where:
- G = Voice Mail group number (O-7)
- AAA = Alternate group (440447)
- LLL = "Leave" mail index.
- R = "Retrieve" mail index from outpulsing table for retrieving messages (O-7)
- XXX = Voice Mail station numbers (ports).(up to 8 max.)

2. The top left button in the flexible button field will be lit for programming voice mail group 440. To change Voice Mail groups or enter further Voice Mail groups, press the appropriate flexible button 1-8 (440447) and perform the following procedures.

> **NOTE**
> *Certain programming will be required in the Voice Mail system connected to the Starplus Digital Key Telephone System for proper operation.*
> *1. Mail Box numbers mustmatch Starplus Digital Key Telephone System station extension numbers. (100-195)*
> *2. Tone Mode Calling option (6#) must be programmed as leading digits in transfer sequence(s) to force tone ringing to key telephones in the handsfree mode.*

### Description

***This feature is available with optional software.***
Up to eight Voice Mail groups can be configured in the Starplus Digital Key Telephone System. Each group can contain up to eight Voice Mail designated ports, each of which interfaces with a port on an SLT or OPX card.

An externally provided Voice Mail system or Auto Attendant must be connected to the Starplus Digital Key Telephone System for Voice Mail or Auto Attendant operation. Voice Mail automatically handles unanswered calls. Station user can then retrieve messages left at their stations. Auto Attendants can handle incoming calls and route callers to station users without intervention from the systems attendant.

Direct incoming ring to Voice Mail/Auto Attendant groups can be done directly through CO Line Ringing Assignments.

The buttons on the digital terminal are defined as shown below when entering the Voice Mail programming area:

| | | | | | |
|---|---|---|---|---|---|
| 1 Q | VOICE MAIL GROUP 440 | R (RETRIEVE) | | 11 A | |
| 2 W | VOICE MAIL GROUP 441 | STATION ASSIGNMENTS | | 12 S | |
| 3 E | VOICE MAIL GROUP 442 | | | 13 D | |
| 4 R | VOICE MAIL GROUP 443 | | | 14 F | |
| 5 T | VOICE MAIL GROUP 444 | | | 15 G | |
| 6 Y | VOICE MAIL GROUP 445 | | | 16 H | |
| 7 U | VOICE MAIL GROUP 446 | | | 17 d | |
| 8 I | VOICE MAIL GROUP 447 | | | 18 K | |
| 9 O | ALTERNATE VOICE MAIL GROUP | | | 19 L | |
| 10 P | L (LEAVE) | | | 20 ; | |

**Default:** By default, all Voice Mail stations are assigned to Pickup Group 1.

**Related Programming:** Refer fo Sec. 655.2, Voice Mail Outpulsing Table, Voice Mail In-Band Signaling for incoming CO calls; 620.1, CO Line Programming, CO Line Ringing Assignments.

**VOICE MAIL GROUPS (Gont'd)**

**A.  Alternate Voice Mail Group**

| Programming Steps | Description |
|---|---|

Programming Steps

To program an alternate group:

1.  Press the ALTERNATE VM GP flexible button (Button #9).

2.  Enter the three-digit pilot number (440 to 447) of the desired group.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
VM 44G AAA LLL R XXX, XXX,
XXX, XXX, XXX, XXX, XXX, XXX
```

Description

**ALTERNATE VM GP.** An Alternate Voice Mail Group may be programmed so that if all Voice Mail ports are in use, the call can be routed to an alternate group. This is useful when more than eight ports are required for Voice Mail traffic.

To delete an Alternate Voice Mail Group assignment, enter three pounds [###] on the keypad and press the HOLD button.

**B.  "Leave" Mail Index** Entry

Programming Steps

To specify the "Leave" mail index (outpulsing table) to be accessed by a Voice Mail group:

1.  Press the LEAVE flexible button (Button #1 0).

2.  Enter the three-digit "Leave" mail index on the dial pad.

    − 1st Digit = Standard Leave Table number (O-7).

    − 2nd Digit ≃ Leave Table to utilize when station is forwarded to VM in a "No-Answei' condition.

    − 3rd Digit ≃ Leave Table to utilize when station is forwarded to VM in a "Busy" condition.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
VM 44G AAA LLL R XXX, XXX,
XXX, XXX, XXX, XXX, XXX, XXX
```

Description

LEAVE. The "Leave" mail index specifies the outpulsing Table where the "in-band" digits required to connect a caller, forwarded into Voice Mail, to the called stations mail box are stored. Refer to Sec. 655.2 for programming entries into an outpulsing table.

To delete a "Leave" mail index entry, enter one pound [#] in the desired location on the keypad and press the HOLD button.(i.e.: Tables 1,2,3 entered. To delete only Table 2, enter 1,#,3 and press HOLD).

## VOICE MAIL GROUPS (Cont'd)

### C. "Retrieve" Mail Index Entry

#### Programming Steps

To program the "Retrieve" mail index (outpulsing table) to be accessed by the Voice Mail group:

1. Press the RETRIEVE flexible button (Button #11).

2. Enter the one-digit outpulsing table number (O-7) on the dial pad.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
VM 44G AAA LLL R XXX, XXX,
XXX, XXX, XXX, XXX, XXX, XXX
```

#### Description

**RETRIEVE.** The "Retrieve" mail Index specifies the outpulsing table where the "In-band" digits required to connect a station user to their own mail box are stored. Refer to Sec. 655.2 for programming entries into an outpulsing table.

> **NOTE**
> *In order for the Starplus Digital Key Wfephone System to send the Station Identification digits (station three-digit extension number), a "Leave" and a "Retrieve" table must be referenced when assigning Voice Mail groups.. However, the "Leave" and "Retrieve" outpulsing Tables Sec. 655.2 can be empty (no entries in the referenced table)*

To delete a "Retrieve" mail index entry, enter one pound [#] on the keypad and press the HOLD button.

### D. Station Assignment(s)

#### Programming Steps

To program the stations in the Voice Mail group:

1. Press the STATION ASSIGN flexible button (Button #1 2).

2. Enter the three-digit station numbers (100-195). A maximum of eight SLT stations may be entered.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
VM 44G AAA LLL R XXX, XXX,
XXX, XXX, XXX, XXX, XXX, XXX
```

#### Description

Up to eight SLT or OPX port extension numbers may be programmed into a Voice Mail group.

The ports will be designated as two-way ports by directing calls to any one of the ports and allowing any one of the ports (or all ports) to be used as VM out dial and/or VM notify ports.

A flexible button may be programmed with a Voice Mail group pilot number. This button will then act as a DSS for that Voice Mail group when pressed and also serves as the message waiting indication for that VM group.

## VOICE MAIL GROUPS (Cont'd)

### 655.2    VOICE MAIL OUTPULSING TABLE

#### A.    Voice Mail In-Band Signaling

<div style="display:flex">

<div>

Programming Steps

if Voice Mail In-Band signaling is to be used:

1. Press FLASH and dial [66]. The following message is shown on the display phone.

```
VOICE   PRE XXXXXXXXXXXXE
MAIL y SUF XXXXXXXXXXXXE
```

Where:

- y = Table index (O-7)
- x = Entered digits (O-9, #, *, Pauses)

2. The TABLE 00 flexible button (Button #1) led is lit. To change tables, press the appropriate flexible button (Buttons 2-8) and perform the following procedures.

3. Dial one of the following, if required:

- [0] = if a prefix is required
- [1] = if a suffix is required
- [#] = if entry is to be deleted

4. Enter up to 12 digits required including '*' and '#'. TRANS button = pause.

5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

</div>

<div>

Description

Entries into one of the eight Voice Mail Outpulsing Tables determine the In-Band signaling required for "Retrieving" messages (allows for stations to pick up mail) and "Leaving" messages (allows stations to leave messages in voice mail).

The buttons on the digital terminal are defined as shown below when entering the Voice Mail Outpulsing Table programming area.

| | | | | | |
|---|---|---|---|---|---|
| 1 Q | TABLE 0 | | | 11 A | |
| 2 W | TABLE 1 | | | 12 S | |
| 3 E | TABLE 2 | | | 13 D | |
| 4 R | TABLE 3 | | | 14 F | |
| 5 T | TABLE 4 | | | 15 G | |
| 6 Y | TABLE5 | | | 16 H | |
| 7 U | TABLE 6 | | | 17 J | |
| 8 I | TABLE 7 | | | 18 K | |
| 9 O | DISCONNECT TABLE 8 | | | 19 L | |

Build a table ("0" for example) for any additional digits other than the Station Extension Number (Voice Mail Box Number) needed for a caller to leave a message in a station's mailbox. ("Leave")

Build another table ("1" for example) for any additional digits needed for a mailbox holder to retrieve a message ("Retrieve").

To clear entries in a Table, press the pound key once [#], followed by the HOLD button.

> **NOTE** *Entries are not required in the Outpulsing Table, however a table must be referenced when setting up the Voice Mail groups, Sec. 655.1 for both Leave and Retrieve data fields, if In-Band signaling is desired.*

**Related Programming:** Refer to Sec. 655.1, Voice Mail Groups (VM); Sec. 655.2, Voice Mail in-Band Signaling on incoming CO Calls.

</div>

</div>

## VOICE MAIL GROUPS (Cont'd)

## VOICE MAIL OUTPULSING TABLE (Cont'd)

### B. Voice Mail Disconnect Table

<table>
<tr><th>Programming Steps</th><th>Description</th></tr>
<tr><td>

1.  Press the DISCONNECT TABLE 8 flexible button (Button #9). This is the table number used for the Voice Mail disconnect signal.

2.  Enter up to 12-digits which will be used for the disconnect signal, including '✶' and '#'. TRANS button = pause.

3.  Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
VOICE DIS E
MAIL
```

</td><td>

To avoid Voice Mail ports from being tied up as a result of CO line callers abandoning the call or not exiting the VM system properly, a disconnect signal can be programmed into the Starplus Digital Key Telephone System to notify the VM system that a call has been abandoned. This is accomplished through "in-band" signaling. If a CO disconnect signal is detected, the Starplus Digital Key Telephone System will send a series of DTMF digits programmed in the Voice Mail disconnect table (outpulsinq table #8) to the Voice Mail port. This can be any digit stream up to 12-digits including "✶" and "#". This table will serve all eight voice mail groups. Silence is provided to the Voice Mail port followed by "busy tone" to aid the Voice Mail system to recognize that an intercom caller has abandoned the call.

The Starplus Digital Key Telephone System will provide Loop Supervision monitoring while a CO call is connected to a port designated as Voice Mail.

> **NOTE** *Loop supervision must be enabled on the CO lines (in CO line programming) in order for VM disconnect feature to operate.*

**Default:** By default programming there are no entries in the disconnect table (Table #8).

</td></tr>
</table>

**VOICE MAIL GROUPS (Cont'd)**

**655.3     VOICE MAIL IN-BAND FEATURES**

Programming Steps

Description

1. Press FLASH and dial [67]. The following
   message will be shown on the display:

```
VMFEATURES ICID AFWD
```

**A.     Voice Mail In-Band Digits**

Programming Steps

Description

If Voice Mail In-Band Digits are to be enabled or
disabled for Incoming CO callers:

1. Press the INCOMING ID DIGITS flexible but-
   ton (Button #1). It will toggle on and off with
   each depression.
   - LED on = ID digits are enabled
   - LED off = ID digits are disabled
2. Press the HOLD button to save the entry.
   Confirmation tone is heard and the display will
   now update.

```
VM FEATURES ICID AFWD
```

The Starplus Digital Key Telephone System allows
the system to be programmed so that if a station
programmed to receive incoming CO line ringing is
forwarded to Voice Mail they may have direct incom-
ing callers routed directly into their stations voice
mail box through the use of "In-Band" signaling.
Alternately, when disabled, callers will be answered
by the Voice Mail or Auto Attendant Main greeting.

Incoming CO callers can be Station Call Forwarded
into voice mail only when the ringing CO line is
programmed to ring at one station. Additionally CO
lines programmed to ring at an attendant station will
station call forward into the Voice Mail system (if
programmed to ring only at one attendant station)
and be presented to the main greeting (not the
attendant stations mail box) even when ID digits are
enabled.

**Default:** By default, ID digits for incoming CO calls
is enabled.

**Related Programming:** Refer to Sec. 655.1, Voice
Mail Programming; and Sec. 655.2, Voice Mail
Outpulsingfable

**VOICE MAIL GROUPS (Cont'd)**

**VOICE MAIL IN-BAND FEATURES (Cont'd)**

B.  **Voice Mail Transfer/Forward**

<u>Programming Steps</u>

If Voice Mail Call Forward is to be enabled or disabled for Incoming CO callers:

1.  Press the CALL FWD flexible button (Button #2). It will toggle on and off with each depression.

    •  LED on = Call Forward is enabled

    •  LED off = Call Forward is disabled

```
VM  FEATURES  ICID  AFWD
```

<u>Description</u>

This feature allows Voice Mail calls, upon reaching a forwarded to VM station, to forward back into the Voice Mail unit. The forwarded station can be forwarded to the same or a different Voice Mail group than the calling VM group. This is useful when VM ports are being used as both Auto Attendant and VM ports. This feature can be enabled/disabled for all VM groups.

**Default:** By default, the VM Transfer/Forward feature is disabled.

**Related Programming:** Refer to Sec. 655.1, Voice Mail Programming; and Sec. 655.2, Voice Mail Outpulsing Table.

# TABLE OF CONTENTS FOR SECTION 660

# SECTION 660
# EXCEPTION TABLES PROGRAMMING

660.1     **EXCEPTION TABLES PROGRAM-MING**

### Programming Steps

The Starplus Digital Key Telephone System offers a flexible means of applying toll restriction to stations or individuals. Dialing privileges (or toll restriction) is determined through assignment of station and CO line Class Of Service (COS). Several types of restriction can be derived simply by programming COS assignments and CO line **access** to stations. This may, in some cases, be all that is necessary. However, when a more complex or specific type of restriction is desired the system offers two allow and two deny tables along with four special tables. These tables can be programmed in a variety of ways to handle applications that are straight forward or applications that require a more complex arrangement.

The allow and deny tables are assigned to stations based on their station Class of Service (COS) assignment. The Station (COS) interacts with CO Line COS assignments to provide several different types of dialing privileges (Refer to CO/Station COS matrix below).

The Allow and Deny tables allow entries of either general or specific allow and deny codes such as allowing all [1-800] type calls, and/or denying all [l]+ or [0]+ calls. The allow and deny tables allow a maximum of eight digits to be entered as allow or deny digits. This allows for' entry of certain area codes or office codes or a combination of area code plus office code that can specifically be allowed or denied. For example the code [1 555-l 212] may be entered in the deny table to deny local toll information calls. Each allow table contains 20 bins for entry of allow codes. Each deny table contains 10 bins for entry of deny codes.

The following rules should be remembered when setting up the Allow/Deny tables. Refer to Table 660-I Class of Service (COS).

1.   **if** both tables (allow and deny) have no entries, no restriction is applied.

2.   If entries are made in the allow table and only there, then only those numbers are allowed. All other dialing is denied.

3.   If entries are made in the deny table and only there, then only those numbers are denied. All other dialing is allowed.

4.   If there are entries in both allow and deny tables, the allow table is searched first and if a match is found, it is allowed. if a match is not found, the deny table is searched and if a match is found there, the call is denied. If the number does not match an entry in either table, it is allowed.

**Table 660-l Class of Service (COS)**

| | | CO LINE CLASS OF SERVICE | | | | |
| | | 1 | 2 I 3 | | 4 | 5 |
|---|---|---|---|---|---|---|
| S T A T I O N c 0 s | 1 | Unrestricted | Unrestricted | Unrestricted | Canned Restriction* | Unrestricted |
| | 2 | Table A | Table A | Unrestricted | Canned Restriction* | Unrestricted |
| | 3 | Table B | Unrestricted | Table B | Canned Restriction* | Unrestricted |
| | 4 | Tables A&B | Table A | Table B | Canned Restriction* | Unrestricted |
| | 5 | Canned Restriction* | Canned Restriction* | Canned Restriction* | Canned Restriction* | Unrestricted |
| | **6** | Intercom only | Intercom only | Intercom only | Intercom only | Intercom only |
| *Canned Restriction= No 'O', 1, #, '*' as a first dialed digit, and 7 digits maximum plus 1-800, 1911, 1611 are allowed and 411, 976, and 555 numbers are denied. | | | | | | |

## Table 660-2 Allow/Deny Toll Table

| | ALLOW TABLE | DENY TABLE | CONDITIONS AND RESULTS | | | |
|---|---|---|---|---|---|---|
| | | | DIALED NO. | A/D | DIALED NO. | A/D |
| RULE 1 A | NO ENTRIES | NO ENTRIES | ALLOW | | | |
| RULE 2 | ENTRIES | NO ENTRIES | FOUND | A | | |
| | | | NOT FOUND | D | | |
| RULE 3 | NO ENTRIES | ENTRIES | | | FOUND | D |
| | | | | | NOT FOUND | A |
| RULE 4 | ENTRIES | ENTRIES | FOUND | A | | |
| | | | NOT FOUND → | | FOUND | D |
| | | | | | NOT FOUND | A |

A special "Don't Care" ("D") character may be entered as a digit to either allow or deny any digit dialed in that digit sequence. For example a code [1 "D" 0] and [1 "D" 1] may be entered in the deny table which would allow local long distance calls (numbers dialed with a 1 followed by a seven-digit local number), but would deny long distance calls (numbers dialed with a 1 followed by an area code).

The Stat-plus Digital Key Telephone System also offers four special tables that can be referenced from within the two allow tables. Three of the special tables can be assigned to specific area codes that require further toll restriction definition. The fourth special table is reserved for use as a home area code table (numbers within the same area code as the site where the system is installed). This provides expanded ability to apply toll restriction on numbers that are dialed within an area code. Each special table will allow up to 800 entries (200-999). This offers the ability to allow every office code on an individual basis

### 660.2 RELATED ITEMS TO TOLL RESTRICTION

#### A. CO/PBX Lines

When CO lines are marked as PBX lines (refer to Sec. 620.1, CO Line Programming) the system will first check the PBX code table (refer to Sec. 610.5, PBX Dialing Codes) for a valid

match. If the first digits dialed do not match the entries in the PBX code table the call is considered an attempt to call another PBX extension and no toll restriction is applied. If the first digits dialed are found in the PBX code table then toll restriction will start with the next dialed digit.

#### B. Forced Account Codes

The system can optionally force the use of account codes on all restricted calls. When forced account codes are enabled (see Sec. 610.2, Account Codes-Forced), an account code must be entered to place a call that is otherwise restricted through toll restriction. By entering an account code the stations effective class of service becomes that equal to class of service 1 (unrestricted).

When account codes are forced on a system wide basis selected users may be instructed on how to enter account codes from any station and be allowed to dial unrestricted from a station that may otherwise be restricted. Use of account codes in this manner, as a traveling class-of-service, is however not controlled by the system. Any station user with knowledge of how to enter account codes to override a stations toll restriction will be allowed to do so.

#### C. SLT DTMF Receivers

When single line telephones are connected to the Starplus Digital Key Telephone System and toll restriction is enabled, the DTMF receivers located on the station board(s) will monitor the call for a programmed period of time (refer to Sec. 610.1, SLT DTMF Receiver timer). While the DTMF receiver is monitoring the digits being dialed by a single line telephone, it is considered busy and not available for monitoring another SLT attempting to dial. When all DTMF receivers are busy, an SLT attempting to go off-hook will not receive dial tone until a receiver is available. The Starplus SPD 4896 system allows up to up to 28 DTMF receivers for monitoring SLT dialing. If a system has heavy SLT usage, then toll restriction may inhibit dialing by SLT stations. Two options are available to help alleviate this problem; 1) shorten the SLT receiver timer (refer to Sec. 610.1, SLT DTMF Receiver timer). This will free up DTMF receivers faster, however, may not provide the desired toll restriction for SLT stations; or 2) Enable LCR and force LCR on SLT stations. When the LCR database is set up the 3-digit table allows for entry of the number of digits to be expected. When a SLT dials the appropriate number of digits, LCR will release the DTMF receiver and then be available for another SLT call.

**).   LCR vs. Toll Restriction**

LCR is not intended to be an alternative to toll restriction nor is toll restriction intended to be a alternate to LCR. In fact they both work best when programmed together. Toll restriction provides the dialing privileges that stations are allowed and LCR provides the routing of calls onto the proper type of lines. LCR can enhance toll restriction in that LCR provides a 'Store and Forward" operation that allows the system to analyze the digits being dialed before a trunk is seized. This prevents users from by-passing toll restriction by taking advantage of the time it takes for a central office line to provide dial tone. Because of this it is recommended that LCR be considered when toll restriction is desired.

660.3    **TOLL RESTRICTION PROGRAMMING**

**A.    Entering Toll Table Programming**

<u>Programming Steps</u>

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

> **NOTE**
> *It is recommended that the Exception Tables be* initialized *prior to entering data into the tables.* *Do this by following the instructions in Sec. 600.5, Initialization for initializing the Exception Tables. This procedure* may also *be repeated if it is determined* #at data In the exception. tables *has* become corrupt. However, after initializing *the exception* tables, for this purpose, all data *must be re-entered into the tables.*

1.  Press FLASH and dial [70]. The following message is shown on the display phone:

> **EX TABLES**
> **ENTER BUTTON NUMBER**

2.  To program allow/deny tables, press the appropriate Table button and enter information as outlined in the following procedures.

3.  To program Special Tables 1-3, it is necessary to associate an area code to the table. This is done by pressing the appropriate "AREA-CODE TBL" button and assign the area code.

> **NOTE**
> *Special Table 4 is reserved for the home area code and does not require an area code entry.*

4.  To display entries in any of the tables, press the DISPLAY TABLES button (button #12). Entries in the allow/deny tables will display two at a time. Entries in the special tables will be displayed six at a time in ascending order.

<u>Description</u>

All toll tables have been conveniently placed under one program code to allow entry of all toll restriction data.

The buttons on the digital terminal are defined as shown below when entering the Toll Restriction programming area.

| 1  Q | ALLOW TABLE A | | AREA CODE TBL3 | 11  A |
|---|---|---|---|---|
| 2  W | DENY TABLE A | | DISPLAY TABLES | 12  S |
| 3  E | ALLOW TABLE B | | | 13  D |
| 4  R | DENY TABLE B | | | 14  F |
| 5  T | SPECIAL TABLE 1 | | | 15  G |
| 6  v | SPECIAL TABLE 2 | | | 16  i |
| 7  u | SPECIAL TABLE 3 | | | 17  J |
| 8  I | SPECIAL TABLE 4 | | | 18  K |
| 9  0 | AREA CODE TBL1 | | | 19  L |
| 10  P | AREA CODE TBL2 | | | 20  ; |

When the system searches the allow and deny tables, the entries are checked starting with Bin 01 and proceeding sequentially through the table to the last bin. In addition The allow table is always searched before looking at the deny table. Therefore the order of entry is important. Entries that are specific (i.e. [I 716]) should be placed ahead of entries that are more general (usually include "Don't Care" digits i.e. [I "D" 1]).

Once a match is found, in the allow table, that references a special table the number dialed will be checked for an allowed code in the special table. If a match is not found in the special table the system will continue to check for a match in the next allow or deny table that is to be checked. The system will not return to the table that sent the call to the special table.

**EXCEPTION TABLES PROGRAMMING (Cont'd)**

**B.   Allow Table Programming**

Programming Steps

1.   Press the ALLOW TABLE A or ALLOW TA-
     BLE B flexible button (Button #1 or #3). The
     following message is shown on the display
     telephone:

```
ALLOW TABLE A
01E              02E
```

The first two bins locations are displayed.

2.   Enter the two-digit bin number (01-20) of the
     bin to be programmed.

> **NOTE**
>
> *It is recommended that: Bin 17 be reserved for
> an entry mat will reference special table number
> 1; Bin 18 be resewed for an entry that will
> reference special table number 2; Bin 19 be
> reserved for referencing special table number 3;
> Bin 20 be reserved for referencing the Home area
> cook table, special table number 4.*

3.   Enter the allow code:
where:
   - 0 to 9, *, # = corresponding allow digits
     (numbers)
   - MUTE = Don't Care digit ("D")
   - TRANS = search special table ("S")

4.   Press the HOLD button to save the entry.
     Confirmation tone is heard and the display will
     now update.

5.   When all entries for one table are complete,
     press the flexible button for the next tabie.

The following rules should be applied when making
entries that will reference the special tables:

1.   For entries referencing the first three special
     tables a specific area code must be identified
     (one for each table needed). Then make note
     as to how the numbers will be dialed when
     dialing numbers to this area code (i.e. with a
     leading digit [1] or no leading digit [1]). The
     entry into the allow table would be entered as
     follows:

Leading digit [1]: enter BB 1 XXX DDD {S} or

Non Leading [1]: enter BB XXX DDD {S}

Where:
   - BB = Bin number (recommended 17-19)
   - XXX = Area code (must match AREA-X
     entry)
   - DDD = "Don't Care" digit (three entries,
     DND button)

Description

**Allow Table** - Each Allow table contains 20 bin
numbers. Each bin number may be up to eight-digits
in length including {Don't Care} digits and {Search
Special Table} commands. Entries into the allow
table represent exceptions to numbers or codes that
are to be allowed only if they would otherwise be
restricted by an entry in the deny table. For example
if [I 555 1212] is to be allowed but [1+] numbers are
denied, by **an** entry into the deny table, then [1 555
1212] should be entered into the allow table as an
allowed number.

   - Allow table A is referenced and searched
     first (before the deny table A) when Station
     COS is 2 and CO line COS is either 1 or 2.

   - Allow table B is referenced and looked at
     first (before the deny table B) when Station
     COS is 3 and CO line COS is either 1 or 3.

   - When station COS is 4 and CO line COS is
     1 both allow tables are looked at first (allow
     table A first then allow table B) then both
     deny tables (deny table A first then deny
     table B).

**Don't Care** digits specify that the system should
consider any digit dialed in that position as a match.
Don't Care digits should not be entered as the last
digit in an entry, as this would be an unnecessary or
meaningless command.

**Search Special Table** commands must be entered
in a specific manner and should always be placed
as the last entries in the Allow table. It is recom-
mended that the last four bins (17-20) in the allow
table be reserved for referencing the four special
tables with the reference to the home area code
(special table 4) always being located in bin number
20. Search Special table commands can only be
entered into the allow tables.

To erase a bin, enter the two-digit bin number follow-
ing by pressing the HOLD button.

## EXCEPTION TABLES PROGRAMMING (Cont'd)

**Allow Table Programming (Cont'd)**

Programming Steps                                        Description

- {S}= Search Special Table Command (TRANS button)

2. For an entry that is to reference the Home Area Code table (special table 4) the entry may also be entered to expect or not expect a leading digit [1], In fact in some **cases** it may be desirable to enter both of the following entries;

   Leading digit [I]: enter BB 1 DDD {S} and/or

   Non Leading [1]: enter BB DDD {S}

Where:

- BB = Bin number (recommended bin 20)
- DDD = "Don't Care" digit (three entries, MUTE button)
- {S} = Search Special Table Command (TRANS button)

> **NOTE**
> *If both leading digit [1] and non-leading digit [1] entries are made to reference the same table it is necessary to place the leading digit [1] entry ahead of the non-leading digit [1] entry in the allow table.*

**EXCEPTION  TABLES  PROGRAMMING  (Cont'd)**

**C.   Deny Table Programming**

Programming  Steps

1.   Press the DENY TABLE A or DENY TABLE
     B flexible button (Button #2 or #4). The follow-
     ing message is shown on the display phone:

```
DENY TABLE A
01E           02E
```

The first two bin locations are displayed.

2.   Enter the two-digit bin number (01-I 0) of the
     bin to be programmed.

3.   Enter the deny code:

where:

     – ⬚ ⬚ ⬚ ⬚ # = corresponding deny digits
       (numbers)
     – MUTE = Don't Care digit

4.   Press the HOLD button to save the entry.
     Confirmation tone is heard and the display will
     now update.

5.   When all entries for one table are complete,
     press the flexible button for the next table.

Description

**Deny Table** - Each Deny table contains ten bin
numbers. Each bin number may be up to eight -digits
in length including {Don't Care} digits. Entries in the
deny table represent numbers or codes that are to
be denied or restricted. Common entries would be
[1] for restricting all [1+] type of calls. Exceptions to
this restriction would be entered into the allow table.

  • Deny table **A** is referenced and searched
    only after the allow tabie A is checked when
    Station COS is 2 and CO line COS is either
    1 or 2.

  • Deny table B is referenced and searched
    only after the allow table B is checked when
    Station COS is 3 and CO line COS is either
    1 or 3.

  • When station COS is 4 and CO line COS is
    1 both allow tables are looked at first (allow
    table A first then allow table B) then both
    deny tables (deny table A first then deny
    table B).

**Don't Care** digits specify that the system should
consider any digit dialed in that position as a match.
Don't Care digits should not be entered as the last
digit in an entry.

Search Special table commands can not be entered
into the Deny tables.

To erase a bin, enter the two-digit bin number fol-
lowed by pressing the HOLD button.

## EXCEPTION TABLES PROGRAMMING (Cont'd)

### D. Special Table Programming

| Programming Steps | Description |
|---|---|

**Programming Steps**

To program a special table, it is first necessary to assign an area.code to the table (except for the home area code).

To assign an area code to a special table:

1. Press the appropriate AREA CODE TABLE (I-4) flexible button (button #9-1 1). The following message is shown on the display phone:

```
SPECIAL TABLE 1   AC
```

2. Enter the three-digit area code.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To enter office codes into the special table:

4. Press the SPECIAL TABLE (I-4) flexible button (button #5 - #8) that corresponds to the area code programmed above. The following message is shown on the display phone:

```
SPECIAL TABLE 1   AC   XXX
```

Where:

- XXX = Area Code

5. Enter the three-digit office codes that are to be allowed followed by a [I] which means to allow this code. To remove a code from the allow list enter the three-digit office code followed by a [0] which will remove the code from the allow list.

- XXX [I] = Allow code

- XXX [0] = Remove code from the list

Where XXX = an office code from 200 to 999.

6. Press HOLD after every code entered. Confirmation tone is heard and the display will now update. Multiple codes may be entered in a row. The display will update showing the first six codes in ascending order.

**Description**

The special tables provide greater flexibility in designing a toll plan for a particular site. Each special table allows entry of up to 800 three-digit office codes (200 - 999). Three of these tables must be assigned an area code by which they are referenced. The fourth table is reserved for the home area code and requires no area code entry.

The special tables are referenced through entries in the allow tables. Four area codes, including the home area code, can be referenced to these special tables for further definition. When a special table is referenced, entries must be made in the special table specifying what office codes will be allowed. By default no codes are on the allow list.

Codes can be added to the allow list or removed from the list. When a special table is checked for a match, to a three digit code, but not found the system will then continue to search the next allow deny table that is to be checked. The system does not return to the allow table which routed the call to the special table.

The buttons on the digital terminal are defined as shown below when entering the Special Table programming area.

| 1 | Q | ALLOW TABLE A | | AREA CODE TBL3 | 11 | A | |
|---|---|---|---|---|---|---|---|
| 2 | W | DENY TABLE A | | DISPLAY TABLES | 12 | S | |
| 3 | E | ALLOW TABLE B | | | 13 | D | |
| 4 | R | DENY TABLE B | | | 14 | F | |
| 5 | T | SPECIAL TABLE 1 | | | 15 | G | |
| 6 | Y | SPECIAL TABLE 2 | | | 16 | H | |
| 7" | | SPECIAL TABLE 3 | | | 17 | J | |
| 8 | I | SPECIAL TABLE 4 | | | 18 | K | |
| 9 | O | AREA CODE TBL1 | | | 19 | L | |
| 10 | P | AREA CODE TBL2 | | | 20 | ; | |

## EXCEPTION TABLES PROGRAMMING (Cont'd)

### E.  Displaying Toll Table Entries

Programming Steps                                        Description

To display entries in either the Allow/Deny tables or the special tables:

1.  Press the DISPLAY TABLES flexible button (button #12) while entering information into a table.

2.  While viewing entries made into an allow or deny table, two entries at a time will be displayed on the bottom line of the display. By pressing the DISPLAY TABLES button again, the next higher bins will be displayed. When the last entries are displayed pressing the DISPLAY TABLES button again will show the first two entries.

It is possible to view entries in the toll tables using the display on the Executive telephone. To view all entries, the DISPLAY TABLES flexible button (Button #12) is pressed multiple times to scroll through the entries.

> **NOTE**
> *It is recommended to view all entries in the Allow and Deny table before leaving programming. Entries am be entered near the bottom of this list either for searching the special tables or entries that may have been made in error. Viewing the entire allow table will ensure proper entry and operation.*

```
ALLOW  TABLE  A
  01  XXXXXXXE    02 XXXXXXXX
```

Where:
  - X = Allow or Deny Code
  - E = End of Entry

While viewing entries in a special table, six three-digit codes, that have been allowed, will be displayed in ascending order starting with the lowest entry. By pressing the DISPLAY TABLES button again, the next six entries will be displayed. This will continue until all codes have been displayed.

```
SPECIAL  TABLE  1  AC  XXX
YYY  YYY  W Y    W Y  YYY  YYY
```

Where:
  - XXX= Area Code
  - YYY= Allowed Office Code

# TABLE OF CONTENTS FOR SECTION 665

# SECTION 665

# LEAST COST ROUTING (LCR) PROGRAMMING

## 665.1    INTRODUCTION

***This feature is available with optional software.***

Least Cost Routing (LCR) selects the most economical programmed route for an outgoing call. When a station user dials an outside number, the LCR feature analyzes the number and then automatically chooses an outside line from the group that has been programmed as most economical. The LCR feature puts the responsibility of choosing the least expensive route for each area code and exchange code on the system administrator, not on the station user. In order to make a routing decision, the LCR feature is programmed in the system database. The successful operation of this feature is completely dependent on the accuracy of the programming. Refer to Figure 665-l LCR Flowchart for assistance.

There are eight different tables which are set up to monitor the dialing of digits and to select the best route for the call depending on time of day and day of week.

These tables are:

- 3-Digit Area/Office Code Routing Table
- 6-Digit Office Code Routing Table
- Exception Table
- Route List Table
- Insert/Delete Table
- Daily Start Time Table
- Weekday (Weekly) Schedule
- Toll Information Table

## A.  LCR  Operation

The system first checks to see if the number dialed is more than two digits. If it is two digits or less, the call is processed according to instructions in the Exception Table. If the number is not found in the Exception Table, the call is denied.

If the number is more than two digits, it goes to the 3-Digit Table. If the first digit dialed is a "1" the leading 1 table will be checked with the following three digits. If the first digit dialed is not a "1", then the first three digits are checked against the Non-Leading 1 3-Digit table. The first three digits (either office code or area code) are then checked to see if they are in the 3-Digit Table. If they are not found there, the call is not routed. If the digits are found in the 3-Digit Table, the system then checks for an entry to see if the 6-Digit Table must be referenced.

If the 6-Digit column is marked [yes] in the three digit table entry, the number is then checked in the 6-Digit Table.

There are 20 6-Digit tables. Each 6-Digit table is programmed and becomes associated to a specific area code with a selected route. Office codes are entered into the 6-Digit table that will be routed to a specific route list table. This allows the system administrator to split area codes for routing to different lines connected to the system. This helps when Foreign Exchange lines (FX Lines), Banded WATS lines, or "Dedicated" Lines (OPX's from another system) are in use.

If the office code is not found in the 6-Digit Table, the call is referred back to the 3-Digit Table for selecting a route list table. And then goes through the same procedures as described below.

Before actually selecting a route list table, the number is checked against the toll restriction tables (station COS). When LCR is enabled, only station Class of Service is referenced. CO line Class of Service is no longer applicable. All CO lines are considered Class of Service 1.

If the call is not allowed through the toll restriction tables, the call is denied. If it is allowed, the call then goes to the Route List Table as specified by either the 3-Digit or S-Digit table.

The Time of day and Day of week is determined and the call is presented to the corresponding time period route within the specified route table. Each of the 16 Route Tables contain four time sensitive routes.

Routes are determined by the time of day and day of week as specified in the Daily Start Time table and the Weekly Schedule table.

After the appropriate route is selected, LCR Class of Service becomes applicable. A station can use only those line groups programmed with a priority number equal to or higher than the station's LCR Class of Service.

If a line is not available in the first choice line group, the system advances to the next choice line group and searches for a free line. This process continues until an available line is found, or the last available line group is searched ,or until a line group is reached with a priority assignment lower than the station's LCR Class of Service assignment.

When a line is available the system will seize that line and wait for dial tone. Then before dialing, the system checks the Insert/Delete table for digits that should be deleted from the front of the number or digits that should be inserted either before or after the number dialed. Finally the system begins to dial the number out over the selected line. All of this analyzing and manipulation of the number takes only a fraction of a second from the time the station user begins to dial until the number is dialed out over the public network lines.

If no lines are available in any of the CO line groups programmed for that route and allowed to that station, the call can be automatically queued on to the first choice (least costly) line group. If the user waits three seconds after dialing the number, they will hear confirmation tone which indicates that an automatic LCR Queue Callback has been activated on the first choice line group. When a CO line becomes available in the first choice line group the system will ring the calling station. When answered by the station the system will automatically seize the line and redial the number.

**Figure 665-I LCR Flowchart**

## LCR PROGRAMMING (Cont'd)

### 665.2    LCR TABLES PROGRAMMING

<u>Programming Steps</u>

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

To program the system for Least Cost Routing:

1. Press FLASH and dial [75]. The following message is shown on the display phone:

```
LCR TABLES
ENTER BUTTON NUMBER
```

2. There are eight tables which can be programmed here for LCR (you must also program LCR Class of Service in Station Programming). Use the procedures listed below to program these LCR tables.

| NOTE | *It is extremely important that the worksheets be completed before programming the LCR tables.* |
|---|---|

<u>Description</u>

***This feature is available with optional software.***

The Least Cost Routing (LCR) feature allows for the automatic selection of the most economical trunk according to the number dialed and the time of day and day of the week. There are eight different tables which are set up to monitor the dialing of digits of a station and to select the best route programmed for the call. These tables are:

- . 3-Digit Area/Office Code Routing Table
- . 6-Digit Office Code Routing Table
- . Exception Table
- . Route List Table
- ● Insert/Delete Table
- . Daily Start Time Table
- ● Weekday (Weekly) Schedule
- . Toll Information Table

The buttons on the digital terminal are defined as shown below when entering the LCR Tables programming area:

| | Q | 3-DIGIT TABLE | | | 11 | A |
|---|---|---|---|---|---|---|
| | 2 W | 6-DIGIT TABLE | 1 | | 12 S | |
| | 3 E | EXCEPTION TABLES | | | 13 D | |
| | 4 R | ROUTE LIST TABLE | | | 14 F | |
| | 5 T | INSERT/DELETE TABLE | | | 15 G | |
| | 6 Y | DAILY TIME TABLE | | | 16 H | |
| | 7 U | WEEKLY TIME TABLE | | | 17 J | |
| | 8 I | TOLL INFORMATION | | | 18 K | |

Default: Refer to Figure 675-8 DB Printout of LCR Default for a complete listing of the LCR default data.

**Related Programming:** Refer to Sec. 610.2, System Features Programming, LCR Enable ; 630. 1, Station Attributes Programming, Station Class of Service (COS); and Sec. 630.1, LCR Class of service (COS).

## LCR PROGRAMMING (Cont'd)

### A.  3-Digit Area/Office Code Table

Programming Steps

1.  Press 3-DIGIT TABLE flexible button (Button # 1). The following message will be shown on the display phone:

```
3 DIGIT ROUTING TABLE
ENTER L NNN RRY PP HOLD
```

Where:
- L = [0] for non leading 1 ("1" not dialed)
   [1] for leading 1 ("1" is dialed)
- NNN = area/office code
- RR = route list number 00-l 5
- Y = [0] do not go to 6-Digit table
   [1] go to 6-Digit table
- PP = number of digits expected to be dialed.

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

**3-Digit Area/Office Code Table.** This table is divided-into two sections • Leading 1 (a [1] is dialed before the number) and Non Leading 1 (no [1] is dialed before the number). This gives the system the ability to handle call routing in areas that require a [l] before a long distance number, **as** well as in areas that do not require the [1].

Both of these tables include all area codes (NPA's), and office codes (NXX's), from 000 to 999, including such numbers **as** 911,411, etc. A complete entry into these tables include a route list table to be used, if the 6-Digit Table is to be checked and the number of digits likely to be dialed (example 7 digits or 10 digits).

All local office codes must be entered in this table even if they do not require long distance calling.

The number of digits to expect entry will aid the system in identifying when the last digit is dialed and to begin routing the call. This also helps to free SLT DTMF receivers if SLT traffic in the system is heavy.

For international calls, use "00" **as** number of digits to expect. This causes the system to wait five seconds after user dials last digit before the system accesses a CO line and dials out.

**Appendix A-13 3-Digit Area/Office Code Route List Table**

| NON-LEADING (0) LEADING (1) | CODE (NNN) | RTE (RR) | 6 DIG(6) (Y/N) | # DIG | NON-LEADING (0) LEADING (1) | CODE (NNN) | RTE (RR) | 6 DIG(6) (Y/N) | # DIG |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| I | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 0 | | | | | 0 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |

**Figure 665-2 Ex: 3-Digit Area/Off ice Code Table Pgm Form**

## LCR PROGRAMMING (Cont'd)

**B.** 6-Digit Off ice Code Table

### Programming Steps

1. Press the 6-DIGIT TABLE flexible button (Button # 2). The following message is shown on the display phone:

```
6 DIGIT ROUTING TABLE
ENTER S AAA RR NNN HOLD
```

Where:
- S = [0] to remove codes
       [1] to add codes
- **AAA** = area code
- RR = route number 00-1 5
- NNN = office code

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

3. Enter additional office codes to be programmed into the same Area Code/ Route Table, pressing hold after each office code entry.

4. Press a flexible button to program a different table.

### Description

**6-Digit Office Code Table.** This table is used to determine a route for one or a group of individual office codes within an area code. Certain office codes within an area code can be given unique or special routing. If the office code dialed is not found in the 6-Digit Office Code Table, the call is then routed according to the route list table as was entered in the 3-Digit Table.

The system **allows for 20** 6-Digit Area/Office **code** tables that may be used to route specific office codes within an area code. Each table will route calls for a common area code to a specified route. All entries made into a table will route those office codes to the specified route list table. An area code may be entered into more than one 6-Digit table with different routes specified.

To delete all entries in an Area Code/Route table, enter [0 AAA RR ###].

### Appendix A-14 6-Digit Office Code Table

| AREA CODE | R O U T E | | | |
|---|---|---|---|---|
| | | | | |

**Figure 665-3** Ex: 6-Digit Office Code Table Pgm Form

## LCR PROGRAMMING (Cont'd)

### C. Exception Code Table

Programming Steps

1. Press EXCEPTION TABLES flexible button (Button #3). The following message will be shown on the display phone:

```
EXCEPTION CODE TABLE
ENTER S XX RR HOLD
```

Where:

- S = [0] to remove code from table,
  [1] to add code to table
- XX= exception codes for single digit codes, press MUTE button as 2nd digit).
  The digits [✻] and [#] may be entered as valid digits.
- RR= route table number, 00-15

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

3. Press Button #3 again for further entries. Up to 20 Exception codes may be programmed in this table.

Description

**Exception Table.** This table is used for operator calls and any other calls which would use a one-digit or two-digit entry, rather than a three-digit area code.

**Appendix A-15 LCR Exception Code Table**

| CODE # | EXCEPTION CODES (XX) | ROUTE (00-1 5) (RR) | CODE # | EXCEPTION CODES (XX) | ROUTE (00-1 5) (RR) |
|---|---|---|---|---|---|
| 1 | | | 11 | | |
| 2 | | | 12 | | |
| 3 | | | 13 | | |
| 4 | | | 14 | | |
| | | | | | |
| | | | | | |
| 8 | | | 18 | | |
| 9 | | | 19 | | |
| 10 | | | 20 | | |

**Figure 665-4 Ex: Exception Code Table Pgm Form**

## LCR PROGRAMMING (Cont'd)

### D. Route List Table

<div style="display:flex">
<div>

<u>Programming Steps</u>

1. Press the ROUTE LISTTABLE flexible button (Button #4). The following message will be shown on the display phone:

```
ROUTE LIST TABLE
ENTER RR T G DD L HOLD
```

Where:
- RR = Route List Table number 00-l 5
- T = Time Period Route list 1-4
- G = CO Line Group 1-7
- DD = Insert/Delete Table reference 00-19 (## for none)
- L= LCR Class of Service (LCOS)

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

3. To enter additional CO line groups in the same time period route list number: Dial G DD L HOLD

To enter data for a different time period route list:

1. Press program button 4 and enter all data (RR T G DD L).

2. Repeat above to program a new Route Number 00 to 15 or press a flexible button to program other LCR information.

The following message will be shown on the display when the Call Cost feature has been enabled in Flash 05, Button #11.

```
ROUTE   LIST   TABLE
ENTER RR T CCC G DD L HOLD
```

Where:
- RR = Route List Table number 00-15
- T = Time Period Route list l-4
- CCC = Cost for one minute $O.OO-$9.99
- G= CO Line Group l-7
- DD = Insert/Delete Table reference 00-19 (## for none)
- L= LCR Class of Service (LCOS)

</div>
<div>

<u>Description</u>

**Route List Table.** Up to 16 different Route list tables can be programmed. Each route list table contains four time period routing lists, one for each of the available (four) daily start time periods. Within each time period route list up to seven CO (outside) line groups and their corresponding Insert/Delete Table if any and LCR class of service priority are programmed on a per line group basis.

When routing a CO call through LCR, CO Line groups are accessed in sequence so that the first line group entered represents the least costly (and first selected) and the last line group entered represents the most costly (and last selected).

The Route List Table references many other tables when processing a call for routing. First of all, the Daily start time table is referenced to determined what start time entry should be checked in the weekly schedule table. The corresponding entry in the weekly schedule table depending on the day of the week then determines which Time Period Route list should be used within the Route List Table.

The system then begins to check for idle lines in the first entered CO line group and will proceed until an idle line is found. While it is searching for an idle CO line the Station LCR COS is checked against the entries for LCR COS Priority of the specific CO line groups (see LCR COS Priority explanation below). Once an idle CO line is found with a LCR priority equal to or higher than the stations LCR COS then a final check is made to determine if an Insert/Delete table should be referenced. Once all of the tables and entries are checked the system then processes the call on the outside CO line.

| NOTE | *Make sure you have made entries into all Time Period Route List that are referenced in the weekly schedule table.* |
|---|---|

**Related Programming:** Refer to Sec. 610.2, System Features Programming, Call Cost Display Feature programming.

</div>
</div>

## LCR PROGRAMMING (Cont'd)

**Route List Table (Cont'd)**

Programming Steps

Description

**LCR COS Priority.** A station should be assigned a class of service for LCR. Refer to Sec. 630.1, Station Attributes Programming, LCR Class of service (COS). The LCR COS can be between 0 and 6, with 0 being unrestricted and 6 being the most restrictive. Within the time period route List Table, line groups are given an LCR COS Priority assignment between 0 and 6. A station using LCR will be able to use only those CO (outside) line groups with a priority assignment of equal or higher value than the station's LCR Class of Service (i.e. a station with LCOS 3 can use line groups with a priority of 3-6).

**Table 665-I LCR Class of Service Table**

| Allowed Access to Route | | LCR CO Line Group Priority | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| S T A L C R C O S | 0 | Y | Y | Y | Y | y | y | y |
| | 1 | N | Y | Y | Y | Y | Y | Y |
| | 2 | N | N | Y | Y | Y | Y | Y |
| | 3 | N | N | N | Y | Y | Y | Y |
| | 4 | N | N | N | N | Y | Y | Y |
| | 5 | N | N | N | N | N | Y | Y |
| | 6 | N | N | N | N | N | N | Y |

N= Cannot use Line Group
Y= Has access to Line Group

## LCR PROGRAMMING (Cont'd)

### E. Insert/Delete Table

Programming Steps

1. Press INSERT/DELETE TABLE flexible button (button #5). The following message will be shown on the display phone:

```
DIGIT INSERT/DELETE
ENTER TT X DDD HOLD
```

Enter the table information as follows;

Where:

- TT = Insert/Delete Table Number 00-l 9
- X = [0] Pre-Delete numbers (first digits dialed in the number),
  [1] Pre-Insert numbers (insert digits in front of number dialed,
  [2] Post-Insert numbers (insert digits behind number dialed)
- DDD = digits (up to 16-digits may be deleted from the beginning of the number dialed and up to 40 digits can be inserted (20 pre and **20** post)).

2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

To add and delete numbers in the same table, enter the different insertion/deletion tables in step 1 and enter as separate entries using the same table number.

In the Insert Tables for LCR programming:

1. Press the TRANS button for a pause.
   - The [✳] and [#] digits are allowed as valid digits for inserting digits dialed over the network.
   - The [✳] and [#] are valid entries for adding digits in both the pre (in front of) or post (behind the number) tables.
   - The [✳] and [#] can not be used as delete characters in the Delete Tables.

To delete a Table, enter the Table number followed by the HOLD button.

Description

**insert/Delete Table.** Digits can be either added or deleted when dialing a number. For instance, if a user dials a long distance call that should be placed on a foreign exchange (FX) line, the digit [l] and the three-digit area code (NPA) dialed by the user must be deleted before the call can be placed on that FX line. An Insert/Delete Table can be programmed to do this. Digits can also be added to a number that has been dialed by the user.' For instance, Other Common Carrier (OCC) access codes and authorization (ID) codes can be automatically inserted by the system either in front of and/or behind the number dialed.

There are 20 Insert/Delete Tables and each table allows for entries into a delete table and a pre and post insert table. Up to 40-digits (including pauses) can be inserted 20-pre and 20-post) and up to 16-digits can be deleted. Digits can be inserted before or after the number dialed but can be deleted only from the start of the number dialed.



**Figure 665-5 Ex: insert/Delete Pgm form**

## CR OGRAMMING (Cont'd)

### Daily Start Time Table

| Programming Steps | Description |
|---|---|

**Programming Steps**

1. Press the DAILY START flexible button (button #6). The following message will be shown on the display phone:

```
DAILY START TIME TABLE
HHMM  HHMM  HHMM  HHMM  HOLD
```

2. Enter times in military form (2400 Hours) in succession.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update. Default times are 0800, 1700, 2300 (8 AM, 5 PM, and 11 PM), and the fourth time is disabled (####). To change a start time all times must be re-entered. Four pounds [####] will be displayed if nothing is entered for a specific time.

**Description**

**Daily Start Time Table.** The daily start time table is used to correlate the LCR routing. table to the time sensitive discount structure offered by the customers carrier. For example in the most common situation the most expensive rate period is between 8:00 am and 5:00 pm, often called the day rate. The first discount period usually starts at 5:00 pm and runs until 11:00 pm, often called Evening Rates. The remaining time (from 11:00 pm until 8:00 am) in this example is referred to as night time rates which usually has the biggest discount. With the wide selection of Common Carriers the least costly route for a particular area code may be different at different times of the day. To accommodate this situation, this table and the Weekly Schedule Table work together, dividing the day into four possible time periods. By default these tables are set at the standard divisions of 8AM, 5PM, and 11 PM. However, these times can be changed.

The entries in the Daily Stan Time table are used to select the time period to reference in the weekly schedule. Based on the time a call is placed the daily start time table selects the time period to choose in the weekly schedule. The weekly schedule is then used to determine the time period route list in the Route List Table to use for routing the call for a particular day of the week.

The times are entered in the 24 hour format.



**Figure 665-6 Daily Start Time & Weekly Schedule Tables**

## LCR PROGRAMMING (Cont'd)

**G. Weekly Schedule Table**

<u>Programming Steps</u>

1. Press the WEEKLY SCHED flexible button (button #7). The following message will be shown on the display phone:

> **WEEKLY SCHEDULE TABLE
> ENTER D TTTT HOLD**

Where: D= Day of the Week
- [0] = Monday
- [ 1 ] = Tuesday
- [2] = Wednesday
- [3] = Thursday
- [4] = Friday
- [5] = Saturday
- [6] = Sunday

T = Time Period Route List (l-4) to use for the time of day (based on the daily start time table). Enter values for all time periods specified in the daily start time table for that day.

- 1 st T = Time Period Route list for the FIRST Daily Start Time.(applies to all Route List Tables)
- 2nd T = Time Period Route List for the SECOND Daily Start Time.(applies to all Route List Tables)
- 3rd T = Time Period Route List for the THIRD Daily Start Time.(applies to all Route List Tables)
- 4th T = Time Period Route List for the FOURTH Daily Start Time.(applies to all Route List Tables)

2. Press HOLD button after each complete daily entry. Confirmation tone is heard and the display will now update.

<u>Description</u>

**Weekly Schedule Table.** The weekly schedule table determines' what Time Period Route list to use within the.Route List Table. When a call is placed and ultimately sent to a route list (call is not denied) based on the time of day the call is placed the Daily Start Time Table selects the time period to reference in the weekly schedule table. The time period route entered for the specified time period, as determined in the daily start time table and based on the day of week, is then selected and the call will be routed according to the specified time period route list.

Example:
- If a call is placed at 5:45 pm on a Monday then according to the daily start time table (using default values) the entry for time period two of the weekly schedule is checked. Because it is Monday the entry for time period two on Monday is used and the result is that the Time Period Route List number two (again using default values) will be used for all routes. Thus the call is routed according to the entries in Time Period Two route list no matter what route (00-15) is selected. Refer to Figure 665-7 Ex: Daily & Weekly Start Time Tables.



**Figure 665-7 Ex: Daily & Weekly Start Time Tables**

L.    **PROGRAMMING (Cont'd)**

H.    **LCR Routing for Toll Information**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

1.   Press TOLL INFO flexible button (button #8) The following message will be shown on the display phone:

```
LCR ROUTE FOR 555-1212
ENTER ROUTE
```

2.   Enter the two-digit Route List number (00-I 5) for the Route to be referenced in the Route List Table.

3.   Press the HOLD button after programming the Route number. Confirmation tone is heard and the display will now update.

4.   Enable LCR at this point. Refer to Sec. 610.2, System Features Programming, LCR Enable.

This feature adds provisions to the LCR call processing which will allow common call routing for all toll information calls. 1 -(XXX)555-1 212, (XxX)555-1212, I-555-1212 and 555-1212 calls will all be intercepted and sent to a selected route in the Route List Table. Numbers dialed will be integrated and if it is determined to be a toll information call, either preceded with an area code or without or with a leading digit 1 or not, the call will be sent to the route designated in programming.

**Default:** By default, Toll Information Calls will be to Route List Table zero (0) which will allow toll information calls to be placed on the system at default.

A Toll Information route will be chosen over a 3-Digit or 6-Digit route assignment if both are **assigned.**

Entering the pound key twice [##] will deny all Toll Information calls.

| NOTE | *Local information calls (555-1212 or 1-555-1212) must be programmed separately within me 3-Digit Area/Office Code Table.* |
|------|---------------------------------------------------------------|

| TOLL INFORMATION ROUTE LIST TABLE | DEFAULT 00 | |
|-----------------------------------|------------|--|

**Figure 665-8 Ex: LCR Toll Information Routing Pgm Form**

## LCR PROGRAMMING (Cont'd)

### I. Default LCR Database

Programming Steps

Description

In an effort to decrease installation and set up time, usually associated with LCR, a default LCR database has been incorporated. The default LCR database will provide basic routing for local and long distance dialing. Default entries have been made in the 3-Digit Table for local office codes (NNX's) and all area codes (NPA's). Six routes have been established with the default database for routing of all calls under default. The entire default database'is shown in Figure 675-8 DB Printout of LCR Default.

# TABLE OF CONTENTS FOR SECTION 670

# SECTION 670
# INITIALIZE DATABASE PARAMETERS

## 670.1    INTRODUCTION

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If Database Parameters need to be initialized:

1. Press FLASH and dial [80]. The following message will be shown on the display of a display phone:

    INITIALIZE DATA-BASE
    ENTER BUTTON NUMBER

Description

This section describes the procedures and steps necessary to initialize the system database returning any programmed data to its original or default value. The entire system database may be initialized or various portions of the database may be individually initialized. In addition to initialization of the entire database, a system reset (Button #20) command is also included in this section for clearing meantime errors without initializing the database.

The buttons on the key telephone are defined as shown below when entering the Initializing Data-Base Parameters programming area:

| 1 | a | SYSTEM PARAMETERS | | HUNT GROUPS | 11 | A |
|---|---|---|---|---|---|---|
| 2 | W | CO LINE ATTRIBUTES | | ACD* or UCD GROUPS | 12 | S |
| 3 | E | STATION ATTRIBUTES | | VOICE MAIL* GROUPS | 13 | D |
| 4 | R | PORT - STA/CO | | | 14 | F |
| 5 | T | EXCEPTION TABLES | | | 15 | G |
| 6 | Y | SYSTEM SPEED | | | 16 | H |
| 7 | U | LCR* TABLES | | | 17 | J |
| 8 | I | ENTIRE SYSTEM | | | 18 | K |
| | SO | ICLID* TABLES | | | 19 | L |
| 10 | P | DIRECTORY DIAL TABLES | | RESET | 20 | ; |

*Features available with optional software.

## INIT DATABASE PARAMETERS (Cont'd)

### A. Initialize System Parameters

| Programming Steps | Description |
|---|---|

If System Parameters need to be initialized:

1. Press the System Parameters flexible button (Button #1). The following message will be shown on the display phone:

```
INITIALIZE SYS PARAM
PRESS HOLD
```

2. To initialize the system parameters, press the HOLD button. Confirmation tone is heard.

The system parameters may be initialized setting all data fields to their original, default values. The following data fields are returned to their default values upon initializing the System parameters.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH01 | 1 | System Hold Recall | 060 seconds |
| | 2 | Exclusive Hold Recall | 180 seconds |
| | 3 | Attendant Recall Timer | 01 minutes |
| | 4 | Transfer Recall Timer | 045 seconds |
| | 5 | Preset Forward Timer | 10 seconds |
| | 6 | Call Forward No Answer | 015 seconds |
| | 7 | Pause Timer | 2 seconds |
| | 8 | Call Park Timer | 180 seconds |
| | 9 | Conference/DISA Timer | 10 minutes |
| | 10 | Paging Timeout Timer | 15 seconds |
| | 11 | CO Ring Detect Timer | 300 milliseconds |
| | 12 | DISA/SLT Receiver Timer | 020 seconds |
| | 13 | MSG Wait Reminder Tone | 000 minutes |
| | 14 | SLT Hook-flash Timer | 10 (1 seconds) |
| | 15 | SLT Hook-flash Debounce | 010 (.1 second) |
| | 16 | SMDR Call Qualification Timer | 30 sec. |
| | 17 | Auto Call Back Timer | 00 sec. (disabled) |
| | 18 | Reminder Ring Timer | 00 sec. (one burst) |
| | 19 | Release Guard Timer | 300 milliseconds |
| FLASH 05 | 1 | Attendant Override | Disabled |
| | 2 | Hold Preference | System HOLD |
| | 3 | External Night Ringing | Disabled |
| | 4 | Executive Warning Tone | Enabled |
| | 5 | Page Warning Tone | Enabled.. |
| | 6 | Background Music | Enabled |
| | 7 | LCR Enable | Disabled |
| | 8 | Forced Account Codes | Disabled |
| | 9 | Group Listening | Disabled |
| | 10 | Idle Speaker Mode | Disabled |
| | 11 | Call Cost Display Feature | Disabled |
| | 12 | Music On Hold | Enabled |
| | 13 | Handset Receiver Gain | Disabled |

## INIT. DATABASE PARAMETERS (Cont'd)

### Initialize System Parameters (Cont'd)

Programming                                          Description

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 05 | 14 | Call Qualifier Tone Option | Disabled |
| ADDITIONAL SYSTEM FEATURES: | | | |
| FLASH 06 | 1 | Barge-in Warning Tone | Enabled |
| SYSTEM FLASH RATES: | | | |
| FLASH 07 | 1 | Incoming CO Line Ringing | 30 ipm flash |
| | 2 | incoming Intercom Ringing | 120 ipm flutter |
| | 3 | Call Forward | 30 ipm flash |
| | 4 | Message Waiting | 15 ipm flash |
| FLASH 10 | | Attendant Assignment | STA 100 |
| FLASH 11 | I-4 | Time and Date Format | 12 HR, M/D/Y |
| FLASH 12 | | PBX Dialing Codes | None |
| FLASH 13 | 1 | Exec/Secy Pair #1 | None |
| | 2 | Exec/Secy Pair #2 | None |
| | 3 | Exec/Secy Pair #3 | None |
| | 4 | Exec/Secy Pair #4 | None |
| FLASH 14 | 1 | Relay #1 | None |
| | 2 | Relay #2 | None |
| | 3 | Relay #3 | None |
| | 4 | Sensor #1 | None |
| | 5 | Sensor #2 | None |
| | 6 | Sensor #3 | None |
| | 7 | | |
| | a | Stations | None |
| | 11 | | |
| | 12 | Relay/Sensor #1 | None |
| | 13 | Relay/Sensor #2 | None |
| | 14 | Relay/Sensor #3 | None |
| | 15 | Relay/Sensor #4 | None |
| FLASH 15 | 1 | Port #1 ("On-Board" RS-232C) | 2400 |
| | 2 | Port #2 ("On-Board" Modem) | 1200 |
| | 3 | Port #3 (Backplane RS-232C) | 2400 |
| | 4 | Port #4 (Backplane RS-232C) | 2400 |
| FLASH 20 | 1 | DISA Access Code | 000 |
| | 2 | Data Base Admin. Access | [DBAM] 3226 |
| FLASH 21 | 1 | SMDR | NO (disabled) |
| | 2 | Reported Call Type | LD only |
| | 3 | Print Format | 80 column |
| | 4 | SMDR Baud Rate | 2400 |
| | 5 | SMDR Reporting Port | Port #1 |

## INIT. DATABASE PARAMETERS (Cont'd)

### Initialize System Parameters (Cont'd)

Programming Steps                                                   Description

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH22 | 1 | Night Mode Operation | Manual |
|  | 2 | ANM Schedule - Mon. | 08:00/1 7:00 |
|  | 3 | ANM Schedule - Tues. | 08:00/1 7:00 |
|  | 4 | ANM Schedule - Wed. | 08:00/1 7:00 |
|  | 5 | ANM Schedule - Thur. | 08:00/17:00 |
|  | 6 | ANM Schedule - Fri. | 08:00/17:00 |
|  | 7 | ANM Schedule - Sat. | ##:##l##.#### |
|  | 8 | ANM Schedule - Sun. | ##:##/##:## |
| FLASH 23 | 1-4 | Directory Dialing Table | None |
| FLASH 24 | I-I2 | Flexible Card Assignments | 4 Station, 4 CO Line, 4 Station |

## **'''T. DATABASE PARAMETERS (Cont'd)**

### **B. Initialize CO Line Attributes**

<u>Programming Steps</u>

If CO Line Attributes need to be initialized:

1.  Press the CO Line Attributes flexible button (Button #2). The following message will be shown on the display phone:

```
INITIALIZE CO LINES
PRESS HOLD
```

2.  To initialize the CO Line Attributes, press the HOLD button. Confirmation tone will be heard.

<u>Description</u>

The CO Line parameters may be initialized setting all data fields-to their original, default values. The following data fields are returned to their default vaiue upon initializing the CO Line parameters.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 40 | 1 | DTMF/Pulse Signaling | ALL Lines set for DTMF |
| | 2 | CO/PBX Marking | ALL Lines set for CO |
| | 3 | Universal Night Answer | Enabled on all Lines |
| | 4 | DISA TRK-to-TRK (Conf) | Enabled on all Lines |
| | 5 | Automatic Privacy | Enabled on all tines |
| | 6 | Loop Supervision | NO (disabled on all lines) |
| | 7 | DISA Operation | NO (disabled on all lines) |
| | 8 | Flash Time | 10 (1 second) |
| | 9 | Line Group Assignment | All Lines are in Group 1 |
| | 10 | Line Class of Service | All Lines assigned COS1 |
| | 11 | ! CO Line Ring Assignment | All Lines Ring at STA 100 |
| | 12 | CO Line Identification | None |
| | 13 | Trunk Direction | Incoming-Outgoing |
| | 14 | Ring Delay Timer | 00 (disabled) |
| FLASH 41 | 1 | Dial Pulse Break/Make Ratio | 60/40 |

## INIT. DATABASE PARAMETERS (Cont'd)

### C.  Initialize Station Attributes

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If Station Attributes need to be initialized:

   1. Press the Station Attributes flexible button (Button #3). The following message will be shown on the display phone:

           INITIALIZE STATIONS
           PRESS HOLD

   2. To initialize the Station Attributes, press the HOLD button. Confirmation tone will be heard.

The Station parameters may be initialized setting all data fields to their original, default values. The following data fields are returned to their default value upon initializing the Station parameters.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 50, Page "A" | A/1 | Page Access | Allowed |
| | Al2 | Do Not Disturb | Allowed |
| | A/3 | Conference | Allowed |
| | A/4 | Executive Override | Not Allowed |
| | A/5 | Privacy Release | Not Allowed |
| | A/6 | System Speed Dial | Allowed |
| | A/7 | Line Queuing | Allowed |
| | A/8 | Preferred Line Answer | Not Allowed |
| | A/9 | Off-Hook Voice-Over | Not Allowed |
| | A/10 | Call Forward | Allowed |
| | All 1 | Forced LCR | Not Allowed |
| | A/12 | ACD* Supervisor Barge-In | Not Allowed |
| | A l l 3 | Executive Override Blocking | Allowed at all stations |
| | A/14 | CO Line Ringing Options | Muted Ringing allowed |
| FLASH 50, Page "B" | B/1 | Station ID | All Key Stations default to Station ID 0 (keyset), All Single Line Telephones and OPX's default to ID 5 (SLT w/o MSG Wait) |
| | B/2 | Station Class of Service | All Stations assigned COS 1 |
| | B/3 | Speakerphone Option | All Stations assigned option 1 |
| | B/4 | Pick-Up Group(s) | All Stas assigned into Group 1 |
| | B/5 | Paging Zone(s) | All Stas assigned into Zone 1 |
| | B/6 | Preset Forward Destination | None assigned |
| | B/7 | CO Line Group Access | All Sta assigned access to Group I 1 |
| | B/8 | LCR Class of Service | All Stations given an LCR COS of 0 |
| | B/9 | Off-Hook Preference | Is allowed to all stations with the ability to change the assignment |
| | B/10 | Flex Button Assignment | See default button assignment |

Features available with optional software.

| | | | |
|---|---|---|---|
| 1 | STA 100 | CO 1 | 11 |
| 2 | STA 101 | CO 2 | 12 |
| 3 | STA 102 | CO 3 | 13 |
| 4 | STA 103 | CO 4 | 14 |
| 5 | STA 104 | CO 5 | 15 |
| 6 | STA 105 | CO 6 | 16 |
| 7 | STA 106 | CO 7 | 17 |
| 8 | STA 107 | CO 8 | 18 |
| 9 | STA 108 | LOOP | 19 |
| 10 | STA 109 | POOL | 20 |

| CAMP ON | LINE QUE | CALL BACK | PICK UP |
|---|---|---|---|
| **MSG** | **FWD** | **DND** | **CONF** |

| 1 | ABC 2 | DEF 3 | HOLD |
|---|---|---|---|
| GHI 4 | JKL 5 | MNO 6 | TRANS |
| PRS 7 | TUV 8 | WXY 9 | FLASH |
| * | OPER 0 | # | SPEED |
| | | | MUTE |
| | | | ON/OFF |

H  T  P          SPKR VOL          RING VOL

**Figure 670-I 34-Button Default Button Mapping**

| CO 1 | c o 2 | LOOP | POOL |
|------|-------|------|------|
| MSG | FWD | DND | C  O  N  F |

| | ABC 2 | DEF 3 | HOLD |
|---|---|---|---|
| 1 | | | |
| GHI 4 | JKL 5 | MNO 6 | TRANS |
| | | | FLASH |
| PRS 7 | TUV 8 | WXY 9 | SPEED |
| | | | MUTE |
| ✳ | OPER 0 | # | ON/OFF |

H  T  P          SPKR VOL          RING VOL

**Figure 670-2 14-Button Default Button Mapping**

**INIT. DATABASE PARAMETERS (Cont'd)**

**D. Initialize Station and CO Port Parameters**

| Programming Steps | Description |
|---|---|
| If Group Parameters need to be initialized: | Station and CO Port parameters may be initialized setting all stations and all CO Lines back to their original, default values. The following data fields are returned to their default values upon initializing the CO/Station Port parameters. |

1. Press the Station/CO Port Parameters flexible button (Button #4). The following message will be shown on the display phone:

```
INITIALIZE PORT - STA/CO
PRESS HOLD
```

2. To initialize the Station/CO Port parameters, press the HOLD button. Confirmation tone will be heard.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 42 | 1 | Card Slot #1 - Ports 1-12 | CO Lines 1-12 |
| | 2 | Card Slot #2 - Ports 13-24 | CO Lines 13-24 |
| | 3 | Card Slot #3 - Ports 25-36 | CO Lines 25-36 |
| | 4 | Card Slot #4 - Ports 37-48 | CO Lines 37-48 |
| FLASH 52 | 1 | Card Slot #1 - Ports 1-12 | Stations 100-111 |
| | 2 | Card Slot #2 - Ports 13-24 | Stations 112-123 |
| | 3 | Card Slot #3 - Ports 25-36 | Stations 124-135 |
| | 4 | Card Slot #4 - Ports 37-48 | Stations 136-147 |
| | 5 | Card Slot #5 - Ports 49-60 | Stations 148-159 |
| | 6 | Card Slot #6 - Ports 61-72 | Stations 160-171 |
| | 7 | Card Slot #7 - Ports 73-84 | Stations 172-183 |
| | 8 | Card Slot #8 - Ports 85-96 | Stations 184-195 |

**INIT. DATABASE PARAMETERS (Cont'd)**

**E. Initialize Exception Tables**

<u>Programming Steps</u>

If Exception Tables need to be initialized:

1. Press the Exception Tables flexible button (Button #5). The following message will be shown on the display phone:

```
INITIALIZE EX TABLES
PRESS HOLD
```

2. To initialize the Exception Tables, press the HOLD button. Confirmation tone will be heard.

<u>Description</u>

The Exception Table parameters including the Allow/Deny Tables and the Special Tables may be initialized setting all tables to their original, default values. The following Tables are cleared returning to their default value uoon initializina the Exception Tables parameters:

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 70 | 1 | Allow Table - A | Table Cleared (no entries |
| | 2 | Deny Table - A | Table Cleared (no entries) |
| | 3 | Allow Table - B | Table Cleared (no entries) |
| | 4 | Deny Table - B | Table Cleared (no entries) |
| | 5 | Special Table 1 | Table Cleared (no entries allowed, no area code specified) |
| | 6 | Special Table 2 | Table Cleared (no entries allowed, no area code specified) |
| | 7 | Special Table 3 | Table Cleared (no entries allowed, no area code specified) |
| | 8 | Special Table 4 (home Area Code) | Table Cleared (no entries allowed) |
| | 9 | Area Code Table 1 | |
| | 10 | Area Code Table 2 | |
| | 11 | Area Code Table 3 | |
| | | Display Tables | |

**INIT. DATABASE PARAMETERS (Cont'd)**

**F.    Initialize System Speed Numbers**

| Programming Steps | Description |
|---|---|

Programming Steps

If System Speed bins need to be initialized:

1.    Press the System Speed flexible button (Button #6). The following message will be shown on the display phone:

```
INITIALIZE SYS SPEED NO
PRESS HOLD
```

2.    To initialize the System Speed bins, press the HOLD button. Confirmation tone will be heard.

Description

Numbers entered into the System Speed dial Table may be initialized clearing all bins to their original, default value (empty). All bins 20 through 99 are cleared returning to their default value (empty) upon initializing the Speed Dial Table.

## INIT. DATABASE PARAMETERS (Cont'd)

### G. Initialize LCR Tables

<div style="display:flex">

Programming Steps

If LCR Tables need to be initialized:

1.  Press the LCR* Tables flexible button (Button #7). The following message will be shown on the display phone:

> **INITIALIZE LCR TABLES**
> PRESS HOLD

2.  To initialize the LCR* Tables, press the HOLD button. Confirmation tone will be heard.

Description

*This feature is available with optional software.*

The LCR* Tables may be initialized setting all tables to their original, default values. The following tables will be reset to their original default value after initialization of the LCR tables:

- 3-Digit Table
- 6-Digit Table
- Exception Table
- Route List Table
- Insert/Delete Table
- Daily Start Time Table
- Weekly Schedule
- Toll Information Route

</div>

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 75 | 1 | 3-Digit Routing Table | Table Cleared (no entries |
| | 2 | 6-Digit Routing Table | Table Cleared (no entries) |
| | 3 | Exception Table | Table Cleared (no entries) |
| | 4 | Route List Table | Table Cleared (no entries) |
| | 5 | Insert/Delete Table | Table Cleared (no entries) |
| | 6 | Daily Start Time Table | Table Cleared (no entries) |
| | 7 | Weekday (Weekly) Schedule | Table Cleared (no entries) |
| | 8 | Toll Information Table | Table Cleared (no entries) |

*Features available with optional software.

## INIT. DATABASE PARAMETERS (Cont'd)

### I-I.  Initialize System Database and Reset (all parameters)

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If System needs to be initialized:

1.  Press the System and Reset flexible button (Button #8). The following message will be shown on the display phone:

```
┌──────────────────────────────┐
│  INITIALIZE DATA-BASE         │
│  PRESS HOLD                   │
└──────────────────────────────┘
```
performance.

2.  To initialize the entire system database, press the HOLD button. The system will perform a hard reset.

To completely initialize the database area including all non-programmable parameters held in Static RAM (SRAM) and reset the system also clearing any meantime errors that may exist this command may be used. The system will require reprogramming of any customer specific data after using this command. This provides an easy way to re-initialize the system and clearing any meantime errors that may have accumulated inhibiting system operation or

## INIT. DATABASE PARAMETERS (Cont'd)

### I.    initialize ICLID Parameters

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If the ICLID* Table(s) need to be initialized:

1.   Press the ICLID* TABLE flexible button (Button #9). The following message will be shown on the display phone:

> **INITIALIZE ICLID**
> **PRESS HOLD**

2.   To initialize the ICLID* Table(s), press the HOLD button. Confirmation tone will be heard.

Description

*This feature is available with optional software.*

The ICLID* Tables parameters may be initialized setting all data fields to their original, default values.

| PROGRAM  CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH  43 | 1 | ICLID* Ringing Assignments | No stations are assigned |
| FLASH  56 | 1 | ICLID* Enable/Disable | Disabled |
|  | 2 | ICLID* Name Entry | Number is shown on LCD |
|  | 3 | ICLID* Baud Rate Display | 2400 Baud |
|  | 4 | ICLID* Port Assignment | Port #1 |

*Features available with optional software.

## INIT. DATABASE PARAMETERS (Cont'd)

**J.    Initialize Directory Dialing Table
       Parameters**

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

If Directory Dialing Table Parameters need to be initialized:

1.  Press the Directory Dialing Table Parameters flexible button (Button #10). The following message will be shown on the display phone:

```
INITIALIZE DIR-DIAL
PRESS HOLD
```

2. To initialize the Directory Dialing Table parameters, press the HOLD button. Confirmation tone will be heard.

The Directory Dialing Table parameters may be initialized setting all data fields to their original, default values.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 23 | | Directory Dialing List | |
| | 1 | Bin/ICM | |
| | 2 | Name Entry | |
| | 3 | Clear Entry | |
| | 4 | Back Space | |
| FLASH 55 | | Local Number/Name Translation Table | |
| | 1 | Route Number | |
| | 2 | Phone Number | |
| | 3 | Name | |
| | 4 | Clear Entry | |
| | | Back Space | |

**INIT. DATABASE PARAMETERS (Cont'd)**

**K.   Initialize Hunt Group Parameters**

<u>Programming Steps</u>

If Group Parameters need to be initialized:

1. Press the Hunt Group Parameters flexible button (Button #1 1). The following message will be shown on the display phone:

```
INITIALIZE HUNT GROUP
PRESS HOLD
```

2. To initialize the Hunt Group parameters, press the HOLD button. Confirmation tone will be heard.

<u>Description</u>

Hunt Group parameters may be initialized setting all data fields to their original, default values.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 30 | 1-8 | Hunt Groups 450-457 | No Hunt Groups established |
|  | 9 | Station or Pilot Hunting | All Hunt Groups default using Pilot Hunting |

## INIT. DATABASE PARAMETERS (Cont'd)

### L.   Initialize ACD or UCD Group Parameters

Programming Steps

If ACD* or UCD Group Parameters need to be initialized:

1.   Press the ACD* or UCD Group Parameters flexible button (Button #12). The following message will be shown on the display phone:

> **INITIALIZE ACD GROUP**
> **PRESS HOLD**

2.   To initialize the ACD* or UCD Group parameters, press the HOLD button. Confirmation tone will be heard.

Description

***This feature is available with optional software.***
ACD* or UCD Group parameters may be initialized setting all data fields to their original, default values.

| PROGRAM CODE | FLEX BUTTON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 60 | A/1-8 | ACD*/UCD Groups 550-557 | No Groups established |
|  | A/9 | Alternate ACD*/UCD Group Assignments | No Alternates group assignments is made |
|  | A/10 | ACD*/UCD Overflow Assignment | No Overflow assignment is made |
|  | A/11 | ACD*/UCD RAN Announcement Table Assignments | No RAN tables are specified |
|  | Al12 | ACD* Supervisor Programming | No Supervisor assigned |
|  | B/1-8 | ACD*/UCD Station Assignments | No stations are assigned |
| FLASH 61 | 1 | ACD*/UCD Ring Timer | 060seconds |
|  | 2 | ACD*/UCD Message Interval Timer | 060seconds |
|  | 3 | ACD*/UCD Overflow Timer | 060seconds |
|  | 4 | i ACD*/UCD Wrap-Up Timer | 004seconds |
|  | 5 | ACD*/UCD No Answer Recall | 000 seconds (disabled) |
|  | 6 | ACD*/UCD No Answer Retry | 300seconds |
|  | 7 | ACD* Guaranteed Msg Timer | 10  seconds |
| FLASH 62 | 1-8 | RAN Tables 1 through 8 | No RAN parameters set |
| FLASH 64 | A/1 -8 | ACD* Groups 558-565 | No ACD groups established |
|  | A/9 | Alternate ACD* Group Assignments | No ACD Alternates group assignments is made |
|  | A/10 | ACD* Overflow Assignment | No Overflow assignment is made |
|  | A/11 | ACD* RAN Announcement Table Assignments | No RAN tables are specified |
|  | A l 1 2 | ACD* Supervisor Programming | No Supervisor assigned |
|  | B/1-8 | ACD* Station Assignments | No stations are assigned |

*Features available with optional software

## INIT. DATABASE PARAMETERS (Cont'd)

**M.   Initialize VM Group Parameters**

Programming Steps

If VM* Group Parameters need to be initialized:

I.   Press the VM* Group Parameters flexible but-
ton (Button #13). The following message will
be shown on the display phone:

> **INITIALIZE VM GROUP**
> PRESSHOLD

2.   To initialize the VM* Group parameters, press
the HOLD button. Confirmation tone will be
heard.

Description

***This feature is available with optional software.***

VM* Group parameters may be initialized setting all
data fields to their original, default values.

| PROGRAM CODE | FLEX BUT-TON | FEATURE | DEFAULT VALUE (after initializing) |
|---|---|---|---|
| FLASH 65 | I-8 | Voice Mail* Groups 440-447 | No Voice Mail groups are established |
| | 9 | Alternate Voice Mail* Group Assignments | No Alternate VM group assignment is made |
| | 10 | Leave Table | No outpulsing table is referenced |
| | 11 | Retrieve Table | No outpulsing table is referenced |
| | 12 | Voice Mail * Station Assignments | NO stations are assigned |
| FLASH 66 | I-7 | Voice Mail* Out-Pulsing Tables for in-band signaling | Out-pulse tables are empty by default |
| | 8 | Voice Mail* Disconnect Table | Disconnect table is empty |
| FLASH67 | l | In-Band Digits for Incoming CO Calls | Disabled by default |
| | 2 | Voice Mail* Transfer/Forward | Disabled by default |

*Features available with optional software.

**INIT. DATABASE PARAMETERS (Cont'd)**

**N. System Reset**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If the system needs to be reset but not initialized:

1. Press the RESET flexible button (Button #20). The following message will be shown on the display phone:

```
RESET SYSTEM
PRESS HOLD
```

2. To reset the system without initializing the database, press the HOLD button. No Confirmation tone will be heard and the system will now reset.

This feature provides a hard system reset from the keyset instead of the KSU. This is useful in cases where miscellaneous data errors have occurred and the system needs to be reset without initializing the entire database.

# TABLE OF CONTENTS FOR SECTION 675

# SECTION 675

# PRINTING SYSTEM DATABASE PARAMETERS

## 675.1    INTRODUCTION

| Programming Steps | Description |
|---|---|

### Programming Steps

If the system is in the programming mode, continue using the program codes. If starting to program here, enter the programming mode. Refer to Sec. 600.2, Program Mode Entry (Key Station).

If DataBase Parameters need to be printed:

1.  Press FLASH and dial [85]. The following will be shown on the display phone:

```
PRINT DATA-BASE
ENTER BUTTON NUMBER
```

2.  Choose the portion of the database to be printed by pressing the appropriate button in the flexible button field.

### Description

This section describes the procedures and steps necessary to print Data Base Parameters and various portions of the system.

The buttons on the key telephone are defined as shown below when entering the Print Data Base Parameters programming area.

| 1 Q | SYSTEM PARAMETERS | HUNT GROUPS | 11 A |
| 2 W | CO LINE ATTRIBUTES | ACD* or UCD GROUPS | 12 S |
| 3 E | STATION ATTRIBUTES | VOICE MAIL* GROUPS | 13 D |
| 4 R | PORT - STA/CO | | 14 F |
| 5 T | EXCEPTION TABLES | | 18 G |
| 6 Y | SYSTEM SPEED | | 18 H |
| 7 U | LCR TABLES | | 17 J |
| 8 I | ENTIRE SYSTEM | | 18 K |
| 9 O | ICLID* TABLES | | 19 L |
| 10 P | DIRECTORY DIAL TABLES | ABORT PRINTING | 20 ; |

*Features available with optional software.

With a printer connected to the RS-232C port (future) of the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows the entire database to be "dumped" as a permanent record which can serve as a hard copy of the database.

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figures for examples of the database printouts. Also refer to the following paragraphs for instructions on printing only portions of the database.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port (future) on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

System DataBase Printouts (Cont'd)

## A. Printing System Parameters

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If a printout of all System Parameters is desired:

1. Press the SYSTEM PARAMETERS flexible button (Button #1). The following message will be shown on the display phone:

```
PRINT SYS PARAM
PRESS HOLD
```

2. To print the system parameter database , press the HOLD button. The following message will be shown on the display phone:

```
PRINTING SYS PARAM
```

When the system has finished sending the information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows the System Parameters database to be "dumped" as a permanent record which can serve as **a** hard copy.

The system Baud rate must match that of the, printer or receiving device.

When printing the System Parameters the following data is printed;

- All System Timers
- All System wide options (i.e. external night ringing, Hold preference etc...)
- Attendant programming
- Other system assignments (i.e. Page/Relay Assignments, Executive/Secretary, SMDR etc...)
- Weekly Night Mode schedule

Refer to the following Figure for an example of the system parameters database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

**System Timers:**

SHR= System Hold Recall Timer
EHR= Exclusive Hold Recall Timer
ART= Attendant Recall Timer
XFR= Transfer Recall Timer
PFT= Preset Forward Timer
CFN= Call Forward No-Answer Timer
PT= Pause Timer
CPT= Call Park Timer
CFT= Conference Timer
PTO= Page Timeout Timer
COT= CO Ring Detect Timer
SRT= Single Line Receiver Timer
MWT= Message Wait Reminder Tone
HFT= Hook Flash Timer
HFD= Hookswitch Bounce Timer
CQT= SMDR Call Qualification Timer
ACB= Auto Call Back Timer
RR= Reminder Ring Timer
RG= Release Guard Timer

System **Features:**

AO=Attendant Override
SY= Hold Preference
ENR= External Night Ringing
EO=Exec Override Warn Tone
PW= Page Warning Tone
BGM= Background Music
LCR= LCR Enable/Disable
AC=Forced Account Codes
GL=Group Listening
S=Idle Speaker Mode
CC= Call Cost Display Feature
MH= Music On Hold
V= Handset Receiver Gain
Q= Call Qualifier Tone Option

```
SYSTEM   PARAMETERS

Eng. Ver. 2.3D-0FFF
SYSTEM TIMERS

SHR  EHR  ART  XFR  PFT  CFN  PT
 60  180    1   45   10   15   2

CDT  CFT  PTO  COT  SRT  MWT  HFT
180   10   15    3   20    0   10

HFD  CQT  AC3  RR  RG
 10   30    0   0   3

SYSTEM FEATURES

AO  SY  ENR  EO  PW  BGM  LCR
 N   Y    N   Y   Y    Y    N

AC  GL  S  CC  MH  V  Q
 N   N  N   N   Y  N  N

BARGE IN WARN TONE ENABLED

SYSTEM LED FLASH RATES

INC CO RING        30 IPM FLASH
INC ICM RING      120 IPM FLUTTER
CALL FORWARD       30 IPM FLASH
MESSAGE WAITING    15 IPM FLASH

ATTENDANT STATIONS
 100   ###   ###

DATE & TIME FORMAT
MM/DD/YY, 12 HOURS

PBX DIALING CODES
 ##   ##   ##   ##   ##

EXECUTIVE/SECRETARY PAIRINGS
1 =    ###    ###
2 =    ###    ###
3 =    ###    ###
4 =    ###    ###

RELAY ASSIGNMENTS
ON BOARD RELAY
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
6 NONE
7 NONE
RELAY/SENSOR ###
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
6 NONE
```

```
RELAY/SENSOR  ###
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
6 NONE
RELAY/SENSOR   ###
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
6 NONE
RELAY/SENSOR  ###
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
6 NONE

I/O BAUD RATE
-    -
Port 1 / On Board = 2400
Port 2 / Modem    = 1200
Port 3 /  RS232   = 2400
Port 4 / RS422    = 2400

ACCESS CODE
1 DISA ACCESS         100
2 ADMIN PASSWORD      3226

SDR  TPE  PNT  BAUD  PORT
 N    LD   80  2400     1

AUTO NIGHT MODE      N

WEEKLY NIGHT MODE SCHEDULE

              END     START
     DAY      TIME    TIME

   M  0      0800     1700
   T  1      0800     1700
   W  2      0800     1700
   T  3      0800     1700
   F  4      0800     1700
   S  5      ####     ####
   S  6      ####     ####

DIAL PULSE
 RATIO   SPEED
  6040   10PPS

SYSTEM SLOT TYPE

S S S S C C C C S S S
```

**Figure 675-I DB Printout of System Parameters**

**System DataBase Printouts (Cont'd)**

**B.   Printing CO Line Attributes**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If a printout of the CO Line Attributes is desired:

1.  Press the CO LINE ATTRIBUTES flexible button (Button #2). The following message will be shown on the display phone:

> **PRINTING CO LINES**
> **PRESS HOLD**

2.  To print the data for ALL CO Lines, press the HOLD button. To print CO Line data for a specified CO Line Range enter four digits to specify the CO Line range (two digits for the first line within the range and two digits for the last line in the range i.e. [0115]). If a printout of only one line is desired enter that line twice (i.e. [0101]). Then press the HOLD button.

3.  The following message will be shown on the display phone and the CO Line data will be printed:

> **PRINTING CO LINES**

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of CO Lines or the entire CO Line database to be "dumped" as a permanent record which can serve as a hard copy of the CO Line attribute database .

The system Baud rate must match that of the printer or receiving device.

When printing the CO Line attributes the following data is printed:

- All CO Line parameters within the specified range.
- CO Line ringing assignments within the specified range.
- Dial Pulse Ratio and Speed settings

Refer to the following Figure for an example of the CO Line attribute database printout.

Default:  None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

**Definition of Terms for CO Lines Printout**

SIGNAL= DTMF/Dial Pulse                         FLTM= Flash Timer
TYPE= CO/PBX                                     GRP= CO Line Group
UNA= Universal Night Answer                      COS= CO Line Class of Service
PRI= CO Line Privacy                             DIR= Trunk Direction
SUPV= Loop Supervision                           RD= Ring Delay Timer
DISA= Direct Inward System Access

```
CO  LINE  ATTRIBUTES

co 01

  LINE 01

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

 RING  ASSIGNMENTS
  1009

 co  02
 -    -
  LINE 02

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

RING ASSIGNMENTS
 100B

co   03
 -    -
j LINE 03

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

 RING  ASSIGNMENTS
  1003

CO 04

  LINE 04

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

RING ASSIGNMENTS
 100B
```

```
co  05
 -   -
 LINE 05

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   JO

RING ASSIGNMENTS
 100B

co  06
 -   -
 LINE 06

SIGNAL  TYPE  UNA  CONF  DRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

RING  ASSIGNMENTS
 100B

co  07
 -   -
 LINE  07

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

RING ASSIGNMENTS
 100B
co 08
 -   -
 LINE 08

SIGNAL  TYPE  UNA  CONF  PRI
DTMF    CO    Y    Y     Y

 SUPV  DISA  FLTM  GRP  COS  DIR  RD
  N     N    10    1    1    2   00

RING ASSIGNMENTS
 100B

...and so on thru CO Lines 48
```

**Figure 675-2 DB Printout of CO line Attributes**

**System DataBase Printouts (Cont'd)**

**C. Printing Station Attributes**

Programming Steps                                              Description

If a printout of the Station Attributes is desired:

1. Press the STATION ATTRIBUTES flexible button (Button #3). The following message will be shown on the display phone:

```
PRINT STATIONS
PRESS HOLD
```

2. To print data for all stations, press the HOLD button. To print Station data for a specified Station Range enter six digits to specify the Station range (three digits for the first station within the range and three digits for the last station in the range i.e. [100109]). If a printout of only one station is desired enter that station twice (i.e. [101 101]). Then press the HOLD button.

3. The following message will be shown on the display phone and the requested information will be printed:

---

PRINTING STATIONS

---

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

When printing the Station attributes the following data is printed;

- All current station parameters

Refer to the following Figure for an example of a Station attribute database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

**Paae "A" Features:**

PAGE= Paging Access
DND= Do Not Disturb
CONF= Conference
EOR=Executive Override
PRI= Privacy
SPD= System Speed Dial Access
QUE= Line Queue Access
PLA= Preferred Line Answer
OHVO=Off-Hook Voice Over
FWD= Station Call Forward Access
LCR= LCR Class of Service
SUB= ACD Supervisor Monitor Barge-in
REM= CO Line Ringing Options

**Pa e "5" Features:**

SID= Station ID
AID= Associated ID (DSS/DLS Console)
DCOS= Day Class of Service
NCOS= Night Class of Service
SPK= Speakerphone Option
PICKUP= Pickup Groups
PAGE= Paging Groups
PREFWD= Preset Forward Assignment
LCOS=LCR Class of Service
BUTTONS= Refer to Table 630-2 Flexible Button Display Designations, Page 630-22.

STATION ATTRIBUTES

STA 100

```
PAGE DND CONF  EOR PRI SPD QUE
  Y   Y   Y   N/A  Y   Y   Y
PLA OHVO FWD LCR SUB REM
  N   N   Y   N   N   N
SID AID DCOS NCOS SPK
  0       1    i    0
PICKUP PAGE PREFWD LCOS
  1      1           0
CO ACCESS 1

BUTTONS
01D100  02D101  03D102
04D103  05D104  06D105
07D106  08D107  09D108
10D109  11D110  12D111
13CO01  14CO02  15CO03
16CO04  17CO05  18CO06
19LP    20PL1   21CBK
22FWD   23DND   24CNF

PRIME KEY  0 Y
```

**STA** 101

```
PAGE DND CONF  EOR PRI SPD QUE
  Y   Y   Y   N/A  Y   Y   Y
PLA OHVO FWD LCR SUB REM
  N   N   Y   N   N   N
SID AID DCOS NCOS SPK
  0       1    1    0
PICKUP PAGE PREFWD LCOS
  1      1           0
CO ACCESS 1

BUTTONS
01D100  02D101  03D102
04D103  05D104  06D105
07D106  08D107  09D108
10D109  11CO01  12CO02
13CO03  14CO04  15CO05
16CO06  17CO07  18CO08
19LP    20PL1   21CPO
22LQU   23CBK   24PKU
25MSG   26FWD   27DND
28CNF

PRIME KEY  0 Y
```

STA 102

```
PAGE DND CONF  EOR PRI SPD QUE
  Y   Y   Y   N/A  Y   Y   Y
PLA OHVO FWD LCR SUB REM
  N   N   Y   N   N   N
SID AID DCOS NCOS SPK
  0       1    1    0
PICKUP PAGE PREFWD LCOS
  1                  0
CO ACCESS 1

BUTTONS
01D100  02D101  03D102
04D103  05D104  06D105
07D106  08D107  09D108
10D109  11CO01  12CO02
13CO03  14CO04  15CO05
16CO06  17CO07  18CO08
19LP    20PL1   21CPO
22LQU   23CBK   24PKU
25MSG   26FWD   27DND
28CNF

PRIME KEY  0 Y
```

STA 103

```
PAGE DND CONF  EOR PRI SPD QUE
  Y   Y   Y   N/A  Y   Y   Y
PLA OHVO FWD LCR SUB REM
  N   N   V   N   N   N
SID AID DCOS NCOS SPK
  0       1         0
PICKUP PAGE PREFWD LCOS
  1      1           0
CO ACCESS 1

BUTTONS
03100   02D101  03D102
043103  05D104  06D105
07D106  08D107  09D108
10D109  11CO01  12CO02
13CO03  14CO04  15CO05
16CO06  17CO07  18CO08
19LP    20PL1   21CP0
22LQU   23CBK   24PKU
25MSG   26FWD   27DND
28CNF

PRIME KEY  0 Y
```

...and so on thru stations 195

**Figure 675-3 DB Printout of Station Attributes**

**System DataBase Parameters (Cont'd)**

**D.    Printing CO and Station Port Parameters**

Programming Steps

If CO/Station parameters need to be printed:

1. Press the CO/Station Port Parameters flexible button (Button #4). The following message will be shown on the display phone:

```
  PRINT PORT-STA/CO
PRESS HOLD.D
```

2. To print the CO/Station Port parameters, press the HOLD button. The following message will be shown on the display phone:

```
  PRINTING PORT-STA/CO
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

Description

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figure for an example of a Station attribute database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

```
    CARD     CO
    ___      _____
  01 -  01  02  03  04  05  06  07  08  09  10  11  12
  02 -  13  14  15  16  17  i8  19  20  21  22  23  24
  03 -  25  26  27  28  29  30  31  32  33  34  35  36
  04 -  37  38  39  40  41  42  43  44  45  46  47  48

CARD                  STA
___       _____
  01 - 100 101 102 103 104 105 106 107 108 109 110 111
  02 - 112 113 114 115 116 117 118 119 120 121 122 123
  03 - 124 i25 126 127 128 i29 130 131 132 133 134 135
  04 - 136 137 138 139 140 141 142 143 144 145 146 147
  05 - 148 149 150 151 152 153 154 155 156 157 158 159
  06 - 160 161 162 163 164 165 166 167 168 169 170 171
  07 - 172 173 174 175 176 177 178 179 180 181 182 183
  08 - 184 185 186 187 188 189 190 191 192 193 194 195
```

**Figure 675-4 DB Printout of CO/Station Parameters**

**System DataBase Printouts (Cont'd)**

E.    **Printing Exception Tables**

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

If a printout of the Exception tables are desired:

1. Press the EXCEPT TABLES flexible button (Button #5). The following message will be shown on the display phone:

```
PRINT EX TABLES
PRESS  HOLD
```

2. To print the Except Tables, press the HOLD button. The following message will be shown on the display phone:

```
PRINTING  EX  TABLES
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows each exception table to be printed individually to serve as a permanent record which can be saved as a hard copy of the exception table database .

The system Baud rate must match that of the printer or receiving device.

When printing information from the Exception tables, the following data is printed:

- Allow Table A
- Deny Table A
- Allow Table B
- Deny Table B
- Special Table 1
- Special Table 2
- Special Table 3
- Special Table 4

Refer to the following Figure for an example of the Exception Tables database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

Allow Table A

| | |
|---|---|
| 01 | 11 |
| 02 | 12 |
| 33 | 13 |
| 04 | 14 |
| 05 | 15 |
| 06 | 16 |
| 07 | 17 |
| 08 | 18 |
| **09** | 19 |
| 1**0** | 20 |

Deny **Table  A**

| | |
|---|---|
| 01 | 06 |
| 02 | 07 |
| 03 | 08 |
| 04 | 09 |
| 05 | 10 |

Allow Table B

| | |
|---|---|
| 01 | 11 |
| 02 | 12 |
| 03 | 13 |
| 04 | 14 |
| 05 | 15 |
| 06 | 16 |
| 07 | 17 |
| 08 | 18 |
| 09 | 19 |
| 10 | 20 |

Deny **Table  3**

| | |
|---|---|
| 01 | 06 |
| 02 | 07 |
| 03 | 08 |
| 04 | 09 |
| 05 | 10 |

**SPECIAL**  TABLE  1  **AREA**  **CODE**
—    -   -   -
**ALLOWED**   **OFFICE**   **CODES**


**SPECIAL**   **TABLE**   **2**   **AREA**   **CODE**
————    -    -    -
**ALLOWED**  OFFICE   **CODES**


SPECIAL  **TABLE**   **3**   **AREA**   **CODE**
————    -    -    -
**ALLOWED**   **OFFICE**   **CODES**


**SPECIAL**   **TABLE**   4  HOME  **AREA**  CODE
————————
ALLOWED  OFFICE  **CODES**

**Figure 675-5 DB Printout of Exception Tables**

**System DataBase Printouts (Cont'd)**

F.  **Printing System Speed Bins**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If a printout of the System speed dial entries are desired:

1. Press the SYSTEM SPEED flexible button (Button #6). The following message will be shown on the display phone:

```
PRINT SYS SPEED NO
PRESS HOLD
```

2. To print the System Speed bins, press the HOLD button. The following will be shown on the display phone:

```
PRINTING SYS SPEED NO
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of system speed dial bins or all bins can be "dumped" as a permanent record which can serve as a hard copy of the system speed dial database .

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figure for an example of a System Speed Dial database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

```
SYSTEM  SPEED  -NUMBERS                                                    1
                                                50
  20
                                                51
  21
                                                52
  22
                                                53
  23
                                                54
  24
                                                55
  25
                                                56
  26
                                                57
  27
                                                58
  28
                                                59
  29
                                                60
  30
                                                61
  31
                                                62
  32
                                                63
  33
                                                64
  34
                                                65
  35
                                                66
  36
                                                67
  37
                                                68
  38
                                                69
  39
                                                70
  40
                                                71
  41
                                         . . .and so on thru Speed Numbers 99
  42

  43

  44

  45

  46

  47

  48

  49
```

**Figure 6756 DB Printout of System Speed Numbers**

**System DataBase Printouts (Cont'd)**

**G. Printing LCR Tables**

<u>Programming Steps</u>

If a printout of the LCR* tables are desired:

1.  Press the LCR* TABLES flexible button (Button #7). The following message will be shown on the display phone:

```
PRINT LCR TABLES
PRESS HOLD
```

2.  To print the LCR* Tables, press the HOLD button. The following will be shown on the display phone.

```
PRINTING LCR TABLES
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

<u>Description</u>

***This feature is available with optional software.***

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows each exception table to be printed individually to serve as a permanent record which can be saved as a hard copy of the exception table database .

The system Baud rate must match that of the printer or receiving device.

When printing information from the LCR Tables, the following data is printed:

- Exception Table
- Route List Table
- Insert/Delete Table
- Daily Time Table
- Weekly Time Table
- Toll Tables
- 6-Digit Table
- 3-Digit Table

Refer to the following Figures for examples of the LCR Tables database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

**EXCEPTION CODE TABLE**

| CODE | ROUTE NO |
|------|----------|
| - | - |

I

**ROUTE LIST TABLE**

| RT | TIME | COST | CO GRD | INS/DEL | GRP PR |
|----|------|------|--------|---------|--------|
| 0 | 1 | 026 | 1 | ## | 1 |
| | 2 | 026 | 1 | ## | 1 |
| | 3 | 026 | 1 | ## | 1 |
| | 4 | 026 | 1 | ## | 1 |
| 1 | 1 | 000 | 1 | ## | 1 |
| | 2 | 000 | 1 | ## | |
| | 3 | 000 | 1 | ## | |
| | 4 | 000 | 1 | ## | 1 |
| 2 | 1 | 010 | 1 | ## | 1 |
| | 2 | 010 | 1 | ## | 1 |
| | 3 | 010 | 1 | ## | 1 |
| | 4 | 010 | 1 | ## | |
| 3 | 1 | 072 | 1 | ## | |
| | 2 | 072 | 1 | ## | 1 |
| | 3 | 072 | 1 | ## | 1 |
| | 4 | 072 | 1 | ## | 1 |
| 4 | 1 | 171 | 1 | ## | 1 |
| | 2 | 171 | 1 | ## | 1 |
| | 3 | 171 | 1 | ## | |
| | 4 | 171 | 1 | ## | |
| 5 | 1 | 106 | 1 | ## | 1 |
| | 2 | 106 | 1 | ## | 1 |
| | 3 | 106 | 1 | ## | |
| | 4 | 106 | 1 | ## | 1 |
| 6 | 1 | 777 | 1 | ## | |
| | 2 | 277 | 1 | ## | |
| | 3 | 277 | 1 | ## | 1 |
| | 4 | 277 | 1 | ## | 1 |

**DIGIT INS/DEL TABLE.**

| TABLE | DIGITS |
|-------|--------|

**DAILY START TIME TABLE .**

| TABLE | TIME |
|-------|------|
| 1 | 800 |
| 2 | 1700 |
| 3 | 2300 |
| 4 | #### |

**WEEKLY SCHEDULE TABLE**

| START TIME | M | T | W | T | F | S | S |
|------------|---|---|---|---|---|---|---|
| 800 | 1 | 1 | 1 | 1 | 1 | 3 | 3 |
| 1700 | 2 | 2 | 2 | 2 | 2 | 3 | 2 |
| 2300 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| #### | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

**LCR ROUTE FOR 555-1212**

##
6 DIGIT TABLE

| AREA CODE | ROUTE NO | OFFICE CODES |
|-----------|----------|--------------|

**Figure 675-7 DB Printout of LCR Tables**

## 3 DIGIT TABLE

| CODE | LEADING 1 RR | PP | 6 | NON-LEADING 1 RR | PP | 6 |
|------|------|------|------|------|------|------|
| 11 | ## | ## | N | 6 | ## | N |
| 200 | 0 | 11 | N | ## | ## | N |
| 201 | 0 | 11 | N | ## | ## | N |
| 202 | 0 | 11 | N | ## | ## | N |
| 203 | 0 | 11 | s | ## | ## | N |
| 204 | 3 | 11 | N | ## | ## | N |
| 205 | 0 | 11 | N | ## | ## | N |
| 206 | 0 | 11 | N | ## | ## | N |
| 207 | 0 | 11 | N | ## | ## | N |
| 208 | 0 | 11 | N | ## | ## | N |
| 209 | 0 | 11 | N | ## | ## | N |
| 210 | 0 | 11 | N | ## | ## | N |
| 212 | 0 | 11 | N | ## | ## | N |
| 213 | 0 | 11 | N | ## | ## | N |
| 214 | 0 | 11 | N | ## | ## | N |
| 225 | 0 | 11 | N | ## | ## | N |
|     | 0 | 11 | N | ## | ## | N |
| 217 | 0 | 11 | N | ## | ## | N |
| 218 | 0 | 11 | N | ## | ## | N |
| 219 | 0 | 11 | N | ## | ## | N |
| 220 | 2 | -a | N | 1 | 7 | N |
| 221 | 2 | a | N | 1 | 7 | A |
| 222 | 2 | 8 | N | 1 | 7 | N |
| 223 | 2 | 3 | N | 1 | 7 | N |
| 224 | 2 | a | N | 1 | 7 | N |
| 225 | 2 | a | N | 1 | 7 | N |
| 226 | 2 | a | N | 1 | 7 | N |
| 227 | 2 | a | N | 1 | 7 | N |
| 228 | 2 | 8 | N | 1 | 7 | N |
| 229 | 2 | a | N | 1 | 7 | N |
| 230 | 2 | 3 | N | 1 | 7 | N |
| 231 | 2 | a | N | 1 | 7 | N |
| 232 | 2 | a | N | 1 | 7 | N |
| 233 | 2 | a | N | 1 | 7 | N |
| 234 | 2 | a | N | 1 | 7 | N |
| 235 | 2 | a | N | 1 | 7 | N |
| 236 | 2 | 8 | N | 1 | 7 | N |
| 237 | 2 | 3 | N | 1 | 7 | N |
| 238 | 2 | 3 | N | 1 | 7 | N |
| 239 | 2 | a | N | 1 | 7 | N |
| 240 | 2 | 8 | N | 1 | 7 | N |
| 241 | 2 | a | N | 1 | 7 | N |
| 242 | 2 | a | N | 1 | 7 | N |
| 2 4 3 | 2 | a | N | 1 | 7 | N |
| 244 | 2 | a | N | 1 | 7 | N |
| 245 | 2 | 8 | N | 1 | 7 | N |
| 246 | 2 | a | N | 1 | 7 | N |
| 247 | 2 | 3 | N | 1 | 7 | N |
| 2 4 8 | 2 | a | N | 1 | 7 | N |
| 249 | 2 | a | N | 1 | 7 | N |
| 2 5 0 | 2 | a | N | 1 | 7 | N |
| 251 | 2 | a | N | 1 | 7 | N |
| 252 | 2 | a | N | 1 | 7 | N |
| 2 5 3 | 2 | a | N | 1 | 7 | N |
| 254 | 2 | a | N | 1 | 7 | N |
| 255 | 2 | a | N | 1 | 7 | N |
| 256 | 2 | 8 | N | 1 | 7 | N |
| 257 | 2 | 8 | N | 1 | 7 | N |
| 258 | 2 | 8 | N | 1 | 7 | N |
| 259 | 2 | 8 | N | 1 | 7 | N |
| 260 | 2 | 8 | N | 1 | 7 | N |
| 261 | 2 | 8 | N | 1 | 7 | N |
| 262 | 2 | 8 | N | 1 | 7 | N |
| 263 | 2 | 8 | N | 1 | 7 | N |
| 264 | 2 | -8 | N | 1 | 7 | N |
| 265 | 2 | 8 | N | 1 | 7 | N |
| 266 | 2 | 8 | N | 1 | 7 | N |
| 267 | 2 | a | N | 1 | 7 | N |
| 268 | 2 | 8 | N | 1 | 7 | N |
| 269 | 2 | 8 | N | 1 | 7 | N |
| 270 | 2 | 8 | N | 1 | 7 - | N |
| 271 | 2 | 8 | N | 1 | 7 | N |
| 272 | 2 | 8 | N | 1 | 7 | N |
| 273 | 2 | 8 | N | 1 | 7 | N |
| 274 | 2 | 8 | N | 1 | 7 | N |
| 275 | 2 | 8 | N | 1 | 7 | N |
| 276 | 2 | a | N | 1 | 7 | N |
| 277 | 2 | a | N | 1 | 7 | N |
| 278 | 2 | 8 | N | 1 | 7 | N |
| 279 | 2 | a | N | 1 | 7 | N |
| 280 | 2 | 8 | N | 1 | 7 | N |
| 281 | 2 | 8 | N | 1 | 7 | N |
| 282 | 2 | a | N | 1 | 7 | N |
| 283 | 2 | a | N | 1 | 7 | N |
| 284 | 2 | 8 | N | 1 | 7 | N |
| 285 | 2 | a | N | 1 | 7 | N |
| 236 | 2 | 8 | N | 1 | 7 | N |
| 257 | 2 | a | N | 1 | 7 | N |
| 288 | 2 | a | N | 1 | 7 | N |
| 289 | 2 | 8 | N | 1 | 7 | N |
| 290 | 2 | a | N | 1 | 7 | N |
| 29: | 2 | a | N | 1 | 7 | N |
| 292 | 2 | 8 | N | 1 | 7 | N |
| 293 | 2 | 8 | N | 1 | 7 | N |
| 294 | 2 | 8 | N | 1 | 7 | N |
| 293 | 2 | a | N | 1 | 7 | N |
| 296 | 2 | 8 | N | 1 | 7 | N |
| 297 | 2 | a | N | 1 | 7 | N |
| 298 | 2 | a | N | 1 | 7 | N |
| 299 | 2 | a | N | 1 | 7 | N |
| 300 | 0 | 11 | N | ## | ## | N |
| 301 | 0 | 11 | N | ## | ## | N |
| 302 | 0 | 11 | s | ## | ## | N |
| 303 | 0 | 11 | N | ## | ## | N |
| 304 | 0 | 11 | N | ## | ## | N |
| 305 | 0 | 11 | N | ## | ## | N |
| 306 | 3 | 11 | N | ## | ## | N |
| 307 | 0 | 11 | N | ## | ## | N |
| 308 | 0 | 11 | N | ## | ## | N |
| 309 | 0 | 11 | N | ## | ## | N |
| 310 | 0 | 11 | N | ## | ## | N |
| 312 | 0 | 11 | N | ## | ## | N |
| 313 | 0 | 11 | N | ## | ## | N |
| 314 | 0 | 11 | N | ## | ## | N |
| 315 | 0 | 11 | N | ## | ## | N |
| 315 | 0 | 11 | N | ## | ## | N |
| 317 | 0 | 11 | N | ## | ## | N |

**Figure 675-8 DB Printout of LCR Default**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 318 | 0 | 11 | N | ## | ## | N | 379 | 2 | 8 | N | 1 | 7 | N |
| 319 | 0 | 11 | N | ## | ## | N | 380 | 2 | 8 | N | 1 | 7 | N |
| 320 | 2 | 8 | N | 1 | 7 | N | 381 | 2 | 8 | N | 1 | 7 | N |
| 321 | 2 | 8 | N | 1 | 7 | N | 382 | 2 | 8 | N | 1 | 7 | N |
| 322 | 2 | 8 | N | 1 | 7 | N | 383 | 2 | 8 | N | 1 | 7 | N |
| 324 323 | 2 | 8 | N | 1 | 7 | N | 384 | 2 | 8 | N | 1 | 7 | N |
| | 2 | 8 | N | 1 | 7 | N | 385 | 2 | 8 | N | 1 | 7 | N |
| 325 | 2 | 8 | N | 1 | 7 | N | 386 | 2 | 8 | N | 1 | 7 | N |
| 326 | 2 | 8 | N | 1 | 7 | N | 387 | 2 | a | N | 1 | 7 | N |
| 327 | 2 | 3 | N | 1 | 7 | N | 388 | 2 | 8 | N | 1 | 7 | N |
| 328 | 2 | 8 | N | 1 | 7 | N | 389 | 2 | 8 | N | 1 | 7 | N |
| 329 | 2 | 3 | N | 1 | 7 | N | 390 | 2 | 8 | N | 1 | 7 | N |
| 330 | 2 | 8 | N | 1 | 7 | N | 391 | 2 | 8 | N | 1 | 7 | N |
| 331 | 2 | 8 | N | 1 | 7 | N | 392 | 2 | 8 | N | 1 | 7 | N |
| 332 | 2 | 8 | N | 1 | 7 | N | 393 | 2 | 8 | N | 1 | 7 | N |
| 333 | 2 | 8 | N | 1 | 7 | N | 394 | 2 | 8 | N | 1 | 7 | N |
| 334 | 2 | 8 | N | 1 | 7 | N | 395 | 2 | 8 | N | 1 | 7 | N |
| 335 | 2 | 8 | N | 1 | 7 | N | 396 | 2 | 8 | N | 1 | 7 | N |
| 336 | 2 | 8 | N | 1 | 7 | N | 397 | 2 | 8 | N | 1 | 7 | N |
| 337 | 2 | 8 | N | 1 | 7 | N | 398 | 2 | 8 | N | 1 | 7 | N |
| 338 | 2 | 8 | N | 1 | 7 | N | 399 | 2 | 8 | N | 1 | 7 | N |
| 339 | 2 | 8 | N | 1 | 7 | N | 400 | 0 | 11 | N | ## | ## | N |
| 340 | 2 | 8 | N | 1 | 7 | N | 401 | 0 | 11 | N | ## | ## | N |
| 341 | 2 | a | N | 1 | 7 | N | 402 | 0 | 11 | N | ## | ## | N |
| 342 | 2 | 8 | N | 1 | 7 | N | 403 | 3 | 11 | N | ## | ## | N |
| 343 | 2 | 8 | N | 1 | 7 | N | 404 | 0 | 11 | N | ## | ## | N |
| 344 | 2 | 8 | N | 1 | 7 | N | 405 | 0 | 11 | N | ## | ## | N |
| 345 | 2 | 8 | N | 1 | 7 | N | 406 | 0 | 11 | N | ## | ## | N |
| 346 | 2 | 8 | N | 1 | 7 | N | 407 | 0 | 11 | N | ## | ## | N |
| 347 | 2 | 8 | N | 1 | 7 | N | 408 | 3 | 11 | N | ## | ## | N |
| 348 | 2 | 8 | N | 1 | 7 | N | 409 | 0 | 11 | N | ## | ## | N |
| 349 | 2 | 8 | N | 1 | 7 | N | 410 | 0 | 11 | N | ## | ## | N |
| 350 | 2 | 8 | N | 1 | 7 | N | 411 | 1 | 4 | N | 1 | 3 | N |
| 351 | 2 | 8 | N | 1 | 7 | N | 412 | 0 | 11 | N | ## | ## | N |
| 332 | 2 | 8 | N | 1 | 7 | N | 413 | 0 | 11 | s | ## | ## | N |
| 353 | 2 | 8 | N | 1 | 7 | N | 414 | 0 | 11 | N | ## | ## | N |
| 354 | 2 | 8 | N | 1 | 7 | N | 415 | 0 | 11 | N | ## | ## | N |
| 355 | 2 | 8 | N | 1 | 7 | N | 416 | 3 | 11 | N | ## | ## | N |
| 356 | 2 | 8 | N | 1 | 7 | N | 417 | 0 | 11 | N | ## | ## | N |
| 357 | 2 | 8 | N | 1 | 7 | N | 418 | 3 | 11 | N | ## | ## | N |
| 358 | 2 | 8 | N | 1 | 7 | N | 419 | 0 | 11 | N | ## | ## | N |
| 359 | 2 | 8 | N | 1 | 7 | N | 420 | 2 | 8 | N | 1 | J | N |
| 360 | 2 | 8 | N | 1 | 7 | N | 421 | 2 | 3 | N | 1 | 7 | N |
| 361 | 2 | 8 | N | 1 | 7 | N | 422 | 2 | a | N | 1 | 7 | N |
| 362 | 2 | 8 | N | 1 | 7 | N | 423 | 2 | 8 | N | 1 | 7 | N |
| 363 | 2 | 8 | N | 1 | 7 | N | 424 | 2 | 8 | N | 1 | 7 | N |
| 364 | 2 | 8 | N | 1 | 7 | N | 425 | 2 | 8 | N | 1 | 7 | N |
| 365 | 2 | 8 | N | 1 | 7 | N | 426 | 2 | a | N | 1 | J | N |
| 366 | 2 | 8 | N | 1 | 7 | N | 427 | 2 | a | N | 1 | 7 | N |
| 367 | 2 | 8 | N | 1 | 7 | N | 428 | 2 | 8 | N | 1 | 7 | N |
| 368 | 2 | 8 | N | 1 | 7 | N | 429 | 2 | 8 | N | 1 | 7 | N |
| 369 | 2 | 8 | N | 1 | 7 | N | 430 | 2 | 8 | N | 1 | 7 | N |
| 370 | 2 | 8 | N | 1 | 7 | N | 431 | 2 | 8 | N | 1 | 7 | N |
| 371 | 2 | 8 | N | 1 | 7 | N | 432 | 2 | 8 | N | 1 | 7 | N |
| 372 | 2 | 8 | N | 1 | 7 | N | 433 | 2 | 8 | N | 1 | 7 | N |
| 373 | 2 | 8 | N | 1 | 7 | N | 434 | 2 | 8 | N | 1 | 7 | N |
| 371 | 2 | 8 | N | 1 | 7 | N | 435 | 2 | 8 | N | 1 | 7 | N |
| 375 | 2 | 8 | N | 1 | 7 | N | 436 | 2 | 8 | N | 1 | 7 | N |
| 376 | 2 | 8 | N | 1 | 7 | N | 437 | 2 | 8 | N | 1 | 7 | N |
| 377 | 2 | 8 | N | 1 | 7 | N | 438 | 2 | 8 | N | 1 | 7 | N |
| 378 | 2 | 8 | N | 1 | 7 | N | 439 | 2 | 3 | N | 1 | 7 | N |

**Figure 675-6 DB Printout of LCR Default (Cont'd)**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 440 | 2 | 8 | N | 1 | 7 | N | | 501 | 0 | 11 | N | ## | ## | **N** |
| 441 | 2 | 8 | N | 1 | 7 | N | | 502 | 0 | 11 | N | ## | ## | **N** |
| 442 | 2 | 8 | N | 1 | 7 | N | | 503 | 0 | 11 | N | ## | ## | **N** |
| 443 | 2 | 8 | N | 1 | 7 | N | | 504 | 0 | 11 | N | ## | ## | **N** |
| 444 | 2 | 8 | N | 1 | 7 | N | | 505 | 0 | 11 | N | ## | ## | **N** |
| 445 | 2 | 8 | N | 1 | 7 | N | | 506 | 3 | 11 | N | ## | ## | **N** |
| 446 | 2 | 8 | N | 1 | 7 | N | | 507 | 0 | 11 | N | ## | ## | **N** |
| 447 | 2 | 8 | N | 1 | 7 | N | | 508 | 0 | 11 | N | ## | ## | **N** |
| 448 | 2 | 8 | N | 1 | 7 | N | | 509 | -0 | 11 | N | ## | ## | **N** |
| 449 | 2 | 8 | N | 1 | 7 | N | | 510 | 0 | 11 | N | ## | ## | N |
| 450 | 2 | 8 | N | 1 | 7 | N | | 512 | 0 | 11 | N | ## | ## | **N** |
| 451 | 2 | 8 | N | 1 | 7 | N | | 513 | 0 | ii | N | ## | ## | **N** |
| 452 | 2 | 8 | N | 1 | 7 | N | | 514 | 3 | 11 | N | ## | ## | **N** |
| 453 | 2 | 8 | N | 1 | 7 | N | | 515 | 0 | 11 | N | ## | ## | **N** |
| 454 | 2 | a | N | 1 | 7 | N | | 516 | 0 | 11 | N | ## | **##** | **N** |
| 455 | 2 | a | N | 1 | 7 | N | | 517 | 0 | 11 | N | ## | ## | **N** |
| 456 | 2 | 8 | N | 1 | 7 | N | | 518 | 0 | 11 | N | ## | ## | N |
| 457 | 2 | 8 | N | 1 | 7 | N | | 519 | 3 | 11 | N | ## | ## | N |
| 458 | 2 | a | N | 1 | 7 | N | | 520 | 2 | 8 | N | 1 | 7 | N |
| 459 | 2 | 8 | N | 1 | 7 | N | | 521 | 2 | 8 | N | 1 | 7 | N |
| 460 | 2 | 8 | N | 1 | 7 | N | | 522 | 2 | 8 | N | 1 | 7 | N |
| 461 | 2 | 8 | N | 1 | 7 | N | | 523 | 2 | a | N | 1 | 7 | N |
| 462 | 2 | a | N | 1 | 7 | N | | 524 | 2 | a | N | 1 | 7 | N |
| 463 | 2 | 8 | N | 1 | 7 | N | | 525 | 2 | 8 | N | 1 | 7 | N |
| 464 | 2 | 8 | N | 1 | 7 | N | | 526 | 2 | 8 | N | 1 | 7 | N |
| 465 | 2 | 8 | N | 1 | 7 | N | | 527 | 2 | 8 | N | 1 | 7 | N |
| 466 | 2 | a | N | 1 | 7 | N | | 528 | 2 | 8 | N | 1 | 7 | N |
| 467 | 2 | a | N | 1 | 7 | N | | 529 | 2 | a | N | 1 | 7 | N |
| 468 | 2 | 8 | N | 1 | 7 | N | | 530 | 2 | 8 | N | 1 | 7 | N |
| 469 | 2 | 8 | N | 1 | 7 | N | | 531 | 2 | 8 | N | 1 | 7 | N |
| 470 | 2 | a | N | 1 | 7 | N | | 532 | 2 | 8 | N | 1 | 7 | N |
| 471 | 2 | a | N | 1 | 7 | N | | 533 | 2 | 8 | N | 1 | 7 | N |
| 472 | 2 | 8 | N | 1 | 7 | N | | 534 | 2 | 8 | N | 1 | 7 | N |
| 473 | 2 | 8 | N | 1 | 7 | N | | 535 | 2 | 8 | N | 1 | 7 | N |
| 474 | 2 | a | N | 1 | 7 | N | | 536 | 2 | a | N | 1 | 7 | N |
| 475 | 2 | 3 | N | 1 | 7 | N | | 537 | 2 | a | N | 1 | 7 | N |
| 476 | 2 | 8 | N | 1 | 7 | N | | 538 | 2 | 8 | N | 1 | 7 | N |
| 477 | 2 | 8 | N | 1 | 7 | N | | 539 | 2 | 8 | N | 1 | 7 | N |
| 478 | 2 | a | N | 1 | 7 | N | | 540 | 2 | a | N | 1 | 7 | N |
| 479 | 2 | 8 | N | 1 | 7 | N | | 541 | 2 | 8 | N | 1 | 7 | N |
| 480 | 2 | 8 | N | 1 | 7 | N | | 542 | 2 | 8 | N | 1 | 7 | N |
| 481 | 2 | 8 | N | 1 | 7 | N | | 543 | 2 | 8 | N | 1 | 7 | N |
| 482 | 2 | a | N | 1 | 7 | N | | 544 | 2 | a | N | 1 | 7 | N |
| 483 | 2 | a | N | 1 | 7 | N | | 343 | 2 | 8 | N | 1 | 7 | N |
| 484 | 2 | 8 | N | 1 | 7 | N | | 546 | 2 | a | N | 1 | 7 | N |
| 485 | 2 | 3 | N | 1 | 7 | N | | 547 | 2 | a | N | 1 | 7 | N |
| 486 | 2 | a | N | 1 | 7 | N | | 548 | 2 | a | N | 1 | 7 | N |
| 487 | 2 | a | N | 1 | 7 | N | | 549 | 2 | 8 | N | 1 | 7 | N |
| 488 | 2 | 8 | N | 1 | 7 | N | | 550 | 2 | 8 | N | 1 | 7 | N |
| 489 | 2 | 8 | N | 1 | 7 | N | | 551 | 2 | a | N | 1 | 7 | N |
| 490 | 2 | 8 | N | 1 | 7 | N | | 552 | 2 | a | N | 1 | 7 | N |
| 491 | 2 | 3 | N | 1 | 7 | N | | 553 | 2 | 8 | N | 1 | 7 | N |
| 492 | 2 | a | N | 1 | 7 | N | | 554 | 2 | 8 | N | 1 | 7 | N |
| 493 | 2 | 8 | N | 1 | 7 | N | | 353 | 2 | 8 | N | 1 | 7 | N |
| 494 | 2 | 8 | N | 1 | 7 | N | | 556 | 2 | 8 | N | 1 | 7 | N |
| 495 | 2 | 8 | N | 1 | 7 | N | | 557 | 2 | 8 | N | 1 | 7 | N |
| 496 | 2 | a | N | 1 | 7 | N | | 558 | 2 | 8 | N | 1 | 7 | N |
| 497 | 2 | 8 | N | 1 | 7 | N | | 559 | 2 | a | N | 1 | 7 | N |
| 498 | 2 | 8 | N | 1 | 7 | N | | 560 | 2 | 3 | N | 1 | 7 | N |
| 499 | 2 | 8 | N | 1 | 7 | N | | 561 | 2 | a | N | 1 | 7 | N |
| 500 | 0 | 11 | N | ## | ## | N | | 5 62 | 2 | 8 | N | 1 | 7 | N |

**Figure 675-8 DB Printout of LCR Default (Cont'd)**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 563 | 2 | 8 | N | 1 | 7 | N | | 625 | 2 | 8 | N | 1 | 7 | N |
| 564 | 2 | 8 | N | 1 | 7 | N | | 626 | 2 | 8 | N | 1 | 7 | N |
| 565 | 2 | 8 | N | 1 | 7 | N | | 627 | 2 | 8 | N | 1 | 7 | N |
| 566 | 2 | 8 | N | 1 | 7 | N | | 628 | 2 | 8 | N | 1 | 7 | N |
| 567 | 2 | 8 | N | 1 | 7 | N | | 629 | 2 | 8 | N | 1 | 7 | N |
| 568 | 2 | 8 | N | 1 | 7 | N | | 630 | 2 | 8 | N | 1 | 7 | N |
| 569 | 2 | 8 | N | 1 | 7 | N | | 63: | 2 | 8 | N | 1 | 7 | N |
| 570 | 2 | 8 | N | 1 | 7 | N | | 632 | 2 | 8 | N | 1 | 7 | N |
| 571 | 2 | 8 | N | 1 | 7 | N | | 633 | 2 | 8 | N | 1 | 7 | N |
| 572 | 2 | 8 | N | 1 | 7 | N | | 634 | 2 | 8 | N | 1 | 7 | N |
| 573 | 2 | 8 | N | 1 | 7 | N | | 635 | 2 | 3 | N | 1 | 7 | N |
| | 2 | 8 | N | 1 | 7 | N | | 636 | 2 | 8 | N | 1 | 7 | N |
| | 2 | 8 | N | 1 | 7 | N | | 637 | 2 | 8 | N | 1 | 7 | N |
| 574 | 2 | 8 | N | 1 | 7 | N | | 638 | 2 | 8 | N | 1 | 7 | N |
| 576 | 2 | 8 | N | 1 | 7 | N | | 639 | 2 | 8 | N | 1 | 7 | N |
| 577 | 2 | 8 | N | 1 | 7 | N | | 640 | 2 | 8 | N | 1 | 7 | N |
| 578 | 2 | 8 | N | 1 | 7 | N | | 641 | 2 | 8 | N | 1 | 7 | N |
| 579 | 2 | 8 | N | 1 | 7 | N | | 642 | 2 | 8 | N | 1 | 7 | N |
| 580 | 2 | 8 | N | 1 | 7 | N | | 643 | 2 | 8 | N | 1 | 7 | N |
| 581 | 2 | 8 | N | 1 | 7 | N | | 644 | 2 | 8 | N | 1 | 7 | N |
| 582 | 2 | 8 | N | 1 | 7 | N | | 645 | 2 | 8 | N | 1 | 7 | N |
| 583 | 2 | 8 | N | 1 | 7 | N | | 646 | 2 | 8 | N | 1 | 7 | N |
| 584 | 2 | a | N | 1 | 7 | N | | 647 | 2 | 8 | N | 1 | 7 | N |
| 585 | 2 | 8 | N | 1 | 7 | N | | 648 | 2 | 8 | N | 1 | 7 | N |
| 586 | 2 | 8 | N | 1 | 7 | N | | 649 | 2 | 8 | N | 1 | 7 | N |
| 587 | 2 | 8 | N | 1 | 7 | N | | 650 | 2 | 8 | N | 1 | 7 | N |
| 588 | 2 | 8 | N | 1 | 7 | N | | 651 | 2 | 8 | N | 1 | 7 | N |
| 589 | 2 | 8 | N | 1 | 7 | N | | 652 | 2 | 3 | N | 1 | 7 | N |
| 590 | 2 | 8 | N | 1 | 7 | N | | 653 | 2 | 8 | N | 1 | 7 | N |
| 591 | 2 | 8 | N | 1 | 7 | N | | 654 | 2 | 8 | N | 1 | 7 | N |
| 592 | 2 | 8 | N | 1 | 7 | N | | 655 | 2 | 8 | N | 1 | 7 | N |
| 593 | 2 | 8 | N | 1 | 7 | N | | 656 | 2 | 3 | N | 1 | 7 | N |
| 594 | 2 | 3 | N | 1 | 7 | N | | 657 | 2 | 8 | N | 1 | 7 | N |
| 595 | 2 | 8 | N | 1 | 7 | N | | 658 | 2 | 8 | N | 1 | 7 | N |
| 596 | 2 | 3 | N | 1 | 7 | N | | 659 | 2 | 8 | N | 1 | 7 | N |
| 597 | 2 | 8 | N | 1 | 7 | N | | 660 | 2 | 8 | N | 1 | 7 | N |
| 598 | 2 | 8 | N | 1 | 7 | N | | 661 | 2 | 8 | N | 1 | 7 | N |
| 599 | 2 | a | N | 1 | 7 | N | | 662 | 2 | 8 | N | 1 | 7 | N |
| 600 | 0 | 11 | S | ## | ## | N | | 663 | 2 | 8 | N | 1 | 7 | N |
| 601 | 0 | 11 | N | ## | ## | N | | 664 | 2 | 8 | N | 1 | 7 | N |
| 602 | 0 | 11 | N | ## | ## | N | | 003 | 2 | 8 | N | 1 | 7 | N |
| 603 | 0 | 11 | N | ## | ## | N | | 666 | 2 | 8 | N | 1 | 7 | N |
| 604 | 3 | 11 | S | ## | ## | N | | 667 | 2 | 3 | N | 1 | 7 | N |
| 605 | 3 | 11 | S | ## | ## | N | | 668 | 2 | 8 | N | 1 | 7 | N |
| 606 | 3 | 11 | S | ## | ## | N | | 669 | 2 | 8 | N | 1 | 7 | N |
| 607 | 0 | 11 | N | ## | ## | N | | 670 | 2 | 8 | N | 1 | 7 | N |
| 608 | 0 | 11 | S | ## | ## | N | | 671 | 2 | 8 | N | 1 | 7 | N |
| 609 | 0 | 11 | S | ## | ## | N | | 672 | 2 | 8 | N | 1 | 7 | N |
| 610 | 0 | 11 | S | ## | ## | N | | 673 | 2 | 8 | N | 1 | 7 | N |
| 612 | 3 | 11 | S | ## | ## | N | | 674 | 2 | 8 | N | 1 | 7 | N |
| 613 | 3 | 11 | S | ## | ## | N | | 675 | 2 | 8 | N | 1 | 7 | N |
| 614 | 0 | 11 | N | ## | ## | N | | 676 | 2 | 8 | N | 1 | 7 | -N |
| 615 | 0 | 11 | N | ## | ## | N | | 677 | 2 | 8 | N | 1 | 7 | N |
| 616 | 3 | 11 | S | ## | ## | N | | 678 | 2 | 8 | N | 1 | 7 | N |
| 617 | 0 | 11 | 9 | ## | ## | N | | 679 | 2 | 8 | N | 1 | 7 | N |
| 618 | 0 | 11 | N | ## | ## | N | | 680 | 2 | 8 | N | 1 | 7 | N |
| 619 | 0 | 11 | N | ## | ## | N | | 68: | 2 | 8 | N | 1 | J | N |
| 620 | 2 | 8 | N | 1 | 7 | N | | 682 | 2 | 8 | N | 1 | 7 | N |
| 621 | 2 | 8 | N | 1 | 7 | N | | 683 | 2 | 8 | N | 1 | 7 | N |
| 622 | 2 | 8 | N | 1 | 7 | N | | 684 | 2 | 8 | N | 1 | 7 | N |
| 623 | 2 | 8 | N | 1 | 7 | N | | 685 | 2 | 8 | N | | 7 | N |
| 624 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |

**Figure 675-8 DB Printout of LCR Default (Cont'd)**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 686 | 2 | 8 | N | 1 | 7 | N | | 748 | 2 | 8 | N | 1 | 7 | N |
| 687 | 2 | 8 | N | 1 | 7 | N | | 749 | 2 | a | N | 1 | 7 | N |
| 688 | 2 | 8 | N | 1 | 7 | N | | 750 | 2 | 8 | N | 1 | 7 | N |
| 689 | 2 | 8 | N | 1 | 7 | N | | 751 | 2 | a | N | 1 | 7 | N |
| 690 | 2 | 8 | N | 1 | 7 | N | | 752 | 2 | a | N | 1 | 7 | N |
| 691 | 2 | 8 | N | 1 | 7 | N | | 753 | 2 | a | N | 1 | 7 | N |
| 692 | 2 | 8 | N | 1 | 7 | N | | 754 | 2 | 8 | N | 1 | 7 | N |
| 693 | 2 | 8 | N | 1 | 7 | N | | 755 | 2 | a | N | 1 | 7 | N |
| 694 | 2 | 8 | N | 1 | 7 | N | | 756 | 2 | a | N | 1 | 7 | N |
| 695 | 2 | a | N | 1 | 7 | N | | 757 | 2 | a | N | 1 | 7 | N |
| 696 | 2 | a | N | 1 | 7 | N | | 758 | 2 | 8 | N | 1 | 7 | N |
| 697 | 2 | 8 | N | 1 | 7 | N | | 759 | 2 | 8 | N | 1 | 7 | N |
| 698 | 2 | a | N | 1 | 7 | N | | 760 | 2 | 8 | N | 1 | 7 | N |
| 699 | 2 | 8 | N | 1 | 7 | N | | 761 | 2 | 8 | N | 1 | 7 | N |
| 700 | 0 | 11 | N | ## | ## | N | | 762 | 2 | a | N | 1 | 7 | N |
| 701 | 0 | 11 | N | ## | ## | N | | 763 | 2 | a | N | 1 | 7 | N |
| 702 | 0 | 11 | N | ## | ## | N | | 764 | 2 | a | N | 1 | 7 | N |
| 703 | 0 | 11 | N | ## | ## | N | | 765 | 2 | a | N | 1 | 7 | N |
| 704 | 0 | 11 | N | ## | ## | N | | 766 | 2 | 8 | N | 1 | 7 | N |
| 705 | 3 | 11 | N | ## | ## | N | | 767 | 2 | 8 | N | 1 | 7 | N |
| 706 | 4 | 11 | N | ## | ## | N | | 768 | 2 | a | N | 1 | 7 | N |
| 707 | 0 | 11 | N | ## | ## | N | | 769 | 2 | a | N | 1 | 7 | N |
| 708 | 0 | 11 | N | ## | ## | N | | 770 | 2 | 8 | N | 1 | 7 | N |
| 709 | 3 | 11 | N | ## | ## | N | | 771 | 2 | a | N | 1 | 7 | N |
| 710 | 0 | ii | N | ## | ## | N | | 772 | 2 | 8 | N | 1 | 7 | N |
| 712 | 0 | 11 | N | ## | ## | N | | 773 | 2 | a | N | 1 | 7 | N |
| 713 | 0 | 11 | N | ## | ## | N | | 774 | 2 | a | N | 1 | 7 | N |
| 714 | 0 | 11 | N | ## | ## | N | | 775 | 2 | a | N | 1 | 7 | N |
| 715 | 0 | 11 | N | ## | ## | N | | 776 | 2 | a | N | 1 | 7 | N |
| 716 | 0 | 11 | s | ## | ## | N | | 777 | 2 | 8 | N | 1 | 7 | N |
| 717 | 0 | 11 | N | ## | ## | N | | 778 | 2 | 8 | N | 1 | 7 | N |
| 718 | 0 | 11 | N | ## | ## | N | | 779 | 2 | 8 | N | 1 | 7 | N |
| 719 | 0 | 11 | N | ## | ## | N | | 780 | 2 | 8 | N | 1 | 7 | N |
| 720 | 2 | 8 | N | 1 | 7 | N | | 781 | 2 | a | N | 1 | 7 | N |
| 721 | 2 | a | N | 1 | 7 | N | | 782 | 2 | a | N | 1 | 7 | N |
| 722 | 2 | 3 | N | 1 | 7 | N | | 783 | 2 | 8 | N | 1 | 7 | N |
| 723 | 2 | 8 | N | 1 | 7 | N | | 784 | 2 | a | N | 1 | 7 | N |
| 724 | 2 | a | N | 1 | 7 | N | | 785 | 2 | a | N | 1 | 7 | N |
| 725 | 2 | a | N | 1 | 7 | N | | 786 | 2 | 8 | N | 1 | 7 | N |
| 726 | 2 | 8 | N | 1 | 7 | N | | 787 | 2 | a | N | 1 | 7 | N |
| 727 | 2 | a | N | 1 | 7 | N | | 788 | 2 | a | N | 1 | 7 | N |
| 728 | 2 | 3 | N | 1 | 7 | N | | 789 | 2 | a | N | 1 | 7 | N |
| | 2 | 3 | N | 1 | 7 | N | | 790 | 2 | 3 | N | 1 | 7 | N |
| 730 | 2 | a | N | 1 | 7 | N | | 791 | 2 | 8 | N | 1 | 7 | N |
| 731 | 2 | a | N | 1 | 7 | N | | 792 | 2 | 8 | N | 1 | 7 | N |
| 732 | 2 | a | N | 1 | 7 | N | | 793 | 2 | a | N | 1 | 7 | N |
| 733 | 2 | a | N | 1 | 7 | N | | 794 | 2 | 8 | N | 1 | 7 | N |
| 734 | 2 | a | 4 | 1 | 7 | N | | 795 | 2 | a | N | 1 | 7 | N |
| 735 | 2 | 8 | N | 1 | 7 | N | | 796 | 2 | a | N | 1 | 7 | N |
| 736 | 2 | a | N | 1 | 7 | N | | 797 | 2 | 8 | N | 1 | 7 | N |
| 737 | 2 | a | N | 1 | 7 | N | | 798 | 2 | 8 | N | 1 | 7 | N |
| 738 | 2 | a | N | 1 | 7 | N | | 799 | 2 | 8 | N | 1 | 7 | N |
| 739 | 2 | a | N | 1 | 7 | N | | 800 | 0 | 11 | N | ## | ## | N |
| 740 | 2 | a | N | 1 | 7 | N | | 801 | 0 | 11 | N | ## | ## | N |
| 741 | 2 | a | N | 1 | 7 | N | | 802 | 0 | 11 | N | ## | ## | N |
| 742 | 2 | a | N | 1 | 7 | N | | 803 | 0 | 11 | N | ## | ## | N |
| 743 | 2 | 8 | N | 1 | 7 | N | | 804 | 0 | 11 | N | ## | # # | N |
| 744 | 2 | a | N | 1 | 7 | N | | 805 | 0 | 11 | N | ## | ## | N |
| 745 | 2 | a | N | 1 | 7 | N | | 806 | 0 | 11 | N | ## | ## | N |
| 746 | 2 | a | N | 1 | 7 | N | | 807 | 3 | 11 | N | ## | ## | N |
| 747 | 2 | a | N | 1 | 7 | N | | 808 | 0 | 11 | s | ## | ## | N |

**Figure 675-8 DB Printout of LCF? Default (Cont'd)**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 809 | 5 | 11 | N | ## | ## | N | | 871 | 2 | 8 | N | 1 | 7 | N |
| 810 | 0 | 11 | N | ## | ## | N | | 872 | 2 | 8 | N | 1 | 7 | N |
| 812 | 0 | 11 | N | ## | ## | N | | 873 | 2 | a | N | 1 | 7 | N |
| 813 | 0 | ii | N | ## | ## | N | | 874 | 2 | 8 | N | 1 | 7 | N |
| 814 | 0 | 11 | N | ## | ## | N | | 875 | 2 | 8 | N | 1 | 7 | N |
| 815 | 0 | 11 | N | ## | ## | N | | 876 | 2 | 8 | N | 1 | 7 | N |
| 816 | 0 | 11 | N | ## | ## | N | | 877 | 2 | 8 | N | 1 | 7 | N |
| 817 | 0 | 11 | N | ## | ## | N | | 878 | 2 | 8 | N | 1 | 7 | N |
| 818 | 0 | 11 | N | ## | ## | N | | 879 | 2 | 8 | N | 1 | 7 | N |
| 819 | 0 | 11 | N | ## | ## | N | | 880 | 2 | 8 | N | 1 | 7 | N |
| 820 | 2 | 8 | N | 1 | 7 | N | | 881 | 2 | 8 | N | 1 | 7 | N |
| 821 | 2 | 8 | N | i | 7 | N | | 882 | 2 | 8 | N | 1 | 7 | N |
| 822 | 2 | 8 | N | 1 | 7 | N | | 883 | 2 | 8 | N | 1 | 7 | N |
| 823 | 2 | 8 | N | i | 7 | N | | 884 | 2 | 8 | N | 1 | 7 | N |
| 824 | 2 | 8 | N | 1 | 7 | N | | 885 | 2 | 8 | N | 1 | 7 | N |
| 825 | 2 | 8 | N | 1 | 7 | N | | 886 | 2 | 8 | N | 1 | 7 | N |
| 826 | 2 | 8 | N | 1 | 7 | N | | 887 | 2 | 8 | N | 1 | 7 | N |
| 827 | 2 | 8 | N | 1 | 7 | N | | 888 | 2 | 8 | N | 1 | 7 | N |
| 828 | 2 | 8 | N | 1 | 7 | N | | 889 | 2 | 8 | N | 1 | 7 | N |
| 829 | 2 | 8 | N | 1 | 7 | N | | 890 | 2 | 8 | N | 1 | 7 | N |
| 830 | 2 | 8 | N | 1 | 7 | N | | 891 | 2 | 8 | N | 1 | 7 | N |
| 831 | 2 | 8 | N | 1 | 7 | N | | 892 | 2 | 8 | N | 1 | 7 | N |
| 832 | 2 | 8 | N | 1 | 7 | N | | 893 | 2 | 8 | N | 1 | 7 | N |
| 833 | 2 | 3 | N | 1 | 7 | N | | 894 | 2 | 8 | N | 1 | 7 | N |
| 834 | 2 | 8 | N | 1 | 7 | N | | 895 | 2 | 8 | N | 1 | 7 | N |
| 835 | 2 | 8 | N | | 7 | N | | 896 | 2 | 8 | N | 1 | 7 | N |
| 836 | 2 | 8 | N | | 7 | N | | 897 | 2 | 8 | N | 1 | 7 | N |
| 837 | 2 | 8 | N | 1 | 7 | N | | 898 | 2 | 8 | N | 1 | 7 | N |
| 838 | 2 | 8 | N | | 7 | N | | 899 | 2 | 8 | N | 1 | 7 | N |
| 839 | 2 | 8 | N | | 7 | N | | 900 | 0 | 11 | N | ## | ## | N |
| 840 | 2 | 8 | N | 1 | 7 | N | | 901 | 0 | 11 | N | ## | ## | N |
| 841 | 2 | 3 | N | 1 | 7 | N | | 902 | 3 | 11 | N | ## | ## | N |
| 842 | 2 | 8 | N | 1 | 7 | N | | 903 | 0 | 11 | N | ## | ## | N |
| 843 | 2 | 8 | N | | 7 | N | | 904 | 0 | il | N | ## | ## | N |
| 844 | 2 | 8 | N | | 7 | N | | 905 | 4 | ii | N | ## | ## | N |
| 845 | 2 | 8 | N | | 7 | N | | 906 | 0 | 11 | N | ## | ## | N |
| 846 | 2 | 3 | N | 1 | 7 | N | | 907 | 0 | 11 | N | ## | ## | N |
| 847 | 2 | 8 | N | 1 | 7 | N | | 908 | 0 | 11 | N | ## | ## | N |
| 848 | 2 | 8 | N | | 7 | N | | 909 | 0 | 11 | N | ## | ## | N |
| 849 | 2 | 8 | N | | 7 | N | | 910 | 0 | 11 | N | ## | ## | N |
| 850 | 2 | a | N | | 7 | N | | 911 | – | 4 | N | 1 | 3 | N |
| 851 | 2 | 8 | N | | 7 | N | | 912 | 0 | 11 | N | ## | ## | N |
| 852 | a | 3 | N | | 7 | N | | 913 | 3 | 11 | s | ## | ## | N |
| 853 | 2 | 8 | N | | 7 | N | | 914 | 0 | 11 | N | ## | ## | N |
| 854 | 2 | 8 | N | 1 | 7 | N | | 915 | 0 | 11 | N | ## | ## | N |
| 855 | 2 | 8 | N | | 7 | N | | 916 | 0 | 11 | N | ## | ## | N |
| 856 | 2 | 8 | N | | 7 | N | | 917 | 0 | 11 | N | ## | ## | N |
| 857 | 2 | 8 | 6 | | 7 | N | | 918 | 3 | 11 | N | ## | ## | N |
| 858 | 2 | 8 | N | – | 7 | N | | 919 | 0 | 11 | s | ## | ## | N |
| 859 | 2 | 8 | N | | 7 | N | | 920 | 2 | 8 | N | 1 | 7 | N |
| 860 | 2 | 8 | N | | 7 | N | | 921 | 2 | 8 | N | 1 | 7 | N |
| 861 | 2 | 8 | N | | 7 | N | | 922 | 2 | 8 | N | 1 | 7 | N |
| 862 | 2 | 8 | N | | 7 | N | | 923 | 2 | 8 | N | 1 | 7 | N |
| 863 | 2 | 8 | N | | 7 | N | | 924 | 2 | 8 | N | 1 | 7 | N |
| 864 | 2 | 8 | N | 1 | 7 | N | | 925 | 2 | 8 | N | 1 | 7 | N |
| 865 | 2 | 8 | N | 1 | 7 | N | | 926 | 2 | 8 | N | 1 | 7 | N |
| 866 | 2 | 8 | N | 1 | 7 | N | | 927 | 2 | 8 | N | 1 | 7 | N |
| 867 | 2 | 8 | N | | ，| N | | 928 | 2 | 8 | N | 1 | 7 | N |
| 868 | 2 | 8 | N | | 7 | N | | 929 | 2 | 8 | N | 1 | 7 | N |
| 869 | 2 | 8 | N | | 7 | N | | 930 | 2 | 8 | N | 1 | 7 | N |
| 870 | 2 | 3 | N | 1 | 7 | N | | 931 | 2 | 8 | N | 1 | 7 | N |

**Figure 675-8 DB Printout of LCR Default (Cont'd)**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 932 | 2 | 8 | N | 1 | 7 | N | | 993 | 2 | 8 | N | 1 | 7 | N |
| 933 | 2 | 8 | N | 1 | 7 | N | | 994 | 2 | 8 | N | 1 | 7 | N |
| 934 | 2 | 8 | N | 1 | 7 | N | | 995 | 2 | 8 | N | 1 | 7 | N |
| 935 | 2 | 8 | N | 1 | 7 | N | | 996 | 2 | 8 | N | 1 | 7 | N |
| 936 | 2 | 8 | N | 1 | 7 | N | | 997 | 2 | 8 | N | 1 | 7 | N |
| 937 | 2 | a | N | 1 | 7 | N | | 998 | 2 | 8 | N | i | 7 | N |
| 938 | 2 | a | N | 1 | 7 | N | | 999 | 2 | 8 | N | 1 | 7 | N |
| 939 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 940 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 941 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 942 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 943 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 944 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 945 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 946 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 947 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 948 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 949 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 950 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 951 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 952 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 953 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 954 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 955 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 956 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 957 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 958 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 959 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 960 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 96i | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 962 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 963 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 964 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 965 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 966 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 967 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 968 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 969 | 2 | 3 | N | 1 | 7 | N | | | | | | | | |
| 970 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 971 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 972 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 973 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 974 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 975 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 976 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 977 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 978 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 979 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 980 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 981 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 982 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 983 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 984 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 985 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 986 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 987 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 988 | 2 | a | N | 1 | 7 | N | | | | | | | | |
| 989 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 990 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |
| 991 | 2 | 3 | N | 1 | 7 | N | | | | | | | | |
| 992 | 2 | 8 | N | 1 | 7 | N | | | | | | | | |

**Figure 675-8 DB Printout of LCR Default (Cont'd)**

**System DataBase Printouts (Cont'd)**

**H.    Printing Entire System Data Base**

Programming Steps

If a complete printout of the entire database in desired:

1. Press the ENTIRE SYSTEM flexible button (Button #8). The following will be shown on the display phone:

```
PRINT  DATA-bASE
PRESS  HOLD
```

2. To print the entire database, press the HOLD button. The display will update to indicate what portion of the database in being printed.

```
PRINTING SYS PARAM
        PRINTING CO UNES
PRINTING    PORT-STNCO
        PRINTING   STATIONS
PRINTING PORT-STA/CO
        PRINTING EX TABLES
PRINTING SYS SPEED NO
        PRINTING LCR TABLES
PRINTING ICLID TABLES
        PRINTING  DIR-DIAL
PRINTING HUNT GROUPS
        PRINTING ACD GROUPS
PRINTING VM GROUPS
```

When the system has finished sending the entire database to the printer, confirmation tone will be heard.

Description

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows the entire database to be "dumped" as a permanent record which can serve as a hard copy of the database.

The system Baud rate must match that of the printer or receiving device.

Printing the entire database takes a while to print. The database is printed in the following order:

- All System Parameters
- All CO Line programming (CO Lines 01-48)
- All CO Ports
- All Station attributes (Stations 100-l 95)
- All Station Ports
- Exception Tables (allow, deny and special tables)
- System Speed Dial Numbers (bins 20-99)
- LCR Tables
- ICLID* Tables
- Directory Dialing Table
- Hunt Group Parameters
- ACD* or UCD Group Parameters
- Voice Mail* Group Parameters

**Default:** None

**Related Programming:** Refer to Sec. 810.8, Baud Rate Assignments for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

'Features available with optional software.

**System DataBase Printouts (Cont'd)**

**I.  Printing ICLID Tables**

<u>Programming Steps</u>

If the ICLID* Table(s) need to be printed:

1.  Press the ICLID* TABLES flexible button
    (Button #9). The following message will be
    shown on the display phone:

> **PRINT ICLID TABLE**
> **PRESS HOLD**

2.  To print the ICLID* Tables, press the HOLD
    button. The following message will be shown
    on the display phone:

> **PRINTING ICLID**

When the system has finished sending the re-
quested information to the printer, confirmation tone
is heard.

<u>Description</u>

***This* feature is available with optional software.**

With a printer connected to the RS-232C port (future)
on the Central Processor Unit (CPU) or to either Port
#3 or Port #4 on the I/O Expansion Module, the
currently stored customer database can be printed
or "uploaded" into a file. This command allows the
entire database to be "dumped" as a permanent
record which can serve as a hard copy of the data-
base .

The system Baud rate must match that of the printer
or receiving device.

When printing the ICLID Tables, the following data
is printed:

- ICLID* Features
- ICLID Translation Table
- ICLID Unanswered Call Table
- ICLID Ringing Assignments Table

Refer to the following Figure for an example of the
ICLID Tables database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Saud
Rate Assignments, for setting the baud rate of the
RS-232C port on the Central Processor Unit (CPU),
Port #3 or Port #4 on the I/O Expansion Module.

*Features available with optional software.

```
ICLID  NAME   BAUD  PORT              053   ##
   N     Y    2400    1               054   ##
                                      055   ##
                                      056   ##
ICLID   TRANSLATION   TABLE           057   ##
                                      058   ##
                                      059   ##
ENTRY ROUTE NAME        NUMBER        060   ##
 000    ##                            061   ##
 001    ##                            062   ##
 002    ##                            063   ##
 003    ##                            064   ##
 004    ##                            065   ##
 005    ##                            066   ##
 006    ##                            067   ##
 007    ##                            068   ##
 008    ##                            069   ##
 009    ##                            070   ##
 010    ##                            071   ##
 011    ##                            072   ##
 012    ##                            073   ##
 013    ##                            074   ##
 014    ##                            075   ##
 015    ##                            076   ##
 016    ##                            077   ##
 017    ##                            378   ##
 018    ##                            079   ##
 019    ##                            080   ##
 020    ##                            081   ##
 021    ##                            082   ##
 022    ##                            083   ##
 023    ##                            084   ##
 024    ##                            085   ##
 025    ##                            086   ##
 026    ##                            087   ##
 027    ##                            088   ##
 028    ##                            089   ##
 029    ##                            090   ##
 030    ##                            091   ##
 031    ##                            092   ##
 032    ##                            093   ##
 033    ##                            094   ##
 034    ##                            0 95  ##
 035    ##                            096   ##
0 3 6   ##                            097   ##
 037    ##                            098   ##
 038    ##                            099   ##
0 3 9   ##                            100   ##
: 040   ##                            101   ##
 041    ##                            102   ##
 042    ##                            103   ##
, 043   ##                            104   ##
 044    ##                            105   ##
 045    ##                            106   ##
0 4 6   ##                            107   ##
 047    ##                            108   ##
 048    ##                            109   ##
0 4 9   ##                            110   ##
 050    ##                            111   ##
 051    ##                            112   ##
 052    ##                            113   ##
```

**Figure 675-9 DB Printout of ICLID Table**

```
 114    ##                                          ROUTE  RING  ASSIGNMENTS
 115    ##                                          ─────────────────────────
 116    ##                                          00
 117    ##                                           NONE
 118    ##
 119    ##                                          01
 120    ##                                           NONE
 121    ##
 122    ##                                          02
 123    ##                                           NONE
 124    ##
 125    ##                                          03
 126    ##                                           NONE
 127    ##
 128    ##                                          04
 129    ##                                           NONE
 130    ##                                          05
 131    ##                                           NONE
 132    ##
 133    ##                                          06
 134    ##                                           NONE
 135    ##
 136    ##                                          07
I 137   ##                                           NONE
 138    ##
 139    ##                                          08
 140    ##                                           NONE
 141    ##
 142    ##                                          09
 143    ##                                           NONE
 144    ##
 145    ##                                          10
 146    ##                                           NONE
 147    ##
 148    ##                                          11
 149    ##                                           NONE
 150    ##
 151    ##                                          12
 152    ##                                           NONE
 153    ##
 154    ##                                          13
 123    ##                                           NONE
 156    ##
 157    ##                                          14
 158    ##                                           NONE
 159    ##
 160    ##                                          15
 161    ##                                           NONE
 162    ##
 163    ##                                          16
 164    ##                                           NONE
 165    ##
...and so on thru route number 199              17
                                                 NON3

ICLID UNANSWERED CALL TABLE                     18
─────────────────────────                        NONE

     NONE                                        19
                                                 NONE
                                                ...and so on thru route 199
```

**Figure 675-I 1 DB Printout of ICLID Table (Cont'd)**

**System DataBase Printouts (Cont'd)**

**J.   Printing Directory Dialing Table**
**Parameters**

Programming Steps

If Directory Dialing Table Parameters need to be printed:

1.   Press the Directory Dialing Table Parameters flexible button (Button #10). The following message will be shown on the display phone:

```
PRINT DIR-DIAL
PRESS HOLD
```

2.   To print the Directory Dialing Table parameters, press the HOLD button. The following message will be shown on the display phone:

```
PRINTING    DIR-DIAL
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

Description

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figure for an example of the Directory Dialing Table database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

```
LST BIN NAME                    059 159
                                060 160
000 100                         061 161
001 101                         062 162
002 102                         063 163
003 103                         064 164
004 104                         065 165
005 105                         066 166
006 106                         067 167
007 i07                         068 168
008 108                         069 169
009 109                         070 170
010 110                         371 171
011 111                         072 172
012 112                         073 173
013 113                         074 174
014 114                         075 175
015 115                         076 176
016 116                         077 177
Oi7 ii7                         078 178
Oi8 118                         079 179
019 ii9                         080 180
020 120                         081 181
021 121                         082 182
022 122                         083 183
023 123                         084 184
024 124                         085 185
325 125                         086 186
026 126                         087 187
327 127                         088 188
028 128                         089 189
029 129                         090 190
030 130                         091 191
031 131                         092 192
332 132                         093 193
033 133                         094 194
034 134                         095 195
035 135                         046 000
036 136                         097 000
037 137                         098 000
038 138                         399 000
039 139                         ...and so on thru bin 199
040 140
041 141
042 142
043 143
044 144
045 145
046 146
047 147
048 148
049 149
050 150
051 151
052 152
053 153
054 154
055 155
056 156
057 157
058 158
```

**Figure 675-12 DB Printout of Directory Dial Table**

**System DataBase Printouts (Cont'd)**

**K.    Printing Hunt Group Parameters**

<table>
<tr><td align="center">Programming Steps</td><td align="center">Description</td></tr>
</table>

If a printout of Hunt Group Parameters is desired:

1.  Press the HUNT GROUP PARAMETERS flexible button (Button #11). The following message will be shown on the display phone:

> **PRINT HUNT GROUP**
> **PRESS HOLD**

2.  To print data for Hunt Group Parameters, press the HOLD button. The following display will be shown on the display phone:

> **PRINTING HUNT GROUP**

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

With a printer connected to the RS-232C port (future) on the-Central Processor Unit (CPU) or to either Port #3 or Port #4 on ttie I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "'dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figure for an example of the Hunt Group Parameter database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

```
HUNT GROUPS

HG0..450     PILOT HUNT

HG1..451     PILOT HUNT

HG2..452     PILOT HUNT

HG3..453     PILOT HUNT

HG4..454     PILOT HUNT

HG5..455     PILOT HUNT

HG6..456     PILOT HUNT

HG7..457     PILOT -HUNT
```

**Figure 675-13 DB Printout of Hunt Group Parameters**

**System DataBase Printouts (Cont'd)**

L. **Printing ACD or UCD Group Parameters**

Programming Steps

Description

If a printout of ACD* or UCD Groups is desired:

1. Press the ACD* or UCD GROUPS flexible button (Button #12). The following message will be shown on the display phone:

```
PRINT ACD GROUP
  PRESS HOLD
```

2. To print data for the ACD* or UCD Group Parameters, press the HOLD button. The following display will be shown on the display phone:

```
PRINTING ACD GROUP
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

*This feature is available with optional software.*

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

Refer to the following Figure for an example of ACD* or UCD Group Parameter database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

*Features available with optional software.

```
ACD  ALT  OVR  ANO  SUP  STN#                    ACD   TIMERS

550                                              RING  MIT  OVER  WRAP  NAT  NAR  FRT
                                                  60   60    60     4    0   300   5
551                                              ANNOUNCEMENT   TABLE

552                                              TABLE TYPE   INDEX   TIME
                                                   1    #     ###    ###
                                                   2    #     ###    ###
553                                                3    #     ###    ###
                                                   4    #     ###    ###
                                                   5    #     ###    ###
554                                                6    #     ###    ###
                                                   7    #     ###    ###
                                                   8    #     ###    ###
555
                                                 ACD  SMDR  REPORTING
                                                 CO   ICM  EV?  I/O   BAUD
556                                              N    N    N    1    2400

557

558

559

560

561

562

563

564

565
```

**Figure 675-14 DB Printout of ACD Group Parameters**

## System DataBase Printouts (Cont'd)

### M. Printing Voice Mail Group Parameters

<table>
<tr><td>Programming Steps</td><td>Description</td></tr>
</table>

Programming Steps

If a printout of Voice Mail Group Parameters is desired:

1. Press the VM* GROUP PARAMETERS flexible button (Button #13). The following message will be shown on the display phone:

```
PRINT VM GROUP
PRESS HOLD
```

2. To print data for Voice Mail* Group Parameters, press the HOLD button. The following display will be shown on the display phone:

```
PRINTING VM GROUP
```

When the system has finished sending the requested information to the printer, confirmation tone will be heard.

Description

*This feature is available with optional software.*

With a printer connected to the RS-232C port (future) on the Central Processor Unit (CPU) or to either Port #3 or Port #4 on the I/O Expansion Module, the currently stored customer database can be printed or "uploaded" into a file. This command allows either a range of station data or all stations data information to be "dumped" as a permanent record which can serve as a hard copy of the station attribute database.

The system Baud rate must match that of the printer or receiving device.

When printing the VM Group Parameters, the following data is printed;

- Voice Mail* Group Parameters
- Voice Mail* Outpulsing Table (including the disconnect table)
- Voice Mail* Options

Refer to the following Figure for an example of the VM Group Parameter database printout.

**Default:** None

**Related Programming:** Refer to Sec. 610.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on the Central Processor Unit (CPU), Port #3 or Port #4 on the I/O Expansion Module.

*Features available with optional software.

| VM | ALT | LEV | RET | STN# |
|-----|-----|-----|-----|------|
| 440 | | # | ## | # |
| 441 | | # | ## | # |
| 442 | | # | ## | # |
| 443 | | # | ## | # |
| 444 | | # | ## | # |
| 445 | | # | ## | # |
| 446 | | # | ## | # |
| 447 | | # | ## | # |

VOICE MAIL OUT TABLE

| TABLE IDX | PREFIX | SUFFIX |
|-----------|--------|--------|
| 0 | | |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |

VOICE MAIL CO DISCONNECT SIGNAL

APPLY IN-BAND DIGITS TO CO CALLS
        N

ALLOW FORWARD TO VM GROUP
        N

**Figure 675-15 DB Printout of Voice Mail Group Parameters**

**System DataBase Printouts (Cont'd)**

**N. Abort Printing**

<u>Programming Steps</u>

<u>Description</u>

If you need to abort a printout:

1. Press the ABORT PRINTING flexible button (Button #20).

2. Press the HOLD button. The message currently on the display phone wiil remain unchanged, however the printing will be aborted.

# SECTION 700
# SYSTEM CHECK-OUT

### 700.1 INTRODUCTION

Prior to actual power up and initialization, the Starplus Digital Key Telephone System should be checked over to avoid start up delays or improper loading. **A** step-by-step checklist is provided for this purpose.

### 700.2 PRELIMINARY PROCEDURES

1. Make sure that the Basic Key Service Unit (BKSU) is properly grounded.

2. Verify that all PCB's are firmly plugged into the correct card slot positions or expander modules are firmly seated onto their connectors.

3. Inspect the MDF for shorted wiring and improper polarity that would affect the Digital Terminal or DSS console.

4. Make certain that the nicad battery jumper on the Central Processor Unit (CPU) is set between pins 2 & 3 to enable Battery Backup option.

5. Make sure that plug-ended MDF cables connected to the KSU are secure and are plugged into the correct position.

### 700.3 POWER UP SEQUENCE

The power up sequence involves the proper application of AC power to the System, and CPB LEDs. A successful power up is assured if the installation checklist has been followed.

1. Plug the AC power cord of the Key Service Unit into the dedicated 117V ac outlet.

2. Turn the power switch of the KSU to ON.

3. The Central Processor Unit (CPU) has two red LEDs located on the front of the card. If the power up is successful, both red LEDs will flash.

4. Press the reset button on the CPU. The above LED indications will repeat. Initialization may be required prior to programming.

5. The system is ready for programming. If any problems have occurred, Refer to Section 800, Maintenance and Troubleshooting.

**Table 700-I Power Supply Tests**

| VOLTAGE DESIGNATIONS | VOLTAGE READING | TEST POINT LOCATION | REMARKS |
|---|---|---|---|
| 117 VAC | +117 VAC ±10% | Commercial Power Source | |

The power supply is pre-set at the time of manufacturing, but should be checked at system initialization with a digital volt meter having an accuracy of ±1%.

# SECTION 800
# MAINTENANCE AND TROUBLESHOOTING

800.1    **PRINTED CIRCUIT BOARD (PCB)**
         **TROUBLESHOOTING CHARTS**

**Table 800-I Central Processor Unit (CPU)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| 1. Central Processor board (CPU) to control system operation. | | | 1.Complete system failure. 2.Erroneous call processing. 3.Inoperative features in system operation. 4.Partial failures in system operation. 5.Continual system restarts. 6,Failure of SMDR. 7.Loss of unique customer data base programming. |
| 2. Read Only Memory (ROM) with factory set instructions. | | | |
| 3. Random Access Memory (RAM) protected by a nicad battery. | | | |
| 4. Halt switch for manual system restart. | | | |
| 5. Provides RS-232C port for SMDR and Terminal/Remote Program-, ming. | | | |

**Table 800-2 CPU Static RAM Memory Size**

| SIZE OF CHIPS (in Bits) | RAM MEMORY SIZE (in bytes) |
|---|---|
| 1 Megabit chip (2048 bytes) | 2 - 1 Meg chips= 256K bytes 4 - 1 Meg chips= 512K bytes |
| 4 Megabit chips (4096 bytes) | 2 - 4 Meg chips= 1024 bytes 4 - 4 Meg chips= 2048K bytes |

**Table 8003 CPU EPROM Memory Size**

| SIZE OF CHIPS (in Megabits) | SW1 SWITCH POSITIONS | | | | EPROM MEMORY SIZE (in bytes) |
|---|---|---|---|---|---|
| | 1 (SA) | 2 (SB) | 3 (SC) | 4 (not used) | |
| 1 Megabit chips (1024 bytes) | O F F (open) | OFF (open) | OFF (open) | OFF (open) | 2 • 1 Meg chips = 256K bytes 4 • Meg chips = 512K bytes |
| 2 Megabit chips (2048 bytes) | ON (closed) | OFF (open) | OFF (open) | OFF (open) | 2 • 2 Meg chips = 512K bytes 4 • 2 Meg chips = 1024K bytes |
| 4 Megabit chips (4096 bytes) | ON (closed) | ON (closed) | OFF (open) | OFF (open) | 2 • 4 Meg chips = 1024K bytes 4 • 4 Meg chips = 2048K bytes |
| 8 Megabit chips (8192 bytes) | ON (closed) | ON (closed) | ON (closed) | OFF (open) | 2 • 8 Meg chips = 2048K bytes 4 • 8 Meg chips = 4096K bytes |

OFF= OPEN, ON= CLOSED

**Table 8004 Single Line Board (SL12)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Provides interface for 12 Singie Line Telephones. Also provides for SLTs with M/W lights. | /Two LEDs that indicate the presence of +5V dc and -5V dc | None | 1 .SLT can't receive dial tone. 2.Poor transmission characteristics |

**Table 800-5 Key Telephone Board (KTI2)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Provides interface for 12 Digital Terminals, DSS/DLS Consoles or SLA (OPX) modules. | Two LEDs that indicate the presence of +5V dc and -5V dc | None | 1.Unable to receive intercom dial tone. 2.Poor transmission characteristics, 3.Key telephone set inoperative. 4.Key telephone un-able to invoke features 5.No LED indications. |

**Table 800-7 CO Line Loop Board (C012)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Provides interface for 12 Loop Start CO tines. | Two LEDs that indicate the presence of +5V dc and -5V dc<br><br>Additionally, 12 LEDs indicate the presence of CO line in use. | None | 1 .Unable to receive intercom dial tone.<br>2.Poor transmission characteristics.<br>3.Key telephone set inoperative.<br>4.Key telephone un-able to invoke feat-ures<br>5.No LED indications. |

**Table 800-8 Voice Control Board (VCB)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Contains "On-Board" 1200 Baud Modem<br><br>Provides all system tones such as intercom dial tone and busy tone, etc. | | None | 1 .Loss of unique cus-tomer database pro-gramming<br>2.Erroneous call pro-cessing<br>3.No Background Music |

**Table 800-9 4-circuit DTMF Module (DTM4)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Used to add DTMF receivers to the system to support Single Line ooeration. | Adds 4 DTMF receiver. | None | 1. SLT cannot receive or break dial tone.<br>2. DISA call can't re ceive or break dial tone. |

**Table 800-10 Backplane I/O Expansion Module (IOM)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Provides two additional RS-232C ports to the system. | None | None | 1 .Loss of SMDR data. |

**Table 800-6 Single Line Telephone Adapter (OPX)**

| FUNCTION | CONTROL | OPTIONS | FAULT OPTIONS |
|---|---|---|---|
| Provides one 48 volt loop to interface an OPX circuit. | Busy state LED that monitors circuits for busy condition. | /None | 1 .SLT can't receive dial tone.<br>2.Poor transmission, characteristics. |

## 800.2 REMOTE MAINTENANCE

### A. General Overview

The Remote Maintenance feature allows authorized personnel to survey system and slot configuration information. This can be done through a modem or data terminal connected to the Backplane Expansion Module via the RS-232C port. The commands are entered from a keyboard and are limited to those listed.

### B. Overview of Maintenance Commands

There are four basic commands available in the Remote Maintenance feature. All commands begin with a single character, followed by a space, another character and an optional digit or digits. All commands are terminated with a carriage return.

Basic format of the commands are shown in Figure 800-I :

### C. Maintenance Password

The Remote Maintenance feature, like Remote Programming, is entered via a six-character alphanumeric string. The password prompt is given by entering **a** carnage return at the device connected to the Backplane Expansion Module RS-232C port. After the prompt is printed out, the password should be entered followed by a carriage return. Proper entry of the password will result in the maintenance prompt. The Remote Maintenance password is: {CONFIG}

### D. Exit Maintenance

The Exit command will terminate thecurrent Remote Maintenance feature session. The Exit command format is: MAINT>X

```
4896 Digital Key-System
Eng. Ver. 0.071F DATE: 06/09/93  TIME: 13:26:41
ENTER PASSWORD:
maint>?
command  list:
 a s[nn]   - dump system or slot configuration data
           [nn] specifies an optional slot number parameter
           no parameter indicates that the entire system will be dumped
           examples:
                    maint>d s      (dumps entire system configuration)
                    maint>d s 2    (dumps slot 2 configuration, etc.)
 ?        - help menu
 x          exit maint
maint>
```

Figure **800-I Remote Maintenance Help Menu**

## F System Configuration

Figure 800-2 is a configuration of the Starplus Digital
key Telephone System with LCR and shows what is
printed out when:

  a. The installer enters **D<space>S** at the maint>
     prompt.

```
maint>d s
   SLOT      TYPE    FW VER.    BRD TYPE    3RD  OPTS    SERV  STAT
   ------    ------                                      -------------

     1       CPB     0.071F      CPU         4896,IAE    INS
     2       KIB     N/A         KSB              0       INS
     3       KIB     N/A         KSB              0       INS
     4       KIB     N/A         KSB              0       INS
     5       KIB     N/A         KSB              0       INS
     6       coa     N/A         col              0       INS
     7       COB     N/A         COI              0       INS
     8       C03     N/A         col              0       INS
     9       COB     N/A         COI              0       INS
    10       KIB     N/A         KSB              0       INS
    11       II3     N/A         KSB              0       INS
    12       UNK     N/A         UNPOPULATED              OOS
    13       SIB     N/A         SLT              .       INS

maint>
```

**Figure 800-2 System Configuration w/LCR**

where:

**Column 1:** lists the card slot.

**Column 2:** lists card type of that card slot.

**Column 3:** lists the firmware version of the card.

**Coiumn 4:** lists card type and if that card is installed.

**Column 5:** lists card options:

**Column 6:** lists card status:

  OOS status can indicate the entire card is out
  of service or a specific station is not installed or
  installed but not operational
  INS status can indicate a specific station is
  installed and operating correctly.

## F. CO/Station Configuration

Figure 800-3 is the CO/Station Configuration and shows what is printed out when:

a. The installer enters **D<space>S2** at the maint> prompt.

```
maint>d s2
  SLOT :  2
-------------------
Board Type : KIB - KSB

    STA        TYPE       STATUS    LCD
  --------   --------    ----------  -----

    100       Keyset       INS       Y
    101       Keyset       OOS       N
    102       Keyset       INS       Y
    103       Keyset       INS       Y
    104       Keyset       INS       Y
    105       Keyset       INS       Y
    106       Keyset       INS       Y
    107       Keyset       INS       N
    108       Keyset       INS       Y
    109       Keyset       INS       Y
    110       Keyset       INS       Y
    111       Keyset       INS       Y

maint>
  ALT-F10   HELP : ANSI-BBS : FDX :  2400 N81 :
```

**Figure 800-3 CO/Station Configuration**

where: **CO Lines:**

**Column** 1: lists the CO Line number.

**Column** 2: indicates status:

**OOS** status can indicate the entire card is out of service.

INS status can indicate a board station is installed and operating correctly. Outgoing enabled indicates the CO line is active in the system. Outgoing disabled indicates that the Attendant has disabled the CO line for outgoing access

**Column 3:** indicates whether the CO Line is Pulse or DTMF. (programmable option)

**Column 4:** indicates whether the CO Line is a CO Line or a PBX Line. programmable option)

where: **Stations**

**Column** 1: lists the station number.

**Column** 2: indicates station type (keyset, DSS, SLT.

**Keyset** - ID 0 = Key station
**DSS/DLS** - ID 1 = DSS Map 1
**DSS/DLS** - ID 2 = DSS Map 2
**DSS/DLS** - ID 3 = DSS Map 3
**DSS/DLS** - ID 4 = DSS Map 4
**SLT** - ID 5 = SLT/OPX
**SLT w/Lamp** - ID 6 = SLT w/Message Waiting
**Relay/Sensor** - ID 7 = Relay/Sensor Module
**DDIU** - ID 8 = Digital Data Interface Unit

**Column 3:** indicates status:

COS status can indicate the entire card is out of service or a specific station is not installed or installed but not operational.

INS status can indicate a specific station is installed and operating correctly.

**Column 4:** indicates whether the station has an LCD Display or doesn't have an LCD Display.

**G.   Event Trace Buffer**

The Event Trace Buffer is used to store and dump event traces (up to 30) that occur just prior to a Starplus Digital Key Telephone System soft or hard restart. These can then be reviewed by authorized personnel to aid in system troubleshooting..

The basic format for the commands are:

- T<space><return> • display the current status of the Event trace buffer

- T<space>0<return> - turns the Trace buffer OFF.

- T<space>1 <return> • turns the Trace buffer ON to record events prior to a soft system reset.

- T<space>2<return> • turns the Trace buffer ON to record events prior to a hard system restart.

- T<space>3<return> • turns the Trace Buffer ON to record events prior to either a soft reset or a hard system restart.

- d<space>E<return> • dumps Trace Events stored from last system reset. (soft or hard)

| NOTE | [Ctrl] + C will abort the Data Dump and return to the maint> prompt. |
|---|---|

## 800.3    REMOTE SYSTEM MONITOR

### A.    General Overview

The Remote Monitor feature provides remote access to the installed system for diagnostic purposes. These capabilities benefit Service personnel enabling them to support the end user remotely. Different levels of access, via password, allows authorized personnel to trace, monitor and "up-load" critical information directly from the Starplus Digitai Key Telephone System. This provides a more accurate means of acquiring system information that leads to a quick resolution of problems that may occur. This is all done without interfering with ongoing call processing or normal system operation, and in many cases may be performed without a site visit. The built-in 1200 baud modem (future) is used for remote access.

Capabilities allowed and reserved for this "High level troubleshooting" in addition are:

- Monitor Mode
- Enable & Disable Event "Trace"
- Dump 'Trace Buffer" (up-load)

### B. Monitor Password

The Remote Monitorfeature, like Remote Maintenance, is entered via a six-character alphanumeric string. The password prompt is given by entering a carriage return at the device connected to the Backplane I/O Expansion Module. After the prompt is printed out, the password should be entered followed by a carriage return. Proper entry of the password will result in the MON> prompt. The Remote Maintenance password is: {ETRACE}

| NOTE | The remote *monitor feature is intended* **for use** *only under the guidance and instruction by authorized personnel from a Technical Assistance Center (TAC). Care and caution must be observed when using* **this** *feature as be observed when using* **this** *feature as permanent damage to the software structure can occur.* |
|------|------|

### C.    Help Menu (?)

**A** convenient on screen Help Menu is provided by typing a "?" then pressing Enter. The following will appear on the screen:

```
4896 Digital Key-System
Eng. Ver. 0.071F DATE: 06/09/93  TIME: 13:30:55
ENTER PASSWORD:
mon>?
command list:
  c [c]       dump co data
  s [s]       dump sta data
  t [d]       set trace key
  d [a][a] - dump memory
  m a      - modify memory
  b  rate  - set   baud    rate
  ?        - help menu
  x        - exit monitor
mon>
```

### D. Dump Memory Data

Three options allow the memory structure lo be "dumped" for viewing. The three options are entered as follows:

c [c] - Dump CO Line memory structure

s [s] - Dump Station memory Structure

d [a][a] - Dump a memory address Structure

The data obtained from these commands is in hexadecimal format and is used primarily for manufacture level support.

| NOTE | [Ctrl] + C will abort the Data Dump and return to the mon> prompt. |
|------|------|

### E.    Event Trace Mode

The "T" command enables and disables the Starplus Digital Key Telephone System Trace mode. While the trace mode is enabled events for the trace desired will be displayed on the monitor, printer or PC connected to the Starplus Digital Key Telephone System in an event record. To view the current status of the trace mode type "T"<return>at the MON> prompt then the following screen will be displayed:

```
mon>t

 Messages      Y/N
 --------      ---
BOARD EVT  -> N
MSC States -> N
Dev        -> N
PCM        -> N
COL States -> N
Stn States -> N
Error Msg  -> N
Que Evt    -> N

mon>
```

a. To enable an event trace type "t" <space> (space bar)

b. Then type of trace desired [d], where d is determined as follows:

- B= Board event trace (traces events associated with PCB's)

- M= Miscellaneous State event trace

- P= Pulse Coded Modulation (PCM) traces events associated with voice communications.

- C= CO Line (C012) States (traces events associated with CO Line activity)

- S= Station (STA) States (traces events associated with Station activity)

- E= Error Messages (traces error messages)

- Q= Queue (QUE) Events (traces queuing events, i.e. DTMF receiver, UCD, LCR, etc...)

- D= Device Command (traces commands to peripheral devices).

c. Then enter the specific board, CO line or Station number of the trace desired or type "all" if all board's, CO line's or Station's events are desired.
- 1-19 = Board KSU card slot position (CPU= 1)
- 01-48 = CO Line port
- 100-I 95 = Station location
- All= All Boards, CO lines or Stations

d. Then press Enter to enable the trace. A screen similar to the following will appear:

```
mon>t b

 Messages      Y/N
 --------      ---
BOARD EVT  -> Y
MSC States -> N
Dev        -> N
PCM        -> N
COL States -> N
Stn States -> N
Error Msg  -> N
Que Evt    -> N

mon>
```

e. To disable or turn off a particular trace mode do not enter a specific board, CO line or Station number (i.e. "t<space>s<return>" to disable station event trace).

To have event trace's displayed on the screen you must first exit the MONitor mode by typing "X" at the MON> prompt. After you exit the event(s), the trace will begin as shown in Figure 800-4 Event Trace as it appears on Display.

---

**CAUTION**

**Unless instructed by personnel at a Technical Assistance Center (TAC) do not leave the trace mode enabled for! extended periods of time. The system will "dump" the requested event(s) trace which may use up paper or fill/ memory buffers on the collecting device. It is recommended that the trace events be disabled (turned off) for all event(s) traces before leaving the system site.**

---

```
Sta 100:  State= DIAL-TONE,  Evt= Dial Pad (25), Data=7
Sta 100:  State= DIALING,   Evt= Dial Pad (25), Data=5
Sta 100:  State= DIALING,   Evt= Int Page (69), Data=8
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=3
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=9
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=5
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=8
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=7
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=4
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=3
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=9
Sta 100:  State= PAGING,    Evt= Dial lad (25), Data=9
Sta 100:  State= PAGING,    Evt= Dial ?ad (25), Data=9
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=7
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=11
Sta 100:  State= PAGING,    Evt= Dial Pad (25), Data=3
Sta 100:  State= PAGING,    Evt= Diai Pad (25), Data=2
Sta 100:  State= PAGING,    Evt: Page T/O (150), Data=0
Sta 100:  State= MISC-TONE,  Evt= Dial Pad (25), Data=4
Sta 100:  State= MISC-TONE,  Evt= Dial Pad (25), Data=9
Sta 100:  State= MISC-TONE,  Evt= Key Data (26), Data=32
Sta 100:  State= MISC-TONE,  Evt= Mon Key (145), Data=-1
Sta 100:  State= MISC-TONE,  Evt= On Hook (17), Data=0
```

**Figure 800-4 Event Trace as it appears on Display**

## F.  Modify Memory command

The Modify Memory Command is for Engineering Use only.

---

**CAUTION**

---

Use of this command can alter or damage the Starplus Digital Key Telephone Systems operating data base which can result in system malfunction. If this occurs it will be necessary to power the system down and re-initialize the data base, then completely re-program the customer programming data.

---

## G. Baud Rate Command

This command provides a convenient means for changing the baud rate, for the RS-232-C port located on the Central Processor Unit (CPU), while in the Monitor mode. To change the baud rate type "B" plus the desired baud rate, then the enter key.

| NOTE | *After changing the Baud Rate via Baud Rate command, you must change your Baud Rate on your Receiver/Terminal.* |

## H.  Exit the Monitor mode

The Exit command will terminate the current Remote Monitor enable/disable session. If Event(s) Trace have been or are still enabled the event records will be displayed only after exiting the MONitor mode. The Exit command format is: MON> X

---

**CAUTION**

---

/Unless instructed by personnel at a Technical Assistance /Center (TAC) do not leave the trace mode enabled for extended periods of time. The system will "dump" the requested event(s) trace which may use up paper or fill memory buffers on the collecting device. It is recommended that the event traces be disabled (turned off) for all event(s) before leaving the system site.

---

# APPENDIX A
# CUSTOMER DATABASE PROGRAMMING

### Appendix A-l System Parameters

| PROG CODE | FLEX BTN | FUNCTION | FORMAT | DEFAULT | CUSTOMER DATA |
|---|---|---|---|---|---|
| FLASH01 | 1 | /System Hold Recall | 000-300 s | 060 s | |
| | 2 | Exclusive Hold Recall | 000-300 s | 180 s | |
| | 3 | Attendant Recall Timer | 00-60 min | O f m i n | |
| | 4 | Transfer Recall | 000-300 s | 045 s | |
| | 5 | Preset Forward Timer | 00-99 s | 10 s | |
| | 6 | Call Forward No/Answer | 000-600 s | 015 s | |
| | 7 | ! Pause Timer | 1-9 s | 2s | |
| | a | /Call Park Timer | 000-600 m | 180s | |
| | 9 | Conference/DISA Timer | 00-99 m ! | 10 m | |
| | 10 | Paging Timeout Timer | 00-60 s | 15 s | |
| | 11 | CO Ring Detect Timer | 200-900 msec | 300 msec | |
| | 12 | DISA/SLT Receiver Timer | 005-100 | 020s | |
| | 13 | MSG Wait Reminder Tone | 000-l 04 m | 000 m | |
| | 14 | SLT Hook-Flash Timer | 05-20 s | 1.0s | |
| | 15 | SLT Hook-Flash Debounce Tmr | 0.00-1.00 sec | 0.1 s | |
| | 16 | SMDR* Call Qualification Timer | 00-60 sec. | 30 sec. | |
| | 17 | Auto Call Back Timer | 00-99 sec. | 00 sec. | |
| | 18 | Reminder Ring Timer | 00-99 sec. | 00 sec. | |
| | 19 | Release Guard Timer | 01-50 msec. | 300 msec | |
| | | | | | |
| | | | | | |
| FLASH 05 | 1 | Attendant Override | Yes/No | No | |
| | 2 | /Hold Preference | Sys/Excl | System | |
| | 3 | 'External Night Ring | Yes/No | No | |
| | 4 | Executive Warning Tone | Yes/No | Yes | |
| | 5 | /Page Warning Tone | Yes/No | Yes | |
| | 6 | Background Music | Yes/No | Yes | |
| | 7 | LCR* Enable | Yes/No | No | |
| | 8 | ForcedAccount Codes* | Yes/No | No | |
| | 9 | Group Listening | Yes/No | No | |
| | 10 | Idle Speaker Mode | Yes/No | No | |
| | 11 | /Call Cost* Display Feature | Yes/No | No | |
| | 12 | /Music On Hold | Yes/No | Yes | |
| | 13 | Handset Receiver Gain | Yes/No | No | |
| | 14 | Call Qualifier Tone Option | Yes/No | No | |

| | | | | | |
|---|---|---|---|---|---|
| ADDITIONAL SYSTEM FEATURES: | | | | | |
| _ASH 06 | 1 | Barge-In Warning Tone | Enable/Disable | Enable | |

*Features available with optional software.

## Appendix A-l System Parameters (Cont'd)

| PROG CODE | FLEX BTN | FUNCTION | FORMAT | DEFAULT | CUSTOMER DATA |
|---|---|---|---|---|---|
| SYSTEM FLASH RATES: | | | | | |
| /FLASH07 | 1 | Incoming CO Ringing | 00-15 | 30 ipm flash | |
| | 2 | /Incoming ICM Ringing | 00-15 | 120 ipm flutter | |
| | 3 | Call Forward | 00-l 5 | 30 ipm flash | |
| | 4 | /Message Waiting | 00-15 | 15 iprn flash | |
| | | | | | |
| | | | | | |
| | | | | | |
| FLASH10 | | Attendant Station Assignment | 100-l 95 | 100 | |
| FLASH 11 | 1-4 | /Time/Date Format | 12/24 HR:M/D | 12 HR:M/D | |
| FLASH 12 | 1-5 | PBX Dialing Codes | Five 2-Digit | None | |
| /FLASH 13 | 1 | Exec/Secy Pair 1 | Sta #, Sta # | None | |
| | 2 | Exec/Secy Pair 2 | Sta #, Sta # | None | |
| | 3 | Exec/Secy Pair 3 | Sta #, Sta # | None | |
| | 4 | Exec/Secy Pair 4 | Sta #, Sta # | None | |
| FLASH 14 | 1 | Relay #1 | | None | |
| | 2 | Relay #2 | | None | |
| | 3 | Relay #3 | | None | |
| | 4 | (Sensor #1 | | None | |
| | 5 | Sensor #2 | | None | |
| | 6 | Sensor #3 | | None | |
| | 8 | /Stations | | None | |
| | 12 | Relay/Sensor #1 | | None | |
| | 13 | Relay/Sensor #2 | | None | |
| | 14 | /Relay/Sensor #3 | | None | |
| | 15 | Relay/Sensor #4 | | None | |
| FLASH 15 | 1 | Port #1 ("On-Board" RS-232C) | | 2400 | |
| | 2 | Port #2 ("On-Board" Modem) | | 1200 | |
| | 3 | Port #3 (Backplane RS-232C) | | 2400 | |
| | 4 | Port #4 (Backplane RS-232C) | | 2400 | |
| 'FLASH 20 | 1 | DISA Access Code | 100-999 | too | |
| | 2 | Admin. Password | One 4-Digit | 3226 | |
| FLASH 21 | 1 | SMDR* Enable/Disable | Yes/No | No | |
| | 2 | Call Type | All/LD Only | LD Only | |
| | 3 | /Print Columns | 80/29 | 80 | |
| | 4 | /Baud Rate | 300/1200/2400 4800/9600 | 2400 | |
| | 5 | I/O Port | 1/2/3/4 | Port #1 | |

*Features available with optional software.

**Appendix A-l System Parameters (Cont'd)**

| PROG CODE | FLEX BTN | FUNCTION | FORMAT | DEFAULT | CUSTOMER DATA |
|---|---|---|---|---|---|
| /FLASH22 | 1 | Night Mode Operation | Auto/Manual | Manual | |
| | 2 | ANM Schedule - Monday | Off Time | 0 | / |
| | 3 | ANM Schedule - Tuesday | Off Time | 1 | / |
| | 4 | ANM Schedule - Wednesday | Off Time | 2 | / |
| | 5 | ANM Schedule - Thursday | Off Time /On Time | 3 | / |
| | 6 | ANM Schedule - Friday | Off Time On Time | 4 | / |
| | 7 | ANM Schedule - Saturday | Off Time On Time | 5######## | / |
| | 8 | ANM Schedule - Sunday | Off Time /On Time | 6######## | / |
| FLASH 23 | l-4 | Directory Dialing Table | | | |
| FLASH 24 | l-1 2 | Flexible Card Assignments | | 4 Station, 4 CO Line, 4 Station | |
| FLASH 41 | 1 | /Dial Pulse | 60/40, 66/33 | 60/40 | |
| | 2 | Dialing Speed | 10/20 p p s | 10 pps | |
| FLASH 42 | l-4 | Flexible CO Port Assignments | | Cards l-4 | |
| jFLASH43 | 1 | ICLID* Ringing Assignment | | None | |
| FLASH 52 | l-8 | /Flexible Station Port Assignments | | Cards 1-8 | |

*Features available with optional software.

### Appendix A-2 Hunt Group, ACD and UCD Group Parameters

| PROG CODE | FLEX BTN | FUNCTION | PILOT OR STATION | STATIONS (up to 8 Stations) |
|---|---|---|---|---|
| FLASH 30 | 1 | Hunt Group 0 (450) | | |
| | 2 | Hunt Group 1 (451) | | |
| | 3 | Hunt Group 2 (452) | | |
| | 4 | Hunt Group 3 (453) | | |
| | 5 | Hunt Group 4 (454) | | |
| | 6 | Hunt Group 5 (455) | | |
| | 7 | Hunt Group 6 (456) | | |
| | 8 | Hunt Group 7 (457) | | |

| PROG CODE | FLEX BTN | FUNCTION | ALT | OVR | RAN | STATIONS (up to 8 Stations) |
|---|---|---|---|---|---|---|
| FLASH 60 | 1 | ACD*/UCD Group 0 (550) | | | | |
| | 2 | ACD*/UCD Group 1 (551) | | | | |
| | 3 | ACD*/UCD Group 2 (552) | | | | |
| | 4 | ACD*/UCD Group 3 (553) | | | | |
| | 5 | ACD*/UCD Group 4 (554) | | | | |
| | 6 | ACD*/UCD Group 5 (555) | | | | |
| | 7 | ACD*/UCD Group 6 (556) | | | | |
| | 8 | ACD*/UCD Group 7 (557) | | | | |

| PROG CODE | FLEX BTN | FUNCTION | FORMAT | DEFAULT | CUSTOMER DATA |
|---|---|---|---|---|---|
| FLASH 61 | 1 | ACD*/UCD Ring Timer | 000-300 | 060 | |
| | 2 | ACD*/UCD Message Timer | 000-300 | 060 | |
| | 3 | ACD*/UCD Overflow Timer | 000-300 | 060 | |
| | 4 | ACD*/UCD Wrap-up Timer | 000-999 | 004 | |
| | 5 | ACD*/UCD No-Answer Recall Timer | 000-300 | 000 | |
| | 6 | ACD*/UCD No-Answer Retry Timer | 000-999 | 30 | |
| | 7 | *Guaranteed Message Timer | 000-300 | 10 | |

| PROG CODE | FLEX BTN | FUNCTION | FORMAT | DEFAULT | CUSTOMER DATA |
|---|---|---|---|---|---|
| FLASH 62 | 1 | RAN Announcement Table 1 | YXXXMMM | None | |
| | 2 | RAN Announcement Table 2 | YXXXMMM | None | |
| | 3 | RAN Announcement Table 3 | Y X X X M M M | None | |
| | 4 | RAN Announcement Table 4 | Y X X X M M M | None | |
| | 5 | RAN Announcement Table 5 | Y X X X M M M | None | |
| | 6 | RAN Announcement Table 6 | Y X X X M M M | None | |
| | 7 | RAN Announcement Table 7 | Y X X X M M M | None | |
| | 8 | RAN Announcement Table 8 | Y X X X M M M | None | |

*Features available with optional software.

**Appendix A-2 Hunt, ACD, UCD Group Parameters (Cont'd)**

| PROG CODE | FLEX BTN | FUNCTION | ALT | OVF? | RAN | STATIONS (up to 16 Stations) |
|---|---|---|---|---|---|---|
| FLASH 64 | 1 | ACD* Group 8 (558) | | | | |
| | 2 | ACD* Group 9 (559) | | | | |
| | 3 | ACD* Group 10 (560) | | | | |
| | 4 | ACD* Group 11 (561) | | | | |
| | 5 | ACD* Group 12 (562) | | | | |
| | 6 | ACD* Group 13 (563) | | | | |
| | 7 | ACD* Group 14 (564) | | | | |
| | 8 | ACD* Group 15 (565) | | | | |

*Features available with optional software.

**Appendix A-3 Voice Mail Group Parameters**

| PROG CODE | FLEX BTN | FUNCTION | ALT | OVR | RAN | |
|---|---|---|---|---|---|---|
| FLASH 65 | 1 | Voice Mail Group 0 (440)* | | | | |
| | 2 | Voice Mail Group 1 (441)* | | | | |
| | 3 | Voice Mail Group 2 (442)* | | | | |
| | 4 | Voice Mail Group 3 (443)* | | | | |
| | 5 | Voice Mail Group 4 (444)* | | | | |
| | 6 | Voice Mail Group 5 (445)* | | | | |
| | 7 | Voice Mail Group 6 (446)* | | | | |
| | 8 | Voice Mail Group 7 (447)* | | | | |

| PROG CODE | FLEX BTN | FUNCTION | OUTPULSING DIGITS | | L or R |
|---|---|---|---|---|---|
| FLASH 66 | 1 | VM* Outpulsing Table 0 | Prefix | | |
| | | | Suffix | | |
| | 2 | VM* Outpulsing Table 1 | Prefix | | |
| | | | Suffix | | |
| | 3 | VM* Outpulsing Table 2 | Prefix | | |
| | | | Suffix | | |
| | 4 | VM* Outpulsing Table 3 | Prefix | | |
| | | | Suffix | | |
| | 5 | VM* Outpulsing Table 4 | Prefix | | |
| | | | Suffix | | |
| | 6 | VM* Outpulsing Table 5 | Prefix | | |
| | | | Suffix | | |
| | 7 | VM* Outpulsing Table 6 | Prefix | | |
| | | | Suffix | | |
| | 8 | VM* Outpulsing Table 7 | Prefix | | |
| | | | Suffix | | |
| | 9 | VM* Disconnect Table 8 | Disconnect | | |

| PROG CODE | FLEX BTN | FUNCTION |
|---|---|---|
| FLASH 67 | 1 | Voice Mail* ID digits for Incoming CO Calls |
| | 2 | Voice Mail* Transfer/Forward |

*Features available with optional software.

**Appendix A-4 CO Line Programming (Flash 40)**

| FLEXIBLE BUTTONS | | CO1 | CO2 | CO3 | CO4 | CO5 | CO6 | CO7 | CO8 | CO9 | CO10 | CO11 | CO12 | DEF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Tone/ Pulse | | | | | | | | | | | | | TONE |
| 2 | CO/ PBX | | | | | | | | | | | | | CO |
| 3 | UNA | | | | | | | | | | | | | YES |
| 4 | Conf | | | | | | | | | | | | | YES |
| 5 | Privacy | | | | | | | | | | | | | YES |
| 6 | Loop supv | | | | | | | | | | | | | NO |
| 7 | DISA | | | | | | | | | | | | | NO |
| 8 | Flash Timer | | | | | | | | | | | | | 10 |
| 9 | Line Group | | | | | | | | | | | | | 1 |
| 10 | Line COS | | | | | | | | | | | | | 1 |
| 11 | Ring* | | | | | | | | | | | | | |
| 13 | Trunk Dir | | | | | | | | | | | | | 2 |
| 14 | Ring Delay | | | | | | | | | | | | | 00 |
| 15 | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |

*Refer to CO Line Ringing Assignments

Board # _____

**Appendix A-4 CO Line Programming (Flash 40) (Cont'd)**

| CO LINE | CO LINE NAME FOR IDENTIFICATION |
|---|---|
| co1 | |
| CO 2 | |
| CO 3 | |
| co4 | |
| CO 5 | |
| CO6 | |
| c o 7 | |
| CO 8 | |
| CO 9 | |
| CO 10 | |
| CO 11 | |
| CO 12 | |

CO Line Board # _____

**Appendix A-5 CO Line Ringing Assignment Chart**

| CO LINE: | DAY RINGING | CO LINE: | DAY RINGING |
|---|---|---|---|
| TYPE: | NIGHT RINGING | TYPE: | NIGHT RINGING |
| NUMBER: | | NUMBER: | |
| CO LINE: | DAY RINGING | CO LINE: | DAY RINGING |
| /TYPE.. | NIGHT RINGING | TYPE. | NIGHT RINGING |
| NUMBER: | | /NUMBER: | |
| CO LINE: | DAY RINGING | CO LINE: | DAY RINGING |
| /'TYPE: | NIGHT RINGING | TYPE: | NIGHT RINGING |
| NUMBER: | | NUMBER: | |
| CO LINE: | DAY RINGING | CO LINE: | DAYRINGING |
| TYPE: | NIGHT RINGING | TYPE: | NIGHT RINGING |
| /NUMBER: | | NUMBER: | |

Button #11 = Enter Ringing Assignments

Button #17 = Display Ringing Assignments

Ringing Assignments:
   0 = No Ring (deletes station from Ringing Assignments
   1 = D (Day Ringing)
   2 = N (Night Ringing)
   3 = B (Both Day and Night Ringing)

### Appendix A-6 Station Programming (Flash 50)

| DATA FIELD | PAGE/BTN | STATION NUMBER | | | | | | | DEFAULT |
|---|---|---|---|---|---|---|---|---|---|
| **PAGE ACCESS** | A/1 | | | | | | | | **Enabled** |
| DO NOT DISTURB | A/2 | | | | | | | | Enabled |
| CONFERENCE | AI3 | | | | | | | | Enabled |
| EXECUTIVE OVERRIDE | A/4 | | | | | | | | **Disabled** |
| PRIVACY | A/5 | | | | | | | | **Enabled** |
| SYSTEM SPEED | A/6 | | | | | | | | **Enabled** |
| QUEUING | A/7 | | | | | | | | **Enabled--** |
| PREF LINE ANSWER | A/8 | | | | | | | | **Disabled** |
| **OHVO** | A/9 | | | | | | | | **Disabled** |
| CALL FORWARD | A/10 | | | | | | | | Enabled |
| FORCED LCR* | A/11 | | | | | | | | Disabled |
| **ACD*** SUPV BARGE-IN | A/12 | | | | | | | | **Disabled** |
| OVERRIDE BLOCKING | A/13 | | | | | | | | /Allowed |
| CO RINGING OPTIONS | A/14 | | | | | | | | /Muted |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Page "A" is selected by pressing Button #18 of the flexible buttons

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| STA ID (0-7) | B/I | | | | | | | | 0 |
| COS (I-6) | B/2 | | | | | | | | 1 |
| SPEAKERPHONE (O-2) | B/3 | | | | | | | | 0 |
| PICKUP GROUP (I-4) | B/4 | | | | | | | | 1 |
| PAGING ZONES (I-4) | B/5 | | | | | | | | 1 |
| /PRESET FORWARD | B/6 | | | | | | | | **None** |
| CO LINE GROUP (0-7) | B/7 | | | | | | | | 1 |
| LCR* CLASS OF SERVICE (O-6) | B/8 | | | | | | | | 0 |
| OFF-HOOK PREFER | B/9 | | | | | | | | 00 |
| BUTTON ASSIGN | B/10 | Refer to Button Assignment Chart | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Page "B" is selected by pressing Button #19 of the flexible buttons

* Features available with optional software.

### Appendix A-7 Button Assignment Chart (Flash 50)

| STA # _____ PORT # _____ | | | |
|---|---|---|---|
| 1 | | | 11 |
| 2 | | | 12 |
| 3 | | | 13 |
| 4 | | | 14 |
| 5 | | | 15 |
| 6 | | | 16 |
| 7 | | | 17 |
| 8 | | | 18 |
| 9 | | | 19 |
| 10 | | | 20 |
| 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 |

| STA # _____ PORT # _____ | | | |
|---|---|---|---|
| 1 | | | 11 |
| 2 | | | 12 |
| 3 | | | 13 |
| 4 | | | 14 |
| 5 | | | 15 |
| 6 | | | 16 |
| 7 | | | 17 |
| 8 | | | 18 |
| 9 | | | 19 |
| 10 | | | 20 |
| 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 |

This chart is to be used to assign each flexible button a function. By default, Buttons 1 through 10 are assigned as Stations 100 through 109, Buttons 11 through 18 are assigned as CO Lines 01 through 8. Buttons 19 and 20 are assigned as a Loop and Pool Button respectively. Buttons 21-24 are flexible buttons with features assigned to them.

WHERE:

   BB = Button Number (01 through 28)
   LL = CO Line Number (01 through 48)
   G = Line Group (1 through 7)

**KEY STATION BUTTON PROGRAMMING:**

1. To assign a button as a multi-function button (user programmable) enter:
   BB [0] HOLD

2. To assign a button as a CO Line button, enter:
   BB [I] LL HOLD

3. To assign a button as a loop button, enter:
   BB [2] HOLD

4. To enter a button as a pooled group button, enter:
   BB [3] G HOLD

5. To unassign a button, enter:
   BB [#] HOLD

**SLT ENTRY: (Off-I-look Preference)**

1. When an SLT is being assigned for Off-Hook Preference, enter:
   00 [I] LL HOLD for a specific CO Line
   or
   00[3] G HOLD for CO Group Access.

## Appendix A-9 System Speed Dial Numbers

Programmed from the first Attendant station.

<u>Monitored by Toll Restriction (COS)</u>

| BIN # | Telephone Number | BIN # | Telephone, Number |
|-------|------------------|-------|-------------------|
| 20 | | 41 | |
| 21 | | 42 | |
| 22 | | | |
| 23 | | 43 | |
| 24 | | 44 | |
| 25 | | 45 | |
| 26 | | 46 | |
| 27 | | 47 | |
| 28 | | 48 | |
| 29 | | 49 | |
| 30 | | 50 | |
| 31 | | 51 | |
| 32 | | 52 | |
| 33 | | 53 | |
| 34 | | 54 | |
| 35 | | 55 | |
| 36 | | 56 | |
| 37 | | 57 | |
| 38 | | 58 | |
| 39 | | 59 | |

## Appendix A-8 System Speed Dial Numbers (Cont'd)

Programmed from the first Attendant station.

<u>Overrides Toll Restriction (COS).</u>

| BIN   # | Teleohone   Number | BIN   # | Teleohone   Number |
|---------|--------------------|---------|--------------------|
| 60 |  | 80 |  |
| 61 |  | 81 |  |
| 62 |  | 82 |  |
| 63 |  | 83 |  |
| 64 |  | 84 |  |
| 65 |  | 85 |  |
| 66 |  | 86 |  |
| 67 |  | 87 |  |
| 68 |  | 88 |  |
| 69 |  | 89 |  |
| 70 |  | 90 |  |
| 71 |  | 91 |  |
| 72 |  | 92 |  |
| 73 |  | 93 |  |
| 74 |  | 94 |  |
| 75 |  | 95 |  |
| 76 |  | 96 |  |
| 77 |  | 97 |  |
| 78 |  | 98 |  |
| 79 |  | 99 |  |

## Appendix A-9 Exception Tables (Fiash 70)

| Allow Table A | Allow Table B |
|---|---|
| BIN 1 | BIN 1 |
| BIN2 | BIN2 |
| BIN 3 | BIN3 |
| BIN 4 | BIN4 |
| BIN5 | BIN5 |
| BIN 6 | BIN6 |
| BIN 7 | BIN7 |
| BIN 8 | BIN8 |
| BIN 9 | BIN9 |
| BIN 10 | BIN 10 |
| BIN 11 | BIN 11 |
| BIN 12 | BIN 12 |
| BIN 13 | BIN 13 |
| BIN 14 | BIN 14 |
| BIN 15 | BIN 15 |
| BIN 16 | BIN 16 |
| BIN 17 | BIN 17 |
| BIN 18 | BIN 18 |
| BIN 19 | BIN 19 |
| BIN 20 | BIN 20 |

| Deny Table A | Deny Table B |
|---|---|
| BIN 1 | BIN 1 |
| BIN 2 | BIN2 |
| BIN 3 | BIN3 |
| BIN4 | BIN 4 |
| BIN5 | BIN5 |
| BIN6 | BIN6 |
| BIN 7 | BIN7 |
| BIN 8 | BIN 8 |
| BIN 9 | BIN9 |
| BIN 10 | BIN 10 |

**Appendix A-9 Exception Tables (Flash 70) (Cont'd)**

Special Table 1

| Area Code: | | |
|---|---|---|
| OFFICE CODES | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Special Table 2

| Area Code: | | |
|---|---|---|
| OFFICE CODES | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Special Table 3

| /Area Code: | | |
|---|---|---|
| OFFICE CODES | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Special Table 4

| I/ Area Code: | | |
|---|---|---|
| OFFICE CODES | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Appendix A-I 0 Least Cost Routing (Flash 75)**

CO LINE GROUPS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |

Enter what type lines are programmed in each group.

DAILY START TIME TABLE

| START TIME | DEFAULT TIME | CHANGED TIME |
|---|---|---|
| 1 | 0800 | |
| 2 | 1700 | |
| 3 | 2300 | |
| 4 | #### | |

WEEKLY SCHEDULE TABLE

| START TIME (From Daily Start Table) | TIME PERIOD ROUTE LIST | | | | | | |
|---|---|---|---|---|---|---|---|
| | MON | TUE | WED | THU | FRI | SAT | SUN |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |

| TOLL INFORMATION ROUTE LIST TABLE | DEFAULT 00 | |
|---|---|---|

**Appendix A-I 1 Route List Table**

| Route | Time | 1st Group | Insert/ Delete | PRIO | 2nd Group | Insert/ Delete | PRIO | 3rd Group | Insert/ Delete | PRIO | 4th Group | Insert/ Delete | PRIO | 5th Group | Insert/ Delete | PRIO | 6th Group | Insert/ Delete | PRIO | 7th Group | Insert/ Delete | PRIO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 01 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 02 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 03 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |

**Appendix A-I 1 Route List Table (Cont'd)**

| Route | Time | 1st Group | Insert/ Delete | PRIO | 2nd Group | Insert/ Delete | PRIO | 3rd Group | Insert/ Delete | PRIO | 4th Group | Insert/ Delete | PRIO | 5th Group | Insert/ Delete | PRIO | 6th Group | Insert/ Delete | PRIO | 7th Group | Insert/ Delete | PRIO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 05 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 06 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 07 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |

**Appendix A-I 1 Route List Table (Cont'd)**

| Route | Time | 1st Group | Insert/ Delete | PRIO | 2nd Group | Insert/ Delete | PRIO | 3rd Group | Insert/ Delete | PRIO | 4th Group | Insert/ Delete | PRIO | 5th Group | Insert/ Delete | PRIO | 6th Group | Insert/ Delete | PRIO | 7th Group | Insert/ Delete | PRIO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 09 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 10 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 11 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |

**Appendix A-I 1 Route List Table (Cont'd)**

| Route | Time | 1st Group | Insert/Delete | PRIO | 2nd Group | Insert/Delete | PRIO | 3rd Group | Insert/Delete | PRIO | 4th Group | Insert/Delete | PRIO | 5th Group | Insert/Delete | PRIO | 6th Group | Insert/Delete | PRIO | 7th Group | Insert/Delete | PRIO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 13 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 14 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |
| 15 | 1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | | |

**Appendix A-I 2 Insert/Delete Tables**

| TABLE | | | DIGITS  DIALED | |
|---|---|---|---|---|
| 00 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 01 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 02 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 03 | INSERT. | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 04 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 05 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 06 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 07 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 08 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 09 | INSERT | PRE | | |
| | | POST | | |
| | DELETE/ | (PRE) | | |
| 10 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 11 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |
| 12 | INSERT | PRE | | |
| | | POST | | |
| | DELETE | (PRE) | | |

**Appendix A-12 Insert/Delete Tables (Cont'd)**

| TABLE | | | DIGITS DIALED |
|---|---|---|---|
| 13 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 14 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 15 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 16 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 17 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 18 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |
| 19 | INSERT | PRE | |
| | | POST | |
| | DELETE | (PRE) | |

### Appendix A-13 3-Digit Area/Office Code Route List Table

| NON-LEADING (0) LEADING (1) | CODE (NNN) | ROUTE (RR) | 6-DIG (Y/N) | # DIG | NON-LEADING (0) LEADING (1) | CODE (NNN) | ROUTE (RR) | 6-DIG (Y/N) | # DIG |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |
| 0 | | | | | 0 | | | | |
| 1 | | | | | 1 | | | | |

## Appendix A-I 4 6-Digit Office Code Table

| AREA CODE | ROUTE | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |

**Appendix A-I 5 LCR Exception Code Table**

| CODE # | EXCEPTION CODES (XX) | ROUTE (00-I 5) (RR) | CODE # | EXCEPTION CODES (XX) | ROUTE (00-I 5) (RR) |
|---|---|---|---|---|---|
| 1 | | | 1   1 | ' | |
| 2 | | | 12 | | |
| 3 | | | 13 | | |
| 4 | | | 14 | | |
| | | | 15 | | |
| 6 | | | 16 | | |
| 7 | | | 17 | | |
| 8 | | | 18 | | |
| 9 | | | 19 | , | |
| 10 | | | 20 | I | |

# APPENDIX B
# DIGITAL SYSTEMS PART NUMBERS

### Appendix B-1 Digital System Component List

| Description | Part No. |
|---|---|
| **Starplus SPD 4896 Components:** | |
| Key Service Unit (KSU) | 4800-00 |
| Central Processor Unit (CPU) | 4830-00 |
| Voice Control Board (VCB) | 4830-I 0 |
| Key Telephone Board (KT12) | 4832-00 |
| Single Line Board (SL12) | 4833-00 |
| CO Line Board (C012) | 4831-00 |
| Power Supply | 4871-00 |
| | |
| **Starplus SPD 4896 Digital Terminals:** | |
| 34-Button Executive (Display) Telephone | 1414-XX* |
| 34-Button Executive/PC Interface Telephone | 1418-XX* |
| 34-Button Enhanced (Non-Display) Telephone | 1412-XX* |
| 14-Button Basic Telephone | 1411 -XX* |
| DSS/DLS Console Unit | 141 o-xx* |
| DSS/DLS Expansion Module | 1410-10 |
| Handset Assembly | 1464-XX* |
| 34-Button Wall Mount Bracket | 1440-XX* |
| Single Line Adapter (SLA) | 1484-00 |
| | |
| **Starplus Digital Systems Manuals:** | |
| Description, Installation and Maintenance Manual | 4850-00 |
| Station User's Guide (pkg of 6) | 4852-00 |
| SLT User's Guide (pkg of 6) | 4853-00 |
| Attendant User's Guide | 4854-00 |
| Automatic Call Distribution (ACD) User's Guide (pkg of 6) | 4855-00 |
| | |
| **Starplus Digital Systems Optional Components:** | |
| 4-Circuit DTMF Receiver Module (DTM4) | 4834-00 |
| Relay/Sensor Interface Module | 1435-00 |
| Digital Data Interface Unit (DDIU) | 1485-00 |
| Backplane I/O RS-232C Expander Module | 4873-00 |
| Tri-Output Power Supply | 4872-00 |

\* Colors:   08=Off White, 60=Burgundy, 70=Lt. Gray, 71 =Charcoal Gray

# APPENDIX C
# ICLID GENERAL DESCRIPTION

## 1. INTRODUCTION

This specification provides the functional and implementation definition for the addition of the ICLID feature to the Starplus Digital Key Telephone Systems.

## 2. SYSTEM CONFIGURATION

The following illustration depicts the configuration presumed for the implementation of the ICLID feature for the system. The phones are presumed to be in an ACD or UCD group in order to allow proper operation with the system.

## 3. FUNCTIONAL PERFORMANCE

The ICLID (Incoming Calling Line IDentification) feature has been added to the Starplus Digital Key Systems as a first step in providing it generally. The key system operation of this feature is dependent on the feature first being activated from the central office so that the numbers of the calling party will be delivered over the individual tip and ring of the CO lines during the first silent interval between ringing.

The features implemented are:

1. Display of calling number/name on initial ring-in of a line on the display keysets.

2. Recording of incoming call number/name on the SMDR printout.

3. Management of an "unanswered call" table from a display phone with appropriate privilege level to allow tracking of unanswered calls for statistical information and return call management.

4. Local translation of incoming numbers to names according to a table of number/name equivalences which can be administered by the system.



**Figure** 1 ICLID **System Configuration**

**A. Calling Number/Name Display**

This feature is intended as the **basic offering of** the ICLID service when associated with the Starplus Digital Key Telephone System. Essentially, whenever an incoming call is received at the system, the number received along with the ringing signal will be stored in the line control tables and used at various points in the processing of the call.

The primary function will be that the calling number will be displayed (if available) at any point at which the "LINE RINGING" is displayed in the system.

In addition, with the availability of the calling name feature, if the calling name is provided, the system will deliver that to the display instead of the calling number.

The specification for this feature is that the system will display its "LINE RINGING" message as normally implemented and alter that display to the calling number/name if the information is made present on the line. This will allow the normal operation of the system when ICLID information is not presented or the device which intercepts it and provides the information to the KSU is missing or failed.

```
0000000001111111111222222
123456789012345678901234

bbbbbNNNNNNNNNNNNNNNNbbbbb
```

or

```
XXXXXXXXXXXXXXXXXXXXXXXX
```

If the *calling name* is available, the display will be shown as above where the X's represent the internal table storage of the calling name. Note that although the Central Office delivery of the calling name is 15-characters, the internal table used to store the name for translation of a received number is 24-characters in width. If the Central Office delivers a name , it will be positioned left justified in the 24-character field on the display. Note that if a number is received which matches a number/name translation, the translated name will be used and the name delivered from the Central Office will be effectively discarded.

If no name is available, either supplied from the Central Office or internally from the translation table, the delivered number will be positioned centered in the display as shown above for the 14 N's.

**B. Incoming Number/Name SMDR**

As with the above feature implementation, the intent is that the system operate normally in the absence of ICLID information or the failure of the ICLID equipment. If the information is present at the time that an SMDR record is generated for a call, it will alter the content and format of the SMDR output record.

If the calling number is available, the number will be output in the SMDR record in the same location as the dialed number is located in the outgoing calls.

If the calling name is present, an additional line will be output in the SMDR identifying the name. This record will immediately follow the normal SMDR record. The normal SMDR record will include an indicator which identifies that a following record with name identification is present.

Unanswered calls will be recorded on the SMDR for incoming as a system option to allow the identification of callers for statistical and call-back purposes. These calls will be identified with an indicator in the SMDR record.

**c. Unanswered Call Management**

An Unanswered Call Management Table with 100 entry capacity for the Starplus SPD 4896 system is maintained in the system. The calling number/name information pertaining to any unanswered call will be placed in this table at the time the system has determined that the call has been abandoned.

This table may be administered from appropriately privileged phones so that the unanswered calls may be reviewed and handled by the customer.

**D. Local Name Translation**

An administerable table provides a local translation from a received calling number to a name. This table can be administered by the customer from the attendant console location. In cases of conflict between the name delivered from the CO and that in the local translation table, the local translation table shall rule. 200 entries are provided for the Starplus SPD 4896 system.

**4. ICLID Display Phone Operation**

The phone, modified as described in paragraph, will be used to deliver specific data messages identifying call states to a device attached to the phone via a serial channel following the data transmission requirements of RS-232C. The interface parameters to be used are 2400bps, no parity, 8 data bits, and 1 stop bit. The implementation of this will be to deliver ICLID data to a Personal Computer attached to the

phone for look-up of customer records and subsequent processing by the individual answering the telephone call.

## A. Information from the Phone to the PC

The messages are provided from the keyset to the connected PC are shown in the table below.

The formats of these messages are shown in the table below.

These messages are transmitted from the KSU to the phone and subsequently from the phone to the data line as the appropriate events occur within the system. Each event is separate and does not require any history to be maintained. A PC connected to the phone must be prepared to accept and process any of these messages at any time.

The data is sent from the KSU to the keyset using command FO. The keyset then takes the data byte and sends it out to the PC at 2400 baud, no panty, eight data bits, and one stop bit. There is no handshaking in the keyset so the PC must always be ready to receive the data sent to it. The data is in the form specified in the ICLID specification.

## B. Information from the PC to the Phone

The ICLID phone allows information from a connected PC to be used to simulate button depressions internally within the phone. The characters sent from the PC to the phone must be paced to provide at least 100ms between characters (500ms for DTMF pad depressions). The data received from the PC is converted to keystroke data. The data is received at 2400 baud, no parity, eight data bits, and one stop bit. There is no handshaking in the keyset receive. To allow the keyset time to send the data to the KSU character pacing of 1 00ms is required. To allow DTMF outgoing digits to complete, 500ms pacing is required. The character received has bits seven and eight striped off and is converted to the key strokes as per the following chart. Time must be allowed from the access of a CO line before digits are sent out to the line. The following table lists The ASCII characters and the button depression they cause.

| Message Type | Message Format | Size |
|---|---|---|
| 1. Caller information | 1iiNNNNNNNNNNNNN , NXXXXXXXXXXXXXXX XXXXXXXX(Cr) | 42 |
| 2. Call answered at this station. | 2ii(Cr) | 4 |
| 3. Caii answered at some other station. | 3ii(Cr) | 4 |
| 4. Call abandoned. | 4ii(Cr) | 4 |
| 5. Call completed at this station (on-hook). | 5ii(Cr) | 4 |
| 6. Transferred ICLID call. | 6iiNNNNNNNNNNNNNN XXXXXXXXXXXXXXX xxxxx(Cr) | 42 |
| 7. Recalled ICLID. | 7iiNNNNNNNNNNNNNN XXXXXXXXXXXXXXX XXXXX(Cr) | 42 |

Note: ii = Two bytes used to identify a call for subsequent messages so that a PC will be able to identify current call status for processing purposes.

N...N = This is the number received from the Central Office.

X...X = This is the name to be used for look-up purposes as delivered either from the Central Office or via the number to name internal translation in the system.

| HEX Value | Btn # | Pacing | ASCII Char(s) |
|---|---|---|---|
| 00 | Keyset Reset | | NUL |
| 01 | Flex #01 | 100ms | SOH |
| 02 | Flex #02 | 100ms | STX |
| 03 | Flex #03 | 100ms | ETX |
| 04 | Flex #04 | 100ms | EOT |
| 05 | Flex #05 | 100ms | ENQ |
| 06 | Flex #06 | 100ms | ACK |
| 07 | Flex #07 | 100ms | BEL |
| 08 | Flex #08 | 100ms | BS |
| 09 | Flex #09 | 100ms | HT |
| 0A | Flex #10 | 100ms | LF |
| 0B | Flex #11 | 100ms | VT |
| 0C | Flex #12 | 100ms | FF |
| 0D | Flex #13 | 100ms | CR |
| 0E | Flex #14 | 100ms | SO |
| 0F | Flex #15 | 100ms | SI |
| 10 | Flex #16 | 100ms | DLE |
| 11 | Flex #17 | 100ms | DC1 |
| 12 | Flex #18 | 100ms | DC2 |
| 13 | Flex #19 | 100ms | DC3 |
| 14 | Flex #20 | 100ms | DC4 |
| 15 | Flex #25[4] | 100ms | NAK |
| 16 | Flex 26[5] | 100ms | SYN |
| 17 | Flex 27[6] | 100ms | ETB |
| 18 | Flex #28[7] | 100ms | CAN |
| 19 | Digit 1 | 500ms | EM |
| 1A | Digit 4 | 500ms | SUB |
| 1B | Digit 7 | 500ms | ESC |
| 1C | Digit * | 500ms | FS |
| 1D | Flex #09 | 100ms | GS |
| 1E | Flex #19 | 100ms | RS |
| 1F | HOLD | 100ms | US |
| 20 | TRAN | 100ms | SP |
| 21 | Digit 2 | 500ms | ! |
| 22 | Digit 5 | 500ms | " |
| 23 | Digit 8 | 500ms | # |
| 24 | Digit 0 | 500ms | $ |
| 25 | Flex #10 | 100ms | % |
| 26 | Flex #20 | 100ms | & |
| 27 | FLASH | 100ms | ' |
| 28 | | | ( |
| 29 | Digit 3 | 500ms | ) |
| 2A | Digit 6 | 500ms | * |
| 2B | Digit 9 | 500ms | + |
| 2C | Digit # | 500ms | , |
| 2D | SPEED | 100ms | - |

| | | | |
|---|---|---|---|
| 2E | MUTE | 100ms | . |
| 2F | ON/OFF | 100ms | / |
| 30 | H/W Error | | 0 |
| 31 | | | 1 |
| 32 | | , | 2 |
| 33 | | | 3 |
| 34 | | | 4 |
| 35 | | | 5 |
| 36 | | | 6 |
| 37 | | | 7 |
| 38 | | | 8 |
| 39 | | | 9 |
| 3A | | | |
| 3B | | | |
| 3c | | | < |
| 3D | | | = |
| 3E | | | > |
| 3F | | | ? |

[4]. Normally the MSG button.
[5] Normally the FWD button.
[6]. Normally the DND button.
[7]. Normally the CONF button.

## 5. IMPLEMENTATION PLAN

The reference for this data delivery is the BellCoRe specification TR-TSY-000030 Issue 1 dated November 1988. Other specifications will be consulted as they become available. In particular, the implementation of the multiple message format provided by Northern Telecom must be examined for deviations from the multiple message format definition in the TR-TSY-000030 document.

The steps necessary to implement this are detailed in the following sections.

## A. ICLID KTU Display Phone

The ICLID KTU provides transmit, receive, and ground data lines from the phone p-processor which are used on command from the KSU to output information. The use of this capability would be to output the ICLID information to a PC attached to the phone. Future use could be made of this capability for low speed data provided to equipment attached to the phone.

## B. Table Structures

### a   Incoming Number Table (per CO line)

| CO Line | Received # (14) | Received Name (24) | Date (2) | Time (2) | CO Line (2) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| . | . | . | . | • | • |
| • | • | • | • | • | • |
| • | • | • | • | • | • |
| n-l | | | | | |
| n | | | | | |

### b   Unanswered Call Table

| I | CO Line | Received # (1  4) | Received Name (24) | Date (2) | Time (2) | CO Line (2) |
|---|---|---|---|---|---|---|
| | 0 | | | | | |
| Oldest Index | 2 | | | | | |
| Newest index | 3 | | | | | |
| | 4 | | | | | |
| | • | • | • | • | • | • |
| | • | • | • | • | • | • |
| | • | • | • | • | • | • |
| | 48 | | | | | |
| | 49 | | | | | |

### c   Number to Name Translation Table

| Entry # | Received # (14) | Received Name (24) |
|---|---|---|
| 0 | | |
| 1 | | |
| 2 | | |
| • | . | . |
| . | . | • |
| • | . | . |
| 99 | | |

# STARPLUS®

# PRODUCT NOTICES

## VODAVI
COMMUNICATIONS
SYSTEMS

# PRODUCT NOTICE

**Capacitor Discharge Procedure**

**AFFECTED PRODUCTS:**    612-00, 1400-00 (612 KSU and 1428 Basic KSU)

**SYMPTOM:**    To ensure proper initialization of memory at start up and proper memory protection which should eliminate the potential of inoperative cards, circuits, and telephones which may appear as false out of box failures.

**RESOLUTION:**    A Procedure has been developed to clear the contents of **RAM** by discharging the capacitor which provides the voltage for the RAM chips when the AC power is off.

**PROCEDURE:**

1. Disconnect any AC power from the 612 KSU. 1400-00 Basic KSU. and any expansion KSU. Remove the cover from the KSU or Basic KSU.

   *Refer to the reference illustration for Steps 2-3*

2. Locate the IC U18 in the lower right corner of the 612 KSU or 1400-00 Basic KSU.

3. Connect one lead of a lumper wire to Pin 2 of U18. Connect the other end of the jumper wire to Pin 4 of U18.

4. Maintain this connection for 30 seconds. Remove the jumper wire and power the system up.

Top of KSU

Power Transformer

U18 AREA

AREA IN DETAIL

ResetSwitch

Super-Capacitor

Pin4    Pin2

U18

**Vodavi Communications Systems**          **8300 E. Raintree Drive**

# PRODUCT NOTICE

## Start up and Initialization Procedure

**AFFECTED PRODUCTS:**   2830-00, 2830-16, 4830-00 (2856 CPU's and 4896 CPU)

**SYMPTOM:**   To **ensure** proper initialization of memory at start up and propei memory protection which should eliminate the potential of inoperative cards, circuits, and teiephones which may appear as false out of box faiiures.

**CONDITIONS:**   The Ni-Cad battery that backs up the **RAM** has a backup time of approximately 72 hours if it is fully charged.
When this battery is partially discharged, it cannot sufficiently protect the memory and contamination of the memory can occur. This can lead to erratic operation and/or failure of the system or its' components to properly power up.
If the CPU cards have not had power applied long enough to fully charge the battery (48 hours) -or- if the CPU board has not had power to it for 72 or more hours after being fully charged. the following procedure must be utilized.

**ROCEDURE:**   1.   Unpackage the CPU and check the battery jumper straps against the following table:

| CPU TYPE | BATTERY ENABLED (JUMPER J3) | BATTERY DISABLED (JUMPER J3) |
|---|---|---|
| 2830-00 or -16 | Pins 2-3 | Pins I-2 |
| 4830-00 | Pins 2-3 | Pins I-2 |

If the battery is enabled, remove the strap and let the battery sit for 5 minutes

> ### *CAUTION:*
> **Removing the battery strap will cause loss of all data programmed up to this point.**

2.    Install the battery jumper (J3) strap between pins 2-3 to enable the battery.

---

**CAUTION.'**
**At this time the system should. be equipped with the following minimum equipment:.**
**2800-00**    CPU/VCM, 4 x 8 Station card in first slot,. LCD set at station 100
**4800-00**    CPU, VCB, KT12 in first slot, LCD set at station, 100.

---

3.    Power up the system. After initial power up, do not touch any buttons on any installed phones for 5 minutes.

4.    After 5 minutes, using station 100. initialize the entire system database. Dial "3226. press the FLASH button and dial 80. press button 8. press the HCLD button. This will initialize the entire RAM contents to a default database.

5.    Leave power to the CPU card for 48 continuous hours to fully charge the battery,

---

**CAUTION:**
**If you stage the equipment at your shop, make sure that the equipment is installed within 72 hours of removing power.**

---

6.    You may now program the customer site specific data into memory during the 48 hour period.

# PRODUCT NOTICE

EPROM Speed

AFFECTED PRODUCTS:      1400-00, 2830-00, 2830-l 6, 4830-00 (1428 KSU, 2856 CPU's, and 4896 CPU)

**SYMPTOM:**      The system may exhibit erratic operation and intermittent operation problems. This problem could be caused by EPROM (erasable programmable read only memory) that has improper access speed. EPROM memory is used by the telephone systems to store the software operating instructions.

**CONDITIONS:**      The proper EPROM access speed for each of the systems is as follows:

| | | |
|---|---|---|
| 1400-00 | KSU | 150 nanoseconds (100ns is acceptable) |
| 2830-00 or -16 | CPU | 100 nanoseconds |
| 4830-00 | CPU | 100 nanoseconds |

**PROCEDURE:**      The location information of the EPROMS (silkscreened on the PCS) for each of the systems is as follows:

| | | |
|---|---|---|
| 1400-00 | KSU | U41 & U42 |
| 2830-00 or · 16 | CPU | U5 a U16 |
| 4830-00 | CPU | U45 & U48 |

The EPROM speed is determined by locating the part number that is silkscreened on the EPROM itself. After the part number, a -XX will be shown. The -XX will either be:

-10 = 100 nanoseconds
-15 = 150 nanoseconds

If you find the CPU or KSU is equipped with the improper speed EPROM. they need to be replaced with the proper speed ones using standard Vodavi MRA procedures. All new product shipping from Vodavi is shipping with prooeriy matched EPROM access speeds.

# PRODUCT NOTICE

## Codec information ·

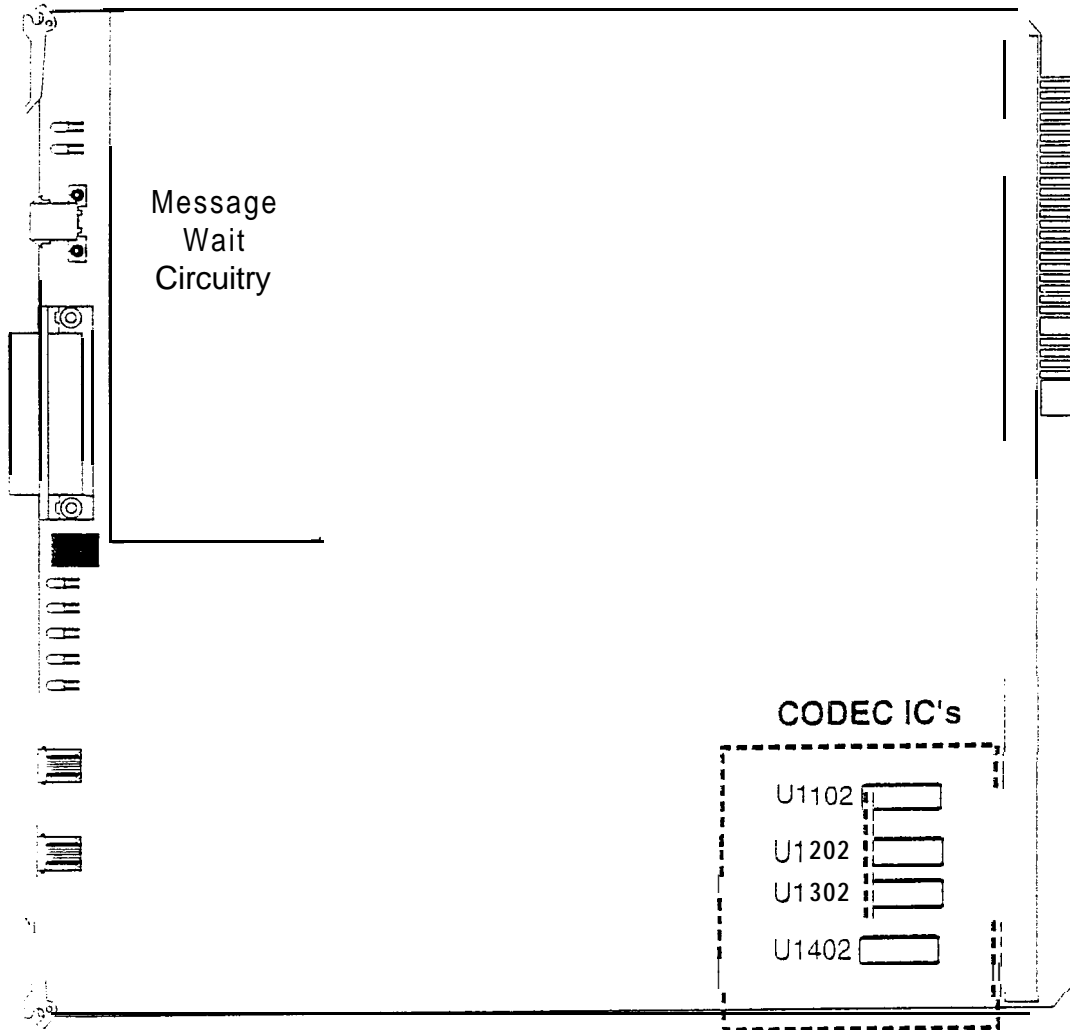**AFFECTED PRODUCTS:**    1400-00, 1402-00, 1431-00, 1432-00, 1433-00, 2831-00, 2831-I 0, 2831-20, 2833-00, 4831-00, 4831-10, 4831-20

**SYMPTOM:**    In certain site specific environments (a quiet office or a quiet CO line), background noise from the environment may be interpreted as noise on the call. Not all locations are affected by this noise. This condition may appear as low ievel clipping of the voice and is caused by the zero cross over c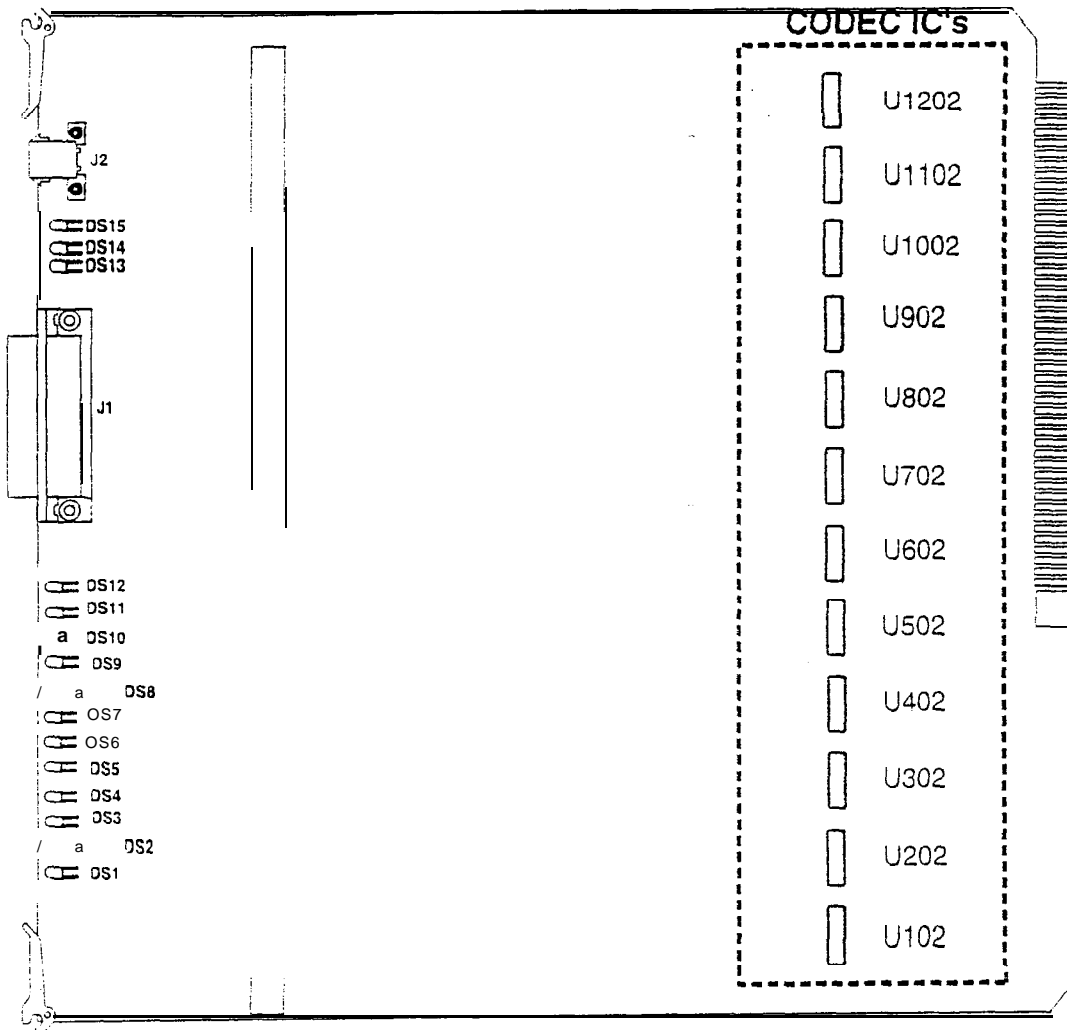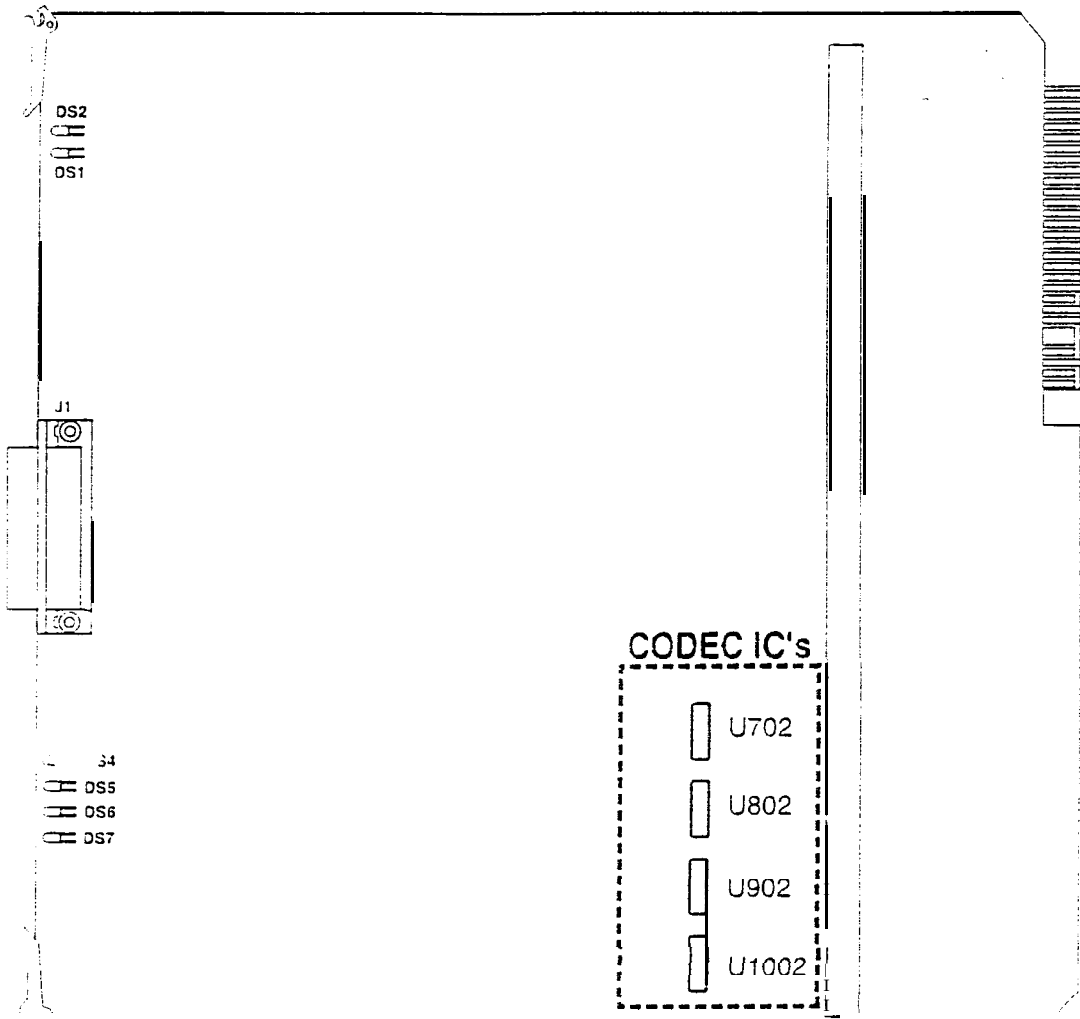ircuit in the codec IC used on all CO lines. This situation arose as a result of a revision change to the codec IC used on all CO lines by the manufacturer of the IC. VCS has corrected this in production and repair; however you may find locations where the condition is present and it can be annoying to the customer.

**RESOLUTION:**    If the CO codec (coder/decoder) IC's are of a certain revision, susceptibility to this problem may be heightened. The solution is to utilize two specific versions of a Texas Instruments 3054 type codec.

**PROCEDURE:**    To determine the codec types:

Use the attached diagrams to locate the CO line codec IC's on each board type.

Each codec has a part number and manufacturer information silkscreened on top of it.

Acceptable codec(s):

Pan Number:    TP3054AN
Mfg. Info    Any

Pan Number:    TP3054BN
Mfg. Info:    AAAAAAAXN

The X must equal letters D-G in the manufacture information line to be the proper revision. The X wiil always be the next to last digit on the manufacture line regardless of the length of the line.
If you find a suspect codec IC and your customer is experiencing these symptoms, the unit should be replaced with a non-suspect unit. Your suspect unit can be upgraded using standard Vodavi **MRA** procedures.

**1400-00 KSU**

Vodavi Communications Systems

CODEC IC's

U1102

U1202

U1302

U1402

1402-00

DS1
0

P2

DS2

P1

**CODEC IC's**

U1102

U1202

C05
J21

C06
J22

1431-00

1432-00

**1433-00**

Connector
for digital
stations

CODEC IC's

U1102

U1202

U1302

U1402

2831-00

CODEC IC's

U901

U1001

U1101

U1201

DTMF
RCVR

2831-10

DS2
DS1

J1

DS4
DS5
DS7
DS3

J6

J2
J3
J4
J5

**CODEC IC's**

U702

U802

uoo2

U1002

DTMF
RCVR

**2831-20**

Message
Wait
Circuitry

CODEC IC's

U1102

U1202

U1302

U1402

2833-00

Pa

DS15
DS14

J1

DS12
DS11
DS10
DS9
DS8
DS7
DS6
DS5
DS4
DS3
DS2
DS1

**CODEC IC's**

U1202
U1102
U1002
U902
U802
U702
U602
U502
U402
U302
U202
U102

4831-10

DS2

DS1

J1

CODEC IC's

U702

U802

U902

U1002

4831-20

iunications Systems

# PRODUCT NOTICE

**Static Noise on CO Lines**

**AFFECTED PRODUCTS:**     2856 CPU (2830-00 or 2830-l 6)

**SYMPTOM:**     There may be times when processor communication with a CO board causes a low level static noise to be present during conversation on CO lines. This condition is caused by the timing circuit in the IC chip and was changed by the chip manufacturer during a revision update. To resolve this condition, a new type of IC chip was selected and implemented into production and repair.

**RESOLUTION:**     After determining that external oroblems on the CO line are not causing the noise. the CPU card must be removed from the system and examined. If the oid IC chip is installed on the board, it needs to be repaired with the new IC. To identify the problem IC, look for U55 as shown in the attached drawing.

1.     Verify that the IC is a 74HCT138 or a 74HC138. If U55 is a 74HC138 type. you can re-install the board as the IC is correct.

2.     If the chip is a 74HCT138 type. look at the date code on the CPU board. Compare the date code against the table below to determine if the IC is correct. If correct. re-install the board. If incorrect, follow standard Vodavi MRA procedures to have the board repaired or replaced.

**PROCEDURE:**

| U55 | DATE CODE ON PCS | CORRECT | INCORRECT |
|---|---|---|---|
| 74HCT138 | 4094 and above | | x |
| 74HCT138 | 3994 and below | X | |
| 74HC 138 | ALL | X | |

Vodavi Communications Systems

# PRODUCT NOTICE

### Voice Mail PC Speed Control Command

**AFFECTED PRODUCTS:** SP103-02, SP103-04, SP103-06, SP103-08, SP103-12, SP103-16 (Starplus AVP products)

**SYMPTOM:** Voice mail performance seems to be sluggish. Voice mail performance is defined **as** retrieving messages, leaving messages, navigating through a menu route action, and general "slow" performance.

RESOLUTION: If a certain keyboard combination is accidentally pressed, the system can be taken out of turbo or the high speed mode. If the [CTRL] [ALT] [-] keys are inadvertently pressed, this will place the PC in the standard or non-turbo mode.

PROCEDURE: Simultaneously press the [CTRL] + [ALT] + [+] keys. This will place the PC in the turbo or high speed mode. The system is defaulted in the turbo mode.

**Vodavi Communications Systems**

# PRODUCT NOTICE

## Sequentiai Shorts

**AFFECTED PRODUCTS:** 1400-00, 1402-00, 1431-00, 1432-00, 2831-00, 2831-10, 2831-20, 4832-00, 4832-10

**SYMPTOM:** Digital telephone station port(s) become inoperative after initial installation or after an add/move/change.
Digital telephone station port(s) exhibit erratic operation after initial installation or after an add/move/change.

**CONDITIONS:** The station battery feed circuit that interfaces digital telephones to station ports can be sensitive to sequential shorts. A sequential short is a type of short that is of a short duration. This type of short can occur when using a punch down tool on a live station circuit.

**PROCEDURE:** VCS recommends that every effort be made to install stations with power off.

Vodavi Communications Systems

# PRODUCT NOTICE

## Station ID Lock feature

AFFECTED **PRODUCTS:**    Feature Package 3 S/W versions 3.1 F and above.

**SYMPTOM:**    A new feature has been added that allows station ID to be "locked" into memory. This feature is designed to prevent the loss of station programming that results when a different station type is plugged into a port already designated as another station type. Example: Station 101 is an executive telephone, the user unplugs station 101 and plugs in DSS unit, all button data for the executive telephone is now lost. The Station ID Lock feature if enabled, will prevent this by not allowing the DSS unit to come up.

**CONDITIONS:**    This feature is available on 1428. 2856, and 4896 with Feature Package 3 version 3.i E and above.

Once this feature is enabled, station ID programming changes require that the station lock feature first be disabled. Plug the new device into the jack. The set will automatically be identified. Enable the Station ID lock feature.

This is programmable on a system wide basis and the feature is disabled by default.

**PROCEDURE:**

1.    Enter the program mode from station 100. Dial "3226.

2.    Press the FLASH button and dial [OS].

3.    Press button #8. The LCD will disolay:

```
┌─────────────────────────────────┐
│  STATION LOCK          0-1      │
│      DISABLED                   │
└─────────────────────────────────┘
```

4.    Enter a one digit value on the keypad to enable/disable this feature.

0=disable
1=enable

5.    Press the HOLD button to save the entry. Confirmation tone will be heard.

Vodavi Communications Systems

# PRODUCT NOTICE

**Connecting two 4896 systems** together **via T-1 circuits**

AFFECTED PRODUCTS:     4896 System

**SYMPTOM:**     To clarify **connecrion** requirements that are stated in the Technical Manual (4850-02). Reference page(s) 500-26, 500-27, and 500-31 in the Technical Manual.

CONDITIONS:     This notice only applies to multiple 4896 systems that will be connected together via T-1 interfaces.

PROCEDURE:     The manual states that no CSU is required when connecting 2 4896 systems together.
The statement should read:

If 4896 systems are in the same building and are not physically located more than twenty-five feet (25') apart, no CSU is required to connect the systems together.
**if** the 4896 systems are more than twenty-five (25') feet apart, not in the same building, or are utilizing the CO network for connection, 3 CSU is required at both ends.

The CSU build out should be adjusted accordingly via the procedure in the Technical Manual.

If the 4896 system is being connected to any T1 other than another Starplus 4896 system, a CSU is required.

UPDATED     JUL. X X 1996

VODAVI

## Software Version 3.1 j

**AFFECTED PRODUCTS:** SPD 612, 1428.2856, and 4896 Systems

**SUBJECT:** New Software Release for Starplus Digital Systems

**UPDATES:**

1.  A change in administration programming has been 'added to S/W version 3.1 j and above. This change is as follows:
    **On 612, 1428, and 2856 systems, the station ID programming (Page** B, button **1) has been changed. Station ID** 7 **now** reflects **a relay/sensor** box **and Station ID 8 now reflects a** DDIU **unit. The complete station ID map for all digital systems is now:**

    | | |
    |---|---|
    | [0] = ID0 Digital | [5] = ID5 SLT/OPX |
    | [1] = ID1 DSS Map 1 | [6] = ID6 SLT w/ MSG |
    | [2] = ID2 DSS Map 2 | [7] = ID7 Relay/Sensor Box |
    | [3] = **ID3** DSS Map 3 | [8] = ID8 DDIU Unit |
    | [4] = iD4 DSS Map 4 (4896 only) | [9] = ID9 DSS Map 5 (4896 oniy) |

2.  In addition to the above programming change, the following information appiies to S/W version 3.1 j and above:

a)  The forward override code (5%) will allow an OHVO function to be performed at a busy station that is busy forwarded.

b)  The 300 baud rate function of the PC Interface mode (648) is not supported. Aiways select 1200, 2400, or 4800 baud. Do not utilize 300 baud.

c)  Camp on ringing to a station cannot be picked up via directed call pickup. The current technical manual states that this can be done. (Page 400.18, Directed Caii Pickup)

d)  The CO transmit volume option will not function unless the handset receiver gain option is enabled. The handset receiver gain option is programmed in FLASH 05, BUTTON 13.

UPDATED   JUL X X 1996
· · ·

e)      Issue 2 of the Technical Manual inadvertently left out information regarding the RAN Hunt Group feature that was added to FP3 software. This enhancement allows an ACD RAN to be directed to a hunt group to permit up to eight (8) **callers to receive** the RAN announcement at a time. There can be up to four (4) **RAN** hunt groups in the system.

Programming  Hunt  Groups:

1.      At station  100, dial "3225.

2.      Press the FLASH button and dial 30.

3.      The button layout for Hunt Group programming is now as follows: **Entering hunt groups in announcement tables:**

| | |
|---|---|
| HUNT GROUP 450 | HUNT GROUP 460 |
| HUNT GROUP 451 | HUNT GROUP 461 |
| HUNT GROUP 452 | STA/PILOT |
| HUNT GROUP 453 | |
| HUNT GROUP 454 | |
| HUNT GROUP 455 | |
| HUNT GROUP 456 | |
| HUNT GROUP 457 | |
| HUNT GROUP 458 | |
| HUNT GROUP 459 | |

1.      At station  100, dial "3225.

2.      Press the FLASH button and dial 62.

3.      Enter the desired string of digits using the keypad. The order entry is:

TYPE  NUMBER
[1]      CO  Port
[2]      SLT  Port
[3]      Hunt  Group

INDEX  NUMBER
[01-96]          CO Line
[100-315]        Siation  Number
[458-461]        Hunt  Group

UPDATED JUL X X 1996

**Conditions:**

1.    RAN hunt group pilot numbers are 458-461.

2.    RAN hunt group numbers can be chained. together by placing the RAN group number (458-461) as the last member in the desired group.

3.    Hunt group pilot numbers 458-461 are reserved exclusively for RAN functions. Both guaranteed and regular RAN announcements can be directed to a RAN hunt group.

4.    Both guaranteed and regular RAN announcements can be directed to a RAN hunt group.

5.    RAN hunt groups are pilot type only and cannot be changed. Only SLT stations can be entered into these type of hunt groups.

f)    A comprehensive RAM test has been added to the software. If this RAM test fails, the red heartbeat LED will flash rapidly. If this rapid flashing continues for more than 5 minutes, the RAM test has failed.
If the RAM test fails, the problem is in the 1400-00 Basic KSU, 2830-00/1 6 CPU, 4830-00 CPU, or the 4830-20 Memory Expansion Kit. On the 4830-00, verify the following:

Check the seating of the memory expansion kit if installed.
If the memory expansion kit is installed, check that jumper J4 is installed between pins 1 & 2.

g)    Software 3.1j now supports disconnect supervision for ground start emulation of T1 circuits. This was not available in previous versions of software. Disconnect supervision is not supported for loop start emulation of T1 circuits.

h)    When programming an SLT station for off hook preference, the following sequence(s) should be entered:

01 [1] LL to assign a specific line to choose. Where LL is the line number 01-96.
-or-
01 [3] G to assign a specific line to choose. Where G is the desired group number 1-7.

UPDATED        JUL. X X 1996

**Software Version-3.2 Series**

AFFECTED PRODUCTS:     SPD 612, 1428, 2856, and 4896 Systems

SUBJECT:     New Software Release for Starplus Digital Systems

UPDATES:

1. Incoming calls can now utilize trunk to trunk transfer. This was unavailable on previous versions of S/W. EXAMPLE:

   a) Station A answers Incoming call on CO line 1.

   b) Station A places CO iine 1 on hold.

   c) Station A answers second call on CO line 2.

   d) Station A presses the [TRANS] button followed by pressing the button for the call on hold.

2. Regarding the operation of the Database Administration software. Using the download feature on a 4896 system, the DBA program (0.1i and above) can differentiate between the various card types instailed in the system. This was unavaiiable on previous versions.

3. On S/W versions 3.23 and above, the conference operation has been enhanced. Presently, if a conference master has one CO line on conference hold and is attempting to add a second CO line to the conference and receives busy tone or a wrong number, the oniy way to drop the second line is to make the conference with the busy line and remove it from the conferenc e. The conference fearure 'has been changed to allow the conference master to access one of the CO lines on conference hold. This will connect the master to the party they pulled off of conference nold and drop the party (busy/wrong numberj the master was taiking to.

UPDATED . . . JUL. X X 1996

4. On S/W versions 3.23 and above, the LCR default table has been modified to accommodate several new area codes.
Area codes: 630, 847, 334, 360, 281, 520, 970, 941, 540, 860, 562, 423, 441, 954, 541, 864, 770, and 972.
These codes in the 3 digit leading l-table have been defaulted to select Route 0, 11 digits expected, and no 6 digit routing.
In addition, area code 441 has been defaulted to select Route 5, 11 digits expected, and no 6 digit routing.

5. On S/W versions 3.23 and above, an enhancement to the T1 area has been added. This enhancement gives the installer the ability to enable/disable the receiving of pulse dialing on T1 circuits.

a) Enter the programming mode.

b) Go to FLASH 06.

cj Press-button 9.

d) Enter a 0 or 1 on the keypad. 0 will disable the receiving of pulse dialing, 1 will enable the receiving of pulse dialing.

e) Press the HOLD button to save the entry. A confirmation tone will be heard and the LCD will uodate.

6. When utilizing the Caller ID feature in the 3.2 S/W series, it may be necessary to set the ring delay timer to 4 seconds so that all of the caller ID information can be received from the Telco. The ring delay timer is in Flash 40, Page A, Button 14.

7. It is recommended that ACD agent station not be deieted from an ACD group through database administration when that station is in the unavailable mode. This will cause the LCD to display unavailable even though the station is no longer part of the ACD group. The station can dial the 566 code to remove the message.

8. On software versions 3.24 and above, the Personaiized Message operation has been corrected and enhanced.

The station user can now press the pre-programmed Personalized Message button and dial a 2 digit message code. Valid codes that can be diaied during this coeration are 00-I 0, 21-30.

This feature has been enhanced to allow the user to press this button and enter a two digit code during a Silent Response operation. When receiving a Camp On or OHVO call:
- Station A presses pre-programmed message button
- Station A dials two digit code 31-51 (DTMF digits are muted to current party)

9. On software versions 3.24 and above, CO and intercom calls will now ring a station using the Directory Dial feature. The station user must hang up from the Directory Dial mode to answer the call.

UPDATED . JUL X X 199

10. Starting with software version 3.24 and above, the software packaging has bee modified to be three (3) packages. These packages are the Standard, VMI, and ACD packages. The 612 retains its current two (2) packages.

The systems, software packages, and optional features are broken down as follows:

| | 612 | | 1428 | | | 2856/4896 | | |
|---|---|---|---|---|---|---|---|---|
| | Standard | VMI | Standard | VMI | ACD | Standard | VMI | AC3 |
| ICLID | | | X | X | X | x | x | x |
| ACD | | | | | X | | | X |
| LCR | | | X | X | X | X x | | x |
| VOICE MAIL | X | | | X | X | | x | x' |
| PC DBA | | | X | x | x | X | X | X |
| Volume Control | | | X | x | x | X | X | X |
| Reminder Ring | | | X | X | X | x | X | X |
| SMDR | | | X | X | X | X | X | X |
| DID/E&M/T1 | | | | | | X | X | X |
| Verified Account Codes | | | X | X | X | X | X | X |
| Call Coverage | | | X | X | X | X | X | X |

## REMEMBER!

- Verified Account Codes
- T1
- DID
- More than 48 CO lines or 96 stations

These features require the Memory Expansion Kit (4830-20) to be installed.

UPDATED
JUL X X 1996

11. On software versions 3.2A and above, a problem that could result in a glare condition on TIE trunks was corrected. The glare condition occurred when a user accessed a TIE trunk at the exact moment a incoming call on the TIE trunk is being presented. The user placing the outgoing call would answer the incoming call. If the user then transferred the call, the TIE-trunk would be tied up for an indefinite period of time. The TIE type trunk can be on a TIE trunk board or a T1 circuit that is marked for TIE signaling.

12. On software versions 3.2A and above, an intermittent problem that could result in the loss of the customer database was corrected. Affected products:

   4896 without memory expansion kit
   If the system has ever been placed in night service, a potential exists for the system to lose its' database programming if power is lost or the system is reset.

13. On software versions 3.2C and above, a problem was corrected where station cards in slots higher-than the last single line card could not be viewed or programmed after an upload.

14. On software versions 3.2C and above, a problem was corrected in which flexible port assignments (FLASH 52), could cause cold starts to occur in a system. This occurred in systems that did not have all the rearranged station numbers assigned. In impiementing this function, the following should be noted with the SPD 1428 system:

   FLASH 52 Button #2 will display the last four station assignments as 128-131. This is normal and should not be viewed as a problem. These stations are simply stations to fill in the numbering plan, they are not available for system use.

15. On software versions 3.2C and above, a problem with LCR in which extra digits dialed could cause an incomplete number to be outpulsed was corrected. Extra digits dialed after the LCR table is satisfied will not be processed.

16. On software versions 3.2C and above, the method of hunt utiiized in voice mail groups has been changed. The previous method wouid select the "longest idle" port, the new method always attempts to start with the first station that was entered in tile voice mail group programming. The hunt method was changed in an attempt to reduce problem reports associated with voice mail message lights operating erratically.

17. On software versions 3.2C and above, a conference master is now able to call voice mail when they have temporarily exiied the conference.

UPDATED JUL X X 1993

**initial Release** ▪ STARPLUS® DHS

AFFECTED PRODUCTS:    STARPLUS® **DHS**

SUBJECT:    Initial Release for STARPLUS ® DHS

UPDATES:

1.    A station user cannot resume speaking with his remote party if another station calls him and uses "Voice Over Busy" while he has mute active.

   a)   Sta A on CO 1.

   b)   Sta B calls Sta A and performs voice over busy.

   c)   Sta A cannot resume conversation with CO 1 until Sta B hangs up.

2.    A station user must be a member of the group being paged to use Meet Me Page. Feature

3.    A CO line group Feature button will not show all trunks busy if the last available line in the group is answered as in incoming call. The CC line group button will show busy if outgoing calls are placed.

4.    Incoming CO LED flashes at a station that is not assigned CO LINE RECEIVE. Page 54 of the manual incorrectly states that the line will display a busy indication.

6.    Only 1 DISA line per system is supported on the STARPLUS® DHS system at this time.

7.    Stations assigned COS O-6 do not override programmed TOLL RESTRICTION tables via EMERGENCY SPD DIAL BINS as described in the text. This will be corrected in the next version of software.

8.    The (/) does not display when [F3] FLASH command is initiated while on a CO iine.

9.    A CO line assigned as a private line can be accessed at other stations when on HOLD via an incoming button appearance, contrary to documentation.

10.    CO calls transferred or forwarded to VM queue do not ring through at the VM port but instead will recall the initiating transfer station.

UPDATED . . . JUL X X 1999

# PRODUCT NOTICE

PC-DBA Software Version 1 .0c

AFFECTED PRODUCTS:     PC-CBA

**SUBJECT:**     S/W Release

UPDATES:     1.     CO senderization enable/disable has been added in the SYSTEM FEATURES II area of PC-DBA. This feature is only available with KSU S/W versions 3.3 or greater. This feature provides a means to force the system into a DTMF senderized mode. In this mode; the system will provide false dialtone to the station user and collect DTMF digits one at a time. The system will then regenerate the digits for a specific on/off time to the central office.
After the inter-digit timer expires, the audio path is connected between the station and rhe central office. At this point the station user may use the dialpad in the cut through mode.

2.     Save Number Re-dial and Last Number Re-dial can now 'be programmed onto a flexible button.

3.     When entering a DSS type station, the Keyset Hardware ID must be entered.

Move the cursor to the STATION ID field and press [F2].

Select the sesired CSS (map 1-5) and press [ENTER].

Move the cursor to the Keyset Hardware ID field and press [F2].

SPD should be displayed in the dialog box. Press the [ENTER] key.

4.     A correction was added to resolve a problem with full uploads not completing at limes.

UPDATED   , . , JUL. X X 1996

VODAVI

### Starplus® DHS KSU & 3 x 3 Board

**AFFECTED PRODUCTS:**    Starplus CHS KSU (SP7000-00)and 3 x 8 Board (SP7100-00)

**SUBJECT:**    Potential noise issue

**SYMPTOM:**    A potential exists for noise to occur on intercom and CO calls if the ambient temperature around the KSU rises. This is due to component tolerances on the 3 x 8 board. Not all KSU and 3 x 3 boards will exhibit a problem, however, the potential does exist for this situation to occur.

**CONDITIONS:**    The 3 x 8 board must be replaced with a known good 3 x 3 board. No re-programming of the KSU is required.
The base KSU includes 1 - 3 x 8 board. Additional 3 x 3 boards are added to expand the system capacity. A total of 3 - 3 x 8 boards (including the 1 in the base KSU), can Se accommodated in a KSU.

**PROCEDURE:**    VCS will advance replace at no charge any 3 x 3 boards that are suscec:. This program is valid icr 60 days from June 3. 1996.

UPDATED    JUL. X X 1996

Vodavi Communications Systems

Software Version 3.1 i

AFFECTED PRODUCTS: 612, 1428, 2856. and 4896

**SYMPTOM:** S/W Release for Starplus Digital Systems

**RESOLUTION:**

PROCEDURE:— • 1 .  A change in administration- programming has been added to S/W version 3.1 i and above. This change is as follows:
**On 612, 1428, and 2856 systems, the station ID programming (Page 3, button 1) has been changed. Station ID 7 now reflects a relay/sensor box and Station ID 8 now reflects a DDIU unit. The complete station ID map for ail digitai systems is now:**

[0] = ICO Digital                              [5] = ID5 SLT/OPX
[1] = ID1 DSS Map 1                            [6] = ID6 SLT w/ MSG
[2] = ID2 DSS Map 2                            [7] = ID7 Relay/Sensor Box
[3] = ID3 DSS Map 3 (4896 only)               [8] = ID8 DDIU Unit
[4] = ID4 DSS Map 4 (4896 only)               [9] = ID9 DSS Map 5 (4896 only)

3.  In addition to the above programming change, the following information appiies to S/W version 3.1 i and above:

The forward override code (5#) will allow an OHVO function to be performed at a busy station that is busy forwarded.

The 300 baud rate function of the PC Interface mode (648) aoes not function properly. Always select 1200, 2400, or 4800 baud. Do not utilize 300 baud.

Camp on ringing to a station cannot be picked up via directed call pickup. The current technical manual states that this can be done. (Page 400.18, Directed Caii Pickup)

The CO transmit volume option will not function unless the handset receiver gain option is enabled. The handset receiver gain option is programmed in FLASH 05, BUTTON 13.

UPDATED . . . JUL X X 1996

Issue 2 of the Technical Manual inadvertently left out information regarding the RAN Hunt Group feature that was added to FP3 software. This enhancement allows an ACD RAN to be directed to **a** hunt group to permit up to eight (8) callers to receive the RAN announcement at a time. There can be up to four (4) RAN hunt groups in the system.

**Programming** Hunt Groups:

1.      At station 100, dial "3226.

2.      Press the FLASH button and dial 30.

| | |
|---|---|
| HUNT GROUP 450 | HUNT GROUP 460 |
| HUNT GROUP 451 | HUNT GROUP 461 |
| HUNT GROUP 452 | STA/PILOT |
| HUNT GROUP 453 | |
| HUNT GROUP 454 | |
| HUNT GROUP 455 | |
| HUNT GROUP 456 | |
| HUNT GROUP 457 | |
| HUNT GROUP 458 | |
| HUNT GROUP 459 | |

3.      The button layout for Hunt Group programming is now as follows:

Entering **hunt** groups **in announcement** tables:

1       At station 1C0, dial "'3225.

2.      Press the FLASH button and dial 62.

3.      Enter the desired string of digits using the keypad. The order entry is:

TYPE NUMBER
[1]     co Port
[2]     SLT Port
[3]     Hunt Group

INDEX NUMBER
[01-96]         CO Line
[100-315]       Station Number
[458-461]       Hunt Group

**Conditions:**

JUL. X X 1996

UPDATED   •   ••

1. RAN hunt group pilot numbers are 458-461.

2. RAN hunt group numbers can be chained together by placing the RAN group number (458-461) as the last member in the desired group.

3. Hunt group pilot numbers 458-461 are reserved exclusively for RAN functions. Both guaranteed and regular RAN announcements can be directed to a RAN hunt group.

4. Both guaranteed and regular RAN announcements can be directed to a RAN hunt group.

5. RAN hunt groups are pilot type only and cannot be changed. Only SLT stations can be entered into these type of hunt groups.

A comprehensive RAM test has been added to the software. If this RAM test fails, the red heartbeat LED will flash rapidly. If this rapid flashing continues for more than 5 minutes, the RAM rest has failed.

If the RAM test fails, the problem is in the 1400-00 Basic KSU, 2830-00/16 CPU, 4830-00 CPU, or the 4830-20 Memory Expansion Kit. On the 4830-00, verify the following:

Check the seating of the memory expansion kit if installed.
If the memory expansion kit is installed, check that jumper J4 is installed between pins 1 & 2.

UPDATED    JUL. X X 1996

Vodavi Communications Systems

# PRODUCT NOTICE .

EPROM Speed

**AFFECTED** PRODUCTS:    1400-00, 2830-00, 2830-16, 4830-00 (1428 KSU, 2856 CPU's, and 4896 CPU)

**SYMPTOM:**    The system may exhibit erratic operation and intermittent operation problems. This problem could be caused by EPROM (erasable programmable read only memory) that has improper access speed. EPROM memory is used by the telephone systems to store the software operating instructions.

CONDITIONS:- *    The proper EPROM access speed for each of the systems is as follows:

| | | |
|---|---|---|
| 1400-00 | KSU | 150 nanoseconds (1 00ns is acceptable) |
| 2830-00 or -16 | CPU | 100 nanoseconds |
| 4830-00 | CPU | 100 nanoseconds |

PROCEDURE:    The location information of the EPROMS (silkscreened on the PCB) for each of the systems is as follows:

| | | |
|---|---|---|
| 1400-00 | KSU | u41 & u42 |
| 2830-00 or -16 | CPU | U5 & U16 |
| 4830-00 | CPU | U45 & U48 |

The EPROM speed is determined by locating the part number that is silkscreened on the EPROM itself. After the part number, a -XX will be shown. The -XX will either be:

-10 = 100 nanoseconds
-15 = 150 nanoseconds

If you find the CPU or KSU is equipped with the improper speed EPROM, they need to be replaced with the proper speed ones using standard Vodavi MRA procedures. All new product shipping from Vodavi is shipping with properly matched EPROM access speeds.

UPDATED . . .

**Station** ID Lock **Feature**

**AFFECTED PRODUCTS:** Feature Package 3 S/W versions 3.1 F and above.

**SYMPTOM:** A new feature has been added that allows station ID to be "locked" into memory. This feature is designed to prevent the loss of station programming that results when a different station type is plugged into a port already designated as another station type. Example: Station 101 is an executive telephone, the user unplugs station 101 and plugs in DSS unit, all button data for the executive telephone is now lost. The Station ID Lock feature if enabled. wiii prevent this by not allowing the DSS unit to come up.-

**CONDITIONS:** This feature is available on 1428, 2856, and 4896 with Feature Package 3 version 3.1 E and above.

Once this feature is enabled, station ID programming changes require that the station lock feature first be disabled. Plug the new device into the jack. The set wiil automatically be identified. Enable the Station ID lock feature.

This is programmable on a system wide basis and the feature is disabled by default;

PROCEDURE:

1. Enter the program mode from station 100. Dial "3226.

2. Press the FLASH button and dial [OS].

3. Press button #8. The LCD will display:

```
STATION LOCK'          0-1
   DISABLED
```

4. Enter a one digit value on the keypad to enable/disable this feature.

   0=disable
   1=enable

5. Press the HOLD button to save the entry. Confirmation tone will be heard.

JUL X X 1996
UPDATED . . .

# PRODUCT NOTICE

## Codec Information

**AFFECTED PRODUCTS:** 1400-00, 1402-00, 1431-00, 1432-00, 1433-00, 2831-00, 2831-10, 2831-20, 2833-00, 4831-00, 4831-I 0, 4831-20

**SYMPTOM:** In certain site specific environments (a quiet office or a quiet CO line), background noise from the environment may be interpreted as noise on the call. Not all locations are affected by this noise. This condition may appear as low level clipping of the voice and is caused by the zero cross over circuit in the codec IC used on all CO lines. This situation arose as a result of a revision change to the codec IC used an all CO lines by the manufacturer of the IC. VCS has corrected this in production and repair; however you may find locations where the condition is present and it can be annoying to the customer.

**RESOLUTION:** If the CO codec (coder/decoder) IC's are of a certain revision, susceptibility to this problem may be heightened. The solution is to utilize two soeciiic versions of a Texas Instruments 3054 type codec.

**PROCEDURE:** To determine the codec types:

Use the attached diagrams to locate the CO line codec IC's on each board type.

Each codec has a part number and manufacturer information silkscreened on top of it.

Acceptable codec(s):

Pan Number: TP3054AN
Mfg. Info Any

Part Number: TP3054BN
Mfg. Info: AAAAAAAXN

The X must equal letters D-G in the manufacture information line to be the proper revision. The X will always be the next to last digit on the manufacture line regardless of the length of the line.
If you find a suspect codec IC and your customer is experiencing these symptoms, the unit should be replaced with a non-suspect unit. Your suspect unit can be upgraded using standard Vodavi MRA procedures.
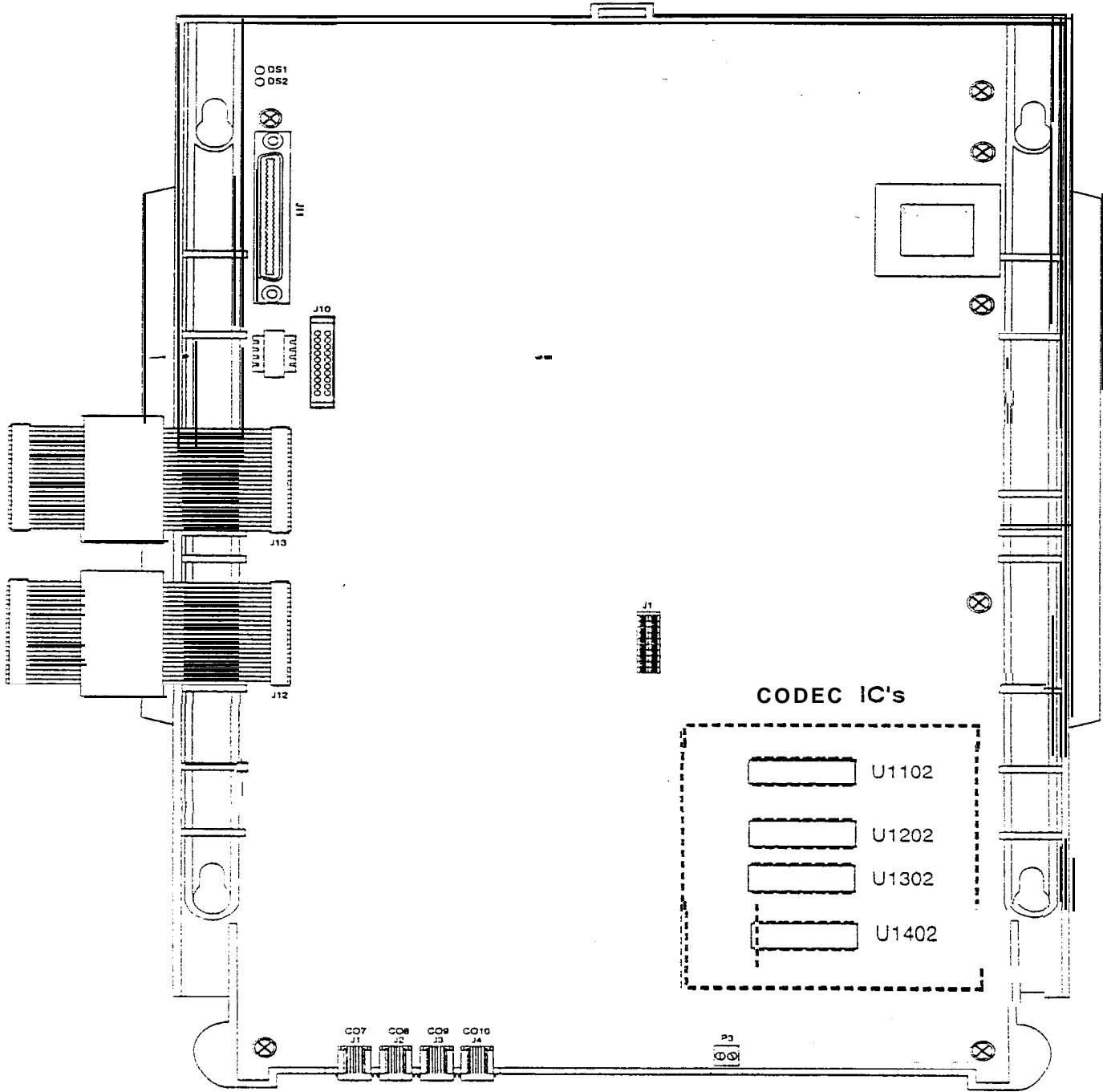
UPDATED . . . JUL X X 1996

Vodavi Csmmunicarions Systems
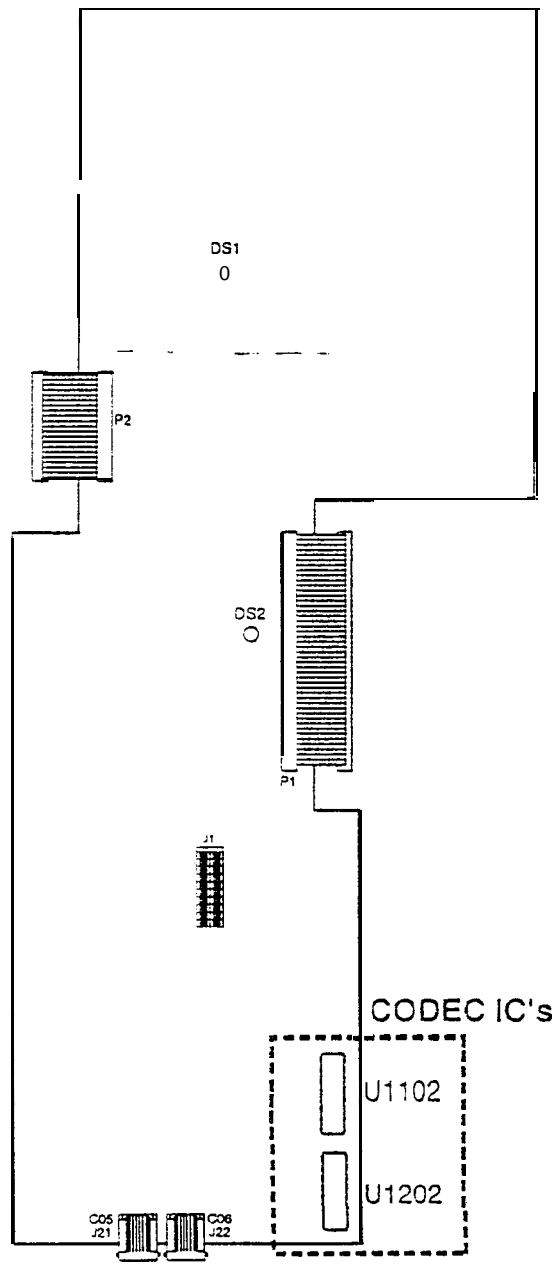
1400-00 KSU

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Vodavi Communications Svstems

CODEC IC's

U1102
U1202
U1302
U1402

1402-00

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DS1

0

P2

DS2

P1

J1

CODEC IC's

U1102

U1202

C05
J21

C06
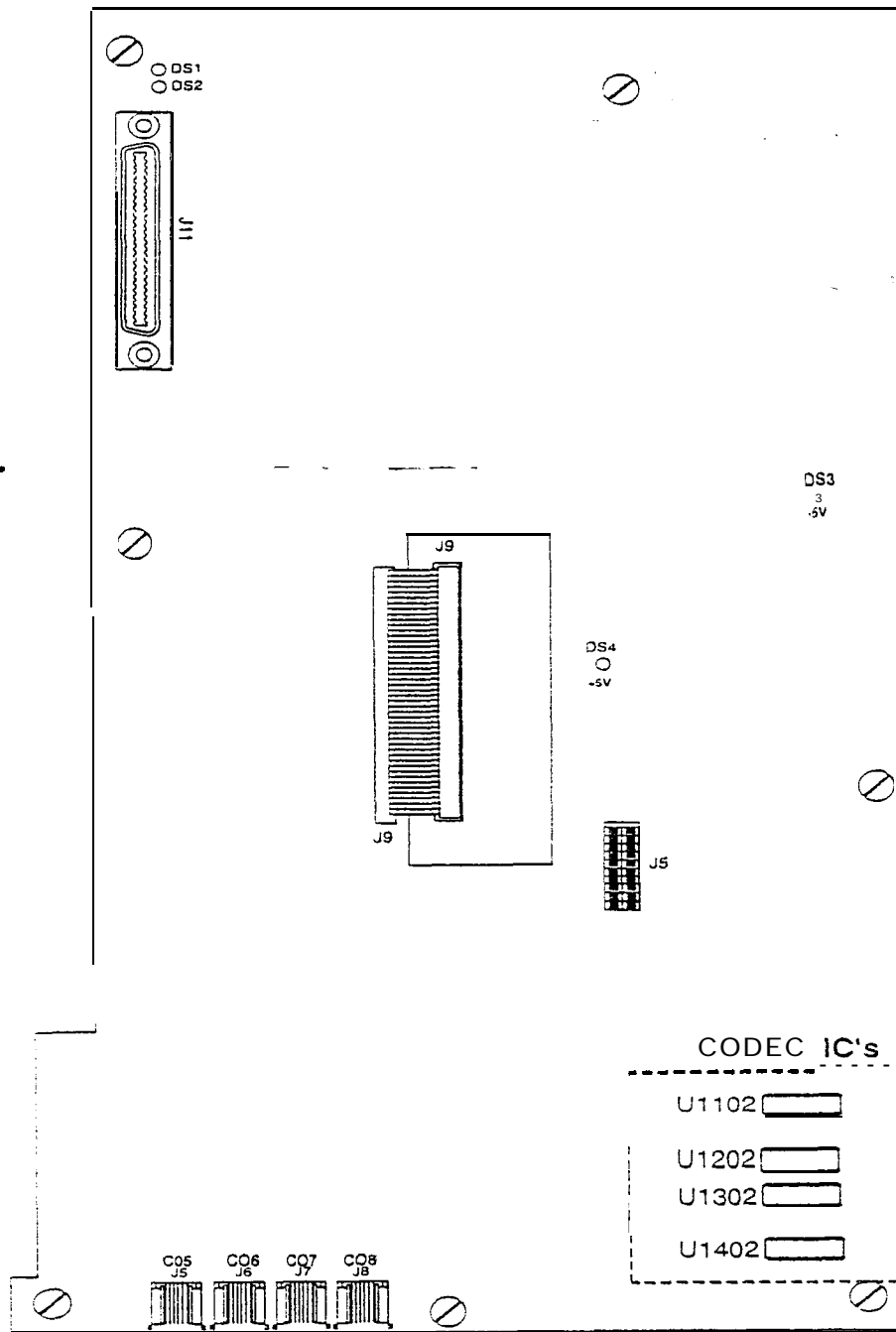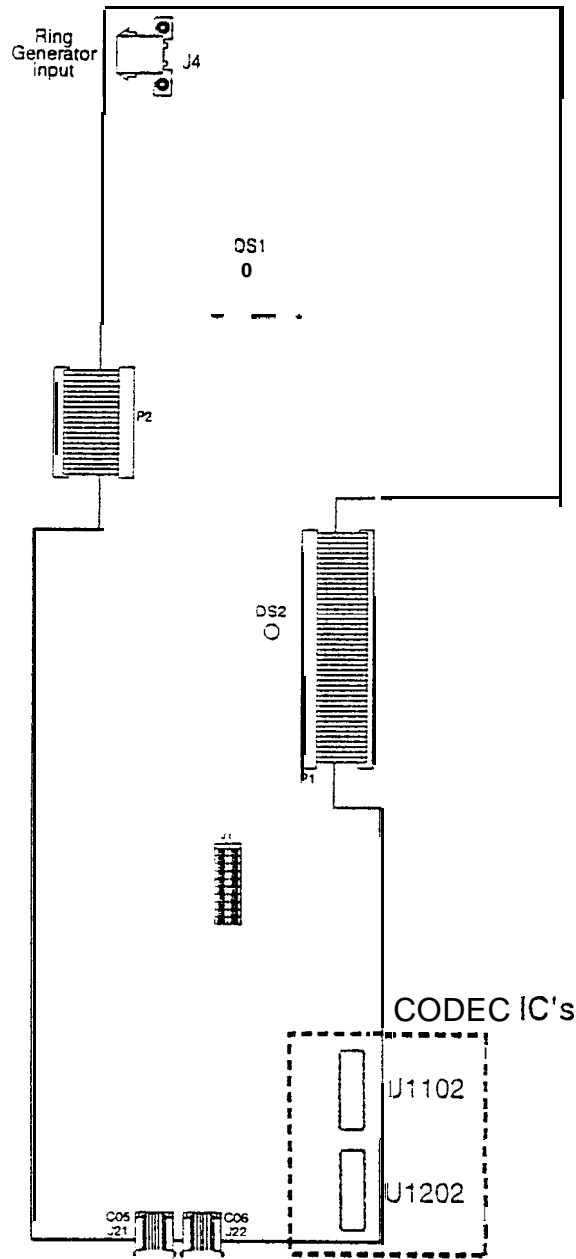J22

1431-00

JUL. X X 1996

UPDATED

1432-00

JUL. XX 1996

UPDATED  . . .

Ring
Generator
input

J4

DS1
0

P2

DS2
O

P1

CODEC IC's

U1102

U1202

C05
J21

C06
J22

1433-00

UPDATED

JUL. X X 1986

Communications Systems

Connector
for digital
stations

CODEC IC's

U1102

U1202

U1302

U1402

2831-00

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CODEC IC's

U901

U1001

U1101

U1201

J14    DTMF
       RCVR

2831-I  0

UPDATED    JUL. X X 1996
             . . .

2831-20

UPDATED    JUL. X X 1996

Message
Wait
Circuitry

CODEC IC's

U1102

U1202

U1302

U1402

2833- 00

UPDATED  JUL. X X 1989

Vodavi Communications Systems

CODEC IC's

U1202

U1102

U1002

U902

U802

U702

U602

U502

U402

U302

U202

U102

DS15
DS14

J1

DS12
DS11
DS10
DS9
DS8
DS7
DS6
DS5
DS4
DS3
DS2
DS1

4831- 00

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4831-10

UPDATED . . JUL. X X 1996

voaavi C ...imunications Systems

DS2
DS1

J1

DS4
DS5
DS6
DS7

CODEC IC's

U702

U802

U902

U1002

**4831-20**

UPDATED . . . JUL. X X 1996