infinite

digital systems

/DVX I and DVX II
HYBRID KEY TELEPHONE SYSTEMS

GENERAL DESCRIPTION, INSTALLATION AND MAINTENANCE MANUAL

COMMUNICATIONS SYSTEMS

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ISSUE CONTROL SHEET

ISSUE	DATE	CHANGE
Issue 1	January, 1993	Initial Release of the *infinite* DVX[I] & DVX[II] Digital System General Description, Installation and Maintenance Manual

SECTION 100
INTRODUCTION

100.1 PURPOSE

This manual provides the information necessary to program, install, operate and maintain the *infinite* 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 *infinite* 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 *infinite* 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: 1.9
- The Universal System Ordering Code (USOC) jack required for direct interconnection with the telephone network: RJ21X

DVX I FCC Registration Numbers:

- For systems configured as a key system: (button appearances)
  DLPHKG-65152-KF-E
- For systems configured as a Hybrid system: (dial access codes)
  DLPHKG-65153-MF-E

DVX II FCC Registration Numbers:

- For systems configured as a key system: (button appearances)
  DLPHKG-65102-KF-E
- For systems configured as a Hybrid system: (dial access codes)
  DLPHKG-65101-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 *infinite* 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 *infinite* 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 may be voided.

E. Notice of Compliance

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

G. OPX Circuit

The *infinite* 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.

- Each OPX port when used to support an off-premise extension requires an OL13C network circuit.
- An FCC registered interface such as a RJ11C/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: CA11A/CA21A
- 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.

CAUTION

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

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 *infinite* 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 may be voided.

D. Notice of Compliance

The *infinite* 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 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."

E. OPX Circuit

The *infinite* 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 UL/CSA SAFETY COMPLIANCE

The *infinite* 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 *infinite* 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 REASONABLY SECURE AGAINST INTRUSIONS FROM FRAUDULENT CALLERS, IT IS BY NO MEANS INVULNERABLE TO FRAUD. THEREFORE NO EXPRESS OR IMPLIED WARRANTY IS MADE AGAINST SUCH FRAUD INCLUDING INTERCONNECTION TO THE LONG DISTANCE NETWORK."

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

SECTION 200
GENERAL DESCRIPTION

200.1 SYSTEM TECHNOLOGY

The *infinite* family of digital key telephone systems is comprised of two fully digital hybrid key telephone systems, the DVX I and DVX II. These systems are designed to meet the telecommunications needs of a small to medium sized business offices. Both 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 *infinite* Digital systems are also engineered to allow migration of the family of *infinite* 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 *infinite* DVX I System, 4x8 SLT Interface Board (CSB) on the *infinite* DVX II System, or SLA (OPX) adapters.

The DVX I is the smallest member of the *infinite* Digital family and fully configured supports a maximum of 14 CO/PBX/Centrex lines and 28 digital station devices. The DVX I 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 DVX I 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 DVX II system is the largest 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 DVX II is a typical 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 DVX II 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.

Both 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. Both *infinite* 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 *infinite* family of digital terminals include a 33-button display and non-display stations, and an 8-button non-display station. 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 *infinite* 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 to either a I/O port or remotely via the on-board modem.

The *infinite* 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 *infinite* Digital systems.

Future software enhancements and upgrades are easily retrofitted and installed in the system. This will in most cases provide backward compatibility with existing *infinite* Digital hardware further reducing the cost to upgrade or add features to an installed system.

200.2 COMMON EQUIPMENT FOR THE DVX [I] SYSTEM

A. Basic Key Service Unit with Power Supply (BKSU)

The DVX [I] Basic Key Service Unit (KSU) is a wall mountable cabinet that contains the main key service board (KSB), power supply and pre-wired connectors for stations and CO Line interfaces. The DVX [I] Digital Key Telephone System is a microprocessor (68000) controlled, solid state electronic switch which distributes communications using Pulse Code Modulation/Time Division Multiplexing (PCM/TDM) technology. All control, switching and interface circuitry is condensed onto a single printed circuit board (PCB), the main key service board (KSB), located inside the key service unit (KSU).

The Basic Key Service Unit (BKSU) is a system which comes fully configured for four CO/PBX/Centrex lines and eight stations. The Basic KSU also contains one RS-232C I/O port, one DTMF Receiver, one connector for Background Music and Music on Hold, an on-board 300 baud modem port, and one external page port. The Basic KSU also contains two connectors for adding a 2x4 Expander Module, or a 2x4 SLT Expander Module on connectors J9 and J10. An optional I/O Module that adds one additional RS-232C port and one RS-422 port, and an optional 1200 baud modem can be added to increase the speed of transmission of the on-board modem port. A Reset (Halt) switch and a background music volume control are also mounted on the PCB. In addition, two connectors are provided for adding an Expansion KSU which will allow the system to expand to a total of 14 CO/PBX/Centrex lines and 28 digital station ports. Refer to Figure 200-1 Main Key Service Board of the Basic KSU for the component layout and location of connectors.

Power Supply:

The power supply, installed in the Basic KSU at the time of manufacture, has an input voltage of 117V ac ±10%. The power supply provides power, a filtered/unregulated ±12V dc, to the main key service board. A slo-blow 1.5 amp fuse on the AC side of the transformer provides the necessary fire and overload protection. Power is regulated and distributed to stations/ circuitry in the system on the main key service board. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

CPU and Memory:

The DVX [I] system is controlled by a 16-bit (68000) main micro-processor which controls all system functions including the PCM/TDM voice switching under the direction of ROM and RAM software coding. The main key service board is responsible for all control functions, execution of all logic operations and control of system modules including control over the circuitry necessary for voice switching and conference connections. The main key service board is also responsible for all system tones, system timing, and station status control. In addition the main key service board provides software and hardware support of the following:

- Real Time clock.
- Watch dog timer and recovery.
- PCB status as to presence/absence of modules for automatic software configuration setup.
- State/event software design.

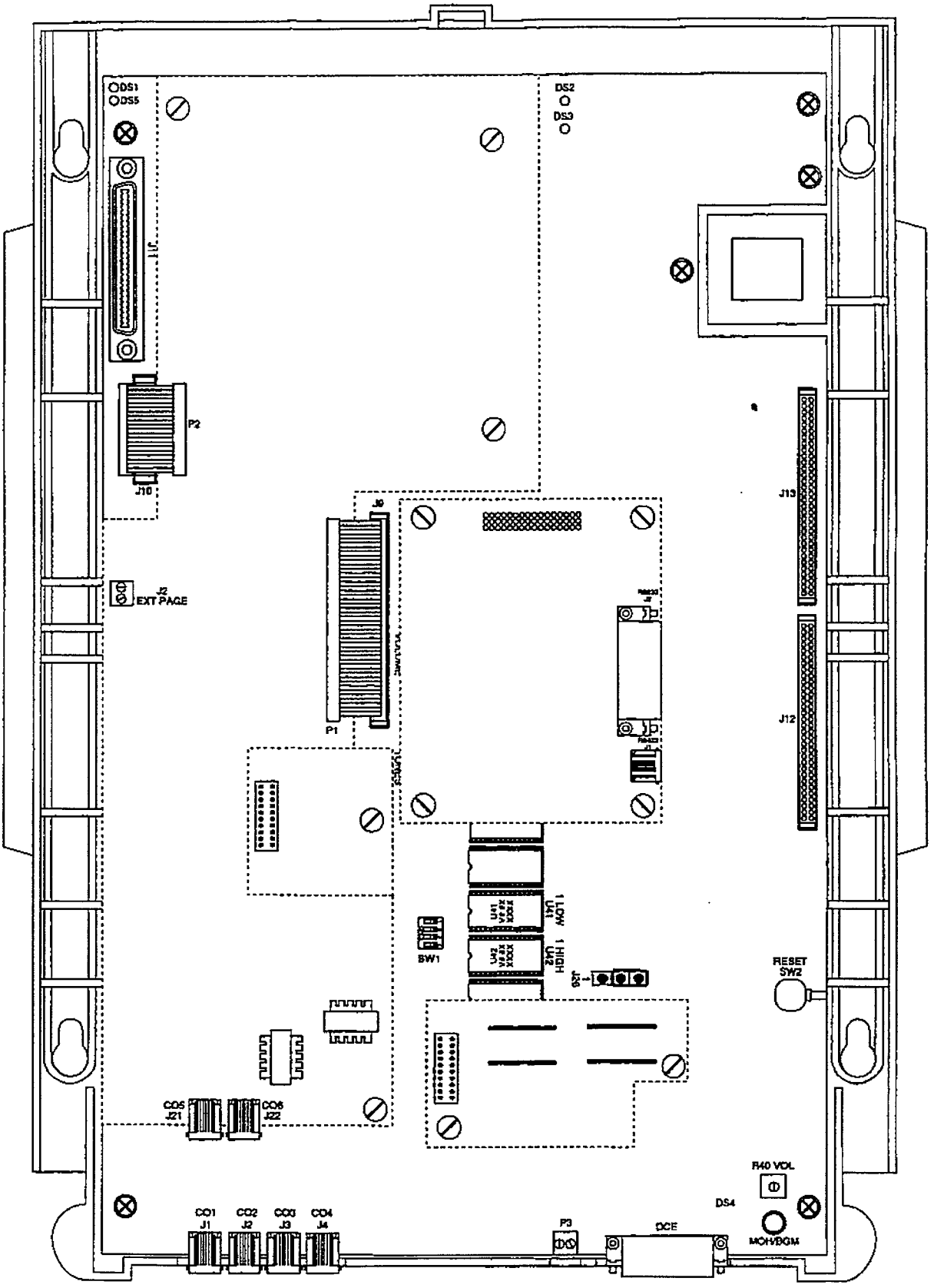


Figure 200-1 Main Key Service Board of the Basic KSU

- Backup of customer database RAM memory via a "Super Cap" (super capacitor).

System software is provided in EPROM memory and is installed on the main key service board. The system contains 512K of EPROM storage and is equipped with 128K of "battery"-backed static RAM. Provisions have been made on the card to address up to two megabytes of EPROM memory and up to two megabytes of static RAM.

LEDs & Indicators:

Four green LEDs are located on the main key service board along the top of the PCB. Two of the LEDs (DS2 & DS3) indicate the presence of +5V & -5V dc. LEDs DS1 and DS5 indicate the present of +12V dc used to supply power to the key stations (one LED per four stations). An extinguished LED indicates the absence of the associated voltage.

A red LED (DS4) located in the lower right portion of the main key service board provides a system "heart beat" indication.

CO Line/Station Interfaces:

The Basic Key Service Unit (BKSU) contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging.

The main key service board contains four Central Office, Centrex or PBX loop start, line interfaces. The protection circuitry to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). Each CO line interface design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular jacks mounted on the bottom of the main key service board.

The main key service board also provides the interface for eight Digital Key Telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located inside the Basic KSU. Each station connection requires four wires to connect to the board.

A Digital DSS Console, 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 overcurrent.

The main key service board also contains an on-board modem that is capable of transmitting data at a rate of 300 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. An optional 1200 Baud module may be added to the main key service unit to allow transmission at the rate of 1200 Baud.

B. DVX[I] Expansion KSU with Power Supply (EKSU)

The Expansion Key Service Unit (EKSU) is a unit which comes equipped with a power supply and circuitry providing four additional loop start CO/PBX/Centrex line ports and eight digital key telephone ports to the Expansion KSU. All processing and control functions as well as voice connections and switching are controlled by circuitry on the Basic KSU and transmitted to the Expansion KSU through the ribbon cables.

The main key service board on the Expansion KSU allows connection of one optional application module (i.e. DTMF Receiver) to the system and connector(s) for installing an additional 2x4 Expander Module, 2x4 SLT Expander Module or a 4x8 Expander Module. Refer to Figure 200-2 Main Key Service Board of the Expansion KSU

Power Supply

The power supply, installed in the Expansion KSU at the time of manufacture, has an input voltage of 117V ac ±10%. The power supply provides power, a filtered/unregulated ±12V dc, to the Expansion Key Service Board (EKSB). A slo-blow 1.5 amp fuse on the AC side of the transformer provides the necessary fire and overload protection. Power is regulated and distributed to stations/circuitry in the system on the main key service board on the Expan-

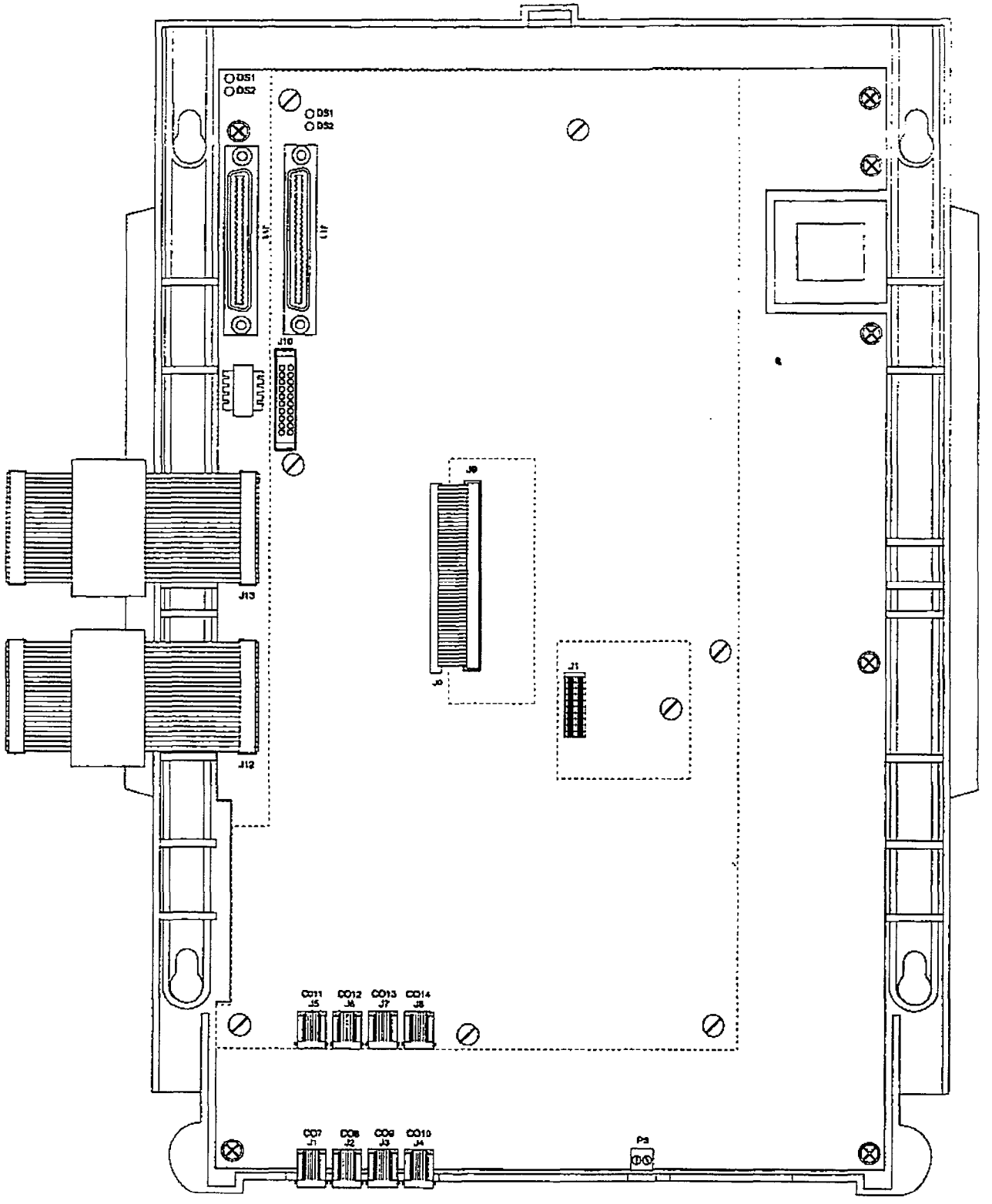


Figure 200-2 Main Key Service Board of the Expansion KSU

sion KSU. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

LEDs & Indicators:

Four green LEDs are located on the main key service board on the Expansion KSU. Two of the LEDs (DS2 & DS3) indicate the present of +5V & -5V. LEDs DS1 and DS5 indicate the present of +12V dc used to supply power to the key stations (one LED for every four stations). An extinguished LED indicates the absences of the associated voltage.

CO Line/Station Interfaces

The Expansion KSU contains the necessary circuitry to connect an additional four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging.

The main key service board on the Expansion KSU contains four Central Office, Centrex or PBX loop start, line interfaces

The protection circuitry to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). Each CO line interface design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular jacks mounted on the bottom of the main key service board of the Expansion KSU.

The main key service board also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located inside the Expansion KSU. Each station connection requires four wires to connect to the board.

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 overcurrent.

C. 2x4 Expander Module

The 2x4 Expander Module is a two CO by four key station interface module that plugs onto the main key service board of the Basic KSU or the main key service board of the Expansion KSU through the use of two ribbon cables. This module is a combination board that contains the necessary circuitry to connect two CO/Centrex/PBX loop start lines and four digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, and a connector for adding one application module (i.e. DTMF Receiver) to the system.

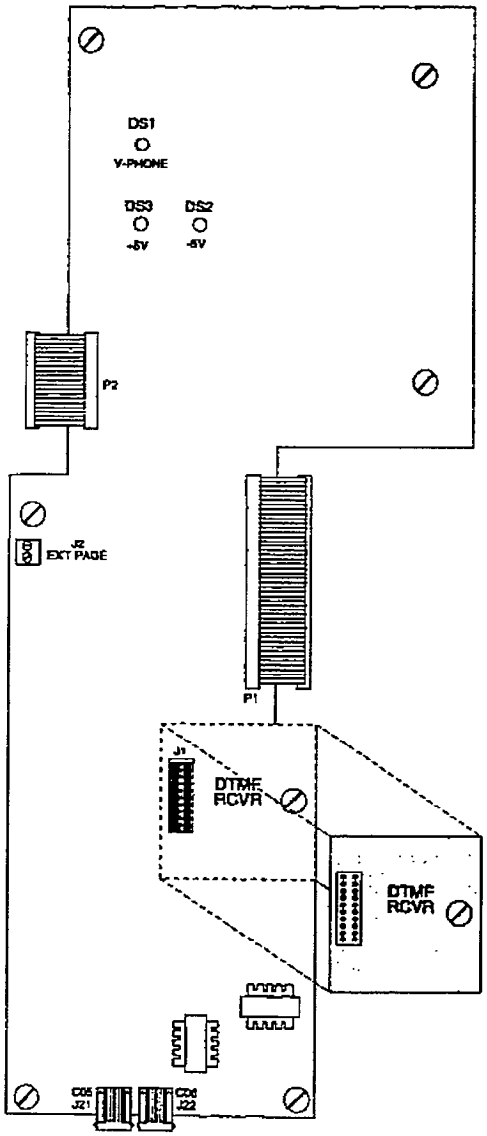


Figure 200-3 2x4 Expander Module

LEDs & Indicators:

Three green LEDs are located on the 2x4 Expander Module. Two of the LEDs (DS3 & DS2) indicate the presence of +5v & -5v dc. LED DS1 monitors the +12V dc used to supply power to the key stations. An extinguished LED indicates the absence of the associated voltage.

CO Line/Station Interfaces:

The 2x4 Expander Module provides the interface for two Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit.

The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular connectors mounted on the bottom edge of the board. The 2x4 Expander module also provides the interface for four digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the main key service board inside the Basic KSU or a similar connector on the main key service board when installed in the Expansion KSU. Each station connection requires four wires to connect to the board.

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.

D. 2x4 SLT Expander Module

The 2x4 SLT Expander Module is a two CO by four single line telephone interface module that plugs onto the main key service board of the Basic KSU or the main key service board of the Expansion KSU through the use of two ribbon cables. This module is a combination board that contains the necessary circuitry to connect two CO/Centrex/PBX loop start lines and four single line telephones to the system. This card also contains a connector for adding one application module (i.e. DTMF Receiver) to the system.

Message Waiting capability comes installed on the 2x4 SLT Expander Module. This circuitry provides message waiting voltage to single line telephones equipped with message waiting lamps, and supports up to four single line telephones message waiting lamps at 90V dc typical across tip and ring.

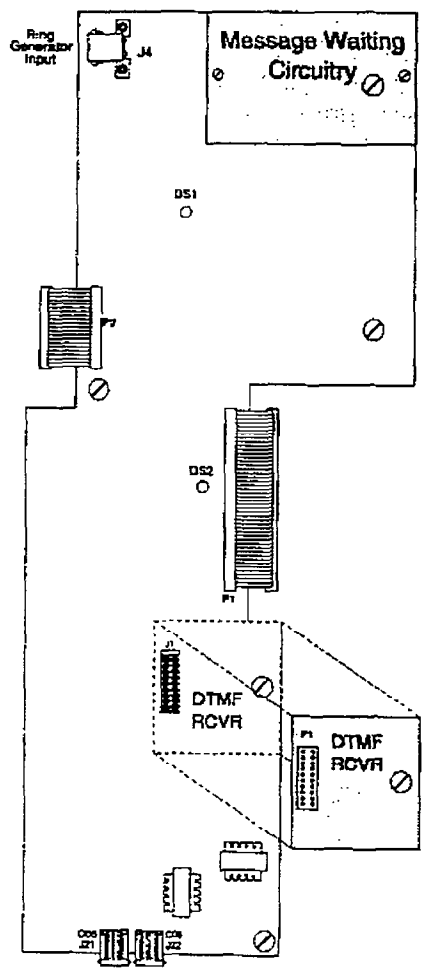


Figure 200-4 2x4 SLT Expander Module

LEDs & Indicators:

Two green LEDs indicate the presence of +5v & -5v dc. An extinguished LED indicates the absence of the associated voltage.

CO Line/Station Interfaces:

The 2x4 SLT Expander Module provides the interface for two Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular connectors mounted on the bottom edge of the board.

The 2x4 SLT Expander module also provides the interface for four standard on-premise single line telephones (2500 type). Four 36v dc single line circuits are provided on the printed circuit board. 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 (700ms duration) to the connected SLT or device. The card will support single line telephones up to 2000 feet from the Basic KSU. Refer to Table 200-4 - 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.

A molex connector, J4 is located in the upper left corner of the 2x4 SLT Expander Module to provide ring generator capabilities. It is recommended that the Tellabs 8101, 30 Hz, 90VAC Ring Generator be used with this board.

E. 4x8 Expander Module

The 4x8 Expander Module is a four CO by eight digital key station Interface module that may plug onto the main key service board of the Expansion KSU only. This module is a combination board that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, and a connector for adding one application module (i.e. DTMF Receiver) to the system.

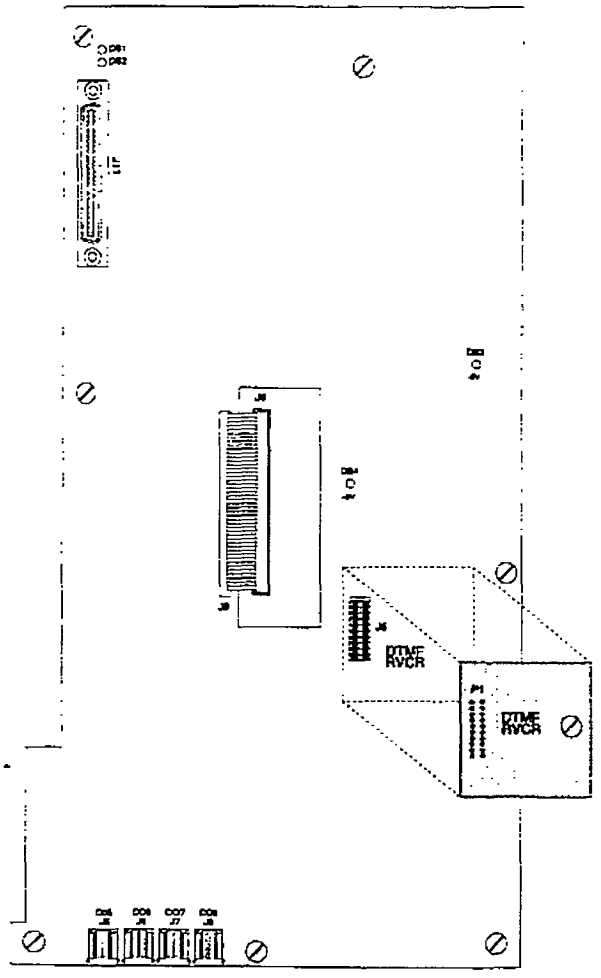


Figure 200-5 4x8 Expander Module

LEDs & Indicators:

Four green LEDs are located on the 4x8 Expander Module. Two of the LEDs (DS4 & DS3) indicate the presence of +5v & -5v dc. LEDs DS1 and DS2 indicate the presence of +12V dc used to supply power to the key stations (one LED for every four stations). An extinguished LED indicates the absence of the associated voltage.

CO Line/Station Interfaces

The 4x8 Expander Module provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ11 modular connectors mounted on the bottom edge of the board.

The 4x8 Expander module also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the board. Each station connection requires four wires to connect to the board.

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 overcurrent.

200.3 COMMON EQUIPMENT FOR THE DVX II SYSTEM

The following components are necessary to operate the *infinite* Digital Key Telephone System. Refer to Appendix B for a complete *infinite* Digital Key Telephone System component list with Part #'s.

- Equipment Cabinet w/Power Supply (KSU)
- Central Processing Board (CPB)
- 4x8 Key Interface Board (CKB)
- 4x8 SLT Interface Board (CSB)

A. Equipment Cabinet With Power Supply (KSU)

The DVX II system main cabinet contains the power supply and mother board to support a fully configured system of 28 CO Lines and 56 Stations. The mother board has eight card slots. Card Slot J8 (the right most card slot) is used for the Central Processor Board (CPB) PCB. Card slots J1 through J7 each support a four CO line by eight station PCB's. Cable exits through the bottom of the KSU through a cable exit raceway near the back of the KSU. Refer to Figure 200-6 Basic KSU Equipment Cabinet

Power Supply

The power supply is installed in the KSU cabinet at the time of manufacture and ships with the KSU. The power supply input voltage is 117V ac ±10%. The power supply provides power distribution of filtered / unregulated 12V dc and a regulated -5V dc to the back plane bus. An ON/OFF switch is located on the front of the power supply along with a slo-blow 5 amp fuse on the AC side of the transformer. The power supply provides an input for a 48V dc source for future use. Power is regulated and distributed to stations/circuitry in the system on each printed circuit board. Three fuses located inside the power supply protect the system from over-current situations. 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 Board (CPB)

This plug-in card is the only common equipment card required to make the system operational and controls all system activity. The CPB contains the main microprocessor a 16-bit (68000) and a real time clock which controls all system functions including the PCM/TDM voice switching under direction of ROM and RAM software coding. The CPB is responsible for all control functions, execution of all logic operations and control of system modules including control over circuitry necessary for voice switching and conference connections. The CPB is also responsible for all system tones, system timing, and station status control. In addition the CPB also provides software and hardware support to ensure the following:

- Watch dog timer and recovery.
- 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.
- State/event software design.
- Battery backup of customer database RAM memory.

The CPB contains the circuitry and connection (RCA type) for background music/music on hold, and the standard 300 baud modem. An optional 1200 baud modem can be installed on the CPB to allow the on-board modem to transmit at a 1200 baud rate. In addition there is one RS-232C (modular connector) input/output port on the CPB and a connector to support the use of an optional I/O expansion module. The I/O expansion module adds RS-232C I/O port and RS-422 I/O port to the system for a system total of three I/O ports. A reset (halt) push button switch and a BGM/MOH volume control pot is located on the front of the PCB. Refer to Figure 200-7 Central Processing Board (CPB) for the location of the Central Processing Board connectors.

System software is provided in EPROM memory and is installed on the CPB. The CPB contains 512k of EPROM storage and is equipped with 256K of battery-backed static RAM. Provisions have been made on the card to address up to four megabytes of EPROM memory and up to two megabytes of static RAM.

Modem Interface

The Central Processor Board (CPB) contains an on-board modem that is capable of transmitting data at a rate of 300 baud.

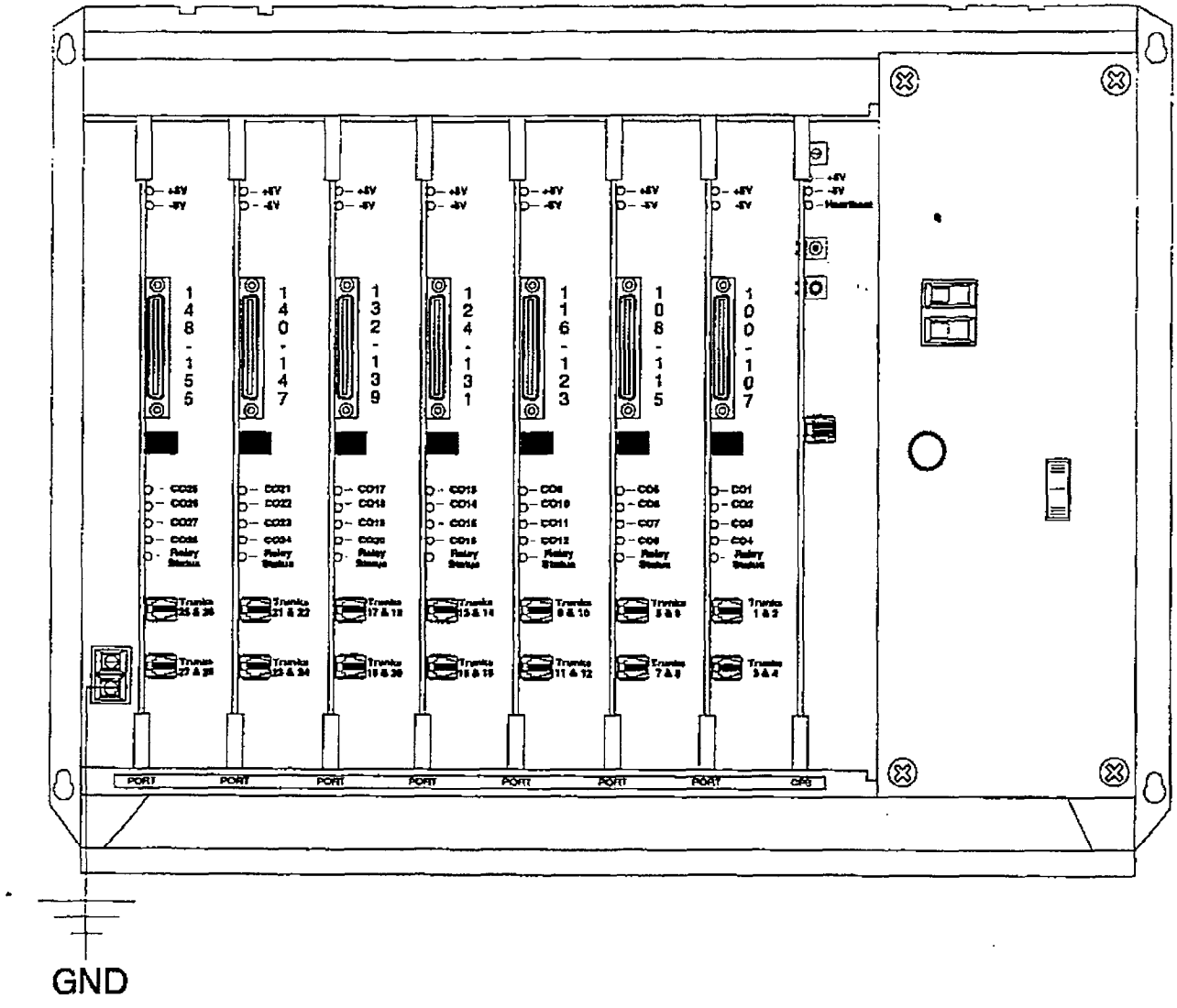


Figure 200-6 Basic KSU Equipment Cabinet

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. An optional 1200 baud module may be added to the CPB to allow transmission at the rate of 1200 baud.

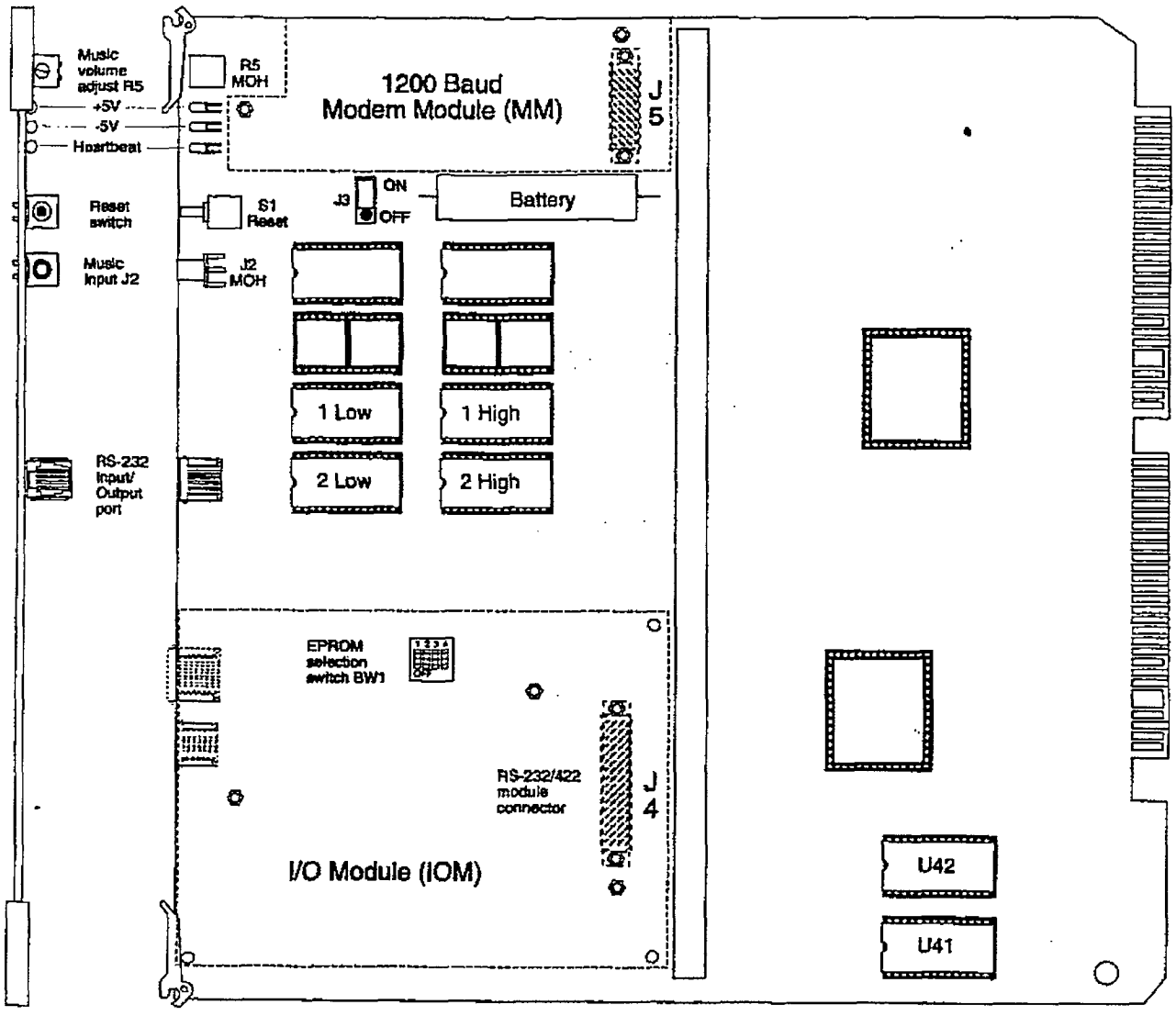


Figure 200-7 Central Processing Board (CPB)

C. 4 x 8 Key Interface Board (CKB)

The 4x8 Key Interface Board (CKB) is a four CO by eight digital key station interface board. The 4x8 Key Interface Board is a combination card that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, a multi purpose relay and a connector for adding one application module to the system. The 4x8 Key Interface Board may be installed into Basic KSU cabinet back plane using slots J7 through J1 and may be removed or inserted while power is applied to the Basic KSU (power on). Refer to Refer to Figure 200-8 4x8 Key Interface Board (CKB) for location of connectors.

LEDs & Indicators:

Five red LEDs are located along the front edge of the 4x8 Key Interface Board (CKB), one for each CO Line to indicate when it is in use and one LED that monitors the contact operation of the multi use contact located on the board. Two green LEDs also located along the front edge of the CKB indicate the presence of +5V & -5V dc.

CO Line/Station Interfaces:

The 4x8 Key Interface Board (CKB) provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision).

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.

The 4x8 Key Interface Board also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the front edge of the board. Each station connection requires four wires to connect to the board.

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 overcurrent.

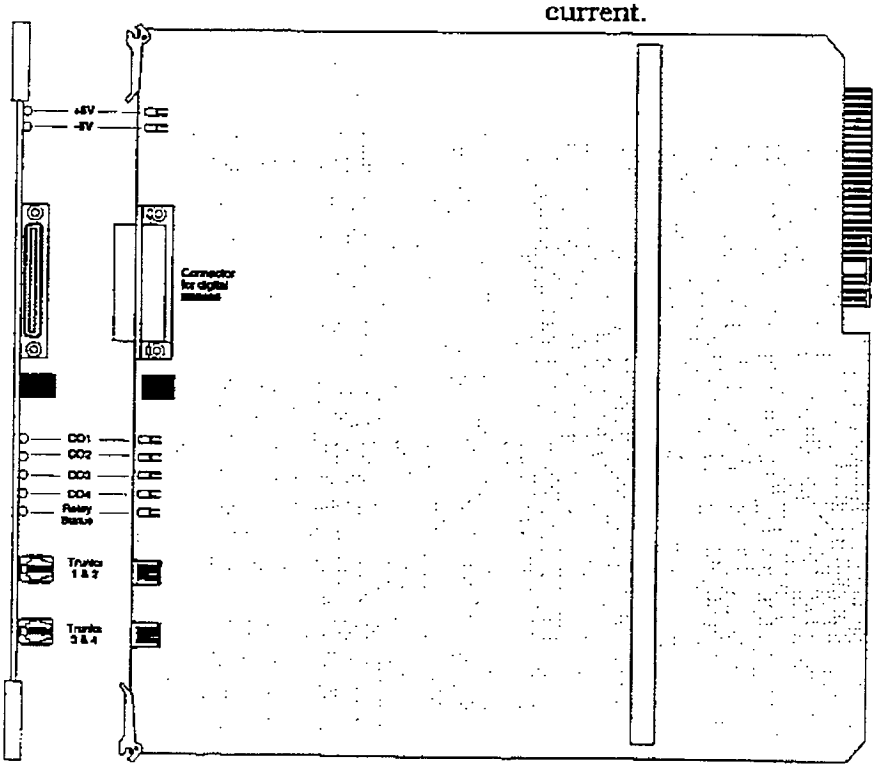


Figure 200-8 4x8 Key Interface Board (CKB)

D. 4x8 SLT Interface Board (CSB)

The 4x8 SLT Interface Board (CSB) is a four CO Line by eight single line telephone interface board. The card is a combination card that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight standard on-premise single line telephone (2500 type) to the system. This card also contains one additional voice (transmit) path for external paging and a connector for adding one application module (i.e. DTMF Receiver or Dual DTMF/Talk-Back Page Module) to the system. The 4x8 SLT Interface Board can be removed or inserted with power on the KSU. Refer to Figure 200-9 4x8 SLT Interface Board (CSB) for location of connectors.

NOTE ***Paging is only possible if the optional Dual DTMF/Talk-Back Page Module (future) is installed.***

A molex connector is located on the 4x8 SLT Interface Board (CSB) to provide ring generator capabilities. It is recommended that the Tellabs 8101, 30 Hz, 90VAC Ring Generator be used with this board.

NOTE ***Only one Ring Generator is required per system. At least one DTMF Receiver MUST be installed in the system.***

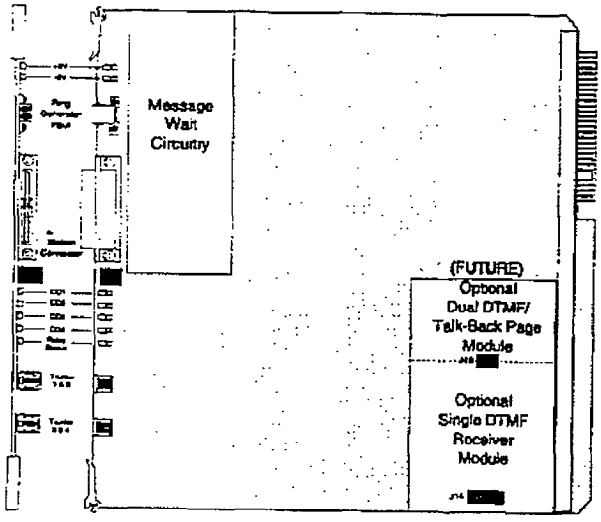


Figure 200-9 4x8 SLT Interface Board (CSB)

Message Waiting capability comes installed onto the 4x8 SLT Interface Board. This circuitry provides message waiting lamps to single line telephones equipped with message waiting lamps and supports up to eight Single Line Telephone Message Waiting lamps at 90V dc typical across tip and ring.

LEDs & Indicators:

Five red LEDs are located along the front edge of the 4x8 SLT Interface Board, one for each CO Line to indicate when it is in use and one LED that monitors the contact operation of the multi use relay located on the board. Two green LEDs also located along the front edge of the 4x8 SLT Interface Board (CSB) indicate the presence of +5V & -5V dc.

CO Line/Station Interfaces:

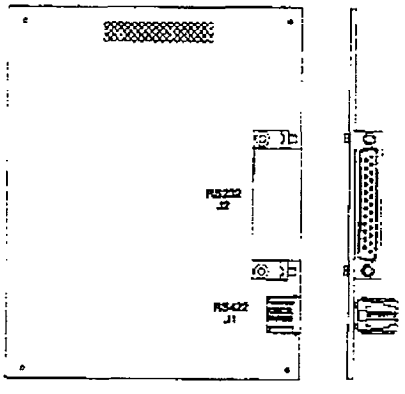
The 4x8 SLT Interface Board (CSB) provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). 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. The 4x8 SLT Interface Board does not support data devices for data switching.

The 4x8 SLT Interface Board (CSB) provides the control and interface for eight standard single line telephones (2500 type). Eight 36V dc single line circuits are provided on the printed circuit board. 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 (700ms duration) to the connected SLT or device. The card will support single line telephones up to 2000 feet from the Basic KSU cabinet. Refer to Table 200-4 - 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.

200.4 APPLICATION MODULES

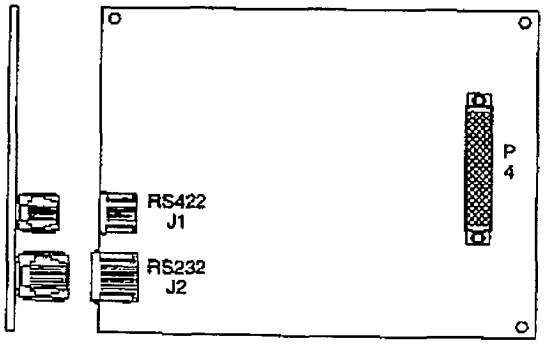
A. Expansion I/O Module (IOM) for the DVX I System

The DVX I contains one RS-232C, I/O port (female, DB-25 type connector) located on the main key service board (J5). This optional I/O module may be added to the main key service board (on connector J15) adding one additional RS-232C port (female, DB-25 type connector) and one RS-422 port (6 pin modular jack connector). Each I/O port on this module is capable of transmitting and receiving data at 300, 1200, 2400, 4800 and 9600 Baud rates.



B. Expansion I/O Module (IOM) for the DVX II System

This module provides one RS-232C I/O port (8 pin modular jack) and one RS-422 I/O port (6 pin modular jack). This module is installed on the Central Processor Board printed circuit board and adds two I/O ports to the one RS-232C I/O port already on the Central Processor Board for a total of three I/O ports allowed in the system. Each port is independently programmed for its use and the rate of speed at which it transmits and receives data (baud rate). The options are 300, 1200, 2400, 4800, and 9600 Baud rates all at 8 data bits, 1 stop bit, with No parity.

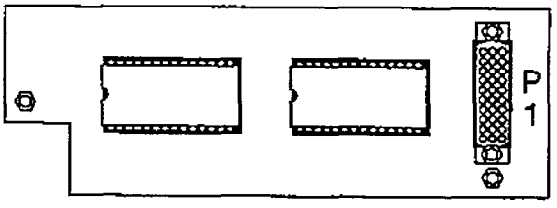


C. 1200 Baud Modem Module (MM)

This optional 1200 baud modem can be installed on either the DVX I or the DVX II systems to add the capability of communicating with the system from a remote site or location at the rate of 1200 baud. Both systems provide as standard an on-board modem capable of transmitting data at 300 baud. With this module installed, a transmission baud rate of 1200 baud can be selected. A programmable option allows for auto baud detection between 300 and 1200 baud.

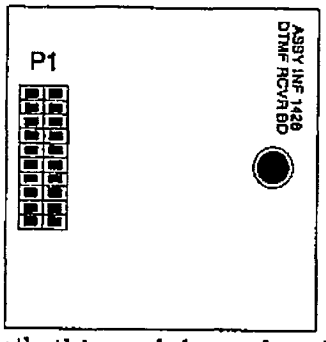
Connection to the modem is accomplished by simply calling into the system and connecting to the modem. This can be done by: ringing directly to the modem, by going through DISA, or after being answered by a station user and transferred to the modem port. Connection to the modem port is under software control.

The 1200 baud modem module maintains the compatibility with the Hayes command protocol and uses the Bell System (Western Electric) standards 103 and 212A for modem design. The modem operates on-line in both Full and Half duplex modes.



D. DTMF Receiver Module (RM)

This module is used to provide DTMF receivers in the system to support single line telephone and DISA applications.



Currently this module can be added to the DVX I System Expansion KSU, 2x4 Expander Module, 2x4 SLT Expander Module and the 4x8 Expander Module. This module can also be added to the DVX II System on each 4x8 Key Interface Board, and each 4x8 SLT Interface Board. Each DTMF Re-

ceiver Module contains 1 DTMF receiver. A maximum of three DTMF Receiver Modules can be installed in the DVX I system for a total of four receivers for the system(one DTMF Receiver is located on the main key service board on the Basic KSU. A maximum of 13 DTMF Receivers can be installed in the DVX II system, depending on whether the DTMF Receiver Module or the Dual DTMF/Talk-Back Page Module is installed.

NOTE	***The DVX I Basic KSU is designed with one DTMF Receiver incorporated onto the main key service 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.

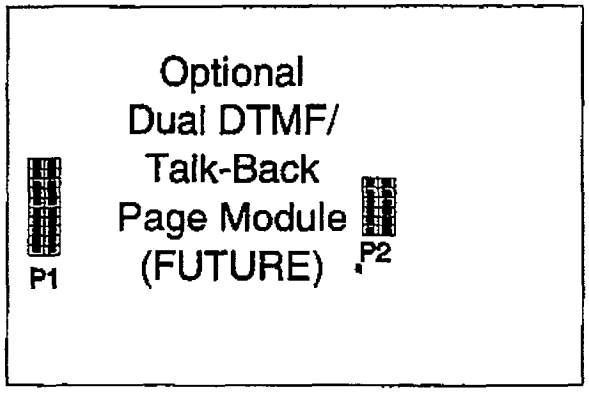
The DTMF Receiver Module plugs onto a 20-pin connector on the following printed circuit boards (one DTMF Receiver Module may be installed on each card):

- 2x4 Expander Module
- 2x4 SLT Expander Module
- Main Key Service Board of the Expansion Key Service Unit (EKSU)
- 4x8 Expander Module
- 4x8 Key Interface board (CKB)
- 4x8 SLT Interface board (CSB)

E. Dual DTMF/Talk-Back Page Module (Future)

This module is used to provide additional DTMF receivers in the system to support single line telephone and DISA applications along with two-way external paging capability. Currently this module can only be added to the DVX II 4x8 SLT Interface Board (CSB). Each Dual DTMF/Talk-Back Page Module contains two DTMF Receivers. A maximum of six Dual DTMF/Talk-Back Page Modules can be installed in the DVX II system. (A CKB must be installed in Slot 1 for programming from an Executive Digital Terminal (Only a single DTMF Receiver module can be installed on the CKB board), CSB boards can be installed in Slots 2 thru 7. Each CSB board having a Dual DTMF/Talk-Back Page Module installed, resulting in 13 DTMF Receivers in the system.

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.



200.5 DIGITAL TERMINALS

A. 33-Button Executive (Display) Terminal

The 33-button Digital Terminal is one in a line of Digital electronic telephone terminals. The line consists of an Executive (Display) telephone, an Executive/PC Interface telephone, an Enhanced (non-display) telephone and an 8-button Basic telephone. These telephones are designed to operate with the new line of *infinite* Digital Key Systems and PBX Systems.

The 33-button and 8-button Digital Terminals are connected to the KSU via a four wire (two twisted pair) connections from an appropriate electronic terminal interface board.

LCD Display:

The 33-button 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 recreated 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 33-button 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 33-button Digital Terminal has 33-buttons all containing LEDs except the Pickup and Flash buttons plus a 12-key dial pad.

The 33-button 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

- 12 Dial Key Pad*
- 24 Flexible Buttons
- 1 ON/OFF button (fixed)
- 1 MUTE button (fixed)
- 1 SPEED button (fixed)
- 1 FLASH button (fixed)
- 1 TRANSfer button (fixed)
- 1 HOLD button (fixed)
- 1 CAMP-ON button (fixed)
- 1 MSG button (fixed)
- 1 PICKUP button (fixed)

* All buttons except the 12-key dial pad, Pickup and Flash button have an LED associated with it. Refer to Figure 200-10 33-Button Executive Digital Terminal.

Speakerphone:

Each 33-button 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 *infinite* Digital Terminal to

Figure 200-10 33-Button Executive Digital Terminal

adjust the volume of the voice and tones presented to the terminal speaker.

- The speaker volume (center switch) will control all voice signals sent to the speaker i.e. Speaker Phone conversations, BGM, and Page announcements.
- The ringing volume (right switch) 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.

HF-PV-TN 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 "HF" position allows intercom call announce with hands free reply.
- The "PV" position allows Call Announce intercom calls only.
- The "TN" position provides Tone only intercom ringing.

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 HF or PV to force the station to Tone ring.

Directory Tray:

Each 33-button Digital Terminal is equipped with a slide-out Directory Tray accessed from the front of the digital terminal.

Wall Mounting:

The 33-button Wall Mount Bracket is designed to allow the 33-button digital 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 wall bracket.

Handset/line Cords:

The 33-button 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 33-button Digital Terminal uses an electret type transmitter. Compatible headsets can be plugged into the Terminals handset jack for headset operation.

B. 33-Button Executive/PC Interface Terminal (ICLID)

The 33-button Executive/PC Interface Terminal is similar to the 33-button 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 33-button Executive/PC Interface terminal provides transmit, receive, and ground data lines from the phone microprocessor 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. 33-Button Digital Terminal (Enhanced)

The 33-button Enhanced Digital Terminal is similar to the 33-button Executive Digital Terminal and all of the information listed above applies except there is no LCD display.

Figure 200-11 33-Button Enhanced Digital Terminal

D. 8-Button Digital Terminal

The 8-button Digital Terminal is new to the line of digital electronic telephone terminals. This new telephone is designed to operate with the line of *infinite* Digital Key Systems and PBX Systems.

Buttons and LEDs:

The 8-button 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 8-button Digital Terminal has eight buttons all containing LEDs plus a 12-key dial pad.

The 8-button 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*
- 8 buttons, 4 of which are flexible
- 1 DSS STA 100 button (flexible)
- 1 DSS STA 101 button (flexible)
- 1 LOOP button (flexible)
- 1 POOL button (flexible)
- 1 SPEED button (fixed)
- 1 ON/OFF button (fixed)
- 1 TRANSfer button (fixed)
- 1 HOLD button (fixed)

* All buttons except the 12 key dial pad, have an LED associated with it. Refer to Figure 200-10 33-Button Digital Terminal.

Speakerphone:

Each 8-button 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 pre-programmed MUTE flex 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 Control:

A "slide" switch is provided on the front of the *infinite* 8-button 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 all 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 proportionately quieter than normal ringing based on the current switch setting.

Directory Tray:

Each 8-button Digital Terminal is equipped with a slide-out Directory Tray accessed from the front of the digital terminal.

Wall Mounting:

The 8-button Wall Mount Bracket is designed to allow the 8-button Digital 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 8-button 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 8-button Digital Terminal uses an electret type transmitter. Compatible headsets can be plugged into the Terminals handset jack for headset operation.

Figure 200-12 8-Button Basic Digital Terminal

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 33-button digital terminal.

The Direct Station Selector/Direct Line Selector (DSS/DLS) Console to be used with the family of *infinite* digital systems is modular in nature. The DSS/BLF console provides 48 buttons (4 columns of 12 buttons) and requires a separate four-conductor line cord each connected to a digital terminal station port.

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

NOTE	***The following features are NOT allowed to be programmed onto DSS/DLS Console flexible buttons: ACD Agent or Supervisor Login, Do Not Disturb (DND), Call Forward (FWD), Camp-On, Available/Unavailable, Personal Park, Voice Mail, and Headset mode. These features can however still be programmed onto keyset flexible buttons.***

A DSS/DLS unit may be assigned to one of the different MAP configurations available. Any one of the three MAP configurations may be assigned to a DSS/DLS and up to three maps may be assigned to one station. However, "duplicate" MAPs or appearances of Stations and/or CO lines between the MAPs are not allowed.

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 three pre-defined MAPs for the DSS Console with default Button Programming. Refer to Figure 200-14 DSS Console Map 1, Figure 200-15 DSS Console Map 2, and Figure 200-16 DSS Console Map 3 for a button layout of each DSS Console Button Map.

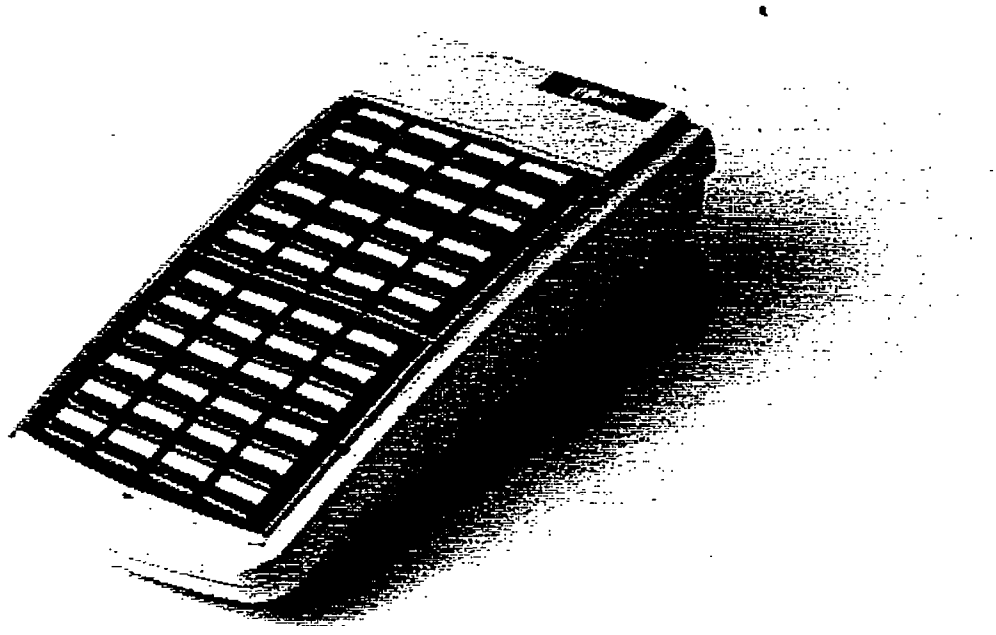


Figure 200-13 48-Button DSS/DLS Console

MAP #1 has by default the first 28 Stations (Stas 100-127), and 14 CO Lines, three Call Park locations, Release, Attendant Override, and an All Call Page button mapped to the buttons. All buttons except the 14 CO line buttons and Release button are flexible and can be changed by the station user.

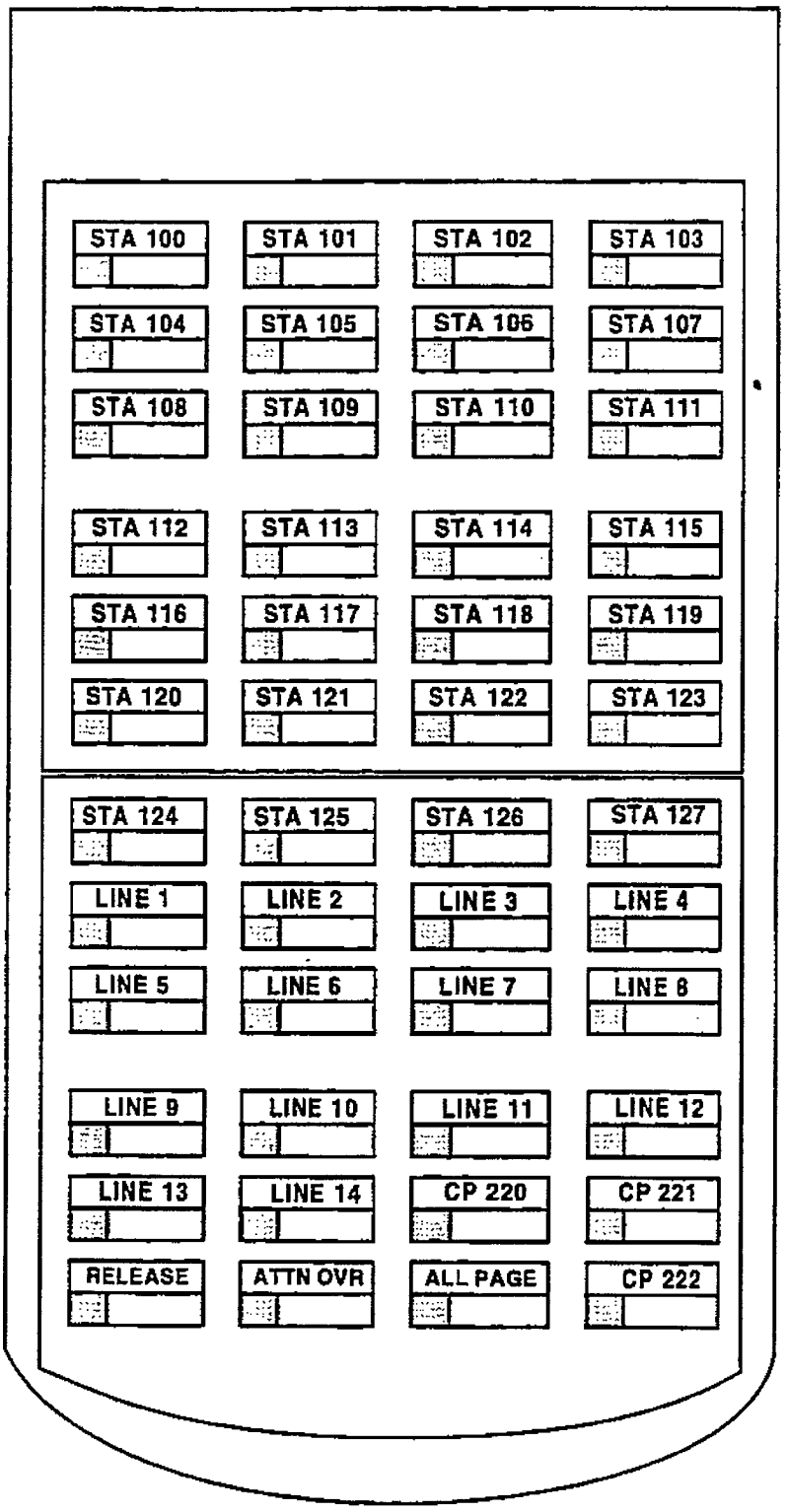


Figure 200-14 DSS Console Map 1

MAP #2 has by default all 28 CO lines, and the first 12 stations (Stas 100-111), followed by four Call Park locations, Release, Attendant Override, an All Call Page button, and the first Internal Page Zone mapped to the buttons. All buttons except the 28 CO line buttons and the Release button are flexible and can be changed by the station user.

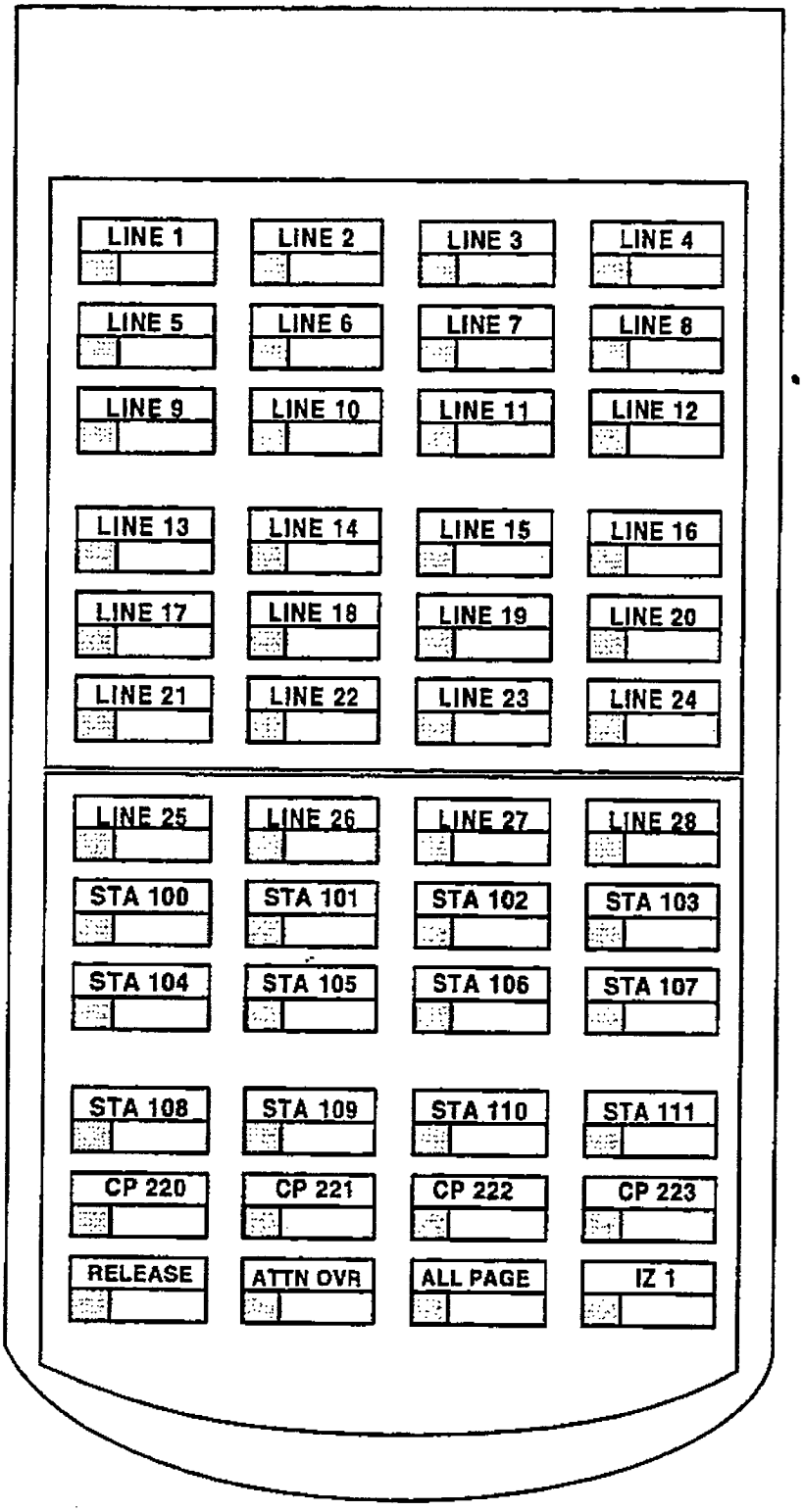


Figure 200-15 DSS Console Map 2

MAP #3 by default is intended to be used with MAP # 2 on an DVX[II] System, in that it has the remaining stations (Stas 112-155) to provide a full CO Line by Station mapping. Additionally, Internal Page Zones 2, and 3 appear and the last two buttons are unassigned. All of the buttons on MAP #3 are flexible and can be changed by the user.
CO Line ringing on Map 1 and Map 2 is determined by CO Line Ringing Assignments.

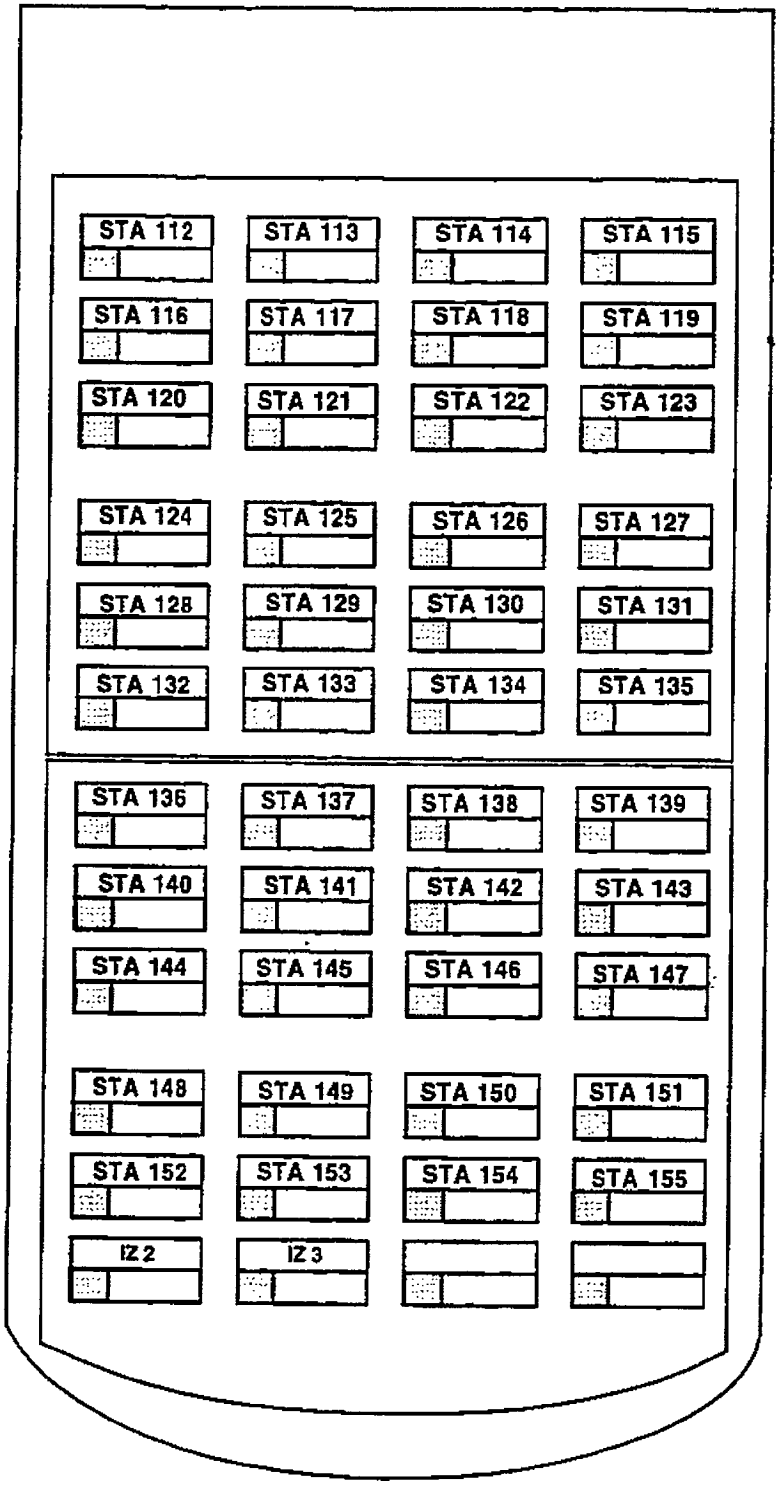


Figure 200-16 DSS Console Map 3

200.6 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 either the DVX I or DVX II systems.

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.

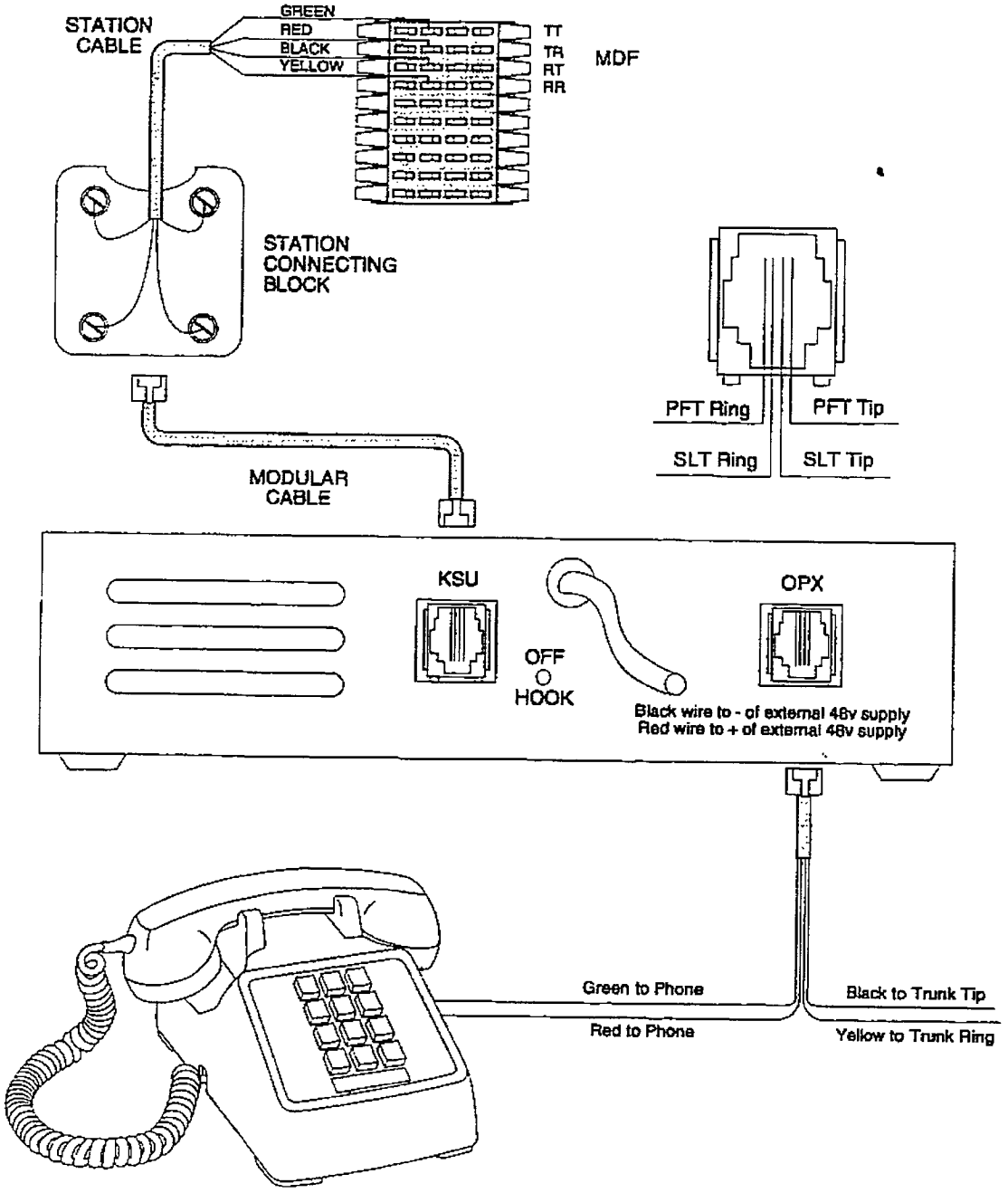


Figure 200-17 Off-Premise Extension (OPX) Module

200.7 RELAY / SENSOR INTERFACE MODULE

The Relay Sensor Interface Module connects to either the DVX[I] or DVX[II] systems 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 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.

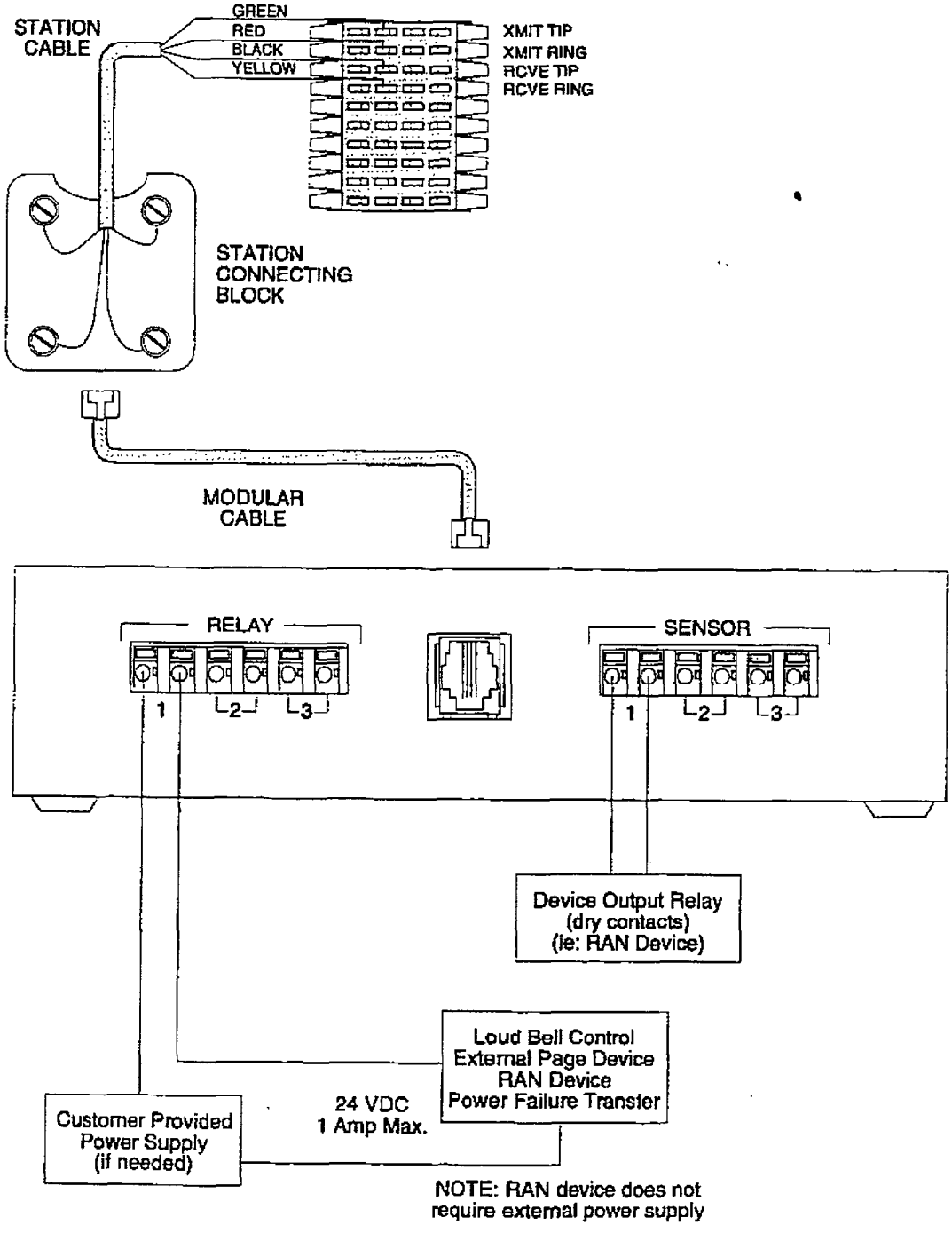
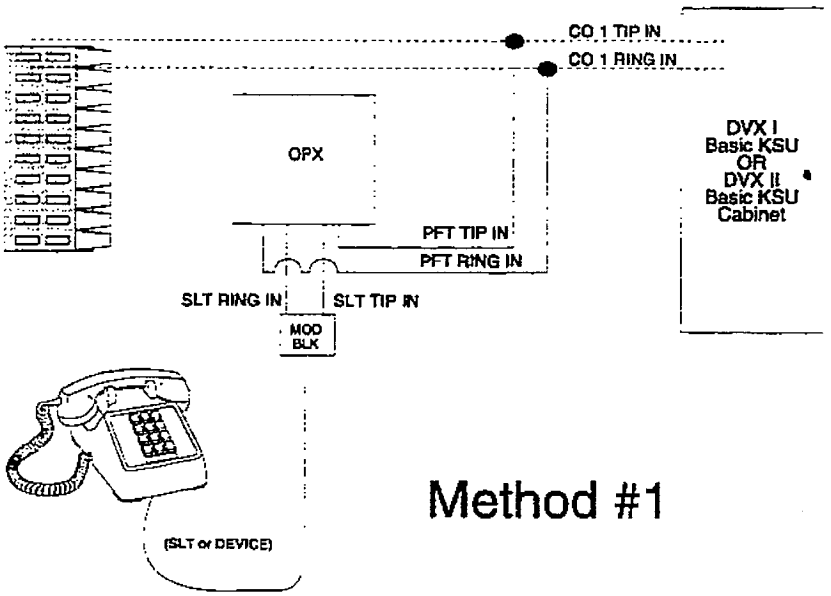


Figure 200-18 Relay / Sensor Interface Module

200.8 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 a multi-use relay on any one of the CO / Station Interface boards 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.



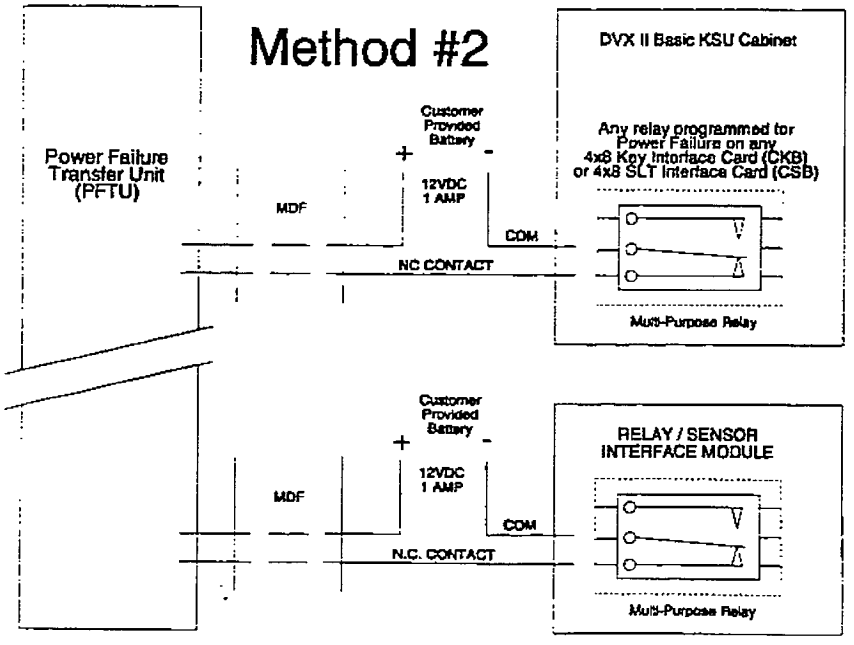


Figure 200-19 Power Failure Transfer Wiring Options

200.9 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 200-20 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?

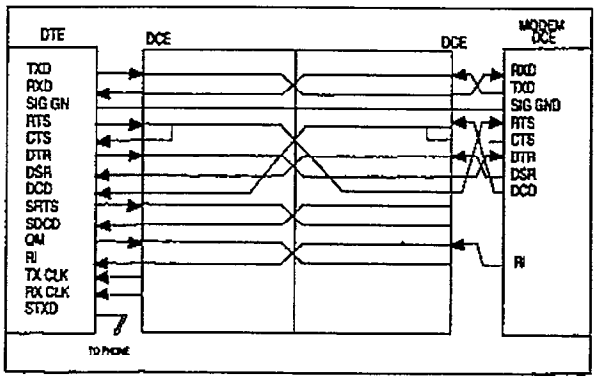
When planning the installation of the data feature, use a digital display phone at any location that is to originate a data connection. A DDIU can only be called; it cannot originate a connection. A digital display phone would typically be connected to a CRT terminal, or personal computer. A DDIU would 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	into telephone (or DDIU)
3	Transmit DATA	out of telephone (or DDIU)
4	Request To Send	into telephone (or DDIU)
5	Clear To Send	out of telephone (or DDIU)
6	Data Set Ready	out of telephone (or DDIU)
7	Signal Ground	
8	Data carrier detect	out of telephone (or DDIU)
11	unassigned	into telephone (or DDIU)
12	Secondary DCD	out of telephone (or DDIU)
15	Transmit Clock	out of telephone (or DDIU)
17	Receive Clock	out of telephone (or DDIU)
19	Secondary RTS	into telephone (or DDIU)
20	Data Terminal Ready	into telephone (or DDIU)
22	Ring Indicator	out of telephone (or 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

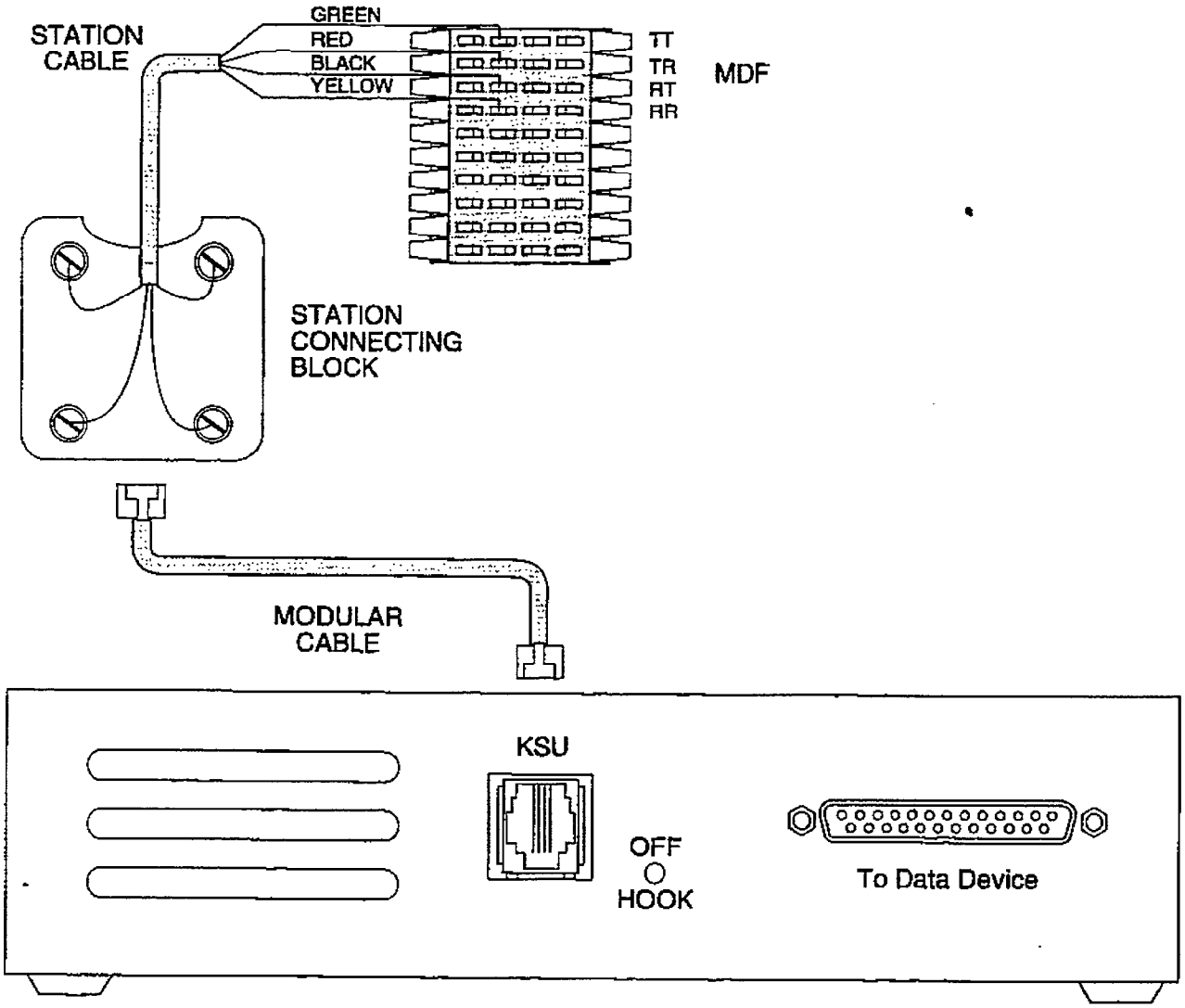
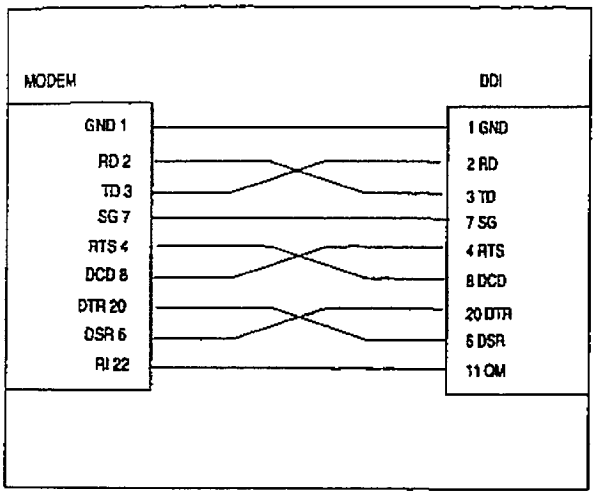
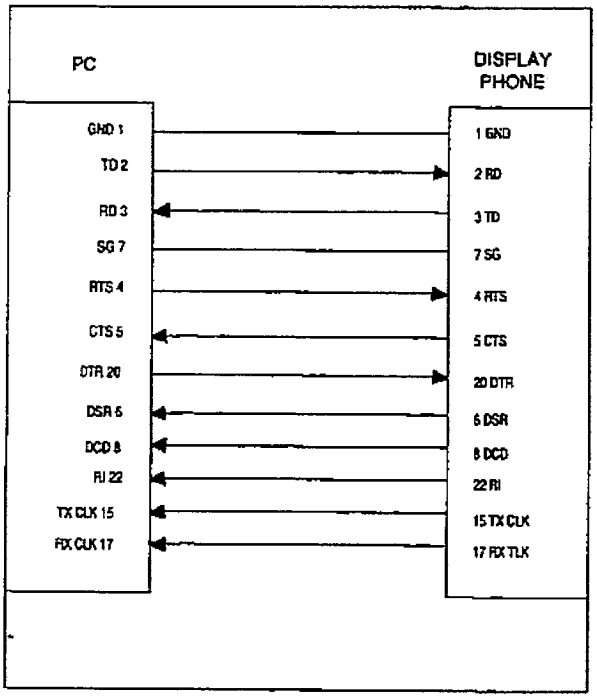


Figure 200-20 Digital Data Interface Unit (DDIU) wiring



Modem to DDIU Cable



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, 730.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 730.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

200.10 SYSTEM SPECIFICATIONS AND CAPACITY

The DVX I Basic KSU is housed in a wall-mountable cabinet that contains the system power supply and the mother board for stations and CO lines. This Basic KSU supports a loaded capacity of 6 CO lines and 12 stations. DSS/DLS's can be installed in place of any Digital Key terminal. Standard single line telephones (2500 type) can be installed by using Single Line Telephone Adapters (OPX) boxes, or the 2x4 SLT Expander Module.

The DVX II Basic KSU is housed in a wall-mountable cabinet that contains the system power supply and the back plane for station and CO line boards. This Basic KSU supports a loaded capacity of 28 CO lines and 56 stations. DSS/DLS's can be installed in place of any Digital Key terminal. Standard single line telephones (2500 type) can be installed by replacing the 4x8 Key Interface Board(s) (CKB) with the 4x8 SLT Interface Board(s) (CSB). Eight single line telephones can replace eight 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 200-1 - Digital System Capacities. Electrical specifications, environmental specifications, and Loop limits are listed in Table 200-2 - Electrical Specifications, Table 200-3 - Environmental Specifications and Table 200-4 - Loop Limits. Dialing specifications are listed in Table 200-5 - Dialing Specifications. FCC Registrations Numbers for DVX I and DVX II are listed in Table 200-6 - FCC Registration Numbers. Miscellaneous Specifications are listed in Table 200-8 - Miscellaneous Specifications. Key telephone, Single Line Telephone and OPX Audible Indications are listed in Table 200-9 - Digital Terminal Audible Signals, Table 200-10 - Single Line Telephone Audible Signals and Table 200-11 - OPX Telephone Audible Signals. Key Telephone Visual Indications are listed in Table 200-12 - DSS/BLF Button Visual Indicators, Table 200-13 - CO Line Button Visual Indicators, and Table 200-14 - Function Button Visual Indicators.

Table 200-1 - Digital System Capacities

Time Slots:	112 PCM/TDM time slots
Ports: (DVX I)	
CO/PBX/Centrex Lines	14 (max) loop start (2 or 4 per expansion module
Digital Terminal Stations	28 (max) Digital Terminals (4 or 8 per station board)
Standard Single Line Telephones	8 (max) Standard Single Line Telephones (4 per board)
Off-Premise Extensions (SLT's)	27 (max) OPX or SLT Stations (1 per OPX adapter)
Ports: (DVX II)	
CO/PBX/Centrex Lines	28 (max) loop start (4 per Station board)
Digital Terminal Stations	56 (max) Digital Terminals (8 per Station board)
Standard Single Line Telephones	48 (max) Standard (2500 type) SLT's (8 per SLT Expander board)
Off-Premise Extensions	55 (max) OPX Stations (1 per single line adapter (OPX))
Paging: (DVX I)	
Internal Paging	4 (max) Internal Page Zones (software controlled)
External Paging (one way paging)	4 (max) One per Station board
Paging: (DVX II)	
Internal Paging	4 (max) Internal Page Zones (software controlled)
External Paging (one way paging)	7 (max) One per CO/Station board
DTMF Receivers: (DVX I)	4 (max) per system (1 provided standard in BKSU, 1 each optional on additional expander modules)
DTMF Receivers: (DVX II)	13 (max) per system (1 each optional on additional expander modules)
DTMF Sender: (DVX I & DVX II)	1 per system (time shared)
I/O Ports:	3 (max) per system (1 RS-232C included on BKSU/CPB, 2 on optional I/O module (1-RS-232C and 1-RS-422)
Contacts (multi-purpose) (DVX II)	7 (max) per system (1 included on each CO/Station board) (additional relays may be used with the relay sensor module)
Contacts/Sensors (Relay Sensor Module) (DVX I & DVX II)	4 Relay / Sensor Modules per system. Each Relay/Sensor Module has 3 relays and 3 sensing circuits.
Conference:	
Circuits	4 Conference "bridges" per system
Parties per "bridge"	5 parties per "bridge"
DISA Circuits:	3 CO Lines may be programmed simultaneously.
Attendants:	Up to 3 stations can be designated as attendant(s).
DVX I Digital DSS/DLS Consoles:	21 (max) Up to 3 DSS/DLS units can be programmed to function with each station. (Each DSS/DLS unit reduced station capacity by 1)
DVX II Digital DSS/DLS Consoles:	42 (max) Up to 3 DSS/DLS units can be programmed to function with each station. (Each DSS/DLS unit reduced station capacity by 1)
Hunt Groups:	
Groups:	Software supports up to 8 groups.
Members:	Software supports up to 8 stations in each group.
Types:	Station or Pilot Hunting

Table 200-1 - System Capacities (Cont'd)

ACD or UCD Groups:	
Groups:	Software supports 8 groups.
Members:	Software supports up to 8 stations in each group.
RAN Announcements:	Eight RAN announcements per ACD/UCD Group.
Calls in Queue:	All CO Lines (14 or 28) may be in queue for an ACD/UCD Group.
Voice Mail Groups:	
Groups:	Software supports 8 Groups.
Members: (ports)	Software supports up to 8 stations in each 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 ms duration

Table 200-2 - Electrical Specifications

AC Input to Power Supply Power Consumption:	117V ac ± 10%, 60 Hz single phase 120V ac @1.5A max 180 watts maximum (DVX I) 600 watts maximum (DVX II)
Power Supply Fuse - AC input	1.5A, 125V ac (DVX I BKSU and EKSU) 5A, 125V ac (DVX II)
Longitudinal Balance:	Better than 60db from 200 Hz to 1,000 Hz 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: (1,000 Hz)	Station to CO Line and Station to Station: Better than 2.0% or 34db Output level -30 dbm to 0 dbm
Ringing Sensitivity:	16 Hz to 30 Hz at 40 VRMS minimum 30 Hz to 67 Hz at 50 VRMS minimum
Ringer Equivalence Number: (REN)	1.9
CO Line Signaling - DTMF:	Frequency pair at -5 dbm to 0 dbm Frequency tolerance, better than ±1.5%
Music Source (input)	0 dBm max at 600 ohms input impedance
Contact Rating Multi Purpose Relay	1.0A, 24V dc
External Page Port Output Impedance Output Power w/o compression	600 ohms @ 0 dBm 1 mW Maximum
UL File Number:	E109461

Table 200-3 - Environmental Specifications

Operating Temperature	40° to 104° F
Recommended Operating Temperature	70° to 78° F
Storage Temperature	-40° to 140° F
Relative Humidity	5% to 90% non-condensing
Heat Dissipation (BTU's) (DVX I and DVX II)	615 BTU's Maximum

Table 200-4 - 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 200-5 - Dialing Specifications

DTMF Dialing	
Frequency Deviation	±1%
Rise Time	3 msec.
Duration of DTMF Signal	75 msec. minimum
Interdigit Time	75 msec. minimum
PULSE Dialing	
Pulse Dialing Rate	10 or 20 pps.
Pulse Break/Make Duration	60/40 or 66/33
CO Type	Loop Start, 600 ohm, current sensing

Table 200-6 - FCC Registration Numbers

infinite DVX I For Systems configured as a key system (button appearance) use:	DLPHKG-65152-KF-E
For Systems configured as a hybrid system (dial access codes) use:	DLPHKG-65153-MF-E
infinite DVX II For Systems configured as a key system (button appearance) use:	DLPHG-65102-KF-E
For Systems configured as a hybrid system (dial access codes) use:	DLPHG-65101-MF-E

Table 200-7 - Dimensions and Weight

DVX I BASIC KEY SERVICE UNIT	
Height	20.0"
Width	14.0"
Depth	4.0"
Weight	13.5 lbs. (unloaded)
DVX I EXPANSION KEY SERVICE UNIT	
Height	20.0"
Width	14.0"
Depth	4.0"
Weight	13.5 lbs. (unloaded)
DVX II KEY SERVICE UNIT w/POWER	
Height	15.2"
Width	18.5"
Depth	14.75"
Weight	60 lbs. (unloaded)
OFF-PREMISE EXTENSION MODULE	
Height	1.75"
Width	7.625"
Length	8.0"
Weight	3.5 lbs.
RELAY/SENSOR MODULE	
Height	1.75"
Width	7.625"
Length	8.0"
Weight	3.5 lbs.
33-BUTTON ENHANCED TERMINAL (non-display)	
Height	3.5"
Width	7.625"
Depth	9.625"
Weight	3 lbs.
33-BUTTON EXECUTIVE DISPLAY TERMINAL (display)	
Height	3.5"
Width	7.625"
Depth	9.625"
Weight	3 lbs.
8-BUTTON BASIC TERMINAL	
Height	2.75
Width	6.25
Depth	9.25
Weight	2? lbs.
DSS/DLS CONSOLE	
Height	2.75"
Width	5.25"
Depth	9.25"
Weight	2 lbs.

Table 200-8 - Miscellaneous Specifications

Memory: (DVX [I])	
Programmable Read-Only Memory (EPROM)	512K expandable to 2 Megabytes
Random Access Memory (RAM):	128K expandable to 2 Megabytes
Memory: (DVX [II])	
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:	28 CO/PBX Centrex talk paths (non-blocking)
Intercom Paths:	Non blocking
Music Channels:	1 channel provides music 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:(DVX [I])	
Station Speed Dial:	20 bins per station (24-digits)
System Speed Dial:	80 bins per system (24-digits)
Total speed dial bins:	600 speed locations to be divided among all telephones.
Speed Dialing Memory: (DVX [II])	
Station Speed Dial:	20 bins per station (24-digits)
System Speed Dial:	80 bins per system (24-digits)
Total speed dial bins:	1280 speed locations to be divided among all telephones.

Table 200-9 - Digital Terminal Audible Signals

TYPE OF SIGNAL	FREQUENCY	SIGNAL DURATION
Key Telephone Signals:		
Incoming CO Line	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	1215/1471	0.2s on/.6s off, repeated
Message Wait Call Back	1215/1471	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 Telephone 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 200-10 - Single Line Telephone Audible Signals

TYPE OF SIGNAL	FREQUENCY	SIGNAL DURATION
Single Line Signals:		
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 200-11 - OPX Telephone Audible Signals

TYPE OF SIGNAL	FREQUENCY	SIGNAL DURATION
OPX Signals:		
Incoming CO Line	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 200-12 - DSS/BLF Button Visual Indicators

TYPE OF SIGNAL	INDICATOR FLASH RATES
Off-Hook/Busy (All Stations)	Steady
Incoming Intercom Ring (Destination)	120 ipm flutter
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

Table 200-13 - CO Line Button Visual Indicators

TYPE OF SIGNAL	INDICATOR FLASH RATES
Incoming CO Ring	30 ipm flash
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 200-14 - Function Button Visual Indicators

TYPE OF SIGNAL	INDICATOR FLASH RATES
Call Forward (active)	30 ipm flash
Message Waiting (active)	15 ipm flash
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 300
KEY STATION FEATURE DESCRIPTION

The System and Key Station features of the *infinite* Digital Key Telephone System are listed and described below in alphabetical order. An abbreviated feature index is provided in Table 300-1 Key Station Feature Index.

300.1 ACCOUNT CODES

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.

300.2 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.

300.3 AUTOMATIC CALL BACK TIMER

To accommodate the reduced number of buttons on the *infinite* 8-button 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.

300.4 AUTOMATIC CALL DISTRIBUTION (ACD)

The Basic ACD Software package is an optional software package available for the *infinite* Digital Systems. When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. Eight Automatic Call Distribution (ACD) 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. Agent Positions

- Agent Login/Logout w/Agent ID Feature: The Agent Login/Logout Feature will provide 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 will allow 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 provides up to four digits for the ACD SMDR reporting which are compatible with the Basic ACD software package. This feature will permit up to 12-digits to be entered, however, only the first four digits are provided for ACD reporting.

Table 300-1 Key Station Feature Index

FEATURE		AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
A				
Account Codes	300-1	S	N	N
Attendant Recall	300-1	S	N	N
Automatic Call Back Timer	300-1	S	N	N
Automatic Call Distribution (ACD)	300-1	S	N	N
Agent Positions	300-1	S	N	N
Alternate ACD Group Assignments	300-8	O	Software	N
Group Member Status	300-8	O	Software	N
Incoming CO Direct Ringing	300-8	O	Software	N
No-Answer Recall Timer	300-8	O	Software	N
No-Answer Retry Timer	300-8	O	Software	N
Overflow Station Assignments	300-8	O	Software	N
PC/ACD Interface Trace	300-9	O	Software	N
Recorded Announcements (RAN)	300-8	O	Software	RAN Device(s)
Supervisor Positions	300-8	O	Software	N
Supervisor/Agent Calls in Queue Display	300-9	O	Software	N
Automatic Line Access	300-9	S	N	N
Automatic Night Service	300-9	S	N	N
Automatic Pause Insertion w/Speed Dial	300-9	S	N	N
Automatic Privacy	300-9	S	N	N
Automatic Selection	300-9	S	N	N
B				
Background Music	300-9	S	N	Music Source
Battery Back-up (Memory)	300-9	S	N	N
Busy Lamp Field (BLF)	300-9	S	N	N
C				
Call Announce - Privacy	300-9	S	N	N
Call Back	300-9	S	N	N
Call Cost Display Feature	300-9	S	N	N
Call Forward: Preset	300-10	S	N	N
Hunt Groups	300-10	S	N	N
Off-Net	300-10	S	N	N
Stations	300-10	S	N	N
UCD Groups	300-10	S	N	N
VM Groups	300-10	S	N	VM System
Call Forward: Station	300-10	S	N	N
All Calls	300-10	S	N	N
Busy	300-10	S	N	N
Busy/No Answer	300-10	S	N	N
No Answer	300-11	S	N	N
Off-Net	300-11	S	N	N
Call Park	300-11	S	N	N
Call Pick-up	300-11	S	N	N
Directed Call Pick-up	300-11	S	N	N
Group Pick-up	300-11	S	N	N
Call Transfer	300-11	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Key Station Feature Index (Cont'd)

FEATURE		AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
Calling Station Tone Mode Option	300-11	S	N	N
Camp-On	300-11	S	N	N
Camp-On Recall	300-11	S	N	N
Canned Toll Restriction	300-11	S	N	N
Centrex Compatibility	300-11	S	N	N
Flex Button Programming	300-12	S	N	N
Off-Hook Preference	300-12	S	N	N
Private Line Appearance	300-12	S	N	N
Programmable Flash Timer	300-12	S	N	N
Programming "*", "#", and Hook-Flashes into Speed Dial	300-12	S	N	N
Centrex/PBX Transfer	300-12	S	N	N
Chaining Speed Bins	300-12	S	N	N
CO Line Access	300-12	S	N	N
CO Line Class of Service	300-12	S	N	N
CO Line Control (Contact)	300-12	S	N	Gen & Bells
CO Line Groups	300-12	S	N	N
CO Line Identification	300-12	S	N	N
CO Line Incoming Ringing Assignment	300-13	S	N	N
CO Line Loop Supervision	300-13	S	N	N
CO Line Queue	300-13	S	N	N
CO Ring Detect	300-13	S	N	N
Conference	300-13	S	N	N
Add-On Conference	300-13	S	N	N
Multi-Line Conference	300-13	S	N	N
Unsupervised Conference	300-13	S	N	N
Conference Enable/Disable	300-13	S	N	N
D				
Data Feature	300-13	S	N	N
DataBase Printout (Dump)	300-14	S	N	Printer/Terminal
Database Upload/Download	300-14	S	N	Printer/Terminal
Day/Night Class of Service (COS)	300-14	S	N	N
Default Button Mapping	300-14	S	N	N
Dial By Name	300-14	S	N	N
Dial Pulse Sending	300-14	S	N	N
Dialing Privileges	300-14	S	N	N
Direct Inward System Access (DISA)	300-14	S	DTMF Rcvr	N
CO Line Group Access	300-14	S	N	N
Programmable Access	300-14	S	N	N
Station Access	300-14	S	N	N
Trunk-to-Trunk	300-14	S	N	N
Direct Station Selection	300-17	S	N	N
Directed Call Pick-up	300-17	S	N	N
Call Pick-up - Station	300-17	S	N	N
Call Pick-up - UCD Groups	300-17	S	N	N
Directory Dialing	300-17	S	N	N
Disable Outgoing CO Line Access	300-17	S	N	N
Distinctive Ringing (User Selectable)	300-17	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Key Station Feature Index (Cont'd)

FEATURE		AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
Do Not Disturb (DND)	300-17	S	N	N
One-Time Do Not Disturb (DND)	300-17	S	N	N
DTMF Sending	300-17	S	N	N
E				
Emergency Transfer	300-17	O	OPX/PFTU	48v or 12v Supply
End to End Signalling	300-17	S	N	N
Exclusive Hold	300-18	S	N	N
Executive Override	300-18	S	N	N
Executive/Secretary Transfer	300-18	S	N	N
External Night Ringing	300-18	S	N	Paging Equipment
F				
Flash	300-18	S	N	N
Flash On Intercom	300-18	S	N	N
Flash with Speed Dial	300-18	S	N	N
Flexible Attendant	300-18	S	N	N
Flexible Button Assignment	300-18	S	N	33-Btn/8-Btn
Flexible Port Assignments	300-19	S	N	N
Forced Account Codes	300-19	S	N	N
Forced Least Cost Routing (LCR)	300-19	S	N	N
G				
Group Call Pick-up	300-19	S	N	N
Group Listening	300-19	S	N	N
H				
Headset Compatibility	300-19	S	N	Headset
Headset Mode	300-19	S	N	Headset
Hearing Aid Compatible	300-19	S	N	N
Hold Preference	300-19	S	N	N
Hold Recall	300-19	S	N	N
Hot Line/Ring Down	300-20	S	N	N
Hunt Groups	300-20	S	N	N
Hunt Group Chaining	300-20	S	N	N
Pilot Hunting	300-20	S	N	N
Station Hunting	300-20	S	N	N
I				
ICLID Feature	300-20	O	Software	ICLID Keyset
Calling Number/Name Display	300-20	S	N	N
Incoming Number/Name for SMDR Records	300-20	S	N	N
Unanswered Call Management	300-20	S	N	N
Idle Speaker Mode	300-21	S	N	N
Incoming CO Lines Off-Net Forward via Speed Dial	300-21	S	N	N
Intercom Calling	300-21	S	N	N
Intercom Signaling Select	300-21	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Key Station Feature Index (Cont'd)

FEATURE	AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
K			
Keyset Self Test 300-21	S	N	Exec Keyset
L			
Last Number Redial (LNR) 300-21	S	N	N
LCD Interactive Display 300-21	S	N	Exec Keyset
Least Cost Routing (LCR) 300-21	S	N	N
6-Digit Table 300-21	S	N	N
Daily Start Time Tables 300-22	S	N	N
Default LCR Data Base 300-22	S	N	N
Exception Tables 300-22	S	N	N
Insert/Delete Tables 300-22	S	N	N
LCR Routing for Toll Information 300-22	S	N	N
Route List Tables 300-21	S	N	N
Weekly Time Tables 300-22	S	N	N
3-Digit Table 300-21	S	N	N
Local Number/Name Translation Table 300-22	S	N	N
Loop Button CO Line Access 300-22	S	N	N
M			
Meet Me Page 300-22	S	N	N
Message Waiting 300-22	S	N	N
Message Waiting Reminder Tone 300-22	S	N	N
Messages - Personalized 300-22	S	N	N
Custom Messages 300-23	S	N	N
Date and Time Entry to Personalized Message(s) 300-23	S	N	N
Message Code on a Flex Key 300-23	S	N	N
Music On Hold 300-23	S	N	Music Source
Mute Key 300-23	S	N	N
N			
Name in Display 300-23	S	N	Exec Keyset
Night Service Feature 300-23	S	N	N
Night Service Mode 300-23	S	N	N
Automatic Night Mode Operation 300-23	S	N	N
External Night Ringing 300-23	S	N	N
Manual Operation 300-23	S	N	N
Night Class of Service (COS) 300-23	S	N	N
Night Ringing Assignments 300-24	S	N	N
Universal Night Answer (UNA) 300-24	S	N	N
Weekly Night Mode Schedule 300-24	S	N	N
O			
Off Hook Voice Over (OHVO) 300-24	S	N	OHVO Keyset
Off-Hook Preference 300-24	S	N	N
Auto Feature Access 300-24	S	N	N
Auto Line Access 300-24	S	N	N
Hot Line/Ring Down 300-24	S	N	N
Intercom Access 300-24	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Key Station Feature Index (Cont'd)

FEATURE	AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
User Programmable Preference 300-24	S	N	N
Off-Hook Signalling 300-24	S	N	N
Off-Premise Extensions (OPX) 300-24	O	SLA (OPX)	48v Supply
On Hook Dialing 300-24	S	N	N
On Line Programming 300-25	S	N	N
P			
Page/Relay Control 300-25	S	N	Relay/Sensor Unit
Paging 300-25	S	N	Paging Equipment
External Paging 300-25	S	N	N
Internal Paging 300-25	S	N	N
Paging Access Restriction 300-25	S	N	N
Pause Timer 300-25	S	N	N
PBX Dialing Codes 300-25	S	N	N
Pool Button Operation 300-25	S	N	N
Preferred Line Answer 300-26	S	N	N
Privacy Release 300-26	S	N	N
Per CO Line Option 300-26	S	N	N
Per Station Option 300-26	S	N	N
Private Line 300-26	S	N	N
Pulse-To-Tone Switchover 300-26	S	N	N
R			
Range Programming 300-26	S	N	N
Remote Administration 300-26	S	N	PC/Term/Modem
Database Upload/Download 300-26	S	N	PC/Term/Modem
Remote System Monitor & Maintenance ... 300-26	S	N	PC/Term/Modem
Remote System Maintenance 300-26	S	N	PC/Term/Modem
Remote System Monitor 300-27	S	N	PC/Term/Modem
S			
Save Number Redial (SNR) 300-27	S	N	N
Single Line Telephone (SLT) Compatibility 300-27 * 2x4 SLT Expander Module, 4x8 SLT Interface Board (CSB), or Single Line Adapter (OPX) w/48v Supply can be used for SLT operations.	S	*	2500 Type
Speakerphone 300-27	S	N	N
Station Class of Service (COS) 300-27	S	N	N
Station Message Detailed Recording 300-27	S	N	Printer/Terminal
Station Relocation Feature 300-27	S	N	N
Station Speed Dial 300-27	S	N	N
System Capacity 300-28	S	N	N
Up to 14x28 Configuration 300-28	S	N	N
Up to 28x56 Configuration 300-28	S	N	N
System Hold 300-28	S	N	N
System Speed Dial 300-28	S	N	N
T			
Text Messaging (Silent Response) 300-28	S	N	Exec Keyset
Toll Restriction (Table Driven) 300-28	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

Table 300-1 Key Station Feature Index (Cont'd)

FEATURE	AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
Transfer Recall 300-28	S	N	N
U			
Uniform Call Distribution (UCD) 300-28	S	N	N
Agent Queue Status Display 300-29	S	N	N
Alternate UCD Group Assignments 300-28	S	N	N
Auto Wrap-Up w/Timer 300-28	S	N	N
Available/Unavailable Mode 300-28	S	N	N
Incoming CO Direct Ringing 300-29	S	N	N
No-Answer Recall Timer 300-29	S	N	N
No-Answer Retry Timer 300-29	S	N	N
Overflow Station Assignments 300-29	S	N	N
Recorded Announcements (RAN) 300-29	S	N	RAN Device(s)
Universal Night Answer (UNA) 300-29	S	N	N
V			
Voice Mail Groups (VM) 300-29	S	N	VM System
CO Disconnect Signal 300-30	S	N	N
In-Band Signaling Integration 300-30	S	N	N
Message Waiting Indication 300-30	S	N	N
Tone Mode Calling Option 300-30	S	N	N
Transfer/Forward 300-30	S	N	N
VM Transfer with ID Digits 300-30	S	N	N
Volume Controls 300-30	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

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 eight 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 1st 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 not be one of the ACD group stations.

H. Recorded Announcements (RAN)

Recorded announcement devices can be assigned to provide up to eight different messages, if all stations in a ACD group are busy. The eight messages are available to all eight ACD groups in different configurations. 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. 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 progress or provide assistance in training ACD personnel. 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.
- 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.

J. Supervisor/Agent Calls in Queue Display

This 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.

K. PC/ACD Interface Trace

This feature is only available when the Basic ACD Software package is purchased separately. The PC/ACD Interface Trace provides a series of events trace output which is compatible with the *infinite* PC/ACD Reporting package.

300.5 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.

300.6 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.

300.7 AUTOMATIC PAUSE INSERTION WITH SPEED DIAL

If a flash command is placed into system speed dial numbers, station speed dial numbers, save number redial or last number redial, a pause will automatically be inserted after the flash. A pause will also be automatically inserted after a PBX dialing code has been used.

300.8 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.

300.9 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.

300.10 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.

300.11 BATTERY BACK-UP (MEMORY)

A "Super Cap" is located on the Main Key Service Board (KSB) of the *infinite* DVX I System, and a NICAD battery is located on the Central Processing Board (CPB) of the *infinite* DVX II 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.

300.12 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.

300.13 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.

300.14 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.

300.15 CALL COST DISPLAY FEATURE

The Call Cost Display Feature provides 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.

300.16 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 - 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.

B. 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.

C. 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.

D. 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.

E. Preset Call Forward - VM 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 be presented to Voice Mail.

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

300.17 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, a 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, a 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, a 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, a 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.: UCD, Voice Mail, Hunt) if the station forwarded is the only station assigned to ring on the CO line.***

300.18 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).

300.19 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.

300.20 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.

300.21 CALLING STATION TONE MODE OPTION

This feature will provide an easy means for a Calling station to override a desired stations HF (handsfree) or PV (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.

300.22 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.

300.23 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).

300.24 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 restricted with all local calls and 1-800, 911, 1-911, and 1-611 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.

300.25 CENTREX COMPATIBILITY

The *infinite* Digital Key Telephone System provides features that are Centrex compatible so

that Centrex users can utilize the *infinite* Digital Key Telephone System to enhance their Centrex capabilities. 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 *infinite* Digital Key Telephone System are still made available to Digital Terminals by accessing intercom before going off-hook.

C. Private Line Appearance

The *infinite* 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 *infinite* 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 *infinite* Digital Key Telephone System allows these codes to be programmed as a part of system or station speed dial sequences.

300.26 CENTREX/PBX TRANSFER

When Centrex or PBX lines are connected to the *infinite* 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.

300.27 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.

300.28 CO LINE ACCESS

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

300.29 CO LINE CLASS OF SERVICE

Each CO Line may be programmed with a Class-of-Service to provide dialing privileges. The *infinite* 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.

300.30 CO LINE CONTROL (CONTACT)

On the *infinite* DVX [I] System, there are four control contacts, and seven control contacts on the *infinite* DVX [II] System 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 DVX [I] for CO Line Control, the Relay/Sensor Interface module is used for this purpose. On the *infinite* DVX [II] System, there is one contact for each 4x8 port card.

300.31 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.

300.32 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!*

300.33 CO LINE INCOMING RINGING ASSIGNMENT

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 Call 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.*

300.34 CO LINE LOOP SUPERVISION

The *infinite* 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 *infinite* Digital Key Telephone System will release the CO lines and automatically place them back in service. The Loop Supervision disconnect signal is 700 msec. in duration.

300.35 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.

300.36 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.

300.37 CONFERENCE

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 *infinite* 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.

300.38 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.

300.39 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 *infinite* Digital systems. This requires a digital port.

300.40 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 *infinite* Digital Key Telephone System Central Processing Board (CPB).

300.41 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.

300.42 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.

300.43 DEFAULT BUTTON MAPPING

The *infinite* Digital Key Telephone System allows for 24 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 300-1 33-Button Default Button Map . The Infinite Digital Key Telephone System also supports an 8-button Digital Terminal with 4 fixed feature buttons, 4 flexible buttons, a message wait LED and full speakerphone capability. This keyset provides the same functionality that the standard non-display 33-button keyset provides. The 8-button keyset default button map is shown in Figure 300-2 8-Button Default Button Map.

300.44 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.

300.45 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.

300.46 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.

300.47 DIRECT INWARD SYSTEM ACCESS (DISA)

Allows as many as three simultaneous 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.

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 3-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

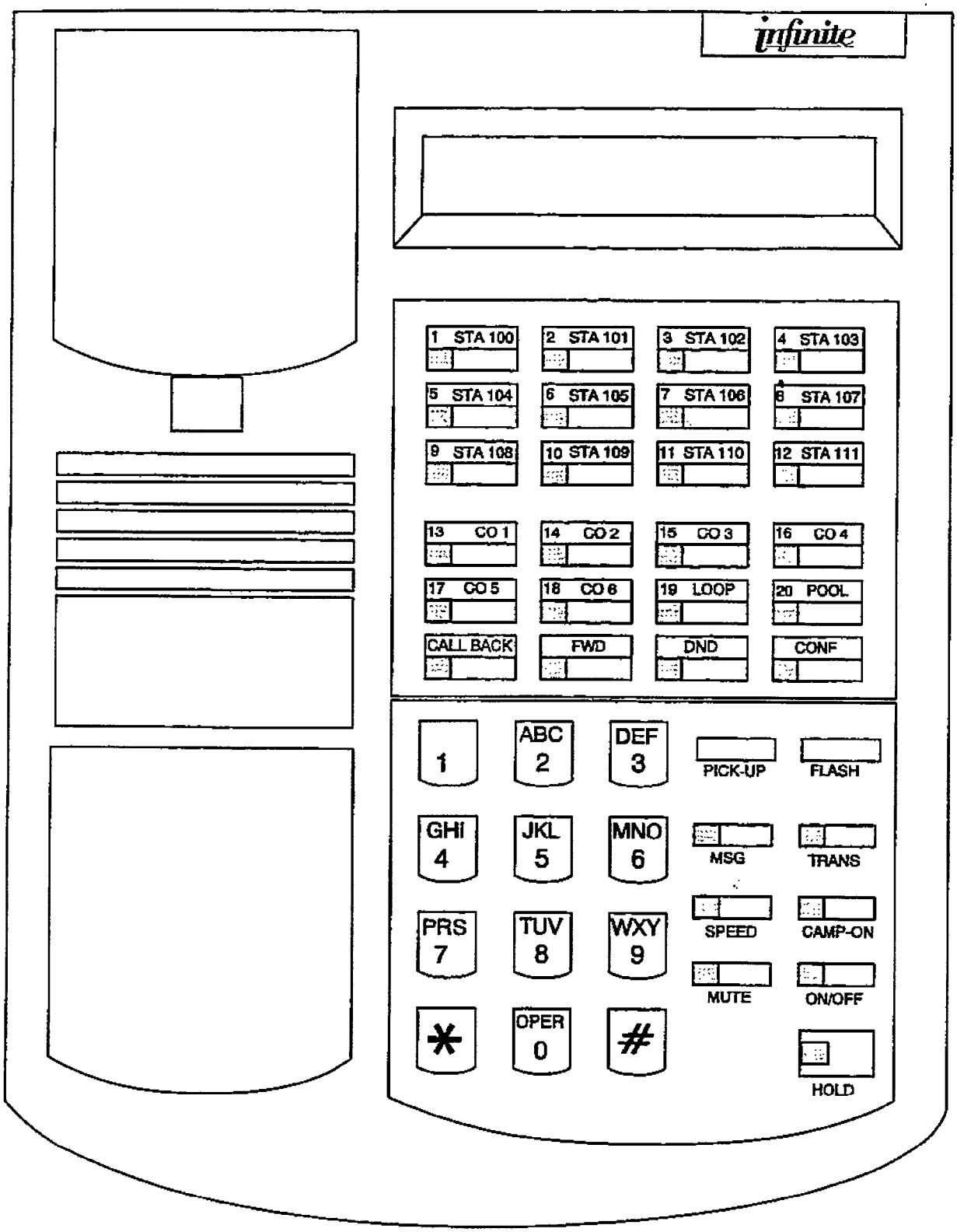


Figure 300-1 33-Button Default Button Map

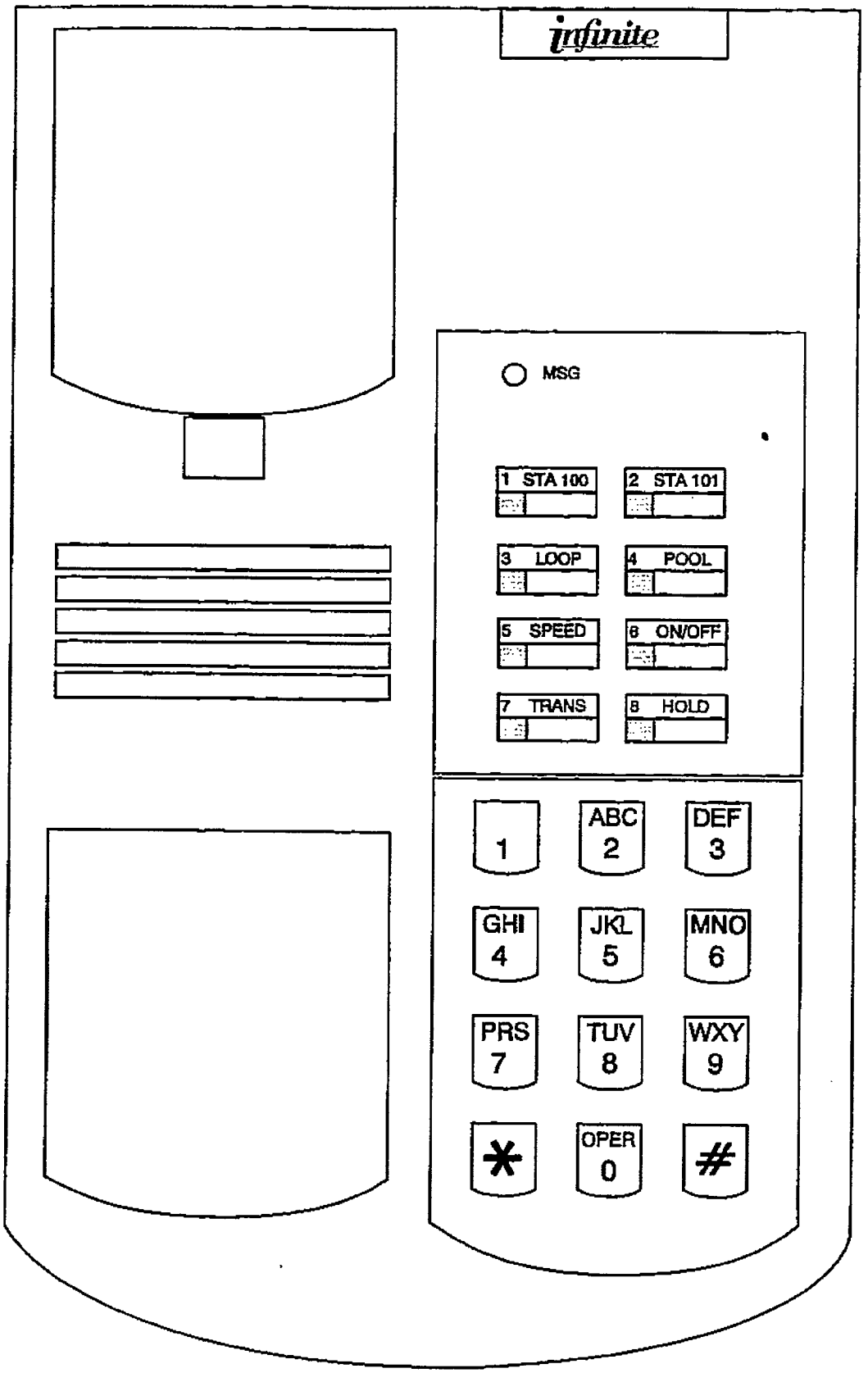


Figure 300-2 8-Button Default Button Map

outgoing trunk-to-trunk connection. This allows for specific CO line access restriction on DISA calls.

300.48 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.

300.49 DIRECTED CALL PICK-UP

A. Call Pick-up - Station

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. Call Pick-up - ACD/UCD Groups

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

300.50 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 *infinite* DVX I System provides locations for up to 100 names, while the *infinite* DVX II 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 *infinite* DVX I System provides locations for up to 100 names, while the *infinite* DVX II System provides locations for up to 200 names.

300.51 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.

300.52 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.

300.53 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.

300.54 DTMF SENDING

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

300.55 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).

300.56 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.

300.57 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.

300.58 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.

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

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.

300.59 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.

300.60 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.

300.61 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.

300.62 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.

300.63 FLASH WITH SPEED DIAL

A flash can be programmed within a speed dial number. When this is done, a pause will automatically be inserted before the remaining speed dial digits are sent.

300.64 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.

300.65 FLEXIBLE BUTTON ASSIGNMENT

Each 33-button digital terminal has 24 flexible buttons which can be individually programmed. Each 8-button digital terminal has 4 flexible buttons which can be individually programmed. One of the following operations can be selected for each button. Refer to Section 400.37, 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 un-

used 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)

NOTE	***The following features are NOT allowed to be programmed onto DSS/DLS Console flexible buttons: ACD Agent or Supervisor Log-in, Do Not Disturb (DND), Call Forward (FWD), Available/Unavailable, Personal Park, Voice Mail, and Headset Mode. These features can however, still be programmed onto keyset flexible buttons.***

300.66 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 127 on the *infinite* DVX I system and any number between 100 and 155 on the *infinite* DVX II. A CO line can be assigned any number between 01 and 14 on the *infinite* DVX I system and any CO line can be assigned any number between 01 and 28 on the *infinite* DVX II system. This restriction is required to minimize memory requirements on the smaller systems.

300.67 FORCED ACCOUNT CODES

The *infinite* 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.

300.68 FORCED LEAST COST ROUTING (LCR)

The *infinite* 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.

300.69 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, recalling outside line ringing, or transferred outside line calls for another station in that group.

300.70 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.***

300.71 HEADSET COMPATIBILITY

The *infinite* 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.

300.72 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.

300.73 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 in conjunction with users wearing hearing aids.

300.74 HOLD PREFERENCE

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

300.75 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).

300.76 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.

300.77 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 pilot hunt group number as the last 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.

300.78 ICLID FEATURE

The ICLID (Incoming Calling Line IDentification) feature has been added to the *infinite* 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. 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 *infinite* 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 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 50 entry capacity for the *infinite* DVX I system, and 100 entry capacity for the *infinite* DVX II system 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 administered from appropriately privileged phones so that the unanswered calls may be reviewed and handled by the customer.

300.79 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.

300.80 INCOMING CO LINES OFF-NET FORWARD (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 or all CO lines 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.

300.81 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.

300.82 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 (HF)(left position). The station user, upon hearing a tone burst and voice announcement over the speaker, can reply handsfree.
- Privacy (PV)(center 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.
- Tone Ringing (TN)(right 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 (HF) position or pressing the ON/OFF button.

300.83 KEYSET SELF TEST

The *infinite* Digital Key Telephone System contains a test mode feature that supports the offline testing of digital terminals and DSS consoles. The term offline 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.

300.84 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.

300.85 LCD INTERACTIVE DISPLAY

The 33-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.

300.86 LEAST COST ROUTING (LCR)

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 In-

sert/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 Start 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)555-1212, (XXX)555-1212, 1-555-1212 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.

300.87 LOCAL NUMBER/NAME TRANSLATION TABLE

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. 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. 100 entries are provided in this table for the *infinite* DVX [I] system, and 200 entries are provided for the *infinite* DVX [II] system.

300.88 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 all 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.

300.89 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.

300.90 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.

300.91 MESSAGE WAITING REMINDER TONE

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

300.92 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 PM
- 04= RETURN TOMORROW
- 05= RETURN NEXT WEEK
- 06= ON TRIP
- 07= IN MEETING
- 08= AT HOME
- 09= ON BREAK
- 10= 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.

- 11= 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

B. 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.

300.93 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.

300.94 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.

300.95 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.

300.96 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.

300.97 NIGHT SERVICE MODE

A. Automatic Night Mode Operation

The *infinite* 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 CO 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.

300.98 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 overridden 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 "HF" mode.*

300.99 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.

300.100 OFF-HOOK SIGNALING

If a station has been programmed to receive direct outside line ringing and is busy on another call, that station will receive muted ring to indicate another call is ringing in. Additionally CO calls may be "camped-on" to a busy station and receive muted ringing.

300.101 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 power supply is required when installing an OPX box.

300.102 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.

300.103 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.

300.104 PAGE/RELAY CONTROL

The *infinite* Digital Key Telephone Systems offer 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 either system. Each relay/sensor interface module contains three independent relays and three sensing input circuits. In addition, each 4x8 CO/Station Interface card of the DVX[II] system contains a Relay Contact (for up to seven "on-board" relays) that may also be assigned to any of the functions mentioned above.

300.105 PAGING

A. External Paging

There are four external paging zones available in the DVX[I] and seven available in the DVX[II] systems. External Paging requires a three-digit dialing code. External paging requires an externally provided amplifier and paging system. One make and one break contact are provided with the page zone on the 4x8 Key Interface Board (CKB). Since no "on-board" relay contacts are available on the DVX[I] for external paging, the Relay/Sensor Interface module is used for this purpose.

If the 4x8 SLT Interface Board (CSB) installed in the DVX[II] System, the relay contact used to provide external paging is provided using the Dual DTMF/Talk-Page Module.

B. Internal Paging

There are four internal paging zones available in the *infinite* Digital Key Telephone Systems. A station can be in any or all zones or in no zone at all. 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.

300.106 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.

300.107 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 party will receive a busy tone. The user may then press the TRANS button to return to ICM dial tone and attempt to use a system park location.***

300.108 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 toll restriction is to be applied at the next dialed digits after the code. If one of these codes is not dialed, toll restriction does not apply. This allows the dialing of PBX extensions 100, 110, 111, etc. This functions on lines marked as PBX type lines in programming.

300.109 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.

300.110 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.

300.111 PRIVACY RELEASE

Privacy is insured on all communications in the system. If desired, the customer may elect to disable the Automatic Privacy feature. Thus allowing another station to join in on existing CO Line conversations.

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 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 warning tone is presented to all 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 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.

300.112 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.

300.113 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.

300.114 RANGE PROGRAMMING

The *infinite* 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.

300.115 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 CPB board, or can be accessed by a telephone modem linking the CPB'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 modem is accomplished by accessing Port 199 either through a direct ringing assignment or through DISA or by being transferred to Port 199 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.

300.116 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 modem to modem access to a remote data terminal. When entering the system remotely via a terminal device, access to the on-board modem is accom-

plished by accessing Port 199 either through a direct ringing assignment or through DISA or by being transferred to Port 199 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 *infinite* 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)

300.117 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.

300.118 SINGLE LINE TELEPHONE (SLT) COMPATIBILITY

The *infinite* Digital Key Telephone System supports industry standard 2500 Type (DTMF) single line instruments. When the 2x4 SLT Expander Module is installed in the DVX[I] system, a maximum of eight single line telephones may be supported. When the 4x8 SLT Interface Board (CSB) is installed in the DVX[II] system, a maximum of 48 single line telephones may be supported.

300.119 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.

300.120 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.

300.121 STATION MESSAGE DETAIL RECORDING (SMDR)

The *infinite* 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.

300.122 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.***

300.123 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 *infinite* DVX[I] System,

there are a total of 600 speed locations, and there are a total of 1280 speed locations in the *infinite* DVX[II] System 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.

300.124 SYSTEM CAPACITY

A. Up to 14x28 Configuration

The DVX[I] system will support a maximum of 14 outside CO circuits and 28 station circuits.

B. Up to 28x56 Configuration

The DVX[II] system will support a maximum of 28 outside CO circuits and 56 station circuits.

300.125 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.

300.126 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.

300.127 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 response 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.

300.128 TOLL RESTRICTION (TABLE DRIVEN)

The system provides a flexible means of providing toll restriction to internal stations of the *infinite* 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.

300.129 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.

300.130 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, 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.

300.131 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.

300.132 VOICE MAIL GROUPS (VM)

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 in the system. Each group can contain up to eight voice mail stations, each of which interfaces with a port on either the 2x4 SLT Expander Module on the DVX[I] System, or on the 4x8 SLT Expander Module on the DVX[II] System. Each voice mail "station" can be shared by a number

of actual users. An 2x4 SLT Expander Module or 4x8 SLT Interface Board (CSB) are required when utilizing the *infinite* Digital Key Telephone System Voice Mail "In-Band" integration.

A. VM CO 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 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.

Disconnect digits may also be programmed for outside line callers.

B. VM In-Band Signaling Integration

The *infinite* 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, 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.

C. VM Message Waiting Indication

When Voice Mail has received a voice message for a user who has a station on the *infinite* Digital Key Telephone System, the VM connected to the system will leave a message waiting indication at the VM users station. When the station user retrieves their mail, the VM system will 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 ringback 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.

300.133 VOLUME CONTROLS

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

SECTION 310
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 2x4 SLT Expander Module is required in the DVX[I] System, and the 4x8 SLT Interface Board (CSB) is required in the DVX[II] 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 310-1 Single Line Telephone (SLT) Feature Index.

310.1 ACCOUNT CODE

SLT 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.

310.2 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.

310.3 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]
- Call Forward - Busy/No Answer [9]
- Call Forward - Off-Net [*]
- Preset Call Forward

310.4 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.

310.5 CONFERENCE

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

310.6 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).

310.7 DIRECT OUTSIDE LINE GROUP ACCESS

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

310.8 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.

310.9 DIRECTED CALL PICK-UP

Tone ringing intercom calls, Initial Ringing CO calls 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.

310.10 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.

310.11 GROUP CALL PICK-UP

Tone ringing intercom calls, transferred outside line calls, and initially ringing calls can be

Table 310-1 Single Line Telephone (SLT) Feature Index

FEATURE		AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
A				
Account Code	310-1	S	N	N
Automatic Line Access	310-1	S	N	N
C				
Call Forward	310-1	S	N	N
Camp-On	310-1	S	N	N
Conference	310-1	S	N	N
Conference w/Personal Park	310-1	S	N	N
D				
Direct Outside Line Access	310-1	S	N	N
Direct Outside Line Ringing	310-1	S	N	N
Directed Call Pick-Up	310-1	S	N	N
Do Not Disturb (DND)	310-1	S	N	N
G				
Group Call Pick-Up	310-1	S	N	N
I				
Intercom Calling	310-3	S	N	N
M				
Message Waiting/Call Back	310-3	S	N	N
Messages - Personalized	310-3	S	N	N
Custom Messages	310-3	S	N	N
N				
Night Service	310-3	S	N	N
O				
Off-Hook Preference	310-3	S	N	N
P				
Personal Park	310-3	S	N	N
Q				
Queuing	310-3	S	N	N
S				
Station Speed Dial	310-3	S	N	N
System Speed Dial	310-3	S	N	N
T				
Transfer	310-3	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

picked up by single line telephones by dialing a special pickup code. The telephones must be in the same pickup group.

310.12 INTERCOM CALLING

Single line telephones can make and receive intercom calls.

310.13 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.

310.14 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.

310.15 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 normally have access to by dialing [#3]. When External Night Ringing is enabled in database programming, ringing is outputted on the external page ports.

310.16 OFF-HOOK PREFERENCE

SLTs 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.

310.17 PERSONAL PARK

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.

310.18 QUEUING

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

310.19 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.

310.20 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.

310.21 TRANSFER

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

SECTION 320
ATTENDANT FEATURE DESCRIPTION

The Attendant and Attendant(s) with DSS/DLS features of the *infinite* Digital Key Telephone System are listed and described below in alphabetical order. An abbreviated feature index is provided in Table 320-1 Attendant Feature Index.

320.1 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.

320.2 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)

320.3 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.

320.4 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 *infinite* Digital Key Telephone System is placed in Night Service by any programmed attendant pressing the NIGHT (DND) button or dialing the NIGHT code.

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

320.6 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 set in data base programming on a week day basis, including Saturday and Sunday. The Attendant can override the automatic schedule by pressing the NIGHT (DND) button.

320.7 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, or all CO lines may be simultaneously forwarded to an off-net location.

320.8 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.

320.9 TIME AND DATE PROGRAMMING

This feature allows the first programmed attendant to set the time and date without entering the programming mode.

Table 320-1 Attendant Feature Index

FEATURE		AVAILABLE	INTERNAL EQUIPMENT REQUIRED	EXTERNAL EQUIPMENT REQUIRED
A				
Attendant Disable Outgoing Access	320-1	S	N	N
Attendant Overflow	320-1	S	N	N
Attendant Override	320-1	S	N	N
Attendant Position	320-1	S	N	N
Attendant Recall	320-1	S	N	N
Attendant Search	320-2	S	N	N
Automatic Night Mode	320-1	S	N	N
B				
Busy Lamp Field Indicators	320-2	S	N	N
D				
Direct Station Calling	320-2	S	N	N
I				
Incoming CO Line Off-Net Forward	320-1	S	N	N
M				
Mapping Options	320-2	S	N	N
Messages - Custom	320-3	S	N	N
N				
Night Service Feature	320-1	S	N	N
R				
Release Key	320-3	S	N	N
T				
Time and Date Programming	320-1	S	N	N

S = Standard Feature; O=Optional: Requires additional hardware; N=No additional hardware required

ATTENDANT W/DSS/DLS FEATURES

320.10 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.

320.11 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.

320.12 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.

320.13 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.

NOTE	*The following features are NOT allowed to be programmed onto DSS/DLS Console flexible buttons: ACD Agent or Supervisor Log-in, Do Not Disturb (DND), Call Forward, Camp-On, Available/Unavailable, Personal Park, Voice Mail, and Headset mode. These features can however still be programmed onto keyset flexible buttons.*

A DSS/DLS unit may be assigned to one of the different MAP configurations available. Any one of the three MAP configurations may be assigned to a DSS/DLS and up to three maps may be assigned to one station. However, "duplicate" MAPs or appearances of Stations and/or CO lines between the MAPs are not allowed.

There are three pre-defined MAPs for the DSS/DLS console with default button programming. Refer to Figure 320-1 DSS Console Map 1, Figure 320-2 DSS Console Map 2, and Figure 320-3 DSS Console Map 3 for a button layout of each DSS Console Button Map. Each Attendant may have up to three DSS/DLS Consoles assigned to work with one Attendant station.

320.14 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).

320.15 RELEASE KEY

Allows the user to disconnect calls while off-hook, speeding up call handling time (MAP 1 and MAP 2 only).

MAP #1 has by default the first 28 Stations (Stas 100-127) and 14 CO lines, three Call Park locations, Release, Attendant Override, and an All Call Page button mapped to the buttons. All buttons except the 14 CO line buttons and Release button are flexible and can be changed by the station user.

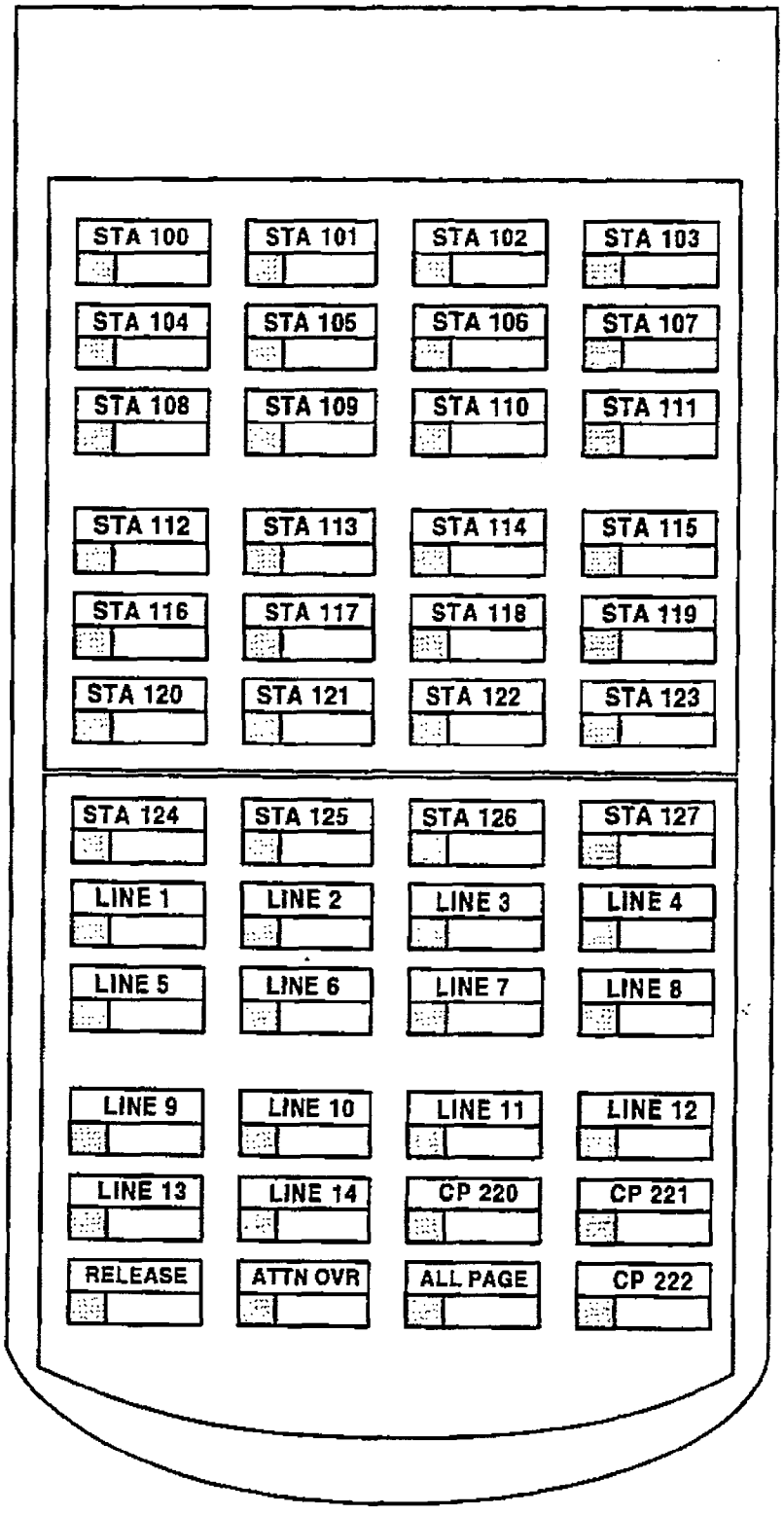


Figure 320-1 DSS Console Map 1

MAP #2 has by default all 28 CO lines, the first 12 Stations (Stas 100-111), followed by four Call Park locations, Release, Attendant Override, an All Call Page button, and the first Internal Page Zone mapped to the buttons. All buttons except the 28 CO line buttons and Release button are flexible and can be changed by the station user.

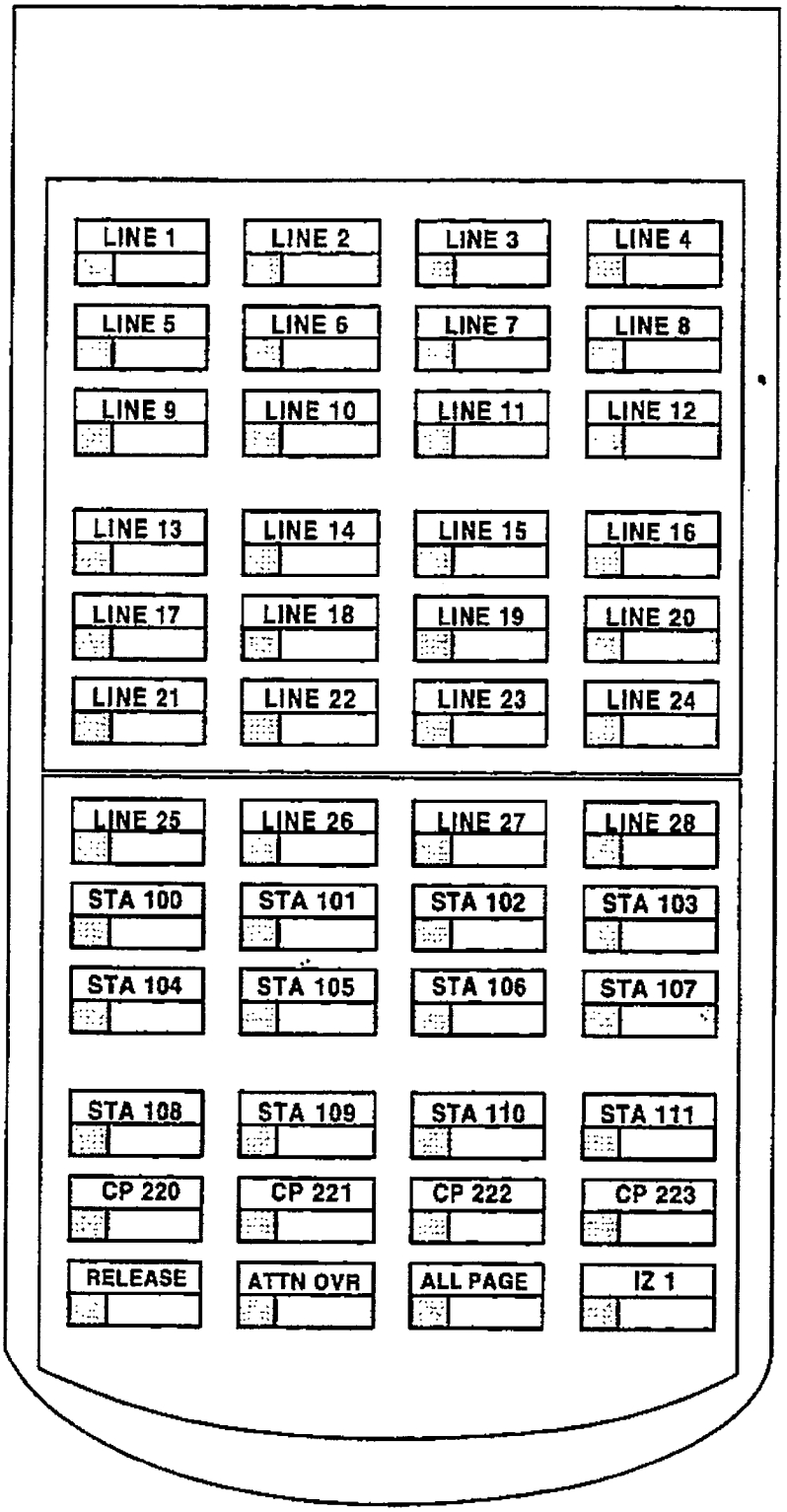


Figure 320-2 DSS Console Map 2

MAP #3 by default is intended to be used with Map #2 on a DVX[II] System, in that it has the remaining stations (Stas111-155) to provide a full CO line by Station mapping. Additionally, Internal Page Zones 2, and 3 appear and the last two buttons are unassigned. All of the buttons on Map #3 are flexible and can be changed by the user.
CO Line ringing on Map 1 and Map 2 is determined by CO Line Ringing Assignments.

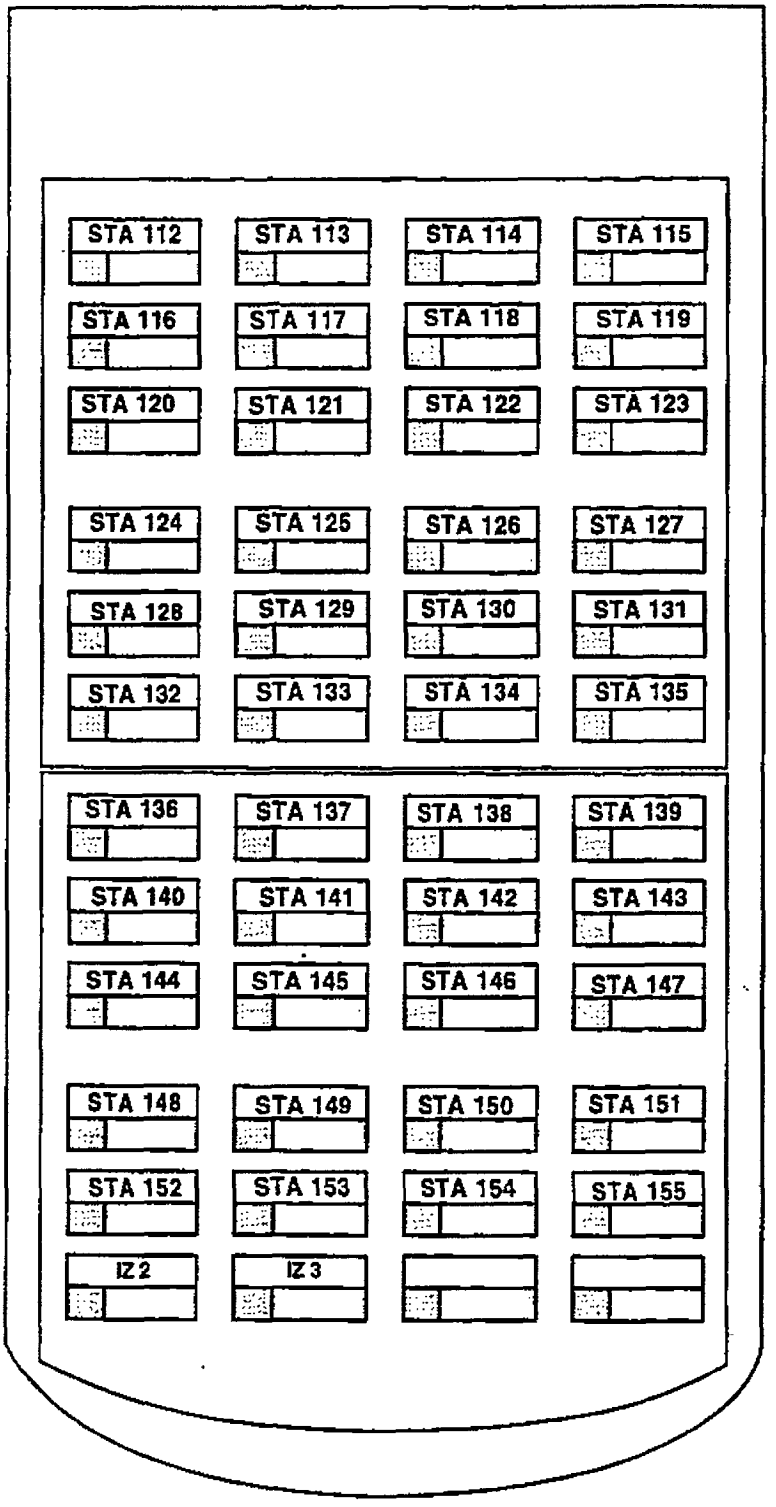


Figure 320-3 DSS Console Map 3

SECTION 400
STATION FEATURE OPERATION

400.1 INTRODUCTION

The *infinite* 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 *infinite* 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.

400.2 KEY TELEPHONE STATION FEATURES

Each *infinite* 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.

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:

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.

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

DO NOT DISTURB (DND) (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.

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

FIXED FEATURE BUTTONS:

PICK-UP 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.

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.

MESSAGE WAIT (MSG) 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 is indicated by a flashing Msg Wait LED.

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

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.

CAMP-ON button enables you to alert a busy party that an outside line is on hold and waiting for them.

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.

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

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 400-1 33-Button Digital Display Terminal

Table 400-1 Digital Terminal Numbering Plan

100-127	Station Intercom Numbers (DVX I)
100-155	Station Intercom Numbers (DVX II)
199	Modem via DISA access or transfer
22 [C]	Call Park Location 0-7 (system)
228	Personal Park
33 [H]	Hunt Group Pilot Numbers 0-7
420 [XXX]	Voice Mail enable MSG Wait
421 [XXX]	Voice Mail cancel MSG Wait
44 [V]	Voice Mail Group Pilot Numbers 0-7
55 [U]	ACD* or UCD Group Pilot Numbers 0-7
566	ACD* or UCD Available/Unavailable
567 55 [U]	ACD* or UCD Calls in Queue Display
570 [BB]	ACD* Call Qualifier
571	ACD* Agent Logout
572 55 [U]	ACD* Agent Login
573	ACD* Group Member Status
574	ACD* Agent Help
575	ACD* Supervisor Logout
576 55 [U]	ACD* Supervisor Login
577 55 [U]	ACD* Supervisor Queue Status Display
6# [XXX]	Tone Mode Ring Option
6*	Dial By Name
601	Attendant Override
602	Disable Outgoing CO Line Access
603	CO Line Off-Net Forward
604	Night Service
620	Camp-On
621	Line Queue
622	Call Back
623	Message Wait
624	Conference
625	Executive Override/ ACD* Supervisor Monitor Barge-In
626	LCR Queue Cancel
627	Account Code Enter
628	OHVO Enable
631	Do Not Disturb
632	Background Music
633 [#]	Personalized Message on a Flex Button
633 [ZZ]	Personalized Messages
633 [00]	Clear Personalized Messages
634	Headset Mode
635	ICLID Display - (unanswered calls)
636 [XXX]	Station Relocate
[FWD]	All Call Forward
[FWD]+[7]	No Answer - Call Forward
[FWD]+[8]	Busy - Call Forward
[FWD]+[9]	Busy/No Answer - Call Forward
[FWD]+[*]	Off-Net - Call Forward
680	Dial Speed Directory
690	Name in Display Programming
691 [BB]	Off-Hook Preference Programming
692	Time & Date Programming (1st programmed Attendant)
695	Distinctive Ringing
70	All Call Page (Internal & External)
71	Internal Page Zone 1
72	Internal Page Zone 2
73	Internal Page Zone 3
74	Internal Page Zone 4
75	Internal All Call Page
76 [0]	External All Call Page (All Zones)
76 [P]	External Page Zones 1-7
77	Meet-Me-Page Answer
81	CO Line Group 1 (if LCR is enabled)
82	CO Line Group 2
83	CO Line Group 3
84	CO Line Group 4
85	CO Line Group 5
86	CO Line Group 6
87	CO Line Group 7
88	All CO line Groups (CO Line Off-Net Forward)
9	LCR or CO Line Group 1 (if LCR is disabled)
0	Attendant
#0	Group Call Pick Up (Key & SLT)
#22 [C]	Call Park Pickup (Key and SLT)
#3	Universal Night Answer
[SPEED] [YY]	Speed Dial Access (00-19 Station) (20-99 System)
[SPEED]+[*]	Save Number Redial
[SPEED]+[#]	Last Number Redial
[*][*]+[3226]	Data Base Admin Manager (default [DBAM])

XXX = Intercom Station Numbers
YY = Speed Dial Bin numbers
ZZ = Personalized Messages
BB = Button Number
U = ACD* or UCD Group Number 0-7
C = Call Park Location 0-7
H = Hunt Group Number 0-7
V = Voice Mail Group Number 0-7
P = External Page Zone Number 1-7
* Features only if ACD system features software is purchased separately.

400.3 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.)

400.4 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.

400.5 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.

400.6 ACCOUNT CODES

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.

*Refer to Sec. 400.37, Flexible Button Assignment.

400.7 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.

400.8 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.

400.9 AUTOMATIC CALL DISTRIBUTION (ACD)

The Basic ACD Software package is an optional software package available for the *infinite* Digital Systems. When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. Eight Automatic Call Distribution (ACD) groups can be programmed, each containing up to eight 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 (55x) 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 ACD 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 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. 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 ACD 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 eight members, that agent will receive error tone.
- The *infinite* Digital System will not verify agent's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 400.37, 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. 400.37, 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 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 identifies 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 ACD reporting.

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. 400.37, 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.

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.
- A [#] can be entered in the qualify code, however it will not be recognized by the ACD reporting package.
- 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 display key telephone:

1. Dial [567] on the dial pad, followed by the three-digit ACD 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 considered busy for incoming calls during this operation.***

*Refer to Sec. 400.37, Flexible Button Assignment.

E. 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. 400.37, Flexible Button Assignment.

F. 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 (55x) that the supervisor is going to log into,
   or
   Press a pre-programmed* LOGIN flex button. (Flex button must have 576+55x 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 ACD 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 (55x) that the supervisor is going to log out of,
   or
   Press a pre-programmed* LOGOUT flex button. (Flex button must have 575+55x 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 ACD SMDR port, if active.

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

Conditions:

- If a supervisor logs into an ACD group from a station that is logged into another ACD group, the station will be automat-

ically removed from 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 that already has eight members, that supervisor will receive error tone.
- The *infinite* Digital System will not verify supervisor's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 400.37, Flexible Button Assignment.

G. Supervisor Monitor With Barge-In

The Supervisor Monitor with Barge-In feature will provide a means for a ACD supervisor to monitor an agent's call in progress or provide assistance in training ACD personnel. When used, a supervisor may intrude onto an agent's call in a listen only mode or in a true conference mode. This feature is available with or without a warning tone.

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 option if they log in at a station with the Supervisor Barge-In flag enabled.
- 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.

H. 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 oldest 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 (55x) the supervisor wants to observe,
   or
   Press the pre-programmed* flex button.

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
2. 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 "HELP" 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.
- The Supervisor's Queue Status display can be removed by dialing the Queue

Status display code followed by the group being observed. Dialing a different group will change the Queue Status display to a different group.

- The Queue Status display show the following information:

```
55x: CIQ: xx AL: xx OC: MMM
MM/DD/YY        HH:MM am
```

Where

- 55x = ACD Group (550-557)
- CIQ:xx = Calls in queue
- AL:xx = Agents logged in
- OC:mmm = Oldest call in minutes

I. 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. Dial the ACD Group Member Status code [573] on the dial pad,
   or
   Press the pre-programmed* flex button. The display now shows ACD Group 550.
2. Dial an [*] on the dial pad to scroll up to the next ACD Group,
   or
   Dial a [#] on the dial pad to scroll down to the previous ACD Group. To return to an idle display, the station (Supervisor/Agent) returns to on-hook condition.

Conditions:

- The ACD Group Members Status display will be updated at the time the code is dialed.
- The status of the ACD agent will be displayed with a letter following the station number that the agent is logged in at. The status will be displayed with the following priority:
  - (N) = Not Equipped
  - (D) = Do not Disturb
  - (O) = 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.

```
ACD55X:    110A  111A  112A
1130  114U  115D  116B  117N
```

400.10 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. 400.37, Flexible Button Assignment.

400.11 AUTOMATIC SELECTION

Pressing an outside line button, or pool button; a speed button; a station button; or dialing a number in the *infinite* 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.

400.12 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 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. 400.37, Flexible Button Assignment.

400.13 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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. 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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 [*] on the dial pad. Dial the speed bin number that contains the number where calls are to be forwarded,
   or
   Press the pre-programmed* flex button for the speed bin.
4. Confirmation tone is heard. FWD button LED is flashing.
5. Replace the handset or press the ON/OFF button.

Refer to Sec. 405.4, 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 CALL FWD button LED is extinguished.

*Refer to Sec. 400.37, 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 (550-557) 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. 405.4, Call Forward-Stations for 8-button operation of this feature.

*Refer to Sec. 400.37, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, 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 (330-337) 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. 405.4, 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 CALL FWD LED is extinguished.

*Refer to Sec. 400.37, Flexible Button Assignment.

400.14 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.

400.15 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 Line
3. Dial the speed bin number that contains the number where calls are to be forwarded,
   or
   Press the pre-programmed* flex button for the speed bin. 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.

400.16 CALLING STATION TONE MODE OPTION

Allows a calling station to override a called stations HF or PV 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).

400.17 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 (220 to 227). Confirmation tone is heard.

c. If you hear busy tone, press TRANS 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 (220 to 227) where the call was parked.

400.18 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 pick up the call.*

400.19 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:

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 155).

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

b. When that extension answers, announce the transfer.

c. 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.

400.20 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 re-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.*

400.21 CAMP-ON

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

a. Press the pre-programmed* 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, only 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 pre-programmed* 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.

*Refer to Sec. 400.37, Flexible Button Assignment.

400.22 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.

400.23 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. Hang up.

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. 400.37, Flexible Button Assignment.

400.24 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 replaces handset or push ON/OFF button to OFF. To terminate an unsupervised conference, press the flashing pre-programmed* CONF button while on hook, all parties will be dropped.

*Refer to Sec. 400.37, Flexible Button Assignment.

400.25 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 three-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 TRAN 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, 730.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 730.3, 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.

400.26 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 HF-TN-PV 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. 400.37, 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.

400.27 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. 400.37, Flexible Button Assignment.

Conditions:

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

400.28 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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite*

DVX [II] 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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] 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 TRAN 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.***

*Refer to Sec. 400.37, Flexible Button Assignment.

400.29 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 trunk group 1.*

NOTE	*The conference timer (Refer to Sec. 710.1, 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. 710.1, System Timers.*

400.30 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 below).

The 81 ringing choices are as follows:

TONE #	FREQ	DURATION
00	1209/1477	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
  - Message Wait Reminder Tone
  - Alarm/Reminder Signaling
  - Line Queue Call Back
  - LCR Queue Call Back

400.31 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. 400.37, 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. 400.37, Flexible Button Assignment.

400.32 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.

400.33 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. 400.37, 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.***

400.34 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.

400.35 FLASH

When connected to an outside line:

a. Press FLASH button to disconnect outside line and re-seize outside line dial tone.

400.36 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.

400.37 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.
- 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 400-2 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 400-2 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.

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

Table 400-2 Flex Button Programming Codes

100-127	Station Intercom Numbers (DVX I)
100-155	Station Intercom Numbers (DVX II)
22 [C]	Call Park Location 1-7 (system)
228	Personal Park
33 [H]	Hunt Group Pilot Numbers 0-7
44 [V]	Voice Mail Group Pilot Numbers 0-7
55 [U]	ACD/UCD Group Pilot Numbers 0-7
566	ACD/UCD Available/Unavailable
567	ACD/UCD Calls in Queue Display
571	ACD Agent Logout
572 55 [U]	ACD Agent Login
573	ACD Group Member Status
574	ACD Agent Help
575	ACD Supervisor Logout
576 55 [U]	ACD Supervisor Login
577 55 [U]	ACD Supervisor Queue Status
601	Attendant Override
602	Disable Outgoing CO Line Access
603	CO Line Off-Net Forward
604	Night Service
620	Camp-On
621	Line Queue
622	Call Back
623	Message Wait
624	Conference
625	Executive Override/Monitor Barge-In
626	LCR Queue Cancel
627	Account Code Enter
628	OHVO On
629	MUTE feature
631	Do-Not Disturb
632	Background Music
633 [ZZ]	Personalized Messages
633 00	Clear Personalized Messages
634	Headset Mode
635	ICLID Display (unanswered calls)
640	All Call Forward
695	Distinctive Ringing
70	All Call Page (Internal & External)
71	Internal Page Zone 1
72	Internal Page Zone 2
73	Internal Page Zone 3
74	Internal Page Zone 4
75	Internal All Call Page
76 [0]	External All Call Page(All Ext Zones)
76 [P]	External Page 1-7
77	Meet-Me-Page Answer
9	Least Cost Routing Access
#0	Group Call Pick Up
#3	Universal Night Answer (UNA)
[SPEED] YY	Speed Dial Access (00-19 Station) (20-99 System)
[SPEED]+[*]	Save Number Redial
[SPEED]+[#]	Last Number Redial

YY = Speed Dial Bin numbers,
ZZ = Personalized Messages,
U = UCD Group Number 0-7,
C = Call Park Location 0-7
H = Hunt Group Number 0-7,
V = Voice Mail Group Number 0-7
P = External Page Zone Number 1-7

400.38 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 speaker phone, 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.

400.39 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. 400.37, Flexible Button Assignment.

400.40 ICLID UNANSWERED CALL MANAGEMENT TABLE

The ICLID Software Package is an optional software package available for the *infinite* Digital Systems which must be purchased separately for this feature to be available. An Unanswered Call Management Table with 50 entry capacity for the *infinite* DVX [I] system, and 100 entry capacity for the *infinite* DVX [II] 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 list	Dial Code 635
2. Review next item in this list entry	MUTE
3. Step to next list entry.	HOLD
4. Delete this list entry.	FLASH
5. Delete entire list.	Note[1]
6. Exit list review function.	ON/OFF
7. Step to previous list entry.	TRANS
8. Call Back	SPEED
[1] This feature is only available to the Attendant(s) Station(s) to clear the list one entry at a time.	

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 list entry is displayed on the LCD, press the SPEED button to automatically dial the list 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 list entry:

a. Press the HOLD button.

To review the previous list entry:

a. Press the TRANS button.

400.41 INTERCOM 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 155).

NOTE	*Dialing a number in the numbering plan activates the telephone automatically.*

b. You will hear ringing if called station is in the "TN" answering mode; or two bursts of tone if called station is in the "HF" or "PV" 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 TN (right) 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 "HF" mode to reply.

b. Replace the handset to end the call.

In the "PV" 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.

a. Lift the handset or press the ON/OFF button to answer.
or
Move the intercom signal switch to the "HF" mode to reply.

In the "HF" mode, you will hear two bursts of tone and an announcement. Reply handsfree or lift the handset for privacy.

400.42 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 (1st 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).

400.43 KEYSET SELF TEST

The *infinite* 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

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 HTP 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 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 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.

400.44 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.

400.45 LEAST COST ROUTING

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 number will 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.

400.46 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 released.

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. 400.37, Flexible Button Assignment.

400.47 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. Dial the Message Waiting Code [623] on the dial pad,
or
Press the MSG button. Called party's MSG button will slow flash.

b. Replace the handset 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.

400.48 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.

400.49 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. Dial the Night Service feature code [604] on the dial pad,
or
Press the pre-programmed* Night Service flex button. The system is now in the Night Service Mode.

To remove the Night Service Mode:

b. Dial the Night Service feature code [604] on the dial pad again,
or
Press the pre-programmed* Night Service flex button again. The system is now removed from the Night Service Mode.

400.50 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. 400.37, Flexible Button Assignment.

400.51 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:

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. Both OHVO stations will receive a one-beep warning tone. The station receiving the OHVO call must be off-hook and in the "HF" 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 "HF" 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 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 will be established between the calling and called stations***

Conditions

- The station receiving the OHVO call MUST be off-hook and in the "HF" mode.
- The calling (originating) station and receiving station (STA B) must be OHVO digital terminals.
- 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 not 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 may then be pressed 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.
- LED's 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.

400.52 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 Zone
(DVX I 1-4, DVX II 1-7)

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 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.***

400.53 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.

400.54 PERSONAL PARK

Each station in the system (digital terminals and SLT's 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 [228] on the dial pad. Confirmation tone will be heard.

Retrieving a Parked Call:

a. From the station that parked the call, dial the Personal Call Park location code [228] on the dial pad. Both the station and the call will receive a warning tone and then a talk path is established between the two parties.

Conditions:

- Only one call can be parked in a Personal Call Park location at one time. When dialing the personal park location and that location is already occupied, the initiating party receives a busy tone. The user may then press the TRANsfer button to return to intercom dial tone to try a system park location
- 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 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 call will ring into this station until the system hold timer expires. The 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 call will be disconnected.
- A digital terminal user can program a flexible button as a Personal Call Park feature button which when pressed will park the call. Call Park retrieval can be performed by going off-hook, dialing the pound [#] key, then press the programmed Personal Call Park button.

400.55 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.

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 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.

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:MM xm*
16	ON BREAK UNTIL: *HH:MM xm*
17	AT LUNCH UNTIL: *HH:MM xm*

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].

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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	Z =94	' =14	# =##

d. Press HOLD to enter message. Confirmation tone is received.

To cancel the message:

a. The station user dials the Message Access Code [633] + [00] and hangs up.

B. Personalized 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 flexible button to speed access of pre-selected 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 (00-10), or the two-digit custom message number (21-30) to activate or deactivate the message. Confirmation tone will be heard.

Conditions:

- The telephone receiving the message must be a display telephone.

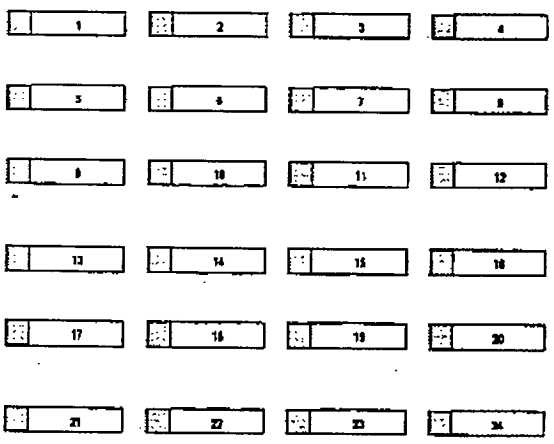
- Both key telephones and SLT's may activate the message. SLT's are notified that they have an active message with a warning tone when going off-hook.
- Incoming and outgoing calls are not inhibited in any way with a message displayed.
- When a message is displayed by a key telephone, the DND button 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 is ringing in or 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 power failure or system reset.

400.56 PRIME FLEX BUTTON 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.

400.57 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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	Z =94	' =14	# =##

c. Press the SPEED button to complete the programming process.

To erase your name:

a. Dial [690] on the dial pad.

b. Press the SPEED button.

400.58 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. 400.63, Storing Speed Numbers for Speed Dial programming.

400.59 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.

400.60 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. 400.37, Flexible Button Assignment.

400.61 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 a true two-way speakerphone.*

400.62 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 a call is on hold at the relocating station or the relocated station is in service, error tone will be received.

400.63 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. 400.37, Flexible Button Assignment.

400.64 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.

400.65 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 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. 400.37, Flexible Button Assignment.

400.66 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 may then be pressed 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.
- LED's 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.***

400.67 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 considered busy for incoming calls during this operation.***

*Refer to Sec. 400.37, 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. 400.37, Flexible Button Assignment.

400.68 UNIVERSAL NIGHT ANSWER (UNA)

If you hear outside line ringing at another station and wish to answer it, dial [#3] on the dial pad. The connected outside line can be transferred or disconnected. Each telephone utilizing Universal Night Answer must have a loop button appearance if the ringing outside line does not appear at their phone.

400.69 VOICE MAIL OPERATION (VM)

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. 400.37, 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 user's 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) MUST be a valid station in the system.***

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 "HF" or "PV" 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).

400.70 VOLUME CONTROLS

There are two volume control slide switches on the front of the 33-button digital key terminal. Sliding the switch to the left decreases the volume. The middle slide switch controls the volume for voice, background music, and speakerphone volume. The right slide switch controls the volume for tone ringing volume.

SECTION 405
8-BUTTON KEYSET FEATURE OPERATION

405.1 INTRODUCTION

The *infinite* 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 8-button digital key telephone than on the 33-button display key telephone. Also included is an illustration of the 8-button digital key telephone used in the *infinite* 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 an 8-button Station User's Guide.

405.2 KEY TELEPHONE STATION FEATURES

The *infinite* Digital Key Telephone System provides the following keys, indicators and features on the 8-button 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 user through 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.

FIXED FEATURE BUTTONS:

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

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.

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.

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

MSG LAMP indicates Message Waiting Callback requests left at you station.

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 405-1 8-Button Digital Terminal

Table 405-1 Digital System 8-Button Numbering Plan

100-127Station Intercom Numbers (DVX [I])
100-155Station Intercom Numbers (DVX [II])
22 [C]Call Park Location 0-7 (system)
228Personal Park
33 [H]Hunt Group Pilot Numbers 0-7
44 [V]Voice Mail Group Pilot Numbers 0-7
55 [U]ACD*/UCD Group Pilot Numbers 0-7
566ACD*/UCD Available/Unavailable
567 55 [U]ACD*/UCD Calls in Queue Display
570 [BB]ACD* Call Qualifier
571ACD* Agent Logout
572 55 [U]ACD* Agent Login
573ACD* Group Member Status
574ACD* Agent Help Request
6# [XXX]Tone Mode Ring Option
620Camp-On
621Line Queue
622Call Back
623Message Wait
624Conference
626LCR Queue Cancel
629MUTE Button
631Do Not Disturb
633 [ZZ]Personalized Messages
633 [00]Clear Personalized Messages
640All Call Forward
640 [7]No Answer - Call Forward
640 [8]Busy - Call Forward
640 [9]Busy/No Answer - Call Forward
640 [*]Off-Net - Call Forward
660Flash Command to CO Line
662Clear - Call Forward, DND, Personal Messages
663Message Wait return
664Conference W/ Personal Park
690Name in Display Programming
70All Call Page (Internal & External)
71Internal Page Zone 1
72Internal Page Zone 2
73Internal Page Zone 3
74Internal Page Zone 4
75Internal All Call Page
76 [0]External All Call Page (All Zones)
76 [P]External Page Zones 1-7
77Meet-Me-Page Answer
9LCR or CO Line Group 1 (if LCR is disabled)
0Attendant
#0Group Call Pick Up
#1Directed Call Pick-up
#22 [C]Call Park Pickup
#3Universal Night Answer

XXX = Intercom Station Numbers
YY = Speed Dial Bin numbers
ZZ = Personalized Messages
U = ACD/UCD Group Number 0-7

405.3 AUTOMATIC CALL DISTRIBUTION (ACD)

The Basic ACD Software package is an optional software package available for the *infinite* Digital Systems. When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. Eight Automatic Call Distribution (ACD) groups can be programmed, each containing up to eight 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 (55x) 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 ACD 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 ACD 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 eight members, that agent will receive error tone.
- The *infinite* Digital System will not verify agent's ID codes, other than requiring four digits to be entered.

*Refer to Sec. 400.37, 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. 400.37, 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.
- The "HELP" feature access code (FA-CODE) will permit a single line telephone to access the "HELP" feature. The SLT after hook-flashing while on a call can dial the FLEX CODE [574] to leave the "HELP" message. The SLT will be returned to his call after the code is dialed.

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 identifies 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 ACD reporting.

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. 400.37, 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.

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.
- A [#] can be entered in the qualify code, however it will not be recognized by the ACD reporting package.
- 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 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. 400.37, Flexible Button Assignment.

405.4 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:

- 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. 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. 400.37, 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. 400.37, 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. 400.37, 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 Call 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 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. 400.37, 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,
   or
   Press the pre-programmed* flex button for the speed bin. 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. 400.37, 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 forwarding.***

4. Dial the three-digit ACD or UCD group pilot number (550-557) 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. 400.37, 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. 400.37, 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. 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 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.

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. 400.37, 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. 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 (330-337) 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. 400.37, Flexible Button Assignment.

405.5 CALLING STATION TONE MODE OPTION

The 8-button keyset will initialize to the handsfree mode any time it is powered up or reset. If the user is in the tone ringing mode, he will be returned to the handsfree mode if the power is turned off or the system is reset.

When the tone ringing mode is desired:

a. Dial the Tone Mode Option code [667] on the dial pad. This code will toggle between the handsfree and tone ringing mode.

405.6 CONFERENCE WITH PERSONAL PARK

While connected to an outside line:

a. Press the TRANS button. Transfer dial tone is heard.
b. Dial [228] 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.

405.7 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. 400.37, Flexible Button Assignment.

405.8 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. 400.37, Flexible Button Assignment.

Conditions:

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

405.9 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. 400.37, Flexible Button Assignment.

405.10 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.

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, dial the message wait code [623] to leave message.

*Refer to Sec. 400.37, Flexible Button Assignment.

405.11 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.*

*A flex button MUST be programmed for this feature to operate. *Refer to Sec. 400.37, Flexible Button Assignment.

405.12 PBX/CENTREX TRANSFER

While connected to an outside line (PBX/Centrex):

a. Press the TRANsfer button. Receive transfer dial 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.

405.13 PERSONAL PARK (Flip-Flop)

While connected to first call:

a. Press the TRAN button. The caller is put on Exclusive Hold.

b. Dial the Personal Park code [228] on the dial pad,
or
Press a pre-programmed* flex button. (call is placed in personal park). Confirmation tone will be heard.

NOTE	*The user can alternately connect to the other call by doing a hook-flash and dialing [228] as many times as necessary.*

405.14 PROGRAMMING YOUR NAME INTO THE LCD DISPLAY

The 8-button 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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	Z =94	' =14	# =##

d. Press the SPEED button to complete the programming process.

405.15 VOLUME CONTROL

A "slide" switch is provided on the front of the *infinite* 8-button 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 all 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 proportionately quieter than normal ringing based on the current switch setting.

SECTION 410
SLT FEATURE OPERATION

410.1 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 Line 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 User's Guide.

410.2 ACCOUNT CODE

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.

.410.3 AUTOMATIC CALL DISTRIBUTION (ACD)

The Basic ACD Software package is an optional software package available for the *infinite* Digital Systems. When purchased, Uniform Call Distribution (UCD) is not used and is replaced by the ACD functions identified in the following. Eight Automatic Call Distribution (ACD) groups can be programmed, each containing up to eight 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 (55x) 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 ACD 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. When the agent logs out and removes himself from the ACD group, an ACD logout event is sent to the ACD 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 eight members, that agent will receive error tone.
- The *infinite* 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

Table 410-1 Digital System SLT Numbering Plan

100-127	Station Intercom Numbers (DVX [I])
100-155	Station Intercom Numbers (DVX [II])
22 [C]	Call Park Location 0-7 (system)
228	Personal Park
33 [H]	Hunt Group Pilot Numbers 0-7
44 [V]	Voice Mail Group Pilot Numbers 0-7
420 [XXX]	Voice Mail Enable MSG Wait
421 [XXX]	Voice Mail Cancel MSG Wait
55 [U]	ACD/UCD Group Pilot Numbers 0-7
566	ACD/UCD Available/Unavailable
571	ACD Agent Logout
572 55 [U]	ACD Agent Login
6# [XXX]	Tone Mode Ring Option
620	Camp-On
621	Line Queue
622	Call Back
623	Message Wait
624	Conference
625	Executive Override
626	LCR Queue Cancel
627	Account Code Enter
631	Do Not Disturb
633 [ZZ]	Personalized Messages
633 [00]	Clear Personalized Messages
640	All Call Forward
640 [7]	No Answer - Call Forward
640 [8]	Busy - Call Forward
640 [9]	Busy/No Answer - Call Forward
640 [*]	Off-Net - Call Forward
660	SLT Flash Command to CO Line
661 [YY]	SLT Station Speed Dial Programming
662	SLT Clear - Call Forward, DND, Personal Messages
663	Message Wait return
664	SLT Conference W/ Personal Park
666 [YY]	SLT Speed Dial Access
690	Name in Display Programming
70	All Call Page (Internal & External)
71	Internal Page Zone 1
72	Internal Page Zone 2
73	Internal Page Zone 3
74	Internal Page Zone 4
75	Internal All Call Page
76 [0]	External All Call Page (All Zones)
76 [P]	External Page Zones 1-7
77	Meet-Me-Page Answer
9	LCR or CO Line Group 1 (if LCR is disabled)
0	Attendant
#0	Group Call Pick Up (Key & SLT)
#1	Directed Call Pick-up (SLT)
#22 [C]	Call Park Pickup (Key and SLT)
#3	Universal Night Answer

XXX = Intercom Station Numbers
YY = Speed Dial Bin numbers
ZZ = Personalized Messages
U = UCD Group Number 0-7
C = Call Park Location 0-7
H = Hunt Group Number 0-7
V = Voice Mail Group Number 0-7
P = External Page Zone Number 1-7

- "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.

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.

410.4 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.***

410.5 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.

410.6 CALLING STATION TONE MODE OPTION

Allows a calling station to override a called key station's "HF" or "FV" 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).

410.7 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)

410.8 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 (220 to 227) 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 (220 to 227) where the call was parked.

410.9 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.

410.10 CLEAR CALL FORWARD, DND, PERSONALIZED 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.

410.11 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.

410.12 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.

410.13 CONFERENCE WITH PERSONAL PARK

While connected to an outside line:

a. Depress the hookswitch momentarily. Intercom dial tone is heard.

b. Dial [228] 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. All three parties are conferenced.

f. Hang up to terminate conference.

NOTE *The user can alternately connect to the other call by doing a hook-flash and dialing [228] as many times as necessary.*

410.14 DIRECT OUTSIDE LINE ACCESS

a. Lift handset.

b. Dial access code [9, 81 - 87] on the dial pad.

c. Dial desired telephone number.

410.15 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.

410.16 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.

410.17 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 will be heard. Dial number of desired extension.

d. Replace handset to complete transfer.

410.18 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.*

410.19 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.

410.20 INTERCOM CALLING

a. You will hear ringing if called station is in the "IN" answering mode; or two bursts of tone if called station is in the "HF" or "PV" position.

b. Lift the handset.
- 100-127 for DVX I System,
- 100-155 for DVX II System).

c. Converse after the two tone bursts stop.

d. Replace the handset to end the call.

Answering an Intercom Call

a. Lift handset to converse.

b. Replace handset to end call

410.21 LEAST COST ROUTING

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 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.

410.22 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	***Only SLT's equipped with message waiting lamp will have access to this feature. OPX stations do not have message waiting capability.***

410.23 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.

410.24 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 attendant(s).***

c. Replace the handset. (Activating DND or Call Forwarding cancels selected message.)

410.25 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 [0] External All Call (All Ext Zones)
- 76 [Z] External Zone (DVX [I] =1-4, DVX [II]= 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.

410.26 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 party that paged you.

410.27 PERSONAL PARK (Flip-Flop)

While connected to first call:

a. Depress the hookswitch momentarily. Intercom dial tone is heard.

b. Dial [228] 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 [228] on the dial pad. (1st call is returned and 2nd call is placed in personal park.

f. The user can alternately connect to the other call by doing a hook flash and dialing [228] as many times as necessary.

410.28 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 pattern shown below.

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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	Z =94	' =14	# =##

d. Press the hookswitch to complete the programming process.

410.29 STATION SPEED DIAL

a. Lift handset.

b. Dial [666] on the dial pad.

c. Dial desired station speed bin number (00-19).

410.30 STORING STATION SPEED NUMBERS

a. Lift handset.

b. Dial [661] on the dial pad.

c. Dial desired station speed bin number (00-19).

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.*

410.31 SYSTEM SPEED DIAL

a. Lift handset.

b. Dial [666] on the dial pad.

c. Dial desired system speed bin number (20-99).

410.32 UNIVERSAL NIGHT ANSWER (UNA)

Upon hearing an incoming signal:

a. Lift handset.

b. Dial the UNA access code [#3] on the dial pad. You will be connected to ringing outside line.

410.33 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 420
ATTENDANT FEATURE OPERATION

420.1 INTRODUCTION

The *infinite* 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 33-button digital key telephone used in the *infinite* 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 include

Literature similar to these operating instructions has been prepared for use by the customer in the form of an Attendant User's Guide.

420.2 ATTENDANT KEY TELEPHONE STATION FEATURES

Each *infinite* 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.

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:

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.

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

DO NOT DISTURB (DND) (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.

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

FIXED FEATURE BUTTONS:

PICK-UP 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.

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.

MESSAGE WAIT (MSG) 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.

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

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.

CAMP-ON button enables you to alert a busy party that an outside line is on hold and waiting for them.

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.

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

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 two 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 420-1 33-Button Attendant Display Terminal

Table 420-1 Digital System Attendant Numbering Plan

100-127	Station Intercom Numbers (DVX [I])
100-155	Station Intercom Numbers (DVX [II])
199	Modem via DISA access or transfer
22 [C]	Call Park Location 0-7 (system)
228	Personal Park
33 [H]	Hunt Group Pilot Numbers 0-7
44 [V]	Voice Mail Group Pilot Numbers 0-7
55 [U]	ACD*/UCD Group Pilot Numbers 0-7
566	ACD*/UCD Available/Unavailable
567 55 [U]	ACD*/UCD Calls in Queue Display
570 [BB]	ACD* Call Qualifier
571	ACD* Agent Logout
572 55 [U]	ACD* Agent Login
573	ACD* Group Member Status
574	ACD* Agent Help Request
575	ACD* Supervisor Logout
576	ACD* Supervisor Login
577	ACD* Supervisor Queue Status Display
6# [XXX]	Tone Mode Ring Option
6*	Dial By Name
601	Attendant Override
602	Disable Outgoing CO Line Access
603	CO Line Off-Net Forward
604	Night Service
620	Camp-On
621	Line Queue
622	Call Back
623	Message Wait
624	Conference
625	Executive Override/Monitor Barge-In
626	LCR Queue Cancel
627	Account Code Enter
628	OHVO Enable
631	Do Not Disturb
632	Background Music
633 [ZZ]	Personalized Messages
633 [00]	Clear Personalized Messages
634	Headset Mode
635	ICLID* Unanswered Calls Display
636 [XXX]	Station Relocate
FWD	All Call Forward
[FWD]+[7]	No Answer - Call Forward
[FWD]+[8]	Busy - Call Forward
[FWD]+[9]	Busy/No Answer - Call Forward
[FWD]+[*]	Off-Net - Call Forward
680	Dial Speed Directory
690	Name in Display Programming
691 [BB]	Off-hook Preference Programming
692	Time & Date Programming (1st programmed Attendant)
693	Directory List program code
694	Custom Message(s) program code
695	Distinctive Ringing
70	All Call Page (Internal & External)
71	Internal Page Zone 1
72	Internal Page Zone 2
73	Internal Page Zone 3
74	Internal Page Zone 4
75	Internal All Call Page
76 [0]	External All Call Page (All Zones)
76 [P]	External Page Zones 1-7
77	Meet-Me-Page Answer
81	CO Line Group 1 (if LCR is enabled)
82	CO Line Group 2
83	CO Line Group 3
84	CO Line Group 4
85	CO Line Group 5
86	CO Line Group 6
87	CO Line Group 7
88 [YY]	All CO line Groups (CO Line Off-Net Forward)
9	LCR or CO Line Group 1 (if LCR is disabled)
0	Attendant
#0	Group Call Pick Up (Key & SLT)
#1	Directed Call Pick-up (SLT)
#22 [C]	Call Park Pickup (Key and SLT)
#3	Universal Night Answer
[SPEED] YY	Speed Dial Access (00-19 Station) (20-99 System)
[SPEED]+[*]	Save Number Redial
[SPEED]+[#]	Last Number Redial

XXX = Intercom Station Numbers
YY = Speed Dial Bin numbers
ZZ = Personalized Messages
BB = Button Number
U = ACD* or UCD Group Number 0-7
C = Call Park Location 0-7
H = Hunt Group Number 0-7
V = Voice Mail Group Number 0-7
P = External Page Zone Number 1-7

*Features only if ACD system features or ICLID software is purchased separately.

Refer to Sec. 400.37, Flexible Button Assignment for programming flexible buttons.

420.3 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.)

420.4 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.

420.5 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.

420.6 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 Line(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.

420.7 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. 400.37, Flexible Button Assignment.

420.8 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.

420.9 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 TRAN 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, 730.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 730.3, 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.

420.10 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 HF-TN-PV 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. 400.37, 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.

420.11 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	1209/1477	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
– Message Wait Reminder Tone
– Alarm/Reminder Signaling
– Line Queue Call Back
– LCR Queue Call Back

420.12 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. 400.37, 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.***

420.13 ICLID UNANSWERED CALL MANAGEMENT TABLE

The ICLID Software Package is an optional software package available for the infinite Digital Systems. This feature is not available unless this software package has been purchased separately. An Unanswered Call Management Table with 50 entry capacity for the *infinite* DVX I system, and 100 entry capacity for the *infinite* DVX II 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 list	Dial Code 635
2. Review next item in this list entry	MUTE
3. Step to next list entry.	HOLD
4. Delete this list entry.	FLASH
5. Delete entire list.	Note[1]
6. Exit list review function.	ON/OFF
7. Step to previous list entry.	TRANS
8. Call Back	SPEED
[1] This feature is only available to the Attendant(s) station(s) to clear the list one entry at a time.	

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 list entry is displayed on the LCD, press the SPEED button to automatically dial the list 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 list entry:

a. Press the HOLD button.

To review the previous list entry:

a. Press the TRANSfer button.

The first Attendant is the only station that can delete an individual list entry.

At the first Attendant:

a. Dial the access code [635] on the dial pad.

To review the next list entry:

a. Press the HOLD button.

To review the previous list entry:

a. Press the TRANSfer button.

b. When the desired list entry is displayed on the LCD, press the FLASH button to delete this entry.

420.14 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 155).

b. You will hear ringing if called station is in the "TN" answering mode; or two bursts of tone if called station is in the "HF" or "PV" 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 "TN" 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 "PV" 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 "HF" mode, you will hear two bursts of tone and an announcement. Reply handsfree or lift handset for privacy.

420.15 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,
or

Press the pre-programmed* button for the speed bin. Confirmation tone is heard.

*Refer to Sec. 400.37, 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 Line button.

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

420.16 KEYSET SELF TEST

The *infinite* 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.

420.17 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. Dial the two-digit message code 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. 400.37, 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.

b. Enter the two-digit message bin number [21 - 30].

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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	Z =94	' =14	# =##

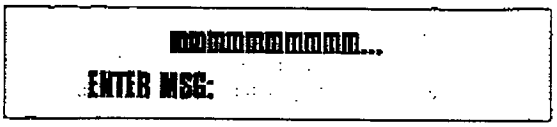
Up to 24-characters may be entered as the custom message (this will represent 48 digits entered).The actual Alpha-Numeric characters will be displayed as the digits are being entered while programming the messages. The attendant must go idle after programming a message before another message may be programmed.

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 attendant will receive the following display after entering the Custom Message Program code [694] on the dial pad.

Then the following display will be shown after the bin # has been selected.



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.

420.18 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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] 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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] 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 wit 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 TRANsfer 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 *infinite* DVX I System provides locations for up to 100 names, while the *infinite* DVX [II] 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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] 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 entry number (000-099 for DVX [I] System, 000-199 for DVX [II] System) 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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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 (100-155)

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 TRANsfer 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 entry number (000-099 for DVX [I] System, 000-199 for DVX [II] System) 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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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.

420.19 NIGHT SERVICE

a. Any designated attendant can place the system into Night Service by pressing the pre-programmed Night Service button (DND) or by dialing [604].

b. Pressing the pre-programmed Night Service button again removes the system from Night Service.

420.20 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. Both OHVO stations will receive a one-beep warning tone. The station receiving the OHVO call must be off-hook and in the "HF" 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 "HF" 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 will be established between the calling and called stations***

Conditions

- The station receiving the OHVO call MUST be off-hook and in the "HF" mode.
- The calling (originating) station and receiving station must be OHVO digital terminals.
- 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 not 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 may then be pressed 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.
- LED's 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.

420.21 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 follows:

YYMMDDHHMM
YY = 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.

420.22 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.

420.23 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 particu-

lar 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 may then be pressed 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.
- LED's 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 320.13 for a description of each map.

420.24 ATTENDANT TRANSFER SEARCH

When attempting to locate a party:

a. Press a station button to signal that station. If the party is not located, press another station button to continue the search.

420.25 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

420.26 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.

420.27 DO NOT DISTURB INDICATION

The associated station button will flash at a medium rate to indicate that station is in Do Not Disturb.

420.28 RETRIEVING A PARKED CALL

a. Lift handset or press ON/OFF button.

b. Dial [#] on the dial pad.

c. Dial the parking location (220 to 227) where the call was parked.

420.29 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 155).

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.

420.30 CAMP-ON

While connected to an outside line:

a. Press desired station button.

b. When busy tone is heard, press CAMP-ON button.

c. Replace handset, access another CO Line or press RELEASE button (if you have one).

420.31 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 400-2 Flex Button Programming Codes).

420.32 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. 400.37, Flexible Button Assignment.

420.33 PAGING

A. External Paging

1. Dial the two-or three-digit External paging code. Wait for page warning tone.

76 [0] = External All Call (Zones 1-7)
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= 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 Zone (Z=1-7)

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. 400.37, Flexible Button Assignment.

420.34 RELEASE BUTTON

All DSS/DLS maps contain a Release button that may be pressed to disconnect or terminate an intercom call, transfer sequence, page announcement or CO call.

430.1 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 430-1 Liquid Crystal Displays (LCD)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Idle Station	STATION XXX MM/DD/YY HH:MM am	
Manually Dialing Outgoing Calls	18005551212 LINE XX HH:MM :SS	
Recalling Line from Hold	LINE XX RECALLING MM/DD/YY HH:MM am	
Recalling Line from Another Station	RECALL FROM STA XXX LINE XX HH:MM:SS RECALL FROM ..(name).. LINE XX HH:MM:SS	
Connected to an Incoming CO Line		STATION XXX LINE XX 00:00:10
Intercom Call	CALL TO STA XXX MM/DD/YY HH:MM am CALL TO ..(name).. MM/DD/YY HH:MM am	CALL FROM STA XXX MM/DD/YY HH:MM am CALL FROM ..(name).. MM/DD/YY HH:MM am

Table 430-1 LCD Displays (Cont'd)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Camp-on	CALL TO STA XXX MM/DD/YY HH:MM am CALL TO ..(name).. MM/DD/YY HH:MM am	CAMP-ON BY STA XXX MM/DD/YY HH:MM am CAMP-ON BY ..(name).. MM/DD/YY HH:MM am
Conference	CONFERENCE MM/DD/YY HH:MM am	CONFERENCE MM/DD/YY HH:MM am
Internal Page	INTERNAL PAGE ZONE X HH:MM am	PAGE FROM STA XXX MM/DD/YY HH:MM am PAGE FROM ..(name).. MM/DD/YY HH:MM am
External Page	EXTERNAL PAGE ZONE X HH:MM am	
All Call Page	ALL CALL PAGE MM/DD/YY HH:MM am	PAGE FROM STA XXX MM/DD/YY HH:MM am
Meet Me Page	ALL CALL PAGE MM/DD/YY HH:MM am CALL FROM XXX MM/DD/YY HH:MM am	PAGE FROM XXX MM/DD/YY HH:MM am CALL TO XXX MM/DD/YY HH:MM am

Table 430-1 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 MM/DD/YY HH:MM am FORWARDED TO ..(name).. MM/DD/YY HH:MM am	
Station No-Answer Call Forward (Originating Station)	NO ANS FWD TO STA XXX MM/DD/YY HH:MM am NO ANS FWD TO ..(name).. MM/DD/YY HH:MM am	
Station Busy/No-Answer Call Forward (Originating Station)	BSY/NA FWD TO STA XXX MM/DD/YY HH:MM am BSY/NA FWD TO ..(name).. MM/DD/YY HH:MM am	
Station Busy Call Forward (Originating Station)	BUSY FWD TO STA XXX MM/DD/YY HH:MM am BUSY FWD TO ..(name).. MM/DD/YY HH:MM am	
Forwarded Call (Name in Display)	FORWARDED TO STA XXX VIA STA XXX HH:MM am FORWARDED TO ..(name).. VIA STA XXX HH:MM am	CALL FROM STA XXX VIA STA XXX HH:MM am CALL FROM ..(name).. VIA STA XXX HH:MM am

Table 430-1 LCD Displays (Cont'd)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Forwarded Intercom Call	FORWARDED TO STA XXX VIA STA XXX HH:MM am	CALL FROM STA XXX VIA STA XXX HH:MM am
Station Forwarding to a Voice Mail Group (Station Idle)	FORWARDED TO VOICE MAIL MM/DD/YY HH:MM am	
Station Forwarding to an ACD or UCD Group(Station Idle)	FORWARDED TO ACD 55X MM/DD/YY HH:MM am	
Preset Forward		FORWARD RING LINE XX HH:MM am
Station calling a Station Forwarded to a Voice Mail Group	FORWARDED TO VOICE MAIL VIA STA XXX HH:MM am	FORWARDED TO VOICE MAIL MM/DD/YY HH:MM am
Call Pickup	CALL TO STA XXX PICKED UP BY STA XXX HH:MM am	CALL TO STA XXX FROM STA XXX HH:MM am TRANSFER FROM STA XXX LINE XX HH:MM am
Exclusive Hold	LINE HOLDING LINE XX HH:MM am	

Table 430-1 LCD Displays (Cont'd)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Do Not Disturb	DO NOT DISTURB STA XXX MM/DD/YY HH:MM am DO NOT DISTURB ..(name).. MM/DD/YY HH:MM am	STATION IN DO NOT DISTURB MM/DD/YY HH:MM am
Call Back	CALL BACK FROM STA XXX MM/DD/YY HH:MM am CALL BACK FROM ..(name).. MM/DD/YY HH:MM am	CALL FROM STA XXX MM/DD/YY HH:MM am CALL FROM ..(name).. MM/DD/YY HH:MM am
Outside Line Transfer		TRANSFER FROM STA XXX LINE XX HH:MM am TRANSFER FROM ..(name).. LINE XX HH:MM am
Message Waiting		MSG: XXX XXX XXX XXX XXX MM/DD/YY HH:MM am
Reply to a Message Waiting	CALL TO STA XXX MM/DD/YY HH:MM am CALL TO ..(name).. MM/DD/YY HH:MM am	CALL BACK FROM STA XXX MM/DD/YY HH:MM am

Table 430-1 LCD Displays (Cont'd)

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Programmed Flash Command (F)	F*12	
Programmed Pause Command (P)	950777P1234567 SPEED XX HH:MM am	
Programmed Pulse-To-Tone Switchover (S)	950777S1234567 SPEED XX HH:MM am	
CO Line Queuing	PLACED IN QUEUE FOR LINE XX HH:MM am QUEUE CALL BACK LINE XX HH:MM am	
Hunt Groups	CALL TO STA XXX VIA HUNT HH:MM am CALL TO ..(name).. VIA HUNT HH:MM am	
ACD or UCD Groups	CALL TO STA XXX VIA ACD HH:MM am CALL TO ..(name).. VIA ACD HH:MM am	

Table 430-1 LCD Displays (Cont'd

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Ringing CO Lines		LINE RINGING LINE XX HH:MM am
Display Security Feature	DISPLAY SECURITY LINE XX HH:MM:SS	
Station Forwarding Off-Net	FORWARDED TO SPEED XX MM/DD/YY HH:MM am	
Calling a Station Forwarded Off-Net (before and after call is answered)	FORWARDED OFF NET LINE XX CALLED 102 2331234 LINE XX HH:MM:SS	FORWARDED TO SPEED XX MM/DD/YY HH:MM am
Calls in Queue (Supervisor)	55X: CIQ: XX AL: XX OC: MMM MM/DD/YY HH:MM am	
Calls in Queue (using Dial Code)	ACD 55X 02 CALLS IN QUEUE MM/DD/YY HH:MM am	
Unavailable Mode (Agent Station)	UNAVAILABLE ACD * XXX * MM/DD/YY HH:MM am	
Station calling a Voice Mail Group Pilot Number	CALL TO VOICE MAIL MM/DD/YY HH:MM am	

Table 430-1 LCD Displays (Cont'd

FUNCTION	CALLING STATION'S DISPLAY	CALLED STATION'S DISPLAY
Dial By Name	DIAL NAME: MM/DD/YY HH:MM pm	
Off-Hook Voice Over (OHVO)	ANNOUNCE TO STA XXX MM/DD/YY HH:MM am	ANNOUNCE FROM STA XXX MM/DD/YY HH:MM am
Executive Override	MONITORING STA XXX MM/DD/YY HH:MM am	

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 electromagnetic 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.12 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 *infinite* 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 protec-

tion is available through telephone equipment supply houses. Care should be taken to ensure that such protection devices are installed in accordance with the manufacturer's instructions and to ensure that no more than one set of protectors be installed on central office lines at the installation premises. Improper 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 DVX [I] 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 CO/Station ports from the sales contract and discussions with the customer.

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 basic components of the DVX [I] before attempting installation of this product.***

500.3 COMMON EQUIPMENT FOR THE DVX [I] SYSTEM

A. Basic Key Service Unit with Power Supply (BKSU)

The DVX [I] Basic Key Service Unit (BKSU) is a system which comes fully configured for four CO/PBX/Centrex lines and eight stations. The Basic KSU also contains one RS-232C I/O port, one DTMF Receiver, one connector for background music and Music-on-Hold, an on-board 300 baud modem port, and one External Page port. The Basic KSU also contains two connectors for adding a 2x4 Expander Module, a 2x4 SLT Expander Module (J9 and J10), an optional I/O Module that adds one additional RS-232C port and one RS-422 port, and an optional 1200 baud modem can be added to increase the speed of transmission of the on-board modem port. A Reset (Halt) switch and a Background Music volume control are also mounted on the PCB. In addition, two connectors are provided for adding an Expansion KSU which will allow the system to expand to a total of 14 CO/PBX/Centrex lines and 28 digital station ports. Refer to Figure 500-1 Digital Flatpack Mounting Arrangements for the component layout and location of connectors.

Power Supply:

The power supply, installed in the Basic KSU at the time of manufacture, has an input voltage of 117V ac ±10%. The power supply provides power, a filtered/unregulated ±12V dc, to the main key service board. A slo-blow 1.5 amp fuse on the AC side of the transformer provides the necessary fire and overload protection. Power is regulated and distributed to stations / circuitry in the system on the main key serv-

	CO PORTS	STATION PORTS	SYSTEM CONFIGURATION				
			4x8	6x12	8x16	12x24	14x28
Basic KSU	1-4	1-8	✓	✓	✓	✓	✓
2x4 Station or SLT Expander Module	5-6*	9-12*		✓			✓
Expansion KSU	7-10	13-20			✓	✓	✓
4x8 Expander Module	11-14	21-28				✓	✓

*If the 2x4 Station or SLT Expander Module is not installed in the Basic KSU and an Expansion KSU is part of the system configuration, CO Ports 5-6 and Station Ports 9-12 can be re-assigned. Refer to Sec. 720.3 and/or Sec. 730.4, Flexible Port Assignment Features.

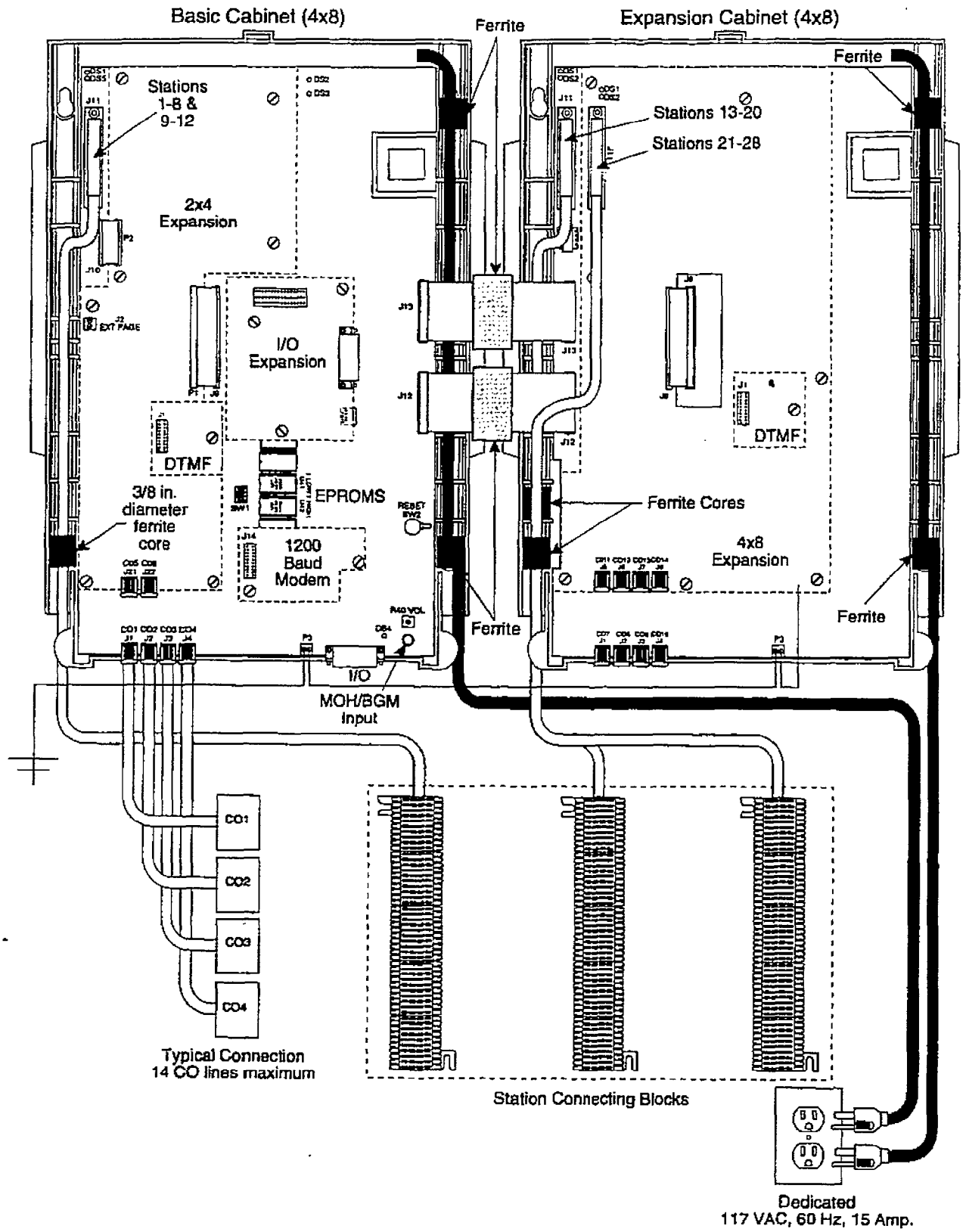


Figure 500-1 Digital Flatpack Mounting Arrangements

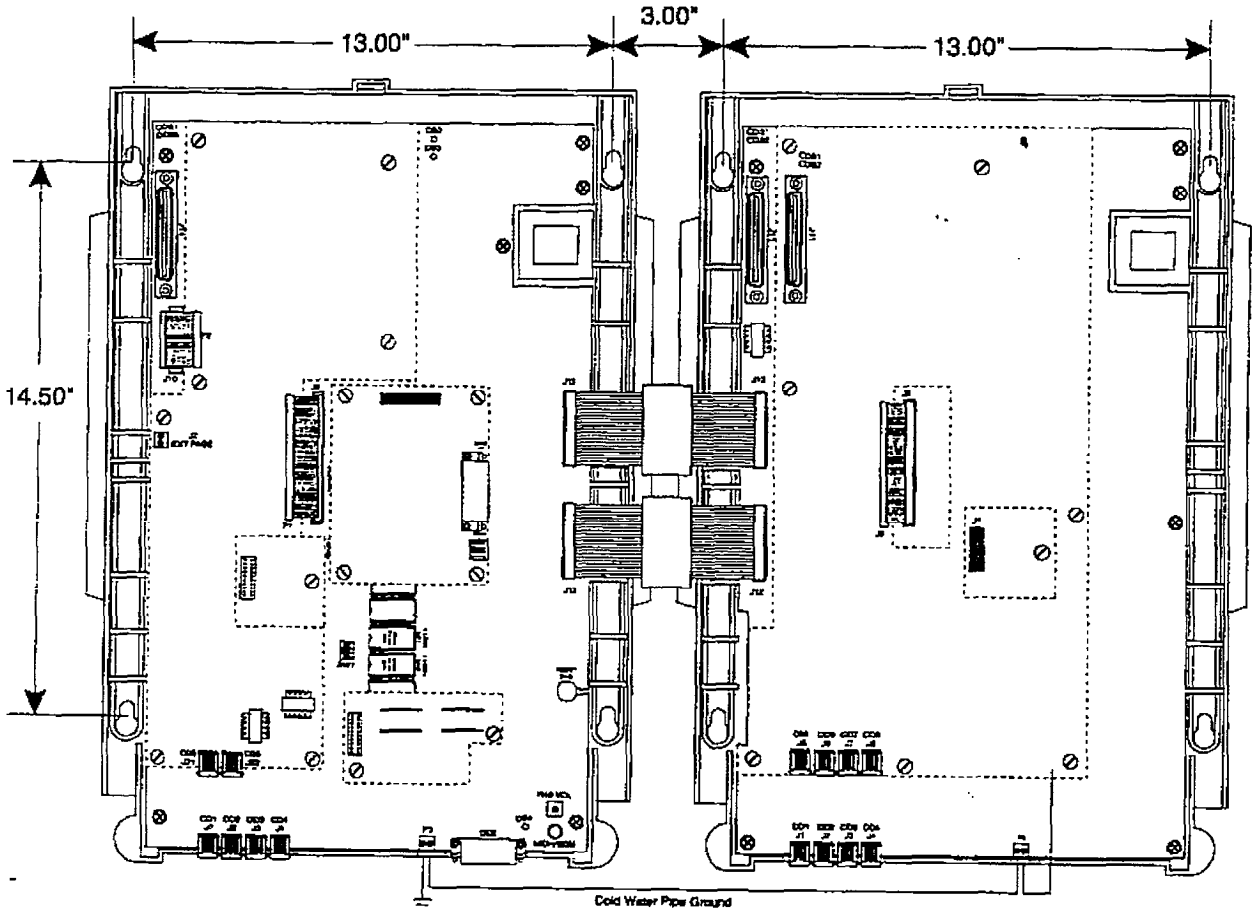


Figure 500-2 Digital Flatpack Mounting Dimensions

ice board. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

LEDs & Indicators:

Four green LEDs are located on the main key service board along the top of the PCB. Two of the LEDs (DS2 & DS3) indicate the presence of +5V & -5V dc. LEDs DS1 and DS5 indicate the presence of +12V dc used to supply power to the key stations (one LED per four stations). An extinguished LED indicates the absence of the associated voltage.

A red LED (DS4) located in the lower right portion of the main key service board provides a system "heart beat" indication.

Basic KSU Mounting:

The DVX[I] Basic Key Service Unit (BKSU) is housed in a wall mountable cabinet which contains the main key service board, power supply and pre-wired connectors for stations and CO Line interfaces. 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. If mounting the Basic KSU alone, the minimum back board size is 25" x 17" x 3/4". A fully loaded KSU can weigh approximately 15 lbs. Make certain proper mounting procedures are followed.

NOTE	***Check local building and electrical codes before mounting the system. For example, certain areas may require a flame retardant plywood back board.***

1. Mount the KSU to the plywood using 3/4" #12 pan-head sheet metal screws such that the top of the KSU is approximately three feet (1 meter) from the ceiling, and bottom is four feet (1.2 meters) from the floor.
2. Use the mounting template supplied with the cabinet to locate the mounting holes. Refer to Figure 500-2 Digital Flatpack Mounting Dimensions.
3. Drill the holes and mount the Basic KSU.

Grounding:

A No. 12 AWG copper wire should be used to connect a ground between the ground source and the Basic KSU (25 feet maximum). A two position terminal strip P3 is located along the bottom edge of the main key service unit and is accessible through the bottom of the KSU. One terminal position can be used to connect the ground wire from a ground source and the other position may be used to connect the ground from the Basic KSU to the Expansion KSU.

CPU and Memory:

The DVX[I] system is controlled by a 16-bit (68000) main micro-processor which controls all system functions including the PCM/TDM voice switching under the direction of ROM and RAM software coding. The main key service board is responsible for all control functions, execution of all logic operations and control of system modules including control over the circuitry necessary for voice switching and conference connections. The main key service board is also responsible for all system tones, system timing, and station status control. Refer to Figure 500-3 Main Key Service Board of the Basic KSU. In addition the main key service board provides software and hardware support of the following:

- Real Time clock.
- Watch dog timer and recovery.
- PCB status as to presence/absence of modules for automatic software configuration setup.
- State/event software design.
- Backup of customer database RAM memory via a "Super Cap" (super capacitor).

System software is provided in EPROM memory and is installed on the main key service board. The system contains 512K of EPROM storage and is equipped with 128K of "battery"-backed static RAM. Provisions have been made on the card to address up to two megabytes of EPROM memory and up to two megabytes of static RAM.

An option "dip" switch (SW1) located on the main key service board allows the system EPROM memory to be configured utilizing different size EPROM chips. 1 Megabit, 2 Megabit, 4 Megabit and 8 Megabit chips may be used to provide the generic software. Refer to Section 800, Maintenance and Troubleshooting for "dip" switch (SW1) settings for various allowable configurations.

A separate option strap (J26) allows the use of either 256Kbit, 1 Megabit, or 4 megabit static RAM chips to be used for RAM memory. Refer to Section 800, Maintenance and Troubleshooting for the option strap choices.

CO Line/Station Interfaces:

The Basic Key Service Unit (BKSU) contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging.

The main key service board (KSB) contains four Central Office, Centrex or PBX loop start, line interfaces. The protection circuitry to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). Each CO line interface design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular jacks mounted on the bottom of the main key service board.

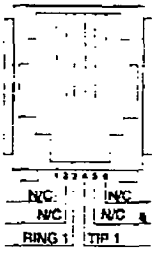
The main key station board also provides the interface for eight Digital Key Telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located inside the Basic KSU. Each station connection requires four wires to connect to the board.

A Digital DSS Console, 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 overcurrent.

The main key service also contains an onboard modem that is capable of transmitting data at a rate of 300 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. An optional 1200 Baud module may be added to the main key service unit to allow transmission at the rate of 1200 Baud.

CO Lines Connections:

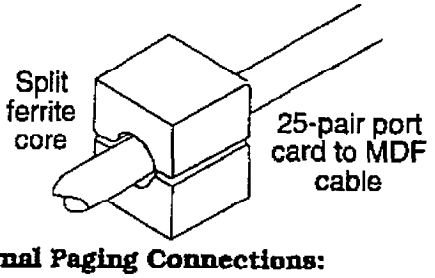
CO Lines are connected to the system via modular RJ-11 connectors accessed through the bottom of the Basic KSU. The Basic KSU connects CO Line ports 1, 2, 3, and 4 to the system through modular connectors J1, J2, J3, and J4 respectively. The CO Line is wired to the green/red pair. The pinouts of the modular connector are as follows.



Stations Connections:

The station ports are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol-type connector located on the main key service board, connector J11. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame. Refer to Table 500-1 Basic KSU J11 Station Connections for pinout information.

NOTE	***The 25-pair cable used to extend the stations to the MDF does not have to be shielded. However, the 25-pair cable must pass through a 3/8" diameter ferrite core before exiting the Basic KSU again to comply with FCC Part 15 regulations.***



External Paging Connections:

The Basic KSU is equipped with an external page port (a one-way, transmit voice path) that is wired to the J11 connector (50-pin male amphenol-type connector) on the Violet/Slate, Slate/Violet pair of wires (pin's 50 and 25). Refer to Table 500-1 Basic KSU J11 Station Connections for pinout information.

Background Music Connections:

The source for Background Music / Music on Hold is connected to the system via an RCA type connector, J7 is located in the

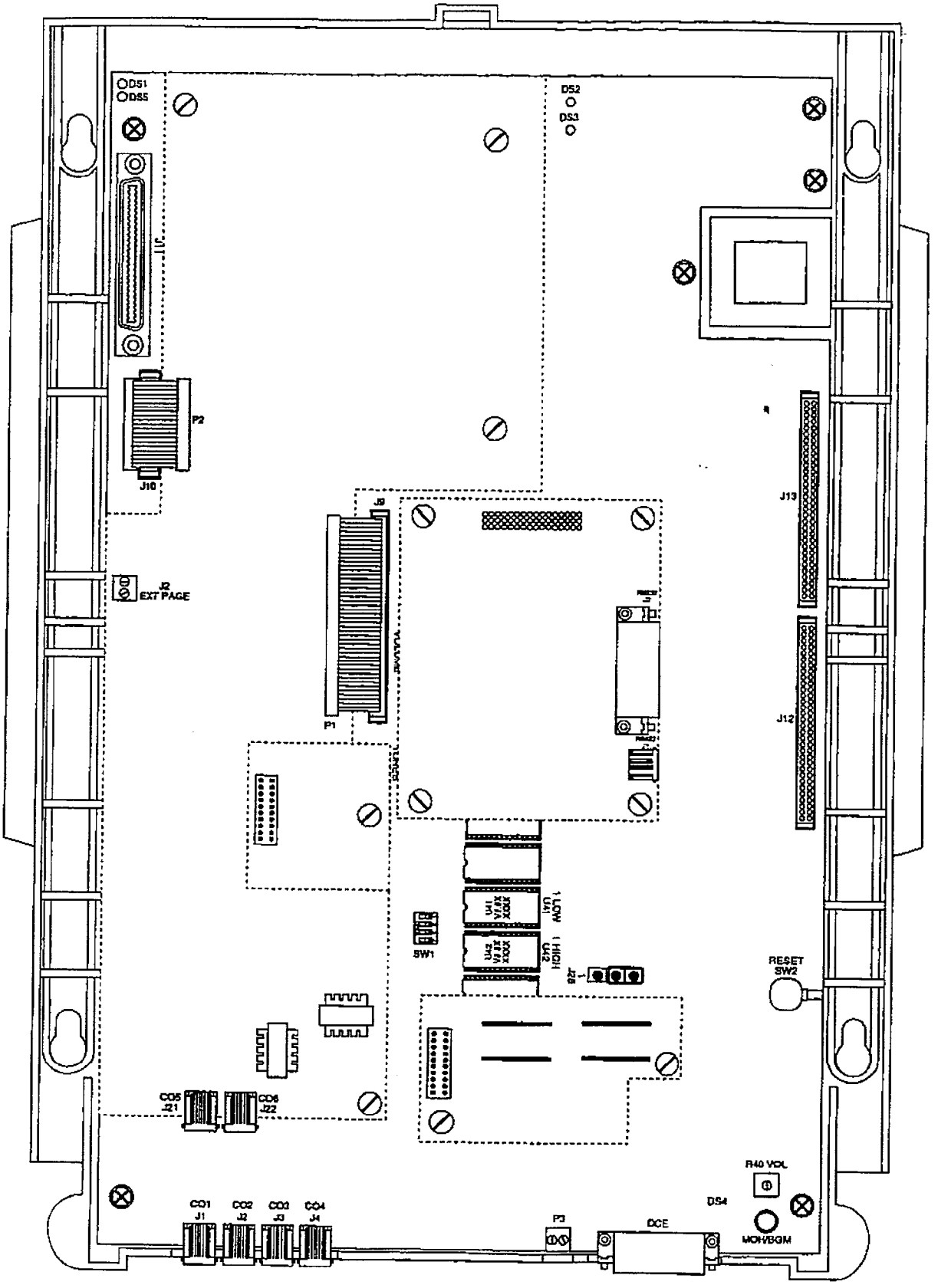


Figure 500-3 Main Key Service Board of the Basic KSU

bottom right corner of the main key service board (KSB). A potentiometer labeled R40 located directly above the RCA connector allows for volume adjustment for Music-On-Hold. Refer to Figure 500-1 Digital Flatpack Mounting Arrangements and Figure 500-2 Digital Flatpack Mounting Dimensions for location of components.

Modem Connections:

The optional 1200 Baud modem module may be installed on the main key service board to connector J14 located directly below the EPROMS. The modem port itself is accessed via system software control. No hardware connections are required to connect to the modem.

I/O Ports Connections:

The Basic KSU contains one RS-232C, I/O port (female, DB-25 type connector) located on the main key service board (J5). This I/O port is capable of transmitting and receiving data at 300, 1200, 2400, 4800 and 9600 Baud rates.

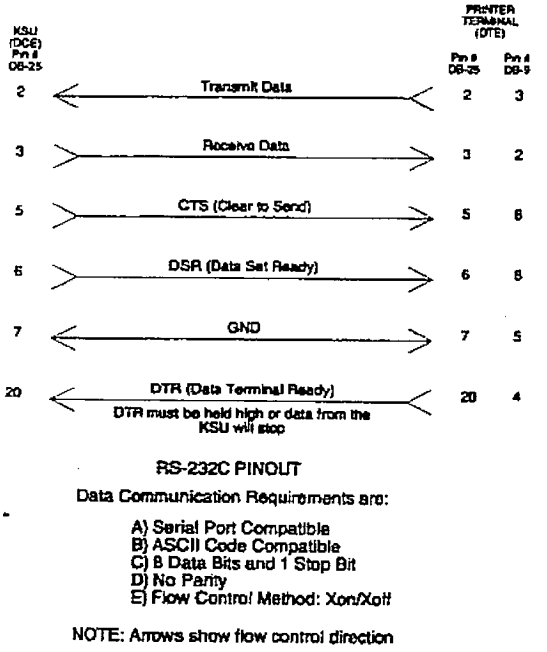


Figure 500-4 Digital Flatpack RS-232C Connections

An optional I/O module may be added to the main key service board (KSB) on connector J15 adding one additional RS-232C port (female, DB-25 type connector) and one RS-422 port (modular jack connector). Refer to Section 500.6, Application Module(s) Installation for the pinouts and communication requirements for the DVX[I] RS-232C/RS-422 I/O Module.

Table 500-1 Basic KSU J11 Station Connections

PAIR	PIN	COLOR	DESIG	
1	26	WH/BL	Port 01	Xmt Tip
	1	BL/WH		Xmt Ring
2	27	WH/OR		Rcve Tip
	2	OR/WH		Rcve Ring
3	28	WH/GN	Port 02	Xmt Tip
	3	GN/WH		Xmt Ring
4	29	WH/BN		Rcve Tip
	4	BN/WH		Rcve Ring
5	30	WH/SL	Port 03	Xmt Tip
	5	SL/WH		Xmt Ring
6	31	RD/BL		Rcve Tip
	6	BL/RD		Rcve Ring
7	32	RD/OR	Port 04	Xmt Tip
	7	OR/RD		Xmt Ring
8	33	RD/GN		Rcve Tip
	8	GN/RD		Rcve Ring
9	34	RD/BN	Port 05	Xmt Tip
	9	BN/RD		Xmt Ring
10	35	RD/SL		Rcve Tip
	10	SL/RD		Rcve Ring
11	36	BK/BL	Port 06	Xmt Tip
	11	BL/BK		Xmt Ring
12	37	BK/OR		Rcve Tip
	12	OR/BK		Rcve Ring
13	38	BK/GN	Port 07	Xmt Tip
	13	GN/BK		Xmt Ring
14	39	BK/BN		Rcve Tip
	14	BN/BK		Rcve Ring
15	40	BK/SL	Port 08	Xmt Tip
	15	SL/BK		Xmt Ring
16	41	YL/BL		Rcve Tip
	16	BL/YL		Rcve Ring
17	42	YL/OR	Port 09*	
	17	OR/YL		
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN	Port 10*	
	19	BN/YL		
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL	Port 11*	
	21	BL/VI		
22	47	VI/OR		
	22	OR/VI		
23	48	VI/GN	Port 12*	
	23	GN/VI		
24	49	VI/BN		
	24	BN/VI		
25	50	VI/SL	External Page Tip	
	25	SL/VI	External Page Ring	

*Only present when 2x4 Expander Module or 2x4 SLT Expander Module is installed

B. Expansion KSU with Power Supply (EKSU)

The Expansion Key Service Unit (EKSU) is a unit which comes equipped with a power supply and circuitry providing four additional loop start CO/PBX/Centrex line ports and eight digital key telephone ports to the Expansion KSU. All processing and control functions as well as voice connections and switching are controlled by circuitry on the Basic KSU and transmitted to the Expansion KSU through the ribbon cables.

The main key service board on the Expansion KSU allows connection of one optional application module (i.e. DTMF Receiver) to the system and connector(s) for installing an additional 2x4 Expander Module, 2x4 SLT Expander Module or a 4x8 Expander Module. Refer to Figure 500-5 Main Key Service Board of the Expansion KSU for printed circuit board layout and location of connectors.

Power Supply:

The power supply, installed in the Expansion KSU at the time of manufacture, has an input voltage of 117V ac, ±10%. The power supply provides power, a filtered/unregulated ±12V dc, to the Expansion Key Service Board (EKSB). A slo-blow 1.5 amp fuse on the AC side of the transformer provides the necessary fire and overload protection. Power is regulated and distributed to stations/circuitry in the system on the main key service board on the Expansion KSU. The power supply and cabinet meet all safety requirements to comply with UL 1459 Second Edition and CSA C22.2 No. 225 standards.

LEDs & Indicators:

Four green LEDs are located on the main key service board on the Expansion KSU. Two of the LEDs (DS2 & DS3) indicate the presence of +5V & -5V. LEDs DS1 and DS5 indicate the presence of +12V dc used to supply power to the key stations (one LED for every four stations). An extinguished LED indicates the absences of the associated voltage.

Expansion KSU Mounting:

The Expansion Key Service Unit (EKSU) is housed in a wall mountable cabinet which contains the main key service board of the Expansion KSU, power supply and prewired connectors for station and CO Line interfaces. The Expansion KSU is mounted directly to the right of the Basic KSU and connects via two ribbon type cables provided with the unit. 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 Expansion KSU can weigh approximately 15 lbs. Make certain proper mounting procedures are followed.

NOTE	***Check local building and electrical codes before mounting the system. For example certain areas may require a flame retardant plywood back board.***

1. Mount the Expansion KSU to the plywood using 3/4" #12 pan-head sheet metal screws such that the top of the Expansion KSU is approximately three feet (1 meter) from the ceiling, and bottom is four feet (1.2 meters) from the floor.
2. Use the mounting template supplied with the cabinet to locate the mounting holes. Refer to Figure 500-2 Digital Flatpack Mounting Dimensions.
3. Drill the holes and mount the Expansion KSU.

Grounding:

A No. 12 AWG copper wire should be used to connect a ground between the Basic KSU and the Expansion KSU. A two position terminal strip (P3) is located along the bottom edge of the main key service unit and is accessible through the bottom of the Basic KSU. A similar two position terminal strip, P3 is located along the bottom edge of the main key service board and is accessible through the bottom of the Expansion KSU. One terminal position on each P3 connector can be used to connect the ground wire from the Basic KSU to the Expansion KSU.

CO Line/Station Interfaces:

The Expansion KSU contains the necessary circuitry to connect an additional four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging.

The main key service board on the Expansion KSU contains four Central Office, Centrex or PBX loop start, line interfaces.

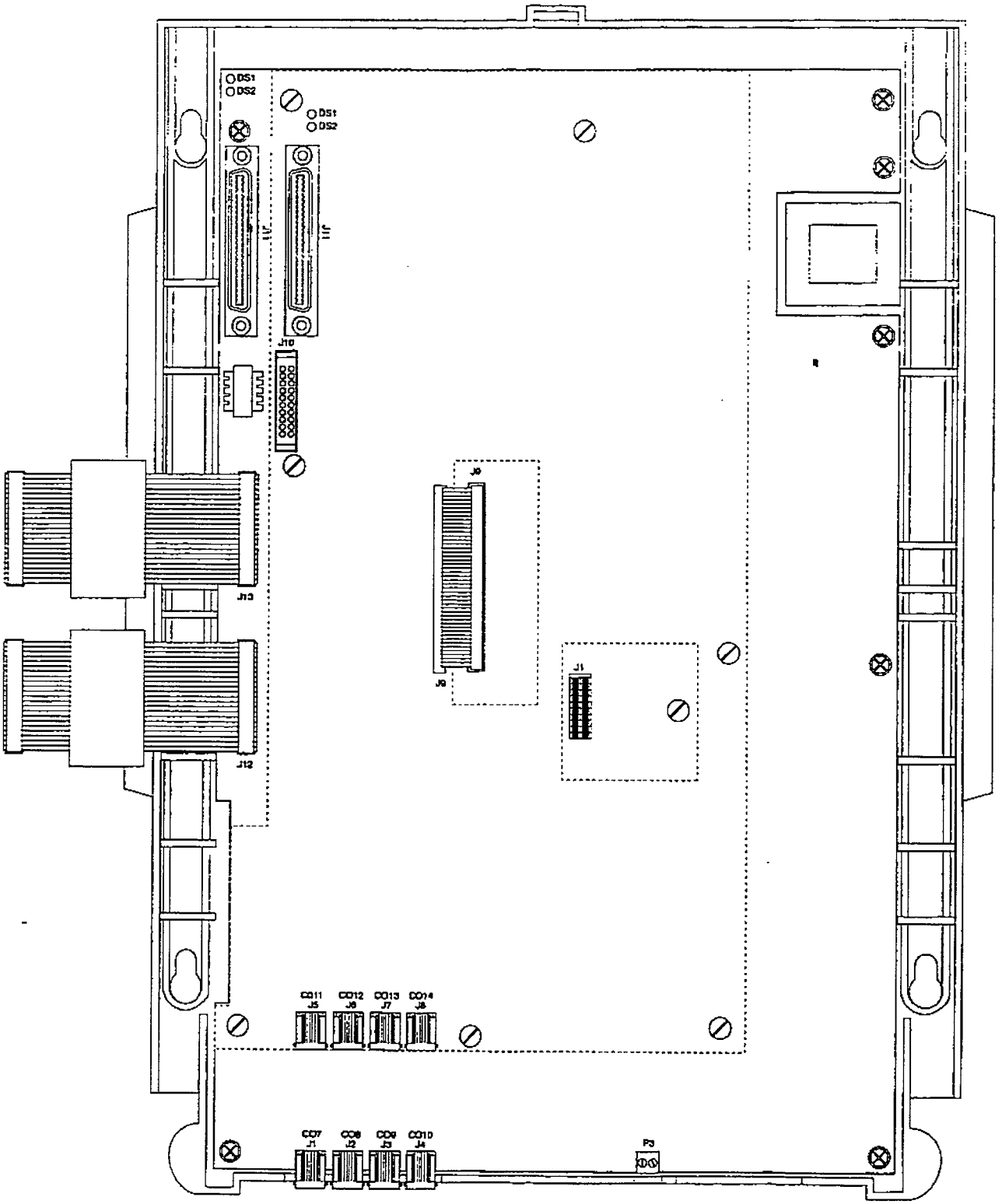


Figure 500-5 Main Key Service Board of the Expansion KSU

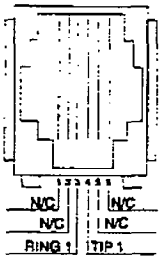
The protection circuitry to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). Each CO line interface design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular jacks mounted on the bottom of the main key service board of the Expansion KSU.

The main key service board also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located inside the Expansion KSU. Each station connection requires four wires to connect to the board.

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 overcurrent.

CO Lines Connections:

CO Lines are connected to the system via modular RJ-11 connectors accessed through the bottom of the Expansion KSU. The Expansion KSU connects CO Line ports 9, 10, 11, and 12 to the system through modular connectors J1, J2, J3, and J4 respectively. The pinouts of the modular connector are as follows:



Stations Connections:

The station ports are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol-type connector located on the main key service board on the Expansion KSU on connector J11. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame.

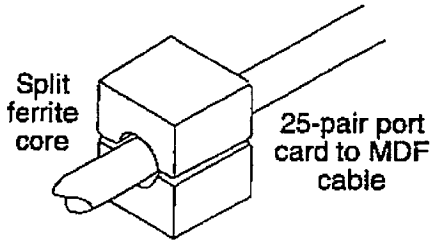
Table 500-2 Expansion KSU J11 Station Connections

PAIR	PIN	COLOR	DESIG	
1	26	WH/BL	Port 13	Xmt Tip
	1	BL/WH		Xmt Ring
2	27	WH/OR		Rcve Tip
	2	OR/WH		Rcve Ring
3	28	WH/GN	Port 14	Xmt Tip
	3	GN/WH		Xmt Ring
4	29	WH/BN		Rcve Tip
	4	BN/WH		Rcve Ring
5	30	WH/SL	Port 15	Xmt Tip
	5	SL/WH		Xmt Ring
6	31	RD/BL		Rcve Tip
	6	BL/RD		Rcve Ring
7	32	RD/OR	Port 16	Xmt Tip
	7	OR/RD		Xmt Ring
8	33	RD/GN		Rcve Tip
	8	GN/RD		Rcve Ring
9	34	RD/BN	Port 17	Xmt Tip
	9	BN/RD		Xmt Ring
10	35	RD/SL		Rcve Tip
	10	SL/RD		Rcve Ring
11	36	BK/BL	Port 18	Xmt Tip
	11	BL/BK		Xmt Ring
12	37	BK/OR		Rcve Tip
	12	OR/BK		Rcve Ring
13	38	BK/GN	Port 19	Xmt Tip
	13	GN/BK		Xmt Ring
14	39	BK/BN		Rcve Tip
	14	BN/BK		Rcve Ring
15	40	BK/SL	Port 20	Xmt Tip
	15	SL/BK		Xmt Ring
16	41	YL/BL		Rcve Tip
	16	BL/YL		Rcve Ring
17	42	YL/OR	Port 21*	
	17	OR/YL		
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN	Port 22*	
	19	BN/YL		
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL	Port 23*	
	21	BL/VI		
22	47	VI/OR		
	22	OR/VI		
23	48	VI/GN	Port 24*	
	23	GN/VI		
24	49	VI/BN		
	24	BN/VI		
25	50	VI/SL	External Page Tip	
	25	SL/VI	External Page Ring	

*Only present when 2x4 Expander Module or 2x4 SLT Expander Module is installed

Refer to Table 500-2 Expansion KSU J11 Station Connections for additional pinouts information.

NOTE	***The 25-pair cable used to extend the stations to the MDF does not have to be shielded. However, the 25-pair cable must pass through a 3/8" diameter ferrite core before exiting the KSU again to comply with FCC Part 15 regulations.***



External Paging Connections:

The Expansion KSU is equipped with an external paging port which provides a one-way transmit voice path. This port is wired to the J11 connector (50-pin male amphenol-type connector) on the Violet/Slate, Slate/Violet pair of wires (pins 50 and 25). Refer to Table 500-2 Expansion KSU J11 Station Connections for additional information.

Application Module(s) Connections:

The J1 connector on the main key service board of the Expansion KSU allows the installation of one application module (i.e. DTMF receiver) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

C. 2x4 Expander Module

The 2x4 Expander Module is a two CO by four key station interface module that plugs onto the main key service board of the Basic KSU or the main key service board of the Expansion KSU through the use of two ribbon cables. This module is a combination board that contains the necessary circuitry to connect two CO/Centrex/PBX loop start lines and four digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, and a connector for adding one application module (i.e. DTMF Receiver) to the system.

NOTE	***When the 2x4 Expander Module is installed in the Expansion KSU, CO Ports 13 and 14, and Station Ports 25 thru 28 become unusable.***

LEDs & Indicators:

Three green LEDs are located on the 2x4 Expander Module. Two of the LED's (DS3 & DS2) indicate the presence of +5V & -5V dc. LED DS1 monitors the +12V dc used to supply power to the key stations. An extinguished LED indicates the absence of the associated voltage.

2x4 Expander Module Installation:

1. Remove power from the Basic KSU and Expansion KSU, if installed.
2. Locate the J9 connector on the main key service board on the Basic KSU or main key service board on the Expansion KSU and the P1 connector on the 2x4 Expander Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
3. Gently push the cable from the P1 connector on the 2x4 Expander Module onto the J9 connector on the main key service board of the Basic KSU or the main key service board of the Expansion KSU.
4. Locate the J10 connector on the main key service board of the Basic KSU or main key service board of the Expansion KSU and the P2 connector on the 2x4 Expander Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
5. Gently push the cable from the P2 connector on the 2x4 Expander Module onto the J10 connector on the main key service board of the Basic KSU or main key service board of the Expansion KSU.
6. Secure the six screws attached to the 2x4 Expander module to the main key service board of the Basic KSU or main key service board of the Expansion KSU.
7. Restore power to the Basic KSU and Expansion KSU, if installed.

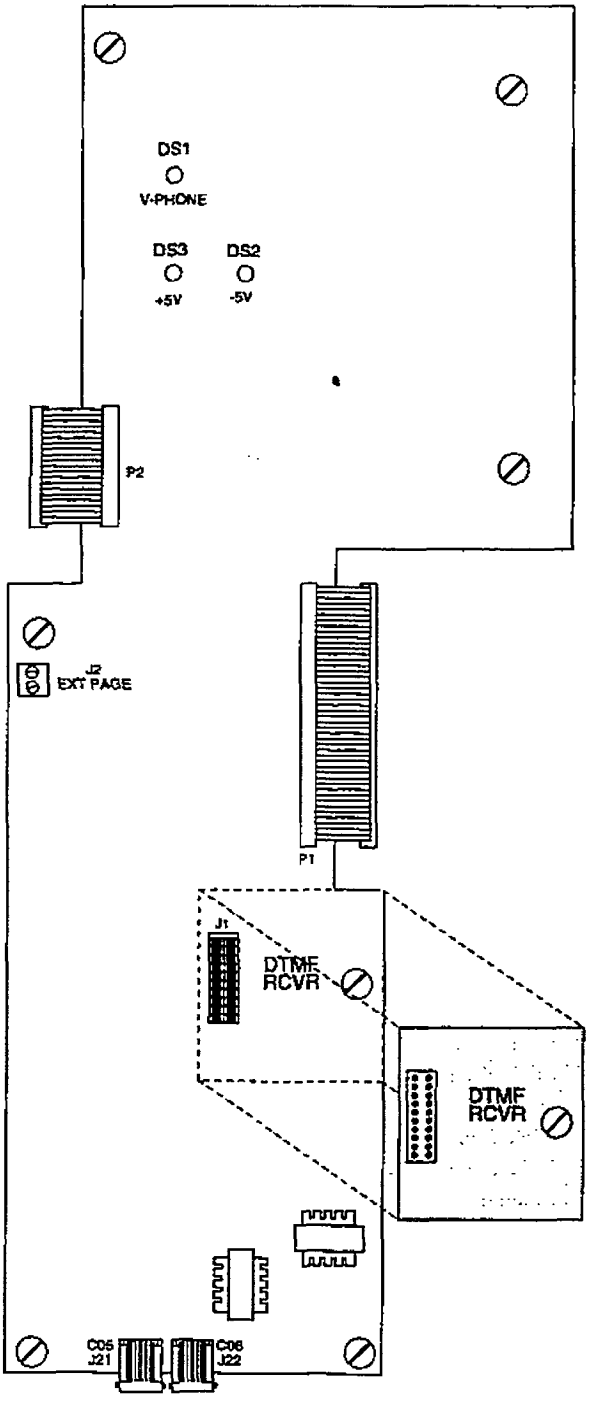


Figure 500-6 2x4 Expander Module

CO Line/Station Interfaces:

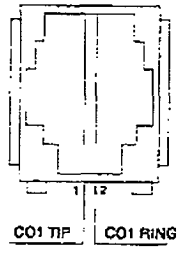
The 2x4 Expander Module provides the interface for two Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular connectors mounted on the bottom edge of the board.

The 2x4 Expander module also provides the interface for four digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the main key service board inside the Basic KSU or a similar connector on the main key service board on the when installed in the Expansion KSU. Each station connection requires four wires to connect to the board.

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 overcurrent.

CO Lines Connections:

CO Lines are connected to the system via modular RJ-11 connectors mounted on the 2x4 Expander Module and accessed on the bottom of the KSU. The 2x4 Expander Module connects CO Line ports 5 and 6 (when installed on the Basic KSU) or ports 13 and 14 (when installed in the Expansion KSU) to the system through modular connectors J21 and J22 respectively. The pinouts of the modular connector are as follows.



Stations Connections:

The station ports of the 2x4 Expander Module are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol-type connector located on the main key service board or expansion key service board, connector J11. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame. The pinouts for the stations on the 2x4 Expander Module activate ports 009 through 012 on connector J11 as shown in Table 500-3 2x4 Expander Module J11 BKSU Connections when installed on the main key service board in the Basic KSU. Also refer to Table 500-1 Basic KSU J11 Station Connections.

Table 500-3 2x4 Expander Module J11 BKSU Connections

PAIR	PIN	COLOR	DESIG	
17	42	YL/OR	Port 09	Xmt Tip
	17	OR/YL		Xmt Ring
18	43	YL/GN		Rcve Tip
	18	GN/YL		Rcve Ring
19	44	YL/BN	Port 10	Xmt Tip
	19	BN/YL		Xmt Ring
20	45	YL/SL		Rcve Tip
	20	SL/YL		Rcve Ring
21	46	VI/BL	Port 11	Xmt Tip
	21	BL/VI		Xmt Ring
22	47	VI/OR		Rcve Tip
	22	OR/VI		Rcve Ring
23	48	VI/GN	Port 12	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	

The pinouts for the stations on the 2x4 Expander Module activate ports 025 through 028 on connector J11 are shown in Table 500-4 2x4 Expander Module J11 EKSU Connections when installed on the main key service board in the Expansion KSU. Also refer to Table 500-2 Expansion KSU J11 Station Connections.

Table 500-4 2x4 Expander Module J11 EKSU Connections

PAIR	PIN	COLOR	DESIG	
17	42	YL/OR	Port 21	Xmt Tip
	17	OR/YL		Xmt Ring
18	43	YL/GN		Rcve Tip
	18	GN/YL		Rcve Ring
19	44	YL/BN	Port 22	Xmt Tip
	19	BN/YL		Xmt Ring
20	45	YL/SL		Rcve Tip
	20	SL/YL		Rcve Ring
21	46	VI/BL	Port 23	Xmt Tip
	21	BL/VI		Xmt Ring
22	47	VI/OR		Rcve Tip
	22	OR/VI		Rcve Ring
23	48	VI/GN	Port 24	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	

Paging Connections:

A two position terminal strip J2 mounted on the 2x4 Expander Module provides connection to the external one-way transmit voice path page port provided for on the 2x4 Expansion Module.

Application Module(s) Connections:

The J1 connector on the 2x4 Expander Module allows the installation of one application module (i.e. DTMF receiver) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

D. 2x4 SLT Expander Module

The 2x4 SLT Expander Module is a two CO by four single line telephone interface module that plugs onto the main key service board of the Basic KSU or the main key service board of the Expansion KSU through the use of two ribbon cables. This module is a combination board that contains the necessary circuitry to connect two CO/Centrex/PBX loop start lines and four single line telephones to the system. This card also contains a connector for adding one application module (i.e. DTMF Receiver) to the system.

Message Waiting capability comes installed on the 2x4 SLT Expander Module. This circuitry provides message waiting voltage to single line telephones equipped with message waiting lamps, and supports up to four single line telephones message waiting lamps at 90V dc typical across tip and ring.

LEDs & Indicators:

Two green LEDs indicate the presence of +5V & -5V dc. An extinguished LED indicates the absence of the associated voltage.

2x4 SLT Expansion Module Installation:

1. Remove power from both the Basic KSU and Expansion KSU, if installed.
2. Locate the Message Waiting module and remove the two screws holding it to the 2x4 SLT Expander Module. Remove the Message Waiting Module to expose the hold down screw underneath.
3. Locate the J9 connector on the main service board of the Basic KSU or main key service board of the Expansion KSU and the P1 connector on the 2x4 SLT Expander Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
4. Gently push the cable from the P1 connector on the 2x4 SLT Expander Module onto the J9 connector on the main key service board of the Basic KSU or main key service board of the Expansion KSU.
5. Locate the J10 connector on the main key service board of the Basic KSU or main key service board of the Expansion KSU and the P2 connector on the 2x4 SLT Expander Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
6. Gently push the cable from the P2 connector on the 2x4 SLT Expander Module onto the J10 connector on the main key service board of the Basic KSU or main key service board of the Expansion KSU.
7. Secure the four screws attached to the 2x4 SLT Expander module to the main key service board of the Basic KSU or main key service board of the Expansion KSU.
8. Re-install the Message Waiting Module and secure it with the two mounting screws.
9. Restore power to both the Basic KSU and Expansion KSU, if installed.

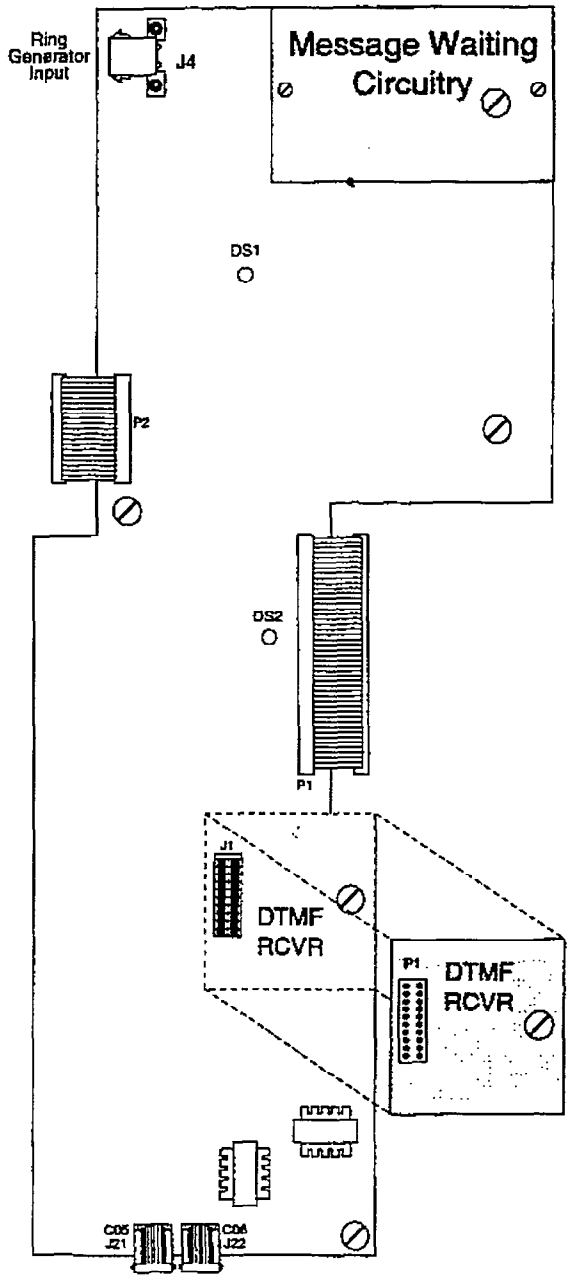


Figure 500-7 2x4 SLT Expander Module

CO Line/Station Interfaces:

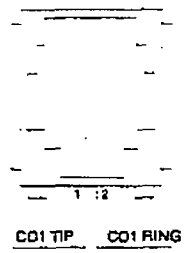
The 2x4 SLT Expander Module provides the interface for two Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular connectors mounted on the bottom edge of the board.

The 2x4 SLT Expander module also provides the interface for four standard on-premise single line telephones (2500 type). Four 36V dc single line circuits are provided on the printed circuit board. 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 (700ms duration) to the connected SLT or device. The card will support single line telephones up to 2000 feet from the Basic KSU. On-premise single line telephones should present a load to the port totaling a maximum ringer equivalence of 2.5.

A molex connector, J4 is located in the upper left corner of the 2x4 SLT Expander Module to provide ring generator capabilities. It is recommended that the Tellabs 8101, 30 Hz, 90VAC Ring Generator be used with this board.

CO Lines Connections:

CO Lines are connected to the system via modular RJ-11 connectors mounted on the 2x4 SLT Expander Module and accessed on the bottom of the Basic KSU. The 2x4 SLT Expander Module connects CO Line ports 5 and 6 (when installed on the Basic KSU) or ports 13 and 14 (when installed in the Expansion KSU) to the system through modular connectors J21 and J22 respectively. The pinouts of the modular connector are as follows.



NOTE	***Currently ALL CO Line modular cables must pass through a 1.2" thick, 2-3/8" diameter, round ferrite core three times prior to exiting the KSU in order to comply with FCC regulations. Up to five cables can be wrapped around one ferrite core.***

Stations Connections:

The station ports of the 2x4 SLT Expander Module are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol-type connector located on the main key service board or expansion key service board, connector J11. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame. The pinouts for the stations on the 2x4 SLT Expander Module activate ports 009 through 012 on connector J11 as shown in Table 500-5 2x4 SLT Expander Module J11 BKSU Connections when installed on the main key service board in the Basic KSU. Also refer to Table 500-1 Basic KSU J11 Station Connections.

Table 500-5 2x4 SLT Expander Module J11 BKSU Connections

PAIR	PIN	COLOR	DESIG	
17	42	YL/OR	Port 09	SLT Tip
	17	OR/YL		SLT Ring
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN	Port 10	SLT Tip
	19	BN/YL		SLT Ring
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL	Port 11	SLT Tip
	21	BL/VI		SLT Ring
22	47	VI/OR		
	22	OR/VI		
23	48	VI/GN	Port 12	SLT Tip
	23	GN/VI		SLT Ring
24	49	VI/BN		
	24	BN/VI		
25	50	VI/SL	External Page Tip	
	25	SL/VI	External Page Ring	

The pinouts for the stations on the 2x4 SLT Expander Module activate ports 025 through 028 on connector J11 are shown in Table 500-6 2x4 SLT Expander Module J11 EKSU Connections when installed on the main key service board in the Expansion KSU. Also refer to Table 500-2 Expansion KSU J11 Station Connections. Only the Xmit Tip (SLT Tip) and Xmit Ring (SLT Ring) leads are used when connecting SLT stations to the 2x4 SLT Expansion Module.

Table 500-6 2x4 SLT Expander Module J11 EKSU Connections

PAIR	PIN	COLOR	DESIG	
17	42	YL/OR	Port 21	SLT Tip
	17	OR/YL		SLT Ring
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN	Port 22	SLT Tip
	19	BN/YL		SLT Ring
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL	Port 23	SLT Tip
	21	BL/VI		SLT Ring
22	47	VI/OR		
	22	OR/VI		
23	48	VI/GN	Port 24	SLT Tip
	23	GN/VI		SLT Ring
24	49	VI/BN		
	24	BN/VI		
25	50	VI/SL	External Page Tip	
	25	SL/VI	External Page Ring	

Application Module(s) Connections:

The J1 connector on the 2x4 SLT Expander Module allows the installation of one application module (i.e. DTMF receiver) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

E. 4x8 Expander Module

The 4x8 Expander Module is a four CO by eight digital key station Interface module that may plug onto the main key service board of the Expansion KSU only. This module is a combination board that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, and a connector for adding one application module (i.e. DTMF Receiver) to the system.

LEDs & Indicators:

Four green LEDs are located on the 4x8 Expander Module. Two of the LEDs (DS4 & DS3) indicate the presence of +5V & -5V dc. LEDs DS1 and DS2 indicate the presence of +12V dc used to supply power to the key stations (one LED for every four stations). An extinguished LED indicates the absence of the associated voltage.

4x8 Expander Module Installation:

1. Remove power from the Expansion KSU.
2. Locate the J9 connector on the main key service board of the Expansion KSU and the J9 connector on the 4x8 Expander Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
3. Gently push the cable from the J9 connector on the 4x8 Expander Module onto the J9 connector on the main key service board of the Expansion KSU.
4. Secure the seven screws attached to the 4x8 Expander module to the main key service board of the Expansion KSU.
5. Secure the ground wire from the 4x8 Expander Module to the two position terminal strip (P3) located along the bottom edge of the main key service board of the Expansion KSU.
6. Restore power to the Expansion KSU.

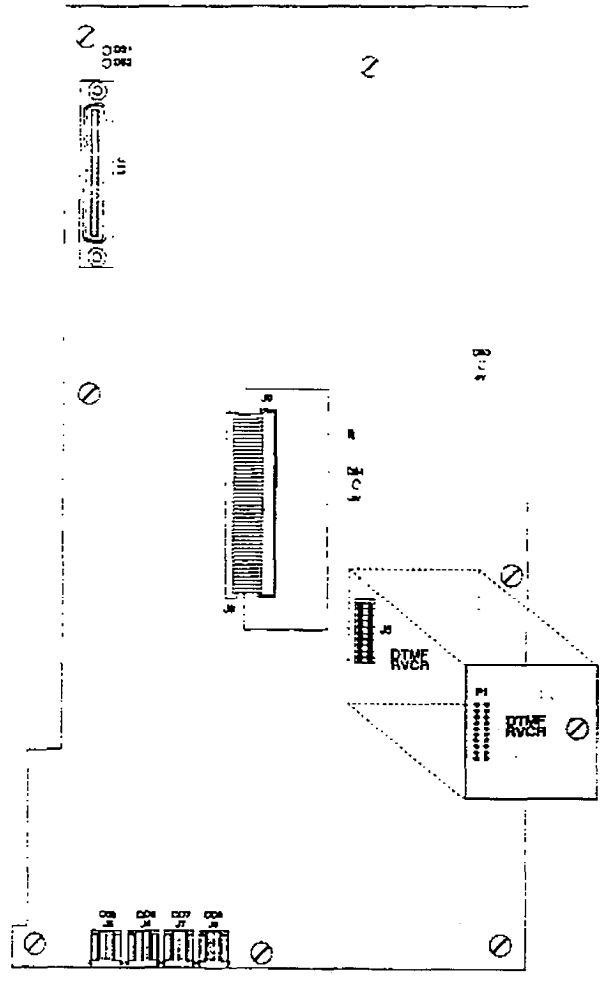


Figure 500-8 4x8 Expansion Module

Module Grounding:

A No. 12 AWG stranded wire is used to connect a ground between the 4x8 Expansion Module and the main key service board of the Expansion KSU. A two position terminal strip (P3) is located along the bottom edge of the main key service board and is accessible through the bottom of the Basic KSU. One terminal position on the P3 connector is used to connect the ground wire from the Basic KSU to the Expansion KSU.

The other terminal position is used to connect the ground wire from the 4x8 Expander Module to the Expansion KSU.

CO Line/Station Interfaces:

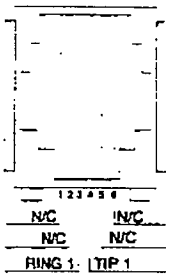
The 4x8 Expander Module provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). The module design also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards. CO lines are connected to the system via RJ-11 modular connectors mounted on the bottom edge of the board.

The 4x8 Expander module also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the board. Each station connection requires four wires to connect to the board.

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 overcurrent.

CO Lines Connections:

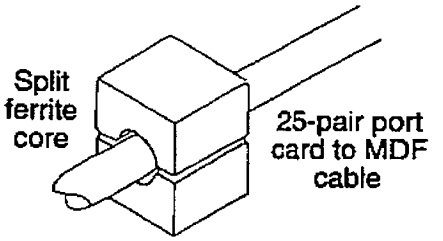
CO Lines are connected to the system via modular RJ-11 connectors accessed through the bottom of the Expansion KSU. The 4x8 Expander Module connects CO Line ports 13, 14, 15, and 16 to the system through modular connectors J1, J2, J3, and J4 respectively. The pinouts of the modular connector are as follows:



Wiring / Pinouts / Connections - Stations

The station ports of the 4x8 Expander Module are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol type connector located on the 4x8 Expander module, connector J11. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame. The pinouts are shown in Table 500-7 4x8 Expander Module Station Connection.

NOTE	***The 25-pair cable used to extend the stations to the MDF does not have to be shielded. However, the 25-pair cable must pass through a 3/8" diameter ferrite core before exiting the KSU again to comply with FCC Part 15 regulations.***



External Paging Connections:

The 4x8 Expander Module is equipped with an external (one-way transmit voice path) page port. This port is wired to the J11 connector (50-pin male amphenol-type connector) using the Violet/Slate, Slate/Violet pair of wires (pin's 50 and 25). Refer to Table 500-7 4x8 Expander Module Station Connection for wiring information.

Application Module(s) Connections:

The J1 connector on the main key service board allows the installation of one application module (i.e. DTMF receiver) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

Table 500-7 4x8 Expander Module EKSU Station Connections

PAIR	PIN	COLOR	DESIG	
1	26	WH/BL	Port 21	Xmt Tip
	1	BL/WH		Xmt Ring
2	27	WH/OR		Rcve Tip
	2	OR/WH		Rcve Ring
3	28	WH/GN	Port 22	Xmt Tip
	3	GN/WH		Xmt Ring
4	29	WH/BN		Rcve Tip
	4	BN/WH		Rcve Ring
5	30	WH/SL	Port 23	Xmt Tip
	5	SL/WH		Xmt Ring
6	31	RD/BL		Rcve Tip
	6	BL/RD		Rcve Ring
7	32	RD/OR	Port 24	Xmt Tip
	7	OR/RD		Xmt Ring
8	33	RD/GN		Rcve Tip
	8	GN/RD		Rcve Ring
9	34	RD/BN	Port 25	Xmt Tip
	9	BN/RD		Xmt Ring
10	35	RD/SL		Rcve Tip
	10	SL/RD		Rcve Ring
11	36	BK/BL	Port 26	Xmt Tip
	11	BL/BK		Xmt Ring
12	37	BK/OR		Rcve Tip
	12	OR/BK		Rcve Ring
13	38	BK/GN	Port 27	Xmt Tip
	13	GN/BK		Xmt Ring
14	39	BK/BN		Rcve Tip
	14	BN/BK		Rcve Ring
15	40	BK/SL	Port 28	Xmt Tip
	15	SL/BK		Xmt Ring
16	41	YL/BL		Rcve Tip
	16	BL/YL		Rcve Ring
17	42	YL/OR		
	17	OR/YL		
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN		
	19	BN/YL		
20	45	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	External Page Tip	
	25	SL/VI	External Page Ring	

500.4 INSTALLATION PLANNING FOR THE DVX II 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 4x8 Key Interface Boards (CKB), 4x8 SLT Interface Boards (CSB) from the sales contract and discussions with the customer.

> **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 basic components of the DVX II before attempting installation of this product.***

500.5 SYSTEM COMPONENTS FOR THE DVX II SYSTEM

A. Equipment Cabinet With Power Supply (KSU)

The DVX II system main cabinet contains the power supply and mother board to support a fully configured system of 28 CO Lines and 56 Stations. The mother board has eight card slots. Card Slot J8 (the right most card slot) is used for the Central Processor Board (CPB) printed circuit board (PCB). Card slots J1 through J7 support four CO line by eight station cards, with the eight stations being either digital terminals (CKB), or single line telephones (CSB). Cable exits through the bottom of the KSU cabinet through a cable exit race-

way near the back of the KSU cabinet. Refer to Figure 500-9 Basic KSU Equipment Cabinet for circuit board layout and location of connectors.

Power Supply:

The power supply is installed in the KSU cabinet at the time of manufacture and ships with the KSU. The power supply input voltage is 117V ac, ±10%. The power supply provides power distribution of filtered/unregulated 12V dc and a regulated -5V dc to the backplane bus. An ON/OFF switch is located on the front of the power supply along with a slo-blow 5 amp fuse on the AC side of the transformer. The power supply provides an input for a 48V dc source for future use. Power is regulated and distributed to stations/circuitry in the system on each printed circuit board. Three fuses located inside the power supply protect the system from over-current situations. 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 installed inside the system cabinet, on the right side, in the first card slot (J9). The power supply is designed to be an integral, structural part of the system. Do not attempt to install the system, or interface cards unless the power supply is installed with all four screws securely in place. The cabinet, includes the power supply already installed. The power supply is recognized under the Component Program of Underwriters Laboratories Inc.

NOTE

Make certain a 1/2 inch diameter ferrite core is in place on the power cord at a point as close to the power supply as possible. If this ferrite core is not in place, it is shipped with the cabinet and must be installed before operating the system. Refer to Figure 500-10 Basic KSU Cabinet Mounting Dimensions for the proper location. Keep the ferrite core from sliding down the cable by installing a cable tie on the power cord just below the ferrite core.

The power supply is unique in that the transformer is not present on the power supply card and its enclosure. The transformer is mounted inside the cabinet next to the bottom right of the backplane. When the power supply card is installed, the transformer is totally enclosed by the power supply card's "L" shaped enclosure, and the right side of the cabinet. This creates a totally enclosed, operational, power supply. Since the transformer is installed in the cabinet, and the power supply card is removable from the cabinet, the AC connections are made directly to the system backplane.

WARNING

Since hazardous voltages are always present on the backplane while the system AC power cord is plugged in, AT NO TIME SHOULD THE POWER SUPPLY CARD BE REMOVED WHILE THE SYSTEM AC POWER CORD IS PLUGGED IN. THE POWER SUPPLY BOARD AND ITS "L" SHAPED METAL ENCLOSURE PROVIDE THE ONLY PROTECTION FROM SHOCK HAZARD WHILE THE AC POWER CORD IS PLUGGED IN. There are very few instances when the power supply card should be removed. If an instance arises where it must be removed, ALWAYS unplug the system AC power cord FIRST.

The power supply cord plugs into an isolated, dedicated, (with dedicated ground) 117V ac outlet for power. This is necessary to prevent possible voltage spikes and transients that may be caused by equipment sharing the same AC circuit.

The AC connection to the power supply requires a parallel blade with a ground receptacle. A three wire to two wire isolation adapter should not be used. The use of a surge suppressor is required.

Grounding:

A No. 12 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 (J10) is located on the lower left corner of the mother board and is accessible through the left side of the KSU. One terminal position can be used to connect the ground wire from a ground source.

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. If mounting the cabinet alone, the minimum back board size is 25" x 17" x 3/4". A fully

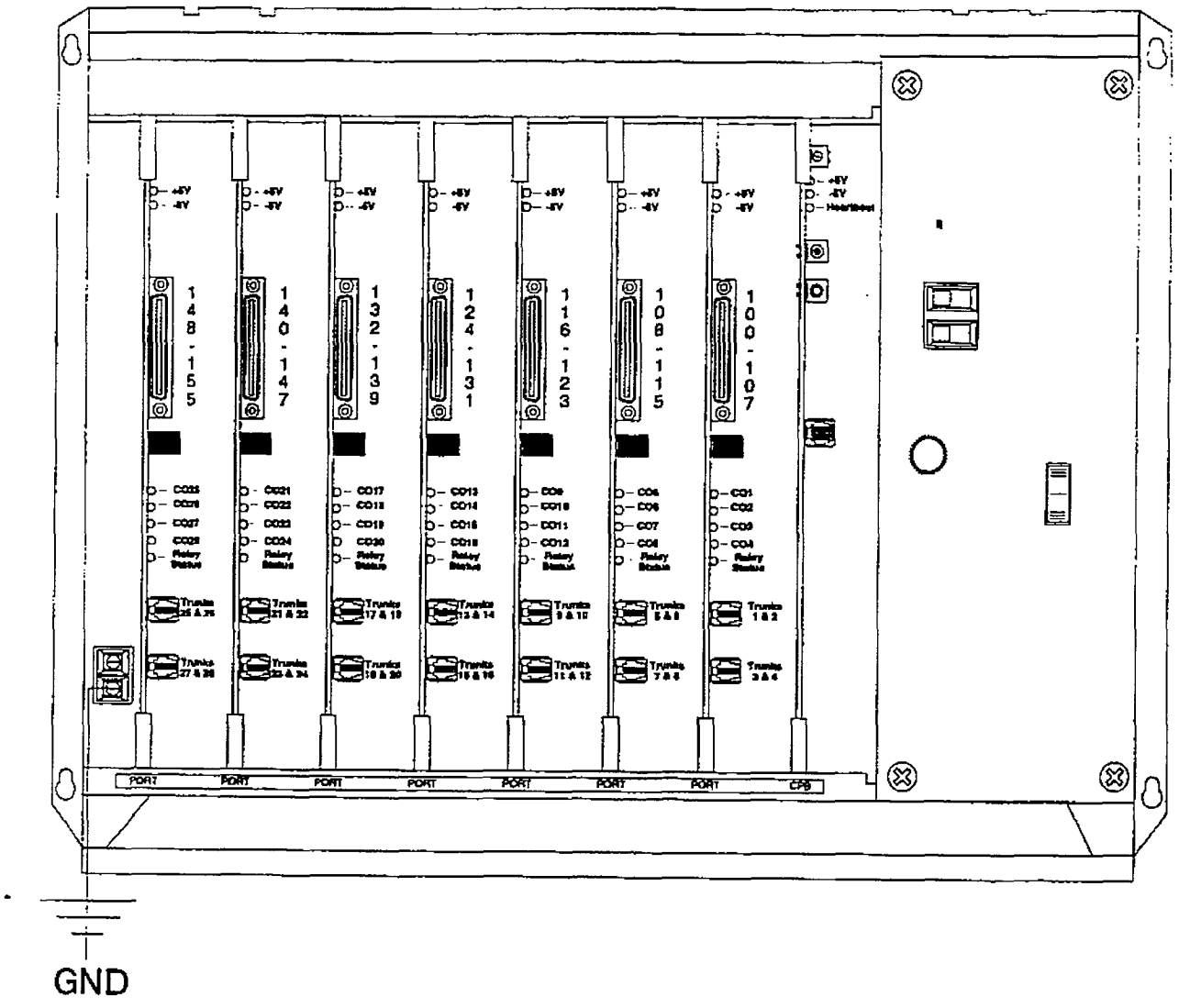


Figure 500-9 Basic KSU Equipment Cabinet

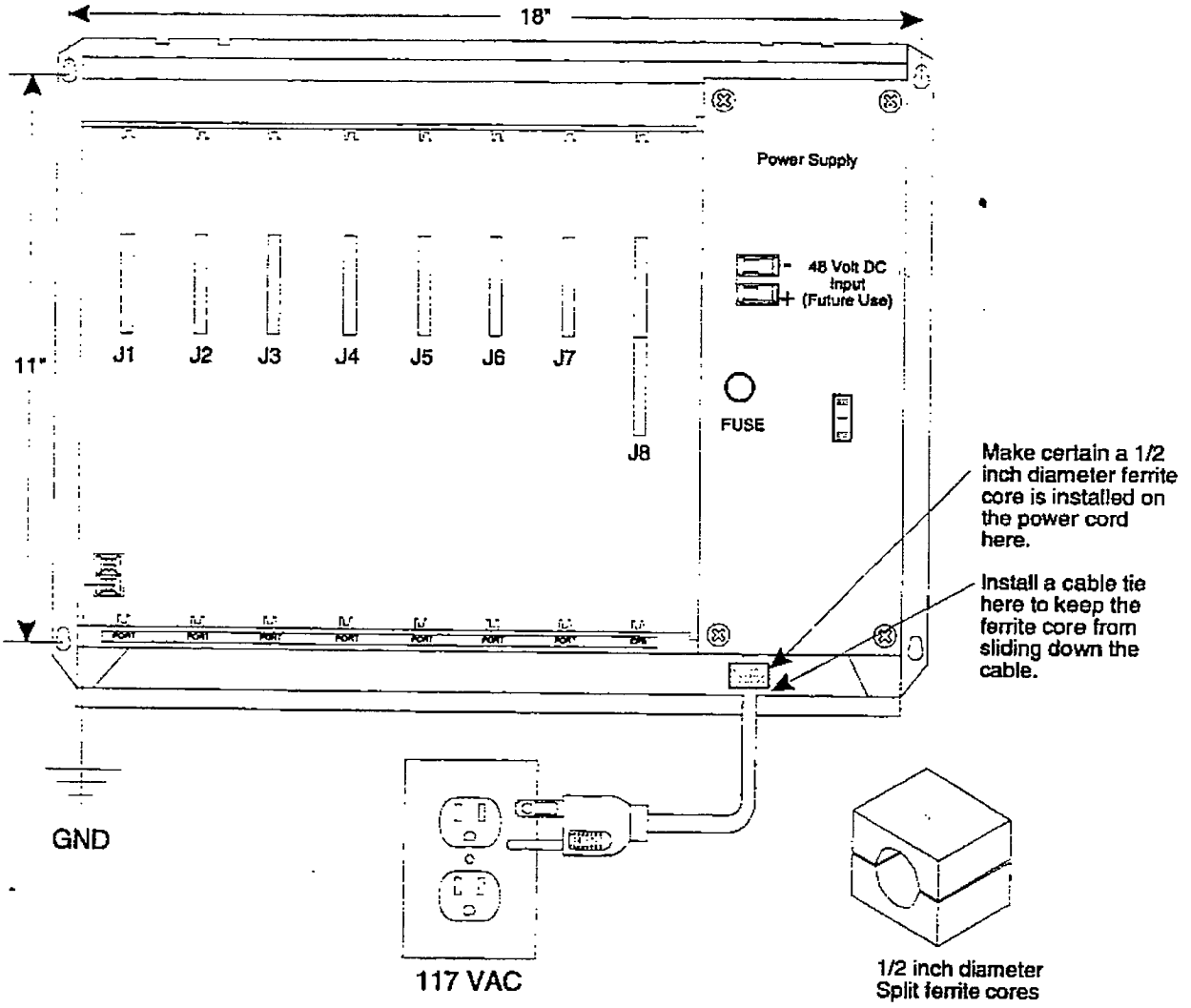


Figure 500-10 Basic KSU Cabinet Mounting Dimensions

loaded cabinet can weigh approximately 64 lbs. Make certain proper mounting procedures are followed.

NOTE	***Check local building and electrical codes before mounting the system. For example, 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 four feet (1.2 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 cabinet to locate the mounting holes. Also refer to Figure 500-10 Basic KSU Cabinet Mounting Dimensions.
3. Drill the holes and mount the cabinet.

C. Central Processor Board (CPB)

This plug-in card is the only common equipment card required to make the system operational and controls all system activity. The CPB contains the main microprocessor a 16-bit (68000) and a real time clock which controls all system functions including the PCM/TDM voice switching under direction of ROM and RAM software coding. The CPB is responsible for all control functions, execution of all logic operations and control of system modules including control over circuitry necessary for voice switching and conference connections. The CPB is also responsible for all system tones, system timing, and station status control. In addition the CPB also provides software and hardware support to ensure the following:

- Watch dog timer and recovery.
- 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.
- State/event software design.
- Battery backup of customer database RAM memory.

The CPB contains the circuitry and connection (RCA type) for background music/music on hold, and the standard 300 Baud Modem. An optional 1200 Baud Modem can be installed on the CPB to allow the on-board modem to transmit at a 1200 baud rate. In addition there is one RS-232C modular connector input/output port on the CPB and a connector to support the use of an optional I/O expansion module. The I/O expansion module adds RS-232C, I/O port and one RS-422 I/O port to the system for a system total of three I/O ports. A reset (halt) push button switch and a BGM/MOH volume control potentiometer is located on the front of the printed circuit board. Refer to Figure 500-9 Basic KSU Equipment Cabinet for CPB layout and location of connectors.

System software is provided in EPROM memory and is installed on the CPB. The CPB contains 512K of EPROM storage and is equipped with 256K of battery-backed static RAM. Provisions have been made on the card to address up to four megabytes of EPROM memory and up to two megabytes of static RAM.

An option "dip" switch located on the CPB allows the system EPROM memory to be configured utilizing different size EPROM chips. 1 Megabit, 2 Megabit, 4 Megabit and 8 Megabit chips may be used to provide the generic software. Refer to Section 800, Maintenance and Troubleshooting for "dip" switch settings for various allowable configurations.

The CPB allows the use of either 1 Megabit or 4 megabit static RAM chips to be used for RAM memory. The size and type of memory used is automatically determined and set by the system.

IMPORTANT STEP

The battery backup strap must be placed in the "ON" position to activate memory battery backup (J3). Do this prior to inserting the CPB into the KSU. Refer to Figure 500-9 Basic KSU Equipment Cabinet. If the optional 1200 baud modem module or expansion I/O module are to be installed, do this now prior to inserting the CPB. The CPB board is inserted into the J8 slot with components on the card facing the right. This board must NOT be installed with the power on. The edge connector on the CPB is offset to prevent it from being installed in an incorrect slot. Do not force the card into

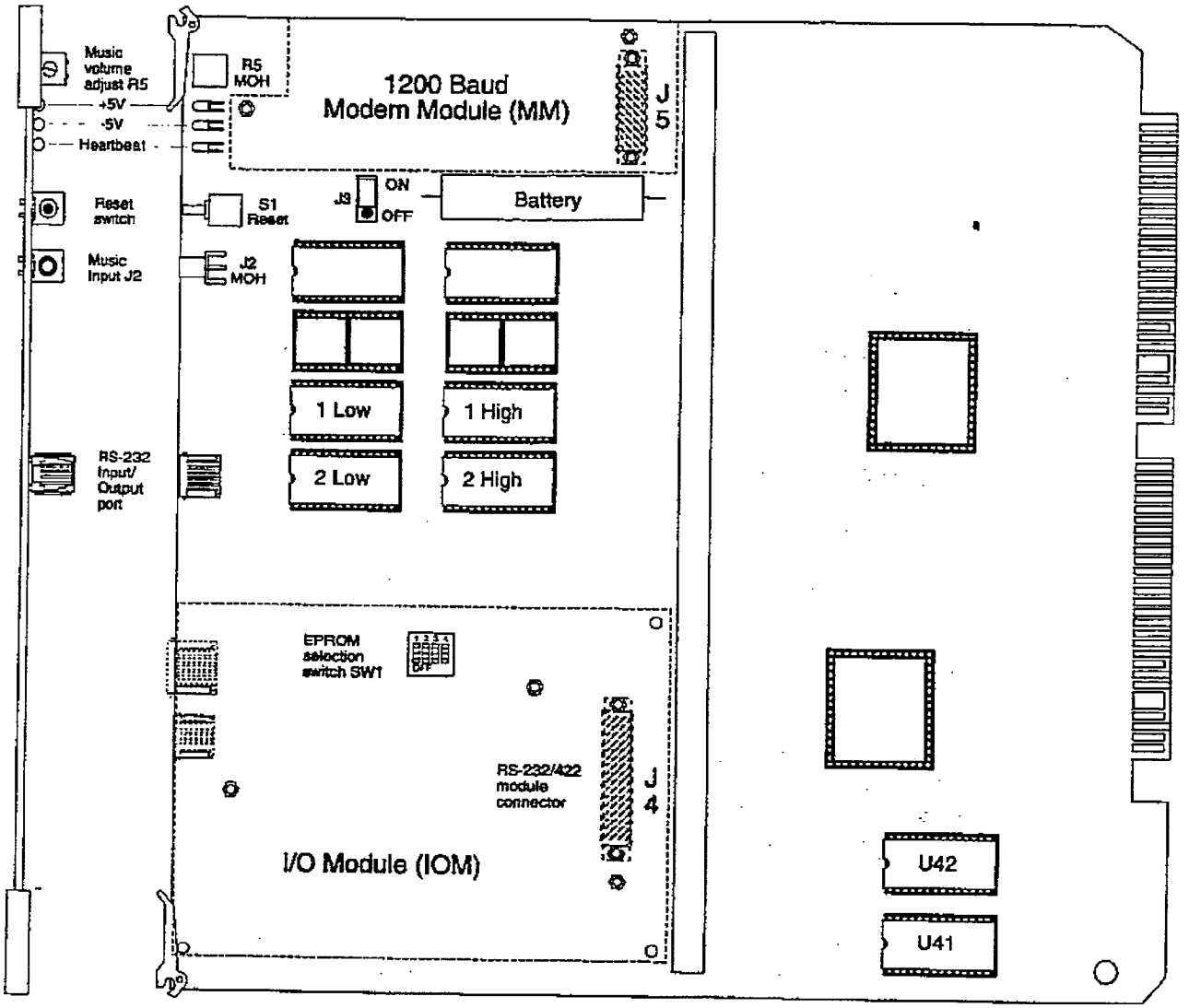
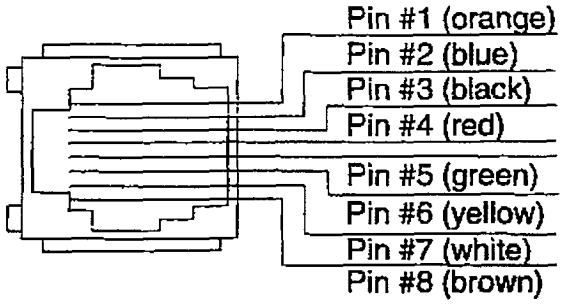
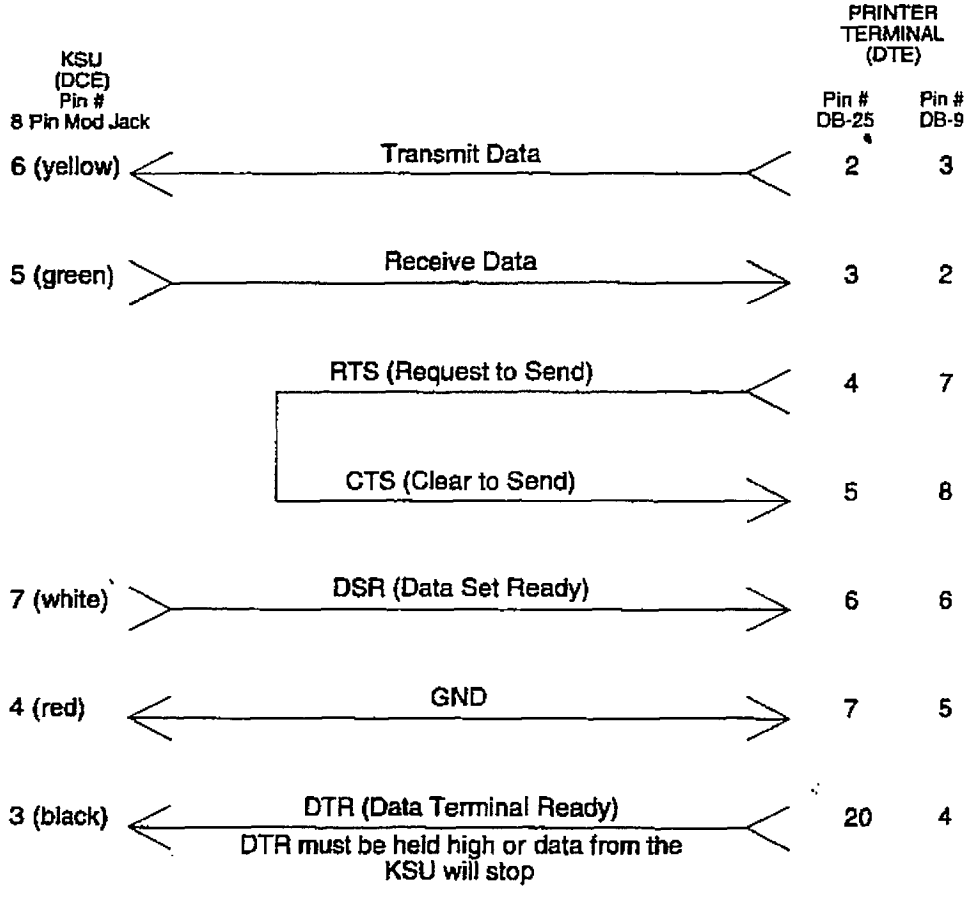


Figure 500-11 Central Processor Board (CPB)



CPB I/O 8 Pin Modular Jack Pinout



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 required by the printer or terminal

Figure 500-12 Basic KSU CPB RS-232C Connections

another slot. One Central Processing Board is required per system.

LEDs & Indicators:

Two green LEDs located along the front edge of the Central Processing Board (CPB) provide an indication of the presence of +5V dc & -5V dc to the PCB. A third red LED located just below the two green LEDs provides a system "heart beat" indication.

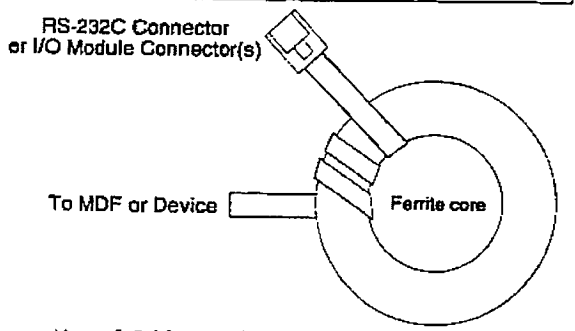
Modem Interface:

The Central Processor Board (CPB) contains an on-board modem that is capable of transmitting data at a rate of 300 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. An optional 1200 baud module may be added to the CPB to allow transmission at the rate of 1200 baud.

I/O Port(s) Connections:

The Central Processor Board (CPB) contains one RS-232C, I/O port (8 pin modular jack type connector) located near the front edge of the board. This I/O port is capable of transmitting and receiving data at 300, 1200, 2400, 4800, and 9600 baud rates. The pinouts and communication requirements are shown in Figure 500-12 Basic KSU CPB RS-232C Connections.

NOTE	***RS-232C modular cables must pass through a 1.2" thick, 2-3/8" diameter, round ferrite core three times prior to exiting the KSU in order to comply with FCC regulations. Up to five cables can be wrapped around one ferrite core.***



An optional I/O module may be added to the Central Processor Board (CPB) adding one additional RS-232C port (8 pin modular jack type connector) and one RS-422 port (6 pin modular jack connector). Refer to Section 500.6, Application Module(s) Installation for the pinouts and communication requirements for the DVX II RS-232C/RS-422 I/O Module.

Modem Connections:

The optional 1200 baud modem module may be installed on the Central Processor Board (CPB) to connector J5 located directly above the battery. The modem port itself is accessed via software control. No hardware connections are required to connect to the modem.

Background Music Connections:

Background Music/Music-On-Hold is connected to the system via an RCA type connector, J2 is located on the front edge of the Central Processor Board (CPB). A potentiometer labeled R5, accessible from the front of the CPB, allows for volume adjustment for Music-On-Hold.

D. 4x8 Key Interface Board (CKB)

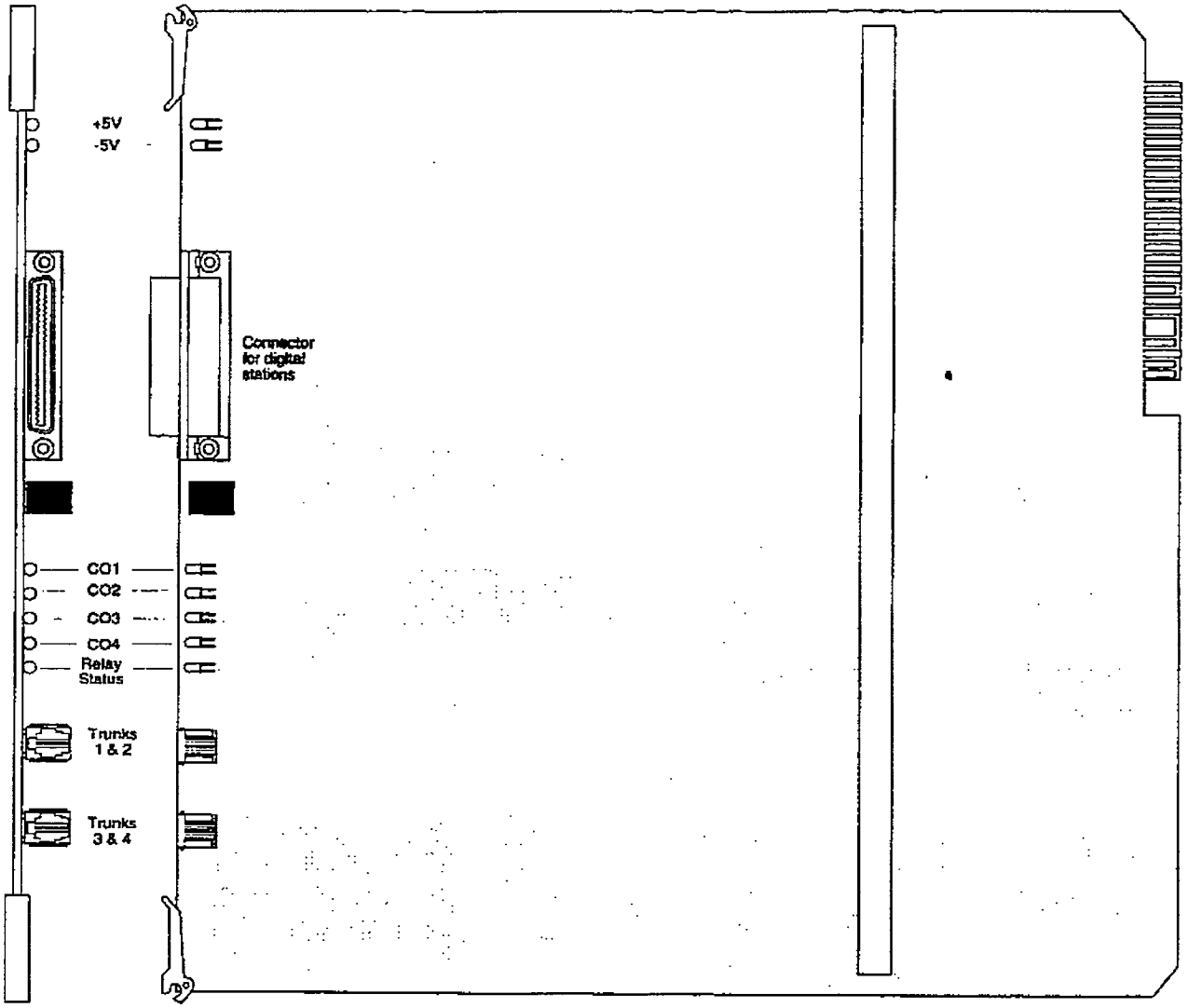
The 4x8 Key Interface Board (CKB) is a four CO line by eight digital key station interface board. The 4x8 Key Interface Board is a combination card that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight digital key telephones to the system. This card also contains one additional voice (transmit) path for external paging, a multi purpose relay and a connector for adding one application module to the system. The 4x8 Key Interface Board may be installed into Basic KSU cabinet backplane using slots J7 through J1 and may be removed or inserted while power is applied to the Basic KSU (power on). Refer to Figure 500-9 Basic KSU Equipment Cabinet for component layout and location of connectors.

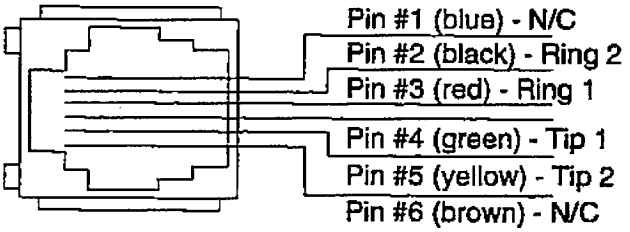
LEDs & Indicators:

Five red LEDs are located along the front edge of the 4x8 Key Interface Board (CKB), one for each CO Line to indicate when it is in use and one LED that monitors the contact operation of the multi use contact located on the board. Two green LEDs also located along the front edge of the CKB indicate the presence of +5V & -5V dc.

CO Line/Station Interfaces:

The 4x8 Key Interface Board (CKB) provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision).





RJ-14 Modular Jack Pinouts for 4x8 Key Interface Board (CKB)

Figure 500-13 4x8 Key Interface Board (CKB)

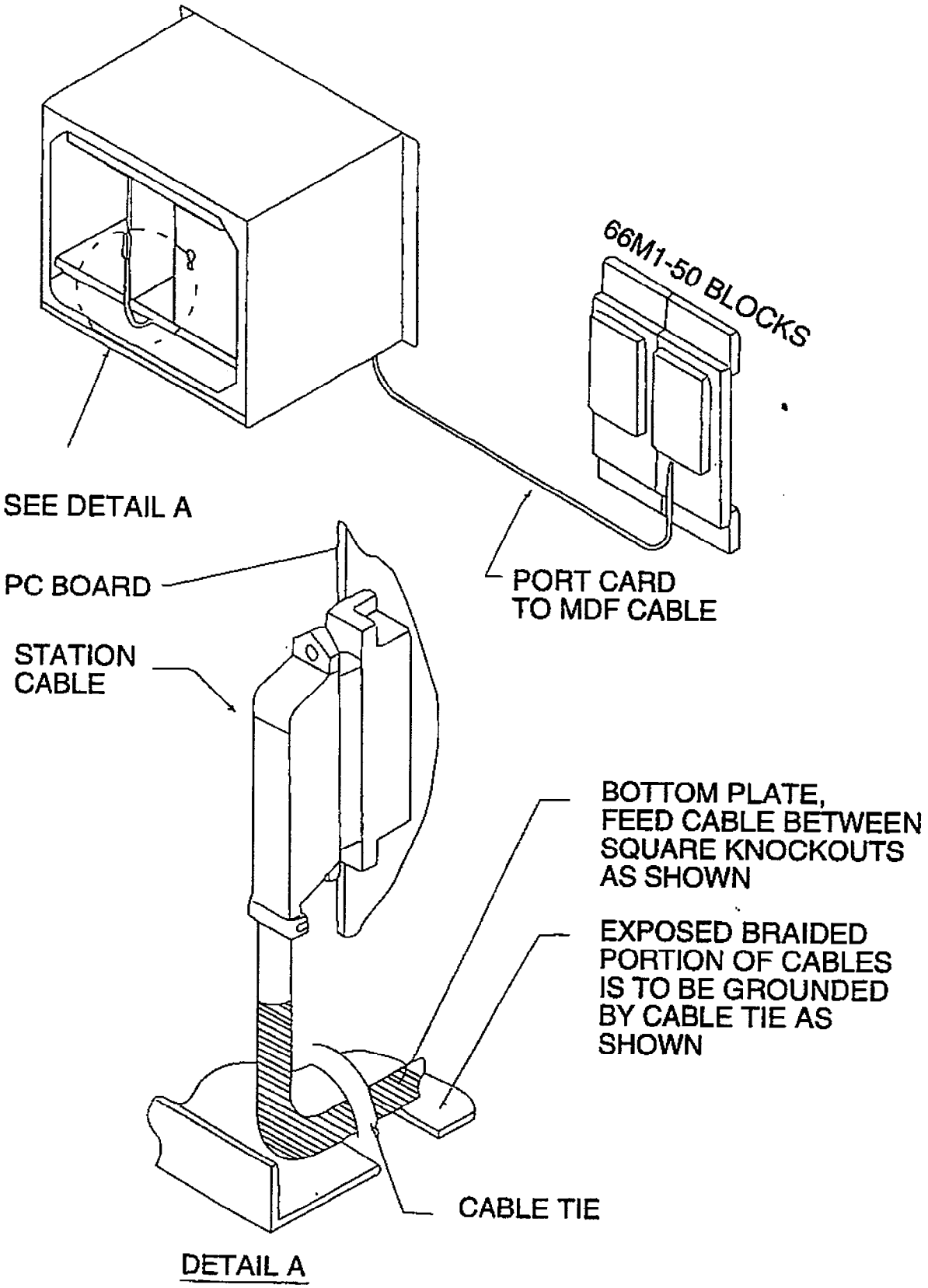


Figure 500-14 Shielded Cable Terminations

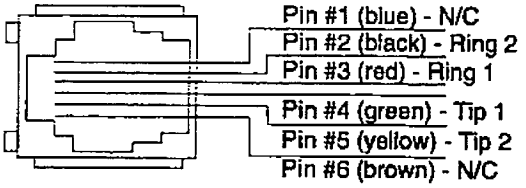
The card also provides proper fusing or protection to comply with the requirements of UL 1459 Second Edition and CSA C22.2 No. 225 standards.

The 4x8 Key Interface Board also provides the interface for eight digital key telephones using two 64K channel arrangements. Stations connect to the board via the MDF through a 50-pin connector located on the front edge of the board. Each station connection requires four wires to connect to the board.

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.

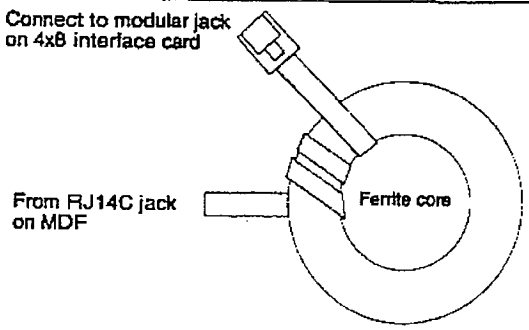
CO Lines Connections:

CO Lines are connected to the system via modular RJ-14 connectors mounted to the front edge of the 4x8 Key Interface Board (CKB) and accessed through the bottom of the KSU. Each card connects four CO Line ports to the system through modular connectors J2 and J3 found on each 4x8 Key Interface Board. The pinouts of the modular connector are as follows:



CKB RJ-14 Modular Jack Pinout

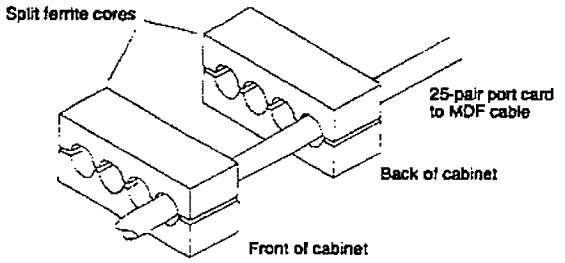
NOTE	***Currently ALL CO Line modular cables must pass through a 1.2" thick, 2-3/8" diameter, round ferrite core three times prior to exiting the KSU in order to comply with FCC regulations. Up to five cables can be wrapped around one ferrite core.***



Stations Connections:

The station ports of the 4x8 Key Interface Board (CKB) are wired to the main distribution frame via a 25-pair, (50-pin) male amphenol type connector located on the front edge of the board, connector J1. A 25-pair cable with a 50-pin female amphenol-type connector is required to extend the station ports to the main distribution frame. Refer to Table 500-8 4x8 Key Interface Board (CKB) for pin-out information.

NOTE	***Currently the 25-pair cable (supplied with the 4x8 Key Interface Board) used to extend the stations to the MDF must be shielded, with the exposed end of the shield closest to the Basic KSU cabinet. This cable must be used to comply with FCC Part 15 regulations. In addition the 25-pair cable must pass through a ferrite core before exiting the Basic KSU cabinet again to comply with FCC Part 15 regulations. Refer to Figure 500-14 Shielded Cable Terminations.***



External Paging Connections:

The 4x8 Key Interface Board (CKB) is equipped with an external page port (a one-way, transmit voice path) that is wired to the J1 connector (50-pin male amphenol-type connector) on the Violet/Slate, Slate/Violet pair of wires (pin's 50 and 25). Refer to Table 500-8 4x8 Key Interface Board (CKB) for wiring information.

Miscellaneous Relay Connections:

Each 4x8 Key Interface Board (CKB) also contains a miscellaneous relay (K1) that can be used as for External Paging, Loud Bell, CO Line control, Power Fail, RAN, other functions as software will allow. The relay provides both an Open and a Closed loop upon activation. Therefore, each relay may be used for various applications. The relay provides a dry output and is rated for 1 AMP at 24V dc. The relay is wired to the MDF via the J1 connector (50-pin male amphenol-type connector) on the Violet/Orange, Violet/Green and Brown/Violet wires (pin's 47, 48 and 24). Refer to Table 500-8 4x8 Key Interface Board (CKB)

for wiring information.

Application Module(s) Connections:

The J14 connector on the 4x8 Key Interface Board (CKB) board allows the installation of one application module (i.e. DTMF receiver) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

Table 500-8 4x8 Key Interface Board (CKB)

PAIR	PIN	COLOR	DESIG	
1	26	WH/BL	Port 01	Xmt Tip
	1	BL/WH		Xmt Ring
2	27	WH/OR		Rcve Tip
	2	OR/WH		Rcve Ring
3	28	WH/GN	Port 02	Xmt Tip
	3	GN/WH		Xmt Ring
4	29	WH/BN		Rcve Tip
	4	BN/WH		Rcve Ring
5	30	WH/SL	Port 03	Xmt Tip
	5	SL/WH		Xmt Ring
6	31	RD/BL		Rcve Tip
	6	BL/RD		Rcve Ring
7	32	RD/OR	Port 04	Xmt Tip
	7	OR/RD		Xmt Ring
8	33	RD/GN		Rcve Tip
	8	GN/RD		Rcve Ring
9	34	RD/BN	Port 05	Xmt Tip
	9	BN/RD		Xmt Ring
10	35	RD/SL		Rcve Tip
	10	SL/RD		Rcve Ring
11	36	BK/BL	Port 06	Xmt Tip
	11	BL/BK		Xmt Ring
12	37	BK/OR		Rcve Tip
	12	OR/BK		Rcve Ring
13	38	BK/GN	Port 07	Xmt Tip
	13	GN/BK		Xmt Ring
14	39	BK/BN		Rcve Tip
	14	BN/BK		Rcve Ring
15	40	BK/SL	Port 08	Xmt Tip
	15	SL/BK		Xmt Ring
16	41	YL/BL		Rcve Tip
	16	BL/YL		Rcve Ring
17	42	YL/OR		
	17	OR/YL		
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN		
	19	BN/YL		
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL		
	21	BL/VI		
22	47	VI/OR	Misc. Relay N.C.	
	22	OR/VI		
23	48	VI/GN	Misc. Relay N.O.	
	23	GN/VI		
24	49	VI/BN		
	24	BN/VI	Misc. Relay Common	
25	50	VI/SL	External Page Tip	
	25	SL/VI	External Page Ring	

E. 4x8 SLT Interface Board (CSB)

The 4x8 SLT Interface Board (CSB) is a four CO Line by eight single line telephone interface board. The card is a combination card that contains the necessary circuitry to connect four CO/Centrex/PBX loop start lines and eight standard on-premise single line telephones (2500 type) to the system. This card also contains one additional voice (transmit) path for external paging and a connector for adding one application module (i.e. DTMF Receiver or Dual DTMF/Talk-Back Page Module) to the system. The 4x8 SLT Interface Board can be removed or inserted with power on the KSU. Refer to Figure 500-9 Basic KSU Equipment Cabinet for component layout and location of connectors.

NOTE	***Paging is only possible if the optional Dual DTMF/Talk-Back Page Module (future) is installed.***

A molex connector is located on the 4x8 SLT Interface Board (CSB) to provide ring generator capabilities. It is recommended that the Tellabs 8101, 30 Hz, 90VAC Ring Generator be used with this board.

NOTE	***Only one Ring Generator is required per system. At least one DTMF Receiver MUST be installed in the system.***

Message Waiting capability is installed onto the 4x8 SLT Interface Board. This circuitry provides message waiting lamps to single line telephones equipped with message waiting lamps, and supports up to eight single line telephone Message Waiting lamps at 90V ac typical across tip and ring.

LEDs & Indicators:

Five red LEDs are located along the front edge of the 4x8 SLT Interface Board, one for each CO Line to indicate when it is in use and one LED that monitors the contact operation of the multi use relay located on the board. Two green LEDs also located along the front edge of the 4x8 SLT Interface Board (CSB) indicate the presence of +5V & -5V dc.

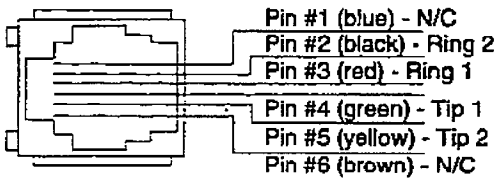
CO Line/Station Interfaces:

The 4x8 SLT Interface Board (CSB) provides the interface for four Central Office, Centrex or PBX loop start, lines. The protection circuitry necessary to allow the system to be classified as a fully protected system are located on the card for each CO circuit. The CO circuits are equipped with current sensing circuitry that identifies distant end disconnect (loop supervision). 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. The 4x8 SLT Interface Board does not support data devices for data switching.

The 4x8 SLT Interface Board (CSB) provides the control and interface for eight standard single line telephones (2500 type). Eight 36V dc single line circuits are provided on the printed circuit board. 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 (700ms duration) to the connected SLT or device. The card will support single line telephones up to 2000 feet from the Basic KSU cabinet. On-premise single line telephones should present a load to the port totaling a maximum ringer equivalence of 2.5.

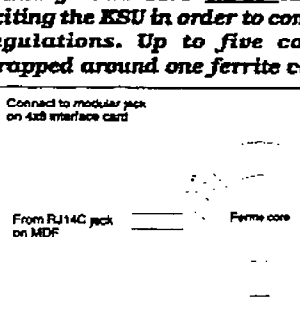
CO Lines Connections:

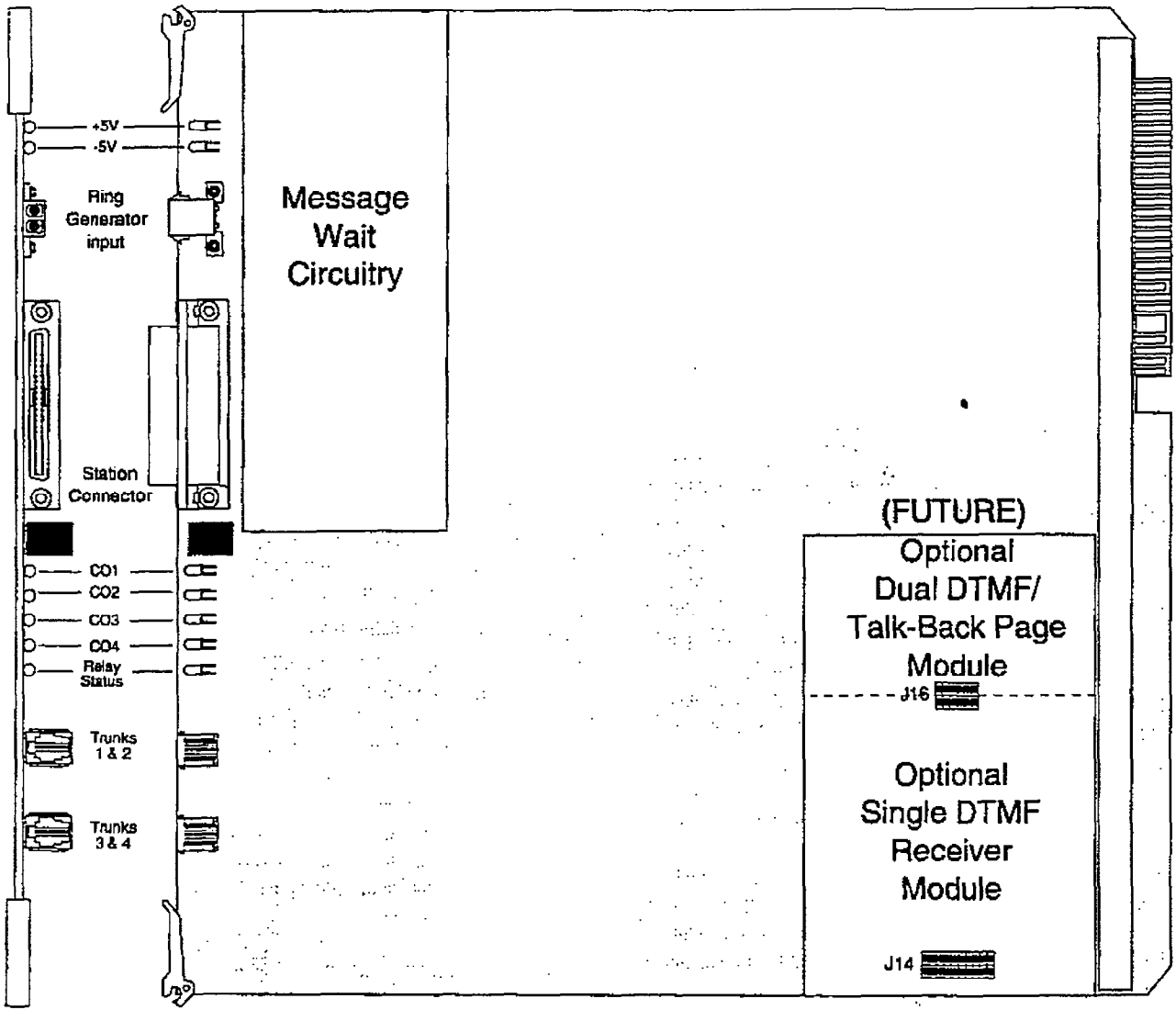
CO Lines are connected to the system via modular RJ-14 connectors mounted to the front edge of the 4x8 SLT Interface Board and accessed through the bottom of the Basic KSU cabinet. Each 4x8 SLT Interface Board connects four CO Line ports to the system through modular connectors J2 and J3 found on each card. The pinouts of the modular connector are as follows:

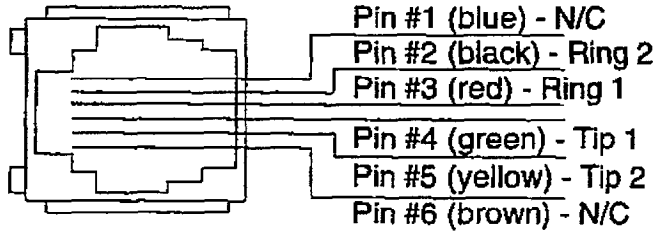


4x8 SLT Interface Board (CSB) RJ-14 Modular Jack Pinout

NOTE	***Currently ALL CO Line modular cables must pass through a 1.2" thick, 2-3/8" diameter, round ferrite core three times prior to exiting the KSU in order to comply with FCC regulations. Up to five cables can be wrapped around one ferrite core.***







4x8 SLT Interface Board RJ-14 Modular Jack Pinouts

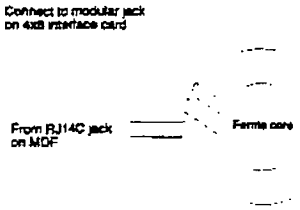
Figure 500-15 4x8 SLT Interface Board (CSB)

Stations Connections:

The station ports of the 4x8 SLT Interface Board (CSB) are wired to the main distribution frame via a 25-pair, (50-pin) female amphenol type connector located on the front edge of the board, connector J1. A 25-pair cable with a 50-pin male amphenol-type connector is required to extend the station ports to the main distribution frame. The pinouts are shown in Figure 500-9 Basic KSU Equipment Cabinet.

NOTE

Currently the 25-pair cable (supplied with the 4x8 SLT Interface Board) used to extend the stations to the MDF must be shielded, with the exposed end of the shield closest to the Basic KSU cabinet. This cable must be used to comply with FCC Part 15 regulations. In addition the 25-pair cable must pass through a ferrite core before exiting the Basic KSU cabinet again to comply with FCC Part 15 regulations. Refer to Figure 500-14 Shielded Cable Terminations.



External Paging Connections:

The 4x8 SLT Interface Board will provide an external two-way page port when the Dual DTMF/Talk-Back Page Module (future) is installed. When this module is installed onto the 4x8 SLT Interface Board, it is wired to the J1 connector (50-pin male amphenol-type connector) on the Violet/Slate, Slate/Violet pair of wires (pin's 50 and 25). Refer to Table 500-9 4x8 SLT Interface Board (CSB) for wiring information.

Miscellaneous Relay Connections:

Each 4x8 SLT Interface Board contains a miscellaneous relay (K1) that can be used for Loud Bell, CO Line control, Power Fail, RAN, and other functions as software will allow. The relay provides both an Open and a Closed loop upon activation. Therefore, each relay may be used for various applications. The relay provides a dry output and is rated for 1 AMP at 24V dc. The relay is wired to the MDF via the J1 connector (50-pin male amphenol-type connector) on the Violet/Orange, Violet/Green and Brown/Violet wires(pin's 47, 48 and 24). Refer to Table 500-9 4x8 SLT Interface Board (CSB) for wiring information.

Table 500-9 4x8 SLT Interface Board (CSB)

PAIR	PIN	COLOR	DESIG	
1	26	WH/BL	Port 01	SLT Tip
	1	BL/WH		SLT Ring
2	27	WH/OR		
	2	OR/WH		
3	28	WH/GN	Port 02	SLT Tip
	3	GN/WH		SLT Ring
4	29	WH/BN		
	4	BN/WH		
5	30	WH/SL	Port 03	SLT Tip
	5	SL/WH		SLT Ring
6	31	RD/BL		
	6	BL/RD		
7	32	RD/OR	Port 04	SLTTip
	7	OR/RD		SLT Ring
8	33	RD/GN		
	8	GN/RD		
9	34	RD/BN	Port 05	SLT Tip
	9	BN/RD		SLT Ring
10	35	RD/SL		
	10	SL/RD		
11	36	BK/BL	Port 06	SLT Tip
	11	BL/BK		SLT Ring
12	37	BK/OR		
	12	OR/BK		
13	38	BK/GN	Port 07	SLT Tip
	13	GN/BK		SLT Ring
14	39	BK/BN		
	14	BN/BK		
15	40	BK/SL	Port 08	SLT Tip
	15	SL/BK		SLT Ring
16	41	YL/BL		
	16	BL/YL		
17	42	YL/OR		
	17	OR/YL		
18	43	YL/GN		
	18	GN/YL		
19	44	YL/BN		
	19	BN/YL		
20	45	YL/SL		
	20	SL/YL		
21	46	VI/BL		
	21	BL/VI		
22	47	VI/OR	Misc. Relay N.C.	
	22	OR/VI		
23	48	VI/GN	Misc. Relay N.O.	
	23	GN/VI		
24	49	VI/BN		
	24	BN/VI	Misc. Relay Common	
25	50	VI/SL	External Page Tip*	
	25	SL/VI	External Page Ring*	

*Active only when the Dual DTMF/Talk-Back Page Module (future) is installed.

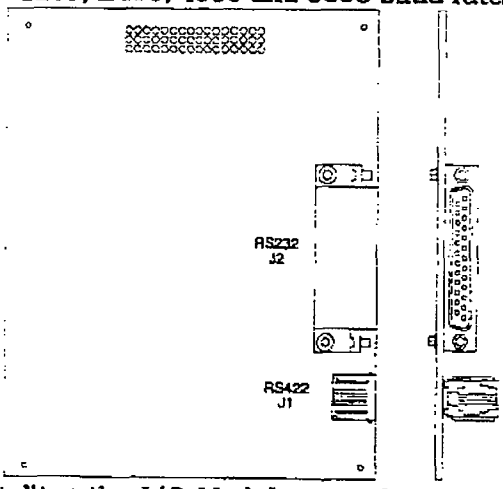
Application Module(s) Connections:

The J14 connector on the 4x8 SLT Interface Board allows for the installation of one application module (i.e. Single DTMF receiver or the Dual DTMF/Talk-Back Page Module) to the system. Refer to Section 500.6, Application Module(s) Installation for a description of the available application modules.

500.6 APPLICATION MODULE(S) INSTALLATION:

A. Expansion I/O Module (IOM) for the DVX I System

The DVX I contains one RS-232C, I/O port (female, DB-25 type connector) located on the main key service board (J5). This optional I/O module may be added to the main key service board (on connector J15) adding one additional RS-232C port (female, DB-25 type connector) and one RS-422 port (6 pin modular jack connector). Each I/O port on this module is capable of transmitting and receiving data at 300, 1200, 2400, 4800 and 9600 baud rates.



Installing the I/O Module onto the main key service board of the DVX I Basic KSU:

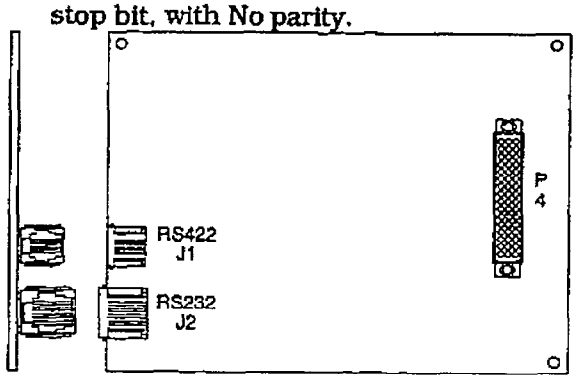
1. Remove power from the Basic KSU.
2. Locate the J15 connector on the main key service board of the Basic KSU and the P4 connector on the I/O Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
3. Gently push the P4 connector on the I/O Module onto the J15 connector on the main key service board of the Basic KSU.
4. Secure with the screws provided on the module.
5. Restore power to the Basic KSU.

Connections:

The pinouts and communication requirements for the *infinite* DVX I Expansion I/O module are shown in Figure 500-16.

B. Expansion I/O Module (IOM) for the DVX II System

This module provides one RS-232C I/O port (8 pin modular jack) and one RS-422 I/O port (6 pin modular jack). This module is installed on the Central Processor Board printed circuit board and adds two I/O ports to the one RS-232C I/O port already on the Central Processor Board for a total of three I/O ports allowed in the system. Each port is independently programmed for its use and the rate of speed at which it transmits and receives data (baud rate). The options are 300, 1200, 2400, 4800, and 9600 baud rates all at 8 data bits, 1 stop bit, with No parity.

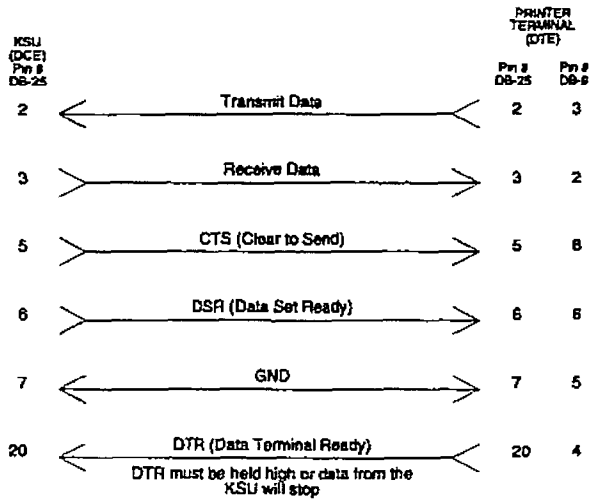


To install the I/O Module onto the Central Processor Board of the DVX II System:

1. Remove power from the Basic KSU.
2. Remove the Central Processor Board (CPB) from the Basic KSU cabinet.
3. Locate the J4 connector on the CPB board and the P4 connector on the I/O Module. Refer to Figure 500-11 Central Processor Board (CPB).
4. Gently push the P4 connector on the I/O Module onto the J4 connector on the CPB board.
5. Secure with the screws provided on the module.
6. Re-insert the CPB board in the Basic KSU.
7. Restore power to the Basic KSU.

Connections:

The pinouts and communications requirements for the *infinite* DVX II Expansion I/O Module are shown in Figure 500-17.

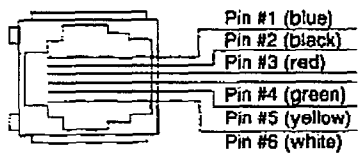


RS-232C PINOUT

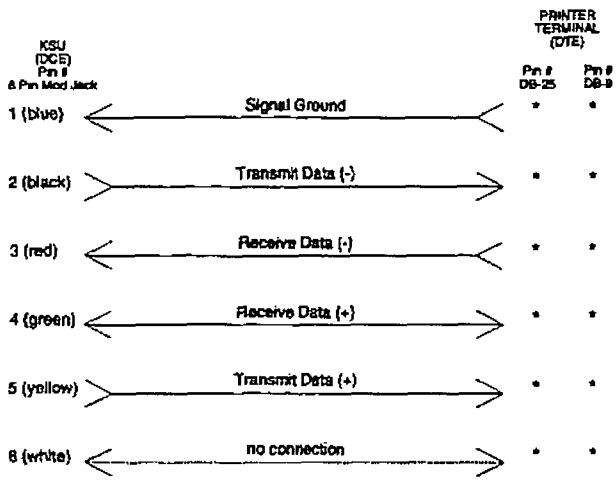
Data Communication Requirements are:

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



Expansion I/O Module, 6 Pin Modular Jack Pinout



RS-422 PINOUT

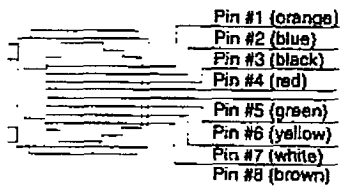
Data Communication Requirements are:

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

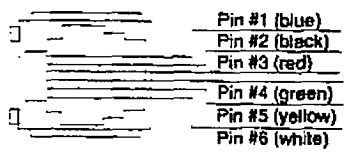
NOTE: Arrows show flow control direction.
* If required by the printer or terminal

* There is no set standard for pins to be used with RS-422 connectors. Refer to your particular terminal installation guide for proper hook-up.

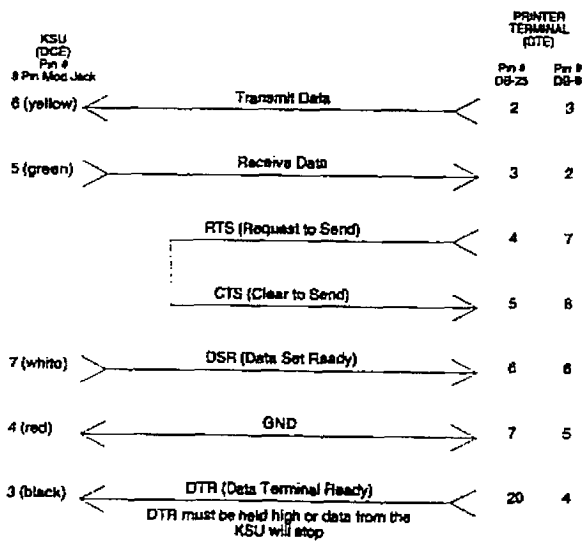
Figure 500-16 DVX[I] Expansion I/O Module Pin-outs



Expansion I/O 8 Pin Modular Jack Pinout



Expansion I/O Module, 6 Pin Modular Jack Pinout

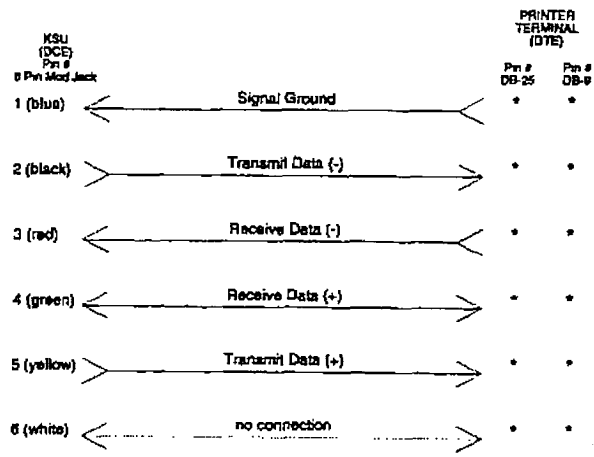


RS-232C PINOUT

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 required by the printer or terminal



RS-422 PINOUT

Data Communication Requirements are:

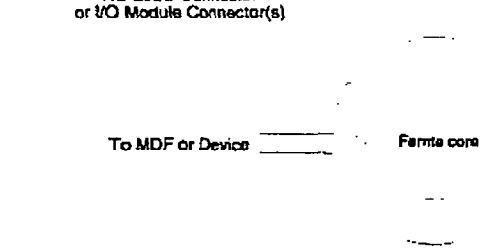
A) Serial Port Compatible
B) ASCII Code Compatible
C) 8 Data Bits and 1 Stop Bit
D) No Parity
E) Flow Control Method: Xon/Xoff

NOTE: Arrows show flow control direction.
* If required by the printer or terminal

* There is no set standard for pins to be used with RS-422 connectors. Refer to your particular terminal installation guide for proper hook-up.

Figure 500-17 DVX[II] Expansion I/O Module Pin-outs

NOTE ***Currently ALL RS-232C modular cables must pass through a 1.2" thick, 2-3/8" diameter, round ferrite core three times prior to exiting the KSU in order to comply with FCC Regulations.***



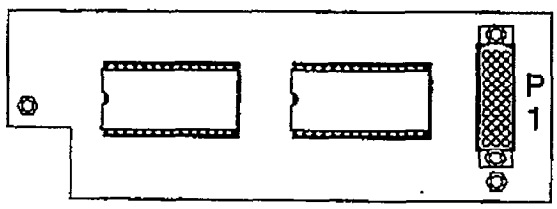
C. 1200 Baud Modem Module (MM)

This optional 1200 baud modem can be installed on either the DVX[I] or the DVX[II] systems to add the capability of communicating with the system from a remote site or location at the rate of 1200 baud. Both systems provide as standard an on-board modem capable of transmitting data at 300 baud. With this module installed a transmission baud rate of 1200 baud can be selected. A programmable option allows for auto baud detection between 300 and 1200 baud.

Connection to the modem is accomplished by simply calling into the system and connecting to the modem. This can be done by:

1. Ringing directly to the modem,
2. Going through DISA,
3. After being answered by a station user and transferred to the modem port.
   Connection to the modem port is under software control.

The 1200 baud modem module maintains the compatibility with the Hayes command protocol and uses the Bell System (Western Electric) standards 103 and 212A for modem design. The modem operates on-line in both Full and Half duplex modes.



Installing the 1200 Baud Modem Module onto the main key service board of the DVX[I] Basic KSU:

1. Remove power from the Basic KSU.
2. Locate the J14 connector on the main key service board on the Basic KSU and the P1 connector on the Modem Module. Refer to Figure 500-18 Basic KSU Application Card Locations.
3. Gently push the P1 connector on the Modem Module onto the J14 connector on the main key service board on the Basic KSU.
4. Secure with the screws provided on the module.
5. Restore power to the Basic KSU.

Installing the 1200 Baud Modem Module onto the Central Processor Board of the DVX[II] System Cabinet:

1. Remove power from the Basic KSU.
2. Remove the Central Processor Board (CPB) from the Basic KSU.
3. Locate the J5 connector on the CPB board and the P1 connector on the Modem Module. Refer to Figure 500-11 Central Processor Board (CPB).
4. Gently push the P1 connector on the Modem Module onto the J5 connector on the CPB board.
5. Secure with the screws provided on the module.
6. Re-insert the CPB board in the Basic KSU cabinet.

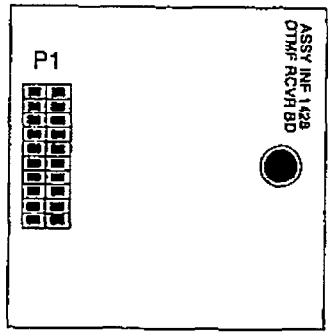
Connections:

Connection is under system software control.

D. Installing the DTMF Receiver Module (RM)

This module is used to provide DTMF receivers in the system to support single line telephone and DISA applications. Currently this module can be added to the DVX[I] System Expansion KSU, 2x4 Expander Module, 2x4 SLT Expander Module and the 4x8 Expander Module. This module can also be added to the DVX[II] System on each 4x8 Key Interface Boards, and each 4x8 SLT Interface Boards. Each DTMF Receiver Module contains one DTMF receiver. A maximum of three DTMF Receiver Modules can be installed in the DVX[I] system for a total of four receivers for the system(one DTMF Receiver is located on the main key service board on the Basic KSU. A maxi-

mum of 13 DTMF Receivers can be installed in the DVX II system, depending on whether the DTMF Receiver Module or the Dual DTMF/Talk-Back Page Module is installed.



Generally, one receiver will support DISA and/or 8 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.

Connections:

The DTMF Receiver Module plugs onto a 20-pin connector on the following printed circuit boards (one DTMF Receiver Module may be installed on each card):

- 2x4 Expander Module
- 2x4 SLT Expander Module
- Main Key Service Board of the Expansion Key Service Unit (EKSU)
- 4x8 Expander Module
- 4x8 Key Interface board (CKB)
- 4x8 SLT Interface board (CSB)

***infinite* DVX I System:**

Installing the DTMF Receiver Module onto the 2x4 Expander Module:

1. Locate the J1 connector on the 2x4 Expander Module and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-18 Basic KSU Application Card Locations and Figure 500-19 Expansion KSU Application Card Locations.
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J1 pins on the 2x4 Expander Module.
3. Secure the DTMF Receiver Module with the screw provided on the module.

Installing the DTMF Receiver Module onto the 2x4 SLT Expander Module:

1. Locate the J1 connector on the 2x4 SLT Expander Module and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-18 Basic KSU Application Card Locations and Figure 500-19 Expansion KSU Application Card Locations.
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J1 pins on the 2x4 SLT Expander Module.
3. Secure the DTMF Receiver Module with the screw provided on the module.

Installing the DTMF Receiver Module onto the main key service board of the Expansion KSU:

1. Locate the J5 connector on the main key service board of the Expansion KSU and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-19 Expansion KSU Application Card Locations.
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J5 pins on the main key service board of the Expansion KSU.
3. Secure the DTMF Receiver Module with the screw provided on the module.

Installing the DTMF Receiver Module onto the 4x8 Expander Module:

1. Locate the J5 connector on the 4x8 Expander Module and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-19 Expansion KSU Application Card Locations.
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J5 pins on the 4x8 Expander Module.
3. Secure the DTMF Receiver Module with the screw provided on the module.

***infinite* DVX II System:**

Installing the DTMF Receiver Module onto the 4x8 Key Interface Board (CKB):

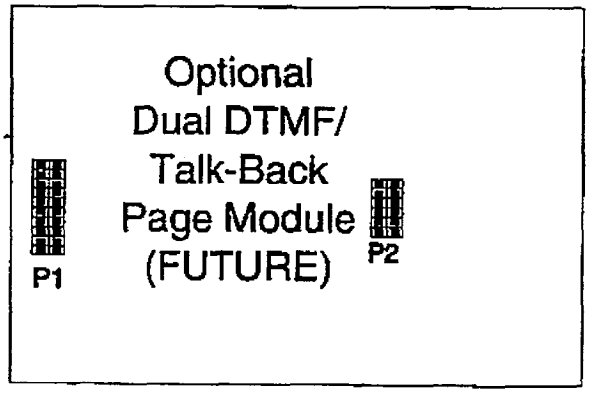
1. Locate the J1 connector on the 4x8 Key Interface Board (CKB) and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-13 4x8 Key Interface Board (CKB).
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J1 pins on the 4x8 Key Interface Board (CKB).
3. Secure the DTMF Receiver Module with the screws provided with the module.
4. Replace the 4x8 Key Interface Board (CKB) back in the Basic KSU cabinet.

Installing the DTMF Receiver Module onto the 4x8 SLT Interface Board (CSB):

1. Locate the J1 connector on the 4x8 SLT Interface Board (CSB) and the P1 connector on the DTMF Receiver Module. Refer to Figure 500-15 4x8 SLT Interface Board (CSB).
2. Take the DTMF Receiver Module and push the P1 pin connector gently onto the J1 pins on the 4x8 SLT Interface Board (CSB).
3. Secure the DTMF Receiver Module with the screws provided with the module.
4. Replace the 4x8 SLT Interface Board (CSB) back in the Basic KSU cabinet.

Installing the Dual DTMF/Talk-Back Page Module onto the 4x8 SLT Interface Board (CSB): **(FUTURE)**

This module is used to provide additional DTMF receivers in the system to support single line telephone and DISA applications along with two-way external paging capability. Currently this module can only be added to the DVX II 4x8 SLT Interface Board (CSB). Each Dual DTMF/Talk-Back Page Module contains two DTMF Receivers. A maximum of six Dual DTMF/Talk-Back Page Modules can be installed in the DVX II system. (A CKB must be installed in Slot 1 for programming from an Executive Digital Terminal (Only a single DTMF Receiver module can be installed on the CKB board), CSB boards can be installed in Slots 2 thru 7. Each CSB board having a Dual DTMF/Talk-Back Page Module installed, resulting in thirteen DTMF Receivers in the system.



Generally, one receiver will support DISA and/or 8 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.

1. Locate the P1 and P2 connectors on the 4x8 SLT Interface Board (CSB) and the J14 and J16 connectors on the Dual DTMF /Talk-Back Page Module.
2. Take the Dual DTMF/Talk-Back Page Module and push the J14 and J16 pin connectors gently onto the P1 and P2 connectors on the 4x8 SLT Interface Board (CSB).
3. Secure the Dual DTMF/Talk-Back Page Module with the screws provided with the module.
4. Replace the 4x8 SLT Interface Board (CSB) into the Basic KSU cabinet.

Connections:

The Dual DTMF/Talk-Back Page Module plugs onto a 20-pin connector and a 14 pin connector on the 4x8 SLT Interface Board.

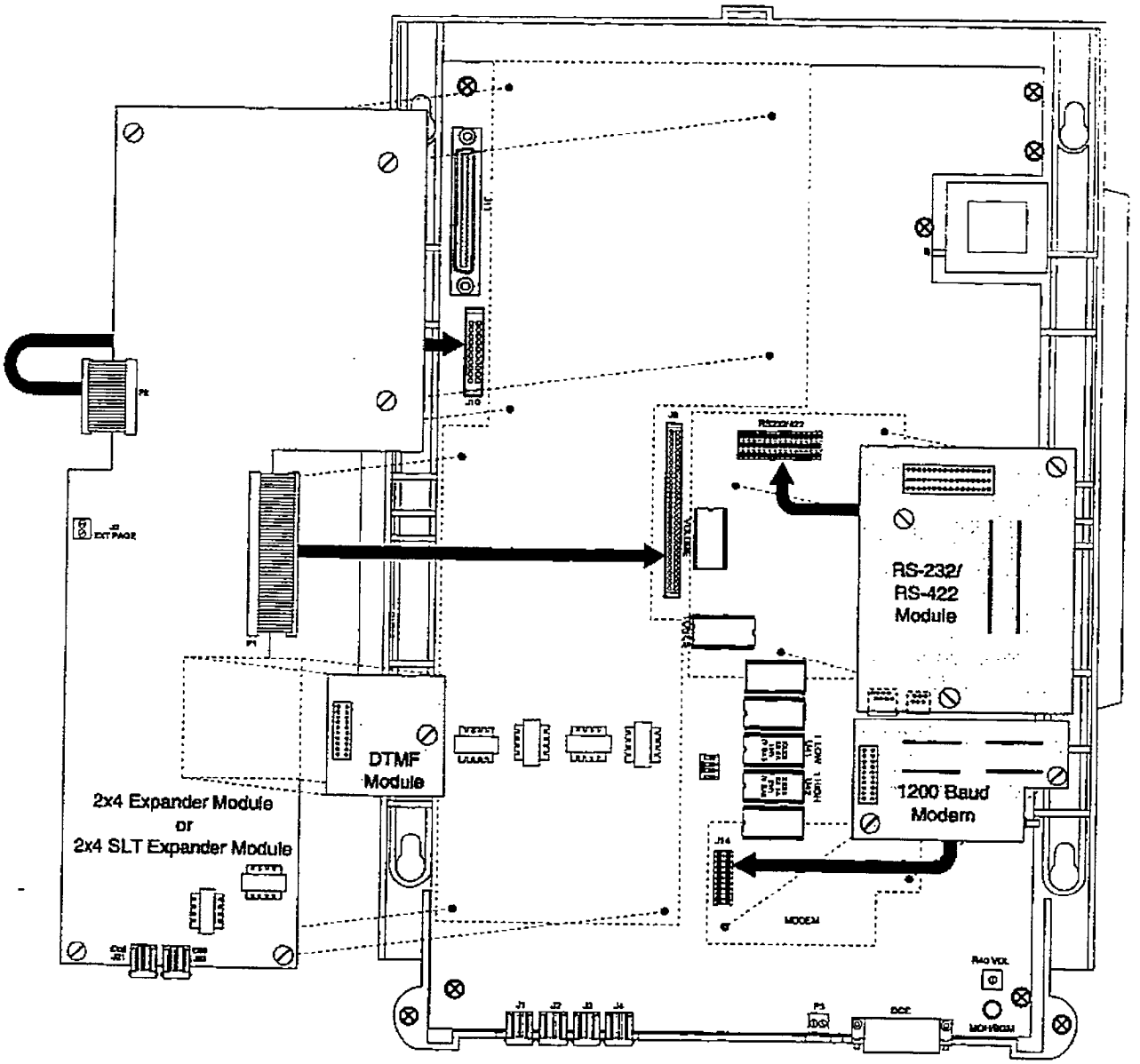


Figure 500-18 Basic KSU Application Card Locations

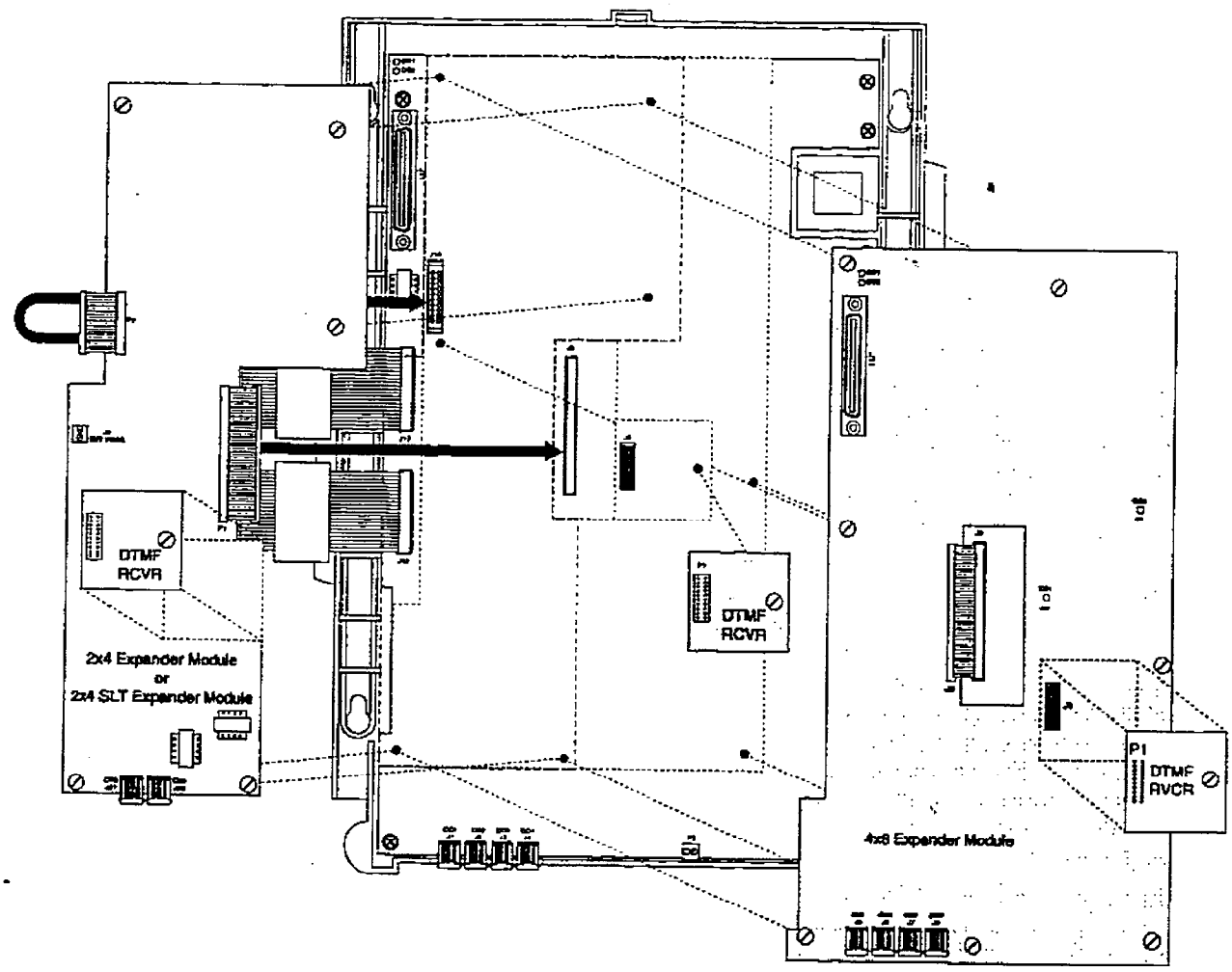


Figure 500-19 Expansion KSU Application Card Locations

500.7 DIGITAL TERMINALS

A. Digital Terminal Installation:

The Digital Terminals are interfaced with the DVX I Basic KSU or Expansion KSU main key service board which provides eight circuits. Each of the eight circuits are interfaced from the J11 connector on the Basic KSU or Expansion KSU main key service board to the MDF. The digital terminals are interfaced with the DVX II 4x8 Key Interface Board (CKB) and 4x8 SLT Interface Board (CSB) which each have eight circuits per board. Each 4x8 Key Interface Board interface is extended from the Basic KSU or the Expansion KSU to the MDF through the front edge connector on the CKB or CSB 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 500-1 Digital Flatpack Mounting Arrangements and Figure 500-9 Basic KSU Equipment Cabinet.

Telephones are connected to the station interfaces via industry-standard twisted, 2-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. It is recommended that the station cable contain 4 pairs of wires. Refer to Figure 500-20 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 4x8 Key Interface Board (CKB) or 4x8 SLT Interface Board (CSB), 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 21 DSS/DLS Console that can be installed in the *infinite* DVX I System, and a maximum of 42 DSS/DLS Consoles that can be installed in the *infinite* DVX II 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 500-20 Digital Terminal Modular Block Wiring.

Since the system supplies power to the DSS/DLS Console, no transformer or external power device is required.

C. Wall Mounting the 33-Button Digital Terminal

To wall mount the *infinite* Digital Terminal, it is necessary to use the 33-Button Wall Mount bracket and one standard-type jack assembly designed for normal wall hanging applications.

1. Unplug the line cord from the phone. A 4-foot line cord is provided with the wall

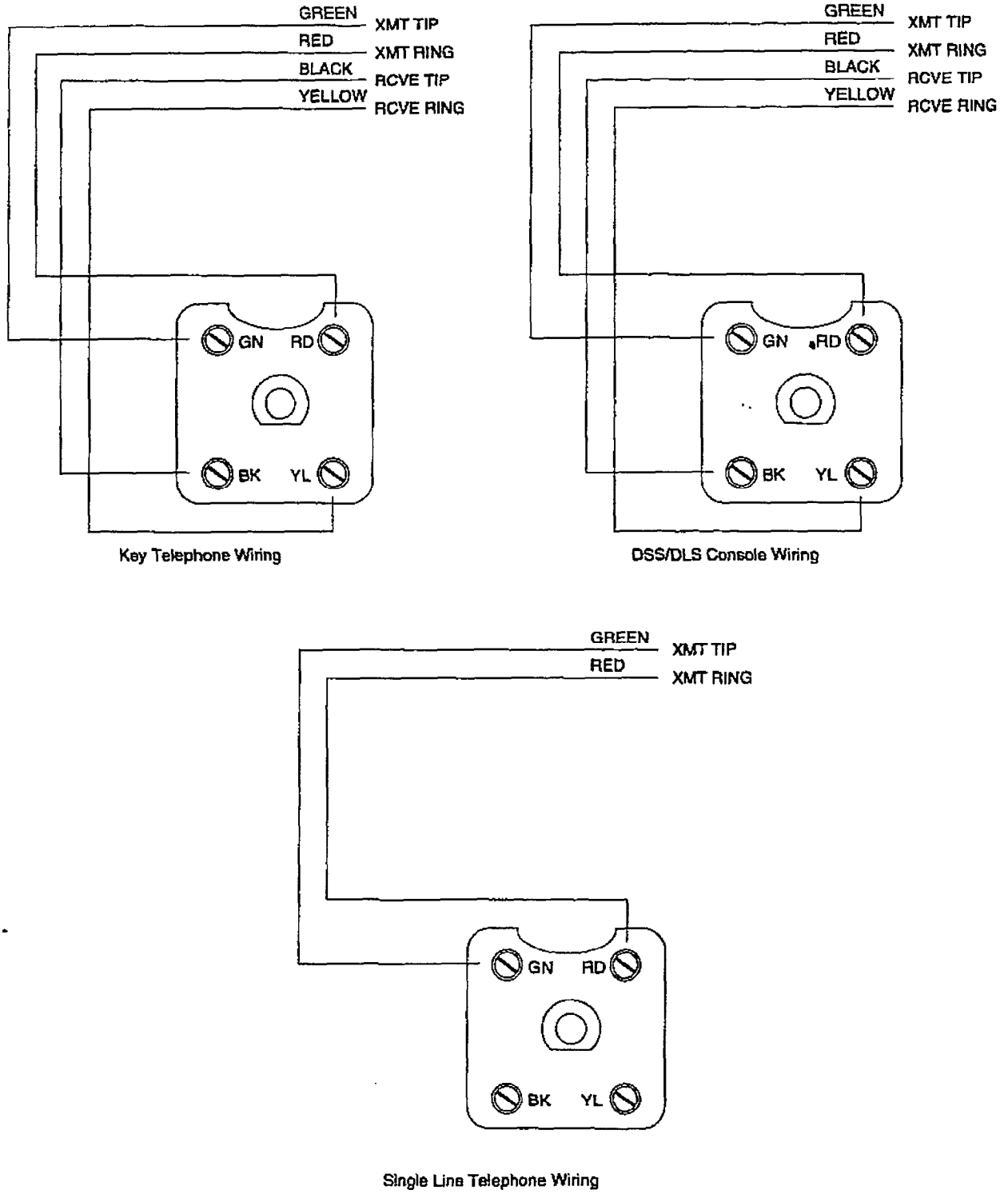


Figure 500-20 Digital Terminal Modular Block Wiring

bracket.

2. 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.
3. 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 500-21 Digital Terminal Wall Mounting.

D. Wall Mounting the 8-Button Digital Terminal

To wall mount the *infinite* Digital Terminal, it is necessary to use the 8-Button Wall Mount bracket and one standard-type jack assembly designed for normal wall hanging applications.

1. Unplug the line cord from the phone. A 4-foot line cord is supplied with the wall bracket.
2. 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.
3. 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 500-21 Digital Terminal Wall Mounting.

E. Single Line Telephone Installation

Single Line Telephones (SLT's) can be exchanged for digital terminals on a groups of eight or one-for-one basis with an OPX box.

The 4x8 SLT Interface Board (CSB) can be plugged into any designated CKB card slot. Each 4x8 SLT Interface Board supports eight standard single line telephones (standard DTMF Single Line Telephones and message waiting DTMF SLT's). It is recommended that the Tellabs 8101, 30 Hz, 90VAC Ring Generator be used with this board.

NOTE ***Only one Ring Generator is required per system. At least one DTMF Receiver MUST be installed in the system.***

Either the single DTMF Receiver Module or the Dual DTMF/Talk-Back Page Module may be installed on each 4x8 SLT Interface Board installed. The single DTMF Receiver Module (RM) installs onto either a 4x8 Key Interface Board (CKB) or 4x8 SLT Interface Board (CSB) and provides 1 DTMF receiver. The Dual DTMF/Talk-Back Page Module can ONLY be installed onto the 4x8 SLT Interface Board and provides two 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 500-1 Digital Flatpack Mounting Arrangements and/or Figure 500-9 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 Table 500-9 4x8 SLT Interface Board (CSB) for SLT wiring connections.

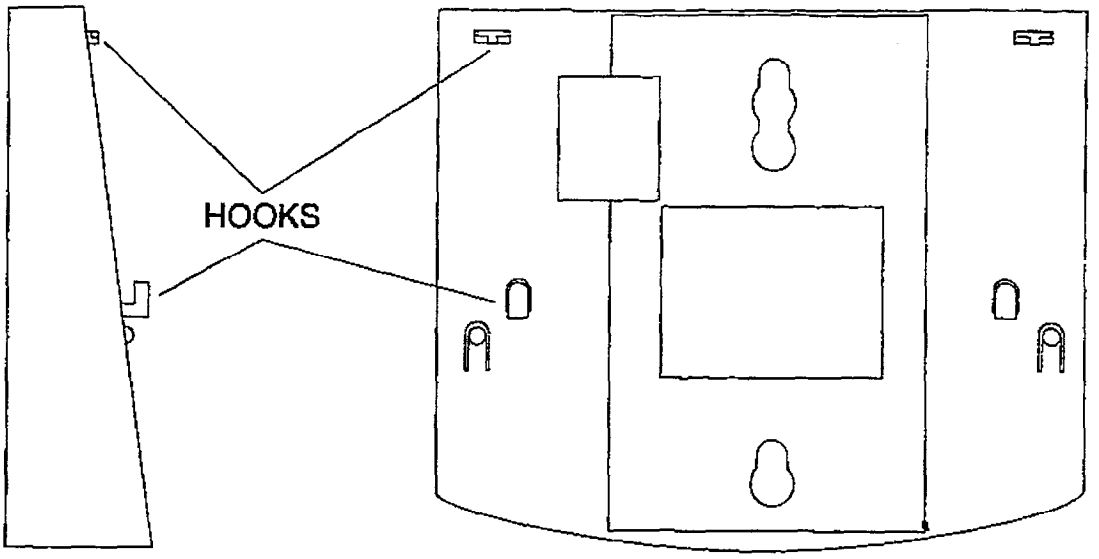
F. SLT Adapter / Off-Premise Extension Module (OPX)

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 uses a key station port from any digital key terminal station port on any card plugged into the system. The OPX card meets the requirements of the FCC for connection to the telephone (Telco) network. Telephones must be DTMF only (2500 type). Refer to Figure 500-22 Off-Premise Extension (OPX) Module

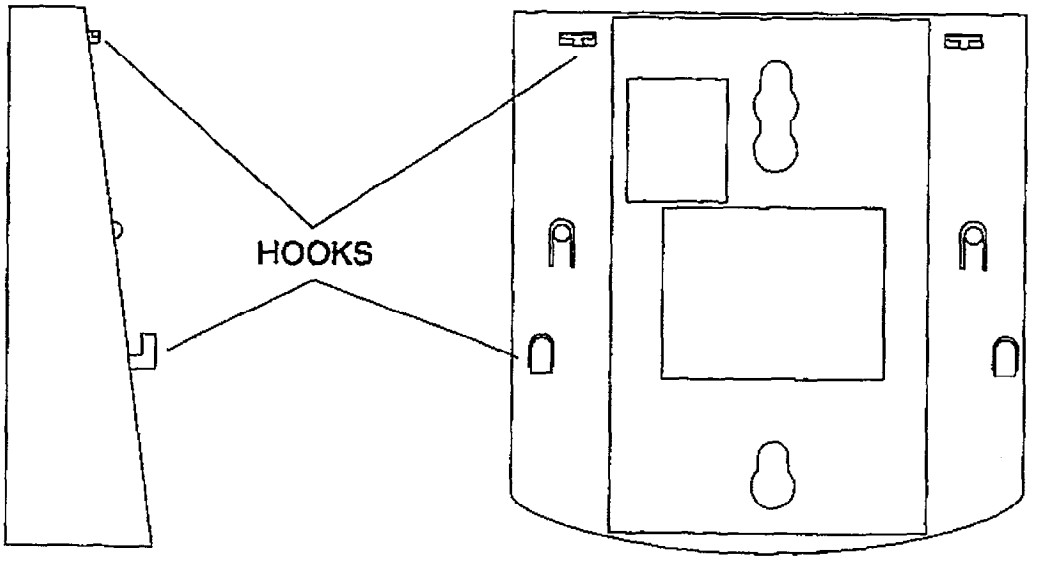
This module also provides for one Power Fail circuit in the event of an AC power failure.

Buttons and LEDs:

An LED located on the back of the unit indicates correct connection and will light



33-Button Wall Mount Bracket



8-Button Wall Mount Bracket

Figure 500-21 Digital Terminal Wall Mounting

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 / ring generator. 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 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.

500.8 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 Alarm signaling input, RAN Stop (end of message) and other applications as developed and allowed by software.

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 500-23 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 a multi-use relay on any one of the CO/Station Interface boards that is programmed for PFT. A customer provided 12 volt 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.

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 500-10 PFTU Conn A Connecting Block and Table 500-11 PFTU Conn B Connecting Block for pinouts 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.

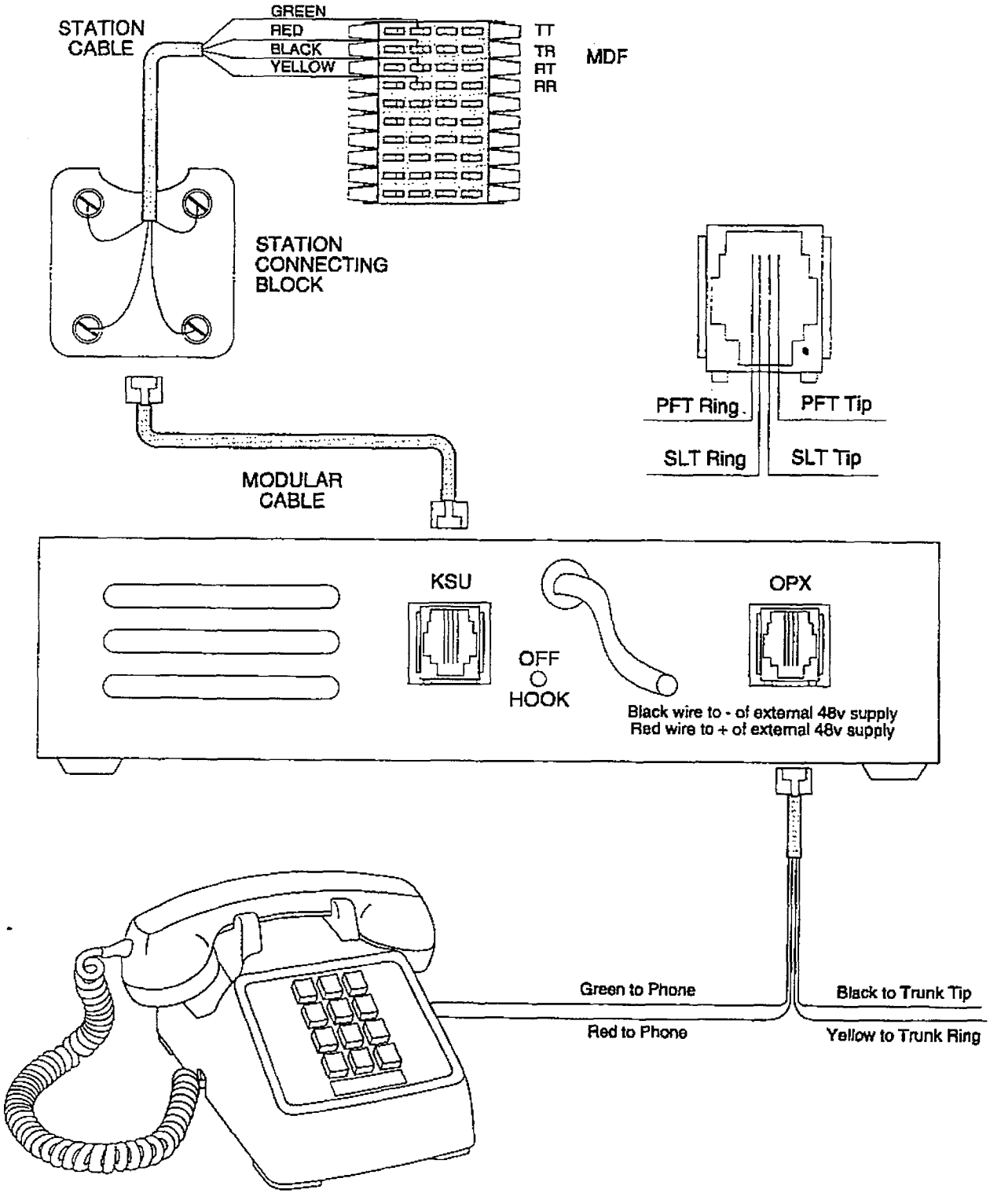


Figure 500-22 Off-Premise Extension (OPX) Module

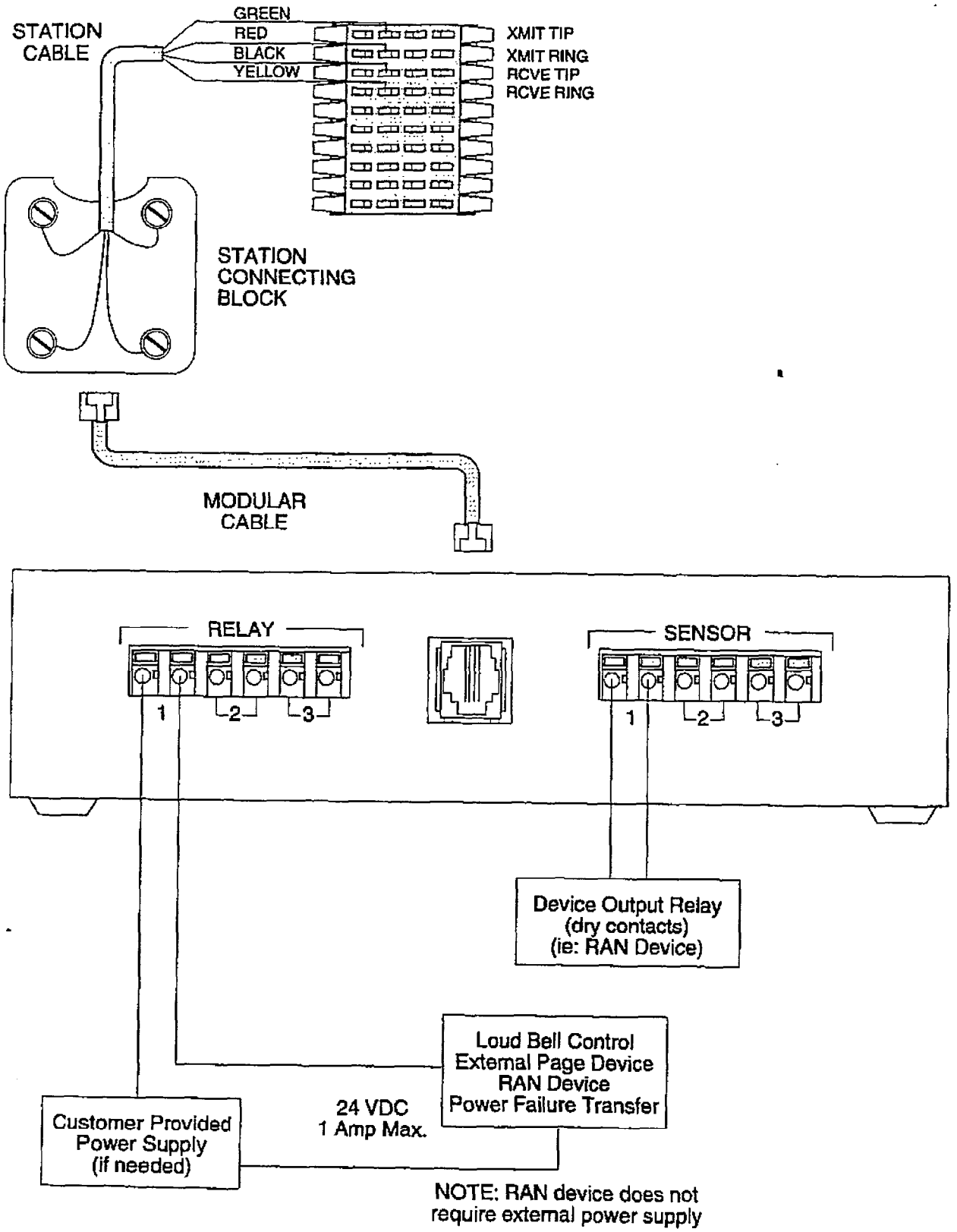
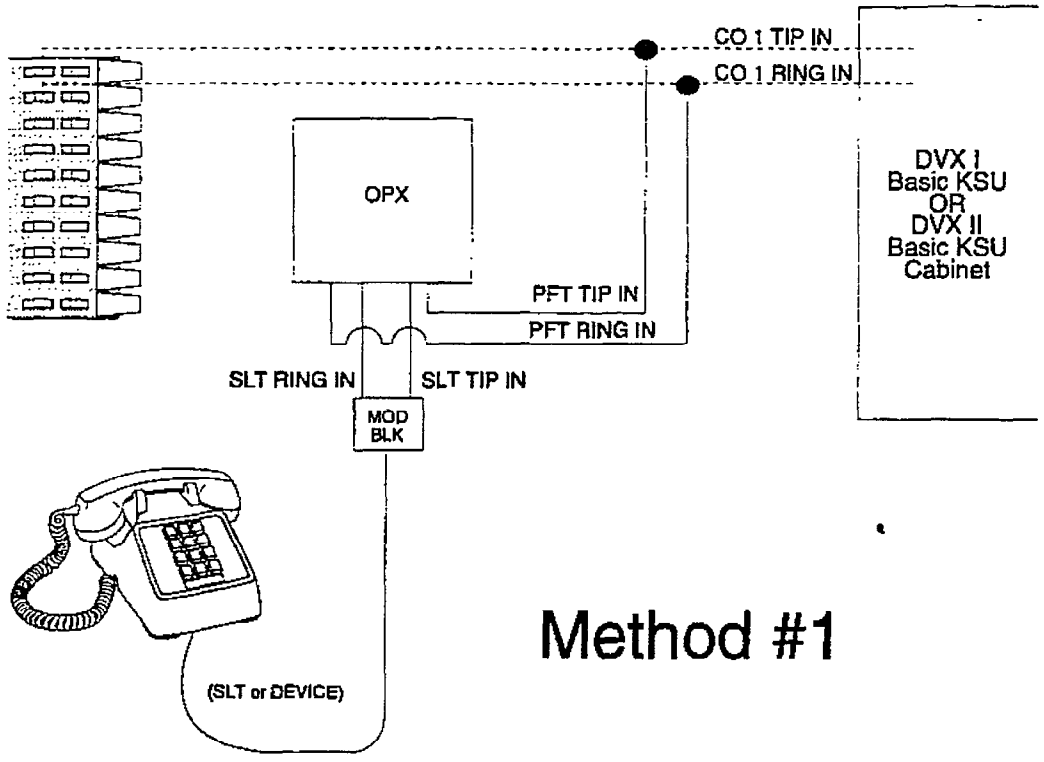


Figure 500-23 Relay / Sensor Interface Module



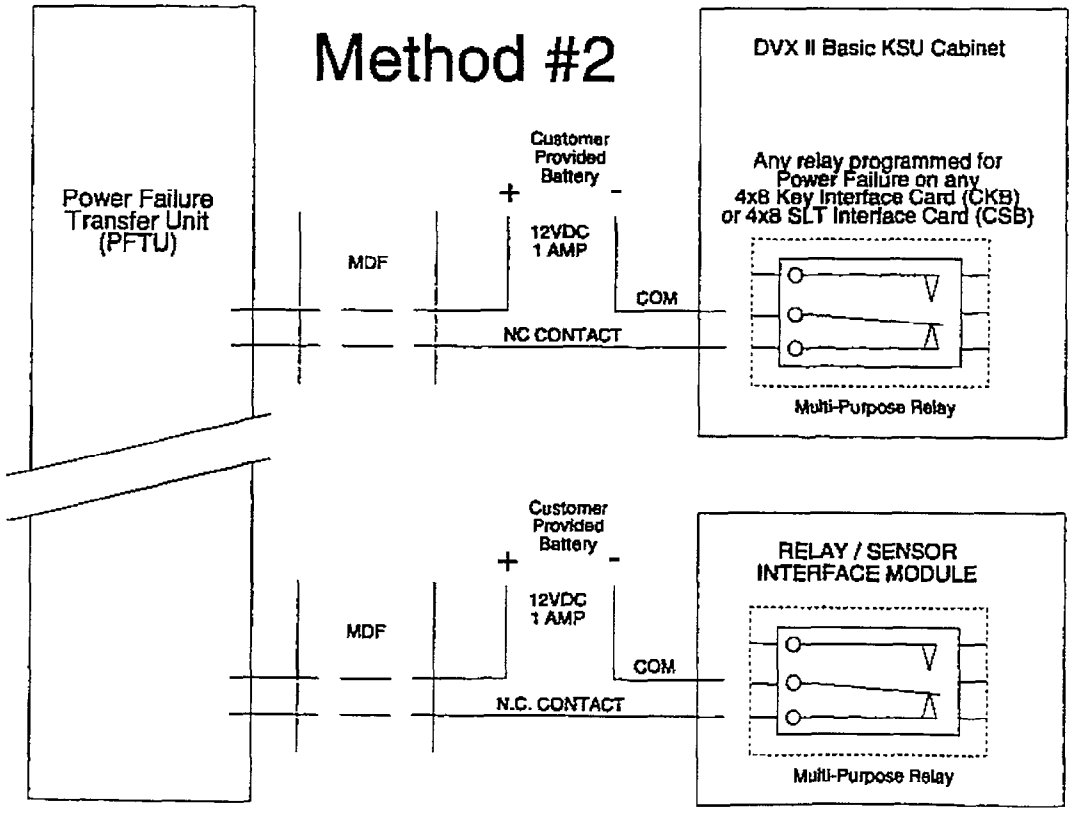


Figure 500-24 Power Failure Transfer Wiring Options

Table 500-10 PFTU Conn A Connecting Block

PAIR	PIN	COLOR	DESIG
1	26	WH/BL	1 TIT
	1	BL/WH	1 TIR
2	27	WH/OR	1 STA IN 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 STA IN 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 STA IN TIP
	10	SL/RD	3 STA IN RING
11	36	BK/BL	3 TRK OUT TIP
	11	BL/BK	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	BK/SL	4 TRK OUT TIP
	15	SL/BK	4 TRK OUT RING
16	41	YL/BL	4 STOT
	16	BL/YL	4 STOR
17	42	YL/OR	5 TIT
	17	OR/YL	5 TIR
18	43	YL/GN	5 STA IN TIP
	18	GN/YL	5 STA IN RING
19	44	YL/BN	5 TRK OUT TIP
	19	BN/YL	5 TRK OUT RING
20	45	YL/SL	5 STOT
	20	SL/YL	5 STOR
21	46	VI/BL	6 TIT
	21	BL/VI	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	BN/VI	6 STOR
25	50	VI/SL	
	25	SL/VI	

Table 500-11 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	SL/WH	8 TIR
6	31	RD/BL	8 STA IN 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 STA IN RING
11	36	BK/BL	9 TRK OUT TIP
	11	BL/BK	9 TRK OUT RING
12	37	BK/OR	9 STOT
	12	OR/BK	9 STOR
13	38	BK/GN	10 TIT
	13	GN/BK	10 TIR
14	39	BK/BN	10 STA IN TIP
	14	BN/BK	10 STA IN RING
15	40	BK/SL	10 TRK OUT TIP
	15	SL/BK	10 TRK OUTRIN G
16	41	YL/BL	10 STOT
	16	BL/YL	10 STOR
17	42	YL/OR	11 TIT
	17	OR/YL	11 TIR
18	43	YL/GN	11 STA IN TIP
	18	GN/YL	11 STA IN RING
19	44	YL/BN	11 TRK OUT TIP
	19	BN/YL	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
	23	GN/VI	12 TRK OUT RING
24	49	VI/BN	12 STOT
	24	BN/VI	12 STOR
25	50	VI/SL	
	25	SL/VI	

500.9 INSTALLING RECORDED ANNOUNCEMENT 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.

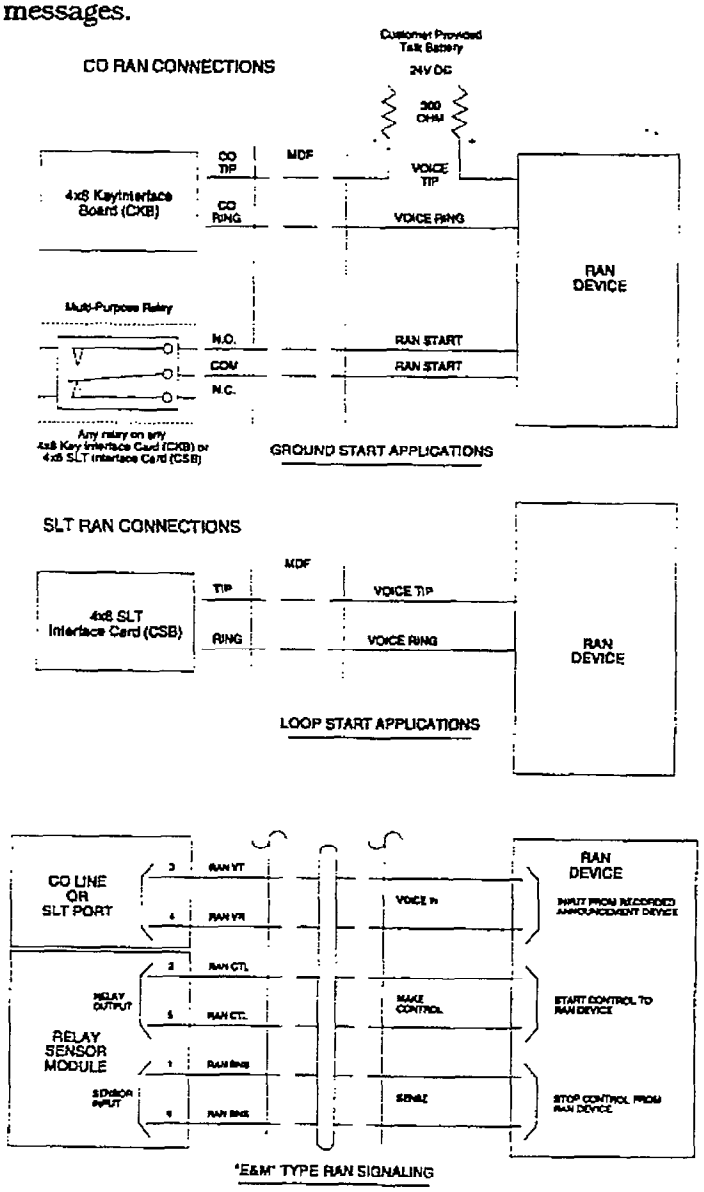


Figure 500-25 CO and SLT RAN Connections

500.10 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.

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.

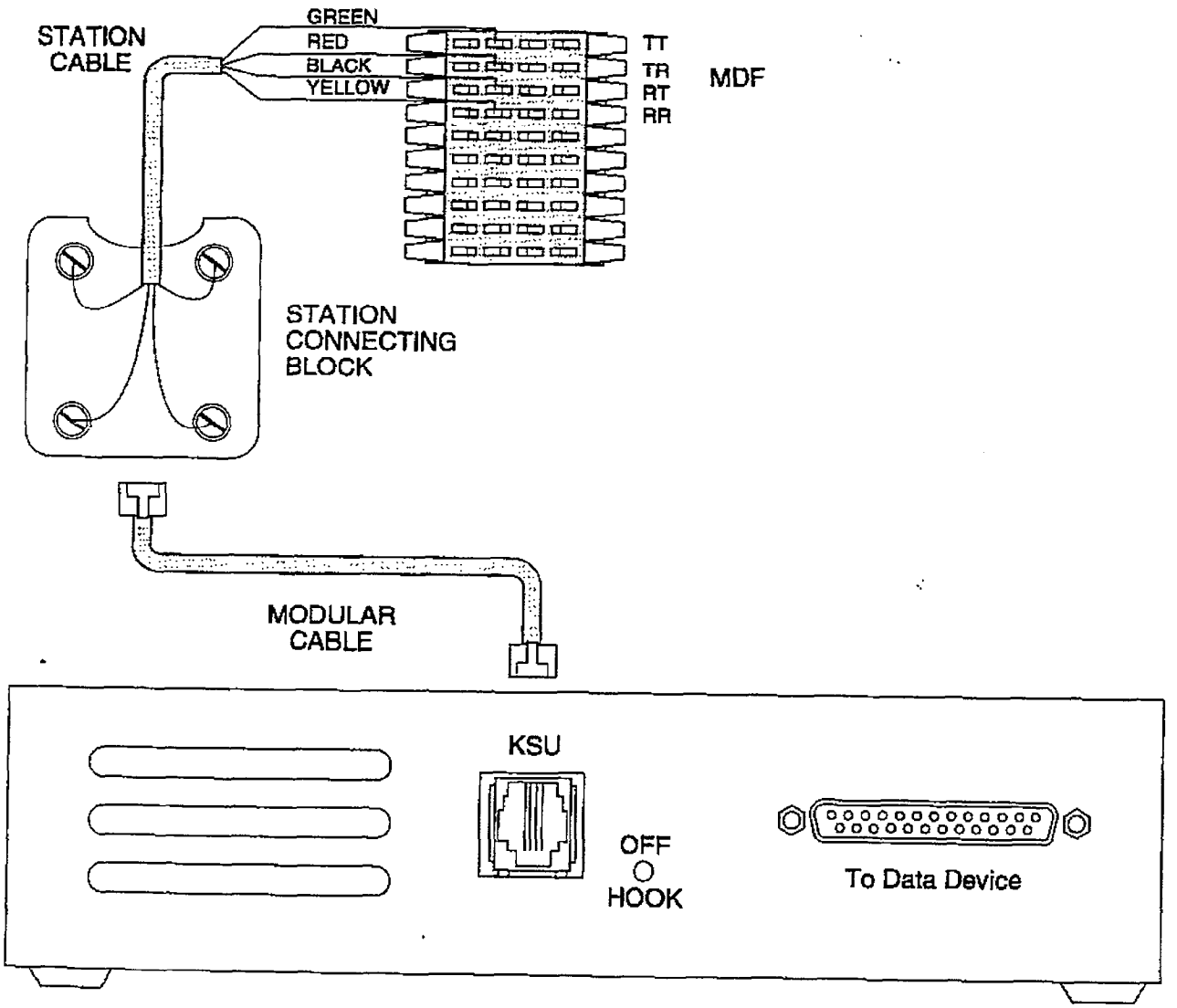


Figure 500-26 Digital Data Interface Unit (DDIU) wiring

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?

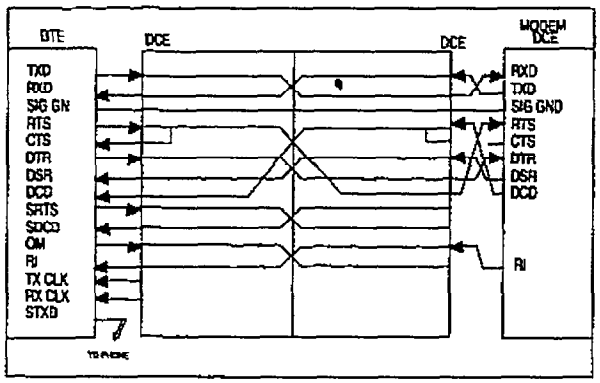
When planning the installation of the data feature, use a digital display phone at any location that is to originate a data connection. A DDIU can only be called; it cannot originate a connection. A digital display phone would typically be connected to a CRT terminal, or personal computer. A DDIU would typically be connected to a printer, or a MODEM.

The station wiring for a digital display phone and a DDIU are identical.

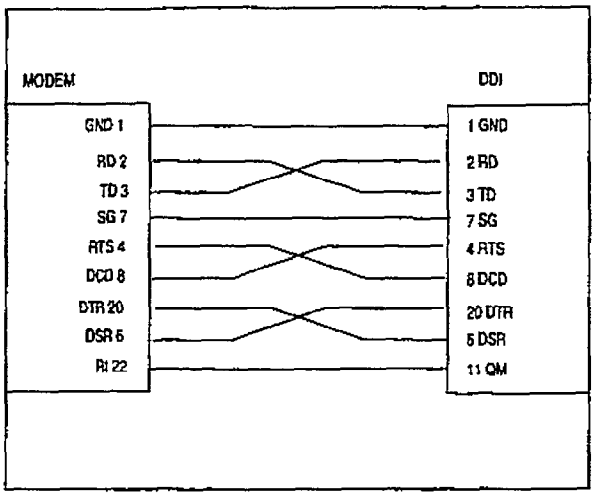
The data connector of the Digital Data Interface Unit (DDIU) is a 25-pin, type D connector which is configured as Data Communications Equipment with the following pin configurations.

PIN #	USE	DIRECTION
2	Receive Data	into telephone (or DDIU)
3	Transmit DATA	out of telephone (or DDIU)
4	Request To Send	into telephone (or DDIU)
5	Clear To Send	out of telephone (or DDIU)
6	Data Set Ready	out of telephone (or DDIU)
7	Signal Ground	
8	Data carrier detect	out of telephone (or DDIU)
11	unassigned	into telephone (or DDIU)
12	Secondary DCD	out of telephone (or DDIU)
15	Transmit Clock	out of telephone (or DDIU)
17	Receive Clock	out of telephone (or DDIU)
19	Secondary RTS	into telephone (or DDIU)
20	Data Terminal Ready	into telephone (or DDIU)
22	Ring Indicator	out of telephone (or DDIU)

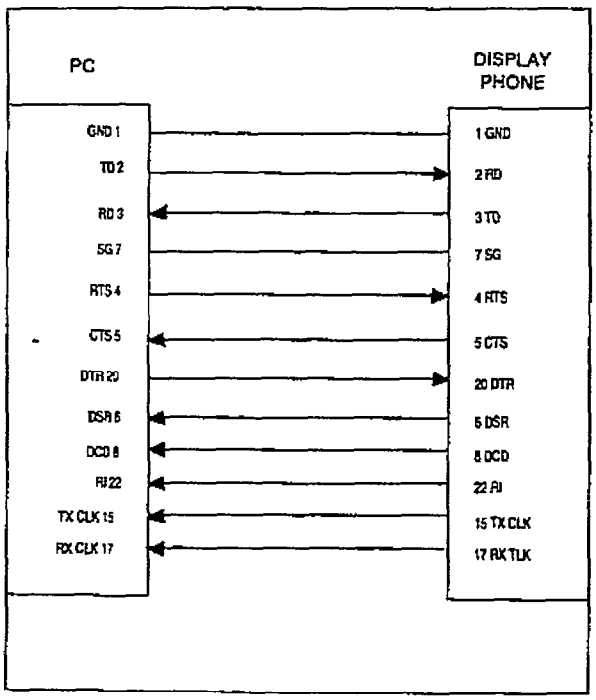
The following diagram will aid in the design of cables to connect the many different configurations of data communications devices.



Digital Systems Data Switching



Modem to DDIU Cable



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, 730.2, Station Identification for programming the Station ID of the Digital Data Interface Unit (DDIU). Also refer to Sec. 730.3, Digital Data Interface Unit (DDIU) for programming the parameters of the Digital Data Interface Unit (DDIU).

Table 500-12 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 30 character maximum may be selected in system programming. The standard format is 69 characters on a single line. A 30 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:

30 character format selected:

```
          1         2         3
123456789012345678901234567890
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)
012345678901234567890123(CR)(LF)
123456789012(CR)(LF)
```

80 character format selected:

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
AAA BB HH:MM:SS HH:MM MM/DD/YY HCCCCCCCCCCCCCCCCCCCCCCCCCC GGGGGGGGGGGG (CR)(LF)

STA CO TOTAL    START   DATE   DIALED                      ACCOUNT CODE
116 08 00:02:00 14:13 05/11/90 012345678901234567890123 123456789012(CR)(LF)
```

80 character format with Call Cost Display feature enabled:

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
AAA BB HH:MM:SS HH:MM MM/DD/YY HCCCCCCCCCCCCCCCCCCCCCCCCCC GGGGGGGGGGGG (CR)(LF)

STA CO TOTAL    START   DATE   DIALED                      ACCOUNT CODE  COST
116 08 00:02:00 14:13 05/11/90 012345678901234567890123 123456789012 000.00(CR)(LF)
```

ICLID 80 character format selected:

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

STA CO  TOTAL   START   DATE   DIALED                      ACCOUNT CODE
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
```

- *continue on next page* -

Table 500-13 SMDR Printout (Cont'd)

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

SECTION 600
SYSTEM CHECK-OUT

600.1 INTRODUCTION

Prior to actual power up and initialization, the *infinite* 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.

600.2 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 is set to "ON". Switch J3 on the DVX II Central Processor Board (CPB).
5. Make sure that plug-ended MDF cables connected to the KSU are secure and are plugged into the correct position.

600.3 POWER UP SEQUENCE

The power up sequence involves the proper application of AC power to the System, and CPB LED's. 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 CPB has one red LED located on the front of the CPB card. If the power up is successful, the red LED will flash.
4. Press the reset button on the CPB. The above CPB LED indication will repeat.
5. The system is ready for programming. If any problems have occurred, Refer to Section 800, Maintenance and Troubleshooting.

Table 600-1 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 700
CUSTOMER DATA BASE PROGRAMMING

700.1 INTRODUCTION

The *infinite* Digital Key Telephone System can be programmed to meet each customer's individual needs. All programming is done either at Station 100 using the 33-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 ASCII terminal, or a computer capable of emulating an 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 CPB or can be performed remotely (off-site) through the use of the on-board modem located on the CPB. 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 700-1) 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 700-1 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 leaving that data field. Data fields can be entered at random.

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.***

700.2 PROGRAM MODE ENTRY (Key Station)

Programming a digital terminal is performed at Port 01 (Station 100) using a 33-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 properly connected to Port 01 (Station 100).

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
 ------------------------------------------
 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    I    FLEX 18    K
 8      8      FLEX 9    O    FLEX 19    L
 9      9      FLEX 10   P    FLEX 20    ;
 *      *      FLASH     ,    ON-OFF     M
 #      #      HOLD      CR   SPEED      Z
 TRANS  X      DND       C    MUTE       V

adm>
```

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.

Figure 700-1 Data Terminal Program Codes Cross Reference

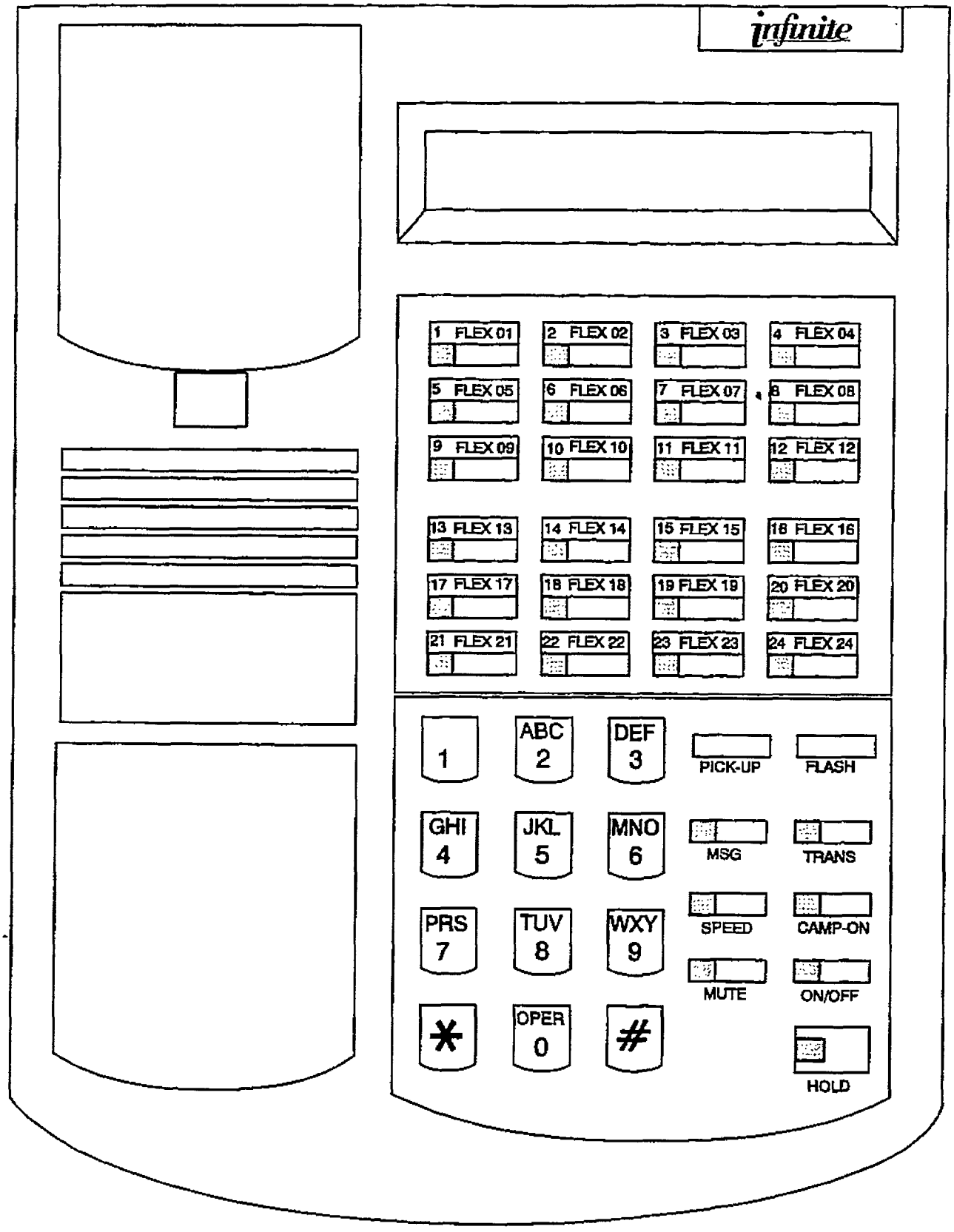


Figure 700-2 Infinite Digital Programming Button Mapping

Table 700-1 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.
CO 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.
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 11	Disabled
Music_On-Hold		Button 12	Enabled
Attendant Station Assignment (3 Stations)	Flash 10		100
Set Date and Time	Flash 11	Button 1-4	MM/DD/YY,12 Hr
PBX Dialing Codes	Flash 12	Buttons 1-5	None
Executive/Secretary Assignments	Flash 13	Buttons 1-4	None
Relay/Sensor Programming	Flash 14	Buttons 1-7	None
Baud Rate Assignments	Flash 15		
Port #1 ("On-Board" RS-232C)		Button 1	2400 Baud
Port #2 ("On-Board" Modem)		Button 2	300 Baud

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
Port #3 (I/O Expander Module RS-232C)		Button 3	2400 Baud
Port #4 (I/O Expander Module RS-422)		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 21		
SMDR		Button 1	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	0-4 08:00-17:00 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	
HUNT GROUP PROGRAMMING:	Flash 30		
Groups 1-8		Buttons 1-8	
Pilot/Circular		Button 9	
CO LINE GROUP PROGRAMMING:	Flash 40		
DTMF/Dial Pulse Signaling		Button 1	DTMF
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	

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
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 1-7	Cards 1-7
ICLID Ringing Assignment Feature	Flash 43	Buttons 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
Select Page A		Button 18	
Select Page B		Button 19	
New Station Range (#'s)		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		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	

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
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 1-7	Cards 1-7
Local Number/Name Translation Table	Flash 55	Buttons 1-4	
ICLID FEATURES:	Flash 56		
Enable/Disable		Button 1	Disabled
Name in Display		Button 2	
Baud Rate		Button 3	2400
Port #		Button 4	Port #1
*ACD GROUP PROGRAMMING:	Flash 60		
ACD Groups (1-8)	Page A	Buttons 1-8	None
Alternate ACD Group		Button 11	None
Overflow 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 (1-8)	Page B	Buttons 1-8	None
Select Page A		Button 18	
Select Page B		Button 19	
*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.
UCD GROUP PROGRAMMING:	Flash 60		
UCD Groups (1-8)	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 (1-8)	Page B	Buttons 1-8	None
Select Page A		Button 18	

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
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	Flash 62		None
*PC/ACD Event Trace	Flash 63		
Event Record		Button 1	Disabled
Port #		Button 2	Port #1
VM GROUP PROGRAMMING:	Flash 65		
VM Groups (1-8)		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 1-8	
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	

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

Table 700-1 Default Values (Cont'd)

FEATURE	PROGRAM CODE	FLEX BUTTON	DEFAULT VALUE
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	
Init LCR Tables		Button 7	
Init Entire System 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 13	
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 Data Base		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	
DATABASE UPLOAD/DOWNLOAD	Flash 86		
Database Upload Routine		Button 1	
Database Download Routine		Button 2	

*When the ACD Software package is purchased separately, the UCD features are replaced with the listed ACD features.

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 may be changed after entering programming.

d. The ON/OFF button LED is lit. The system is ready to program.

Other telephones connected to the system continue to function normally.

700.3 PROGRAM MODE ENTRY (Data Terminal or PC)

A data terminal connected to the RS-232C port on the CPB or remotely through the on-board modem 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 700-1 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 modem is accomplished by accessing Port [199] either through a direct ringing assignment or through DISA or by being transferred to Port [199] by any internal station.

Proper entry of the password will result in the ADM> prompt. Proceed with programming referring to Figure 700-1 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 700-1.

Using the Remote Admin Key Definitions follow the same steps and procedures to program the *infinite* Digital Key Telephone System when using a terminal (as outlined in the following sections).

700.4 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.

700.5 INITIALIZATION

The system has been pre-programmed with certain features which are called default data (Refer to Table 700-1). These features are loaded into memory when the system is initialized.

NOTE ***The system should be initialized when installed or at any time the database has been corrupted.***

Use the procedures below to return the system database to default values:

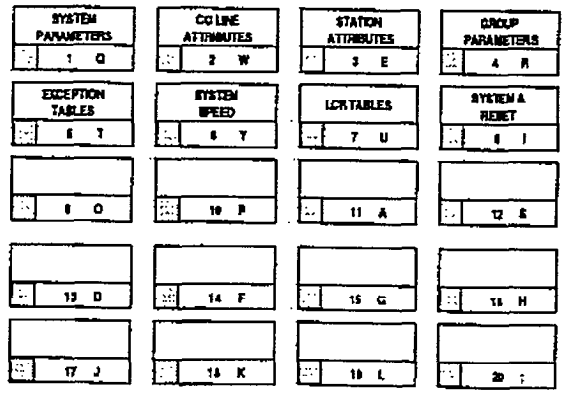
a. Enter the programming mode.

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:



NOTE ***Buttons 1-7 DO NOT initialize the database.***

700.6 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.

700.7 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.

700.8 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 DVX I Main Key Service Board or on the DVX II System Central Processor Board (CPB) can be used for database programming.

When entering the system remotely via a Personal Computer, access to the on-board modem is accomplished by accessing Port [199] either through a direct ringing assignment or through DISA or by being transferred to Port [199] by any internal station.

1. Connect one end of an RS-232C Serial cable from the RS-232C connector on the DVX I Main Key Service Board to the desired Comm Port on the PC.
   or
   Connect one end of an RS-232C Serial cable from the RS-232C connector on the Central Processor Board of the DVX II 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 & 20 MUST be jumpered together for 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
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	

3. Press the Enter key on the PC. The following display will be seen on the Personal Computer monitor.

```
PROCOMM PLUS Ready!

1428 Digital Key-System
Eng. Ver. 2.0a15 DATE: 08/14/92  TIME: 09:11:43
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 700-1 for terminal characters that represent the keyset buttons. By entering a [?] from the terminal, a HELP screen will appear. Refer to the previous screen capture and enter the information shown.
5. Enter the information on the following screen capture.

```
PROCOMM PLUS Ready!

1428 Digital Key-System
Eng. Ver. 2.0a15 DATE: 08/14/92  TIME: 14:17:12
ENTER PASSWORD:
adm>,
    ENTER PROGRAM NO
adm>86
 LOAD DATABASE ROUTINE
ENTER BUTTON NUMBER
adm>u
 DOWNLOAD DATABASE
 PRESS HOLD
adm>
```

6. Press the Enter key after entering the above information. 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 destination shown in the communications package default settings area.

```
Enter log filename (CR for default):
```

NOTE ***The downloaded database can not be changed in the PC. 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. On the PC, press the Alt + F1 keys again to turn the log file off.

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. When transmission of the download file is complete, a confirmation tone will be heard.

The following is a list of strings and the order that they will received in:

1.	DB_VERSION
2.	SYS_TIMERS
3.	DB_VERSION
4.	RELAY_BOX (1 thru 7)
5.	NIGHT_MODE
6.	HUNT_GROUP (330 thru 337)
7.	CO_LINE (1 thru 28)
8.	STATION (100 thru 155)
9.	KEYSET_BUTTONS (100 thru 155) where equipped
10.	DSS_BUTTONS (100 thru 155) where equipped
11.	UCD_GRP (550 thru 557)
12.	UCD_TIMERS
13.	VOICE_MAIL_GRP (440 thru 448)
14.	VOICE_MAIL_OUTPULSE
15.	ALLOW_TABLE_A
16.	ALLOW_TABLE_B
17.	DENY_TABLE_A
18.	DENY_TABLE_B
19.	OFFICE_CODE_TABLE
20.	AREA_CODE_TABLE
21.	3_DIGIT_ROUTE_TABLE
22.	6_DIGIT_ROUTE_TABLE (table entry)
23.	EXCEPTION_CODE_TABLE
24.	ROUTE_LIST_TABLE (table entry)
25.	INS/DEL_TABLE (table entry)
26.	DAILY_START_TABLE
27.	WEEKLY_START_TABLE
28.	ROUTE_FOR_555-1212

29.	SYSTEM_SPEED_BIN
30.	STA_SPEED_BIN (station 100 thru 155)
31.	SPEED_DIR (directory entry)
32.	ICLID_TRANS_TABLE (trans table entry)
33.	ICLID_UAC_TABLE (uac table entry)
34.	SPECIAL_TABLE
35.	PORT_TO_STATION
36.	PORT_TO_CO_LINE
37.	STATUS_REQUEST
38.	END_OF_FILE

Forward and backward compatibility will be maintained. If the file being uploaded from the PC contains less information in a string then 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.

```
PROCOMM PLUS Ready!

1428 Digital Key-System
Eng. Ver. 2.0a15 DATE: 08/14/92  TIME: 16:11:06
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 PgDn 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                    B) RAW ASCII
  Y) YMODEM (Batch)            T) TELINK
  G) YMODEM-G (Batch)          M) MODEM7
  O) 1K-XMODEM                 W) WXMODEM
  E) 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 ASCII)
```

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.

```
    ENTER PROGRAM NO
adm>m
exiting admin...


DATE: 08/14/92 TIME: 16:24:53
exiting maintenance utility...
```

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.

6. On the PC, press the Alt + [X] keys. Press the Enter key to exit Procomm and return to the DOS prompt.

SECTION 710
SYSTEM PARAMETERS PROGRAMMING

710.1 SYSTEM TIMERS

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. 700.2 , Program Mode Entry (Key Station).

If any System Timers are to be changed:

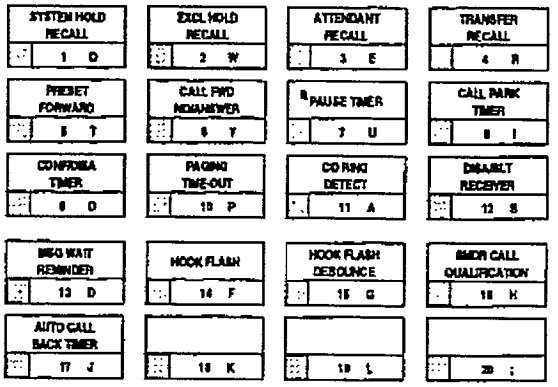
1. Press FLASH and dial [01]. The following message is shown on the display phone:

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.



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/DISA 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)

SYSTEM TIMERS (Cont'd)

A. System Hold Recall Timer

Programming Steps

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:

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.

Description

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.

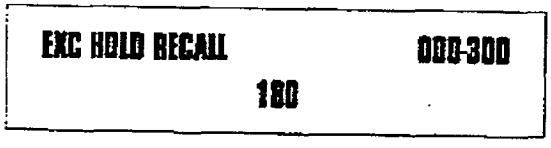
Related Programming: Refer to Sec. 710.2, Hold Preference for selecting System Hold Preference; Refer to Sec. 710.3, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

B. Exclusive Hold Recall Timer

Programming Steps

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:



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.

Description

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. 710.2, Hold Preference for selecting Exclusive Hold Preference; Refer to Sec. 710.3, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

SYSTEM TIMERS (Cont'd)

C. Attendant Recall Timer

Programming Steps

If this timer is to be changed:

1. Press the ATTENDANT RECALL TIMER flexible button (Button #3). The following message is shown on the display phone:

ATND RECALL TIMER	00-60
01	

2. Enter a two-digit timer value on the dial pad which corresponds to 00-60 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 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. 710.3, Attendant Station Assignment; Refer to Sec. 710.1, System Timers for the System Hold Recall Timer, Exclusive Hold Recall Timer, Call Park Recall Timer, and Transfer Recall Timer. Refer to Sec. 720 , CO Line Programming for Loop Supervision programming.

D. Transfer Recall Timer

Programming Steps

If this timer is to be changed:

1. Press the TRANSFER RECALL TIMER flexible button (Button #4). The following message is shown on the display phone:

TRANSFER RECALL	000-300
045	

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.

Description

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. 710.3, Attendant Station Assignment for assigning the Attendant(s) to receive recalls.

SYSTEM TIMERS (Cont'd)

E. Preset Forward Timer

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. 730.1, 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 710.1 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. 710.1, System Timers, Preset Forward Timer; Refer to 730.1, Station Attributes Programming, Call Forwarding option.

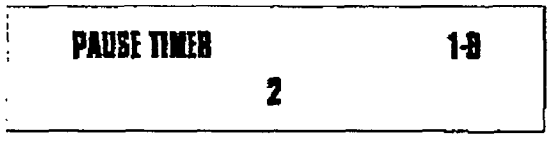
SYSTEM TIMERS (Cont'd)

G. Pause Timer

Programming Steps

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:



2. Enter a one-digit timer value on the dial pad which corresponds to 1-9 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 length of the pause when programmed for use with speed dialing and LCR Insert Tables.

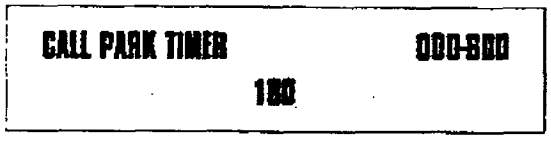
Default: By default, the Pause Timer is set at 2 seconds and is variable from 1 to 9 seconds. There is no 0 entry.

H. Call Park Recall Timer

Programming Steps

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:



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.

Description

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. 710.3, 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 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.***

Related Programming: Refer to Sec. 720 , CO Line Programming for DISA Trunk-to-Trunk (Per CO Line) programming; Loop Supervision Programming; and DISA Programming. Also refer to Sec. 730.1, 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 TIMEOUT TIMER 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. 730.1, Station Attributes Programming for allowing stations access to the system paging resources.

SYSTEM TIMERS (Cont'd)

K. CO Ring Detect Timer

Programming Steps

If this timer is to be changed:

1. Press the CO RING DETECT TIMER flexible button (Button #11). The following message is shown on the display phone:

2. Enter a one-digit timer value on the dial pad which corresponds to 2 (200 msec) -9 (900 msec.) milli-seconds.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

This timer controls the time necessary to detect an outside line as ringing into the system.

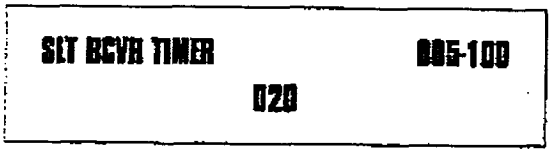
Default: By default, the CO Ring Detect Timer is set at 3 (300 msec), and is variable from 2 (200) msec. to 9 (900) msec. There is no 0 or 1 entry.

L. SLT DTMF Receiver Timer

Programming Steps

If this timer is to be changed:

1. Press the SLT DTMF RECEIVER TIMER flexible button (Button #12). The following message will be shown on the display.



2. Enter a three-digit timer value on the dial pad which corresponds to 005-100 seconds.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

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.

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. 710.10, SMDR Programming; Sec. 720.1, CO Line Programming, Class of Service (COS) Programming; Sec. 730.1, Station Attributes Programming, Station Class of Service (COS) options. Also refer to Sec. 765.1, LCR Tables Programming.

SYSTEM TIMERS (Cont'd)

M. Message Wait Reminder Tone

Programming Steps

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 0.5-2.0 seconds.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will 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 710-1 Hook Switch Activity.

Default: By default, the SLT Hook Flash Timer is set at 10 (one second) as is variable from 0.5 (05) seconds to 2.0 (20) seconds.

NOTE	***Some Single Line telephones have a fixed or programmable Flash Timer (Flash or Tap button). This Hook Switch Timer (DVX[I] and DVX[II] 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

Programming Steps

If this timer is to be changed:

1. Press the SLT HOOK FLASH DEBOUNCE TIMER flexible button (Button #15). The following message is shown on the display phone:

HOOK SWT BOUNCE	000-180
010	

2. Enter a three-digit timer value on the dial pad which corresponds to 0-1 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-Hook signals that are shorter in duration than this timer will be ignored by the system. Refer to Figure 710-1 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.

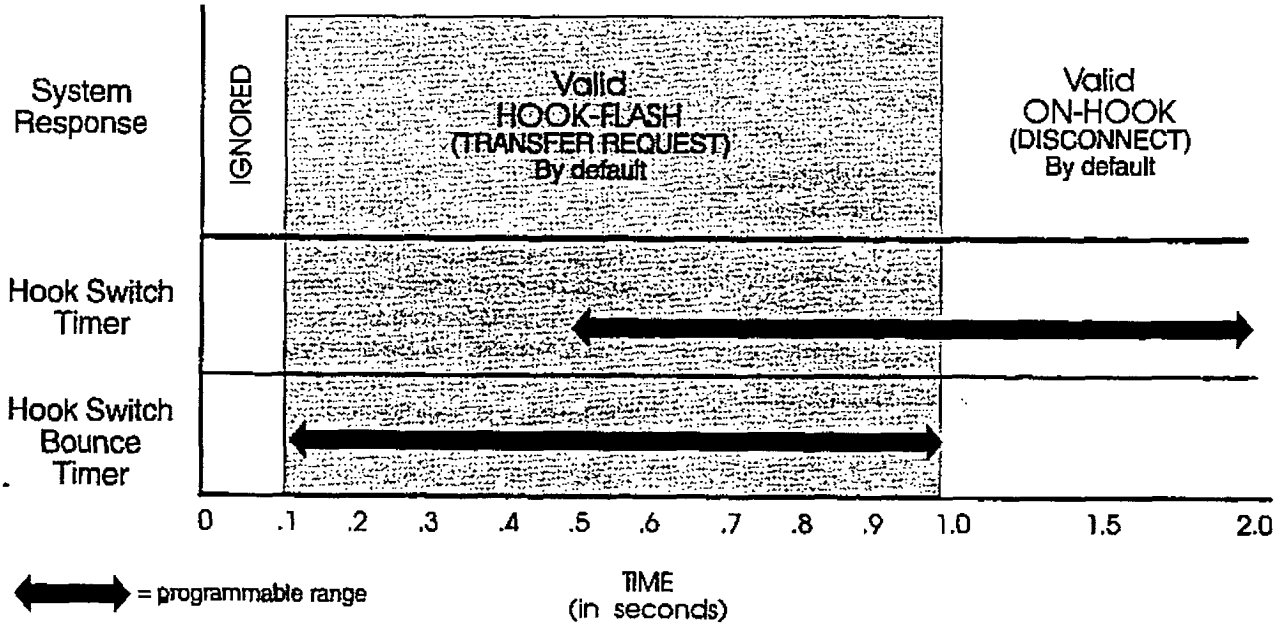


Figure 710-1 Hook Switch Activity

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:

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 display will now update.

Description

This timer determines the length of time that is needed to determine a valid SMDR call for SMDR reporting purposes.

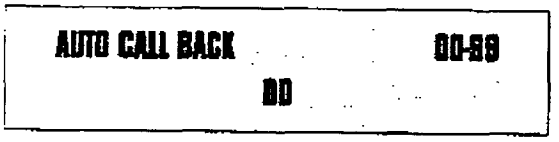
Default: By default, the SMDR Call Qualification Timer is set to 30 sec. and is variable from 00 to 60 seconds in 1 sec increments.

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:



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 display will now update.

Description

To accommodate the reduced number of buttons on the *infinite* 8-button 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.

710.2 SYSTEM FEATURES 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. 700.2, Program Mode Entry (Key Station)

If any System Features are to be changed:

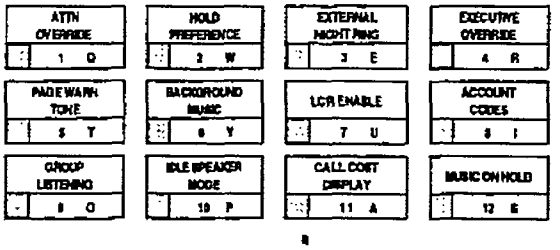
1. Press FLASH and dial [05]. The following message is shown on the display phone:

```
SYS_FEAT AO SY ENR EO PW
BGM LCR AC G S CC MH
```

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.



PROG CODE	FLEX BTN	FUNCTION	DEFAULT	CUSTOMER DATA
FLASH 05	1	Attendant Override	Disabled	
	2	Hold Preference	System	
	3	External Night Ring	Disabled	
	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	
FLASH 10		Attendant Station Assignment	100	
FLASH 11	1-4	Time/Date Format	12 HR:M/D	
FLASH 12	1-5	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	1-7	Page/Contact Programming	None	
FLASH 15	1	Port #1 ("On-Board" RS-232C)	2400	
	2	Port #2 ("On-Board Modem)	300	
	3	Port #3 (I/O Expander Module RS-232C		
	4	Port #4 (I/O Expander Module RS-422)		

PROG CODE	FLEX BTN	FUNCTION	DEFAULT	CUSTOMER DATA
FLASH 21	1	SMDR Enable/Disable	Disabled	
	2	Call Type	LD Only	
	3	Print Columns	80	
	4	Baud Rate	2400	
	5	Port	1	
FLASH 22	1	Night Mode Operation Auto/Manual	Manual	
	2	ANM Schedule - Monday	0	/
	3	ANM Schedule - Tuesday	1	/
	4	ANM Schedule - Wednesday	2	/
	5	ANM Schedule - Thursday	3	/
	6	ANM Schedule - Friday	4	/
	7	ANM Schedule - Saturday	5########	/
	8	ANM Schedule - Sunday	6########	/
FLASH 23	1-4	Directory Dialing Table		

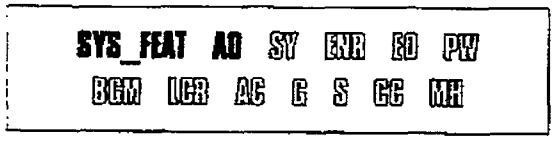
SYSTEM FEATURES (Cont'd)

A. Attendant Override

Programming Steps

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.



Description

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. 710.3, Attendant Station Assignment for designating a station as an Attendant.

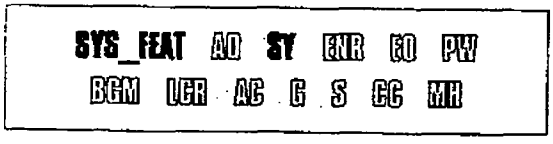
NOTE	***Attendant override will function ONLY when the Attendant station is assigned a flex button assigned as Attendant Override.***

B. Hold Preference

Programming Steps

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.



Description

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. 710.1, System Timers for the System Hold Recall Timer and Exclusive Hold Recall Timer.

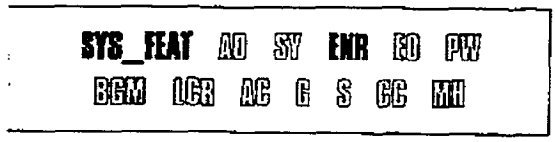
SYSTEM FEATURES (Cont'd)

C. External Night Ring

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.



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.

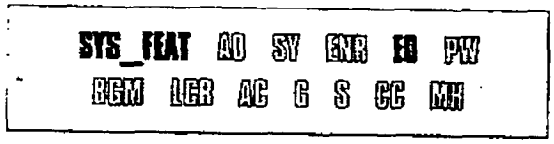
Related Programming: Refer to Sec. 710.7, Relay/Sensor Programming; Refer to Sec. 720.1, CO Line Programming for assigning UNA status to a CO Line(s).

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 will 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.



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".

Default: By default, Executive Override Warning Tone is enabled.

Related Programming: Refer to Sec. 730.1, Station Attributes Programming, Executive/Secretary Pairs for assigning stations as Executive stations.

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.

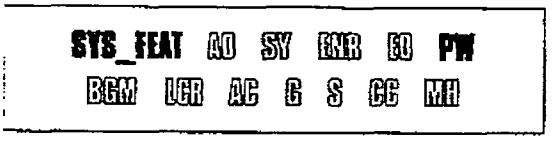
SYSTEM FEATURES (Cont'd)

E. Page Warning Tone

Programming Steps

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.



Description

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.

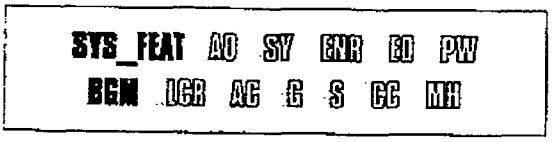
Related Programming: Refer to Sec. 730.1, Station Attributes Programming for Paging Access and Page Group Assignments.

F. Background Music Channel

Programming Steps

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.



Description

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. 710.2, System Features Programming, Music On Hold for the Music-On-Hold assignment.

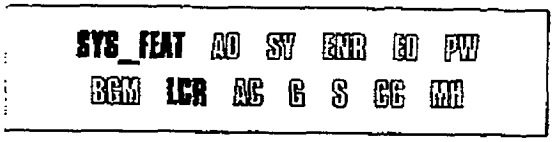
SYSTEM FEATURES (Cont'd)

G. LCR Enable

Programming Steps

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.



Description

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 775-8 DB Printout of LCR Default.

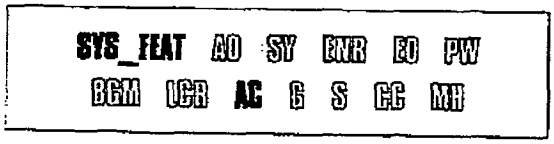
Default: By default, LCR is disabled.

Related Programming: Refer to Sec. 765.1, LCR Tables Programming.

H. Account Codes - Forced

Programming Steps

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.



Description

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.

SYSTEM FEATURES (Cont'd)

I. Group Listening

Programming Steps

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.

Description

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.

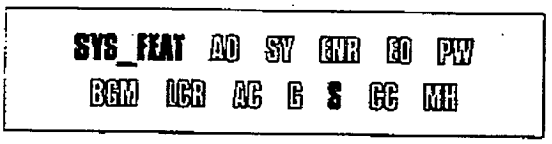
Default: By default, Group Listening is disabled.

J. Idle Speaker Mode

Programming Steps

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 = 1st digit dialed is muted.
2. Press the HOLD button to save the entry. Confirmation tone is heard.



Description

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

Default: By default, idle speaker mode is disabled.

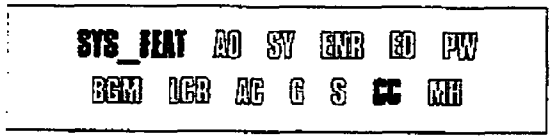
SYSTEM FEATURES (Cont'd)

K. Call Cost Display Feature

Programming Steps

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.



Description

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 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 use LCR enabled to get the call cost display.

Default: By default, the Call Cost Display Feature is disabled.

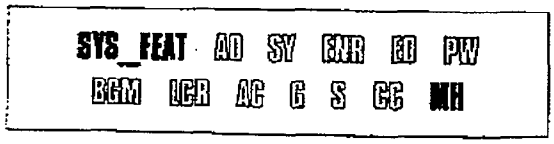
Related Programming: Refer to Sec. 710.2, System Features Programming, LCR Enable.

L. Music On Hold

Programming Steps

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.



Description

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.

MISC. SYSTEM PARAMETERS

710.3 ATTENDANT STATION ASSIGNMENT

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. 710.1, System Timers for the System Hold Recall Timer, Exclusive Hold Recall Timer, Call Park Recall Timer, and Attendant Recall Timer; Sec. 710.2, System Features Programming, Attendant Override; Sec. 710.11, Weekly Night Mode Schedule programming.

710.4 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 xM

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

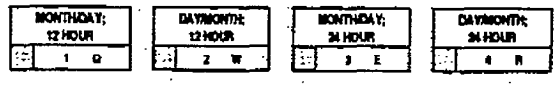
d. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

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:



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. 420.18, Setting System Time and Date from the first programmed attendant; Sec. 710.3, Attendant Station Assignment.

MISC. SYSTEM PARAMETERS (Cont'd)

710.5 PBX DIALING CODES

Programming Steps

If PBX Dialing 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.

Description

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. 720, CO Line Programming for assigning a CO Line(s) as PBX Line(s).

710.6 EXECUTIVE/SECRETARY PAIRS

Programming Steps

If Executive/Secretary pairs are to be assigned:

a. Press FLASH and dial [13]. 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.

Description

There are four Executive/Secretary pairs available. 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 below when entering the Executive/Secretary programming area:

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)

710.7 RELAY/SENSOR PROGRAMMING

Programming Steps

If Relays are to be assigned:

a. Press FLASH and dial [14]. Relay #1 (Flex Button #1) and On-Board Relays (Flex Button #11) LEDs will be lit indicating the system is in the programming mode for "On-Board" relay programming. The following message is shown on the display phone:

> **ON BOARD RELAY PROG**
> **RELAY 1 = NONE**

To program "On-Board" relays:

a. Press the "On-Board" Relays (Flex Button #11) to indicate the system is in the "On-Board" relay programming mode.

b. Press the desired flex button that corresponds to the relay to be programmed and follow the steps outlined in the following section.

To program relays on the Relay/Sensor Module:

a. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor Interface Module is to be programmed.

b. Press flex buttons (1-3) to indicate the relay to be programmed.

To program Sensing circuits on a Relay/Sensor Module:

a. Press the appropriate flex button 12 thru 15 to indicate which Relay/Sensor Interface Module is to be programmed.

b. Press flex buttons (4-6) to select the sensing circuit to be programmed.

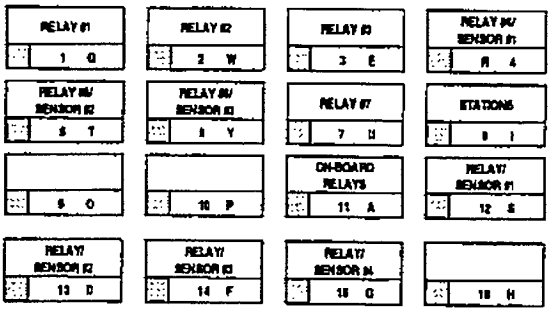
NOTE	***It is necessary to assign a station number to the Relay/Sensor Interface Module. Refer to "F" in this section. In Station Programming, it is also necessary to assign a Station ID to the station port used for a Relay/Sensor Interface Module.***

NOTE	***On-Board relays are numbered from 1-7 correlating to the station boards plugged into the system (i.e. the right most station board in slot J7 corresponds to relay number 1, a station board in slot J6 corresponds to relay 2 etc...).***

Description

The DVX I and DVX II systems offer 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 either system. Each Relay/Sensor Interface module contains three independent relays and three sensing input circuits. In addition, the DVX II 4x8 Key Interface boards (CKB) each contain a Relay Contact (for up to seven "on-board" relays) that may also be assigned to any of the functions mentioned above.

The buttons on the digital terminal are defined as shown below when entering the Relay/Sensor programming area:



Where:

- Button #11 = On-Board Relay programming (Relays on the 4x8 Key Interface Board (CKB)
- 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. 740.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 745.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

RELAY/SENSOR PROGRAMMING (Cont'd)

A. Programming relay for External Paging:

Programming Steps

1. Press the flex button that corresponds to the desired relay to be programmed.
2. Dial [1] on the dial pad.
3. Enter a one-digit page zone number (1-4)
4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ON BOARD RELAY
RELAY 1 = EXT PAGE ZONE X
```

Where:

- X= Page Zones 1 thru 4

Description

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.

B. Programming relay for RAN Starting:

Programming Steps

1. Press the flex button that corresponds to the desired relay to be programmed.
2. Dial [2] on the dial pad.
3. Enter a one-digit RAN Table number (1 thru 8) the relay should be associated to.
4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ON BOARD RELAY
RELAY 1 = RAN START X
```

Where:

- X= RAN Table number

Description

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 port for talk battery. A Loud Bell Control contact assigned to that CO line port 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.

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. 740.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 745.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

RELAY/SENSOR PROGRAMMING (Cont'd)

C. Programming relay for Power Failure Transfer:

Programming Steps

1. Press the flex button that corresponds to the desired relay to be programmed.
2. Dial [3] on the dial pad.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ON BOARD RELAY
RELAY 1 = POWER FAIL
```

Description

POWER FAILURE TRANSFER: When the *infinite* 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 a multi-use relay on any 4x8 Key Interface Board (CKB) or 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 twelve (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:

Programming Steps

1. Press the flex button that corresponds to the desired relay to be programmed.
2. Dial [4] on the dial pad.
3. Enter the three-digit station number (100-155)
4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ON BOARD RELAY
RELAY 1 = LOUD BELL XXX
```

Where:

– XXX= Station number

Description

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.

There are seven control contacts on the DVX[II], which can be individually programmed as Loud Bell Control to control a customer provided ringing device to external areas. One contact for each 4x8 Key Interface Board (CKB).

Loud Bell Control contacts can be assigned to any station and will follow the ringing assignments of that station including tone ringing 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 flex button that corresponds to the desired relay to be programmed.
2. Dial [5] on the dial pad.
3. Enter a two-digit CO Line number (01-28)
4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

```
ON BOARD RELAY
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.

There are seven control relay contacts on the DVX[II], which can be individually programmed as Loud Bell Control to control customer provided ancillary equipment. One contact on each 4x8 Key Interface Board (CKB).

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 associated to.

To delete a station assignment:

a. Press the STA flex button (Button #8).
b. Press the TRANSfer button.
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 port used for a Relay/Sensor Interface module in Sec. 730.1, Station Attributes Programming.

RELAY/SENSOR PROGRAMMING (Cont'd)

G. Program sensing circuit as a RAN Sensing (RAN END) circuit:

Programming Steps

a. Dial [6] on the dial pad.

b. Enter a one-digit RAN Table number (1-8) the sensing circuit should be associated to.

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

RELAY/SENSOR YYY
SENSOR 1 = RAN END X

Where:

– X= RAN Table number

Description

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 Page/Relay contact assigned to an announcement table in programming would provide contact closure to start the Recorded Announcement device.

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. 740.1, Automatic Call Distribution (ACD), ACD Recorded Announcement Assignment(s); or Sec. 745.1, Uniform Call Distribution (UCD), UCD Recorded Announcement Assignment(s) for RAN Table programming.

MISC. SYSTEM PARAMETERS (Cont'd)

710.8 BAUD RATE ASSIGNMENTS

Programming Steps

If Baud Rate(s) are to be assigned:

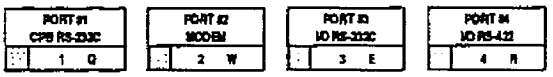
1. Press FLASH and dial [15]. The first button will be lit and ready for programming Port #1. The following message is shown on the display phone:

PORT	BAUD
1	2400

Description

The *infinite* Digital (DVX) Key Telephone Systems can provide outputs such as SMDR or ICLID to either the standard RS-232C "On-Board" connector on the DVX [I] BKSU or CPB board or to the optional RS-232C/422 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.



To program the Baud Rate(s) for Ports #1, #3 or #4:

Programming Steps

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.

Description

PORT #1: Port #1 is the "On-Board" RS-232C port on either the DVX [I] and DVX [II] systems.

PORT #3: Port #3 is the RS-232C connector on the I/O Expander Module used in the *infinite* Digital Key Telephone systems.

PORT #4: Port #4 is the RS-422 connector on the I/O Expander Module used in the *infinite* Digital Key Telephone systems.

Default: By default, Port #1 (CPB RS-232C), Port #3 (RS-232C) and Port #4 (RS-422) Baud Rate(s) are 2400 Baud.

Related Programming: Refer to Sec. 710.10, SMDR Programming features; Refer to Sec. 750.1, ICLID Programming.

To verify Port #2 Baud Rate:

Programming Steps

1. Press the PORT #2 flexible button (Button #2). to verify the baud rate of the "On-Board" modem. The following message is shown on the display phone:

PORT	BAUD
2	300

Description

PORT #2: Port #2 is the "On-Board" modem which is included in either DVX [I] or DVX [II] Digital systems. The baud rate will be 300 Baud for the "On-Board" modem or 1200 Baud for the optionally installed 1200 Baud modem.

Default: By default, the "On-Board" modem Baud Rate is 300 Baud.

MISC. SYSTEM PARAMETERS (Cont'd)

710.9 ACCESS CODES

Programming Steps

If the system is in the programming mode, continue using program codes. If starting to program here, enter the programming mode. Refer to Sec. 700.2, Program Mode Entry (Key Station).

If Access Codes are to be changed:

1. Press FLASH and dial [20]. The following message is shown on the display phone:

ACCESS CODES
ENTER BUTTON NUMBER

Description

This section describes the procedures and steps necessary to program Access codes.

The buttons on the digital terminal are defined as shown below when entering the Access Codes programming area:

A. DISA Access Code

Programming Steps

If this feature is to be assigned:

1. Press the DISA ACCESS CODE flexible button (Button #1). The following message is shown on the display phone:

DISA ACCESS CODE
100

2. Enter a three-digit value on the dial pad which corresponds to the first attendant station. A maximum of 3 stations can be entered.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

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.

To disable the DISA access code, enter three pounds (###).

Default: By default, 100 is assigned as the access code.

Related Programming: Refer to Sec. 710.1, System Timers for the Preset Forward Timer, and Conference/DISA Timer; Sec. 720.1, 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. 720.1, CO Line Programming for CO Line Privacy and Conference options.

ACCESS CODE PROGRAMMING (Cont'd)

B. Database Admin. Password

Programming Steps

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.

Description

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

Care 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)

710.10 STATION MESSAGE DETAIL RECORDING (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:

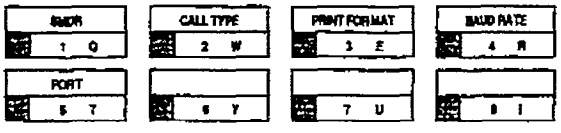
SDR	TPE	PNT	BAUD	PORT
NO	LD	80	2400	1

2. To program SMDR features, use the flexible button(s) as defined in the following procedures.
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

The *infinite* Digital Key Telephone Systems can provide SMDR output to either the standard RS-232C "On-Board" connector on the DVX[I] BKSU or CPB board or to the optional RS-232C/422 I/O Expander Module connector(s). When SMDR is desired, the following system-wide parameters will determine how the SMDR information will be reported.

The buttons on the digital terminal are defined as shown below when entering the SMDR programming area.



Related Programming: Refer to Sec. 710.5, PBX Dialing Codes; Sec. 710.1, SLT DTMF Receiver timer; Sec. 730.1, Station Class of Service (COS); and Sec. 760.1, 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. 710.1 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 recorded. 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 Distance 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

Programming Steps

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 = 30-Character is enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.

Description

The system can be programmed to print individual SMDR records in either a 1-line 80-character format or a 3-line 30 character format.

Default: By default, the 1-line 80-character format is selected.

D. Baud Rate Display

Programming Steps

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.

Description

The *infinite* Digital Key Telephone Systems can provide SMDR output to either the standard RS-232C "On-Board" connector on the DVX[I] BKSU or DVX[II] CPB board or to the optional RS-232C/422 I/O Expander Module connector(s). The Baud Rate will be displayed as either 300 baud, 1200 baud, 2400 baud, 4800 baud, 9600 baud.

Related Programming: Refer to 710.8, Baud Rate Assignments for programming SMDR Baud Rate Assignment.

E. SMDR Port Assignments

Programming Steps

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 ("On-Board" RS-232C)
   - 2= Port #2 ("On-Board" Modem)
   - 3= Port #3 (I/O Expander Module RS-232C)
   - 4= Port #4 (I/O Expander Module RS-422)
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.

Description

Port #1 refers to the standard RS-232C "On-Board" connector on the DVX[I] Basic KSU or the CPB board on the DVX[II].

Port #2 refers to the "On-Board" 300 Baud modem provided with the system.

Port #3 refers to the RS-232C connector on the I/O Expander Module.

Port #4 refers to the RS-422 connector on the same I/O Expander Module installed in either *infinite* Digital system.

Default: By default, Port #1 is used for SMDR.

MISC. SYSTEM PARAMETERS (Cont'd)

710.11 WEEKLY NIGHT MODE SCHEDULE

Programming Steps

If entries or changes need to be made to this schedule:

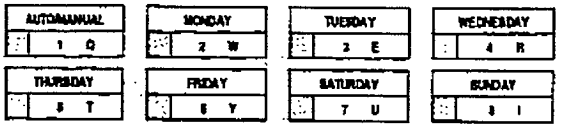
a. Press FLASH and dial [22]. The following message will then be shown on the display:

DAY	END	START	AUTO
MON	0800	1700	YES

Description

The *infinite* 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.



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.

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. 720.1, CO Line Programming, CO Line Ringing Assignments; Sec. 730.1, Station Attributes Programming, Station Class of Service (COS) assignments. Also refer to Sec. 710.3, Attendant Station Assignment for Attendant station assignments.

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.

MISC. SYSTEM PARAMETERS (Cont'd)

710.12 DIRECTORY DIALING

Programming Steps

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
nnnnnnnnnnnnnnnnnnnnnnnnnnnn
```

Where:

- AAA= Directory List Entry Number (000-199)
- 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 (000-199)
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).

Description

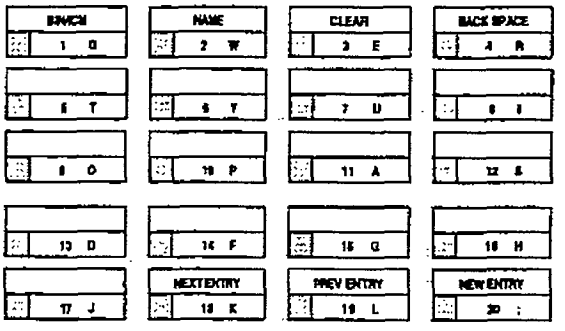
Directory dialing allows station users to obtain a directory of station users and have the system dial the extension that is currently on the display. The *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] System provides locations for up to 200 names.

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 *infinite* DVX [I] System provides locations for up to 100 names, while the *infinite* DVX [II] 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.



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
1. Press the BIN/ICM flexible button (Button #1). 2. Enter a three-digit station intercom number (100-155) or Enter a three-digit System speed dial number (020-099). Enter 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.	**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	Description
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:	**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 mobil phone number) or to have several different names all associated to the same speed dial bin.

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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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.

MISC. SYSTEM PARAMETERS (Cont'd)

DIRECTORY DIALING (Cont'd)

To clear an entry:

Programming Steps	Description
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)

710.13 HUNT GROUPS

A. Hunt Group Programming

Programming Steps

If Hunt Groups are to be assigned:

1. Press FLASH and dial [30]. The following message will be shown on the display:

HUNT GROUP 330 P ###, ###
###, ###, ###, ###, ###, ###

2. The top left button in the flexible button field will be lit for programming Hunt Group 1 (330). To change Hunt Groups or enter a different Hunt Group, press the appropriate flexible button 1-8 (330-337) 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

Programming Steps

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

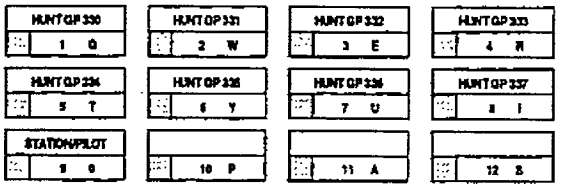
Description

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.



Description

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 directed 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 hunting.

MISC. SYSTEM PARAMETERS (Cont'd)

710.14 LOCAL NUMBER/NAME TRANSLATION 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 00-19

2. The ROUTE NUMBER LED is lit. Enter the two-digit Route Number (00-19) from what was entered in program code, FLASH 43.
   - 00-09= DVX[I] System
   - 00-19= DVX[II] System

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:

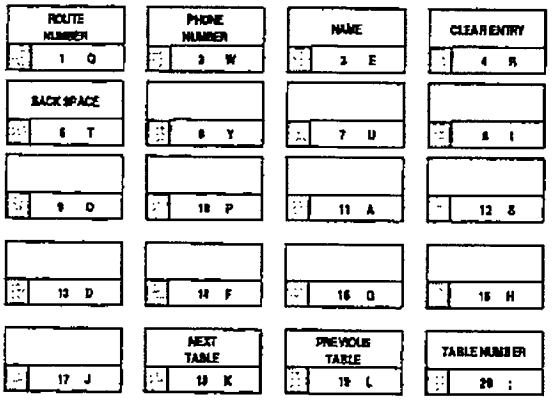
ENTER TABLE NUMBER

2. Enter a two-digit number which corresponds to the index numbers 00-99.
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. 100 entries are provided in this table for the *infinite* DVX[I] system, 200 entries are provided in this table for the *infinite* DVX[II] system.

The buttons on the digital terminal are defined as shown below when entering the ICLID Local Name Translation programming area:



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. 750.1, 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.

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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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 number to correct for errors.

Description

MISC. SYSTEM PARAMETERS (Cont'd)

LOCAL NAME TRANSLATION (Cont'd)

Programming 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	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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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

SECTION 720
CO LINE ATTRIBUTES PROGRAMMING

720.1 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. 700.2, 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 DNA C P
LSO DSA FL10 GRP1 COS1

Where:

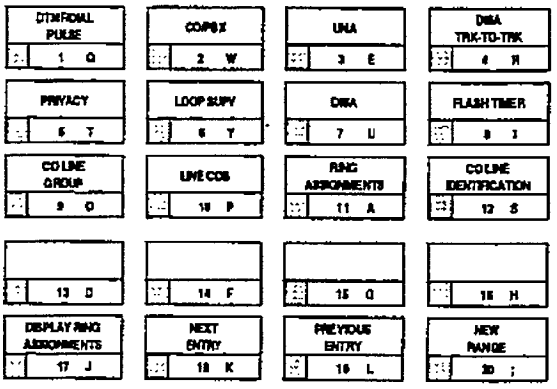
- XX-XX= The CO Line Range being programmed. (01-28)

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 (01-28) 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.



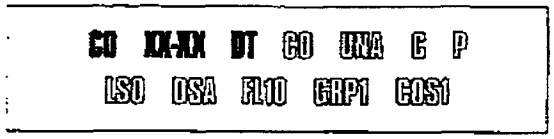
- Button #17 [Ring Display] will display the ringing assignments for the CO line.
- Button #18 [Next Entry] will take you to the next higher CO line.
- Button #19 [Previous Entry] will take you to the next lower CO line.
- Button #20 [Select Range] will prompt for a new CO Line range.

CO LINE ATTRIBUTES (Cont'd)

A. DTMF/Dial Pulse Programming

Programming Steps

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.
   - LED on = DTMF enabled
   - LED off= Dial Pulse enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.



Description

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.

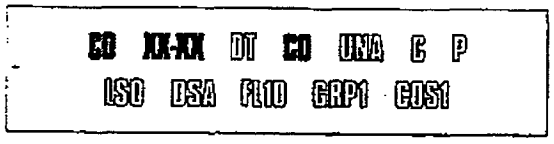
Default: By default, all lines are set for DTMF.

Related Programming: Refer to Sec. 720.2, Dial Pulse Parameters; and Sec. 710.1, System Timers, CO Ring Detect Timer.

B. CO/PBX Programming

Programming Steps

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.
   - LED on = CO type is enabled
   - LED off= PBX is enabled
2. Press the HOLD button to save the entry. Confirmation tone is heard.



Description

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.

Default: By default, all lines are assigned as CO lines.

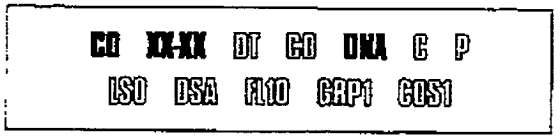
Related Programming: Refer to Sec. 710.5, PBX Dialing Codes; Sec. 710.1, System Timers, CO Ring Detect Timer; Also refer to Sec. 720.1, CO Line Programming, Flash Timer Programming later in this section.

CO LINE ATTRIBUTES (Cont'd)

C. UNA Programming

Programming Steps

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.



Description

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

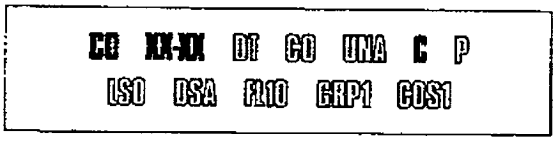
Related Programming: Refer to Sec. 710.1, System Timers, External Night Ring; and Sec. 710.7, Relay/Sensor Programming.

D. DISA Trunk-to-Trunk (Per CO Line)

Programming Steps

If the CO line DISA Trunk-to-Trunk (Conference) attributes is to be changed:

1. Press the DISA TRK-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.



Description

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. 730.1, 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

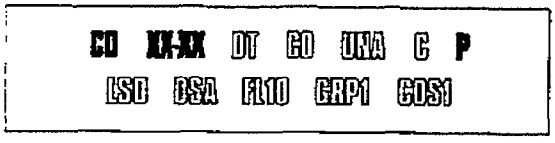
CO LINE ATTRIBUTES (Cont'd)

E. Privacy

Programming Steps

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.



Description

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.
- Both parties will hear an alert tone just prior to a station joining the call.
- When privacy is disabled, only one other station may join in on an existing conversation.

Default: By default, Privacy is enabled for all CO Lines.

Related Programming: Refer to Sec. 730.1, Station Attributes Programming, Privacy (Per Station) option and Sec. 730.2, 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:

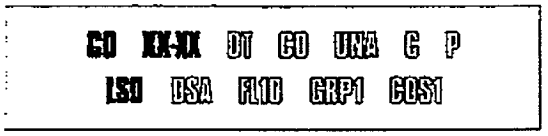
Station Attempting to Access CO Line	CO Line In use by another Station	
	Privacy Enabled	Privacy Disabled
Privacy Enabled	Private (No Cut-through	Private (No Cut-through)
Privacy Disabled	Private (No Cut-through	Privacy Released Cut-through Allowed

CO LINE ATTRIBUTES (Cont'd)

F. Loop Supervision Programming

Programming Steps

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.



Description

LOOP SUPV. Loop supervision is used primarily with DISA, Voice Mail/Auto Attendant and with unsupervised 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 *infinite* Digital Key Telephone Systems. The duration of the Loop interrupt is 700 msec.

Default: By default, Loop Supervision is disabled for all CO Lines.

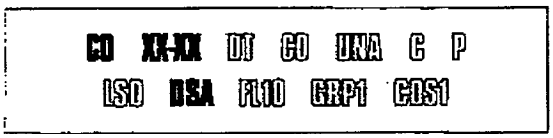
Related Programming: Refer to Sec. 710.1, System Timers, CO Ring Detect Timer; Sec. 720.1, CO Line Programming, DISA Programming; Sec. 755.1, Voice Mail Groups (VM), and Sec. 755.2, Voice Mail Outpulsing Table.

CO LINE ATTRIBUTES (Cont'd)

G. DISA Programming

Programming Steps

1. Press the DISA flexible button (Button #7).
2. Enter a one-digit value on the dial pad to indicate type of DISA desired.
   - 1= 24 hour
   - 2= Night only
   - 0= no DISA (disable DISA)
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.



NOTE	*A DTMF Receiver must be installed in the system.*

Description

DISA. A line can be assigned as a DISA line during night service only or on a 24- hour basis.

A maximum of three 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. 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. 710.1, 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. 720.1, CO Line Programming, Conference/DISA Timer; Sec. 710.9, Access Codes; Sec. 720.1, CO Line Programming, Loop Supervision Programming, DISA Trunk-to-Trunk (Per CO Line), and Class of Service (COS) Programming. Also refer to Sec. 760.1, Exception Tables Programming.

CO LINE ATTRIBUTES (Cont'd)

H. Flash Timer Programming

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.

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 (1.0 seconds) and is variable from 01 to 20 (100 msec. to 2 seconds).

Related Programming: Refer to Sec. 720.1,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 0-7 which corresponds to Groups 0-7.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

CO LINE GROUP. Eight line groups are available for CO line assignment. Groups should be assigned according to type (local, FX, WATS, etc.) Line group 0 is used for programming a line(s) as a private line.

Line Grouping affects Line Queuing, Pooled Group access (Pool Buttons), Speed Dial, and LCR features.

Default: By default, All lines are placed in Line Group 1.

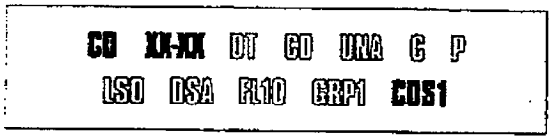
Related Programming: Refer to Sec. 730.1, Station Attributes Programming, Flexible Button Programming - Pool Buttons. Also refer to Sec. 765.2, LCR Route List Table.

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 1-5 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, 1-800, 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.



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 codes are dialed first.)

Refer to Table 720-1 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. 730.1, Station Attributes Programming, Station Class of Service (COS) options. Also refer to Sec. 760.1, Exception Tables Programming.

Table 720-1 Class of Service (COS)

STATION COS	CO LINE CLASS OF SERVICE					
		1	2	3	4	5
	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 #11) to toggle to the Ringing Assignment display. The display will show the following information:

```
CO RING ASSIGNMENT
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 #17 to display ring assignments. Assignments will be displayed in sets of 8 up to the number programmed. Press Button #17 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 3 digit destinations are:

- 020-099 = System Speed Bins 20-99, for off-net ringing.
- 100-155 = Station extension Numbers
- 199 = Direct Ringing to Modem Group
- 330-337 = Hunt Groups 1-8
- 440-447 = Voice Mail Groups 1-8
- 550-557 = ACD or UCD Groups 1-8

Valid Ring 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. 750.2, ICLID Ringing Assignment.

CO LINE ATTRIBUTES (Cont'd)

L. CO Line Identification Display

Programming Steps

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:

```
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, 0-9, *, #, - [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#	% =*3
H =42	T =81	8 =8#	& =*4
I =43	U =82	9 =9#	* =*#
J =51	V =83	0 =0#	(=#1
K =52	W =91	Space =11	) =#2
L =53	X =92	: =12	+ =#3
	Y =93	- =13	= =#4
	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.

Description

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
aaaaaaaaaaaa          HH:MM am
```

CO LINE ATTRIBUTES (Cont'd)

720.2 DIAL PULSE PARAMETERS

Programming Steps

If this feature is to be assigned:

a. Press FLASH and dial [41]. The following message 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 update with each depression.

- LED on = 60/40 (RATIO), 10pps (SPEED)
- LED off = 66/33 (RATIO), 20pps (SPEED)

c. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

By default all lines are DTMF (tone) signaling. If outpulsing is required, the individual outside line must be programmed for pulse. Refer to CO line programming section. 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 Parameter programming area:

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. 720.1, 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)

720.3 FLEXIBLE PORT ASSIGNMENT FEATURE

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
```

b. The buttons 1 through 7 indicate cards 1 through 7. 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 4). The LCD will display the CO Line numbers presently assigned to the first four ports.

To change the CO Line number assigned to any port:

a. Dial the position number on the display (01 through 04), 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 (##).
- In the DVX[I] System, if a 2x4 Expander Module were installed, the entry would be 01 for CO5, followed by the CO Line number desired.

To select another card in the system:

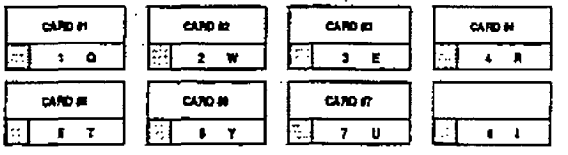
a. Press the button associated with that card. For example, if Button #3 were pressed (CO ports 9 through 12), the CO Line numbers assigned to the third card would be displayed. CO Line numbers on the third card are changed in the same manner by entering the position number (01 through 04), followed 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 Lines 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 14 on the *infinite* DVX[I] system and any number between 01 and 28 on the *infinite* DVX[II] 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:



All CO line numbers entered are stored in a temporary database area which is uploaded to the main database when the system is reset.

SECTION 730
STATION ATTRIBUTES PROGRAMMING

730.1 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 700.2, 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 (100-155) 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. The display updates to current programming for Page A:

```
XXX-XXX A PA DD CF _A PR
SP QU PL OH FW LC SB
```

Where:

- XXX= Station Range
- A= Page "A" Features
- PA= Paging Access is allowed
- DD= Do Not Disturb is allowed
- CF= Conference is allowed
- _A= Executive Override 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*

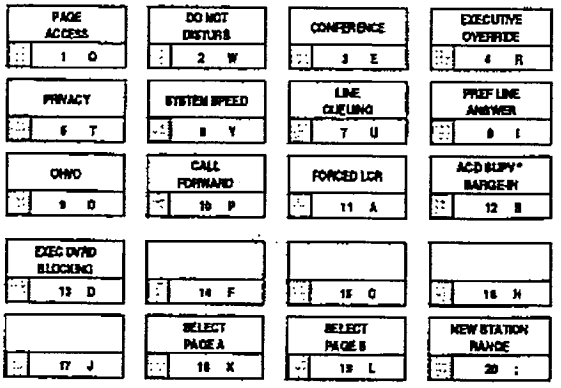
Description

This section describes the steps and procedures necessary to program station attributes for stations connected to the *infinite* 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:



- 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.

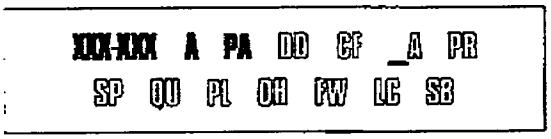
* ACD Features are ONLY available when the Basic ACD Software package is purchased separately.

PAGE "A" STATION ATTRIBUTES (Cont'd)

A. Paging Access

Programming Steps

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.



Description

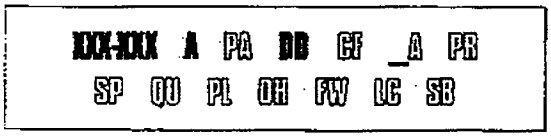
PAGE ACCESS. Stations can individually be allowed or denied the ability to make pages. This applies to all internal and external zone paging. A station denied access to paging may still answer a meet-me page announcement. (Station COS 6 will not deny a station the ability to make a page.)

Default: By default, Paging is allowed at all stations.

B. Do Not Disturb

Programming Steps

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.



Description

DO NOT DISTURB. Stations can be individually allowed or denied the ability to place their telephone in Do Not Disturb.

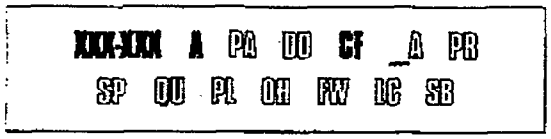
Default: By default, Do Not Disturb is allowed at all stations.

PAGE "A" STATION ATTRIBUTES (Cont'd)

C. Conference Enable/Disable (Per Station)

Programming Steps

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.



Description

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.

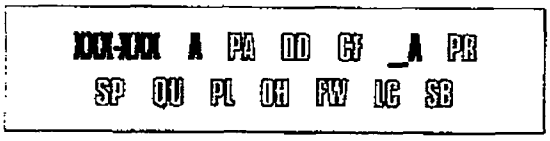
Default: By default, Conference is enabled for all stations.

Related Programming:

D. Executive Override

Programming Steps

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.



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.

Description

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 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. 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. 710.2, System Features Programming, Exec Override Warning Tone. Also refer to Sec. 730.1, ACD Supervisor Monitor w/Barge-in.

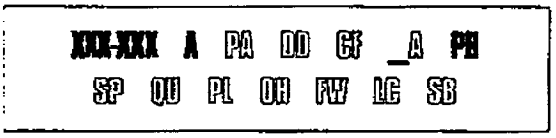
PAGE "A" STATION ATTRIBUTES (Cont'd)

E. Privacy (Per Station)

Programming Steps

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.



Description

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, both parties will hear an alert tone.

If privacy is disabled, only one other station may join in on an existing conversation.

Default: Privacy is enabled for all stations in default.

Related Programming: Refer to Sec. 720.1, 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:

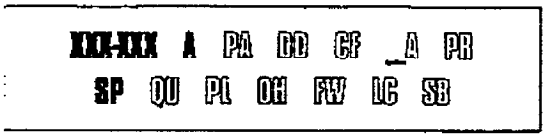
Station Attempting to Access CO Line	CO Line In Use by Another Station	
	Privacy Enabled	Privacy Disabled
Privacy Enabled	Private (No Cut-through)	Private (No Cut-through)
Privacy Disabled	Private (No Cut-through)	Privacy Released (Cut-through Allowed)

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.



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.

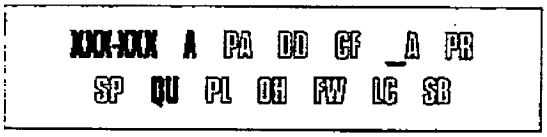
Default: By default, System Speed Dialing is allowed at all stations.

Related Programming: Refer to Sec. 760.1, 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.



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.

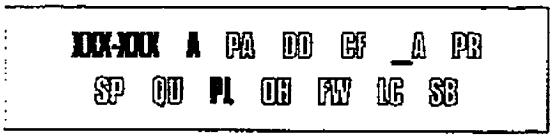
Default: By default, CO Line Queuing is allowed at all stations.

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.



Description

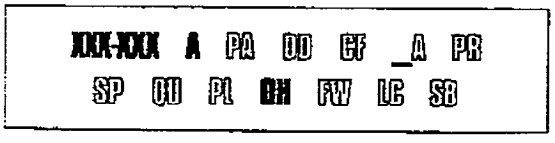
PREF LINE ANSWER. Stations can be given the ability to answer incoming outside line calls, transferred and recalling lines and line queues by simply going off-hook. (Preferred Line Answer)

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.



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.

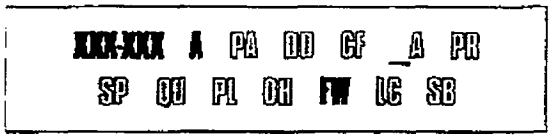
Related Programming:

PAGE "A" STATION ATTRIBUTES (Cont'd)

J. Call Forwarding

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

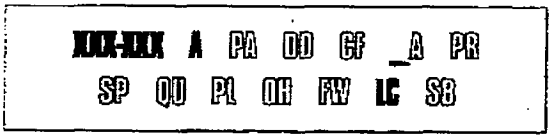
CALL FORWARD. Stations can be allowed or denied the ability to have incoming CO calls, intercom, transferred outside lines forwarded to another station, ACD, UCD, Hunt or Voice Mail group or Off-Net Forward via speed dial.

Default: By default, Call Forwarding is allowed at all stations.

K. Forced Least Cost Routing (LCR)

Programming Steps

1. Press the FORCED LCR flexible button (Page A, Button #11). 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

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.

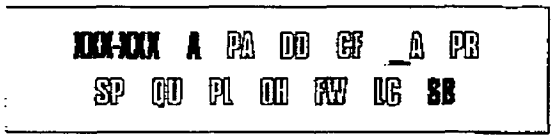
Related Programming: Refer to Sec. 730.1, LCR Class of service (COS); Sec. 710.2, LCR Enable; 765.1, Least Cost Routing (LCR) Programming.

PAGE "A" STATION ATTRIBUTES (Cont'd)

L. ACD Supervisor Monitor w/Barge-In

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.



Description

This feature is ONLY available when the Basic ACD Software Package is purchased separately.

The ACD Supervisor Monitor with Barge-In feature provides a means for an ACD Supervisor to monitor an agents call in progress or provide assistance in training ACD personnel. 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!***

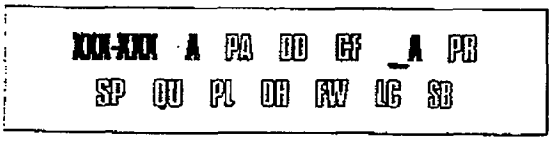
Default: By default, the Supervisor Monitor w/Barge-In feature is not allowed.

Related Programming: Refer to Sec. 730.1, Executive Override.

M. Executive Override Blocking

Programming Steps

1. Press the EXECUTIVE OVERRIDE BLOCKING 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.



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. Refer to Item D., Executive Override earlier in this section.

Default: By default, Executive Override is allowed at all stations.

Related Programming: Refer to Sec. 710.2, System Features Programming, Executive Override.

PAGE "B" STATION ATTRIBUTES (Cont'd)

730.2 PAGE "B" 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 700.2, 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 (100-155) 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 IDD COS1 1 SPD
AAAA BBBB CCC DDDDDDD LO
```

Where:

- XXX= Station Range
- B= Page "B" Features
- ID= Station Identification (0-7)
- COS= Class of Service (1-6)
- SPK= Speakerphone Option (0-2)
- AAAA= Pickup Group (1-4)
- BBBB= Paging Zone (1-4)
- CCC= Preset Forward Destination
- DD....DD= CO Line Group access(0-7)
- LO= LCR Class of Service (0-6)

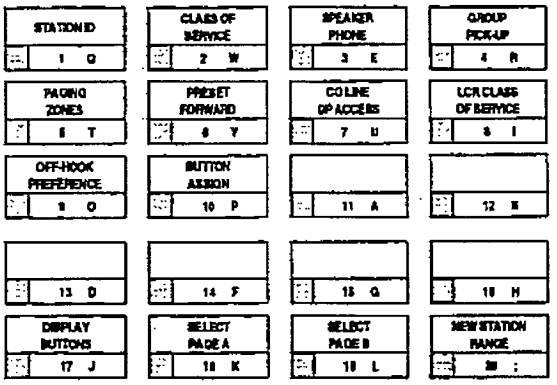
Description

This section describes the steps and procedures necessary to program the Page "B" station attributes for stations connected to the *infinite* 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:



- 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  IB0  COS1  1  SPO
AAAA  BBBB  CCC  DDDDDDD  LO
```

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 4x8 Key Interface Cards default to ID 0 (Digital Terminal), all SLTs 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 attached to.*

To program the Station ID for a DSS/DLS Console with Map 1, Map 2 or Map 3:

Programming Steps

1. Dial either a [1],[2] or [3] on the dial pad.
2. Enter the three-digit station number (100-155) 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  IB1  COS1  1  SPO
AAAA  BBBB  CCC  DDDDDDD  LO
```

Description

MAP #1. By default, the first 28 Stations (Stas 100-127) and CO Lines 1-14 are mapped to be buttons. Three Call Park locations, Release, Attendant Override, and an All Call Page are also mapped to the buttons. All buttons except the 14 CO line buttons and Release button are flexible and can be changed by the station user.

MAP #2. By default, CO Lines 1-28 are fixed buttons and Stations 100-111 are flexible buttons and appear in sequential order with 6 buttons programmed as features.

MAP #3. Stations 112-155 are flexible buttons and appear in sequential order with the bottom 4 buttons programmed as either features or flexible. This provides the receiving stations with DSS buttons when used in conjunction with DSS Map 2 for a full 28x56 CO/Station mapping.

NOTE	*The following features are NOT allowed to be programmed onto DSS/DLS Console flexible buttons: ACD Agent or Supervisor Login, Do Not Disturb (DND), Call Forward (FWD), Camp-On, Available/Unavailable, Personal Park, Voice Mail, and Headset mode. These features can however still be programmed onto keyset flexible buttons.*

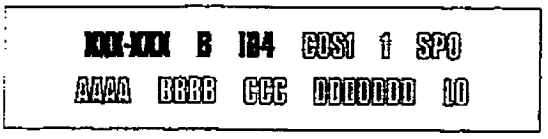
Related Programming: Refer to Sec. 720.1, CO Line Programming, CO Line Programming for CO Line ringing assignments on Map 1 and Map 2.

PAGE "B" STATION ATTRIBUTES (Cont'd)

Station Identification (Cont'd)

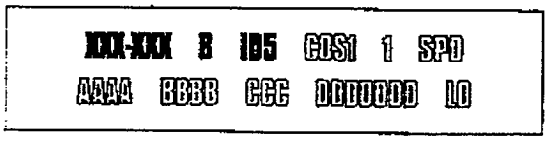
To program the Station ID for a Relay/Sensor Module:

Programming Steps	Description
1. Dial a [4] on the dial pad. 2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.	**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 Alarm signaling input, RAN Stop (end of message) and other applications as developed and allowed by software.



To program the Station ID for a SLT or OPX Station:

Programming Steps	Description
1. Dial a [5] on the dial pad. 2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.	**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 uses a key station port from any digital key terminal station port on any card plugged into the system. The OPX card meets the requirements of the FCC for connection to the telephone (Telco) network. Telephones must be DTMF only (2500 type). **Related Programming:** Refer to Figure 500-22 Off-Premise Extension (OPX) Module This module also provides for one Power Fail circuit in the event of an AC power failure.



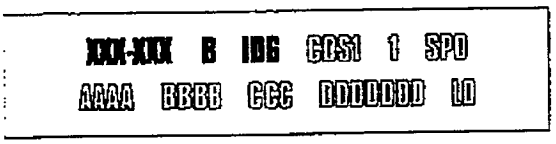
PAGE "B" STATION ATTRIBUTES (Cont'd)

Station Identification (Cont'd)

To program the Station ID for a SLT w/Message Waiting Lamp:

Programming Steps

1. Dial a [6] on the dial pad.
2. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.



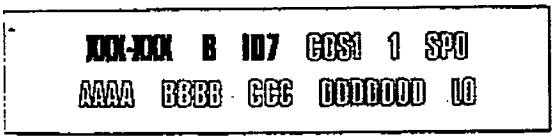
Description

SINGLE LINE TELEPHONE (SLT): The *infinite* Digital Key Telephone System supports industry standard 2500 Type (DTMF) single line instruments. When the 2x4 SLT Expander Module is installed in the DVX[I] system, a maximum of eight single line telephones may be supported. When the 4x8 SLT Interface Board (CSB) is installed in the DVX[II] system, a maximum of 48 single line telephones may be supported.

To program the Station ID for a Digital Data Interface box (DDIU):

Programming Steps

1. Dial a [7] on the dial pad.
2. Enter the three-digit associated station number. (100-155) 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.



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 *infinite* 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)

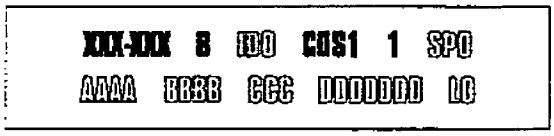
Programming Steps

1. Press the CLASS OF SERVICE flexible button (Page B, Button #2).
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.



Description

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.

Class of service (COS) determines the stations dialing privileges. Refer to Table 720-1 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. 720.1, CO Line Programming, Class of Service (COS) Programming; and Sec. 760.1, Exception Tables Programming.

Table 730-1 Class of Service (COS)

STATION COS	CO LINE CLASS OF SERVICE					
		1	2	3	4	5
	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.					

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 3 to identify the speakerphone operation.
   - 0 = works as normal speakerphone. Full speakerphone capabilities on both CO lines and Intercom.
   - 1 = 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 IDO COS1 1 SPO
AAAA BBBB CCC DDDDDDD LO
```

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, all stations are assigned an ID of 0.

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 IDO COS1 1 SPO
AAAA BBBB CCC DDDDDDD LO
```

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.

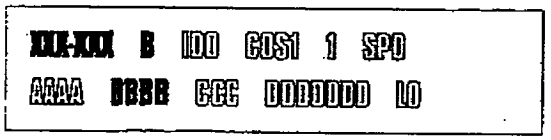
Default: By default, all stations are in group 1.

PAGE "B" STATION ATTRIBUTES (Cont'd)

E. Paging Zone(s) Programming

Programming Steps

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.



Description

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

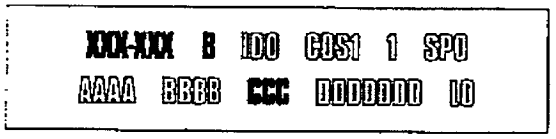
Programming Steps

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.

Valid 3 digit destinations are:

- 020-099= System Speed Bins 20-99 for off-net forwarding
- 100-155= Station Numbers
- 330-337= Hunt Groups 1-8
- 440-447= Voice Mail Groups 1-8
- 550-557= ACD or UCD Groups 1-8

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.



Description

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.

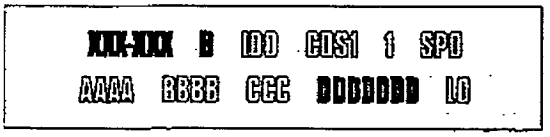
Related Programming: Refer to Sec. 710.1, System Timers, Preset Forward Timer.

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 1-7) for the outside line groups the station will have access to.
   - 0 = no access
   - 1 = 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.



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.

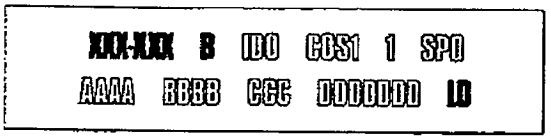
Default: By default, all stations are allowed access to Group 1.

Related Programming: Refer to Sec. 720.1, 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.



Description

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. 760.2, 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
01 YES

2. Enter the two-digit button number (01-28) or (00) to indicate no specific button is preferred. SLTs use 01 to enable or 00 to disable.
3. Then, enter either 0 or 1 where:
   - 0 = Disable user programmable preference 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. 730.1, 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 33-button Digital terminal has 24-flexible buttons which can be individually programmed. Each 8-button Digital terminal has 4-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 (01-24)	
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 730-2 Flexible Button Display Designations.
CO LINE: To assign a button as a CO Line button, enter: BB [1] LL HOLD (LL= CO Line 01-28)	**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)

Programming Steps	Description
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 01-28) To assign a CO Line group for an SLT with Off-Hook Preference, enter: 00 [3] G HOLD (G= Line Group # 1-7)	**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. 720.1, CO Line Programming, CO Line Ringing Assignments; and Sec. 730.1, Station Attributes Programming ,Off-Hook Preference Programming.

PAGE "B" STATION ATTRIBUTES (Cont'd)

K. Display Flexible Buttons

Programming Steps

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	BBYYY	
BBYYY	BBYYY	BBYYY	

Where:

- XXX= Station number
- BB= Button Number
- YYY= Button function (see table below)

Description

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. 400.37, Flexible Button Assignment.

Table 730-2 Flexible Button Display Designations

MUL	= Multi Function button.
CO[LL]	= CO Line button [for CO line [LL]]
LP	= LOOP Button
PL[G]	= POOL Button with CO Line group number
D[XXX]	= Station DSS/BLF button
H[HHH]	= Hunt Group with pilot number
P[CCC]	= Call Park with park location
A[AAA]	= ACD Group with pilot numbers
U[UUU]	= UCD Group with pilot number
V[VVV]	= VM Group with pilot number
M[ZZ]	= Personalized Message with message number
S[YY]	= Speed Dial button with bin number
LNR	= Last Number Redial button
SNR	= Save Number Redial button
IP[N]	= Internal Page with Zone
IAC	= Internal All Call Page button
EP[N]	= External Page with Zone
EAC	= External All Call button
ACP	= All Call Page button
MMP	= Meet Me Page button
AOR	= Attendant Override button (attn)
CPO	= Camp-On button
LQU	= Line Queue button
LQC	= LCR Queue Cancel
CBK	= Call Back Button
PKU	= Pick Up button
MSG	= Message Wait button
FWD	= Call Forward button
DND	= Do Not Disturb button
CNF	= Conference button
UNA	= Universal Night Answer
ACC	= Account Code enter button
MUS	= BackGround Music button
HST	= Headset mode button
PPK	= Personal Park button
AVL	= ACD or UCD Available/Unavailable button
CIQ	= ACD or UCD Calls in queue button
EOR	= Executive Override button
LCR	= LCR Access
ALO	=Agent Logout
ALI	=Agent Login
AMD	=Agent Member Display
HLP	=Agent Help
SLO	=Supervisor Logout
SLI	=Supervisor Login
STS	=Supervisor Status Display
DUA	=Display unanswered calls
DRG	=Distinctive Ringing
OHV	=Off_Hook Voice Over
MUT	=MUTE button
FLA	=FLASH button
REL	=Release button
	Key
LL	= *CO Line number*
G	= *Pool or CO Line Group number*
XXX	= *Station Number*
HHH	= *Hunt Group number*
CCC	= *Call Park location*
AAA	= *ACD Group pilot numbers*
UUU	= *UCD Group pilot number*
VVV	= *Voice Mail Group number*
ZZ	= *Personalized Message number*
YY	= *Speed Dial Bin*
N	= *Page Zone number*

PAGE "B" STATION ATTRIBUTES (Cont'd)

730.3 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 (100-155)
- XXXXX= Baud Rate
- Y= Data Parity
- Z= Data Stop Bits

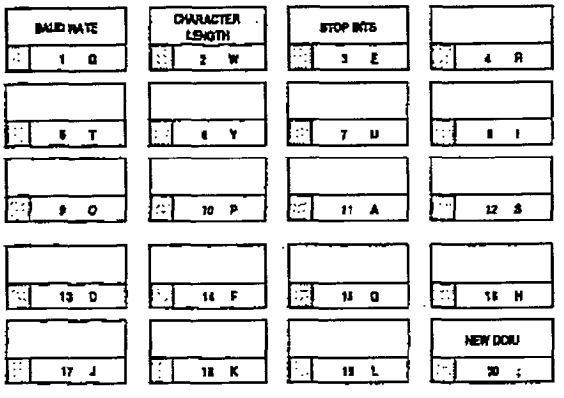
b. Enter the three-digit station number of the DDIU unit.

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 Infinite Digital system.

The buttons on the digital terminal are defined as shown below when entering the Digital Data Interface Unit (DDIU) programming area:



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. 730.2, Page "B" Programming, Station Identification for associating a DDIU to a station.

Digital Data Interface Unit (DDIU) (Cont'd)

B. Character Length Option

Programming Steps

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.

Description

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

Programming Steps

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.

Description

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)

730.4 FLEXIBLE PORT ASSIGNMENT FEATURE

Programming Steps

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				

b. The buttons 1 through 7 indicate cards 1 through 7. 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 8). 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 08), 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:

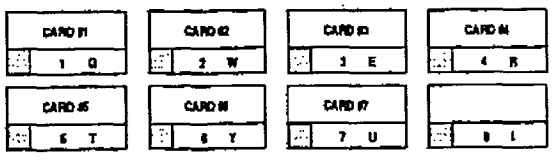
a. Press the button associated with that card. For example, if Button #3 were pressed (Station ports 17 through 24), the station numbers assigned to the third card would be displayed. Station numbers on the third card are changed in the same manner by entering the position number (01 through 08), followed 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 while the system is in use.***

Description

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 127 on the *infinite* DVX[I] system and any number between 100 and 155 on the *infinite* DVX[II] 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:



All Station numbers entered are stored in a temporary database area which is uploaded to the main database when the system is reset.

SECTION 740
AUTOMATIC CALL DISTRIBUTION (ACD)

740.1 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. 700.2, 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 55X A	ALT	OVR	ANN	SUPV
	AAA	BBB	CC	DDD

Where:

- X= ACD Group Number (0-7)
- A= Page A Parameters
- AAA= Alternate ACD Group Assignment
- BBB= ACD Overflow Assignment
- CC= ACD Announcement Tables
- DDD= ACD Supervisor Programming

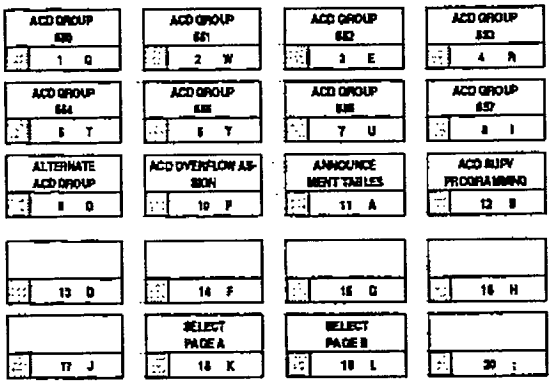
2. The top left button in the flexible button field will be lit for programming ACD group 0 (550). To change ACD groups or enter further ACD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

Description

This feature is ONLY available when the ACD Software Package is purchased separately. There can be eight ACD groups of no more than eight 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 eight stations as ACD members. The two 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:



Default: By default, ACD Group Tables are empty.

Related Programming: Refer to Sec. 740.2, ACD Timers for setting the ACD Ring Timer, ACD Message Interval Timer, ACD Overflow Timer, ACD No-Answer Recall Timer, and ACD No-Answer Retry Timer; Also refer to Sec. 740.3, 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.

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.

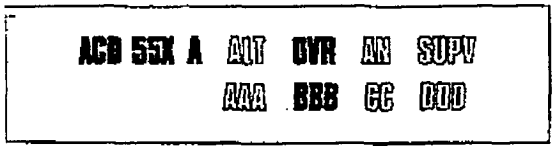
To delete an Alternate ACD Group, press the pound key three times [###] and press the HOLD button.

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 155) 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.

AUTOMATIC CALL DISTRIBUTION (Cont'd)

C. ACD Recorded Announcement Assignment(s) (RAN)

Programming Steps

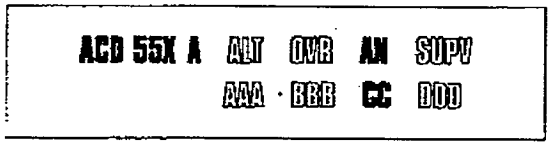
To program a Recorded Announcement:

1. Press the ANNOUNCEMENT TBLS flexible button (Button #11.
2. Enter one of the following digit sequences:
   - 1# = RAN port specified in Table 1 will be used.
   - through
   - 8# = RAN port specified in Table 8 will be used.

Example:

- 1,2 = Port 1 will answer the call; port 2 will provide a subsequent message.
- 8,1 = Port 8 will answer the call; port 1 will provide a subsequent message.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.



Description

ACD ANNOUNCEMENT TABLES. 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.

To erase Recorded Announcement(s), press the pound key two times [##] and press HOLD.

Related Programming: Refer to Sec. 740.3, ACD RAN Announcement Tables programming for further information regarding each RAN Table.

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.

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. For maximum compatibility with the *infinite* PC-ACD Reporting package, the supervisor assignment should be left blank and the supervisor login-logout feature used.

AUTOMATIC CALL DISTRIBUTION (Cont'd)

E. ACD Station Assignment(s)

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 55X B	###	###	###	###
	###	###	###	###

Where:

- X= ACD Group Number (1-8)
- B= Page "B" parameters
- ###= ACD Station assignments

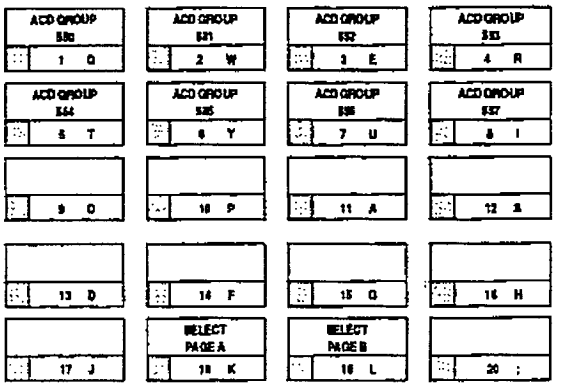
2. The top left button in the flexible button field will be lit for programming ACD group 0 (550). To change ACD groups or enter further ACD groups (550 to 557), press the appropriate flexible button and perform the following procedures.
3. Enter the three-digit station numbers of the stations in the ACD group in the order in which they will be checked. 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.

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:



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.***

AUTOMATIC CALL DISTRIBUTION (Cont'd)

740.2 ACD TIMERS

Programming Steps

If ACD timers are to be changed:

a. Press FLASH and dial [61]. The following message is shown on the display phone:

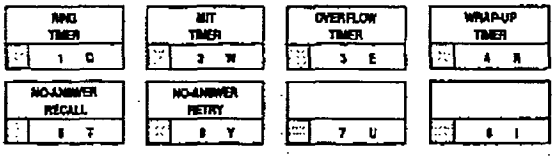
```
ACD TIMERS
ENTER BUTTON NUMBER
```

Description

Six timers for ACD operation are programmable on a system-wide basis. The ACD 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. 740.1, ACD Group Programming; and ACD Recorded Announcement Assignment(s); Also refer to Sec. 500.1, Installation, Background Music/Music-On-Hold Connections for DVX I and DVX II systems, and Installing Recorded Announcement Device (RAN).

The buttons on the digital terminal are defined as shown below when entering the ACD Timers programming area.



A. ACD Ring Timer

Programming Steps

To make a change to the ACD 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

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.

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. 740.3, ACD RAN Announcement Tables for 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.***

AUTOMATIC CALL DISTRIBUTION (Cont'd)

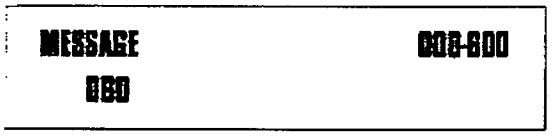
ACD TIMERS (Cont'd)

B. ACD Message Interval Timer

Programming Steps

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:



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 not specified, incoming callers will continue to receive ringback tone.*

Description

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.

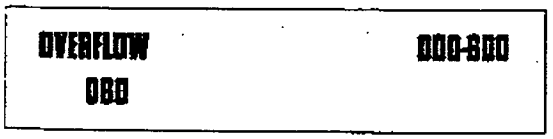
Default: By default, the ACD Message Interval Timer is set for 60 seconds and is variable from 000 to 600 seconds.

C. ACD Overflow Timer

Programming Steps

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:



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.

Description

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

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:

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.

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 600 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:

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

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:

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 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.

AUTOMATIC CALL DISTRIBUTION (Cont'd)

740.3 ACD RAN ANNOUNCEMENT TABLES

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:

- 01-28= CO Line Port
- 100-155= 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.***

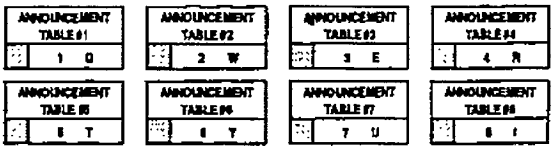
To clear entries in a Table:

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:



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 1-8).

b. Dial [1] for CO port interface.

c. Dial [01 to 28] 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 1-8).

b. Dial [2] for SLT port interface.

c. Dial [100 to 155] for SLT station used.

d. Enter Message duration (000-300 sec.)

Related Programming: Refer to Sec. 740.1, ACD Group Programming; 740.2, ACD Timers; Also refer to Sec. 500.9, Installing Recorded Announcement Device (RAN).

AUTOMATIC CALL DISTRIBUTION (Cont'd)

740.4 PC/ACD INTERFACE TRACE

Programming Steps

To enable PC/ACD Interface 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

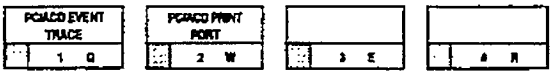
Where:

- X= Port for PC/ACD Interface Trace
- YYYY= Baud Rate of desired port.

Description

The feature is ONLY available when the Basic ACD software package is purchased separately. The PC/ACD Interface Trace feature provides an event trace output which is compatible with the PC/ACD Reporting package

The buttons on the digital terminal are defined as shown below when entering the PC/ACD Event Trace feature programming area:



A. Event Trace Enable/Disable

Programming Steps

1. Press the PC/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

This feature is only available when the Basic ACD Software package is purchased separately. The PC/ACD Interface Trace provides a series of events trace output which is compatible with the *infinite* PC/ACD Reporting package.

Default: By default, the PC/ACD Event Trace is disabled.

AUTOMATIC CALL DISTRIBUTION (Cont'd)

PC/ACD INTERFACE TRACE (Cont'd)

B. Trace Port Assignment

Programming Steps

1. Press the PC/ACD PRINT PORT flexible button (Button #2) to determine which port is to be used for the PC/ACD Interface Trace.
2. Enter a one-digit number for the PC/ACD Event Trace Port number:
   - 1= Port #1 ("On-Board" RS-232C)
   - 2= Port #2 ("On-Board" Modem)
   - 3= Port #3 (I/O Expander Module RS-232C)
   - 4= Port #4 (I/O Expander Module RS-422)

The LCD displays the current baud rate based on which Port number is assigned to the ACD SMDR Port number.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

Port #1 refers to the standard RS-232C "On-Board" connector on the DVX[I] Basic KSU or the CPB board on the DVX[II] System.

Port #2 refers to the "On-Board" 300 Baud modem provided with the system.

Port #3 refers to the RS-232C connector on the I/O Expander Module.

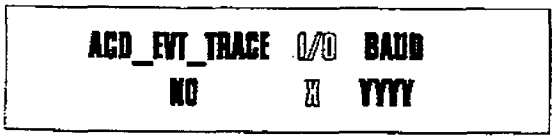
Port #4 refers to the RS-422 connector on the same I/O Expander Module installed in either *infinite* Digital system.

Default: By default, Port #1 is used for Basic ACD SMDR purposes.

C. Baud Rate Display

Programming Steps

The PC/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:



Description

The *infinite* Digital Key Telephone Systems can provide PC/ACD Reporting output to either the standard RS-232C "On-Board" connector on the DVX[I] Basic KSU or DVX[II] CPB board or to the optional RS-232C/422 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 Sec. 710.8, Baud Rate Assignments.

SECTION 745
UNIFORM CALL DISTRIBUTION (UCD)

745.1 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. 700.2, 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 55X  A  ALT  OVR  AN
            AAA  BBB  CC
```

Where:

- X= UCD Group Number (1-8)
- AAA= Alternate UCD Group Assignment
- BBB= UCD Overflow Assignment
- CC= UCD Announcement Tables

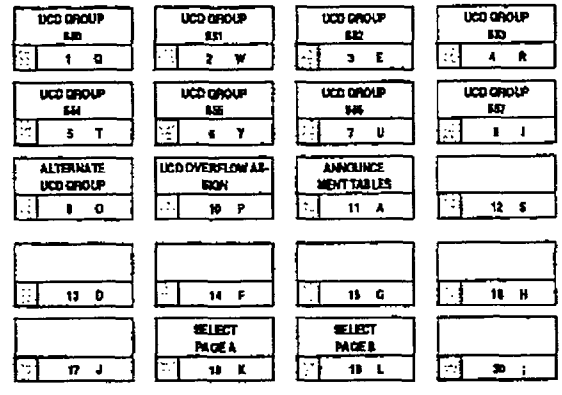
2. The top left button in the flexible button field will be lit for programming UCD group 0 (550). To change UCD groups or enter further UCD groups (550 to 557), press the appropriate flexible button and perform the following procedures.

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:



Default: By default, UCD Group Tables are empty.

Related Programming: Refer to Sec. 745.2, 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. 745.3, UCD RAN Announcement Tables for assigning RAN device ports and message times.

UNIFORM CALL DISTRIBUTION (Cont'd)

A. Alternate UCD Group Assignment

Programming Steps

To program an alternate group:

1. Press the ALTERNATE UCD GP flexible button (Button #9).
2. Enter the three-digit pilot number (550 to 557) of the desired alternate UCD group.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

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.

To delete an Alternate UCD Group, press the pound key three times [###] and press the HOLD button.

B. UCD Overflow Station Assignment

Programming Steps

To program UCD Overflow station:

1. Press the OVERFLOW ASSIGN flexible button (Button #10).
2. Enter the three-digit station number (100 to 155) to designate the UCD Groups overflow station.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

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.

To delete an Overflow Station, press the pound key three times [###] and press the HOLD button.

UNIFORM CALL DISTRIBUTION (Cont'd)

C. UCD Recorded Announcement Assignment(s) (RAN)

Programming Steps

To program a Recorded Announcement:

1. Press the ANNOUNCEMENT TBLS flexible button (Button #11.
2. Enter one of the following digit sequences:
   - 1# = RAN port specified in Table 1 will be used.
   - through
   - 8# = RAN port specified in Table 8 will be used.

Example:

- 1,2 = Port 1 will answer the call; port 2 will provide a subsequent message.
- 8,1 = Port 8 will answer the call; port 1 will provide a subsequent message.

3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

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. 745.3, UCD RAN Announcement Tables programming for further information regarding each RAN Table.

UNIFORM CALL DISTRIBUTION (Cont'd)

D. UCD Station Assignment(s)

Programming Steps

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 55X B ### ### ### ###
###

Where:

- X= UCD Group Number (1-8)
- B= Page "B" parameters
- ###= UCD Station assignments

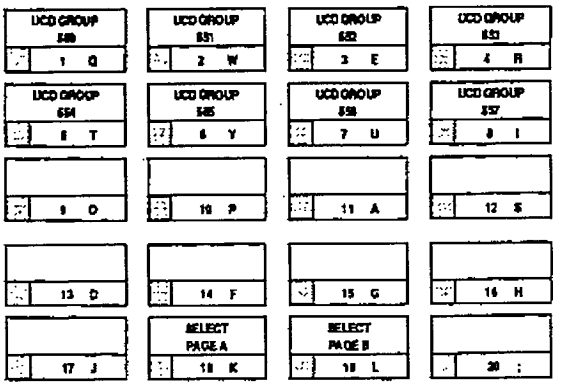
2. The top left button in the flexible button field will be lit for programming UCD group 0 (550). To change UCD groups or enter further UCD groups (550 to 557), press the appropriate flexible button and perform the following procedures.
3. Enter the three-digit station numbers of the stations in the UCD group in the order in which they will be checked. 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.

Description

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.



To erase all stations, press the pound key three times [###] and press HOLD.

UNIFORM CALL DISTRIBUTION (Cont'd)

745.2 UCD TIMERS

Programming Steps

If UCD timers are to be changed:

a. Press FLASH and dial [61]. The following message is shown on the display phone:

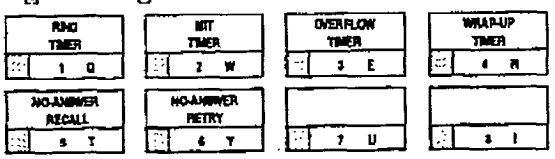
UCD TIMERS
ENTER BUTTON NUMBER

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. 745.1, UCD Group Programming; and UCD Recorded Announcement Assignment(s); Also refer to Sec. 500.1, Installation, Background Music/Music-On-Hold Connections for DVX[I] and DVX[II] systems, and Installing Recorded Announcement Device (RAN).

The buttons on the digital terminal are defined as shown below when entering the UCD Timers programming area.



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**
080	

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. 745.3, 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

Programming Steps

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:

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 apply when RAN ports have been specified. If RAN ports are not specified, incoming callers will continue to receive ringback tone.*

Description

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

Programming Steps

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:

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.

Description

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

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:

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.

Description

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.

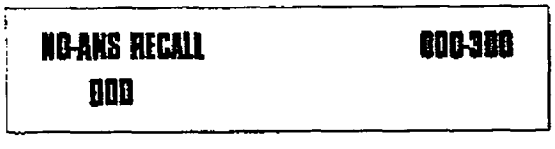
Default: By default, the UCD Auto Wrap-up Timer is set for 04 seconds and is variable from 000 to 600 seconds.

E. UCD No-Answer Recall Timer

Programming Steps

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:



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

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)

745.3 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:

- 01-28= CO Line Port
- 100-155= 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.***

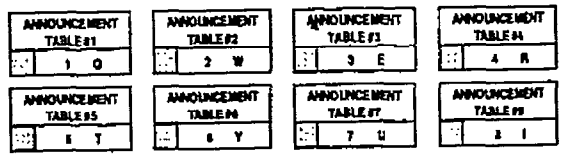
To clear entries in a Table:

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.



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 1-8).

b. Dial [1] for CO port interface.

c. Dial [01 to 28] 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 1-8).

b. Dial [2] for SLT port interface.

c. Dial [100 to 155] for SLT station used.

d. Enter Message duration (000-300 sec.)

Related Programming: Refer to Sec. 745.1, UCD Group Programming; 745.2, UCD Timers; Also refer to Sec. 500.9, Installing Recorded Announcement Device (RAN).

SECTION 750
ICLID PROGRAMMING

750.1 INTRODUCTION

The ICLID (Incoming Calling Line IDentification) feature has been added to the *infinite* Digital Key Telephone System. The 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:

A. Calling Number/Name Display

This feature is intended as the basic offering of the ICLID service when associated with the *infinite* 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.

```
00000000011111111122222
12345678901234567890123
```

```
bbbbbNNNNNNNNNNNNNNbbbbb
```

or

```
XXXXXXXXXXXXXXXXXXXXXXX
```

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 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 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 50 entry capacity for the *infinite* DVX [I] System, and 100 entry capacity for the *infinite* DVX [II] 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. Upon entering into the review process, the functions available to a phone are:

Function	Function Button
1. Go to beginning of list	Dial Code 635
2. Review next item in this list entry	MUTE
3. Step to next list entry.	HOLD
4. Delete this list entry.	FLASH
5. Delete entire list.	Note[1]
6. Exit list review function.	ON/OFF
7. Step to previous list entry.	TRANS
8. Call Back.	SPEED

[1] This feature is only available to the Attendant(s) station(s) to clear the list one entry at a time.

ICLID PROGRAMMING (Cont'd)

750.2 ICLID RINGING ASSIGNMENT

Programming Steps

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 00 XXXY
```

Where:

- 00= ICLID Route Number
  00-09 for DVX [I] System, 00-20 for DVX [II] System
- XXXY= ICLID Destination (XXX) and Ringing Assignment (Y)

2. Press the RING ASSIGNMENT flexible button (Button #1). LED #1 is lit indicating Route 00 is ready for programming.
3. Enter the three-digit destination (XXX) and the one-digit ring type (Y).
   - 0= Unassigned (to delete a station)
   - 1= Day Ringing
   - 2= Night Ringing
   - 3= Both Day & Night Ringing

Deleting a station (entering a 0 for ring type) only removes that station from the ring assignment.

4. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.
5. Press Button #17 to display ring assignments. Assignments will be displayed in sets of 8 up to the number programmed. Press Button #17 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
```

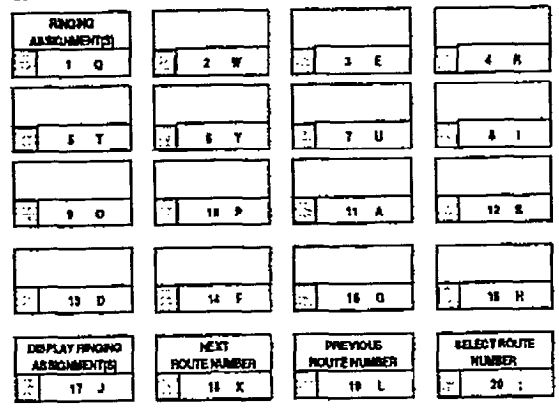
Where:

- DDD= Destination
- R= D for Day
  N = Night
  B = Both Day & Night.

Description

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 20 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:



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. The same ringing types applied to CO line ringing will also 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. 6. 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 two-digit ICLID route number. – 00-09 for DVX [I] System, – 00-19 for DVX [II] System. 3. Press the HOLD button to change to the different route entered. Confirmation tone will be heard.	

ICLID PROGRAMMING (Cont'd)

750.3 ICLID FEATURES

Programming Steps

If ICLID is to be used:

1. Press FLASH and dial [56]. The following message is shown on the display phone:

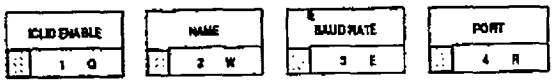
ICLID	NAME	BAUD	PORT
NO	YES	2400	1

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

The *infinite* Digital Key Telephone Systems can provide ICLID output to either the standard RS-232C connector on the DVX [I] Basic KSU motherboard or DVX [II] CPB board or to the optional RS-232C/422 I/O Module 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:



Related Programming: Refer to Sec. 710.14, 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 *infinite* 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 The ICLID Baud Rate is programmed using Flash 15 Baud Rate Assignments. Button #3 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 *infinite* Digital Key Telephone Systems can provide ICLID input to either the standard RS-232C "On-Board" connector on the DVX [I] BKSU or DVX [II] CPB board or to the optional RS-232C/422 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 Sec. 710.8, Baud Rate Assignments.

Programming Steps	Description
D. Port Assignment 1. Press the PORT flexible button (Button #4) to determine which port is to be used for ICLID information. 2. Enter a one-digit number for the ICLID Port number: – 1= Port #1 ("On-Board" RS-232C) – 2= Port #2 ("On-Board" 300 Baud Modem) – 3= Port #3 (I/O Expander Module RS-232C) – 4= Port #4 (I/O Expander Module RS-422) 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.	**Port #1** refers to the standard RS-232C "On-Board" connector on the DVX [I] Basic KSU or the CPB board on the DVX [II]. **Port #2** refers to the "On-Board" 300 Baud modem provided with the system. **Port #3** refers to the RS-232C connector on the I/O Expander Module. **Port #4** refers to the RS-422 connector on the same I/O Expander Module installed in either *infinite* Digital system. **Default:** By default, Port #1 is used for ICLID operation.

SECTION 755
VOICE MAIL GROUPS (VM)

755.1 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. 700.2, 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 L R XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX

Where:

- G = Voice Mail group number (0-7)
- AAA = Alternate group (440-447)
- L = "Leave" mail index from outpulsing table for leaving messages (0-7)
- R = "Retrieve" mail index from outpulsing table for retrieving messages (0-7)
- 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 (440-447) and perform the following procedures.

NOTE

Certain programming will be required in the Voice Mail system connected to the infinite Digital Key Telephone System for proper operation.
1. Mail Box numbers must match Infinite Digital Key Telephone System station extension numbers. (100-155)
2. Tone Mode Calling option (6#) must be programmed as leading digits in transfer sequence(s) to force tone ringing to key telephone.

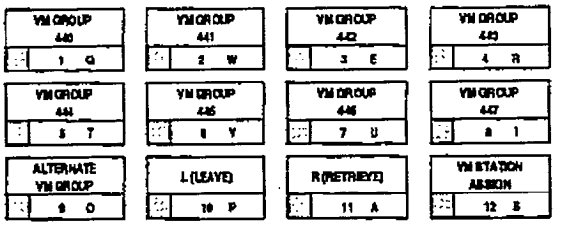
Description

Up to eight Voice Mail groups can be configured in the *infinite* 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 *infinite* 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:



Related Programming: Refer to Sec. 755.2, Voice Mail Outpulsing Table, Voice Mail In-Band Signaling for incoming CO calls; 720.1, CO Line Programming, CO Line Ringing Assignments.

VOICE MAIL GROUPS (Cont'd)

A. Alternate Voice Mail Group

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.

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 #10).
2. Enter the one-digit outpulsing table number (0-7) on the dial pad.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

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. 755.2 for programming entries into an outpulsing table.

To delete a "Leave" mail index entry, enter one pound [#] on the keypad and press the HOLD button.

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 (0-7) on the dial pad.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

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. 755.2 for programming entries into an outpulsing table.

> ***NOTE*** ***In order for the Infinite Digital Key Telephone 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. 755.2 can be empty (no entries in the referenced table)***

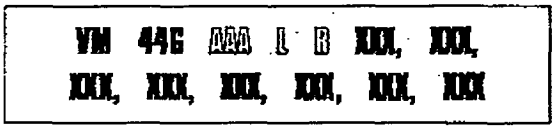
To delete a "Retrieve" mail index entry, enter one pound [#] on the keypad and press the HOLD button.

D. Station Assignment(s)

Programming Steps

To program the stations in the Voice Mail group:

1. Press the STATION ASSIGN flexible button (Button #12).
2. Enter the three-digit station numbers (100-155). 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.



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)

755.2 VOICE MAIL OUTPULSING TABLE

A. Voice Mail In-Band Signaling

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 MAIL y	PRE XXXXXXXXXXXX SUF XXXXXXXXXXXX

Where:

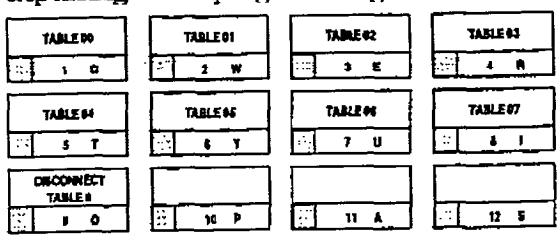
- y = Table index (0-7)
- x = Entered digits (0-9, #, *, Pauses)

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 '#'. TRAN button = pause.
5. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

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.



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. 755.1 for both Leave and Retrieve data fields, if In-Band signaling is desired.***

Related Programming: Refer to Sec. 755.1, Voice Mail Groups (VM); Sec. 755.2, Voice Mail In-Band Signaling on incoming CO Calls.

VOICE MAIL GROUPS (Cont'd)

VOICE MAIL OUTPULSING TABLE (Cont'd)

B. Voice Mail Disconnect Table

Programming Steps

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 '#'. TRAN button = pause.
3. Press the HOLD button to save the entry. Confirmation tone is heard and the display will now update.

Description

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 *infinite* 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 *infinite* Digital Key Telephone System will send a series of DTMF digits programmed in the Voice Mail disconnect table (outpulsing 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. These digits are not used as a result of an internal station disconnecting from Voice Mail. In this case silence is provided for a short period followed by busy tone. This method is also used for CO lines when the VM disconnect table is empty.

The *infinite* 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).

VOICE MAIL GROUPS (Cont'd)

755.3 VOICE MAIL IN-BAND FEATURES

Programming Steps

1. Press FLASH and dial [67]. The following message will be shown on the display:

VM FEATURES ICID AFWD

Description

A. Voice Mail In-Band Digits

Programming Steps

If Voice Mail In-Band Digits are to be enabled or disabled for Incoming CO callers:

1. Press the INCOMING ID DIGITS flexible button (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

Description

The *infinite* 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, 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. 755.1, Voice Mail Programming; and Sec. 755.2, Voice Mail Outpulsing Table

VOICE MAIL GROUPS (Cont'd)

VOICE MAIL IN-BAND FEATURES (Cont'd)

B. Voice Mail Transfer/Forward

Programming Steps

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

Description

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. 755.1, Voice Mail Programming; and Sec. 755.2, Voice Mail Outpulsing Table.

SECTION 760
EXCEPTION TABLES PROGRAMMING

760.1 EXCEPTION TABLES PROGRAMMING

Programming Steps

The *infinite* 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 [1]+ 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 [1 555-1212] 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 760-1 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 760-1 Class of Service (COS)

STATION COS	CO LINE CLASS OF SERVICE					
		1	2	3	4	5
	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.					

Table 760-2 Allow/Deny Toll Table

	ALLOW TABLE	DENY TABLE	CONDITIONS AND RESULTS			
			DIALED NO.	A/D	DIALED NO.	A/D
RULE 1	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		
					FOUND	D
			NOT FOUND	→	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 *infinite* 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

760.2 RELATED ITEMS TO TOLL RESTRICTION

A. CO/PBX Lines

When CO lines are marked as PBX lines (refer to Sec. 720.1, CO Line Programming) the system will first check the PBX code table (refer to Sec. 710.5, 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. 710.2, 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 *infinite* 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. 710.1, 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 system allows up to four DTMF receivers to be installed in the *infinite* DVX[I] System, and up to 13 DTMF receivers on the *infinite*

DVX[II] System, for monitoring SLT dialing. If a system has heavy SLT usage 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. 710.1, 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.

D. 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.

760.3 TOLL RESTRICTION PROGRAMMING

A. Entering Toll Table 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. 700.2, 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. 700.5, Initialization for initializing the Exception Tables. This procedure may also be repeated if it is determined that 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.

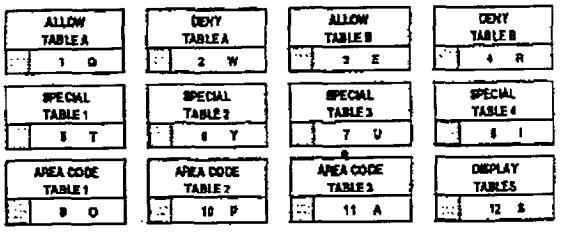
NOTE	***Special Table 4 is reserved for the home area code and does not require an area code entry.***

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.

Description

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.



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. [1 716]) should be placed ahead of entries that are more general (usually include "Don't Care" digits i.e. [1 "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 TABLE B flexible button (Button #1 or #3). The following message is shown on the display telephone:

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 that will reference special table number 1; Bin 18 be reserved 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 code 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 table.

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] - BB 1 XXX DDD (S) or
   Non Leading [1] - BB XXX DDD (S)

Where:

- BB = Bin number (recommended 17-19)

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 [1 555 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 recommended 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 following by pressing the HOLD button.

EXCEPTION TABLES PROGRAMMING (Cont'd)

Allow Table Programming (Cont'd)

Programming Steps

Description

- XXX = Area code (must match AREA-X entry)
- DDD = "Don't Care" digit (three entries, DND button)
- {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 [1] - BB 1 DDD {S} and/or
   Non Leading [1] - 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 following message is shown on the display phone:

The first two bin locations are displayed.

2. Enter the two-digit bin number (01-10) of the bin to be programmed.
3. Enter the deny code:

where:

- 0 to 9, *, # = 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 table 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 followed by pressing the HOLD button.

EXCEPTION TABLES PROGRAMMING (Cont'd)

D. Special Table Programming

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 (1-4) flexible button (button #9-11). 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 (1-4) 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 [1] 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 [1] = 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.

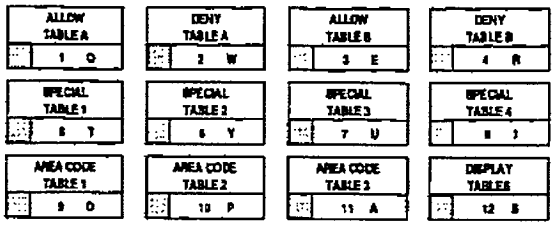
Description

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.



EXCEPTION TABLES PROGRAMMING (Cont'd)

E. Displaying Toll Table Entries

Programming Steps

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.

```
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  YYY  YYY  YYY  YYY
```

Where:

- XXX= Area Code
- YYY= Allowed Office Code

Description

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 can be entered near the bottom of the 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.***

SECTION 765
LEAST COST ROUTING (LCR) PROGRAMMING

765.1 INTRODUCTION

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.

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 denied. 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 6-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.

LCR PROGRAMMING (Cont'd)

765.2 LCR TABLES 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. 700.2, 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.

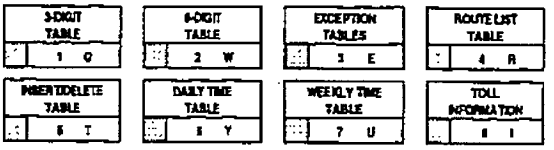
NOTE	***It is extremely important that the worksheets be completed before programming the LCR tables.***

Description

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:



Default: The 3-Digit table contains a default where all Long distance (numbers requiring an area code) with a leading digit "1" are routed to Route List Table 00. Route List Table 00 will route calls on lines in group 1 for all time periods. All Local calls (numbers that are dialed without an area code) with or without a leading digit "1" are routed to route list table 01. Route Table 01 also routes calls using lines in Line Group 1 for all time periods. Refer to Figure 775-8 DB Printout of LCR Default for a complete listing of the LCR default data.

Related Programming: Refer to Sec. 710.2, System Features Programming, LCR Enable ; 730.1, Station Attributes Programming, Station Class of Service (COS); and Sec. 730.1, 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 00-15
- 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 [1] 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					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				

Figure 765-1 Ex: 3-Digit Area/Office Code Table Pgm Form

LCR PROGRAMMING (Cont'd)

B. 6-Digit Office 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 00-15
- 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	ROUTE					

Figure 765-2 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 (00-15) (RR)	CODE #	EXCEPTION CODES (XX)	ROUTE (00-15) (RR)
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

Figure 765-3 Ex: Exception Code Table Pgm Form

LCR PROGRAMMING (Cont'd)

D. Route List Table

Programming Steps

1. Press the ROUTE LIST TABLE 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 00-15
- 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 1-4
- CCC = Cost for one minute $0.00-$9.99
- G= CO Line Group 1-7
- DD = Insert/Delete Table reference 00-19 (## for none)
- L= LCR Class of Service (LCOS)

Description

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. 710.2, System Features Programming, Call Cost Display Feature programming.

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. 730.1, 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 765-1 LCR Class of Service Table

Allowed Access to Route		LCR CO Line Group Priority						
		0	1	2	3	4	5	6
STA LCR COS	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
	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 00-19
- 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 [1] 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.

Appendix A-12 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)

Figure 765-4 Ex: Insert/Delete Pgm Form

LCR PROGRAMMING (Cont'd)

F. Daily Start Time Table

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 11PM. However, these times can be changed.

The entries in the Daily Start 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.

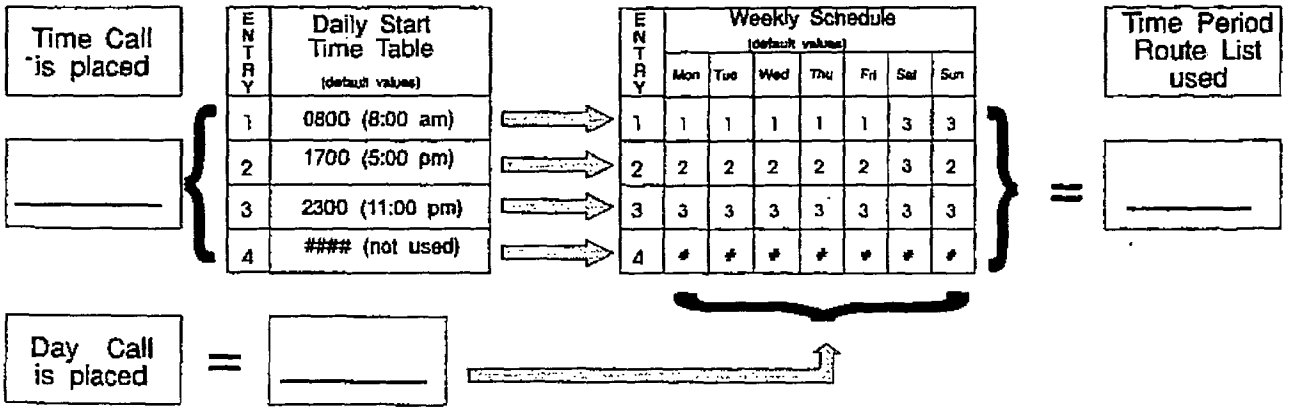


Figure 765-5 Daily Start Time & Weekly Schedule Tables

LCR PROGRAMMING (Cont'd)

G. Weekly Schedule Table

Programming Steps

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 (1-4) 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.

- 1st 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.

Description

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 765-6 Ex: Daily & Weekly Start Time Tables

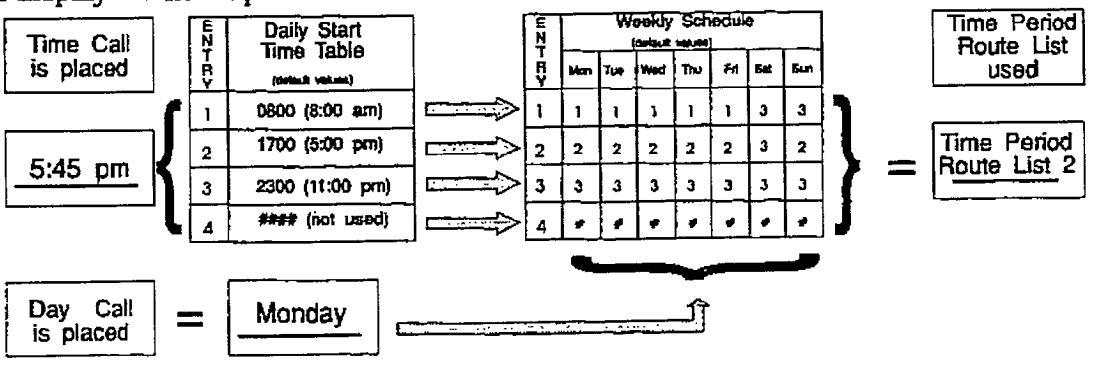


Figure 765-6 Ex: Daily & Weekly Start Time Tables

LCR PROGRAMMING (Cont'd)

H. LCR Routing for Toll Information

Programming Steps

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 (00-15) 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. 710.2, System Features Programming, LCR Enable.

Description

This feature adds provisions to the LCR call processing which will allow common call routing for all toll information calls. 1-(XXX)555-1212, (XXX)555-1212, 1-555-1212 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 the 3-Digit Area/Office Code Table.***

TOLL INFORMATION ROUTE LIST TABLE	DEFAULT 00	

Figure 765-7 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). Two routes have been established with the default database for routing of all calls under default. The entire default database is shown in Figure 775-8 DB Printout of LCR Default.

The 3-Digit tables contain a default where all Long distance (numbers requiring an area code) with a leading digit "1" are routed to Route table 00. Route Table 00 will route calls on lines in group 1 for all time periods. All Local calls (numbers that are dialed without an area code) with or without a leading digit "1" are routed to route list table 01. Route list table 01 also routes calls using lines in line group 1 for all time periods.

SECTION 770
INITIALIZE DATABASE PARAMETERS

770.1 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. 700.2, Program Mode Entry (Key Station).

If Database Parameters need to be initialized:

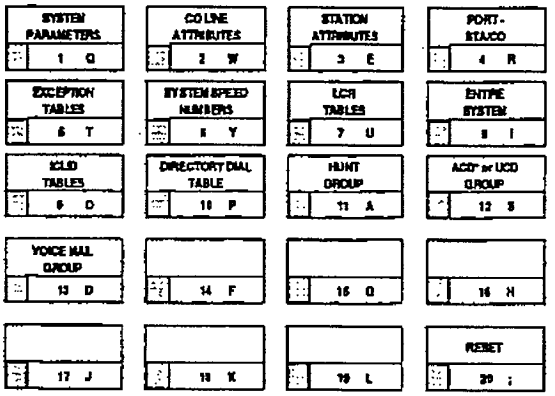
1. Press FLASH and dial [80]. The following message will be shown on the display of a display phone:

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 #8) 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 DataBase Parameters programming area:



* This feature only available if Basic ACD Software Package was purchased separately.

INIT DATABASE PARAMETERS (Cont'd)

A. Initialize System Parameters

Programming Steps

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.

Description

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)
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/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)
SYSTEM FEATURES:			
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

INIT. DATABASE PARAMETERS (Cont'd)

Initialize System Parameters (Cont'd)

Programming Steps | Description

PROGRAM CODE	FLEX BUTTON	FEATURE	DEFAULT VALUE (after initializing)
MISC. SYSTEM FEATURES			
FLASH 10		Attendant Assignment	STA 100
FLASH 11	1-4	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	Relay #4/Sensor #1	None
	5	Relay #5/Sensor #2	None
	6	Relay #6/Sensor #3	None
	7	Relay #7	None
	8	Stations	None
	11	On-Board Relays	None
	12	Relay/Sensor #1	None
	13	Relay/Sensor #2	None
	14	Relay/Sensor #3	None
	15	Relay/Sensor #4	None
FLASH 15	1-4	I/O Ports	None
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
FLASH 22	1	Night Mode Operation	Manual
	2	ANM Schedule - Mon.	08:00/17:00
	3	ANM Schedule - Tues.	08:00/17:00
	4	ANM Schedule - Wed.	08:00/17:00
	5	ANM Schedule - Thur.	08:00/17:00
	6	ANM Schedule - Fri.	08:00/17:00
	7	ANM Schedule - Sat.	##:##/##:##
	8	ANM Schedule - Sun.	##:##/##:##
FLASH 23	1-4	Directory Dialing Table	None

INIT. DATABASE PARAMETERS (Cont'd)

B. Initialize CO Line Attributes

Programming Steps

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.

Description

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 value 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 Lines
	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
FLASH 41	1	Dial Pulse Break/Make Ratio	60/40
	2	Dial Pulse Dialing Speed	10 pps

INIT. DATABASE PARAMETERS (Cont'd)

C. Initialize Station Attributes

Programming Steps

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.

Description

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 (enabled)
	A/2	Do Not Disturb	Allowed (enabled)
	A/3	Conference	Allowed (enabled)
	A/4	Executive Override	Dis-allowed (disabled)
	A/5	Privacy Release	Dis-allowed (disabled)
	A/6	System Speed Dial	Allowed (enabled)
	A/7	Line Queuing	Allowed (enabled)
	A/8	Preferred Line Answer	Dis-allowed (disabled)
	A/9	Off-Hook Voice-Over	Dis-allowed (disabled)
	A/10	Call Forward	Allowed (enabled)
	A/11	Forced LCR	Not Required (disabled)
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 Stations assigned into Group 1
	B/5	Paging Zone(s)	All Stations assigned into Zone 1
	B/6	Preset Forward Destination	None assigned
	B/7	CO Line Group Access	All Stations assigned access to Group 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

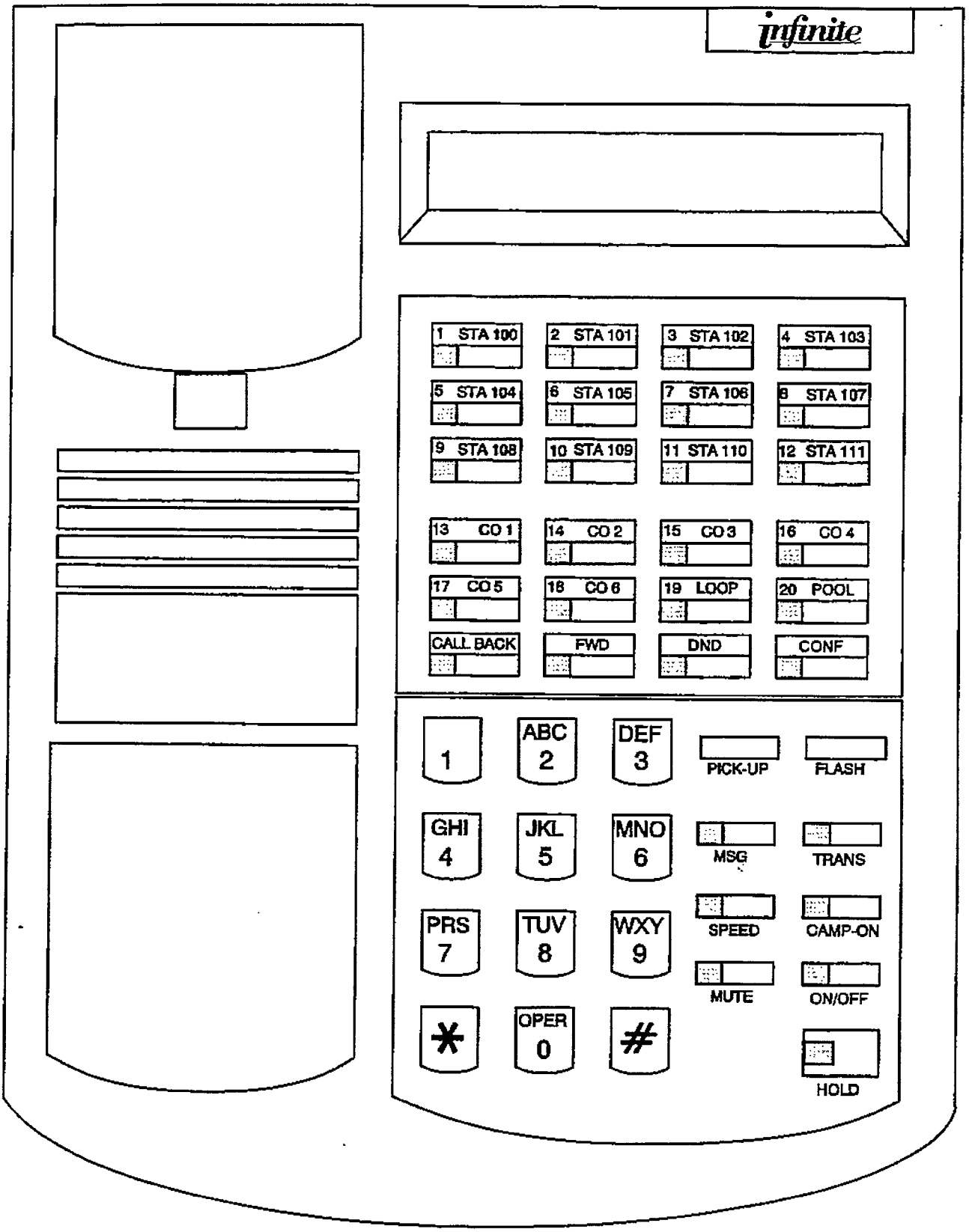


Figure 770-1 33-Button Default Button Mapping

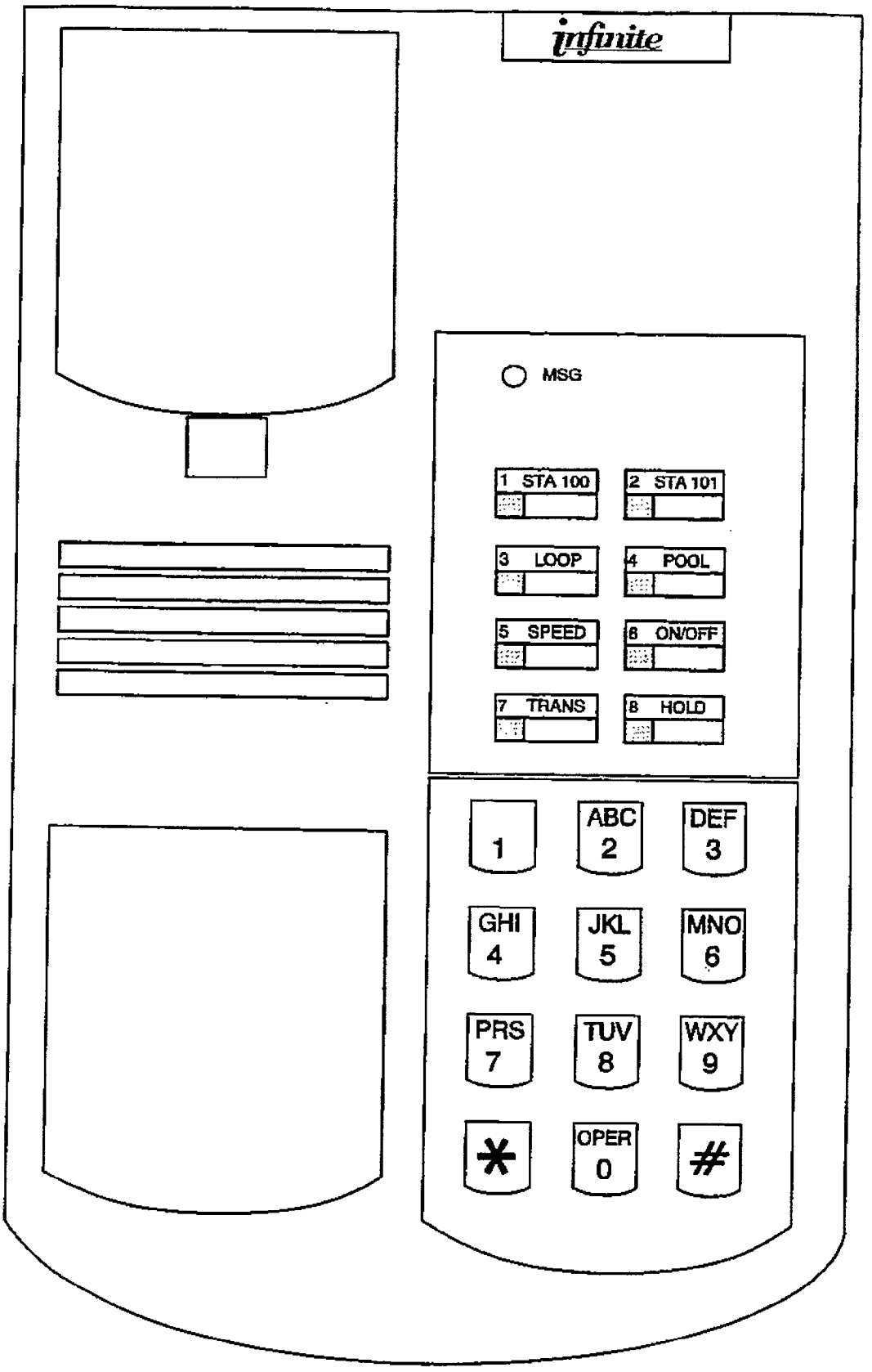


Figure 770-2 8-Button Default Button Mapping

INIT. DATABASE PARAMETERS (Cont'd)

D. Initialize Station and CO Port Parameters

Programming Steps

If Group Parameters need to be initialized:

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.

Description

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.

INIT. DATABASE PARAMETERS (Cont'd)

E. Initialize Exception Tables

Programming Steps

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.

Description

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 upon initializing the Exception Tables parameters:

TABLE	DEFAULT VALUE (after initializing)
ALLOW TABLE - A	Table Cleared (no entries
DENY TABLE - A	Table Cleared (no entries)
ALLOW TABLE - B	Table Cleared (no entries)
DENY TABLE - B	Table Cleared (no entries)
SPECIAL TABLE 1	Table Cleared (no entries allowed, no area code specified)
SPECIAL TABLE 2	Table Cleared (no entries allowed, no area code specified)
SPECIAL TABLE 3	Table Cleared (no entries allowed, no area code specified)
SPECIAL TABLE 4 (home area code)	Table Cleared (no entries allowed)

INIT. DATABASE PARAMETERS (Cont'd)

F. Initialize System Speed Numbers

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

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

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

INIT. DATABASE PARAMETERS (Cont'd)

H. Initialize Entire System and Reset (all parameters)

Programming Steps

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

2. To initialize the entire system database, press the HOLD button. The system will perform a hard reset.

Description

To completely initialize the database area including all non-programmable parameters held in Dynamic RAM (DRAM) 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 performance.

INIT. DATABASE PARAMETERS (Cont'd)

I. Initialize ICLID Parameters

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

The ICLID Table 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

INIT. DATABASE PARAMETERS (Cont'd)

J. Initialize Directory Dialing Table Parameters

Programming Steps

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.

Description

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	
	5	Back Space	

INIT. DATABASE PARAMETERS (Cont'd)

K. Initialize Hunt Group Parameters

Programming Steps

If Group Parameters need to be initialized:

1. Press the Hunt Group Parameters flexible button (Button #11). 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.

Description

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 330-337	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

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 UCD groups established
	A/9	Alternate ACD/UCD Group Assign	No UCD 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
	A/12	ACD Supervisor Programming	No Supervisor assigned
	B/1-8	ACD or UCD Station Assignments	No stations are assigned
FLASH 61	1	ACD or UCD Ring Timer	060 seconds
	2	ACD or UCD Message Interval Timer	060 seconds
	3	ACD or UCD Overflow Timer	060 seconds
	4	ACD or UCD Wrap-Up Timer	004 seconds
	5	ACD or UCD No Answer Recall	000 seconds (disabled)
		ACD or UCD No Answer Retry	300 seconds
FLASH 62	1-8	RAN Tables 1 through 8	No RAN parameters set

INIT. DATABASE PARAMETERS (Cont'd)

M. Initialize VM Group Parameters

Programming Steps

If VM Group Parameters need to be initialized:

1. Press the VM Group Parameters flexible button (Button #13). The following message will be shown on the display phone:

INITIALIZE VM GROUP
PRESS HOLD

2. To initialize the VM Group parameters, press the HOLD button. Confirmation tone will be heard.

Description

VM Group parameters may be initialized setting all data fields to their original, default values.

PROGRAM CODE	FLEX BUTTON	FEATURE	DEFAULT VALUE (after initializing)
FLASH 65	1-8	Voice Mail Groups 440-447	No Voice Mail groups are established
	9	Alternate VM Group Assign	No Alternate VM group assignment is made
	10	Leave Table	No outpulsing table is referenced
	11	Retrieve Table	No outpulsing table is referenced
	12	VM Station Assignments	NO stations are assigned
FLASH 66	1-7	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
FLASH 67	1	In-Band Digits for Incoming CO Calls	Disabled by default
	2	Voice Mail Transfer/Forward	Disabled by default

INIT. DATABASE PARAMETERS (Cont'd)

N. System Reset

Programming Steps

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.

Description

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.

SECTION 775
PRINTING SYSTEM DATABASE PARAMETERS

775.1 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. 700.2, 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:

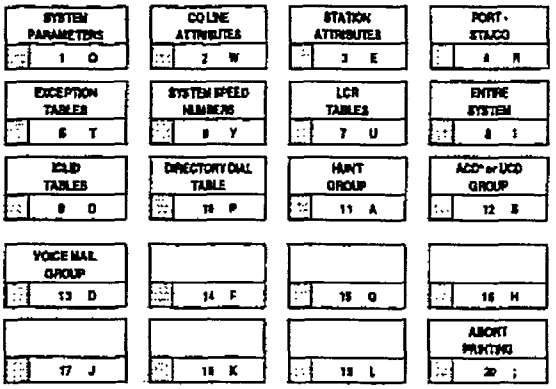
PRINT DATA-BASE
ENTER BUTTON NUMBER

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.



* This feature only available if Basic ACD Software Package was purchased separately.

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

System DataBase Printouts (Cont'd)

A. Printing System Parameters

Programming Steps

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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX [II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX [I] Basic KSU or the Central Processor Board (CPB) on the DVX [II] system.

Definition of Terms for System Parameters Printout

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

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

```
SYSTEM PARAMETERS
-----------
Eng. Ver. 2.0a
SYSTEM TIMERS
---------
SHR EHR ART XFR PFT CFN PT
 60 180  44  45  10  15  2

CPT CFT PTO COT SRT MWT HFT
180  10  15  8  20   0  10

HFD CQT ACB
10  30   0

SYSTEM FEATURES
---------
AO SY ENR EO PW BGM LCR
 N  Y  N   Y  Y  Y   N

AC GL  S  CC MH
 N  N  N   N  Y

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    =  300
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
```

Figure 775-1 DB Printout of System Parameters

System DataBase Printouts (Cont'd)

B. Printing CO Line Attributes

Programming Steps

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 print out 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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

Definition of Terms for CO Lines Printout

SIGNAL= DTMF/Dial Pulse
TYPE= CO/PBX
UNA= Universal Night Answer
PRI= CO Line Privacy
SUPV= Loop Supervision
DISA= Direct Inward System Access
FLTM= Flash Timer
GRP= CO Line Group
COS= CO Line Class of Service

```
CO LINE ATTRIBUTES
------------------

CO 01
---
 LINE 01

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 02
---
 LINE 02

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 03
---
 LINE 03

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 04
---
 LINE 04

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 05
---
 LINE 05

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 06
---
 LINE 06

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 07
---
 LINE 07

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B

CO 08
---
 LINE 08

SIGNAL TYPE UNA CONF PRI
DTMF   CO   Y    Y   Y

SUPV DISA FLTM GRP COS
 N     N   10   1   1

RING ASSIGNMENTS
 100B
...and so on thru CO Lines 14 or 28.
```

Figure 775-2 DB Printout of CO Line Attributes

System DataBase Printouts (Cont'd)

C. Printing Station Attributes

Programming Steps

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 print out of only one station is desired enter that station twice (i.e. [101101]). 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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX [II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX [I] Basic KSU or the Central Processor Board (CPB) on the DVX [II] system.

Definition of Terms for Stations Printout

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
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 730-2 Flexible Button Display Designations, Page 730-21.

```
STATION ATTRIBUTES
------------------
STA 100
-------
PAGE DND CONF EOR PRI SPD QUE
  Y   Y    Y    Y   N   Y   Y
PLA OHVO FWD LCR SUB
 N    N   Y   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 11D110 12D111
13CO01 14CO02 15CO03
16CO04 17CO05 18CO06
19PL1  20LP   21CBK
22FWD  23DND  24CNF

PRIME KEY  0 Y

STA 101
-------
PAGE DND CONF EOR PRI SPD QUE
  Y   Y    Y    Y   N   Y   Y
PLA OHVO FWD LCR SUB
 N    N   Y   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 11D110 12D111
13CO01 14CO02 15CO03
16CO04 17CO05 18CO06
19PL1  20LP   21CBK
22FWD  23DND  24CNF

PRIME KEY  0 Y
STA 102
-------
PAGE DND CONF EOR PRI SPD QUE
  Y   Y    Y    Y   N   Y   Y
PLA OHVO FWD LCR SUB
 N    N   Y   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 11D110 12D111
13CO01 14CO02 15CO03
16CO04 17CO05 18CO06
19PL1  20LP   21CBK
22FWD  23DND  24CNF

PRIME KEY  0 Y

STA 103
-------
PAGE DND CONF EOR PRI SPD QUE
  Y   Y    Y    Y   N   Y   Y
PLA OHVO FWD LCR SUB
 N    N   Y   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 11D110 12D111
13CO01 14CO02 15CO03
16CO04 17CO05 18CO06
19PL1  20LP   21CBK
22FWD  23DND  24CNF

PRIME KEY  0 Y

...and so on thru Sta 155
```

Figure 775-3 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

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 of the Basic KSU or on the DVX [II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX [I] Basic KSU or the Central Processor Board (CPB) on the DVX [II] system.

```
CARD        CO
----  ----------
 01 -  01 02 03 04
 02 -  05 06 ## ##
 03 -  07 08 09 10
 04 -  11 12 13 14

CARD                    STA
----  ------------------------

 01 - 100 101 102 103 104 105 106 107

 02 - 108 109 110 111 ### ### ### ###

 03 - 112 113 114 115 116 117 118 119

 04 - 120 121 122 123 124 125 126 127
```

Figure 775-4 DB Printout of CO/Station Parameters

System DataBase Printouts (Cont'd)

E. Printing Exception Tables

Programming Steps

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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

```
Allow Table A
-------------
01              11
02              12
03              13
04              14
05              15
06              16
07              17
08              18
09              19
10              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 B
------------
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 775-5 DB Printout of Exception Tables

System DataBase Printouts (Cont'd)

F. Printing System Speed Bins

Programming Steps

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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

```
SYSTEM SPEED NUMBERS
                                        46
20
                                        47
21
                                        48
22
                                        49
23
                                        50
24
                                        51
25
                                        52
26
                                        53
27
                                        54
28
                                        55
29
                                        56
30
                                        57
31
                                        58
32
                                        59
33
                                        60
34
                                        61
35
                                        62
36
                                        63
37
                                        64
38
                                        65
39
                                        66
40
                                        67
41
                                        68
42
                                        69
43
                                        70
44
                                        71
45                                      ...and so on thru Speed No 99
```

Figure 775-6 DB Printout of System Speed Numbers

System DataBase Printouts (Cont'd)

G. Printing LCR Tables

Programming Steps

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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

EXCEPTION CODE TABLE

CODE	ROUTE NO

ROUTE LIST TABLE

RT	TIME	COST	CO GRP	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	##	1	
	3	000	1	##	1	
	4	000	1	##	1	
2	1	010	1	##	1	
	2	010	1	##	1	
	3	010	1	##	1	
	4	010	1	##	1	
3	1	072	1	##	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	##	1	
	4	171	1	##	1	
5	1	106	1	##	1	
	2	106	1	##	1	
	3	106	1	##	1	
	4	106	1	##	1	
6	1	277	1	##	1	
	2	277	1	##	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 775-7 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	N	##	##	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
215	0	11	N	##	##	N
216	0	11	N	##	##	N
217	0	11	N	##	##	N
218	0	11	N	##	##	N
219	0	11	N	##	##	N
220	2	8	N	1	7	N
221	2	8	N	1	7	N
222	2	8	N	1	7	N
223	2	8	N	1	7	N
224	2	8	N	1	7	N
225	2	8	N	1	7	N
226	2	8	N	1	7	N
227	2	8	N	1	7	N
228	2	8	N	1	7	N
229	2	8	N	1	7	N
230	2	8	N	1	7	N
231	2	8	N	1	7	N
232	2	8	N	1	7	N
233	2	8	N	1	7	N
234	2	8	N	1	7	N
235	2	8	N	1	7	N
236	2	8	N	1	7	N
237	2	8	N	1	7	N
238	2	8	N	1	7	N
239	2	8	N	1	7	N
240	2	8	N	1	7	N
241	2	8	N	1	7	N
242	2	8	N	1	7	N
243	2	8	N	1	7	N
244	2	8	N	1	7	N
245	2	8	N	1	7	N
246	2	8	N	1	7	N
247	2	8	N	1	7	N
248	2	8	N	1	7	N
249	2	8	N	1	7	N
250	2	8	N	1	7	N
251	2	8	N	1	7	N
252	2	8	N	1	7	N
253	2	8	N	1	7	N
254	2	8	N	1	7	N
255	2	8	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	8	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	8	N	1	7	N
277	2	8	N	1	7	N
278	2	8	N	1	7	N
279	2	8	N	1	7	N
280	2	8	N	1	7	N
281	2	8	N	1	7	N
282	2	8	N	1	7	N
283	2	8	N	1	7	N
284	2	8	N	1	7	N
285	2	8	N	1	7	N
286	2	8	N	1	7	N
287	2	8	N	1	7	N
288	2	8	N	1	7	N
289	2	8	N	1	7	N
290	2	8	N	1	7	N
291	2	8	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
295	2	8	N	1	7	N
296	2	8	N	1	7	N
297	2	8	N	1	7	N
298	2	8	N	1	7	N
299	2	8	N	1	7	N
300	0	11	N	##	##	N

Figure 775-8 DB Printout of LCR Default

301	0	11	N	##	##	N
302	0	11	N	##	##	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
316	0	11	N	##	##	N
317	0	11	N	##	##	N
318	0	11	N	##	##	N
319	0	11	N	##	##	N
320	2	8	N	1	7	N
321	2	8	N	1	7	N
322	2	8	N	1	7	N
323	2	8	N	1	7	N
324	2	8	N	1	7	N
325	2	8	N	1	7	N
326	2	8	N	1	7	N
327	2	8	N	1	7	N
328	2	8	N	1	7	N
329	2	8	N	1	7	N
330	2	8	N	1	7	N
331	2	8	N	1	7	N
332	2	8	N	1	7	N
333	2	8	N	1	7	N
334	2	8	N	1	7	N
335	2	8	N	1	7	N
336	2	8	N	1	7	N
337	2	8	N	1	7	N
338	2	8	N	1	7	N
339	2	8	N	1	7	N
340	2	8	N	1	7	N
341	2	8	N	1	7	N
342	2	8	N	1	7	N
343	2	8	N	1	7	N
344	2	8	N	1	7	N
345	2	8	N	1	7	N
346	2	8	N	1	7	N
347	2	8	N	1	7	N
348	2	8	N	1	7	N
349	2	8	N	1	7	N
350	2	8	N	1	7	N
351	2	8	N	1	7	N
352	2	8	N	1	7	N
353	2	8	N	1	7	N
354	2	8	N	1	7	N
355	2	8	N	1	7	N
356	2	8	N	1	7	N
357	2	8	N	1	7	N
358	2	8	N	1	7	N
359	2	8	N	1	7	N
360	2	8	N	1	7	N
361	2	8	N	1	7	N
362	2	8	N	1	7	N
363	2	8	N	1	7	N
364	2	8	N	1	7	N
365	2	8	N	1	7	N
366	2	8	N	1	7	N
367	2	8	N	1	7	N
368	2	8	N	1	7	N
369	2	8	N	1	7	N
370	2	8	N	1	7	N
371	2	8	N	1	7	N
372	2	8	N	1	7	N
373	2	8	N	1	7	N
374	2	8	N	1	7	N
375	2	8	N	1	7	N
376	2	8	N	1	7	N
377	2	8	N	1	7	N
378	2	8	N	1	7	N
379	2	8	N	1	7	N
380	2	8	N	1	7	N
381	2	8	N	1	7	N
382	2	8	N	1	7	N
383	2	8	N	1	7	N
384	2	8	N	1	7	N
385	2	8	N	1	7	N
386	2	8	N	1	7	N
387	2	8	N	1	7	N
388	2	8	N	1	7	N
389	2	8	N	1	7	N
390	2	8	N	1	7	N
391	2	8	N	1	7	N
392	2	8	N	1	7	N
393	2	8	N	1	7	N
394	2	8	N	1	7	N
395	2	8	N	1	7	N
396	2	8	N	1	7	N
397	2	8	N	1	7	N
398	2	8	N	1	7	N
399	2	8	N	1	7	N
400	0	11	N	##	##	N
401	0	11	N	##	##	N
402	0	11	N	##	##	N
403	3	11	N	##	##	N
404	0	11	N	##	##	N
405	0	11	N	##	##	N
406	0	11	N	##	##	N
407	0	11	N	##	##	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

408	0	11	N	##	##	N
409	0	11	N	##	##	N
410	0	11	N	##	##	N
411	1	4	N	1	3	N
412	0	11	N	##	##	N
413	0	11	N	##	##	N
414	0	11	N	##	##	N
415	0	11	N	##	##	N
416	3	11	N	##	##	N
417	0	11	N	##	##	N
418	3	11	N	##	##	N
419	0	11	N	##	##	N
420	2	8	N	1	7	N
421	2	8	N	1	7	N
422	2	8	N	1	7	N
423	2	8	N	1	7	N
424	2	8	N	1	7	N
425	2	8	N	1	7	N
426	2	8	N	1	7	N
427	2	8	N	1	7	N
428	2	8	N	1	7	N
429	2	8	N	1	7	N
430	2	8	N	1	7	N
431	2	8	N	1	7	N
432	2	8	N	1	7	N
433	2	8	N	1	7	N
434	2	8	N	1	7	N
435	2	8	N	1	7	N
436	2	8	N	1	7	N
437	2	8	N	1	7	N
438	2	8	N	1	7	N
439	2	8	N	1	7	N
440	2	8	N	1	7	N
441	2	8	N	1	7	N
442	2	8	N	1	7	N
443	2	8	N	1	7	N
444	2	8	N	1	7	N
445	2	8	N	1	7	N
446	2	8	N	1	7	N
447	2	8	N	1	7	N
448	2	8	N	1	7	N
449	2	8	N	1	7	N
450	2	8	N	1	7	N
451	2	8	N	1	7	N
452	2	8	N	1	7	N
453	2	8	N	1	7	N
454	2	8	N	1	7	N
455	2	8	N	1	7	N
456	2	8	N	1	7	N
457	2	8	N	1	7	N
458	2	8	N	1	7	N
459	2	8	N	1	7	N
460	2	8	N	1	7	N
461	2	8	N	1	7	N
462	2	8	N	1	7	N
463	2	8	N	1	7	N
464	2	8	N	1	7	N
465	2	8	N	1	7	N
466	2	8	N	1	7	N
467	2	8	N	1	7	N
468	2	8	N	1	7	N
469	2	8	N	1	7	N
470	2	8	N	1	7	N
471	2	8	N	1	7	N
472	2	8	N	1	7	N
473	2	8	N	1	7	N
474	2	8	N	1	7	N
475	2	8	N	1	7	N
476	2	8	N	1	7	N
477	2	8	N	1	7	N
478	2	8	N	1	7	N
479	2	8	N	1	7	N
480	2	8	N	1	7	N
481	2	8	N	1	7	N
482	2	8	N	1	7	N
483	2	8	N	1	7	N
484	2	8	N	1	7	N
485	2	8	N	1	7	N
486	2	8	N	1	7	N
487	2	8	N	1	7	N
488	2	8	N	1	7	N
489	2	8	N	1	7	N
490	2	8	N	1	7	N
491	2	8	N	1	7	N
492	2	8	N	1	7	N
493	2	8	N	1	7	N
494	2	8	N	1	7	N
495	2	8	N	1	7	N
496	2	8	N	1	7	N
497	2	8	N	1	7	N
498	2	8	N	1	7	N
499	2	8	N	1	7	N
500	0	11	N	##	##	N
501	0	11	N	##	##	N
502	0	11	N	##	##	N
503	0	11	N	##	##	N
504	0	11	N	##	##	N
505	0	11	N	##	##	N
506	3	11	N	##	##	N
507	0	11	N	##	##	N
508	0	11	N	##	##	N
509	0	11	N	##	##	N
510	0	11	N	##	##	N
512	0	11	N	##	##	N
513	0	11	N	##	##	N
514	3	11	N	##	##	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

515	0	11	N	##	##	N
516	0	11	N	##	##	N
517	0	11	N	##	##	N
518	0	11	N	##	##	N
519	3	11	N	##	##	N
520	2	8	N	1	7	N
521	2	8	N	1	7	N
522	2	8	N	1	7	N
523	2	8	N	1	7	N
524	2	8	N	1	7	N
525	2	8	N	1	7	N
526	2	8	N	1	7	N
527	2	8	N	1	7	N
528	2	8	N	1	7	N
529	2	8	N	1	7	N
530	2	8	N	1	7	N
531	2	8	N	1	7	N
532	2	8	N	1	7	N
533	2	8	N	1	7	N
534	2	8	N	1	7	N
535	2	8	N	1	7	N
536	2	8	N	1	7	N
537	2	8	N	1	7	N
538	2	8	N	1	7	N
539	2	8	N	1	7	N
540	2	8	N	1	7	N
541	2	8	N	1	7	N
542	2	8	N	1	7	N
543	2	8	N	1	7	N
544	2	8	N	1	7	N
545	2	8	N	1	7	N
546	2	8	N	1	7	N
547	2	8	N	1	7	N
548	2	8	N	1	7	N
549	2	8	N	1	7	N
550	2	8	N	1	7	N
551	2	8	N	1	7	N
552	2	8	N	1	7	N
553	2	8	N	1	7	N
554	2	8	N	1	7	N
555	2	8	N	1	7	N
556	2	8	N	1	7	N
557	2	8	N	1	7	N
558	2	8	N	1	7	N
559	2	8	N	1	7	N
560	2	8	N	1	7	N
561	2	8	N	1	7	N
562	2	8	N	1	7	N
563	2	8	N	1	7	N
564	2	8	N	1	7	N
565	2	8	N	1	7	N
566	2	8	N	1	7	N
567	2	8	N	1	7	N
568	2	8	N	1	7	N
569	2	8	N	1	7	N
570	2	8	N	1	7	N
571	2	8	N	1	7	N
572	2	8	N	1	7	N
573	2	8	N	1	7	N
574	2	8	N	1	7	N
575	2	8	N	1	7	N
576	2	8	N	1	7	N
577	2	8	N	1	7	N
578	2	8	N	1	7	N
579	2	8	N	1	7	N
580	2	8	N	1	7	N
581	2	8	N	1	7	N
582	2	8	N	1	7	N
583	2	8	N	1	7	N
584	2	8	N	1	7	N
585	2	8	N	1	7	N
586	2	8	N	1	7	N
587	2	8	N	1	7	N
588	2	8	N	1	7	N
589	2	8	N	1	7	N
590	2	8	N	1	7	N
591	2	8	N	1	7	N
592	2	8	N	1	7	N
593	2	8	N	1	7	N
594	2	8	N	1	7	N
595	2	8	N	1	7	N
596	2	8	N	1	7	N
597	2	8	N	1	7	N
598	2	8	N	1	7	N
599	2	8	N	1	7	N
600	0	11	N	##	##	N
601	0	11	N	##	##	N
602	0	11	N	##	##	N
603	0	11	N	##	##	N
604	3	11	N	##	##	N
605	0	11	N	##	##	N
606	0	11	N	##	##	N
607	0	11	N	##	##	N
608	0	11	N	##	##	N
609	0	11	N	##	##	N
610	0	11	N	##	##	N
612	0	11	N	##	##	N
613	3	11	N	##	##	N
614	0	11	N	##	##	N
615	0	11	N	##	##	N
616	0	11	N	##	##	N
617	0	11	N	##	##	N
618	0	11	N	##	##	N
619	0	11	N	##	##	N
620	2	8	N	1	7	N
621	2	8	N	1	7	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

622	2	8	N	1	7	N	675	2	8	N	1	7	N
623	2	8	N	1	7	N	676	2	8	N	1	7	N
624	2	8	N	1	7	N	677	2	8	N	1	7	N
625	2	8	N	1	7	N	678	2	8	N	1	7	N
626	2	8	N	1	7	N	679	2	8	N	1	7	N
627	2	8	N	1	7	N	680	2	8	N	1	7	N
628	2	8	N	1	7	N	681	2	8	N	1	7	N
629	2	8	N	1	7	N	682	2	8	N	1	7	N
630	2	8	N	1	7	N	683	2	8	N	1	7	N
631	2	8	N	1	7	N	684	2	8	N	1	7	N
632	2	8	N	1	7	N	685	2	8	N	1	7	N
633	2	8	N	1	7	N	686	2	8	N	1	7	N
634	2	8	N	1	7	N	687	2	8	N	1	7	N
635	2	8	N	1	7	N	688	2	8	N	1	7	N
636	2	8	N	1	7	N	689	2	8	N	1	7	N
637	2	8	N	1	7	N	690	2	8	N	1	7	N
638	2	8	N	1	7	N	691	2	8	N	1	7	N
639	2	8	N	1	7	N	692	2	8	N	1	7	N
640	2	8	N	1	7	N	693	2	8	N	1	7	N
641	2	8	N	1	7	N	694	2	8	N	1	7	N
642	2	8	N	1	7	N	695	2	8	N	1	7	N
643	2	8	N	1	7	N	696	2	8	N	1	7	N
644	2	8	N	1	7	N	697	2	8	N	1	7	N
645	2	8	N	1	7	N	698	2	8	N	1	7	N
646	2	8	N	1	7	N	699	2	8	N	1	7	N
647	2	8	N	1	7	N	700	0	11	N	##	##	N
648	2	8	N	1	7	N	701	0	11	N	##	##	N
649	2	8	N	1	7	N	702	0	11	N	##	##	N
650	2	8	N	1	7	N	703	0	11	N	##	##	N
651	2	8	N	1	7	N	704	0	11	N	##	##	N
652	2	8	N	1	7	N	705	3	11	N	##	##	N
653	2	8	N	1	7	N	706	4	11	N	##	##	N
654	2	8	N	1	7	N	707	0	11	N	##	##	N
655	2	8	N	1	7	N	708	0	11	N	##	##	N
656	2	8	N	1	7	N	709	3	11	N	##	##	N
657	2	8	N	1	7	N	710	0	11	N	##	##	N
658	2	8	N	1	7	N	712	0	11	N	##	##	N
659	2	8	N	1	7	N	713	0	11	N	##	##	N
660	2	8	N	1	7	N	714	0	11	N	##	##	N
661	2	8	N	1	7	N	715	0	11	N	##	##	N
662	2	8	N	1	7	N	716	0	11	N	##	##	N
663	2	8	N	1	7	N	717	0	11	N	##	##	N
664	2	8	N	1	7	N	718	0	11	N	##	##	N
665	2	8	N	1	7	N	719	0	11	N	##	##	N
666	2	8	N	1	7	N	720	2	8	N	1	7	N
667	2	8	N	1	7	N	721	2	8	N	1	7	N
668	2	8	N	1	7	N	722	2	8	N	1	7	N
669	2	8	N	1	7	N	723	2	8	N	1	7	N
670	2	8	N	1	7	N	724	2	8	N	1	7	N
671	2	8	N	1	7	N	725	2	8	N	1	7	N
672	2	8	N	1	7	N	726	2	8	N	1	7	N
673	2	8	N	1	7	N	727	2	8	N	1	7	N
674	2	8	N	1	7	N	728	2	8	N	1	7	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

729	2	8	N	1	7	N	782	2	8	N	1	7	N
730	2	8	N	1	7	N	783	2	8	N	1	7	N
731	2	8	N	1	7	N	784	2	8	N	1	7	N
732	2	8	N	1	7	N	785	2	8	N	1	7	N
733	2	8	N	1	7	N	786	2	8	N	1	7	N
734	2	8	N	1	7	N	787	2	8	N	1	7	N
735	2	8	N	1	7	N	788	2	8	N	1	7	N
736	2	8	N	1	7	N	789	2	8	N	1	7	N
737	2	8	N	1	7	N	790	2	8	N	1	7	N
738	2	8	N	1	7	N	791	2	8	N	1	7	N
739	2	8	N	1	7	N	792	2	8	N	1	7	N
740	2	8	N	1	7	N	793	2	8	N	1	7	N
741	2	8	N	1	7	N	794	2	8	N	1	7	N
742	2	8	N	1	7	N	795	2	8	N	1	7	N
743	2	8	N	1	7	N	796	2	8	N	1	7	N
744	2	8	N	1	7	N	797	2	8	N	1	7	N
745	2	8	N	1	7	N	798	2	8	N	1	7	N
746	2	8	N	1	7	N	799	2	8	N	1	7	N
747	2	8	N	1	7	N	800	0	11	N	##	##	N
748	2	8	N	1	7	N	801	0	11	N	##	##	N
749	2	8	N	1	7	N	802	0	11	N	##	##	N
750	2	8	N	1	7	N	803	0	11	N	##	##	N
751	2	8	N	1	7	N	804	0	11	N	##	##	N
752	2	8	N	1	7	N	805	0	11	N	##	##	N
753	2	8	N	1	7	N	806	0	11	N	##	##	N
754	2	8	N	1	7	N	807	3	11	N	##	##	N
755	2	8	N	1	7	N	808	0	11	N	##	##	N
756	2	8	N	1	7	N	809	5	11	N	##	##	N
757	2	8	N	1	7	N	810	0	11	N	##	##	N
758	2	8	N	1	7	N	812	0	11	N	##	##	N
759	2	8	N	1	7	N	813	0	11	N	##	##	N
760	2	8	N	1	7	N	814	0	11	N	##	##	N
761	2	8	N	1	7	N	815	0	11	N	##	##	N
762	2	8	N	1	7	N	816	0	11	N	##	##	N
763	2	8	N	1	7	N	817	0	11	N	##	##	N
764	2	8	N	1	7	N	818	0	11	N	##	##	N
765	2	8	N	1	7	N	819	0	11	N	##	##	N
766	2	8	N	1	7	N	820	2	8	N	1	7	N
767	2	8	N	1	7	N	821	2	8	N	1	7	N
768	2	8	N	1	7	N	822	2	8	N	1	7	N
769	2	8	N	1	7	N	823	2	8	N	1	7	N
770	2	8	N	1	7	N	824	2	8	N	1	7	N
771	2	8	N	1	7	N	825	2	8	N	1	7	N
772	2	8	N	1	7	N	826	2	8	N	1	7	N
773	2	8	N	1	7	N	827	2	8	N	1	7	N
774	2	8	N	1	7	N	828	2	8	N	1	7	N
775	2	8	N	1	7	N	829	2	8	N	1	7	N
776	2	8	N	1	7	N	830	2	8	N	1	7	N
777	2	8	N	1	7	N	831	2	8	N	1	7	N
778	2	8	N	1	7	N	832	2	8	N	1	7	N
779	2	8	N	1	7	N	833	2	8	N	1	7	N
780	2	8	N	1	7	N	834	2	8	N	1	7	N
781	2	8	N	1	7	N	835	2	8	N	1	7	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

836	2	8	N	1	7	N
837	2	8	N	1	7	N
838	2	8	N	1	7	N
839	2	8	N	1	7	N
840	2	8	N	1	7	N
841	2	8	N	1	7	N
842	2	8	N	1	7	N
843	2	8	N	1	7	N
844	2	8	N	1	7	N
845	2	8	N	1	7	N
846	2	8	N	1	7	N
847	2	8	N	1	7	N
848	2	8	N	1	7	N
849	2	8	N	1	7	N
850	2	8	N	1	7	N
851	2	8	N	1	7	N
852	2	8	N	1	7	N
853	2	8	N	1	7	N
854	2	8	N	1	7	N
855	2	8	N	1	7	N
856	2	8	N	1	7	N
857	2	8	N	1	7	N
858	2	8	N	1	7	N
859	2	8	N	1	7	N
860	2	8	N	1	7	N
861	2	8	N	1	7	N
862	2	8	N	1	7	N
863	2	8	N	1	7	N
864	2	8	N	1	7	N
865	2	8	N	1	7	N
866	2	8	N	1	7	N
867	2	8	N	1	7	N
868	2	8	N	1	7	N
869	2	8	N	1	7	N
870	2	8	N	1	7	N
871	2	8	N	1	7	N
872	2	8	N	1	7	N
873	2	8	N	1	7	N
874	2	8	N	1	7	N
875	2	8	N	1	7	N
876	2	8	N	1	7	N
877	2	8	N	1	7	N
878	2	8	N	1	7	N
879	2	8	N	1	7	N
880	2	8	N	1	7	N
881	2	8	N	1	7	N
882	2	8	N	1	7	N
883	2	8	N	1	7	N
884	2	8	N	1	7	N
885	2	8	N	1	7	N
886	2	8	N	1	7	N
887	2	8	N	1	7	N
888	2	8	N	1	7	N
889	2	8	N	1	7	N
890	2	8	N	1	7	N
891	2	8	N	1	7	N
892	2	8	N	1	7	N
893	2	8	N	1	7	N
894	2	8	N	1	7	N
895	2	8	N	1	7	N
896	2	8	N	1	7	N
897	2	8	N	1	7	N
898	2	8	N	1	7	N
899	2	8	N	1	7	N
900	0	11	N	##	##	N
901	0	11	N	##	##	N
902	3	11	N	##	##	N
903	0	11	N	##	##	N
904	0	11	N	##	##	N
905	4	11	N	##	##	N
906	0	11	N	##	##	N
907	0	11	N	##	##	N
908	0	11	N	##	##	N
909	0	11	N	##	##	N
910	0	11	N	##	##	N
911	1	4	N	1	3	N
912	0	11	N	##	##	N
913	0	11	N	##	##	N
914	0	11	N	##	##	N
915	0	11	N	##	##	N
916	0	11	N	##	##	N
917	0	11	N	##	##	N
918	0	11	N	##	##	N
919	0	11	N	##	##	N
920	2	8	N	1	7	N
921	2	8	N	1	7	N
922	2	8	N	1	7	N
923	2	8	N	1	7	N
924	2	8	N	1	7	N
925	2	8	N	1	7	N
926	2	8	N	1	7	N
927	2	8	N	1	7	N
928	2	8	N	1	7	N
929	2	8	N	1	7	N
930	2	8	N	1	7	N
931	2	8	N	1	7	N
932	2	8	N	1	7	N
933	2	8	N	1	7	N
934	2	8	N	1	7	N
935	2	8	N	1	7	N
936	2	8	N	1	7	N
937	2	8	N	1	7	N
938	2	8	N	1	7	N
939	2	8	N	1	7	N
940	2	8	N	1	7	N
941	2	8	N	1	7	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

942	2	8	N	1	7	N
943	2	8	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	8	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	8	N	1	7	N
953	2	8	N	1	7	N
954	2	8	N	1	7	N
955	2	8	N	1	7	N
956	2	8	N	1	7	N
957	2	8	N	1	7	N
958	2	8	N	1	7	N
959	2	8	N	1	7	N
960	2	8	N	1	7	N
961	2	8	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	8	N	1	7	N
968	2	8	N	1	7	N
969	2	8	N	1	7	N
970	2	8	N	1	7	N
971	2	8	N	1	7	N
972	2	8	N	1	7	N
973	2	8	N	1	7	N
974	2	8	N	1	7	N
975	2	8	N	1	7	N
976	2	8	N	1	7	N
977	2	8	N	1	7	N
978	2	8	N	1	7	N
979	2	8	N	1	7	N
980	2	8	N	1	7	N
981	2	8	N	1	7	N
982	2	8	N	1	7	N
983	2	8	N	1	7	N
984	2	8	N	1	7	N
985	2	8	N	1	7	N
986	2	8	N	1	7	N
987	2	8	N	1	7	N
988	2	8	N	1	7	N
989	2	8	N	1	7	N
990	2	8	N	1	7	N
991	2	8	N	1	7	N
992	2	8	N	1	7	N
993	2	8	N	1	7	N
994	2	8	N	1	7	N
995	2	8	N	1	7	N
996	2	8	N	1	7	N
997	2	8	N	1	7	N
998	2	8	N	1	7	N
999	2	8	N	1	7	N

Figure 775-8 DB Printout of LCR Default (Cont'd)

System DataBase Printouts (Cont'd)

H. Printing Entire System Data Base

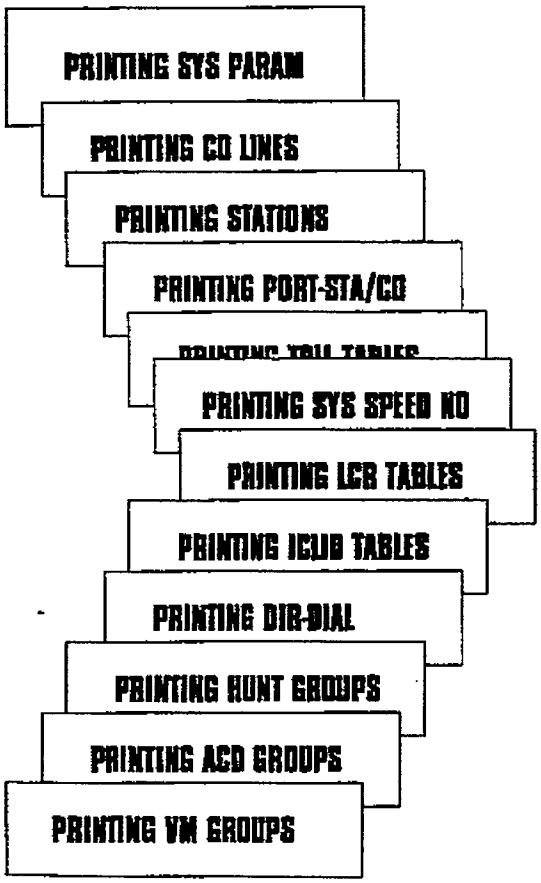
Programming Steps

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.



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 of the Basic KSU or on the DVX[II] CPB board, 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 01-28)
- All Station attributes (Stations 100-155)
- All CO and 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. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

System DataBase Printouts (Cont'd)

I. Printing ICLID Tables

Programming Steps

If the ICLID Table(s) need to be printed:

1. Press the ICLID TABLE flexible button (Button #9). The following message will be shown on the display phone:

2. To print the ICLID Table(s), press the HOLD button. The following message will be shown on the display phone:

When the system has finished sending the requested information to the printer, confirmation tone is heard.

Description

ICLID NAME BAUD PORT
N Y 2400 1

ICLID TRANSLATION TABLE

ENTRY	ROUTE NUMBER	NAME
000	##	
001	##	
002	##	
003	##	
004	##	
005	##	
006	##	
007	##	
008	##	
009	##	
010	##	
011	##	
012	##	
013	##	
014	##	
015	##	
016	##	
017	##	
018	##	
019	##	
020	##	
021	##	
022	##	
023	##	
024	##	
025	##	
026	##	
027	##	
028	##	
029	##	
030	##	
031	##	
032	##	
033	##	
034	##	
035	##	
036	##	
037	##	
038	##	
039	##	
040	##	
041	##	
042	##	
043	##	
044	##	
045	##	
046	##	
047	##	
048	##	
049	##	
050	##	
051	##	
052	##	
053	##	
054	##	
055	##	
056	##	
057	##	
058	##	
059	##	
060	##	
061	##	
062	##	
063	##	
064	##	
065	##	
066	##	
067	##	
068	##	
069	##	
070	##	
071	##	
072	##	
073	##	
074	##	
075	##	
076	##	
077	##	
078	##	
079	##	
080	##	
081	##	
082	##	
083	##	
084	##	
085	##	
086	##	
087	##	
088	##	
089	##	
090	##	
091	##	
092	##	
093	##	
094	##	
095	##	
096	##	
097	##	
098	##	

Figure 775-9 DB Printout of ICLID Table

```
 099     ##

ICLID UNANSWERED CALL TABLE
---------------

    NONE

ROUTE RING ASSIGNMENTS
---------------

00
 NONE

01
 NONE

02
 NONE

03
 NONE

04
 NONE

05
 NONE

06
 NONE

07
 NONE

08
 NONE

09
 NONE
```

Figure 775-11 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 of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

LST	BIN	NAME
000	100	
001	101	
002	102	
003	103	
004	104	
005	105	
006	106	
007	107	
008	108	
009	109	
010	110	
011	111	
012	112	
013	113	
014	114	
015	115	
016	116	
017	117	
018	118	
019	119	
020	120	
021	121	
022	122	
023	123	
024	124	
025	125	
026	126	
027	127	
028	000	
029	000	
030	000	
031	000	
032	000	
033	000	
034	000	
035	000	
036	000	
037	000	
038	000	
039	000	
040	000	
041	000	
042	000	
043	000	
044	000	
045	000	
046	000	
047	000	
048	000	
049	000	
050	000	
051	000	
052	000	
053	000	
054	000	
055	000	
056	000	
057	000	
058	000	
059	000	
060	000	
061	000	
062	000	
063	000	
064	000	
065	000	
066	000	
067	000	
068	000	
069	000	
070	000	
071	000	
072	000	
073	000	
074	000	
075	000	
076	000	
077	000	
078	000	
079	000	
080	000	
081	000	
082	000	
083	000	
084	000	
085	000	
086	000	
087	000	
088	000	
089	000	
090	000	
091	000	
092	000	
093	000	
094	000	
095	000	
096	000	
097	000	
098	000	
099	000	

Figure 775-12 DB Printout of Directory Dial Table

System DataBase Printouts (Cont'd)

K. Printing Hunt Group Parameters

Programming Steps

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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX[II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX[I] Basic KSU or the Central Processor Board (CPB) on the DVX[II] system.

```
HUNT GROUPS
-----------

HG0..330     PILOT HUNT

HG1..331     PILOT HUNT

HG2..332     PILOT HUNT

HG3..333     PILOT HUNT

HG4..334     PILOT HUNT

HG5..335     PILOT HUNT

HG6..336     PILOT HUNT

HG7..337     PILOT HUNT
```

Figure 775-13 DB Printout of Hunt Group Parameters

System DataBase Printouts (Cont'd)

L. Printing ACD or UCD Group Parameters

Programming Steps

If a printout of Hunt Group Parameters is desired:

1. Press the ACD or UCD GROUP PARAMETERS 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.

Description

With a printer connected to the RS-232C port of the Basic KSU or on the DVX II CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX I Basic KSU or the Central Processor Board (CPB) on the DVX II system.

```
ACD ALT OVR ANO SUP STN#
550

551

552

553

554

555

556

557


ACD TIMERS

RING MIT OVER WRAP NAT NAR
 60   60   60    4    0 300

ANNOUNCEMENT TABLE

TABLE TYPE  INDEX  TIME
  1     #    ###    ###
  2     #    ###    ###
  3     #    ###    ###
  4     #    ###    ###
  5     #    ###    ###
  6     #    ###    ###
  7     #    ###    ###
  8     #    ###    ###

ACD SMDR REPORTING
 CO ICM EVT I/O  BAUD
 N   N   N   1   2400
```

Figure 775-14 DB Printout of ACD Group Parameters

System DataBase Printouts (Cont'd)

M. Printing Voice Mail Group Parameters

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

With a printer connected to the RS-232C port of the Basic KSU or on the DVX [II] CPB board, 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 print out.

Default: None

Related Programming: Refer to Sec. 710.8, Baud Rate Assignments, for setting the baud rate of the RS-232C port on either the DVX [I] Basic KSU or the Central Processor Board (CPB) on the DVX [II] system.

```
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 775-15 DB Printout of Voice Mail Group Parameters

System DataBase Printouts (Cont'd)

N. Abort Printing

Programming Steps	Description
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 will remain unchanged, however the printing will be aborted.	

SECTION 800
MAINTENANCE AND TROUBLESHOOTING

800.1 PRINTED CIRCUIT BOARD (PCB) TROUBLESHOOTING CHARTS

Table 800-1 DVX I BKSU Digital System

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
1.Central Processor board (CPB) to control system operation. 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 Programming. 6. Contains on-board 300 baud modem for remote system access. 7. Provides all system tones such as ICM dial tone and busy tone, etc.		I/O Module 1200 Baud Modem Switch settings for EPROM Memory Size (See Table below) J26 Jumper for setting RAM Memory Size (See Table below)	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.

Table 800-2 DVX I Digital System 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's)	OFF	OFF	OFF	OFF	2 - 1 Meg chips = 256K bytes
2 Megabit chips (2048's)	ON	OFF	OFF	OFF	2 - 2 Meg chips = 512K bytes
4 Megabit chips (4096's)	ON	ON	OFF	OFF	2 - 4 Meg chips=1024K bytes
8 Megabit chips (8192's)	ON	ON	ON	OFF	2 - 8 Meg chips=2048K bytes

OFF= OPEN ON=CLOSED

Table 800-3 DVX I Static RAM Memory Size

SIZE OF CHIPS (in Bits)	J26 JUMPER POSITION	RAM MEMORY SIZE (in bytes)
256 Kbit chips (256K chips)	2 - 3	2 - 256K chips = 64K bytes 4 - 256K chips = 128K bytes
1 Megabit chip (2048 chips)	2 - 3	2 - 1 Meg chips= 256K bytes 4 - 1 Meg chips= 512K bytes
4 Megabit chips (4096 chips)	1 - 2	2 - 4 Meg chips= 1024 bytes 4 - 4 Meg chips= 2048K bytes

Table 800-4 DVX [II] Central Processing Board (CPB)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
1.Central Processor board (CPB) to control system operation. 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 Programming. 6. Contains on-board 300 baud modem for remote system access. 7. Provides all system tones such as ICM dial tone and busy tone, etc.			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.

Table 800-5 DVX [II] CPB Static RAM Memory Size

SIZE OF CHIPS (in Bits)	RAM MEMORY SIZE (in bytes)
1 Megabit chip (2048 chips)	2 - 1 Meg chips= 256K bytes 4 - 1 Meg chips= 512K bytes
4 Megabit chips (4096 chips)	2 - 4 Meg chips= 1024 bytes 4 - 4 Meg chips= 2048K bytes

Table 800-8 DVX II CPB 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 chips)	OFF (open)	OFF (open)	OFF (open)	OFF (open)	2 - 1 Meg chips = 256K bytes 4 - Meg chips = 512K bytes
2 Megabit chips (2048 chips)	ON (closed)	OFF (open)	OFF (open)	OFF (open)	2 - 2 Meg chips = 512K bytes 4 - 2 Meg chips = 1024K bytes
4 Megabit chips (4096 chips)	ON (closed)	ON (closed)	OFF (open)	OFF (open)	2 - 4 Meg chips = 1024K bytes 4 - 4 Meg chips = 2048K bytes
8 Megabit chips (8192 chips)	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 800-6 4x8 Key Interface Board (CKB)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
Provides interface for 8 Digital Terminals, DSS/DLS Consoles or SLA (OPX) modules.	Busy state LED that monitors circuits for busy condition.	None	1.Unable to receive intercom dial tone. 2.Poor transmission characteristics. 3.Key telephone set inoperative. 4.Key telephone unable to invoke features 5.No LED indications.

Table 800-7 4x8 SLT Interface Board (CSB)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
Provides interface for 8 SLTs. Also provides for SLTs with M/W lights.	Busy state LED that monitors circuits for busy condition.	None	1.SLT can't receive dial tone. 2.Poor transmission characteristics.

Table 800-9 DTMF Receiver Module (RM)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
Used to add DTMF receivers to the system to support DBA and SLT operation.	Adds 1 DTMF receiver.	None	1. SLT cannot receive or break dial tone. 2. DISA call can't receive or break dial tone.

Table 800-10 I/O Module (IOM)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
Provides 2nd RS-232C port and a RS-422 port to the system.	None	None	1.Loss of SMDR data.

Table 800-11 Single Line Telephone Adapter (OPX)

FUNCTION	CONTROL	OPTIONS	FAULT OPTIONS
Provides one (1) 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. 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 I/O Expansion Module via the RS-232C/RS-422 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 800-1:

```
PROCOMM PLUS Ready!

1428 Digital Key-System
Eng. Ver. 2.0a15 DATE: 08/20/92  TIME: 10:41:06
ENTER PASSWORD:
maint>?
command list:
 d 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 s2   (dumps slot 2 configuration, etc.)
 ?        - help menu
 x        - exit maint
maint>
```

Figure 800-1 Remote Maintenance Help Menu

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 carriage return at the device connected to the I/O Module RS-232C/422 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 the current Remote Maintenance feature session. The Exit command format is: MAINT>X

E. System Configuration

Figure 800-2 is a configuration of the *Infinite* 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      BRD OPTS     SERV STAT
 ----    ----    -------    --------      --------     ---------

   1     CPB     2.0a15      CPU          1428,IA        INS
   2     CKB     N/A       COI/KSI          1           INS
   3     2x4     N/A     UNPOPULATED        0           OOS
   4     UNK     N/A     UNPOPULATED        0           OOS
   5     UNK     N/A     UNPOPULATED        0           OOS

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.

Column 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>S4** at the maint> prompt.

```
maint>d s2
SLOT   2
Board Type : 4+E - COI/KSI

 CO              STATUS                  PULSE/DTMF    CO/PBX
----    ------------------------        ------------   --------

  1      INS. Outgoing Enabled            DTMF          CO
  2      INS. Outgoing Enabled            DTMF          CO
  3      INS. Outgoing Enabled            PULSE         CO
  4      INS. Outgoing Enabled            DTMF          CO

 STA       TYPE          STATUS     LCD
-------   --------     ----------  -----

 100      Keyset          INS        Y
 101      Keyset          OOS        N
 102      Keyset          INS        Y
 103      Keyset          INS        Y
 104      DKK 1           INS        Y
 105      Keyset          OOS        N
 106      Keyset          OOS        N
 107      Keyset          OOS        N

 . ..
```

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

Relay/Sensor - ID 4 = Relay/Sensor Module

SLT - ID 5 = SLT/OPX

SLT w/lamp - ID 6 = SLT w/Message Waiting

DDIU - ID 7 = 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 *Infinite* 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 *Infinite* 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. The built-in 300 baud modem 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 Monitor feature, 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 I/O Module RS-232-C/RS-422 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 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 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:

```
1428 Digital Key-System
Eng. Ver. 2.0a15 DATE: 08/20/92  TIME: 10:54:28
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 to 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 *Infinite* 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 *Infinite* 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 (CKB) 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.

- 1-7 = Board KSU card slot position (CPB= 1)
- 01-28 = CO Line port
- 100-155 = 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= COL_CONNECTED, Evt= Dial Pad (25), Data=1
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=2
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=3
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=4
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=5
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=6
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=7
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=8
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=9
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=10
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=11
Sta 100: State= COL_CONNECTED, Evt= Dial Pad (25), Data=12
Sta 100: State= COL_CONNECTED, Evt= Dtmf Rcvr I/O (175), Data=0
Sta 101: State= IDLE, Evt= Dial Pad (25), Data=1
Sta 101: State= DIALING, Evt= Dial Pad (25), Data=10
Sta 101: State= DIALING, Evt= Dial Pad (25), Data=2
Sta 101: State= MISC_TONE, Evt= Key Data (26), Data=34
Sta 101: State= MISC_TONE, Evt= Mon Key (145), Data=-1
Sta 101: State= MISC_TONE, Evt= On Hook (17), Data=0
Sta 106: State= IDLE, Evt= Key Data (26), Data=11
Sta 106: State= IDLE, Evt= Adm Co Key (37), 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 *Infinite* 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 reprogram 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 CPB, 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-1 System Parameters

PROG CODE	FLEX BTN	FUNCTION	FORMAT	DEFAULT	CUSTOMER DATA
FLASH 01	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	01 min	
	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	2 s	
	8	Call Park Timer	000-600 m	180 s	
	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	020 s	
	13	MSG Wait Reminder Tone	000-104 m	000 m	
	14	SLT Hook-Flash Timer	05-20 s	1.0 s	
	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.	
SYSTEM FEATURES:					
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	
FLASH 10		Attendant Station Assignment	100-155	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	1-7	Page/Contact Programming		None	

Appendix A-1 System Parameters (Cont'd)

PROG CODE	FLEX BTN	FUNCTION	FORMAT	DEFAULT	CUSTOMER DATA
FLASH 15		Baud Rate Assignments			
	1	Port #1 ("On-Board" RS-232C)		2400	
	2	Port #2 ("On-Board" Modem)		300	
	3	I/O Exp Module RS-232C		2400	
	4	I/O Exp Module RS-422		2400	
FLASH 20	1	DISA Access Code	100-999	100	
	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	
FLASH 22	1	Night Mode Operation	Auto/Manual	Manual	
	2	ANM Schedule - Monday	Off Time / On Time	0	/
	3	ANM Schedule - Tuesday	Off Time / On Time	1	/
	4	ANM Schedule - Wednesday	Off Time / On 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	1-4	Directory Dialing Table			
FLASH 41	1	Dial Pulse	60/40, 66/33	60/40	
	2	Dialing Speed	10/20 pps	10 pps	
FLASH 42	1-7	Flexible Port Assignment		Cards 1-7	
FLASH 43	1	ICLID Ringing Assignment		None	

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 (330)		
	2	Hunt Group 1 (331)		
	3	Hunt Group 2 (332)		
	4	Hunt Group 3 (333)		
	5	Hunt Group 4 (334)		
	6	Hunt Group 5 (335)		
	7	Hunt Group 6 (336)		
	8	Hunt Group 7 (337)		

PROG CODE	FLEX BTN	FUNCTION	ALT	OVR	RAN	STATIONS (up to 8 Stations)
FLASH 60	1	ACD or UCD Group 0 (550)				
	2	ACD or UCD Group 1 (551)				
	3	ACD or UCD Group 2 (552)				
	4	ACD or UCD Group 3 (553)				
	5	ACD or UCD Group 4 (554)				
	6	ACD or UCD Group 5 (555)				
	7	ACD or UCD Group 6 (556)				
	8	ACD or 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	

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	YXXXMMM	None	
	4	RAN Announcement Table 4	YXXXMMM	None	
	5	RAN Announcement Table 5	YXXXMMM	None	
	6	RAN Announcement Table 6	YXXXMMM	None	
	7	RAN Announcement Table 7	YXXXMMM	None	

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	

Appendix A-4 CO Line Programming (Flash 40)

CO LINE	FLEXIBLE BUTTONS										
	1	2	3	4	5	6	7	8	9	10	11
	TONE/ PULSE	CO/ PBX	UNA	CONF	PRIV	LOOP SUPV	DISA	FLASH TIMER	LINE GRP	LINE COS	RING*
CO 01											
CO 02											
CO 03											
CO 04											
CO 05											
CO 06											
CO 07											
CO 08											
CO 09											
CO 10											
CO 11											
CO 12											
CO 13											
CO 14											
DEF	TONE	CO	YES	YES	YES	NO	NO	10	1	1	

* Refer to CO Line Ringing Assignments

Appendix A-4 CO Line Programming (Flash 40) (Cont'd)

CO LINE	CO LINE NAME FOR IDENTIFICATION
CO 1	
CO 2	
CO 3	
CO 4	
CO 5	
CO 6	
CO 7	
CO 8	
CO 9	
CO 10	
CO 11	
CO 12	
CO 13	
CO 14	

Appendix A-5 CO Line Ringing Assignment Chart

CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING	CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING
CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING	CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING
CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING	CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING
CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING	CO LINE: ____ TYPE: ____ NUMBER: ____	DAY RINGING / NIGHT RINGING

Button #11 = Enter Ringing Assignments
Button #17 = Display Ringing Assignments

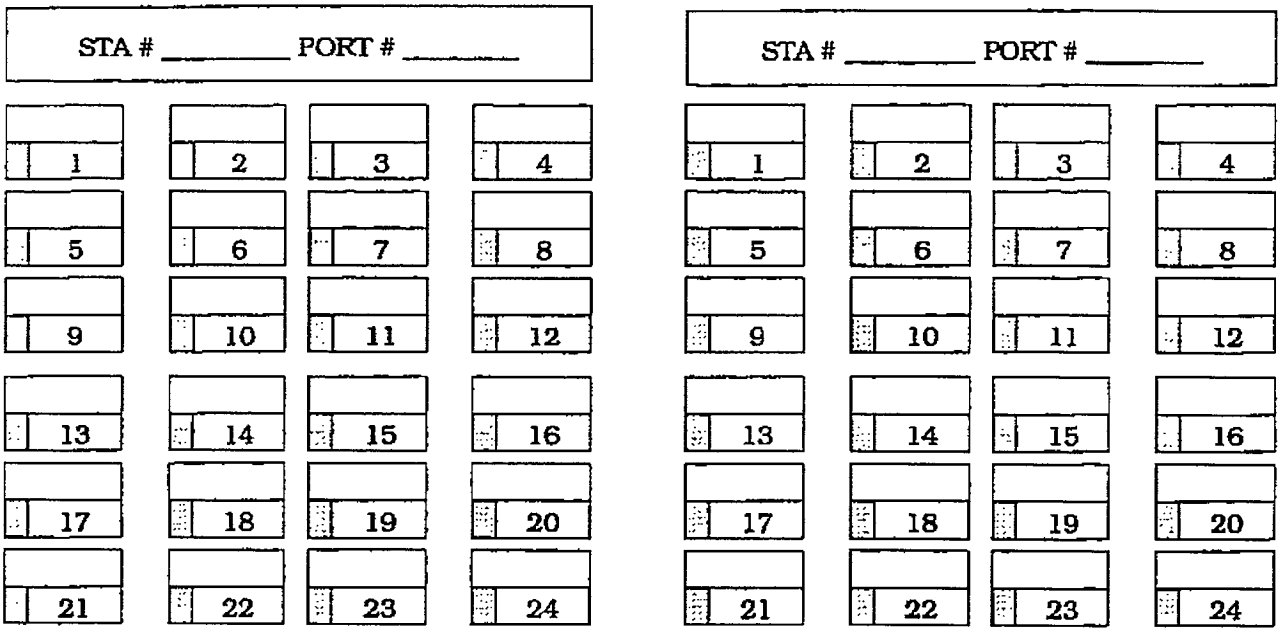
Ringing Assignments:
0 = No Ring (deletes station from Ringing Assignments
1 = D (Day Ringing)
2 = N (Night Ringing)
3 = B (Both Day and Night Ringing)

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	A/3									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
Page "A" is selected by pressing Button #18 of the flexible buttons										
STA ID (0-7)	B/1									0
COS (1-6)	B/2									1
SPEAKERPHONE (0-2)	B/3									0
PICKUP GROUP (1-4)	B/4									1
PAGING ZONES (1-4)	B/5									1
PRESET FORWARD	B/6									None
CO LINE GROUP (0-7)	B/7									1
LCR CLASS OF SERVICE (0-6)	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										

* This feature is ONLY available when the Basic ACD software package has been purchased separately.

Appendix A-7 Button Assignment Chart (Flash 50)



This chart is to be used to assign each flexible button a function. By default, Buttons 1 through 12 are assigned as Stations 100 through 111, Buttons 13 through 18 are assigned as CO Lines 01 through 06. Buttons 19-24 are flexible buttons with features assigned to them.

WHERE:

BB = Button Number (01 through 24)
LL = CO Line Number (01 through 28)
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 [1] 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 (refer to Section 630.1 for CO Line Group numbers) enter:
   BB [3] G HOLD
5. To unassign a button, enter:
   BB [#] HOLD

SLT ENTRY: (Off-Hook Preference)

1. When an SLT is being assigned for Off-Hook Preference, enter:
   00 [1] LL HOLD for a specific CO Line

Appendix A-8 System Speed Dial Numbers

Programmed from the first Attendant station.
Monitored by Toll Restriction (COS)

BIN #	Telephone Number
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	

BIN #	Telephone Number
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	

Appendix A-8 System Speed Dial (Cont'd)

Programmed from the first Attendant station.

Overrides Toll Restriction (COS)

BIN #	Telephone Number
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	

BIN #	Telephone Number
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	

Appendix A-9 Exception Tables (Flash 70)

Allow Table A	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 11	
BIN 12	
BIN 13	
BIN 14	
BIN 15	
BIN 16	
BIN 17	
BIN 18	
BIN 19	
BIN 20	

Allow Table B	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	
BIN 11	
BIN 12	
BIN 13	
BIN 14	
BIN 15	
BIN 16	
BIN 17	
BIN 18	
BIN 19	
BIN 20	

Deny Table A	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
BIN 10	

Deny Table B	
BIN 1	
BIN 2	
BIN 3	
BIN 4	
BIN 5	
BIN 6	
BIN 7	
BIN 8	
BIN 9	
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
AREA CODE: _____ OFFICE CODES:

Appendix A-10 Least Cost Routing (Flash 75)

CO LINE GROUPS						
1	2	3	4	5	6	7

Enter what type lines are programmed in each

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-11 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-11 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-11 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-11 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-12 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)	RTE (RR)	6-DIG (Y/N)	# DIG	NON-LEADING (0) LEADING (1)	CODE (NNN)	RTE (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				
0					0				
1					1				

Appendix A-14 6-Digit Office Code Table

AREA CODE	ROUTE					

Appendix A-15 LCR Exception Code Table

CODE #	EXCEPTION CODES (XX)	ROUTE (00-15) (RR)	CODE #	EXCEPTION CODES (XX)	ROUTE (00-15) (RR)
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

APPENDIX B
DIGITAL SYSTEMS PART NUMBERS

Appendix B-1 Digital System Component List

Description	Part No.
infinite DVX I Components:	
4x8 Basic System (BKSU)	IN1400-00
2x4 Expansion Module	IN1431-00
4x8 Expansion KSU (EKSU)	IN1402-00
4x8 Expansion Module	IN1432-00
2x4 SLT Expansion Module	IN1433-00
RS-232/422 I/O Module	IN1437-00
infinite DVX II Components:	
Key Service Unit w/Power Supply (KSU)	IN2800-00
Central Processor Board (CPB)	IN2830-00
4x8 Key Interface Board (CKB)	IN2831-00
4x8 SLT Interface Board (CSB)	IN2833-00
RS-232/422 I/O Module	IN2837-00
infinite DVX I and DVX II Digital Terminals:	
33-Button Executive (Display) Telephone	IN1414-XX*
33-Button Executive/PC Interface Telephone	IN1418-XX*
33-Button Enhanced (Non-Display) Telephone	IN1412-XX*
8-Button Basic Telephone	IN1411-XX*
DSS/DLS Console Unit	IN1410-XX*
Handset Assembly	IN1464-XX*
33-Button Wall Mount Bracket	IN1440-XX*
8-Button Wall Mount Bracket	IN1442-XX*
Single Line Adapter (SLA)	IN1484-00
infinite Digital Systems Manuals:	
Description, Installation and Maintenance Manual	IN1450-00
8-Button Station Users Guide	IN1451-00
Station Users Guide	IN1452-00
SLT Users Guide	IN1453-00
Attendant Users Guide	IN1454-00
Automatic Call Distribution (ACD) Users Guide	IN1455-00
infinite Digital Systems Optional Components:	
DTMF Receiver Module	IN2834-00
1200 Baud Modem Module	IN2837-10
Relay/Sensor Interface Module	IN1435-00
Digital Data Interface Unit (DDIU)	IN1485-00
infinite Optional Software Packages:	
ICLID Software	IN1420-09
Basic ACD Software	IN1420-0A
ICLID and Basic ACD Software	IN1420-0B
Basic ACD and ACD RS-232C Software	IN1420-1A
ICLID and Basic ACD and ACD RS-232C Software	IN1420-1B

* Colors: 51= Charcoal, 62 = Bone

APPENDIX C
ICLID GENERAL DESCRIPTION

1. INTRODUCTION

This specification provides the functional and implementation definition for the addition of the ICLID feature to the *infinite* 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 *infinite* 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.

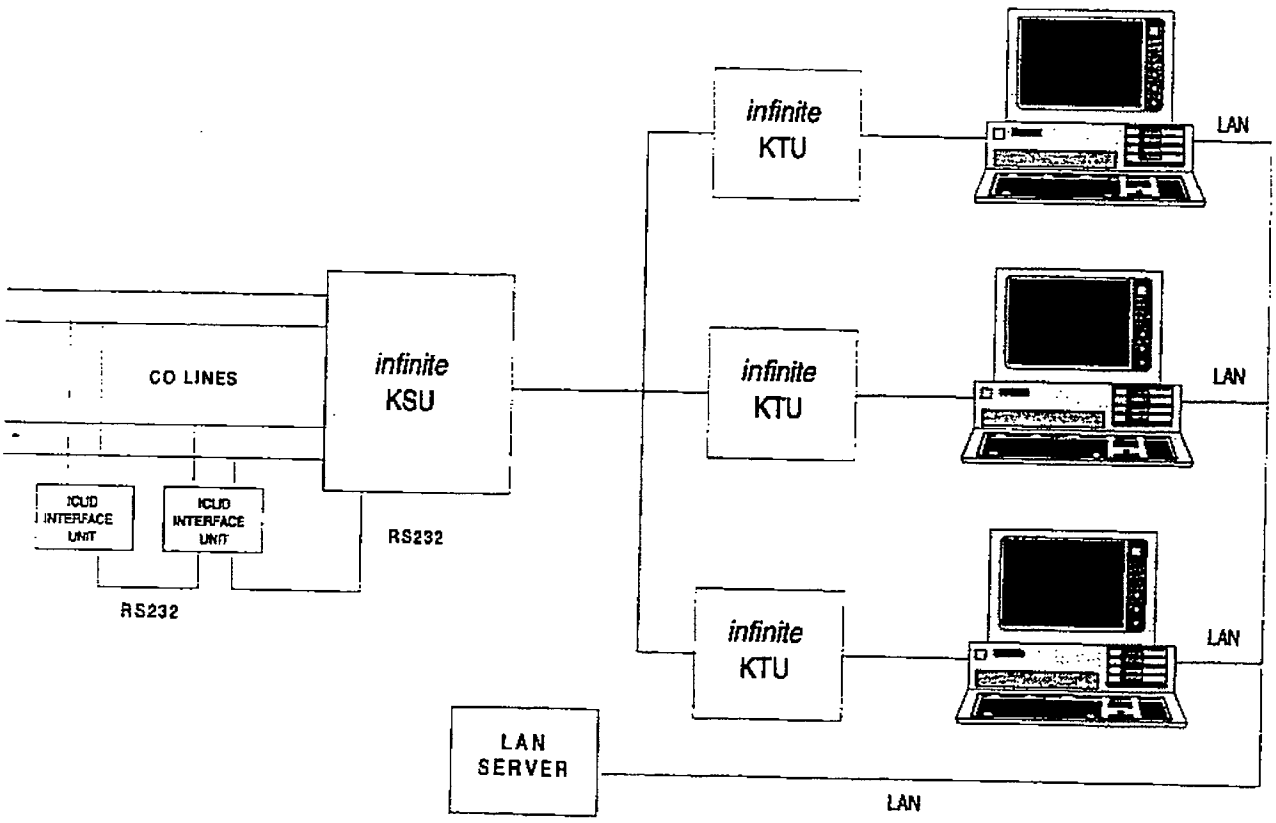


Figure 1 ICLID System Configuration