COMDIAL

Digital Telephone System

System Manual

PK026-000 19

This publication is applicable to the following equipment: common equipment base units: G0408 Rev. A and later, G0816 Rev. A and later, and G1632 Rev. A and later, and software cartridges Innnn and Snnnn with a software release of 13B and earlier.

This publication includes TAB117A change pages that describe features available in software release 14A. (4/94)

IMI66-107.01 6/93

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Chapter 1 System Overview

Introducing The System

The digital telephone system is an expandable communications system with many attractive characteristics including the following:

Unitized base unit which includes all system features. The base unit is full featured and self-contained.

Expansion modules which increase station and line capacity. A **4-line, 8-station** expansion module is available. It can be added singly or in pairs to increase the station and line capacity of an existing base unit installation.

Subdued off-hook voice announce (SOHVA) feature. The SOHVA feature allows a station user to talk to a busy station without being heard by the outside party at the busy station. The called user can easily send back a pre-programmed LCD message or talk to the caller without being heard by the outside party.

Programmable buttons. Many of the telephone buttons can be programmed to provide functions such as direct station selection (DSS), auto dial, system feature access, line access, messaging and more.

Programmed buttons helps station users eliminate manual dialing errors.

Service observing. Supervisors can help insure quality of service without interrupting calls by monitoring a trainee's activity without being heard by the distant party at the trainee's station.

Dual intercom. A second intercom button can be provided so that station users can handle two intercom calls at once. One intercom call can be placed on hold while a second intercom call is serviced or both calls can be **conferenced** together.

Station Message detail accounting (SMDA) reports. The system provides built-in estimated costing of all calls made over outside lines. It also provides SMDA printout reports of all costed calls as well as displaying call costs on LCD speakerphones.

Caller ID interface. The digital telephone system provides an interface for a caller ID decoder device. The device can decode the ID data that the CO delivers to it over the outside lines, and send the decoded information out the RS-232 data port for printing.

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Publication Overview

Understanding The Manual Scope

This publication contains a technical discussion of the digital telephone system. Included in this manual is the following information:

- Chapter 1, System Overview: This chapter provides a generalized understanding of the system, an explanation of the supporting documentation, and a summary of the equipment hardware.
- Chapter 2, Feature Description: This chapter provides a detailed discussion of the features provided by the digital telephone system.
- Chapter 3, Installation: This chapter provides detailed installation instructions and connection details.
- Chapter 4, Programming: This chapter provides detailed programming instructions for setting the operating parameters of the system.
- Chapter 5, Operating Characteristics: This chapter summarizes operating characteristics and provides special tone and indicator details.
- Chapter 6, Maintenance: Special maintenance details are provided in this chapter.

This manual includes information about enhancements to the digital telephone system that are provided by periodic software releases. The information was previously published in the following Technical Advisory Bulletins.

TAB068 Software revision 8 and later

- Support for the ATI-D analog terminal interface device
- Support for the DigiTech DD32X and Americom XD64X DSS/BLF consoles
- Provision for programming a night mode button

TAB080 Software revision 9 and later

Support for dual DD32X DSS/BLF consoles

TAB091 A Software revisions 10 and 11A.

- Additional dial time for the DISD option
- Changed defaulted first choice signalling style for intercom calls
- Supports both on-hook and off-hook call announcing from speakerphones
- Enhanced subdued off-hook voice announce operation
- Expanded personal ring tone choice

- Simplified hybrid operation
- Support for DigiTech telephones with a revision letter of I or later
- Enhanced automatic call back
- Support for digital single-line proprietary telephone
- Support for ExecuMail voice processing system

TAB096A Software revision 11 B

 Enhanced operation with Americom LCD speakerphones

TAB097B Software revision 12A

• Support for *Impact* digital proprietary telephones

TAB099 Software Revision 13A

- Enhanced SMDA reporting
- Expanded options for account code entry
- Support for caller ID service

TAB113 Software Revision 13B

- Support for the *Impact* proprietary multiline telephone (product code 8112N)
- Support for the Americom telephones (product code 70nnn and 71 nnn) with the IO408, IO816, and I1 632 software cartridges.
- Telephone type query for button mapping through VDT programming
- Additional support for caller ID service

Related Publications

The following related publications contain additional information applicable to this system.

General Information

IMI 01-005 Handling Of Electrostatically Sensitive Components

User Information

Operation With DigiTech Telephones and Consoles (product codes **7700S**, 7714X, and **7714S** - all with revision I and later, and **DD32X**)

GCA70-220 DigiTech LCD Speakerphone

System User's Guide

GCA70-221 DigiTech Multiline Telephone

System User's Guide

GCA70-228 DigiTech Attendant's Supplement
GCA70-184 DigiTech Station User's Guide
GCA70-232 DigiTech Single-Line Proprietary

Telephone User's Guide

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GCA70-187 DigiTech DSS/BLF Console User's Guide

Operation With *Impact* Telephones and Consoles (product codes 8024S, 8124S, 8012S, 8112S, 8112N,

8101N, and IB64X)

GCA70-245 Impact LCD Speakerphone

System User's Guide

GCA70-244 Impact Multiline Telephone

System User's Guide

GCA70-247 Impact Attendant's Supplement GCA70-248 Impact Station User's Guide GCA70-246 Impact Single-Line Proprietary

Telephone User's Guide

GCA70-256 Impact DSS/BLF Console

User's Guide

Operation With Americom Telephones (product codes

701 OS, **7016S**, and 711 OX)

Americom Station User's Guide GCA70-149

GCA70-151 Americom System User's Guide GCA70-153 Americom Attendant's Guide

GCA70-257 Americom LCD Speakerphone System User's Guide

Accessory Information

IMI89-037 Installation Instructions For The

Analog Terminal Interface (ATI-D)

GCA70-239 User's Guide For The

Industry-Standard Telephone

Accessories

By employing the Analog Terminal Interface (ATI-D) device, the digital telephone system can support the operation of the following accessories:

- ExecuMail and Eloquence voice mail and automatic attendant equipment
- Industry-standard telephones and telephone devices

The Comdial DigiTech and Impact LCD speakerphones with product codes of 7700S and 80248. revision H and earlier, include a built-in headset port. Speakerphones with a revision of I and later-provide an auxiliary jack for headset interface. The Supra Polaris headset by PLANTRONICS INC, 345 Encinal Street, Santa Cruz CA, 95060 is compatible with the digital telephone system and may be connected to the headset port or auxiliary jack of these LCD speakerphones.

Two Supra Polaris models are available for use:

- OH2001 Monaural Single Receiver
- OH2002 Binaural Dual Receiver

NOTE: The **system** delivers subdued off-hook voice announce (SOHVA) messages to the headset port. Because a telephone headset exhibits a "coupling" effect between the ear piece and the microphone, it may allow the outside party to hear the SOHVA message. The Plantronics headset will minimize the coupling effect but may not completely eliminate it.

Using the Caller Identification Interface (product code CID08), the digital telephone system provides caller ID information as part of the SMDR printout and as ASCII data input for use with personal computer based application programs.

Hardware Summary

The digital telephone system consists of an electronic Digital Service Unit (DSU), usually referred to as common equipment, optional expansion modules to extend station and line capacities as required, a software cartridge containing the operating system programming, dedicated digital electronic key telephones, and interconnecting wiring consisting of small, 2-- or 4--conductor, twisted-pair cable.

The station and line capacity of the base unit and optional expansion module are per the following chart.

| MODEL NO. | CO/PBX CAPACITY | STATION CAPACITY |
|--------------|--------------------|---------------------|
| GO408 | 4 | 8 |
| GO81 6 | 8 | 16 |
| G1632 | 1 6 | 32 |
| GM408 | 4 | 8 |

The digital telephone system is full featured, and supports all Comdial proprietary digital telephone models.

The digital system is expandable in both line and station capacity with the addition of add-on expansion modules.

Common Equipment Description

The common equipment base unit is a fully electronic device. It is essentially a special purpose computer system acting as a communications controller between central office (CO), private branch exchange (PBX), or **CENTREX** supplied lines and the proprietary digital telephone stations. The software architecture of the common equipment provides complete system support and great flexibility of operation.

The system is fully digital and is **ISDN** up-gradable with two usable time slots available for each station. The digital information passes over time division multiplexing **(TDM)** highways. The digital information is an encoded version of the voice transmission and control signals that are translated into computer language. The TDM highway can transmit several signals over a single pair of wires at the same time. The signals are governed by a system clock. This clock creates an overall point of reference against

which the TDM information is synchronized and partitioned into time slots. A time slot is a portion of time assigned to a particular position of the system clock. Each time a particular clock position is reached, the information associated with that position can be read. As the system clock goes through the clock cycle, all necessary digital information is passed between the pieces of equipment sharing the highway.

The common equipment consists of a base unit, which provides complete feature support, and optional expansion modules which provide extended station and line coverage.

The common equipment is contained in a functional, modem-style metal housing of contemporary design in keeping with the needs of the modem off ice environment. It is engineered to be wall or rack mounted. The outline dimensions of the common equipment base units are illustrated in **Figure I-I.**

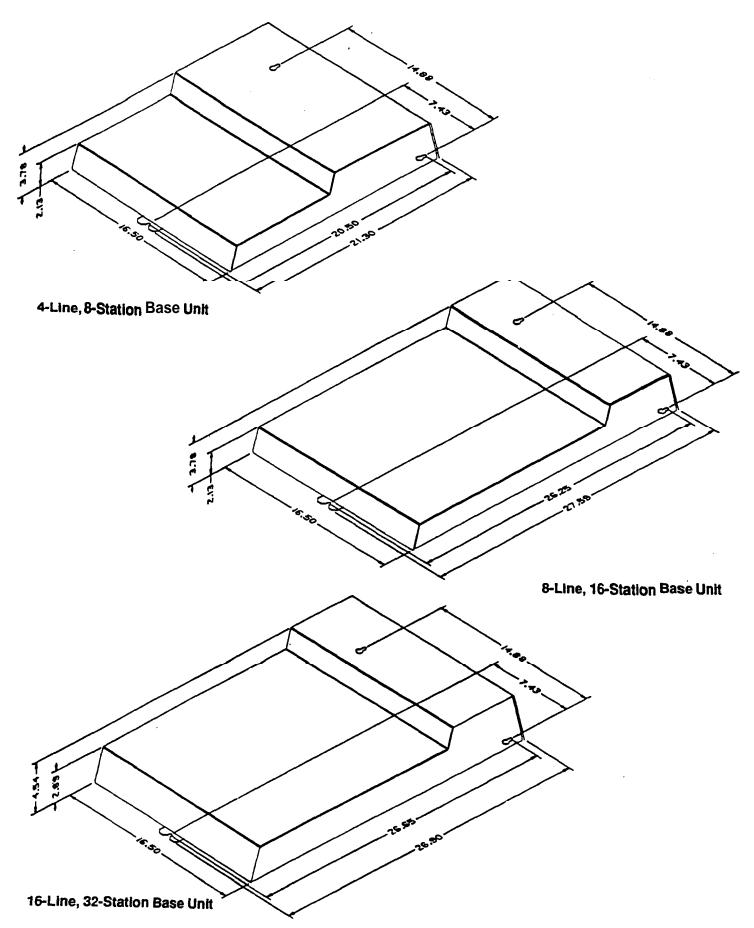


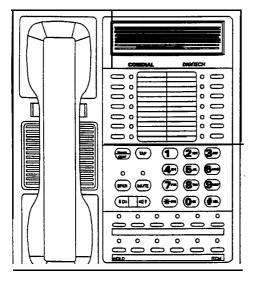
Figure I-I. Outline Dimensions- Common Equipment

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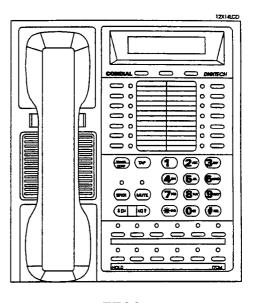
Station Description

The digital telephones employed with the digital telephone system are electronic, **microprocessor**-controlled, devices. They allow not only multiline pickup but also single button access to features available from the serving CO, PBX, or **CENTREX**

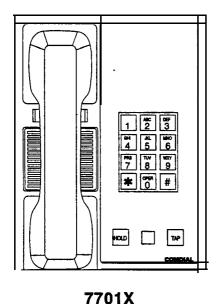
switch as well as the common equipment. The digital telephones are available in several different images with several models available in each image. The images and dimensions of the various digital telephones are shown in **Figures 1-2 and 1-3.**



7114X, 7114S



7700s



7012

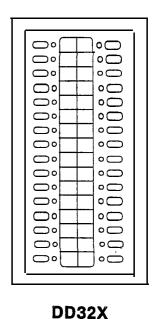


Figure 1-2a. Station Images - DigiTech Telephones

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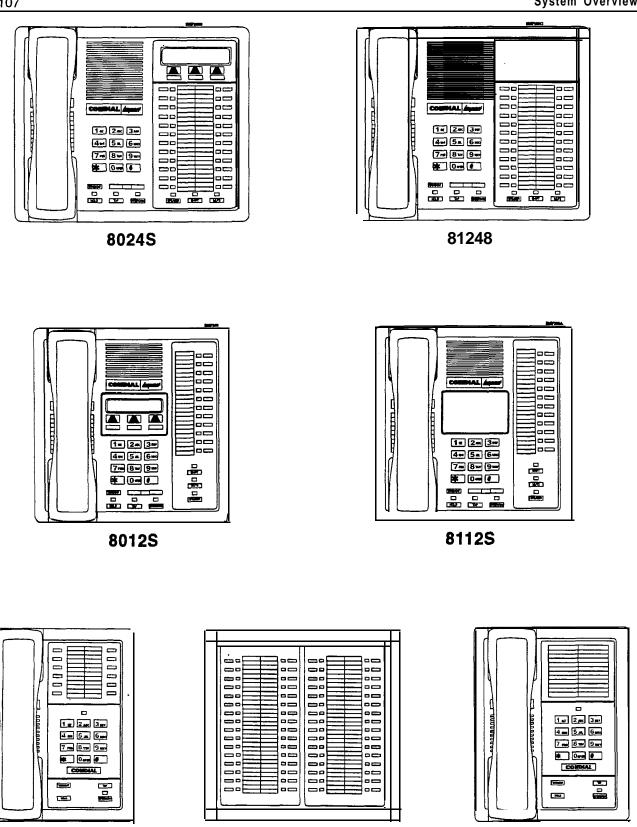


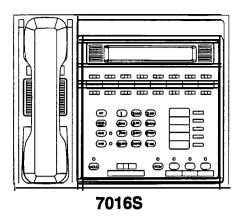
Figure 1-2b. Station Images - Impact Telephones

IB64X

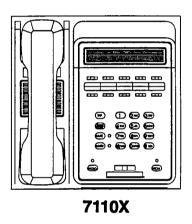
8101N

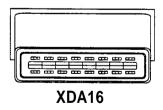
8112N

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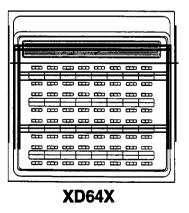


Figure 1-2c. Station Images • Americom Telephones

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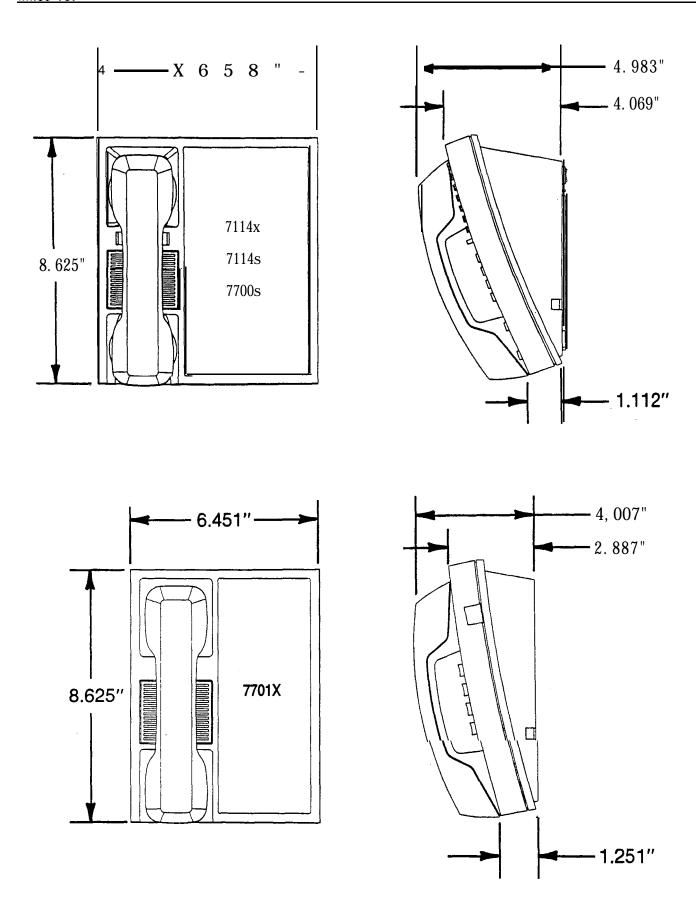
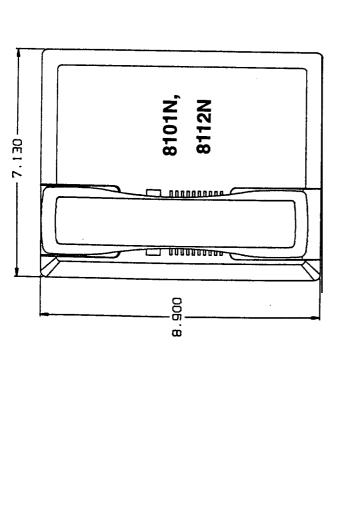
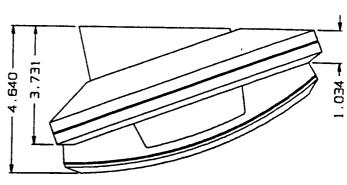
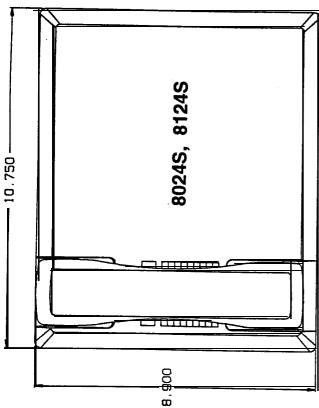


Figure 1-3a. Outline Dimensions - DigiTech Telephones







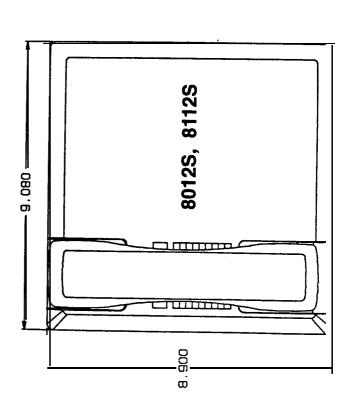


Figure 1-3b. Outline Dimensions - Impact Telephones

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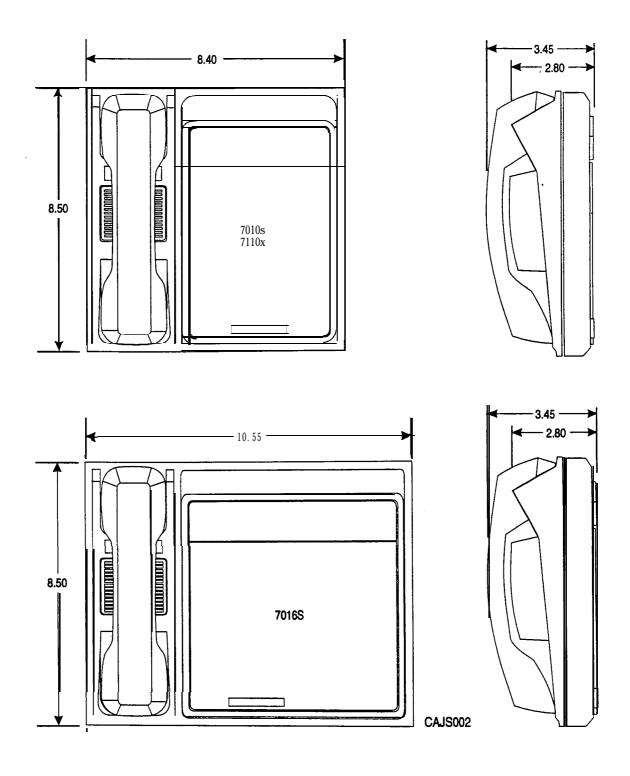


Figure 1-3c. Outline Dimensions • Americom Telephones

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General Specifications

| SYSTEM CAPACITY | Go408 | GO816 | G1632 | GM408 |
|---|---|--|---|--|
| LINES STATIONS DSS/BLF CONSOLES INTERCOM PATHS MAXIMUM SIMULTANEOUS | 4 8 Two per sta. Non-blocking | 8 16 Two per sta. Non-blocking | 16 32 Two per sta. Non-blocking | 4 8 Two per sta. Non-blocking |
| INTERCOM CONVERSATIONS PAGING PORTS PARK ORBITS SPEED DIALS | Non-blocking 1 9 | Non-blocking 1 9 | Non-blocking 1 9 | Non-blocking not app. not app. |
| SYSTEM STATION AUTODIALS POWER FAIL CIRCUITS | 99 10 Unused buttons | 99 10 Unused buttons | 99 10 Unused buttons | not app. not app. not app. |
| POWER REQUIREMENTS (Fully loaded system) | Go408 | GO816 | G1632 | GM408 |
| VOLTAGE CURRENT POWER: VOLT/AMPS | go . 0.6A 7ow 80VA | 129 VAC Singlephas 2.0 A 135w 190VA | se • all models 2.1A 150W 200VA | not app. not. app. not app. |
| COMMON EQUIPMENT DIMENSIONS (approx.) | Go408 | GO816 | G1632 | GM408 |
| WIDTH (inches) HEIGHT(inches) DEPTH (inches) WEIGHT (pounds) | 16.5 21.3 3.8 17.5 | 16.5 27.1 3.8 26 | 16.5 27.6 4.5 30.5 | 16.5 9.25 1.75 xxx |
| STATION DIMENSIONS (approx.) | Wide Image | Narrow Image | Single Line Prop | orietary |
| DigiTech FOOTPRINT (inches) WEIGHT (pounds) Impact | 8.625 X 7.658 2.5 | not app. not app. | 6.5x8.5 1.9 | |
| FOOTPRINT (inches) WEIGHT (pounds): Americom | 10.75x8.9 2.25 | 9.08x8.9 2.25 | 8.9x7.1 3 1.75 | |
| FOOTPRINT (inches) WEIGHT (pounds) | 10.65X8.5 2.9 | 8.4X8.5 2.1 | not app. not app. | |
| CONFERENCING (Maximum Combinations At Any One Time) | GO408 and GO81 6 | | G1632 | |
| | plus 2 SOHVA plus 1 2 four-way plus 2 SOHVA 6 four-v | | 4 five-way plus plus 1 SOHVA 6 four-way plus 3 four-way plus 16 three-way | 2 three-way |
| SMDA STORAGE CAPACITY PER CARTRIDGE | I0408/S0408 | I0818/S0816 | I1632/S1632 | |
| SOFTWARE REVISION 13A AND LATER SOFTWARE REVISION 12AAND EARLIER | 800 900 | 1600 1800 | 1600 1800 | |
| STATION CABLE REQUIREMENTS | | | | |

TYPE
MAXIMUM LENGTH
SWITCHING PRINCIPLE

2-wire (1 -pair) twisted, non-shielded cable 1009 feet with 24 gauge wire, 2000 feet with 22 gauge wire Digital, time division multiplexing **(TDM).** Provides non-blocking switching with stored program control

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TERMINATIONS

STATION Standard 50-pin male connectors for connection to external

distribution field.

LINE Standard, 6-conductor mini-jack (USOC 14C)

STATION MESSAGE DETAIL RECORDING PORT

FORMAT Serial, pseudo RS-232C

PARITY None

DATA **BITS** 7 or 8 (programmable) STOP BITS 1 or 2 (programmable)

BAUD RATE Programmable in class of service

HANDSHAKING Xon • X off
Hardware • CTS
CABLE LENGTH 500 Feet maximum

MUSIC INTERFACE

INPUT LEVEL 3 Volts peak-to-peak maximum INPUT IMPEDANCE Approximately 500 Ohms

CONNECTOR RCA phono jack

PA PORT

OUTPUT LEVEL 400 Millivolts peak-to-peak (typical speech)
OUTPUT IMPEDANCE Approximately 500 Ohms

CONNECTOR RCA phono jack

CENTRAL OFFICE LIMITS

LOOP LIMITS 1900 Ohms maximum loop CABLE INSULATION LEAKAGE 15,000 Ohms minimum

INDUSTRY/REGULATORY STANDARDS FCC Certified, part 15 (Class A) FCC registered (fully protected)

LISTED by OSHA-accredited, nationally recognized, test laboratory

68 hours minimum

EIA RS478

Bell publication 48002 guidance Hearing aid compatible handset

MEMORY RETENTION AFTER POWER LOSS

FCC REGISTRATION NUMBER

KEY SYSTEM CVWUSA-61535-KF-E HYBRID SYSTEM CVWUSA-61536-MF-E

RINGER EQUIVALANCE NUMBER

PRODUCT CODES

Common EquipmentTelephonesG0408 • 4-Line , &Station7714X DigiTech 24-Line Multiline Monitor TelephoneG081 6 • 8-Line, 16-Station7714S DigiTech 24-Line SpeakerphoneG1632 • 1 &Line, 32-Station7700S DigiTech 24-Line LCD Speakerphone

1.38

80248 Impact 24-Line LCD Speakerphone 81248 Impact 24-Line Speakerphone 8012S Impact 12-Line LCD Speakerphone 8112S Impact 1 P-Line Speakerphone

8101 N Impact Single-Line Proprietary Telephone
8112N Impact Multiline Proprietary Telephone
IB64X Impact 84-Button DSS/BLF Console
701 OS Americom 1 O-Line LCD Speakerphone
7110x Americom 10-Line Multiline Monitor Telephone
7016S Americom 16-Line LCD Speakerphone
XDA16 Americom I&Line Adjunct Feature Module

Software Cartridges

10408, SO408

10816. SO81 6

11632, s1632

XD64X Americom 64-Button DSS/BLF Console

1.- 13

Chapter 2 Description Of System Features

Abandoned Hold Release

Refer to the discussion titled Ho/d.

Access Denied

Refer to the discussion titled Line Features.

Account Codes (With Forced Positive Verification)

System users can employ account codes to identify calls by category or by any other desired grouping so that the system can print reports. The account code entry can be voluntary or, beginning with software release 13A, the programmer can arrange the system so that the users are forced to enter an account code before they can make an outgoing call. The system compares the account code entered by a station user with a list of programmed account entries.

The programmer must program the system so that it verifies an entered account code as valid. If he or she enables verification and the system cannot match an account code that a user has dialed with the programmed account code entries, the system will sound an error tone if account code entry is voluntary, or it will prevent the user from further dialing until he or she enters a matching account code if account code entry is forced.

A user must enter an account code either.before dialing an outgoing call or after the distant party on an incoming call has hung up. Additionally, users may enter an account code before they select a line for an outgoing call if they wish. When they enter an account code without a line selection, the code will apply to any line they subsequently select at that station. On incoming and outgoing calls, the user who enters the account code is associated with the call record except when the call is transferred. On transferred calls, the transferee is associated with the call record.

As a feature to LCD speakerphone users, the programmer can arrange for a message to appear in the telephone's display to prompt the user to enter an account code during incoming or before outgoing calls. He or she can also assign the length of time that the display appears. The user must enter account code digits after the message appears. If the programmer has set the system to verify code entry, it then makes a verification attempt. If the system cannot verify the account code it causes the display to show an error message. The user may then re-enter the account code at this point. If the verification attempt is successful (or if the system does not require that the code be verified), the display will return to its normal

date and time message. If the account codes are forced and the call is outgoing, then the line is dropped at the end of the display time if the user has not entered a valid account code. The programmable range for the display time is 1 to 20 seconds. When the feature is not enabled, the system inhibits the display prompt.

When a station user activates the last number redial or automatic radial features for outgoing calls, the system will automatically re-use the last account code the user entered at that station unless he or she enters a new one before activating the redial feature.

In addition to turning on the account code feature, enabling its verification, and making it either voluntary or forced, the programmer must set the account code length, specify the number of digits that the system will verify, and make up the entire list of account codes that the users will use. Account code length defines the number of digits that a user must enter before the system will accept the code. The length can range from three to 16 digits but cannot be lower than the verified account code length. The verified account code length defines the number of digits that the system will verify before it accepts an account code as valid. As well, verified account code length defines the number of valid account codes that a programmer can store (as shown in the following table). A programmer should be aware that when he or she changes the verified account code length, the system automatically empties the list of valid account codes.

| Digits Verified | Number of Valid Account Codes |
|---------------------|-------------------------------|
| 3 | 1 0 0 0 |
| 4 | 400 |
| 5, 6 | 266 |
| 7, 8 | 200 |
| <i>9,</i> 10 | 160 |
| 11, 12 | 133 |
| 13, 14 | 114 |
| 15, 16 | 100 |
| | |

Even though a programmer has arranged a system to force users to enter account codes before making calls, they can always dial certain programmer-defined emergency numbers without an accompanying account code entry. The system allows a maximum of three programmable emergency numbers. The minimum length of an emergency number is 1 digit and the maximum length is 12 digits. Users may dial emergency numbers manually, through system speed dial, personal speed dial, last-number redial, or automatic redial -- with or without account code entry.

Account Codes - continued

Account Code Button

A programmer can use station class of service programming to assign an account code button to any programmable button location at a station as part of the button mapping procedure. With this account code button available, the user can press it and then dial an account code without interrupting the call. Only the user of the Account Code button will hear the DTMF tones when he or she dials the code. The distant on-line party will not hear the DTMF tones, and the system will not place the line on hold. The user can hear the distant on-line party while he or she is dialing an account code. If the telephone does not provide an account code button, the user must dial an intercom code before he or she dials the account code digits.

All-Call Paging

Refer to the discussion titled Paging.

Analog Terminal Interface Support

With software release revision 8, the digital telephone system supports the operation of the Analog Terminal Interface (ATI-D). The ATI-D is a multipurpose on-premise accessory with dual circuits that provide an industry-standard telephone interface. This feature adapts most industry-standard (IST) devices and the **ExecuMail** voice processing system to the digital telephone system. The ATI-D accepts both tone and pulse (rotary) dialing from these devices. Each ATI-D circuit will drive a load with a maximum ringer equivalence number (REN) of 2.0 thus allowing more than one IST connection at each ATI-D circuit input. The ATI-D supports a wide variety of IST equipment such as model 500 and 2500 telephones, cordless telephones, answering machines, and FAX machines. The ATI-D is housed in a metal enclosure and is powered by the telephone system through the station port connections. It contains a ringing generator to generate a ringing signal for the IST devices.

Area Paging Interface

Refer to the paragraph titled **External** Paging **Interface** found in the discussion titled Paging.

Assist Button

Refer to the discussion titled Messaging.

Automatic Callback

Refer to the discussion titled Intercom.

Automatic Dialing Of Stored Numbers Automatic Dialing

The system supports up to 22 automatic dial (autodial) numbers per station. **Autodial** buttons can store up to 16 digits plus an intercom or line selection. Stored digits include 9-0, ** and **. The system stores a pause at any point where the HOLD button is pressed, and stores a hookflash at any point where the TAP button is pressed. Automatic dialing provides a way to obtain one-button access to frequently used system features. This feature does not require any class of service to enable it.

Programmable DSS/BLF

A station user can store one-button, direct station selection (DSS) at any memory button location to create a DSS memory button. When this button is pressed, any active outside **call** is automatically placed on hold and an intercom call is automatically made to that previously stored station number. The visual indicators of the stations programmed at the button locations form a busy lamp field (BLF). The BLF conveys station status to the user. An **autodial** number can also be programmed as a secondary function at every **DSS/BLF** memory location. No class of service is required.

Station Speed Dial

Each station provides 10 speed dial number locations at the keypad buttons. Station speed dial numbers can be up to 16 digits in length and can include line or intercom selection, numbers, #, **, pauses, and hookflash signals. A user can store a pause by pressing the HOLD button and store a hookflash signal by pressing the TAP button.

System Speed Dial

The system provides 99 system-wide speed dial numbers. The system speed dial numbers can be up to thirty-two digits in length, and can include numbers, #, *, pauses, and hookflash signals. The attendant programs the system speed dial numbers at station 10 or 12 for use at every station in the system. No class of service programming is required.

Automatic Hold For Intercom

Refer to the discussion titled Hold.

Automatic Hold - Transfer To Line

Refer to the discussion titled *Hold*.

Automatic Pause Insertion

Refer to the discussions titled *Automatic Dialing* and *Redialing*.

Account Codes - continued

Quantity Of Emergency Numbers For Forced Account Codes

With software release **14A**, the quantity of emergency numbers that the forced account code feature provides increases from three to 10. There is no change in programming required to achieve this from the method currently discussed in the programming chapter of your system manual.

Automatic Redial (Of Busy Number Or Unanswered Call)

Refer to the discussion titled Redialing.

Automatic Station Relocation

With this feature, the system will automatically recognize a particular station should that station be relocated to a new station port. When someone places a telephone at a new port location, it will continue to provide the same class of service parameters and respond to the same extension numbers as it did at the original station port. A programmer must enable this system feature using system class of service programming. As an added feature when someone plugs an LCD speakerphone in a new station port, the system will prompt the user on the display to verify the relocation of features.

Auxiliary Equipment Interface

An installer can use the auxiliary equipment interface to connect a telephone device or a data device to an outside line ahead of the common equipment. The system can detect an off-hook condition in a device that an installer has connected to the auxiliary equipment interface, and turn on the status light for that line at telephones that have that line appearance. It does this to indicate that the line is busy and not available for station use. Auxiliary equipment interface connections provide connections to lines 2 and 4. A user cannot interrupt an external device by pressing the line button unless the line has been programmed to be non-private.

Auxiliary Ringer Interface

Refer to the discussion titled Ringing.

Background Music

Refer to the discussion titled Music features.

Basic Key Service (1 A2) Emulation

The system provides all of the basic, **1A2-type**, key service features. These features are: selective line pickup, common line pickup, multiline pickup, and hold. No special class of service programming is required.

Battery Back-Up

Battery Back-Up (Chassis, Cable, And Batteries)

The manufacturer offers battery back-up assemblies including chassis, cable, fuses, and batteries as optional kits available through normal distribution channels. The assemblies are designed so that installers can connect them directly to the uninterruptable power source (UPS) interface located on the common equipment chassis. The system does not require any action from the telephone user to make it operate on battery power nor does it require any class of service programming action on the programmer's part.

Battery Back-Up Interface

The common equipment cabinet provides an interface for an optional battery back-up kit to give full uninterrupted system power in case of an AC power loss. The switching and charge circuitry are in the common equipment, while the batteries, chassis, and cable are packaged as a separate option. When plugged into an active AC power source the common equipment will constantly charge the attached batteries. Built-in circuitry automatically switches to battery power when AC power is lost. With batteries at full charge, a fully loaded system will operate for a minimum of one hour without AC power.

Block Programming

Refer to the discussion titled Class Of Service.

Call Announce With Handsfree Answerback

Refer to the discussion titled Intercom.

Call Costing And Station Message Detail Accounting Reports

The system provides built-in, estimated costing of all outside calls. It also provides station message detail accounting (SMDA) printout reports of all costed calls as well as displaying call costs on LCD speakerphones.

Call costing, in general, provides a means of establishing costs to be applied to outside calls made from system telephones. Call costing computes charges for a call after it is completed. It does not restrict dialing as toll restriction does. Call costs are based on a two-tier time rate and includes a line surcharge cost. A programmer can program allowances for call set-up and minimum call duration. The system provides several ways of determining call costing making it is possible to apply reasonable rates for the entire country.

The system will automatically provide a report whenever the costed call storage reaches 95 percent of capacity. Additionally, the programmer can arrange for these reports to be printed automatically at a specific time of day.

There are five different SMDA reports which can be produced:

- Detailed report sorted by stations
- Detailed report sorted by account codes
- Line summary report
- Department summary report
- Department Call Distribution (DCD)
- A general output of all records

Upon completion of report printing, the telephone attendant can delete all records the system used for the reports. The system will not delete any call records created between the time the report printout was started and completed. If the attendant does not delete the reports after they are printed, a later command to delete records'will delete all records at that point and not just the ones that were printed in the

previously generated reports. The programmer can take programming action to always delete the records after they have been printed. The attendant has the ability to request particular reports to be printed at any time they are required.

The programmer can establish account codes to allow system users to identify calls by category or by any other desired grouping so that the system can report costing by that category or grouping. Further, the programmer can define department numbers and assign stations to different departments so that the system can produce call cost reports on a department-by-department basis.

Programmers must use call costing and SMDA reporting class of service programming to set the costing features, and assign stations to specific SMDA departments using the station class of service programming. He or she can also enable the LCD speakerphone display of costed calls through station class of service programming.

SMDA Reporting Through VDT Programming and Per-Station SMDA

With the release of software revision 13A, the programmer can use the VDT programming option to request that the system send SMDA reports to either data port A or data port B for printout. It is also possible to use this feature remotely through a data communications arrangement to capture SMDA reports. In addition to this VDT enhancement, this software release allows the system to provide SMDA station reports for individual stations when the attendant requests them by dialing certain code numbers at station 10 or 12. Note, however, that the system can provide only one station report at a time.

Station Message Detail Recording (SMDR)

The SMDR feature generates a call record for printing as soon as the system collects the record. It presents the call record at an **RS-232** level as ASCII transmit data in an **80-column** format at the data port available for that purpose.

Call Forwarding

Call Forwarding On All Calls

This feature allows a station user to designate another station or the attendant station as the recipient of all calls normally directed to ring at his or her station. If the user has call forwarding enabled when the attendant activates night transfer of ringing, the system forwards the night ringing assignment of the users station. Calls that the system forwards to a recipient station can be forwarded again by that station user to another station. Thus, two levels of call forwarding on all calls can occur, first, from station A to station B and then, from station B to station C. As a reminder that call forwarding is enabled, a short tone burst will occur at the user's station for each intercom call that it receives while its calls are forwarded.

When the programmer has assigned a call forward button to a station, its associated LED will turn on to indicate that the feature is enabled when the user presses it; however, if the call forward button is programmed as a second level to a **DSS/BLF** button, the system reserves the LED indication for BLF indication. On LCD speakerphones that are recipients of call forwarding, the display will indicate the extension number or station name for the station from which an intercom call was forwarded.

Call Forwarding - Personal

Call forwarding of personal calls allows a station user to designate another station number (or the attendant station number) to be the recipient of intercom and prime line calls normally directed to that user's station. For each intercom call received while call forward is enabled, a ring reminder (short tone burst) will be sounded at the forwarding station to remind the user that his or her calls are being forwarded. On LCD speakerphones that are recipients of call forwarding, the display will indicate the extension number or station name for the station from which an intercom call was forwarded.

Call Park

Refer to the discussiontitled Hold.

Call Pickup

Directed Call Pickup

A station user can dial a code, followed by the extension number of a ringing station, to answer the ringing call.

Group Call Pickup

If a call rings to any station in a pre-programmed group and another user in the group wishes to answer

the call, that user may dial the group pickup code and answer the call. Four different groups can exist with any number of stations in a group. Overlap is provided by allowing stations to be in more than one group thus enabling those stations to pick up for stations in more than one group. The programmer must place the system stations in logical answering groups by group them together using the station class of service programming.

Call Transfer

Screened Call Transfer

Screened call transfer allows station users to transfer outside calls from one station to another, via the intercom link, in one of two ways. If both stations have access to **the line**, a user effects a common line pickup transfer. If the other station does not have access to the incoming line, the user uses the transfer/conference button to effect the transfer. For a screened transfer, the transferring user precedes the transfer with an announcement to the party that is to receive the transferred call.

Unscreened Call Transfer

A user can transfer a call to anotherstation without first announcing it. The transferred call will camp-on to the other station where it will ring and await an answer. The call will automatically ring back to the transferring station after a programmable recall period. There is no limit as to how many calls users can camp-on to another station. A transferred call will only ring if the station is idle. If the station is busy, the call will wait until it is idle before it rings. The programmer can use the system class of service programming to set the recall time for an unanswered transferred call.

Unanswered Call Transfer Recall Timing

A transferred call that is unanswered after a pre-programmed length of time will return to the station that transferred it. The system will return the call to both attendant stations when the tandem attendant feature is enabled. When LCD speakerphones are employed, the display will show the station number or name as well as the line number that is being recalled. The system class of service programming determines the recall time for an unanswered call transfer.

Call Waiting Tone

A telephone user can signal a busy station with the call waiting tone to indicate that he or she wishes to contact them. Users dial a special code to activate the call waiting tone.

Caller Identification (ID) Service Support

The central office sends caller ID data along lines that it has assigned to the Caller ID service. Caller ID information is displayed at a system LCD speakerphone only if the programmer assigns it to the Caller ID service, and then only for those Caller ID lines that are assigned to that station and arranged to perform as follows:

- ring audibly
- can be answered by user pressing button for the ringing line

are transferred to the station fhe station receives Caller ID data for a call between the first and second rings. A programmer can enable the first ring for a line assigned to Caller ID to be either audible or silent. Selecting the "silent" option insures that the Caller ID data is displayed prior to ringing, which nearly eliminates the loss of Caller ID data due to premature answering.

Station users may automatically retrieve and dial the last Caller ID number displayed at a station by using a preprogrammed SAVE recovery button. Because the programmer can store the local area code and up to 100 **6-digit** area code and local office codes, ten-digit Caller ID numbers can automatically be transformed into a format that can be dialed (seven-, eight-, and eleven-digit Caller ID numbers are already in a format that can be dialed and do not need to be transformed).

The system will dial those numbers that are present in the **6-digit** table as local calls even if they are in different area codes.

All Caller ID features require that the Caller ID decoder device (product code CID08) deliver Caller ID data to the system's RS-232 data port B. The programmer must configure this port to match the output of the Caller ID decoder device. The recommended configuration is 9600 baud, with eight data bits and one stop bit. He or she must use VDT programming to do this.

Caller ID distribution is in the form of messages which specify the Caller ID data for lines with incoming calls, and identify the stations answering such lines. The data is in the ASCII format and is suitable for use with PC-based application programs.

Calling Station Identification On BLF

If a user has stored the station number of a calling station into the direct station select/busy lamp field **(DSS/BLF)** of his or her station, the flashing of the corresponding BLF light will identity the caller. The BLF lights also indicate the status of **the DSS** telephone using the department pilot number.

Class Of Service Programming (From Main Station)

Refer to the discussion titled Class Of Service.

Class Of Service

Block Programming

A programmer can assign a particular line or station's class of service to an entire block of lines or stations with one programming action. This feature eliminates the need for him or her to individually program stations and lines with the same class of service. A programmer can perform a block programming class of service after he or she has programmed a station class of service or line class of service for a particular station or line.

Class Of Service Programming (From Main Station) Class of service (COS) programming is used by the installer/programmer to configure and assign all system, line, station, and special purpose operating features. The installer/programmer enters COS programming by dialing an access code over the intercom line. System administrators can enter COS programming with another code to reprogram any system, station, or special purpose operating feature that may require change at a later date. Line reprogramming ability is not available through system administration programming. The system attendant can reprogram certain system-wide features that require periodic change by entering COS programming with another code provided for this purpose. The station user can program individual stations for speed dial, autodial and direct station selection (DSS) by entering COS with a code provided for that purpose. Thus, COS programming is arranged with a hierarchical order from the highest (the installer/programmer) to the lowest (the station user) level with a higher level programmer having the ability to do anything a lower level programmer can do

All class of service (COS) programming is performed from station 10 or 12. Any station and console combination will function in this mode and provide visual feedback with the LED associated with the programming button. By employing an LCD speakerphone, however, the programmer will have the benefit of display prompts and verifications to simplify and clarify the programming procedures. Class of service programming access is as follows:

However, only the station user can program the speed

without exiting a current programming mode.

dial and autodial locations at a telephone.

Flexible Station And Line Class Of Service Control

The extension number of a station and all other programmable attributes that are initially assigned to a particular station port and the line, along with all programmable line attributes that are initially connected to a particular line port can be re-assigned to a different port through programming action. This feature allows adds, moves, and changes without

re-locating the station and line wiring. A programmer can use line and station class of service programming are used to reassign stations and lines.

Class Of Service Programming (Video Display Terminal)
A programmer can use an asynchronous, serial data terminal with an RS-232 interface to effect class of service programming through menu-driven procedures. VDT programming provides a menu-driven approach to programming that is discussed in Chapter 4.

Class Of Service Program Printout

The common equipment provides serial data ports that the installer can use to interface an RS-232 compatible, asynchronous serial data printer to the system. The connected printer will provide a printout of class of service and toll restriction records. The programmer can use the data printer service class of service programming procedure to specify the nature and extent of each requested printout. He or she can use the system class of service programming to specify the bit-length and baud rate of the data.

Default Functional Program

At initial power-up, the system sets the operating features to a specific group of operating conditions (default conditions). The default conditions provide a complete operating system for normal use. The installer can leave the system defaulted or reprogram as desired. After a programmer has reprogrammed a system, he or she can re-default it by using the system, line, and station class of service programming or use a master clear to default the entire system and erase all stored programmable button information.

Remote Programming And Administration

Both remote class of service programming and the transmission of SMDR data for printing are available through serial data ports. The system supports X-on X-off terminal control codes as well as a DTR signal for handshaking. The system data communications operates per the popular XMODEM protocol. The database can be uploaded or downloaded, error free, from or to a remote computer that is running software that supports the XMODEM protocol. The two serial data ports allow VDT programming (either local or remote) to be conducted through one port at the same time that the other port is being used to send SMDR data for printing. VDT programming of the system is menu driven.

Common Audible Ringer Interface

Refer to the discussion titled Ringing.

Conferencing

Add-On Conferencing

With this feature, a user at a station that is operating in a private mode can add up to four other stations to an outside call.

Multiline Conferencing

This feature will allow one station to access up to four outside lines at the same time resulting in a conference arrangement. The user employs the transfer/conference button to effect the conference.

Unsupervised Conferencing

After a user has established a conference between an internal party and a maximum of two external parties, this feature allows the internal party to drop out of the conference by dialing a special code. The conference between the two outside parties continues in an unsupervised condition.

Console Support

Beginning with software release 8, the digital telephone system supports the installation and use of a DigiTech DD32X and an Americom XD64X DSS/BLF console at any available station port. With software release 12A, console support is extended to include the *Impact* IB64X console as well. The number of installed consoles is limited only by port availability; however, since a console complements a companion telephone located in an adjacent station port, the installer can use up to one-half of the available station ports for consoles. In addition with the dual console feature (discussed later), a full two-thirds of the total station port capacity is available for console

Beginning with software revision of 9, an installer can assign two consoles to one telephone. This feature is especially useful when used with DigiTech DD32X consoles and a G1832 system that has one or two GM408 expansion modules included with it. This dual console feature allows a station user to monitor up to 48 stations from one station location using 32-button consoles.

An installer can install the first console at the station port that is logic-paired with the station that he or she wishes to complement. An installer can install the second console at any station port except 10 or 11 and, use class of service programming to assign it to the same station port that is logic-paired with the first console.

An installer can install a DD32X, XD64X, or IB64X console at any station port and assign it to a station without first installing a console at the station's logic-paired port. This configuration is convenient for adding a console to an existing telephone installation

that already has its logic-paired port occupied; however, one must not this configuration for assigning a console to station ports 10 and 12 because the console buttons will not be usable for programming. As discussed above, this feature is also useful for adding a second console to a station that already has a paired console installed with it.

The digital telephone system automatically recognizes a console when its connected to a station port and automatically assigns station intercom numbers to the console buttons for direct station selection (DSS) purposes with associated busy lamp field (BLF) status lights. However, the console buttons are fully programmable and the station user can customize them as he or she see fit by programming them as DSS buttons or as automatic dialing (autodial) buttons. When the user programs the buttons for DSS use, autodial capability is also available at a secondary level at each DSS button. All 32 buttons on the DD32X console and the first 48 buttons on the XD64X and IB64X are programmable for DSS and/or autodial use.

While the first XD32X console (the one installed at the logic-paired port) extends the **autodial** buttons of the paired telephone by 32 and provides DSS/BLF coverage for station ports 10 through 41, the second XD32X console (the one installed at the programmed station port) provides DSS/BLF coverage as follows:

- On a 32-station system with two 8-station expansion modules, the first 16 buttons are automatically assigned (defaulted) to station ports 42 through 57 for DSS purposes.
- On a 32-station system with one 8-station expansion module, the first 8 buttons are automatically assigned (defaulted) to station ports 42 through 49 for DSS purposes.
- On any other smaller station capacity system, all buttons are unassigned.

When an installer installs a console and programs it to complement a telephone without first having a console installed at a port that is logic-paired to that telephone, its button assignment is automatically defaulted, as described above, but the user can reprogram it as required. It is important to remember that when a programmer programs for a second console, the system sets the console button mapping to that which is described above. When a programmer clear the assignment, the system resets the button mapping to match a logic-paired console. This means that when the second console feature is cleared, the console installed at that port complements the telephone that is installed at its logic-paired port instead of the telephone that is located at the program designated port, and its buttons are automatically reassigned to stations 10 through 41 (through station port 57 with **IB64X** and **XD64X** consoles).

Console Support - continued

In addition to the DSS support that the consoles provide to the telephone, the first DD32X console provides COS programming buttons CI0 through C41 and the second console provides COS programming buttons C42 through C57 when they are needed. You will not need the second IB64X or XD64X consoles for programming purposes since the first one provides complete program button coverage.

Data Security

This data security feature will prevent any type of tone (DTMF, camp-on, barge-in, etc.) from interrupting a call that is active on a port programmed with the feature. This prevents interference to non-voice communications from occurring when the port is being used as a data port (when operating a modem through an ATI-D port for, example). The programmer can use station class of service programming to enable a data security port.

Default Functional Program

Refer to the discussion titled Class Of Service.

Default Toll Restriction

Refer to the discussion titled Toll Restriction.

Delayed Ringing

Refer to the discussion titled Ringing.

Departmental Calling Distribution (DCD) Report

Refer to the discussion titled Direct Department Calling With Departmental Call Distribution (DCD).

Designated Programmable Buttons

Designated programmable buttons are those that the programmer assigns to a station using the button mapping procedures that are a part of station class of service programming. These buttons provide one-button access to a broad range of features. While the programmer must assign most designated buttons, the station users can assign the auto redial button and the response message button themselves.

Dial 0 For System Attendant

The system attendant station (station 10) is signalled whenever anyone dials the digit 0 on the intercom line.

Direct Department Calling With Departmental Call Distribution (DCD)

The system enhances direct department calling with departmental call distribution (DCD) and provides a means by which outside lines can be assigned to one of four different departments. Calls received on

department lines and calls that are transferred to a department from within the system search for an idle station in that department. The system distributes department calls evenly throughout the department stations for answering with individual stations having the ability to be taken out of service as necessary. The system places calls received on department lines and calls that are transferred to a department from within the system in a queue for servicing. It assigns new calls, transferred calls, and held calls a time stamp so that they will be serviced in the order of their arrival.

The system allows up to four departments and allows up to 16 stations (plus one overflow station) in each one. The programmer can assign a station to more than one-department, if desired. Since the programmer can assign a station to more than one department, she or he can add the attendant station to serve as the overflow station for all departments if desired. The programmer can assign separate pilot numbers (extension numbers) to each department that the users can use for making intercom calls or doing call transfers to the department.

The direct department calling feature requires that the programmer assign lines and stations to a department. It does not require that he or she assign department lines to appear at buttons on department stations. If a site requires that a particular department line must appear at a particular department station, the programmer can assign it; however, the programmer must ensure that neither direct nor delayed ringing is enabled for that line at that station.

An incoming call searches for the first station available to answer a call. If all stations in a department are busy or ring with no answer (RNA call), the call will go to the overflow station in that department (if one has been programmed). If there is no overflow station programmed, the call continues to try the department stations until it is answered or dropped by the caller. The caller continues to receive **ringback** tone until the call is answered. The overflow station can service the call or transfer it back to the department using the department pilot number. When the call is transferred back to the department by an overflow station, it will not return to the overflow station until that station is idle and has no ringing calls either new or transferred. Instead, the call will camp-on at the department and wait for a station to become idle. The caller will receive music while on hold if the system is so equipped. To provide reassurance to the caller during ringing it is recommended that a music source be connected to the system. The call will remain in a held state until it is answered or until the department transfer recall timeout period has ended.

Direct Department Calling With Departmental Call Distribution (DCD) - continued

When the recall timeout period has ended, the call will return to the transferring station.

Intercom calls that are made to the department will test the department stations for busy or a RNA. If all stations are busy, a busy tone is returned to the caller. Intercom calls will not camp-on at the department but will go to the overflow station. Further, the system camp-on feature cannot be used to camp-on to a department.

Subsequent calls to a department on a particular line always try the next station in the department from whichever station serviced the last call on that line.

To understand this, assume a department with stations 15, 16, and 12 assigned as department members 1, 2, and 3. Further assume lines 1, 2, and 3 are programmed to ring in this department. To create a randomizing effect, the system tracks for each line which department member (1, 2, or 3) serviced it last. When the next call arrives on line for instance, the system makes a search for the next idle department member after the last one that serviced a call on line 1. Since there are several lines assigned to the department and conversation times and wrap-up times vary, a natural random distribution of calls on lines 1, 2, and 3 at stations 15, 16, and 12 will occur. Further, since the system is keeping track on a per line basis of the servicing stations as department members instead of station numbers, the programmer could rearrange the department list without having any effect on call distribution. As the programmer adds more stations to a department, the randomizing effect improves.

Since the RNA time of a station is a programmable feature, department stations can be set to have a short RNA time to allow a call to search rapidly through a department for an answer.

When an outside or transferred call is ringing at a department station, the station user can press the pre-programmed Do Not Disturb (DND) button to place the station in an off-duty condition. While off-duty, all outside and transferred calls skip to the next department station. This off-duty condition remains set until the DND button is pressed again to place the station back in service. When the overflow station is set to DND, all incoming and transferred calls will return to the department queue.

A department station can also be taken out of service and placed in a wrap-up mode to provide the user time for doing such things as follow-up paperwork. While a station is in a wrap-up mode, all outside and transferred calls skip to the next department station.

The station user sets the wrap-up mode by pressing SHIFT DND and presses these buttons again to clear the wrap-up mode.

It should be noted that the departments formed for use with this direct department calling feature are different from those departments used in SMDA reporting. Assign department transfer recall time (unanswered call transfer recall time feature) using the system class of service programming. Assign lines for direct department calling using the line class of service programming. Assign department stations, access codes to departments (flexible numbering feature), and busy/RNA timeout (call forward - busy feature) using the station class of service programming.

Departmental Calling Distribution (DCD) Report

The attendant station can request a Departmental Calling Distribution (DCD) report that provides a compilation of department call activity. The statistics that are reported are based on the department assignments that are active at the time of the report and are extracted from the SMDR records collected by the system. For a report to be generated, a department must exist. All calls that are included in the DCD report, must meet the following conditions before they are reported as department calls:

- They must be incoming calls. Outgoing calls are not reported in the DCD report.
- The port number of the line which received the call must be one that is assigned to a department.
- The port number of the station which answered the call must be assigned to a department.

A DCD report consists of the following columns of information:

Station Number: The station name or extension number of the station being reported.

Idle Time: The amount of time that the station is on-hook and available to answer a call.

Dept. Calls: The amount of time spent on incoming calls that rang into the department and calls that were transferred to the department.

Hold lime: The amount of time that department calls spent in an on-hold state at a particular station.

Avg. Dept. Calls: The average time per call (including on-hold **time) that** a station spent on a call.

Wrap-Up Time: The time that a station spent in a wrap-up mode doing such things as follow-up paperwork. While a station is in a wrap-up mode, it does not receive department calls. The station user sets a wrap-up mode by pressing SHIFT DND and repeats the procedure to clear the wrap-up mode.

Direct Department Calling With Departmental Call Distribution (DCD) - continued

Missed Calls: The total number of calls that are not answered at a station and that are cycled by the system to another station for answering.

Other Calls: This is a summation of the time spent on outgoing call activity, incoming call activity on non-department lines, plus all intercom call activity.

On-Duty Time: The on-duty time includes a summation of idle time, department call time, wrap-up time, and other call time.

Off-Duty Time: The time that a station spent in a do not disturb mode. While in a do-not-disturb condition, a station is not available to receive calls. The station user sets a do-not-disturb mode by pressing DND and repeats the procedure to clear the do not disturb mode.

Unanswered Calls: Total number of calls that went unanswered at a department.

Calls Answered After 36 **Seconds:** Total number of calls that waited at least 36 seconds (approximately six rings from the CO) before being answered.

Calls Handled By Overflow Station: Total number of calls that were answered and transferred by the overflow station and then answered and serviced by another station.

Calls Terminated At Overflow Station: Total number of calls that were received by the overflow station and were either answered but not transferred or were dropped by the caller before being answered.

Direct Inward Station Dialing (DISD)

The **DISD** feature allows an external party to call an intercom station directly without assistance by the attendant. The **DISD** call must be received on a line which has been specially programmed to allow this feature. Any line can be programmed to be a **DISD** line for both the normal mode of operation and the night transfer (of ringing) mode of operation.

The number of rings which occurs on a **DISD** line before it is answered is programmable. By setting a large number of rings, time is allowed for a call to be serviced in a regular manner by stations that have a line appearance for the **DISD** line. Setting the number of rings to 0 disables the line for **DISD** use. If a line is to be dedicated for **DISD** use, it is a good practice to set it for one ring. The amount of time allowed for an

extension number to be dialed is programmable and a DISD assist station can be programmed to answer calls that are not completed during this dial time limit. When a DISD line is called, it rings for a programmed number of rings. If the call is not answered in a normal manner by a station with the line appearance during this time, the system answers it and presents a DISD dial tone to the caller. The system then waits for an extension number to be dialed from the calling telephone. Only one DISD line is serviced at a time; therefore, an incoming call could ring for more than the programmed number of rings if a DISD call is being serviced when a second DISD call is received.

When a valid extension number is dialed, a confirmation tone is sounded, the system attempts a transfer, and thecalled station rings if it is idle. If a called station does not answer within the transfer recall timeout period, the call is returned to **DISD** dial tone. If the called station has the call forward feature set, the forwarded station rings. If a called station is busy, the call is placed on hold and camped-on at the busy station. If the camp-on is not answered within the transfer recall timeout period, a busy tone is given followed by **DISD** dial tone. The system will return the caller to **DISD** dial tone two additional times and then drop the line (a total of three attempts are made).

NOTE: If the busy called station is part of a hunt group, the DISD call is routed to an idle station in the hunt group. If no idle stations are found, the call is camped-on at the dialed station. The hunt group is not followed in the case of a ring-no-answer (RNA).

If an invalid extension number is dialed, an error tone is sounded before the **DISD** dial tone is returned. If a mistake in dialing is made, the caller can dial a * for 'a new **DISD** dial tone. The system will return the caller to **DISD** dial tone two additional times and then drop the line. If extension number dialing is not completed within the programmed dial time limit, the call is routed to the **DISD** assist station if one is programmed; otherwise, the line is dropped. If the assist station is busy (call will camp-on at the assist station) or if the assist station does not answer before the transfer recall timeout period, the system will return the caller to **DISD** dial tone. If extension number dialing is not completed within the dial time limit this time, the line is dropped.

The installer should connect a music source to the system so the music can provide a reassurance to the caller during a camp-on situation when the **DISD** feature is being used.

Direct Station Call Hold (Station Park)

This feature allows a station user to park a call at a specific station where it will be held without ringing. A feature code plus a station extension number can be dialed over the intercom line to park the call or a programmable button can be programmed to provide a "directed hold" to a specific station. The parked call is picked up by directed station by dialing a feature code. It can be picked up at any station through the use of the call pickup feature. No class of service is required. Also refer to the discussions titled *Call* Pick-Up - *Directed and Call Park*.

Direct Station Selection (DSS) Programmable

Refer to the discussion titled Programmable DSS/BLF.

Distinctive Ringing

Refer to the discussion titled Ringing.

Do Not Disturb

Any station can be set to a do-not-disturb mode (DND using the designated DND programmable button and associated indicator (indicator will light when DND is active). While in the DND mode, the station will not ring on any incoming call nor will it accept an intercom call. A party making an intercom call to a station set in the do-not-disturb mode hears a fast busy tone. The feature cannot be overridden by the calling party unless the override feature is enabled. The DND feature is used with the departmental calling feature to provide a station wrap-up mode and a station off-duty mode.

Do Not Disturb Inhibit

The system can be programmed to inhibit any station from entering the DND mode. System class of service programming is used to program this feature.

Do Not Disturb Override

Stations can be provided with DND override capability which will allow them to call a station that is set in the DND mode. The Executive/Attendant Override feature must also be active for DND override feature to function. Station class of service programming is used to assign this feature.

Dual Console Support

Refer to the discussion titled Console Support.

Dual Intercom

Refer to the discussion titled Intercom.

Dynamic Line Buttons

Through class of service programming, the programmer can arrange certain idle line buttons to serve as dynamic line buttons. This feature allows the system to temporarily assign a line to a station that

normally does not have the line assigned to it, and have that line appear on a dynamic line button. While the call is appearing on the dynamic line button (LED on), any normal call handling operations can be performed. Station class of service programming allows certain buttons to be programmed as dynamic line buttons

End-To-End Signalling

End-To-End Signalling On Intercom

After an intercom call has been established with an **ATI-D** port, the system can continue to send dialing signals (DTMF tones) through the intercom path. This feature can be performed from every station in the system, and is used by peripherals such as voice mail equipment.

End-To-End Signalling On Lines

After an outside call has been established, the system can continue to send dialing signals (DTMF tones) through the **telco** network and have them received at the distant end for inward call completion (bank by phone, etc.). This conventional, off-hook dialing feature can be performed from every station in the system.

Exclusive Hold

Refer to the discussion titled Hold.

Exclusive Hold System-Wide Enable/Disable

Refer to the discussion titled Hold.

Executive/Attendant Override

This feature allows the user of a station, upon encountering a busy signal at another station, to dial a code that will override the busy signal of a call, sound a warning tone, and allow access to the existing conversation. This feature is enabled through station class of service programming.

External Paging Interface

Refer to the discussion titled Paging.

Feature Inhibit

A large array of individual features can be disabled system-wide to provide a basic telephone system. A basic telephone system is useful for installation environments where a large proportion of the stations are accessible to unauthorized users thus subject to tampering or for environments where station users must be limited as to the variety of features allowed to them. Features are disabled by system class of service. Once disabled, they can enabled by turning on all features at once using the system default programming.

Flexible Ringing Assignments

Refer to the discussion titled Ringing.

Flexible Ringing Assignments Of PA Port Refer to the discussion titled Ringing.

Flexible Station And Line Class Of Service Control

Refer to the discussion titled Class Of Service.

Flexible Station Numbering Plan Refer to the discussion titled Square/Non-Square Configuration.

Full Button Programmability Of Features
Refer to the discussion titled Programmable Buttons.

Handsfree Answer Inhibit

Refer to the discussion titled Mute.

Headset Capability

Certain proprietary LCD speakerphones include an auxiliary jack that provides an interface for a headset. To use a headset, the user merely plugs it into the telephone auxiliary jack and presses the appropriate button on his or her telephone to enable the headset mode. The telephone transfers its speakerphone function to the headset. To enhance the headset usefulness, the system delivers subdued off-hook voice announce (SOHVA) messages to the headset when it is in use.

Hold

Abandoned Hold Release

If an on-hold party hangs up at the **CO/PBX** end of a connection, causing an interruption in the line current, the system will drop the line from the hold condition and return it to service. The time interval between hang-up and line-drop is programmable in line class of service programming with choices of either 50 **msec** or 350 msec. This feature is usually dependent upon special arrangements that must be made at the CO end of the connection. The line select indicator will turn off to indicate an idle line after a call on that line hasbeenabandoned.

Automatic Hold For Intercom

If a user selects the second intercom line while a call is active on the first intercom line, this automatic hold feature lets the system automatically place the first intercom call on hold. Use station class of service programming to enable this feature.

Automatic Hold • Transfer To **Intercom** (Answer Hold) If a user selects the intercom line while an outside line call is active, this system feature causes the system to automatically place the outside call on hold. This

feature does not require class of service programming to enable it.

Automatic Hold - Transfer To Line

A programmer can use class of service programming to make this system feature available to selected stations. When enabled, a user can press any line button and cause an active line to automatically go on hold. This feature allows a user to move from line to line without having to press the HOLD button to place any current calls on hold. Use station class of service programming to enable this feature at the desired stations.

Call Park

The call park feature is similar to a manual hold condition. A user can park a call a particular station and retrieve it at any station in the system by dialing the appropriate access code. (Note: the retrieving station must have access to the line on which the call appears.) Calls are parked and retrieved within the system through the use of dialing codes. The system provides nine parking circuits (orbits). Call park, when used with the paging features, allows a system attendant to direct calls to roving personnel. A call that is left in a parking orbit for preprogrammed length of time automatically returns to a timed hold recall condition at the station where the user originally parked the call.

Exclusive Hold

Exclusive hold prohibits a held call from being retrieved by any other station. The exclusive hold condition also links the held call to the timed hold recall timeout feature. After timeout, the system causes audible and visual signalling to occur reverts the exclusive hold condition to a normal line hold condition.

Exclusive Hold System-Wide Enable/DisableThis feature allows programmers to use system class of service programming to enable or disable exclusive hold capability on a system-wide basis.

Manual Hold

A button activated feature at each station will place an outside line on hold. When a user presses the HOLD button while on a call, the system places the call on hold, provides a distinctive flash rate of the line button indicator, and allows the user to access other station features. A user at the holding station or at any other station that has access to the line can retrieve the held call.

Timed Hold Recall

After a call has been on hold for a programmed length of time the system will re-call the station that placed the call on hold. The programmer sets the timed hold recall time period using system class of service programming.

I Hold And I Use Indications

The light associated with a line button provides a visual indication of the status of that line. When a station user has a line in-use or on-hold at a station, the light indication provided at that station is of a different color than the indication provided at the other stations in the system. No class of service programming is required.

Idle Line Preference

Refer to the discussion titled Line Features.

Industry-Standard Telephone Support

Refer to the discussion titled Analog **Terminal** Interface Support.

Intercom Features

Automatic Callback

If a telephone user encounters a busy tone or a ring no-answer after calling an intercom station, She or he can dial a special code number that will cause the system to automatically ring both the user's telephone and the one that he or she was calling. This automatic callback occurs after the busy station becomes idle or after the user at the ring no-answer station takes some action at it that indicates to the system that it is available to be answered. No class of service programming is required to enable this feature.

Call Announce With Handsfree Answerback

The internal loudspeaker at each station provides call-announce capability over the intercom link. A user can make a handsfree response to a call-announce call without lifting the handset.

The user can use the MUTE button to block all handsfree **answerback** response. This arrangement will prevent a station user from monitoring another station site using the monitoring ability of the voice announce feature. When a user presses the MUTE button, all handsfree answerback is disabled thus inhibiting any off-site monitoring. The MUTE light turns on steady to indicate that this feature is active.

Dual Intercom

This feature provides for two separate intercom lines at the same station. One intercom line is fixed and is accessed with the Intercom button. The other intercom line is programmable and is accessed by a programmable button selected for that purpose by class of service programming. Calls are handled on the intercom lines in much the same manner as outside calls are handled using the line buttons. Special considerations are as follows:

Distant party hang-up causes intercom link to drop.

- Intercom call to station already busy on intercom rings in subdued fashion and flashes indicator associated with other intercom button.
- With both intercom lines busy, a third intercom call results in a subdued off-hook voice announce (if enabled) at busy station.
- Pressing a DSS button while on an active intercom call will drop the distant party unless the automatic hold feature is enabled for the intercom line through class of service programming. The hold button can be used, however, to place an intercom call on hold before selecting the other intercom line for use.
- Any action taken on the intercom by a station being observed via the service observing feature will cause the observing station to return to an idle state.

The station class of service button mapping procedure assigns a programmable button to serve as the second intercom button.

Intercom Call Progress Tones

Intercom call progress is marked by special tones. A steady tone is provided for dial tone. Ring-back tone is one second on and three seconds off. For tone signalled intercom calls, a two-tone burst is sounded every four seconds at a called station and returned to the caller as ring-back. For a voice signalled intercom call, a single tone burst is sounded at a called station. When a called station is busy, a busy signal of one-haff second on and one-half second off is received at the calling station. A fast busy tone will be supplied when the called station is in the do not disturb mode. ATI-D ports are only supplied with the regular busy tone since fast busy tones could interfere with the operation of some accessories that can be connected to this port.

Intercom Hunt Group

Station ports can be assigned to intercom hunt groups. When a station that is assigned to a hunt group is busy or is a ring-no-answer (RNA), a call to it will ring at the next idle station in the group. A hunt group can be terminal or circular. A call will route down a terminal group from the called station until it finds an idle station or reaches the end of the group. A call will search around a circular group until it encounters an idle station or until all stations in the circular group are searched. The ringing time at any one station is programmable. Hunt groups are created through station class of service programming.

Intercom Line Timeout

Should the intercom line be selected with no dialing or other action taking place, the intercom will timeout after **15** seconds, and return to an idle state.

Intercom Features - continued on next page. . .

Intercom Features • continued

Tone Or Voice Signalling

The system allows intercom calls to be tone signalled or voice signalled as the users desire; however, the programmer uses system class of service programming procedures to determine which signalling method the system will employed as the primary method. Regardless of the programmer's arrangement, telephone users can take action to use the alternate method when they need it. See the previous paragraph titled *Intercom Call* Progress Tones for a discussion of the intercom signalling tones.

Voice Announce Blocking

This feature allows station users to block voice announced intercom signalling by dialing a code **Or** pressing a programmable button programmed for that purpose. The programmable button used to block voice signalling is enabled by station class of service programming.

Key System/Hybrid Configuration

The system can operate as either a key system (KF designation) or as a hybrid (MF designation) system. In the past, this digital telephone system provided a hardware strap that installers could move to distinguish between hybrid system and key system operation; however, recent rulings by the FCC have eliminated the need for the hardware strap. Therefore, with software release revision 11 A, whenever the programmer assigns lines to line groups the system automatically assumes the hybrid mode.

The KF and MF designations are equipment type categories as stipulated in FCC rules and regulations, Part 68, and appear as part of the FCC Registration Number on the equipment label. The installer must report the appropriate registration number to the telephone company at the time of connection along with other FCC mandated information. Operationally, the hybrid configuration allows dial access to (automatic selection of) outgoing lines. The specific system feature that is enabled by the multifunction (hybrid) configuration is Line Group (Including *Dial Access)*. Since this is a PBX type feature, it may incur a higher monthly tariff to the telephone company.

Last Number Redial

Refer to the discussion titled Redialing.

LCD Messaging

Refer to the discussion titled Messaging.

LCD Support

The system supports the use of digital telephones having a Liquid Crystal Display (LCD). The display is capable of providing the station user with a visual presentation of: call cost, call duration, number dialed, name of called station, name of active feature, date and time, and programming prompts.

Interactive Button Support

Beginning with software release 11 A, the digital telephone system supports the DigiTech LCD speakerphone with a revision letter of I and later. This LCD speakerphone provides the user with three interactive buttons and expanded LCD displays as a standard feature. The interactive buttons provide the user with quick easy access to system features and straight-forward button programming without dialing codes. The expanded displays prompt the telephone user on the operation and progress of many of the telephone features and provides designations for the interactive buttons. Since the interactive buttons provide many user features, their immediate functions vary with the feature. The button functions change to match the feature that the user is currently operating. At any given time, the current button designations show in the display window.

Beginning with software release **11B**, the digital telephone system provides Americom LCD speakerphones (product codes 701 OS and **7016S)** with the same interactive button support. This support is disabled at default but can be enabled by the system programmer whenever it is required.

Beginning with software release 12B, the system includes *Impact* telephone support. The *Impact* LCD speakerphones (product code 8024S and 8012S) also provide interactive button and expanded display operation to the telephone users as a standard feature.

LCD Support - continued

Button Query

Beginning with software release 14A, station users who have LCD speakerphones can use their interactive buttons to access the button query feature. With this feature, the station user can cause his or her LCD speakerphone to show the function of each of its buttons on its display.

Line Features

Access Denied, Line Access Restriction

The system programmer can deny access to particular lines at certain stations in the system. A station user cannot select a denied line for use. This feature is programmable on a per line/per station basis in station class of service programming.

Line Answer From Any Station (Night Mode)

When the attendant programs the system for nighttime operation using the night transfer of ringing feature, the line answer from any station feature is made active. With this feature, a user can dial an access code over the intercom line to allow him to answer any ringing outside line. The line need not be ringing at the user's station for this feature to be used.

Idle Line Preference

When a station is programmed for idle line preference, it will automatically be connected to the first assigned idle line. The system can be programmed on a per station basis to enable idle line preference. When idle line preference is enabled, taking the handset off-hook will automatically connect the station to any assigned line that is idle and has been arranged for this feature. The line button will not have to be pressed. If this feature is used in conjunction with prime line automatic, the user will be given prime line first when going off-hook. An idle line will be given if the prime line is in use. The station class of service programming enables this feature on a per station/per line basis.

Line Groups

Outside lines can be grouped together in up to four different groups. Each group is accessible through a unique dialing code or automatically selected with the programmable autodial feature. Grouping can reserve certain lines for certain clusters of stations as in a tenant-service arrangement. The assignment of line groups frees station buttons nom-rally used for line selection thus making these buttons available for use with a feature such as personal DSS/BLF with station-to-station messaging. Lines are placed in line groups with the line class of service programming.

Line Preselection

A line can be manually selected before lifting the handset (for handsfree dialing) or after the handset is lifted

Line And Line Group Queuing

With the line queuing feature, the station user can take action that will place a station in a queue where it awaits the availability of a line or line group. The station is automatically signalled with five tone bursts when the line is available to it for use. Each station can gueue one line at a time.

Originating Denied

The ability to originate calls on certain lines can be denied at individual stations through system programming. The originating denied feature is programmed on a per station/per line basis.

Originating denied does not prevent a user from answering a ringing line, retrieving a held call or receiving a transferred call. Call origination on a line is denied at a particular station by the station class of service programming.

Prime Line Automatic

If the programmer uses station class'of service programming to enable prime line automatic at a station, the system will automatically select the designated outside line, intercom line or line group when the user lifts the handset. A user can pre-empt prime line pickup by preselecting another line before lifting the handset. If the prime line is ringing, it is automatically answered when the user lifts the handset.

Ringing Line Preference

The system can be programmed on a per station basis to provide ringing line preference on all lines programmed for ringing at the station. When ringing line preference is enabled at a station, taking the handset off-hook automatically connects the station to any outside line that is ringing at it. A line button will not have to be pressed. With ringing line preference enabled, the telephones denote a ringing line with an orange colored status light. If a station also has prime line assigned, the prime line will always be answered first even though it may be the second line to ring. The ability of a particular station to answer a ringing line without line selection is enabled by the station class of service programming.

Manual Hold

Refer to the discussion titled Ho/d.

Meet-Me Answer Page

Refer to the discussion titled Paging.

Messaging

Assist Button

This feature allows a station user to program a button to be used for sending a message to an LCD speakerphone. Once programmed, the station user can press the ASSIST button at anytime to sound a tone burst at the called station and present a preprogrammed message in the station display. The user can send a message while on a call without alerting the distant party. This feature is useful for requesting assistance while engaging on a call. For example, a customer service representative could request assistance from a supervisor while talking to a problem caller. The supervisor, upon receiving the tone and noting the display message, could perform an executive override or service observing action to join the call **Or** monitor it.

LCD Messaging

Standard and system-supplied custom display messages can be set by dialing a specific code at any station. Such messages are to be received and displayed by any LCD speakerphone that calls the station which set the message. When a message is set, the intercom light at the setting station will flash to indicate that the feature is active.

Message Waiting

Special feature access codes enable a station user to control the message waiting (MW) light at other stations in the system. When the message waiting light is turned on at a station, a call can be automatically placed to the station that turned it on.

Alternately, one station **can.be** designated by COS programming as the central message desk and can be arranged for exclusive message waiting control. The central message desk can be used to control message waiting lights and deliver messages to and from all

other stations in the system. The ability of a station to originate a message waiting signal is enabled by programming action. Station class of service programming provides a station with the ability to originate a message waiting signal and is used to create a central message desk.

Response Messaging

This feature allows a user to reply in a non-verbal manner to a voice announce or tone-signalled intercom call or to a subdued off-hook voice announce call if the intercom caller is using an LCD speakerphone. A station user can press a programmable button in response to an intercom call and send a message to be shown on the display of the calling station. Response messages are pre-programmed by the attendant and later stored by station users at programmable buttons on their individual stations as need dictates.

Station-To-Station Messaging

If a station has a **DSS/BLF** appearance at another station, a callback message indication can be left at that station with the **DSS/BLF** appearance. The user can dial a special code to turn on, the BLF light at the called station that is assigned to the calling station. This light indicates that a callback is requested. The light is automatically turned off if a successful callback is made.

If a station number is not programmed for a **DSS/BLF** appearance at another station, attempting to place a call back message will cause the central message desk station to ring. If there is no central message desk assigned, no action will occur.

Modular Wiring And Jacks 2- Or 4-Conductor Wire System

The system can be completely interconnected by employing industry standard **50-pin** connectors and modular plug/jack combinations. Station wiring is number 22 or 24 gauge, **2-conductor**, twisted-pair cable throughout the system. If the installer uses **4-conductor** twisted-pair cable, it provides a spare pair for a separate wiring purpose when needed.

Messaging - continued

Message Waiting Originate Default

With software release **14A**, the default condition for the message wait originate feature changes from disabled to enabled.

Multiline Proprietary Telephone Support

With software release 13B on software cartridges with a product code designation of Innnn, the digital telephone system provides support for the *Impact* multiline proprietary telephone with a product code of **8112N**. This telephone provides the system users with economical multiline operation without the added complexity of monitor or speakerphone requirements. The system automatically recognizes the multiline proprietary telephone when the installer connects it to a station port. The programmer does not have to take any programming action to allow it to operate.

Music Features

Background Music

If the installer connects a customer-provided external music source to the system, the music from that source will sound through the station loudspeakers after the users turn it on at their stations. They can adjust the loudness of this background music with the loudspeaker volume control. The system automatically turns the background music off during calls. This feature requires no class of service programming.

Music Interface

The common equipment cabinet includes an input jack where the installer can connect a customer-provided music source.

Music-On-Hold

When an installer connects a customer-provided music source to the system through the music interface jack, the system supplies that music to the outside lines that users place on hold.

Music-On-Hold System-Wide Enable/Disable

After the installer has arranged for the system to supply customer-provided music to calls that users place on hold, the attendant can disable the feature on a system-wide basis.

Music Interface

Refer to the discussion titled Music Features.

Music-On-Hold

Refer to the discussion titled Music Features.

Music-On-Hold System-Wide Enable/Disable

Refer to the discussion titled Music Features.

Mute

Every monitor telephone and speakerphone has a MUTE button which, when pressed, will mute the

handset transmitter (or internal microphone on speakerphones) to prevent the user's voice from being heard by the distant party. The MUTE light turns on steady to indicate a muted condition. The button provides push-on/push-off operation on speakerphones or push and hold operation while on hook. No class of service is required.

Handsfree Answer Inhibit

The user can use the MUTE button to block all handsfree answerback response. This arrangement will prevent a station user from monitoring another station site using the monitoring ability of the voice announce feature. When a user presses the MUTE button, all handsfree answerback is disabled thus inhibiting any off-site monitoring. The MUTE light turns on steady to indicate that this feature is active.

Night Transfer (Of Ringing)

Refer to the discussion titled Ringing.

On-Hook Dialing

Every monitor and speakerphone provides manual and/or automatic dialing while the station handset is on-hook. The telephone loudspeaker monitors call progress for completion. (The handset must be taken off-hook to provide the voice link on **non**-speakerphone stations.)

Originating Denied

Refer to the discussion titled Line Features.

Paging

All-Call Paging

All-call paging allows all stations to receive announcements through the station speaker at once. The system can also send all-call paging to the paging port where it applies it to the input of an external paging amplifier. Origination of announcements must be via the station handset. A programmer can arrange each station to receive and/or originate all-call page. He or she enables the ability to receive and originate all-call paging at a station through station class of service programming.

External Paging Interface

A dedicated paging port or a spare line port can be interfaced with an external paging amplifier. The paging amplifier can then be dial-accessed by stations in the system. DTMF tones can be dialed through the line port to provide zone selection if provided by the external paging amplifier. The dedicated paging port does not support any "talk-back' capability even if such a feature is provided by the external equipment. The line class of service programming arranges a line **port** for external paging interface.

Paging Features - continued on next page . . .

Paging - continued

Meet-Me Answer Page

Any station user can dial a special code number in response to an all-call or zone page and be connected to the paging party in a private conversation. Ail-call or zone paging is provided to the stations through the station class of service programming.

Zone Paging

Zone paging allows groups of stations to receive announcements through the station speakers. The programming can enable zone paging in up to four different zones. Zone paging can also be received at the paging port where it can be connected to the input of an external paging amplifier. The ability of each station to originate and/or receive a page and the arrangement of the paging into different zones are controlled by station class of service programming. Zone paging through the paging port is enabled by system class of service programming.

Memory Retention Without Batteries

The system memory is electronically protected during AC power failures by an electronic device sometimes known as a "super cap." The stored program data will remain in memory for a minimum of 60 hours provided that the system has been powered continuously for at least 30 minutes prior to the power failure or disconnection. Also, the system clock will continue to run and keep time for at least 30 minutes after an AC power failure or disconnection.

PBX/CENTREX/CO Compatible

System features and programmable buttons support the requirements of most PBXs, Central Offices, and CENTREX systems. Numbers, #'s, *'s, programmable pauses, and flash signals can be made a part of every stored number for access to host system feature codes.

Personalized Ringing Tone

Refer to the discussion titled Ringing.

Pooled Line Access (Line Group Access)

Refer to the discussion titled Line Features.

Power Failure Transfer

An installer can connect an industry-standard telephone such as the model 2500 to a special connection to **serve** as a power-fail telephone. If an AC power failure occurs, the system automatically connects the power-fail telephone directly to an outside line. Users can make normal origination and reception of calls on a power-fail telephone during an AC power failure. The system will automatically

disconnect the power-fail telephone from the outside line as soon as AC power returns.

Prime Line Automatic

Refer to the discussion titled Line Features.

Privacy

Automatic Privacy

A programmer can make a line private or non-private through programming. In the private mode, a station has exclusive use of the line during a call. No other station can access that line unless the user of the private line includes the another station through the use of the add-on conference feature. In the non-private mode, another station with that line appearance can gain access at the same time (sometimes known as common line pickup). A line is specified as private or non-private through the line class of service programming. Through station class of service programming, a programmer can make a line non-private at a particular station. Also see the discussion titled *Conferencing*.

Privacy - Designated Programmable Button

The programmer can arrange for stations to provide a privacy button. If a line is private, a user can press the privacy button to change it into a non-private one. If the line is non-private, pressing the button will have no effect. Station class of service programming is used to program the programmable button function at the stations.

Privacy Release/Brokerage Service

See the previous paragraph titled Privacy • **Designated Programmable Button**

Private Lines (Access Denied)

See the discussion titled Line Features.

Programmable DSS/BLF

Refer to the discussion titled Automatic Dialing.

Programmable Buttons

A programmer, or in many cases the users themselves, can make most system features available at programmable buttons merely by storing the specific access codes necessary for dialing the features. Storable features include those that can utilize lamp (on/off) supervision (e.g., call park orbits). The system will store all feature access codes except for those requiring Transfer/Conference button action. It **Will** store continuous strings of digits (including presses of the intercom button) up to the maximum amount of storable digits (16) allowed in an **autodial** entry.

Pulse/Tone Switchable

The programmer can program the system on a per line basis using the line class of service programming to allow the stations to switch from pulse to DTMF type dialing as needed. Alternately, she or he can program the system to only allow tone dialing.

Redialing

Automatic Redial (Of Busy Number Or Unanswered Call)

A user can automatically redial a busy number or unanswered call by activating this feature. Once the user activates automatic redial, the station will select the line, automatically dial the number, and wait for a response. It will do this once a minute for approximately 10 minutes unless the user deactivates the feature by pressing that button or another button or by lifting the handset. The feature cycle is timed and does not have busy detection circuitry. Because of this, if the user is operating handsfree when the called party answers, she or he must lift the handset to prevent the caller from being cut off by the timing cycle. The automatic redial button is a designated programmable button position and the user must program its location to make it active.

Automatic Pause Insertion

When the system stores a dialed number for later redial, it automatically stores a pause whenever the user waits between digits for at least two seconds. The system inserts the automatic pause in the stored number sequence at the point where the manual pause in dialing occurred. The length of the automatic pause is programmable.

Last Number Redial

Each station is provided with a last number redial feature. This feature will save 32 digits of the last outside number dialed. A newly dialed number will always automatically replace a previously dialed number. Upon command, the system will choose a line and redial the saved number. The system will first choose the prime line if assigned and idle. If it is busy or unavailable, the system will choose any line assigned to idle line preference. If they are unavailable, the system will choose the last line used at the station. If it is busy, no further choice is made. No class of service is required.

Saved Number Redial

This feature enables a button action to save the first 16 digits of the last number manually dialed from the keypad. The saved number can be redialed at a later time, The saved number is permanently available for later use until it is replaced with a new number.

When the caller identification feature is active, this saved number redial feature will save the identified number for redial.

Response Messaging

Refer to the discussion titled Messaging.

Remote Programming And Administration

Refer to the discussion titled C/ass Of Service.

Ringing

Auxiliary Ringer Interface

The auxiliary ringer interface provides "dry-contact" relay closures which track the ringing pattern whenever the system sends ringing to a programmable destination. Programmers can program relay control to be activated when the system sends ringing to station port 17 or to the paging port.

When programmed for station port 17 ringing, an installer often uses an external device to provide loud ringing. When programmed for paging port ringing, installer often installs an external paging amplifier to sound the rings. The system supplies ringing tones to the paging port along with the relay closures. send the ringing tones to the input of an external paging amplifier and the installer can arrange the wiring so that the relay closures energize the paging amplifier while it is receiving the ringing tone. Use system class of service programming to choose either the paging port. or station port 17 for the ringing port relay control. Also use system class of service to determine the type of ringing sent to the paging port. Use station class of service programming to determines the type of ringing that the system sends to station port 17.

Common Audible Ringer Interface

Connections are available at the common equipment that provides "dry-contact" relay closures whenever an incoming line rings. These contact closures track the ringing pattern and can be used to control an external signalling device.

Delayed Ringing

Ringing assignments are programmable. A station can be programmed to provide delayed ringing on some lines while providing immediate ringing on other lines. Delayed ringing is assigned to certain lines at each station through station class of service programming.

Distinctive Ringing

The ringing cadence of an incoming call is the same as the ringing cadence of the TELCO, PBX, or **CENTREX** system. The ringing cadence of an intercom call presents two tone bursts sounded every four seconds.

Ringing Features • continued on next page . . .

Ringing - continued

Ring, No-Answer (RNA) Forwarding Of Transferred Calls

Software release 14A enhances the existing automatic RNA call forwarding feature to include forwarding of transferred lines to individual stations. When a telephone user transfers a line to a station, the call will ring at the station receiving the transfer for the programmed number of rings. After that, the call will **start** ringing at the station that is hunt-linked to the station first receiving the transfer. If that station is also hunt-linked to another station, the call will follow that link. When the transfer recall time expires, the call will recall back to the station that initiated the transfer. The hunt link can be a circular one. The transferred line will circle the hunt link until it recalls. Alternately, the station can be hunt-linked to voice mail so that a transferred call will forward to the station's voice mail box if it is unanswered. For this feature to work properly, the following details must be considered:

- you must hunt-link the station receiving a transfer to another station;
- you must program the number of rings to occur before forwarding;

- you must insure that the transfer recall time is larger than the total time of RNA to all hunt linked stations (if it is not, the transferred call will recall before the call gets to the end of the hunt link).

For an example of this last consideration, assume station 12 is hunt-linked to station 13 which is also hunt-linked to station 14. Further assume that station 12 and 13 have their RNA's set to two rings. A call that is transferred to station 12 will ring there twice, then it will ring at station 13 twice, then it will ring station 14 until transfer recall time expires. Each transfer ring cycle is approximately four seconds; therefore, the line will ring the station for approximately eight seconds before it moves to the next station. Since there are three stations linked together, this event will require 24 seconds. This means that you should set the transfer recall time for 25 seconds or higher.

You can use this formula to determine minimum transfer recall time.

If:

4 = transfer ring cycle time in seconds

R = how many RNA rings assigned per station

S = how many stations are in hunt list

Then:

 $4 \times R \times S = minimum transfer recall time$

Ringing - continued

Flexible Ringing Assignments

Ringing assignments are programmable on a per station/per line basis. Ringing can be controlled for every line that has an appearance at each station. Delayed ringing is assigned to certain lines at each station through station class of service programming.

Flexible Ringing Assignments Of PA Port

The PA port can be programmed for flexible ringing assignments and zone pages. Any desired lines can be programmed for direct ring, delay ring, or night transfer (of ringing) at this port. Paging can be to programmed zone or to all-call. A speaker can be connected to the PA port to sound the ringing that is generated by the system and sent to this port and paging announcements when they are sent to the programmed zone. Using such an arrangement, it is possible for a user to determine that certain lines are ringing, such as in a night transfer (of ringing) mode, and go to the nearest telephone and answer the call. The most common use for this arrangement is as a night bell eliminating the need for external equipment as required with the common ringer and auxiliary. ringer interface. The speaker cannot be used for voice response as the path is one-way only. Use system class of service programming to assign ringing and paging to a PA port.

Night Transfer (Of Ringing)

Night transfer (of ringing) is an attendant-controlled feature that transfers the day ringing program of all incoming calls to a particular station or stations for off-hour or special purpose answering. The night transfer mode can only be activated from station 10 or 12. The individual lines at each station that are to be transferred with this feature are selected by station class of service programming.

Night Transfer (Of Ringing) Button

With software release revision 8, a night transfer of ringing, or night mode, button is available at attendant stations. The night mode button gives attendants at stations 10 and 12 the ability to place the system into the night transfer of ringing mode of operation by simply pressing one button instead of entering the multiple keystroke sequence previously required. The night mode button toggles the feature on and off with one keystroke and the light located above the Intercom button on attendant telephones flutters to indicate when the night transfer or ringing is active.

Personalized Ringing Tone

The system provides a group of distinctive tones for station ringing. A station user can choose a tone from this group to provide a distinctive ring at his or her telephone. Often, when several telephones are located close to each other, each user chooses a different personal ring tone. The system provides six distinctive tones for users to choose from.

Subdued Ringing

When a station is busy on a call and another call comes to the same station, the system will automatically subdue the ringing of the second call to a lower volume.

Ringing Line Preference

Refer to the discussion titled Line Features.

Saved Number Redial

Refer to the discussion titled **Redial**.

Self Diagnostics

Each station can execute a self test when so enabled by anyone who wishes to do so. This test verifies processor, indicator, and tone functions.

Service Observing

Service observing allows a third party to enter an in-progress call in an unannounced muted mode to monitor the conversation. The system does not send any warning tones when the call entry is made. This feature is useful in allowing a supervisor to monitor the performance of an employee during a phone conversation with a client. For a station to provide the service observing feature, it must also have the executive override feature enabled. When the programmer enables the service observing feature, the system automatically enables the executive override feature as well. A programmer can enable or block service observing (and executive override) at each desired station using station class of service programming procedures.

Single-Line Proprietary Telephone Support

With software release revision 11 A, the digital telephone system provides support for the proprietary single-line digital telephone product code 7701 X and, with software release revision 12A, support for product code 8101 N as well. The system automatically recognizes the proprietary single-line digital telephone when the installer connects it to a station port, This means that the system programmer does not have to take any special programming steps to allow it to operate. He or she can use any of the station programming described in this system manual to adjust the parameters of the station port as they are needed.

Speakerphone Support

The digital telephone system supports the operation of proprietary speakerphones. Beginning with software release revision 11 A, the system enables a speakerphone's ability to originate handsfree operation for voice-signalled intercom calls in addition to all of the other features that it normally provides.

Square/Non-Square Configuration

A programmer can arrange for a system to be square or non-square as desired. In a square system, the line 1 buttons of all telephone stations select line 1, the line 2 buttons select line 2, etc. In a non-square system, each line select button at every station may be assigned individually to select any line: A programmer can perform unique button mapping for line appearance on each station using the station class of service programming.

Flexible Station Numbering Plan

The system supports a flexible station numbering plan for individual stations. Each station can be programmed to respond to the dialing of any available number between 10 and 7999. This feature may be used to match the calling number of a station located in a pre-numbered area to that area number. A combination of two, three, or four digit extension numbers can be assigned as long as they do not conflict. For example: If 21 is assigned as an extension number, there can not be any other extension number assigned that begins with a 21. The system class of service programming is used to assign extension numbers to individual station ports.

Tenant Service

A system programmer can arrange for one telephone system to be used for multiple tenants at a site location by employing flexible line appearance at each station. The programmer can perform button mapping

for line appearance on each station in the system using the station class of service programming.

Station-By-Station Privacy

See the discussion titled Privacy.

Station Messige Detail Accounting (SMDA)

See the discussion titled *Call* Costing and *SMDA* Repotting.

Station Message Detail Recording (SMDR)

See the discussion titled *Call* Costing and SMDA Reporting.

Station Monitoring With DSS Call Pickup

The busy lamp field **(BLF)** of a station can provide visual indication of the idle, busy, and ringing status of monitored stations. This monitoring station can also provide audible indication of any direct and delayed ringing that occurs at the monitored station if the programmer has enabled the visual ring indication feature. A user at the monitoring station can make a one-button pickup of a tinging call at a monitored station by pressing the direct station selection (DSS) button associated with the ringing station.

The programmer can enable or disable the flashing BLF lights associated with visual ring indication on a system-wide basis. When the programmer enables the flashing lights, he or she can then enable the audible indication of ringing on a station-by-station basis.

Station Speed Dial

Refer to the discussion titled Automatic Dialing.

Station-To-Station Messaging

Refer to the discussion titled Messaging.

Specialized Route Access

Software release **14A** provides a specialized route access feature that, when enabled, allows the system to select a line group based on the digits the user has dialed. By doing this, it matches calls with their best suited routes. The feature provides a table-driven routing scheme where the numbers that users dial cause the system to chose a line group after comparing the dialed number with entries that are contained in an office code table, an area code table, and four special area code look-up tables.

The specialized route access operates in the following manner: When the caller presses ITCM and dials 9 or presses a preprogrammed button, the system returns a special dial tone. The caller then has 10 seconds in which to dial some digits; otherwise, the telephone will return to its idle state. Once a caller begins to dial digits, he or she has a certain period of time in which to dial each new digit. The system programmer selects this time-out period through programming. After the caller has stopped dialing digits and the end of the time-out period has occurred, the system analyzes the dialed digits and routes the call by following the table-driven routing scheme depending upon how the programmer has arranged the system.

The system routes calls based on comparison matches between the dialed number and the entries that it finds in either an office code table, an area code table, or four special tables for selected area codes. These tables contain 1000 entries from 000 to 999 and the programmer can assign one line group to each entry; therefore, a routing match is always possible.

The system matches dialed digits with table entries in the following manner:

 If the first digit that the caller dials is neither a 1 nor a 0, and if he or she dials less than 10 digits (such as: nnn-nnnn), the system evaluates the first three digits as an off ice code, searches for the off ice code in the office code table, and finds a line group,

If the first digit is either a 1 or a 0 (such as: n-nnn-nnnn), the system ignores the first digit and evaluates the next three digits as an office code, searches for the office code in the office code table, and finds a line group,

 If the first digit that the caller dials is neither a 1 nor a 0, and if he or she dials 10 digits or more (such as nnn-nnn-nnnn), the system evaluates the first three digits as an area code and the following three digits as an office code.

If the first digit that the caller dials is either a 1 or a 0 (such as n-nnn-nnnn), the system ignores the first digit, evaluates the next three digits as an area code, and evaluates the following three digits as an office code.

After digit evaluation the system routes the call as per the following discussion: If there is a special table that matches the dialed area code, the system searches that table for the dialed off ice code and finds a line group. If there is not a special table for that area code, the system just searches the area code table for it and finds a line group.

The following information illustrates the digit evaluation scheme.

| Qty. Of Digits Dialed | Actual Dialed Diaits | Digits Evaluated By System To Find Line Group |
|-----------------------------|-----------------------------------|--|
| 7 | 67 | 067 |
| 3 | 116 | 118 |
| 4 | 5173 | 517 |
| 7 | 9787700 | 978 |
| 8 | 19787700 | 978 |
| 10 | 8049782200_1 | 804 978 |
| 11 | 18849782200 | 1804,978 |

The example below shows how calls to area code 202 are routed using line group 2, calls to office code 202 are routed using line group 1, calls to office code 973 in area code 716 are routed using line group 4, and all other calls are routed using line group 1.

| | | Special | Tables | | |
|--------|-------|-----------|---|---|--|
| | | For Sel | ected Are | ea Codes | |
| | | • | | | |
| | , | entries i | n a speci | fic area c | ode) |
| Office | Area | Area | Area | Area | Area |
| Code | | | Code2 | Code3 | Code4 |
| Table | Table | (716) | () | () | (|
| 1 | | 1 | | | |
| 1 | | 1 | | | |
| 1 | | 1 | | | |
| | | | | | |
| | | | | | |
| 1 | 7 | 1 | | | |
| | | | | | |
| | | i | | | |
| 1 | 1 | 1 | | | |
| | | | | | |
| | | | | | |
| 1 | | 4 | | | |
| | | | | | |
| 1 | | 1 | | | |
| 1 | | 1 | | | |
| 1 | | 1 | | | |
| | | Code Code | For Sel (Each ta entries i Coffice Area Code Code Table Table (716) 1 1 1 1 1 1 1 1 1 | (Each table is for entries in a spec) Office Area Area Area Code Code Code1 Code2 Table Table (716) () 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | For Selected Area Codes (Each table is for office co entries in a specific area of Code Code Code1 Code2 Code3 Table Table (716) () () |

Specialized Route Access - continued on next page . .

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Specialized Route Access - continued

The programmer can arrange for the system to insert up to six digits ahead of a dialed number for a selected line group. This feature is useful if the dialed number must match a specific common carrier format.

To help understand this digit insertion, review this typical arrangement for transparent CENTREX operation (This example assumes that the CENTREX extensions do not conflict with the office codes.): With the digital telephone system installed behind a CENTREX system, callers can make outgoing calls without having to dial 9. Assume that the **CENTREX** extensions are 3300 -3399. Take programming action to assign line group 2 to entries 330 - 339 in the office code table. This means that calls on **CENTREX** extensions will use line group 2 and all other calls will default to use line group 1. Program the 9 digit as the insertion digit for line group 1. With this set up, when a caller dials a number other than a **CENTREX** extension, the system automatically inserts a 9 ahead of the dialed digits and routes the call over line group 1.

If no lines are free in a selected line group, the system will route the call to an overflow line group if the programmer has assigned one; otherwise, the system will return busy tone to the caller.

NOTE: If the programmer has arranged for the system to insert digits on a particular line group, he or she should consider arranging for the system to insert digits in the overflow line group as well. This consideration is necessary only if it is important for the call to route through the same common carrier as was the original line group.

Using Specialized Route Access For Simplified Toll Restriction

In anticipation of the implementation of the revised North American dialing plan, the SRA feature provides the system with the ability to deny calling to designated area or off ice codes. The programmer merely assigns a line group that contains no assigned lines to the designated office or area code. This prevents the system from routing calls for dialed numbers containing those particular area or office codes since there is no line available. This action will work only for manually dialed numbers because automatically dialed numbers, with no line preselect, employ the last used line and therefore cannot be restricted.

Subdued Off-Hook Voice Announce

With the secure off-hook voice announce (SOHVA) feature, a user can make a secure announcement from one station to another station that is off-hook and busy on a call. A station being operated in a handsfree mode cannot receive a SOHVA. With SOHVA, the caller delivers the call and the user receiving the call responds to it in a secure manner that prevents the distant party from hearing either the announcement or the response. The system precedes the announcement with a tone alert that it delivers to the handset receiver of the called telephone. It also supplies a tone to the announcing caller to **alert** them that they are making a SOHVA call. A user can respond to the SOHVA announcement either verbally or non-verbally. He or she either effects a verbal response by pressing and holding the MUTE button and speaking into the handset or effects a non-verbal response by pressing a pre-programmed button to send a message to be shown on the display of the announcing station (if it is an LCD speakerphone). The system automatically disconnects the announcing station after it delivers the response message to it (and displayed if an LCD speakerphone). Stations that have the voice announce blocking feature turned on cannot receive a SOHVA. A programmer can use station class of service programming to disable the SOHVA feature at a station port if desired.

Subdued Off-Hook Voice Announce Originate **Button**

This feature allows a telephone user to program a button at his or her station that she or he must press before delivering a SOHVA call. This SOHVA enabled button allows a caller, after hearing a busy signal, to decide whether to interrupt the called party in a SOHVA manner. If the caller decides that the called should be interrupted, the caller can press the button and complete the SOHVA call. This button, along with SOHVA groups, allows system users greater control of the callers that are allowed to make SOHVA calls and of the situations in which they are allowed to make them

Subdued Off-Hook Voice Announce (SOHVA) **Groups**

The programmer can program the **ability** of station ports to originate and/or receive SOHVA calls by assigning SOHVA calling groups to station ports. This means that he or she can arrange certain station ports together for SOHVA calling between one another while excluding other station ports in the system from this **group**.

The system provides eight different SOHVA groups that are fixed into a variety of SOHVA receive/originate configurations. A programmer can assign one SOHVA

group to each station port to allow or to deny SOHVA receive and/or originate capability to it. By properly assigning SOHVA groups to station ports, the programmer can open or block SOHVA paths between stations.

The system is defaulted with no SOHVA groups assigned. When a station port does not have a SOHVA group assigned to it, it 's user can originate SOHVA calls to any station port and receive SOHVA calls from any station port.

SOHVA groups are **fixed** by the system into the following configurations:

| SOHVA GROUP | | GRO |)UP | CON | FIGU | RAT | IONS | ; |
|--------------|----|----------|----------|----------|----------|----------|----------|---|
| GROUP 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | Χ_ | | | | | | | |
| Originate To | Χ_ | X | LX_ | X | | | | |
| GROUP 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | X | X_ | | <u></u> | | | | |
| Originate To | | X | X_ | X | | | | |
| GROUP 3 | 1_ | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | Χ_ | X_ | Lx_ | | | | | |
| Originate To | | <u> </u> | X_ | Х | | | | |
| GROUP 4 | 1 | 2 | 3_ | 4 | 5 | 6 | 7 | 8 |
| Receive From | Χ | X | X | | | | <u> </u> | |
| Originate To | | | <u>.</u> | | <u> </u> | | | <u> </u> |
| GROUP 5 | 1 | 2 | 3 | 4 | 5 | 6_ | 7 | 8 |
| Receive From | | | <u> </u> | | X | | | $oldsymbol{ol}}}}}}}}}}}}}}}}}$ |
| Originate To | | | | L | LX_ | <u> </u> | | <u> </u> |
| GROUP 6 | 1 | 2 | 3 | 4 | 5_ | 6 | 7_ | 8 |
| Receive From | | | | | | LX_ | <u> </u> | <u></u> |
| Originate To | | | <u> </u> | | | L X | | |
| GROUP 7 | 1 | 2 | 3 | 4 | 5_ | 6 | 7 | 8 |
| Receive From | | <u> </u> | | | | | X | _ |
| Originate To | | <u> </u> | | | | | X. | Ŀ |
| GROUP 8 | 1 | 2_ | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | | | | <u> </u> | | ļ | | LX |
| Originate To | | | <u> </u> | | | | | X |

The following examples may help you to understand how to use SOHVA.

Example 1: Allow station **port** 10 to originate SOHVA messages to all stations in the system and allow those stations the ability to originate SOHVA messages to each other but not to station port 10. Assign group 1 to station port 10 and assign group 2 to all other station ports.

Example 2: Allow station ports 14 and 15 to receive and originate SOHVA calls between each other but deny both receive and originate capability from any other system stations. Assign group 8 to both station port 14 and station port 15. Do not assign group 8 to any other station port **but** be **sure that all station ports have a group assigned to them**.

The programmer assigns SOHVA groups using the station class of service programming procedure.

Subdued Ringing

Refer to the discussion titled Ringing.

System Alarm Reports

The programmer can arrange the system to report alarm and status conditions to a particular station or stations that he or she has enabled to receive them. The alarm receiving station must be an LCD speakerphone. When a station is enabled to receive alarms, its user can take appropriate action to cause the alarm codes to be presented on the LCD display. A programmer must use both system and station class of service programming to enable this feature.

System Speed Dial

Refer to the discussion titled Automatic Dialing.

Tandem Attendant

When the programmer uses system class of service programming to enable the tandem attendant feature, a recall from an unanswered call transfer or a timed hold recall will ring at the normal attendant station (station 10) that set the transfer or hold condition, and also ring at the tandem attendant station (station 12).

TAP (Flash/Recall)

If the host system provides custom calling features via a hookflash signal, the programmer should program the system so that the TAP button will generate a "flash" signal when a user presses it. If custom calling features are not available to digital telephone system users, the programmer should program the TAP button to function as a positive disconnect, dial tone recall button. The flash and recall features are mutually exclusive. The programmer uses the system class of service programming procedures to set the flash or recall TAP time.

Tenant Service

Refer to the discussion titled **Square/Non-Square** Configuration.

Timed Hold Recall

Refer to the discussion titled Hold.

Toll Restriction

Default Toll Restriction

The system defaults two toll restriction tables with pre-programmed values and pre-assigned to all lines. The programmer needs only to assign these tables to the stations by programming action to put them into effect. He or she can use the toll restriction table configuration class of service programming to reprogram the defaulted tables with different information as needed.

Flexible Toll Restriction

A system programmer can configure system toll call restriction to prohibit some or all stations from calling a wide range of number combinations. The restricted numbers are specified on up to 16 tables. The system assigns several broad-range values to two of these tables, and assigns the tables to all lines as a default condition. The programmer needs only to enable the default tables on a per station basis to activate the default toll restriction.

In general, toll restriction works as follows:

The programmable tables of restricted numbers can contain up to four entries and each entry can contain up to 16 digits.

A programmer programs each table of restricted numbers to be an "allow" table or a "deny" table with entries in an "allow" table overriding entries in a "deny" table. This arrangement allows the programmer to enable exceptions to toll restriction. For example, he or she can arrange the table entries so that the system allows the dialing of 1-800-xxx-xxxx numbers even though it denies the dialing of all 1-xxx-xxx-xxxx numbers. A programmer can store a "match anything" symbol (#) to represent any digit from 0 to 9 in the individual entries thus providing him or her with a broad range of number combinations to choose from.

The programmer can individually assign the programmed toll restriction tables to each appropriate station and line. Therefore, when an outside call is dialed, the system examines the dialed number and makes a comparison between it and the toll restriction tables. Any tables that the programmer assigned to BOTH the station being used and the selected line determine the restrictions to be imposed; It should be noted that the system will automatically disconnect a line from a station if its user dials a restricted number on a restricted line from a restricted station.

Night Mode Toll Restriction

A programmer can assign toll restriction tables to any or all stations in the system that will only take effect when the system is in the night transfer (of ringing) mode. These toll tables replace any that he or she may have assigned to the station for normal, or day mode, operation. For example: a programmer can arrange for a station that has no other toll restriction table assignment to receive a toll restriction table which will restrict everything but local calls and will only take effect when the system is placed in the night transfer (of ringing) mode. Therefore, even though users can make toll calls from this station during daytime operation, they can make no toll calls from it when the attendant programs the system for nighttime operation using the night transfer of ringing feature.

NOTE: Do not confuse this night mode to// restriction **table** assignment with the night transfer (of ringing) feature.

Toll Restriction - continued

Toll Restriction Override

Software release 14A provides users of the digital telephone system with a toll restriction override (TRO) feature. The TRO feature allows users to override the toll restriction that they encounter at other stations with their own station's toll restriction assignments. In programming for this feature, you create a four-digit TRO code that users can dial to override the toll restrictions of any station that they happen to be using and replace it with a toll restriction that matches their home station. After entering a TRO code, a user gets his or her own prime line or idle line preference and its accompanying toll restriction assignment. They then have 15 seconds to dial an outgoing call. Once they

hang up from a call, they have 15 seconds to make another call without having to re-enter their TRO code. The system marks outgoing line calls that users make after entering a TRO code with a **(T)** in its **SMDR/SMDA** printouts. The station number that it prints is that of the overriding station and not the actual station that the call was made from. If a user transfers a TRO call or places it on hold and picks it up at another station, the call belongs to the new station.

You can assign the TRO code through station 10 or VDT programming and verify assigned codes using the station class of service data printouts.

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Tone Or Voice Signalling (Intercom)

Refer to the discussion titled Intercom.

Transferring Calls

Refer to the discussion titled Call Transfer.

Transfer/Conference Button

A fixed button is provided that gives quick, easy transferring and conferencing.

Unanswered Call Transfer Recall Timing

Refer to the discussion titled Call Transfer.

Voice Announce Blocking

Refer to the discussion titled Intercom.

Voice Mail Support

With software release revision 11 Å, the digital telephone system supports the use of voice processing equipment connected to the system's station ports through the ATI-D analog terminal interface. The ATI-D is a multipurpose **on-premise** accessory for the digital telephone system. It has dual circuits that allow the voice mail equipment to interface to two station ports. In addition to the required programming task of identifying the station ports as voice mail ports, there are several other programming considerations associated with voice mail operation that the programmer can make whenever their options are wanted. These options include the following features:

Automatic Attendant

With the automatic attendant feature, the voice mail system automatically answers any line that is ringing at a voice mail port. As a default, the system automatically enables ringing line preference for any port the programmer identifies as voice mail ports. The programmer must choose a ringing assignment for the lines assigned to the voice mail port before the voice mail system can provide the automatic attendant feature.

Automatic Transfer Of Voice Mail

The programmer can choose the immediate transfer mode for voice mail transfers. However, if he turns on the screen and/or **confirm** options provided by the

voice mail system, he must not choose the immediate transfer mode because it allows the system to transfer a call as soon as it answers it precluding any screen and confirm action that the voice mail equipment can provide.

Hunt Groups

When a station port that has been assigned to a hunt group is busy, a call to it will ring at the next idle station port in the group. A call will try to ring every port in a hunt group and if all are busy, the telephone system will return a busy tone to the caller. A programmer can assign all voice mail ports to a circular hunt group to take advantage of its multiple-port interface capability. With this arrangement, a call will first try to ring at the first port, then try the next one and so forth until it tries all four ports.

Voice Mail Line ID

The programmer can program the voice mail lines with identification (ID) numbers that allow the voice mail equipment to identify which line it is answering. The ID numbers that the programmer assigns' here must match the ID numbers that are selected as part of voice mail system programming.

Voice Mail Transfer On Busy

The programmer can arrange the telephone system to alert a busy telephone that the voice mail equipment is attempting to transfer a call to it. Without this programming, the voice mail equipment will automatically route the call to a voice mail box when it encounters a busy signal. With this option, when the voice mail equipment tries to transfer a call to a station that is busy on a call (outside or intercom call) and the station has an available intercom line (stations can be programmed to have a second intercom), the intercom will ring subdued. The user can answer the call by pressing the button of the ringing intercom line. In general, attendants will probably desire this feature so they can handle multiple calls, while other station users may prefer to have a message taken when they are already busy on a call.

Zone Paging (Via Station Speakers)

Refer to the discussion titled Paging.

IMI66-107 Installation

Chapter 3 Installation

Mounting Considerations

- The common equipment cabinet should be attached vertically to any sturdy, flat surface. It may be vertically rack-mounted if desired.
- Because of the current listing requirements of UL 1459, the length of the AC line cord on the equipment cabinet is a maximum length of 5 feet; therefore, the cabinet must be located within four feet of-a proper electrical outlet. The system requires a dedicated 117VAC 15 AMP circuit, with a third-wire ground, supplied to a standard electrical outlet (NEMA 5-I 5R).
- The distance between the common equipment and the TELCO/PBX jacks must be 25 feet or less as per FCC requirements. A nominal distance of 7 feet is recommended.
- The mounting location must be secure and dry and have adequate ventilation. The temperature range of the location must be within 32-122 degrees F (O-50 degrees C), and the relative humidity must be less than 90 percent non-condensing.
- If the mounting surface is damp or if it is concrete or masonry material, you must attach a backboard to the mounting surface to be used for common equipment mounting. Suitable mounting backboards are available commercially or can be constructed out of 1/2-inch plywood cut to size.

Special Mounting Consideration

When battery back-up is part of the installation, the external batteries and cable assembly (the Comdial BBU02 battery back-up assembly), the common equipment, and all wiring connections must be located in a dedicated equipment room (as defined in the National *Electric* Code published by The National Fire Protection Association, **Quincy** MA, 02269). However, the Comdial model BBL02 and BBL03 battery back-up assemblies consist of a closed metal cabinet, a pair of batteries, panel-mounted fuses, and a cable that connects the battery back-up unit to the common equipment. This cable is secured to the cabinet by a strain-relief. These models are safe for installation in general office environments and do not need to be installed in a "dedicated equipment room."

Tools And Hardware

 Fasteners - wood screws (1/4 x l-inch round head), toggle bolts, or -wall anchors

- Screwdriver to match fasteners
- Electric drill if prepared holes are required
- Connecting tool for fastening wires to a type-66 connector block.
- Crimping tool for 623-type modular plugs
- Volt/Ohm Meter

Installation Notice

Per The Underwriters Laboratories standard 1459, 2nd edition, be aware of the following precautions when installing telephone equipment that is to be directly connected to the telephone company network:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

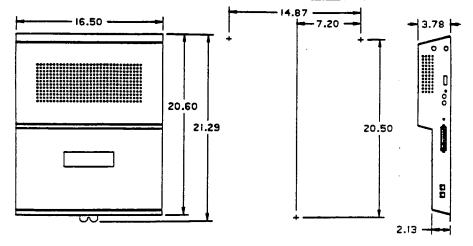
Simplified Hybrid Operation

In the past, the Federal Communications Commission (FCC) required that telephone system manufacturers provide a hardware strap that installers could move to distinguish between hybrid system and key system operation. Prior to the release of software revision 1 IA, the digital telephone system provided this strap at either the JI station connector or at a special terminal **strip** (depending upon the system model). The installer strapped two terminals together at either the 66M-xx station connector block or at the special terminal strip to select the hybrid mode. Recent rulings by the FCC have eliminated the need for the hardware strap. Beginning with software revision 1 1A, whenever a programmer assigns lines to line groups the digital telephone system automatically assumes the hybrid mode and the system no longer includes a hardware strap that the installer must move. hybrid system mode may incur a higher monthly tariff to the telephone company; therefore, the FCC requires that the installer report the equipment-type category designation number (KF for key system, MF for hybrid system) to the telephone company at the time of installation.

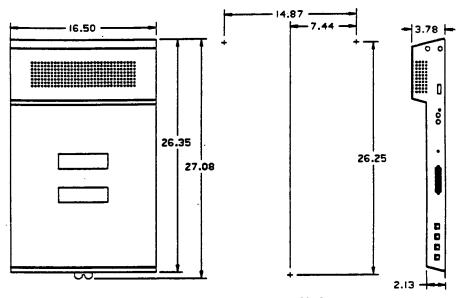
Mounting Procedure

- Unpack and carefully inspect all equipment for shipping damage. Notify the shipper immediately of any damages found. Verify that the packages contain all parts and accessories needed for proper installation and operation.
- 2. If a backboard is required at the mounting location, attach it securely to provide a stable mounting surface for the equipment.
- Refer to Figure 3-1 or to the PP032-000 mounting template included in the literature that accompanies the common equipment cabinet for the locating dimensions required for the three mounting screws, and mark their locations on the mounting surface.
- 4. Drill holes in the mounting surface of a proper size to accommodate the hardware being used. If necessary, prepare these holes with inserts, anchors or other attachment devices as dictated by the type of mounting surface.

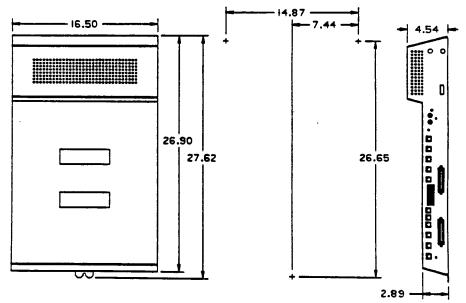
- Insert the two top screws into the mounting surface and tighten them to within approximately 1/8-inch of the surface.
- 6. Hang the cabinet on the top screws using the mounting holes located on the rear of the cabinet. Note that these holes are elongated with an enlargement at one end. This feature allows the cabinet to snap down on the screws to secure the mounting when the cabinet is hung on them.
- 7. insert a third screw through the mounting tab located on the lower edge of the cabinet and into the mounting surface, and tighten it into place.
- a. Place the individual telephone stations as desired and in keeping with accepted industry and off ice standards. A telephone station can be wall mounted if necessary as they are desk/wall reversible. Refer to Chapter 6, Maintenance, for instructions in preparing a desk/wall reversible station for wail mounting.



4-Line, 8-Station Base Unit



8-Line, 16-Station Base Unit



16-Line, 32-Station Base Unit Figure 3-1. Mounting Dimensions

AC Power Connection

Employ a dedicated **117VAC** 15 AMP circuit, with a third-wire ground, supplied to a standard electrical outlet (NEMA **5-15R**) for the AC power connection. AC power connection is illustrated in **Figure 3-2** shown below.

- For added equipment protection, connect a plug-in power line surge protector between the power cord and the AC outlet.
- Thoroughly check out the installation before connecting the power cord to an electrical outlet to apply AC power to the system.

Battery Back-Up

The common equipment provides an interface connector for the connection an optional external battery assembly. Several different assemblies are available separately as kiis (product codes BBU02, B B L 0 2, and BBL03).

CAUTION

Be sure that the AC power cord is connected to the electrical outlet before connecting an external battery assembly to the common equipment interface connector. This ensures that internal protection circuitry is operating to prevent damage that could result from improper connection.

The optional external battery assembly provides a minimum of one hour of operation should the AC power to the system be interrupted. The BBU02 and BBL02 assemblies have a 15 ampere-hour current rating and the **BBL03** assembly has a 25 ampere-hour current rating.

The BBU02 and BBL02 external battery assemblies may include batteries from either of the following suppliers:

- Model PS-12150 from Power-Sonic Corporation, Redwood City CA, 94032
- Model PE12V15 from GS PORTALAC,
 City Of Industry CA, 91748

The BBL03 external battery assembly may include batteries from the following supplier:

 Dynasty JC12-250 from Johnson Controls Inc., Milwaukee WS, 53212

As discussed previously in the page 3-1 paragraph titled *Special Mounting* Consideration, you must mount the BBU02 assembly, the common equipment cabinet, and all the wiring in a "dedicated equipment room". The BBL02 and BBL03 assemblies consist of a closed metal cabinet, a pair of batteries, panel-mounted fuses, and a cable that connects the battery back-up unit to the telephone system. This cable is secured to the cabinet by a strain-relief. This model is safe for

installation in general off ice environments and does not need to be installed in a "dedicated equipment room."

The minimum battery backup time for a fully configured system can be calculated. The formula for doing this is:

$$T = \frac{Ke}{1 + [(0.1) (N)]}$$

T = Back-up time in hours

K = Constant

0.9 for GO408 with or without a GM408 module 0.8 for GO81 6 with or without GM408 modules 0.8 for G1632 with or without GM408 modules

e = Ampere-hour capacity of battery (BBU02 = 15)

N = total number of stations

Example:

Assume that a Cl832 system plus two CM408 modules are installed along with a BBU02 battery assembly to provide back-up power.

$$T = \frac{(8.8) (1.5)}{1 + [(0.1) (48)]} = \frac{12}{5.8} = 2.1 \text{ Hours}$$

• During AC operation, the common equipment provides recharging current to maintain the voltage potential of the external battery assembly at an operational level. The charging circuit may not provide an adequate charge if an installed battery assembly has a current rating of greater than 40 ampere-hours.

NOTE: An optional external battery assembly requires approximately 10 hours to completely re-charge to full potential after it has been completely discharged and, in some cases, when initially installed.

System Grounding

The common equipment cabinet has internal secondary surge protection on all line ports. In order for this protection to be effective, the cabinet **MUST** be connected to a reliable earth ground such as a metal cold water pipe or a building frame ground. The grounding wire must be of **#10** or **#12** insulated, solid copper and separate from the three-wire AC line cord. A ground stud is located on the common equipment cabinet for this purpose. System grounding is, illustrated in **Figure 3-2**,

If spare conductors exist in the cables that are run between the station and the **66M-xx** connector blocks, it is good practice to connect them to earth ground. Doing this may help prevent them from inducing radio frequency and/or AC interference into the system. It is also good practice to disconnect any unused station jacks from the connector block and ground that wiring to earth ground as well.

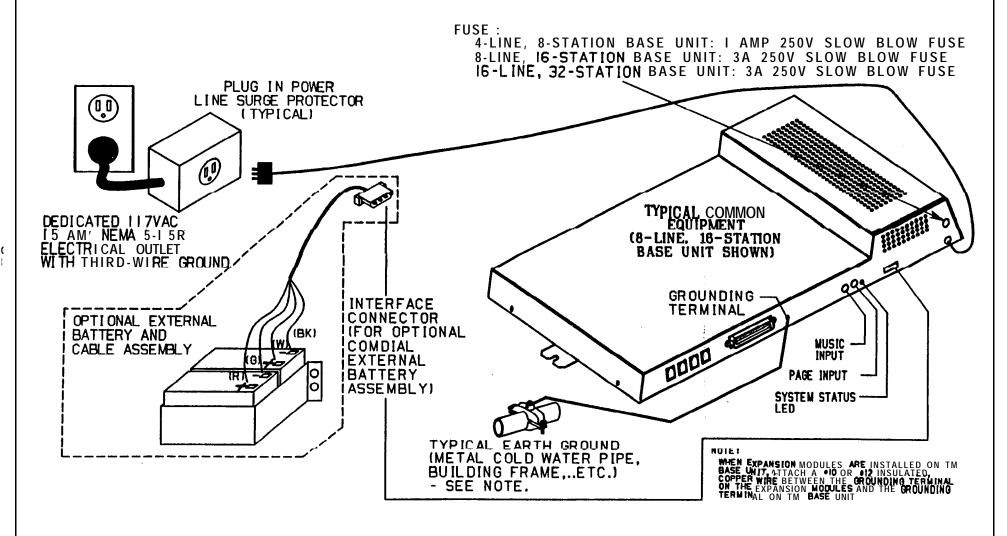


Figure 3-2. AC Power Connection And System Grounding

Line Connections

The line terminations for the common equipment cabinet are standard modular plug/jack connections. Each modular jack provides termination for two lines. Modular line jacks 1 and 2 also provide termination for an auxiliary pair in addition to the two outside lines. The outside line termination can be a type 66M-xx connector block or individual 6-position modular jacks. The line cord that is routed between the outside line termination and the common equipment termination should be twisted-pair wiring. Table 3-1 shows the line connection details for all three of the common equipment base units. Figure 3-4 illustrates typical line connections. The G0406, GO61 6 and G1632 common equipment supports the installation of up to 4, 6, or 16 lines respectively. Add-on expansion modules are available to expand the line capacity the systems.

After you have initially connected a line to a particular line port and programmed its attributes (or left it with the system defaulted values), you can reassign the line and its attributes to a different port by programming action if you wish. This feature allows you to make adds, moves, and changes without relocating the line wiring. Refer to Chapter 4 for the line to line port reassignment programming details.

Line Grounding

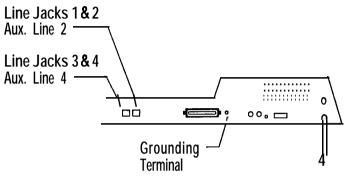
Transient voltage spikes, if induced onto CO or CENTREX lines, can travel through the cable and into the common equipment. The telephone company offers basic protection against this condition but it is usually designed to protect the central office circuits. While it will also provide some protection to the common equipment, it should not be relied upon for total protection. To help ensure that external overvoltage surges do not damage the system, the manufacturer recommends that gas discharge tubes, or similar primary protection devices, be installed and properly grounded on all lines (a selection of solid-state protection devices for this purpose is available from ITW Linx, Elk Grove Village, Illinois 60007).

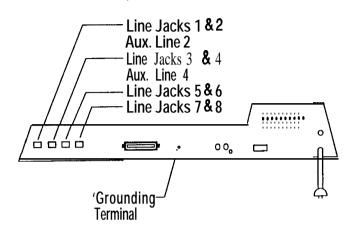
Table 3-1. Line Connections

| OMMON EQUIPMENT | LINE JACK | PIN NO. | CONNECTION | TEI EDUONE | NIIMBER |
|----------------------------|-----------|---------|-------------------------------------|--------------|---------|
| JOHNSON EQUIPMENT | INE JACK | 1 | | TELEPHONE | NUMBEK |
| | <u> </u> | | Auxiliary 1 (Line 2) TIP Line 2 TIP | | |
| | | 2 | Line 2 TIP | | |
| | | 3 | Line 1 TIP | | |
| 4 Line, 8 Sta. Base Unit | | | Line 2 RING | | |
| 8 Line, 18 Sta. Base Unit | | 5 | | | |
| 18 Line, 32 Sta. Base Unit | | 6 | Auxiliary 1 (Line 2) RING | | |
| | 2 | 1 | Auxiliary 2 (Line 4) TIP Line 4 TIP | | |
| | | 2 | | | |
| | | 3 | Line 3 TIP Line 3 RING | | |
| | | 4 | Line 4 RING | | |
| | | 5 | | - | |
| | | 6 | Auxiliary 2 (Line 4) RING | | |
| | 3 | 1 | No Connection | | |
| | | 2 | Line 6 TIP | | |
| | | 3 | Line 5 TiP | | |
| 3 Line, 18 Sta. Base Unit | - | 4 | Line 5 RING | | |
| 16 Line, 32 Sta. Base Unit | | 5 | Line 6 RING | | |
| | | 6 | No Connection | | |
| | 4 | 1 | No Connection | | |
| | | 2 | Line 8 TiP | ļ | |
| | , | 3 | Line 7 TIP | <u> </u> | |
| | | 4 | Line 7 RING | | |
| | | 5 | Line 8 RING | | |
| | | 6 | No Connection | | |
| | 5 | 1 | No Connection | | |
| | | 2 | Line 10 TIP | <u></u> _ | |
| | | 3 | Line 9 TiP | | |
| | | 4 | Line 9 RING | | |
| | | 5 | Line 10 RING | | |
| 6 Line, 32 Sta. Base Unit | | 6 | No Connection | | |
| | 6 | 1 | No Connection | | |
| | | 2 | Line 12 TIP | | |
| | | 3 | Line 11 TIP | ļ | |
| | | 4 | Line 11 RING | | |
| | | 5 | Line 12 RING | | |
| | 7 | 6 | No Connection | | |
| | 7 | 1 | No Connection | | |
| | | 2 | Line 14 TIP | <u> </u> | |
| | | 3 | Line 13 TIP | | |
| | | 4 | Line 13 RING | | |
| | | 5 | Line 14 RING | | |
| | 6 | 6 | No Connection | | |
| | 6 | 1 | No Connection | | |
| | | 2 | Line 16 TIP | | |
| | | 3 | Lint! 15 TIP | | |
| | | 4 | Line 15 RING | | |
| | | 5 | Line 16 RING | | |
| | | 6 | No Connection | | |

8-Line, 16-Station Base Unit

4-Line, 8-Station Base Unit





16-Line, 32-Station Base Unit

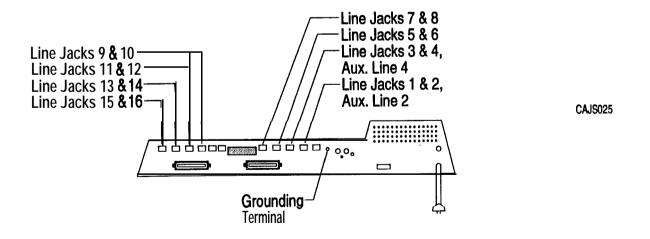


Figure 3-3a. Common Equipment Line Connections

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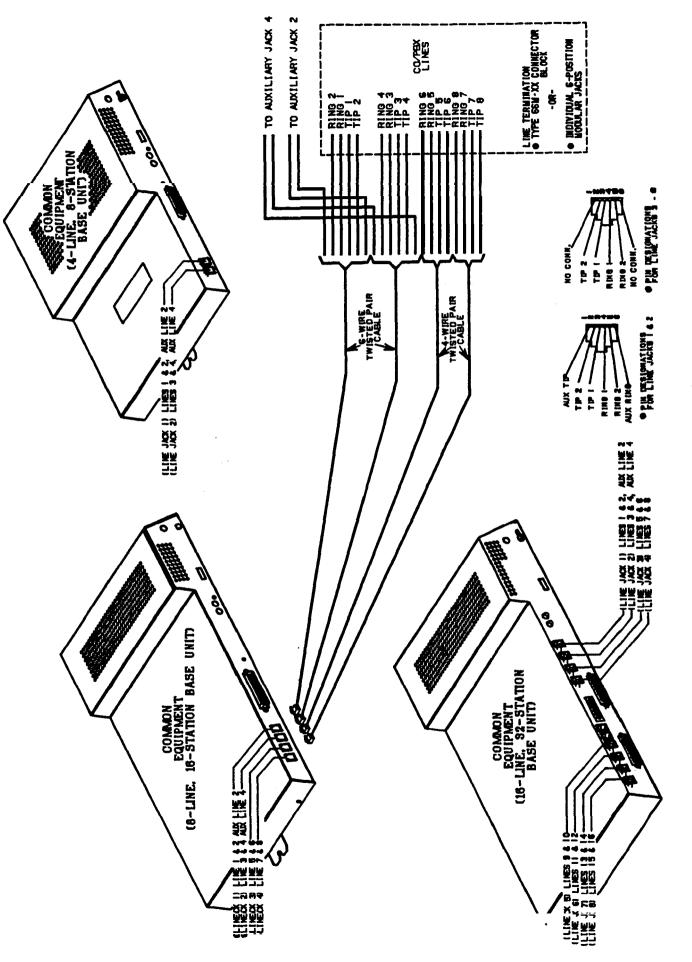


Figure 3-3b. Typical Line Connections

Station Connections

The digital telephone system supports the operation of the following proprietary digital station types:

- Multiline Telephones
- LCD Speakerphones
- DSS/BLF Consoles
- Single-Line and Multiline Proprietary Telephones

Software Revision Considerations

A digital telephone system when equipped with Snnnn software cartridges at any software revision level provides support for the following DigiTech telephones: product code 7714X, 7714S and 7700S with a revision letter of A through H. At software release 8, support was added for the DigiTech DD32X DSS/BLF console.

Wiih the Snnnn software cartridge at software release 10, the digital telephone systemalso supports the newer DigiTech telephones with a product code 7714X, 7714S and 7700S at a revision letter of I and later. You need to consider the following items when installing the revision I and later telephones.

- ✓ While the system when equipped with an Snnnn cartridge at software release 10 and later supports the use of all DigiTech telephones regardless of their revision letters, a system with an Snnnn cartridge at software release of 9 or earlier will not support the revision I and later telephones. In other words, whenever a system includes revision I or later DigiTech telephones, be sure that the system software release is at 10 or later.
- ✓ Always program station ports to provide ringing line preference to revision I and later telephones that are connected there. This action is necessary before the orange LED feature can become active.

With the Snnnn cartridge at'software release 11 A, the digital telephone system provides support for the proprietary single-line digital telephone (product code 7701 X).

With software release 12B in Innnn software cartridges, the digital telephone system provides support for all DigiTech telephones and DSS/BLF console plus support for Comdial *Impact* telephones and DSS/BLF console with product codes of 8024, 8012, 8112, 8101, and IB64X beginning with a revision letter of A.

With software release **13B** on Innnn cartridges, the system adds support for the *Impact* 8112N multiline proprietary telephone and the Americom telephones and consoles with product codes of 711 OX, 701 OS,

7016S, **XD64X**, and **XDA16** to the support already provided for all DigiTech and *Impact* telephones.

Station Installation

The G0408, GO81 6 and G1632 common equipment supports the installation of up to 8, 16, or 32 telephones respectively. Add-on expansion modules are available to expand the station capacity of the systems.

Connections between the common equipment and the stations are typically via type **66M-xx** connector blocks which are cable connected to the common equipment **50-pin** male connector. The connector block is, in turn, wired to modular jacks that accept the modular line cord connected between it and the telephones.

The maximum distance allowed from the common equipment to the stations is per the following list:

- Multiline Telephones 1000 feet using #24 gauge, twisted-pair cable or 2000 feet using #22 gauge cable
- Single-Line Telephones 1500 feet using #24 gauge, twisted-pair cable

When installing the system telephones keep in mind that each station port supports only one proprietary telephone and the system does not allow you to bridge two stations to a single modular jack.

Grounding Considerations

Remember, if spare conductors exist in the cables that run between the stations and the **66M-xx** connector blocks, it is good practice to connect them to earth ground. Doing this may help prevent them from introducing radio frequency and/or AC interference into the system. Also remember that it is good practice to disconnect any unused station jacks from the connector block and ground that wiring to earth ground as well.

Station Relocation

The digital proprietary telephones identify their telephone type to the system when you install them. The system assigns an extension number and all other programmable attributes to station ports as a default that you can reprogram them as needed. Plus, you can use programming action to reassign attributes of one station port to a different station port if you wish. This station relocation feature allows you to do adds, moves and changes without relocating the station wiring. Refer to the automatic station relocation programming procedure and the station-to-station programming procedure found in Chapter 4.

NOTE: The station 10 to station port 10 assignment can not be **relocated**.

IMI66-107 Installation

Cable Clips

Each cabinet-mounted **50-pin** male connector is equipped with a retaining clip. This clip is designed to secure the mated connection once it is made. The clip does this by snapping into a slot on the cable-mounted connector when it is pressed together with the cabinet-mounted connector. This retaining clip must be pulled back slightly to unsnap it before the connectors can be separated.

Auxiliary Jack (Impact and DigiTech LCD speakerphones with product code of 8024S and 7700S rev I and later)

The auxiliary jack (available on *Impact* **8024S** and DigiTech **7700S** Rev. I and later LCD speakerphones) will support the use of the following devices: a headset, a tape recorder, an external ringer, or an external paging device.

The auxiliary jack is a **4-position 616-type** handset jack that provides the following connections:

- positions 2 and 3 = output from system to external device
- positions 1 and 4 = input to system from headset's microphone

At any given time, the auxiliary jack will serve whichever external device that is listed in its display but it will serve only one of those devices at a time. The user must program a separate enable/disable button for each external device that he or she plans to connect to the auxiliary jack. When a user presses a

particular enable button that he or she has programmed, that device is the one that is active and named in the display.

If an external device requires power for its operation, you must install an external source to supply it. The system does not supply any power through the telephone's auxiliary jack. The auxiliary jack is an audio output source for the external ringer, external paging device, and tape recorder. The jack will accept an audio input signal from the headset microphone during headset operation but it is not designed to receive signals from any other external device or from a telephone line.

CAUTION

With the exception of a headset microphone, do not connect the audio output of any external device to the auxiliary jack. Also, do not connect the tip and ring leads of a telephone line to the auxiliary jack. Do not connect any devices to the auxiliary jack other than those mentioned in the telephone user's guide. You should caution the telephone users about this fact as well.

If a user needs to connect a tape recorder to his or her telephone's auxiliary jack, you must obtain a special recorder cable made for this purpose from your normal distribution outlets:

Ordering Code

CI001 CD001 Applicable Telephone
Impact 8024S LCD speakerphone
DigiTech 7700S rev I and later
LCDspeakerphone

(O-LINE, 32-STATION BASE UNIT 4-LINE, 8-STATION BASE UNIT STATIONS 1 0-25 -RS-232 DATA PORT A - STATION10-17, COMMONAUDIBLE, RS-232 DATA PORTE DATAPORT, STATION 17 AUDIBLE, **POWER FAIL STATION** POWERFAILSTATION. MUSICINTERFACE - PAGING PORT SYSTEM STATUS LED BATTERY BATTERY 00 BACK-UP **BACK-UP** CONNECTOR CONNECTOR STATIONS -GROUNDING 26 - 41 SYSTEM STATUS LED GROUNDING **TERMINAL** raging ront TERMINAL STATION 17 MUSIC INTERFACE **AUDIBLE** COMMON

AUDIBLE

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8-LINE, 16-STATION BASE UNIT

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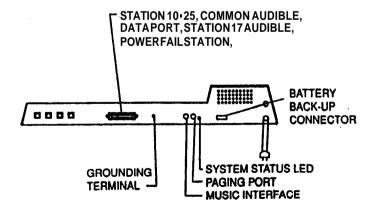
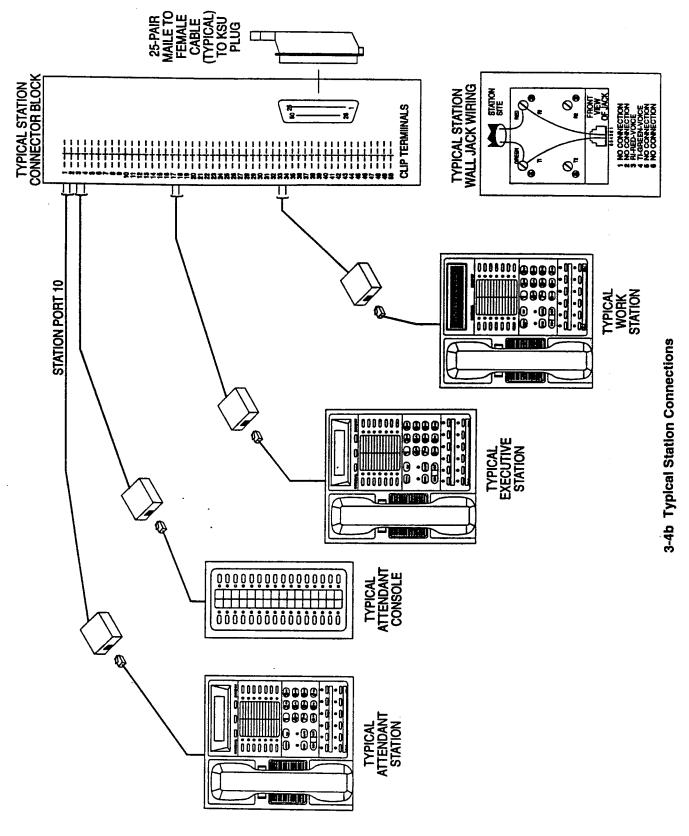


Figure 3-4a. Common Equipment Station Connections



Station Connections - Continued on next page . . .

Table 3-2. J-1 Station Connections (4-Line, 8-Station Base Unit)

| 25-PAIR CABLE CON | INECTI | ONS | 2-W | RE CONN | | STA. CO | NNECTIONS |
|------------------------------|--------------|--------------|---------------|----------|---------------|---------|-----------|
| WIRE COLOR | PAIR | PIN . NO. | CLIP TERM. | PAIR | WIRE COLOR | STA | LOCATION |
| WHITE-BLUE | 1 | 26 | 1 | SIGNAL | GREEN | 10 | • |
| BLUE-WHITE | ľ | 1 | 2 | PATH | RED | | |
| WHITE-ORANGE | 2 | 27 | 3 | SIGNAL | GREEN | 11 | |
| ORANGE-WHITE | _ | 2 | 4 | PATH | RED | | |
| WHITE-GREEN | 3 | 28 | 5 | SIGNAL | GREEN | 12 | • |
| GREEN-WHITE | | 3 | 6 | PATH | RED | | |
| WHITE-BROWN | 4 | 29 | 7 | SIGNAL | GREEN | 13 | - |
| BROWN-WHITE | • | 4 | 8 | PATH | RED | | |
| WHITE-SLATE | 5 | 30 | 9 | SIGNAL | GREEN | 14 | |
| SLATE-WHITE | | 5 | 10 | PATH | RED | | |
| RED-BLUE | 6 | 31 | 11 | SIGNAL | GREEN | 15 | |
| BLUE-RED | • | 6 | 12 | PATH | RED | | |
| RED-ORANGE | 7 | 32 | 13 | SIGNAL | GREEN | 16 | |
| ORANGE-RED | • | 7 | 14 | PATH | RED | | |
| RED-GREEN | 8 | 33 | 15 | SIGNAL | GREEN | 17 | |
| GREEN-RED | " | 8 | 16 | PATH | RED | | |
| RED-BROWN | 9 | 34 | 17 | | | | |
| | 9 | 9 | 18 | | | | |
| BROWN-RED | 40 | 35 | 19 | | | | |
| RED-SLATE | 10 | 10 | 20 | | | | |
| SLATE-RED | 44 | | | | | | |
| BLACK-BLUE | 11 | 36 11 | 21 | | | | |
| BLUE-BLACK | 42 | 37 | 23 | ł | | | |
| BLACK-ORANGE | 12 | 12 | 24 | ł | 0.5 | | |
| ORANGE-BLACK | 40 | | | ì | | ARE | |
| BLACK-GREEN | 13 | 38 | 25 | | PC | ORTS | |
| GREEN-BLACK | | 13 | | ł | | | |
| BLACK-BROWN | 14 | 39 | 27 | | | | |
| BROWN-BLACK | 45 | 14 | | | | | |
| BLACK-SLATE | 15 | 40 | 29 | 4 | | | |
| SLATE-BLACK | | 15 | 30 | | | | |
| YELLOW-BLUE | 16 | 41 | 31 | | | | |
| BLUE-YELLOW | 4-7 | 16 | 32 | - | | | |
| YELLOW-ORANGE | 17 | 42· | 33 | 1 | | | |
| ORANGE-YELLOW | 18 | 43 | 35 | | | NOT | |
| YELLOW-GREEN | 10 | 18 | 36 | | 1 | ASSIGNE | -D |
| GREEN-YELLOW YELLOW-BROWN | 19 | 44 | 37 | | | RS 232 | TD |
| BROWN-YELLOW | j '3 | 19 | 38 | 1 | | DATA | RD |
| YELLOW-SLATE | 20 | 45 | 39 | 1 | | PORT A | |
| SLATE-YELLOW | 1 - | 20 | 40 | 1 | | | SG |
| VIOLET-BLUE | 21 | 46 | 41 | | 1 | RS 232 | TD |
| BLUE-VIOLET | 1 - | 21 | 42 |] | | DATA | RD |
| VIOLET-ORANGE | 22 | 47 | 43 | | | PORT B | |
| ORANGE-VIOLET | _ _ _ | 22 | 44 | | | | SG |
| VIOLET-GREEN | 23 | 48 | 45 | | | СОММО | |
| GREEN-VIOLET | <u> </u> | 23 | 46 | | | AUDIBL | |
| VIOLET-BROWN | 24 | 49 | 47 | | | STATION | |
| BROWN-VIOLET | | 24 | 48 | <u> </u> | | AUDIBLI | |
| VIOLET-SLATE | 25 | 50 | 49 | | | POWER | |
| SLATE-VIOLET | | 25 | 50 | I | 1 | STATIO | |

Station Connections • Continued on next page . . .

Table 3-3. **J1** Station Connections (&Line, **16-Station** Base Unit)

| 25-PAIR CABLE CON | | | + | RE CONN | | | ONNECTIONS |
|-------------------------------|--------|-----------------|--------------|--------------|--|----------|------------|
| WIRE COLOR | PAIR | PIN . NO. | CLIP TERM | PAIR | WIRE COLOR | STA | LOCATION |
| WHITE-BLUE | 1 | 26 | 1 | SIGNAL | GREEN | 10 | |
| BLUE-WHITE | | 1 | 2 | PATH | RED | } | |
| WHITE-ORANGE | 2 | 27 | 3 | SIGNAL | GREEN | 11 | |
| DRANGE-WHITE | Ī | 2 | 4 | PATH | RED | | |
| WHITE-GREEN | 3 | 28 | 5 | SIGNAL. | GREEN | 12 | |
| GREEN-WHITE | ſ | 3 | 6 | PATH | RED | | <u> </u> |
| WHITE-BROWN | 4 | 29 | 7 | SIGNAL | GREEN | 13 | |
| BROWN-WHITE | ſ | 4 | 8 | PATH | RED | | |
| WHITE-SLATE | 5 | 30 | 9 | SIGNAL | GREEN | 14 | |
| SLATE-WHITE | Ī | 5 | 10 | PATH | RED | <u> </u> | |
| RED-BLUE | 6 | 31 | 11 | SIGNAL | GREEN | 15 | |
| BLUE-RED | Ì | 6 | 12 | PATH | RED | | |
| RED-ORANGE | 7 | 32 | 13 | SIGNAL | GREEN | 16 | |
| ORANGE-RED | | 7 | 14 | PATH | RED | | |
| RED-GREEN | 8 | 33 | 15 | SIGNAL | GREEN | 17 | |
| GREEN-RED | - | 8 | 16 | PATH | RED | | <u> </u> |
| RED-BROWN | 9 | 34 | 17 | SIGNAL | GREEN | 18 | |
| BROWN-RED | - | 9 | 18 | PATH | RED |] | |
| RED-SLATE | 10 | 35 | 19 | SIGNAL | GREEN | 19 | |
| SLATE-RED | | 10 | 20 | PATH | RED | 1 | |
| BLACK-BLUE | 11 | 36 | 21 | SIGNAL | GREEN | 20 | |
| BLUE-BLACK | | 11 | 22 | PATH | RED | j | ļ |
| BLACK-ORANGE | 12 | 37 | 23 | SIGNAL | GREEN | 21 | |
| ORANGE-BLACK | | 12 | 24 | PATH | RED | 1 | |
| BLACK-GREEN | 13 | 38 | 25 | SIGNAL | GREEN | 22 | İ |
| GREEN-BLACK | '' | 13 | 26 | PATH | RED | | |
| BLACK-BROWN | 14 | 39 | 27 | SIGNAL | GREEN | 23 | |
| BROWN-BLACK | ' | 14 | 28 | PATH | RED | 1 | |
| BLACK-SLATE | 15 | 40 | 29 | SIGNAL | GREEN | 24 | |
| SLATE-BLACK | | 15 | 30 | PATH | RED | | |
| YELLOW-BLUE | 16 | 41 | 31 | SIGNAL | GREEN | 25 | 1 |
| BLUE-YELLOW | | 16 | 32 | PATH | RED | | |
| YELLOW-ORANGE | 17 | 42 | 33 | | | NOT | |
| DRANGE-YELLOW | | 17 | 34 | | | ASSIGN | ED |
| YELLOW-GREEN | 18 | 43 | 35 | | | NOT | |
| GREEN-YELLOW | | 18 | 36 | | | ASSIGN | |
| YELLOW-BROWN | 19 | 44 | 37 | | | RS 232 | TD |
| BROWN-YELLOW | | _19 | 38 | | | DATA | RD |
| YELLOW-SLATE | 20 | 45_ | 39 | | | PORT A | |
| SLATE-YELLOW | | 20 | 40 | | | D | SG |
| VIOLET-BLUE | 21 | 46 | 41 | | | RS 232 | TD |
| BLUE-VIOLET | 00 | 21_ | 42 | | | DATA | RD |
| VIOLET-ORANGE | 22 | <u>47</u> 22 | 43 | | | PORT B | |
| ORANGE-VIOLET VIOLET-GREEN | 23 | | 44 45 | | | 0011110 | SG |
| GREEN-VIOLET | 23 | _48 _23 | | | | COMMO | |
| VIOLET-BROWN | 24 | 49 | 46 47 | | | AUDIBLE | |
| BROWN-VIOLET | ~ | 24 | 48 | | | STATION | |
| VIOLET-SLATE | 25 | 50 | 49 | | | AUDIBLE | |
| SLATE-VIOLET | ا دع ا | 30 | 50 | | I | POWER | PAIL |

Station Connections - Continued on next page . . .

Table 3-4a. J1 Station Connections (16-Line, 32-Station Base Unit)

| 25-PAIR CABLE CON | 2-W | IRE CONN | ECTIONS | STA. CONNECTIONS | | | |
|-------------------|-----------------|--------------|---------------|------------------|-------|-------------|----------|
| WIRE COLOR | PAIR | PIN . NO. | CLIP TERM. | PAIR | WIRE | STA | LOCATION |
| WHITE-BLUE | 1 | 26 | 1 | SIGNAL | GREEN | 10 | |
| BLUE-WHITE | Ì | 1 | 2 | PATH | RED | | |
| WHITE-ORANGE | 2 | 27 | 3 | SIGNAL | GREEN | 11 | |
| ORANGE-WHITE | | 2 | 4 | PATH | RED | | |
| WHITE-GREEN | 3 | 28 | 5 | SIGNAL | GREEN | 12 | |
| GREEN-WHITE | 1 | 3 | 6 | PATH | RED | | |
| WHITE-BROWN | 4 | 29 | 7 | SIGNAL | GREEN | 13 | |
| BROWN-WHITE | | 4 | 8 | PATH | RED | | |
| WHITE-SLATE | 5 | 30 | 9 | SIGNAL | GREEN | 14 | |
| SLATE-WHITE | | 5 | 10 | PATH | RED | | |
| RED-BLUE | 6 | 31 | 11 | SIGNAL | GREEN | 15 | |
| BLUE-RED | İ | 6 | 12 | PATH | RED | | |
| RED-ORANGE | 7 | 32 | 13 | SIGNAL | GREEN | 16 | |
| ORANGE-RED | | 7 | 14 | PATH | RED | | |
| RED-GREEN | 8 | 33 | 15 | SIGNAL | GREEN | 17 | |
| GREEN-RED | 1 | 8 | 16 | PATH | RED | | |
| RED-BROWN | 9 | 34 | 17 | SIGNAL | GREEN | 18 | |
| BROWN-RED | İ | 9 | 18 | PATH | RED | | |
| RED-SLATE | 10 | 35 | 19 | SIGNAL | GREEN | 19 | |
| SLATE-RED | | 10 | 20 | PATH | RED | | |
| BLACK-BLUE | 11 | 36 | 21 | SIGNAL | GREEN | 20 | |
| BLUE-BLACK | | 11 | 22 | PATH | RED | | |
| BLACK-ORANGE | 12 | 37 | 23 | SIGNAL | GREEN | 21 | |
| ORANGE-BLACK | | 12 | 24 | PATH | RED | İ | |
| BLACK-GREEN | 13 | 38 | 25 | SIGNAL. | GREEN | 22 | |
| GREEN-BLACK | Ì | 13 | 26 | PATH | RED | | |
| BLACK-BROWN | 14 | 39 | 27 | SIGNAL | GREEN | 23 | |
| BROWN-BLACK | | 14 | 28 | PATH | RED | | |
| BLACK-SLATE . | 15 | 40 | 29 | SIGNAL | GREEN | 24 | |
| SLATE-BLACK | | 15 | 30 | PATH | RED | | |
| YELLOW-BLUE | 16 | 41 | 31 | SIGNAL | GREEN | 25 | |
| BLUE-YELLOW | | 16 | 32 | PATH | RED | <u> </u> | |
| YELLOW-ORANGE | 17 | 42 | 33 | | | · | |
| ORANGE-YELLOW | | 17 | 34 | | | | |
| YELLOW-GREEN | 18 | 43 | 35 | | | | |
| GREEN-YELLOW | | 18 | 36 | | | | |
| YELLOW-BROWN | 19 | 44 | 37 | | | | |
| BROWN-YELLOW | 20 | 19 | 38 | | | | |
| SLATE-YELLOW | | 20 | 40 | | | | |
| VIOLET-BLUE | 21 | 46 | 41 | | SP | ARE | |
| BLUE-VIOLET | | 21 | 42 | | _ | RTS | |
| VIOLET-ORANGE | 22 | 47 | 43 | | . • | | |
| ORANGE-VIOLET | 1 1 | 22 | 44 | | | | |
| VIOLET-GREEN | 23 | 48 | 45 | | | | |
| GREEN-VIOLET | | 23 | 46 | | | | |
| VIOLET-BROWN | 24 | 49 | 47 | | | | |
| BROWN-VIOLET | -7 | 24 | 48 | | | | |
| VIOLET-SLATE | 25 | 50 | 49 | | | | |
| | | | | | | | |

Station Connections - Continued on next page . . .

Table 3-4b. J2 Station Connections (16-Line, 32-Station Base Unit)

| 1 | 25-PAIR CABLE CONNECTIONS | | | | DNNECTI | NS STATION CONNECTIONS | | |
|--------------------------------|---------------------------|-----------------|-----------|-------------|---------|------------------------|----------|--|
| 1 | | PIN | CLIP | IRE CO | WIRE | | | |
| | PAIR | NO. | TERM. | PAIR | COLOR | STA. | LOCATION | |
| WHITE-BLUE | 1 | 26 | 1 | SIGNAL | GREEN | 26 | | |
| BLUE-WHITE | | 1 | 2 | PATH | RED | | | |
| WHITE-ORANGE | 2 | 27 | 3 | SIGNAL | GREEN | 27 | | |
| ORANGE-WHITE | | 2 | 4 | PATH | RED | | | |
| WHITE-GREEN | 3 | 28 | 5 | SIGNAL | GREEN | 28 | | |
| GREEN-WHITE | | 3 | 6 | PATH | RED | | | |
| WHITE-BROWN | 4 | 29 | 7 | SIGNAL | GREEN | 29 | | |
| BROWN-WHITE | | . 4 | 8 | PATH | RED | | | |
| WHITE-SLATE | 5 | 30 | 9 | LSIGNAL | GRFFN | 30 | | |
| SLATE-WHITE | | 5 | 10 | PATH | RED | | | |
| RED-BLUE | 6 | 31 | 11 | SIGNAL | GREEN | _ 31 | | |
| BLUE-RED | | 6 | 12 | PATH | RED | | | |
| RED-ORANGE | 7 | 32 | 13 | SIGNAL | GREEN | 32 | | |
| ORANGE-RED | | 7 | 14 | <u>PATH</u> | RED | | | |
| REI-GREEN | _ 8 | 33 | 15 | SIGNAL | GREEN | 33 | | |
| GREEN-RED | | 8 | 16 | PATH | RED | | | |
| RED-BROWN | 9 | 34 | 17 | SIGNAL | GREEN | 34 | | |
| BROWN-RED | | 9 | 18 | PATH | RED | | | |
| RED-SLATE | 10 | 35 | 19 | SIGNAL | GREEN | 35 | | |
| SLATE-RED | | 10 | 20 | PATH | RED | } | | |
| BLACK-BLUE | 11 | 36 | 21 | SIGNAL | GREEN | ሷ 36 | | |
| BLUE-BLACK | | 11 | 22 | PATH | RED | | | |
| BLACK-ORANGE | 12 | 37 | 23 | SIGNAL | GREEN | 37 | | |
| ORANGE-BLACK | | 12 | 24 | PATH | RED | | | |
| BLACK-GREEN | 13 | 38 | 25 | SIGNAL | GREEN | 38 | | |
| GREEN-BLACK | | 13 | 26 | PATH | RED | | | |
| BLACK-BROWN | 14 | 39 | 27 | SIGNAL | GREEN | 39 | | |
| BROWN-BLACK | 4- | 14 | 28 | PATH | RED | 100 | | |
| BLACK-SLATE | 15 | 40 | 29 | SIGNAL | GREEN | 40 | | |
| SLATE-BLACK | 4.0 | 15 | 30 | PATH | RED | | | |
| YELLOW-BLUE | 16 | 41 | 31 | SIGNAL | GREEN | 41 | | |
| BLUE-YELLOW | | 16 | 32 | PATH | RED | | <u> </u> | |
| YELLOW-ORANGE | 17 | 42 | 33 | <u> </u> | | | | |
| ORANGE-YELLOW YELLOW-GREIEN | 18 | 17 43 | 34 35 | - | | | | |
| GREEN-YELLOW | 10 | 18 | 36 | 1 | | | | |
| YELLOW-BROWN | 19 | 44 | 37 | 1 | | | | |
| BROWN-YELLOW | 17 | 19 | 38 | 1 | | | | |
| YELLOW-SLATE | 20 | 45 | 39 | | | | | |
| SLATE I-YELLOW | 20 | 20 | 40 | | | | | |
| VIOLET-BLUE | 21 | | <u>40</u> | 1 | | | | |
| BLUE-VIOLET | 21 | 46 21 | 42 | 1 | | SPARE PO | ORTS | |
| VIOLET-ORANGE | 22 | 47 | 43 | 1 | | | | |
| ORANGE-VIOLET | | 22 | 44 | 1 | | | | |
| VIOLET-GREEN | 23 | 48 | 45 |] | | | | |
| GREEN-VIOLET | | 23 | 46 | 1 | | | | |
| VIOLET-BROWN | 24 | 49 | 47 | } | | | | |
| BROWN-VIOLIET | = | 24 | 48 | 1 | | | | |
| VIOLET-SLATE | 25 | 50 | 49 |] | | | | |
| SLATE-VIOLET | | 25 | I 50 | 7 | | | | |

Station Wall Mounting

The DigiTech (product code 77nnn) and Impact (product code 8nnnn) telephones are shipped from the factory configured for desk use. To convert them for wall mounting, follow the procedures outlined below. Americom telephones (product codes 70nnn and 71 nnn) are standard desk telephones. They require an optional bracket for wall mounting purposes. Order either the TPW1 OX-BK bracket (for 1 O-line telephones) or the TPW1 6X-BK bracket (for 16-line telephones) through your normal distribution channels.

To convert the model **77nn** telephones for wall mounting,

- 1. Disconnect line cord and handset cord from telephone.
- 2. Turn telephone overer to expose lower housing.

The telephone circuitry is sensitive to static electricity discharge. Be sure that your body and the workplace are properly grounded to avoid any static electricity discharge while step 3 is being performed.

- Remove screws that attach lower housing to upper housing. Carefully separate lower and upper housings making sure not to disconnect wiring between them.
- **4.** Carefully reverse lower housing end-for-end (rotate it 180 degrees). Do not disturb any internal wiring during this process.
- Refasten lower housing to upper housing.
 Make sure that all wires are clear.Do not over-tighten screws while refastening the housings.
- Route line cord through appropriate channel on lower housing, and reconnect it to telephone. Substitute a short line cord for standard supplied one if desired.
- 7. Reconnect the handset cord.

To convert the Model 80nn And 81nn telephones for wall mounting

- Turn telephone over and disconnect line cord and handset cord from telephone. Do not damage line cord on plastic dressing tabs.
- 2. Remove screws from pedestal and unlatch it from telephone housing, rotate it end-for-end (180 degrees), **relatch** its tabs in the slots in the lower housing of the telephone, and replace screws.
- Route line cord as appropriate, and reconnect it to telephone. Substitute a short line cord for standard supplied one if desired.
- 4. This telephone provides a reversible handset retaining hook. When wall mounting, pull up this hook and rotate it -180 degrees from its desk-use orientation (see Figure 3-5b).
- **5.** Reconnect the handset cord.

There are wall mounting enhancement kits available through your **normall** distribution channels. These kits include a handset cradle cup that you can screw-mount to the telephone's upper housing. The product codes for these enhancement kits are: **HCCI** for the *Impact* telephones (product codes 80nnn and 81nnn), HCCX for the **DigiTech** telephones (product codes 77nnn) and HCCA for Americom telephones (product code 70nnn and 71 nnn).

To wall mount the telephones,

After configuring a telephone for wall mounting either mount it directly on the wall using two **#10 panhead** screws (obtained locally), or mount it on a wall jack cover plate. If using a wall jack cover plate, use an AT&T type 6308 wall plate for best results.

- If #10 screws are used, thread them into the wall within 1/8-inch of the surface. Refer to Figure 3-5c for the spacing dimensions.
- Position the keyhole-shaped holes in the bottom of the telephone over the #1 0 screws or the cover plate studs. Slide the telephone down until a slight click is felt.
- 3. To remove the telephone, lift to unsnap both screws or studs from the bottom housing, and then lift it away from the wall.

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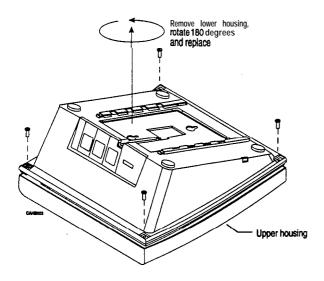


Figure **3-5a.** Reversing The Lower Housing On Model **77nn** Telephones

Wall Plate • OR • #10 Screws

NOTE: AT&T 630B wall plate is recommended for secure mount.

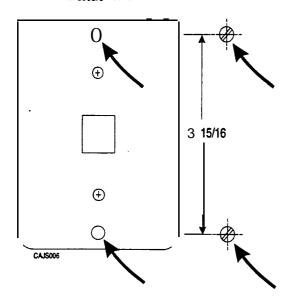
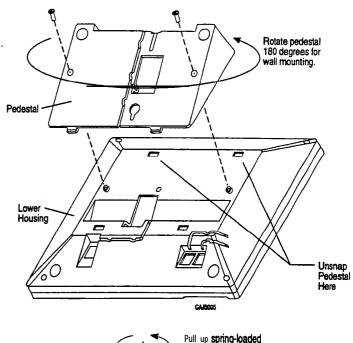


Figure 3-5c. Station Wall Mounting Details



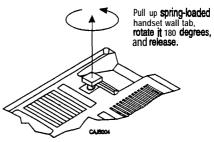


Figure **3-5b.** Reversing The Pedestal And Handset Hook On Model 60nn And 81 nn Telephones

DSS/BLF Console Installation

Beginning with software release 8, the digital telephone system supports the installation and use of a DigiTech DD32X and an Americom XD64X DSS/BLF console at any available station port. With software release 12A, console support is extended to include the *Impact* IB64X console as well. The number of installed consoles is limited only by port availability; however, since a console complements a companion telephone located in an adjacent station port, you can use up to one-half of the available station ports for consoles. In addition with the dual console feature (discussed later), a full two-thirds of the total station port capacity is available for console use.

Beginning with software revision of 9, you can assign two consoles to one telephone. This feature is especially useful when used with DigiTech **DD32X** consoles and a G1632 system that has one or two GM408 expansion modules included with it. This *dual* console *feature* allows a station user to monitor up to 48 stations from one station location using **32-button** consoles.

Install the first console at the station port that is logic-paired with the station that you wish to complement. Install the second console at any station port except 10 or 11 and, using class of service programming, assign it to the same station port that is logic-paired with the first console.

The digital telephone station ports are logic-paired as follows:

| 10 - 11 | 26-27 | 42-43 |
|----------------|---------|--------------------|
| 12-13 | 28-29 | 44-45 |
| 14 • 15 | 30 - 31 | 46 • 47 |
| 16 - 17 | 32 - 33 | 48-49 |
| 18-19 | 34 • 35 | 50 - 51 |
| 20 - 21 | 36 • 37 | 52 - 53 |
| 22-23 | 38 • 39 | 54 - 55 |
| 24-25 | 40 - 41 | 56 • 57 |
| | | |

You can install a DD32X, XD64X, or IB64X console at any station port and assign it to a station without first installing a console at the station's logic-paired port if you wish. This configuration is convenient for adding a console to an existing telephone installation that already has its logic-paired port occupied; however, do not use this configuration for assigning a console to station ports 10 and 12 because the console buttons will not be usable for programming. As discussed above, this feature is also useful for adding a second

console to a station that already has a paired console installed with it.

The digital telephone system automatically recognizes a console when you connect it to a station port and automatically assigns the station intercom numbers to the console buttons for direct station selection (DSS) purposes with associated busy lamp field (BLF) status lights. However, the console buttons are fully programmable and the station user can customize them as he or she see fit by programming them as DSS buttons or as automatic dialing (autodial) buttons. When the user programs the buttons for DSS use, autodial capability is also available at a secondary level at each DSS button. All 32 buttons on the DD32X console and the first 48 buttons on the XD64X and IB64X are programmable for DSS and/or autodial use.

While the first XD32X console (the one installed at the logic-paired port) extends the **autodial** buttons of the paired telephone by 32 and provides DSS/BLF coverage for station ports 10 through 41, the second XD32X console (the one installed at the programmed station port) provides DSS/BLF coverage as follows:

- On a 32-station system with two 8-station expansion modules, the first 16 buttons are automatically assigned (defaulted) to station ports 42 through 57 for DSS purposes.
- On a 32-station system with one 8-station expansion module, the first 8 buttons are automatically assigned (defaulted) to station ports 42 through 49 for DSS purposes.
- On any other smaller station capacity system, all buttons are unassigned.

When you install a console and program it to complement a telephone without first having a console installed at a port that is logic-paired to that telephone, its button assignment is automatically defaulted, as described above, but the user can reprogram it as required. It is important to remember that when you program for a second console, the system sets the console button mapping to that which is described above. When you clear the assignment, the system resets the button mapping to match a logic-paired console. This means that when the second console feature is cleared, the console installed at that port complements the telephone that is installed at its logic-paired port instead of the telephone that is located at the program designated port, and its buttons are automatically reassigned to station ports 10 through 41 (through station port 57 with IB64X and XD64X consoles).

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In addition to the DSS support that the consoles provide to the telephone, the first DD32X console provides COS programming buttons CI0 through C41 and the second console provides COS programming buttons C42 through C57 when they are needed. You will not need the second IB64X or XD64X consoles for

programming purposes since the first one provides complete program button coverage.

Refer to **Figure** 3-6 for an illustration of a typical **DSS/BLF** console installation.

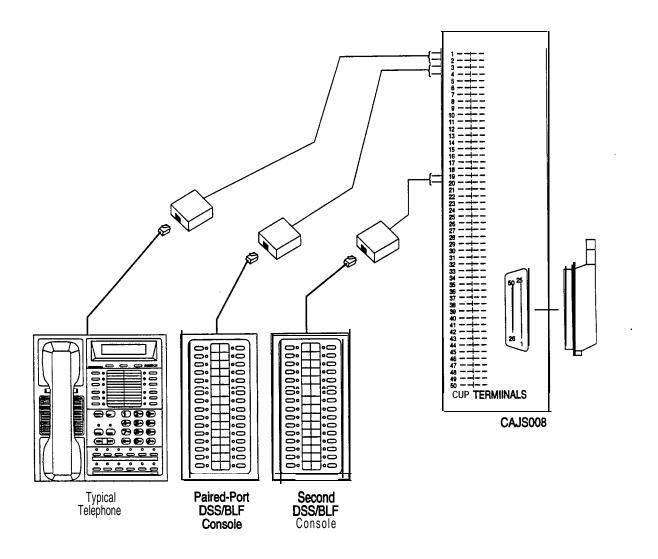


Figure 3-6. Typical DSS/BLF Console Connections

Power Failure Station Connections

The system provides a tip and ring pair connected to line 1 as an emergency power failure circuit. This circuit is active during a commercial AC power failure if an external battery assembly is not installed to provide battery back-up power to the system. Connect an industry standard, single-line telephone, such as a model 2500, to a power failure pair.and use it to

provide communications capability until the AC power to the system is restored.

The power **failure pair** is located as follows and as detailed in **Figure 3-7** below.

NOTE: The system also provides one power failure connection with each add-on expansion module.

POWER FAILURE TERMINALS ON STATION CONNECTOR BLOCK (4-Line, 8-Station and 8-Line, 16-Station base units)

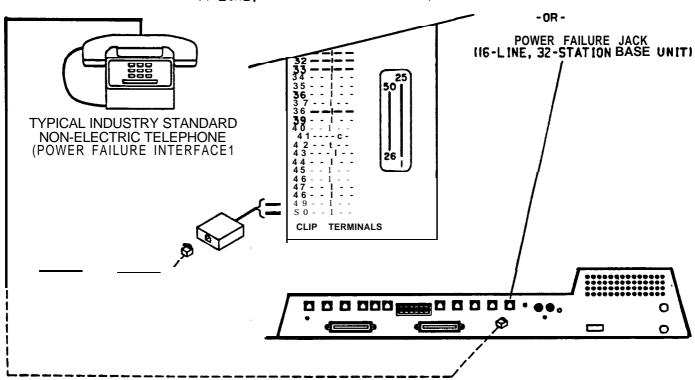


Figure 3-7. Power Failure Connection

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Auxiliary Equipment Interface

You can connect an industry-standard telephone or data device on a line ahead of the common equipment if you wish. If you do so, the system can detect an off-hook condition in the connected device and turn on the line status light at the system telephones to indicate that the line is busy. **Table 3-1** (on page 7) and **Figure 3-8** below detail the auxiliary interface connections.

NOTE: When you are employing this auxiliary interface feature, the line-to-line port reassignment as discussed previously and in Chapter 4 works as described except in regard to line 2 and line 4. Line 2 can only be reassigned to line port 4 and line 4 can only be reassigned to line port 2

Connection is across tip and ring of lines 2 and 4. The system provides the auxiliary interface connections at terminals 1 and 6 of common equipment line jacks 1 and 2.

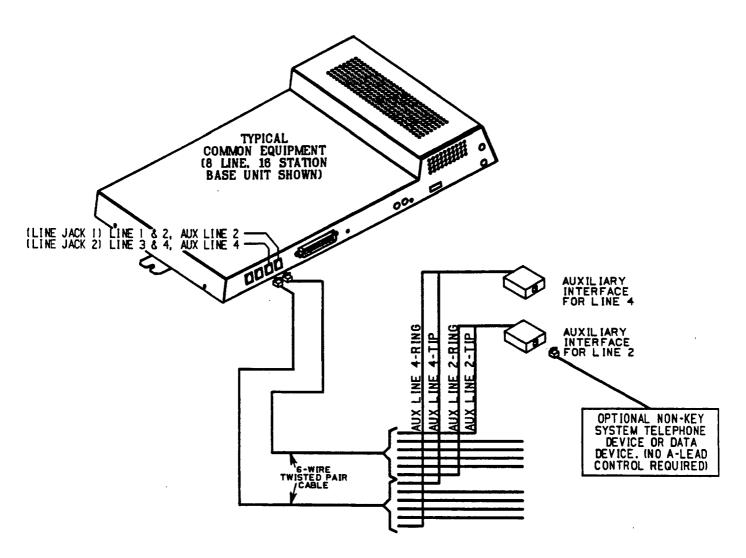


Figure 3-8. Auxiliary Interface Connections

installation IMi66-107

Common Audible And Auxiliary Ringing Interface

You can use he relay closure dry-contact points for controlling external audible equipment. These contact closures track the pattern of the ringing for incoming calls. The contacts are closed during the ringing period and are open during the silent period. A typical common audible connection is illustrated on **Figure 3-9**.

CAUTION

Do not exceed a 1 amp at 24 volts (0.5 amp at 48 volts) load on these control terminals. If the load requirements exceed this limit, connect the load through an external slave relay. DO NOT CONNECT THESE CONTROL TERMINALS DIRECTLY TO THE 117VAC LINE.

Outside Lines

 Common audible terminals provide a dry-contact closure whenever any of the outside lines that you have connected to the common equipment ring with an incoming call.

Selected Ports

 Station 1 7 audible terminals provide a dry-contact relay closure whenever ringing is sent to station 17 or to a programmable destination. Use class of service programming to choose either station 17 or the paging port as the ringing destination. Refer to Chapter 4 for details.

When you have programmed for station port 17 ringing, it is a common practice to use a customer-supplied external device to provide loud ringing and connected in a manner similar to the common audible arrangement shown in Figure 3-9.

CAUTION

Do not connect a external paging amplifier or any external ringing device to the station port 17 connections.

• When you have programmed forpaging port tinging, it is a common practice to use a customer-supplied external paging amplifier connected to the paring port to amplify and broadcast the ringing tones sent to, the paging port by the system. You can employ the relay closures that appear at the ringing terminals to energize the external paging amplifier during the periods when the ringing tones are being sent if necessary.

NOTE: Refer to the following paragraph headed

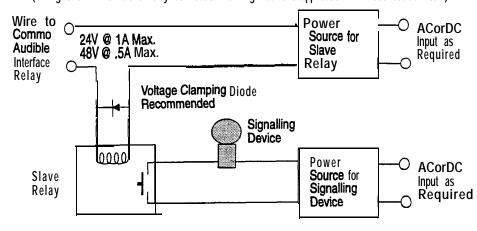
External Paging Interface for a discussion of external paging amplifier connections and informa tion for using the paging port ringing terminals in an alternate paging enable function.

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Signalling Device Wire to Power AC or DQ Common Source for 24V @ 1A Max. Input as **Audible** Signalling 48V @ .5A Max. Required Interface Device Relay

(Wiring shown for low current application • see caution text)

(Wiring shown with slave relay connection for high current application - see caution text)



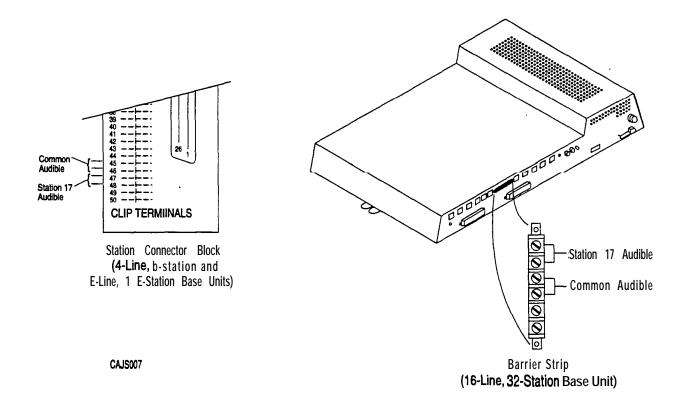


Figure 3-9. Typical Common Audible Interface Wiring

External Paging Interface

The system provides a special transformer-isolated paging port that you can use to couple the system to a customer-supplied external paging amplifier. This external paging port does not provide a talk-back path nor will it recognize DTMF dial tones.

You can use the relay closure dry-contact points that the system makes available at the ringing port terminal for controlling the external paging amplifier during a paging operation. These contacts close and stay closed during the time that a paging operation is active to provide a constant enable signal path for the paging amplifier.

NOTE: This paging enable constant closure function overrides the ring pattern closure provided when ringing is sent to the paging port. See the previous paragraph titled <u>Common-Audible</u>
<u>And Auxiliary Ringing Interface</u>

- Connect the audio input of a customer-supplied external paging amplifier to the paging port as shown below in Figure 3-10.
- If the paging amplifier requires an enable signal, connect the enable leads to the station 17 audible terminals as shown in Figure 3-10.

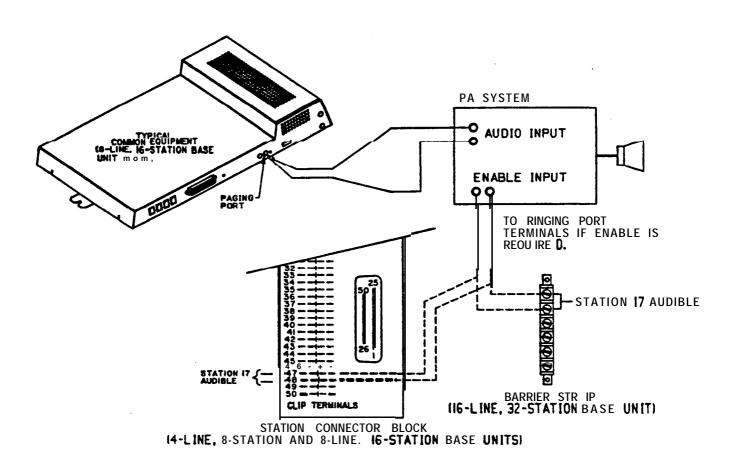


Figure 3-10. Typical External Paging Connection

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External Paging Interface - Line Port

You can use class of service programming to convert a line port to be an AUXILIARY port. As an AUXILIARY port, a user can use it to couple a telephone to an external paging device that you have wired to the line port. He or she does this from any station with that line presence by pressing the proper line button to select the AUXILIARY port. The user can dial DTMF tones or dial pulses through the AUXILIARY port as needed. The paging enable relay

closure feature discussed previously is not available for use with this installation.

- Connect the audio input of a customer-supplied external paging amplifier to the tip and ring leads of the AUXILIARY port as shown in Figure 3-1 1 below.
- You can install a DTMF tone select, zone-paging amplifier if you wish. If do you install this type of amplifier, the user must dial the zone-select code after he or she presses the AUXILIARY port line select button.

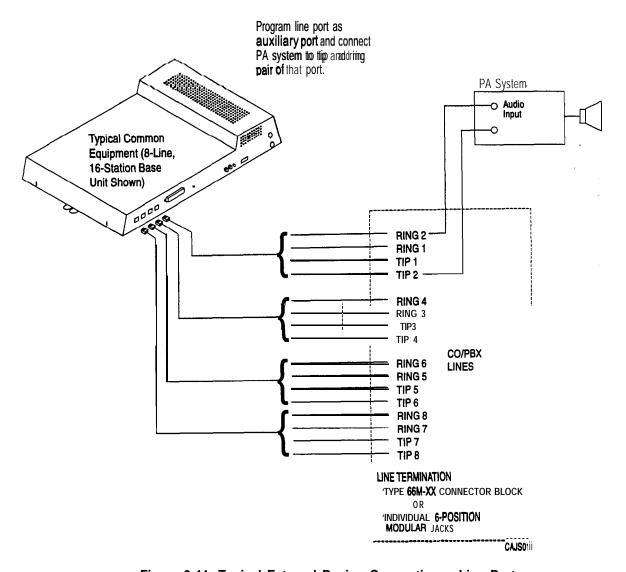


Figure 3-11. Typical External Paging Connection • Line Port

Data Device Connections

The system provides two RS232 Data Ports for use.

- When you use a video display terminal (VDT) to perform class of service programming, connect it to RS232 Data Port A.
- When you use a serial data printer for SMDR, SMDA, and COS printout, connect it to the RS232 Data Port B.
- When you use a Caller ID Interface (product code CID08) to identify incoming calls, connect it to RS232 Data Port B using the special cable provided with the CID08. Refer to the paragraph titled *Caller Identification Service Support* (located on page 4-40) for installation details associated with this feature.

The distance between a data device and the common equipment can be up to 500 feet in a quiet electrical environment. Some sites may require shielded cable for long runs. For longer distances, you must install limited distance modems to relay the data communications between the common equipment and a data device.

When preparing a cable for connection to a data device, refer to the manufacturer's manual for the equipment being interfaced and make the following wiring connections:

- Wire the common equipment RD (data from device to common equipment) connection to the device TD (transmit data) connection.
- Wire the common equipment TD (data to device from common equipment) connection to the device RD (receive data) connection.
- Wire the common equipment SG (signal ground) connection to the device SG (signal ground) connection.

 If required for proper operation, wire the common equipment CTS (clear-to-send status from device to common equipment) connection to the device RTS (request-to-send) connection.

NOTE: The common equipment requires a positive voltage, with respect to signal ground, in order to send data.

The default data communications format is as follows:

- 7-bit data with 2 stop bits and no parity
- Baud rate of 300 baud

Configure a data device to match **this** format for initial operation or reprogram the system's data format to match those of a data device.

The system's data ports are located as follows and are connected as illustrated in **Figure 3-12** on the next **page.**

4-Line, &Station And &Line, 16-Station Base Units

 Clip terminals 37 • 40 (data port A) and 41 • 44 (data port B) on station connector block.

| SIG. | <u>PORT A</u> | | <u>PORT B</u> | |
|-------|---------------|----|---------------|------|
| TD = | TERMINAL 3 | 37 | TERMINAL | 41 |
| RD = | TERMINAL 3 | 38 | TERMINAL | 42 |
| CTS = | TERMINAL 3 | 39 | TERMINAL | 43 |
| SG = | TERMINAL 4 | 10 | TERMINAL | . 44 |

I&Line, 32-Station Base Unit

Special modular jacks are available as data ports

| <u>SIG</u> | J A C K |
|------------|---------|
| None | 1 |
| CTS | 2 |
| RD | 3 |
| TD | 4 |
| SG | 5 |
| None | 6 |

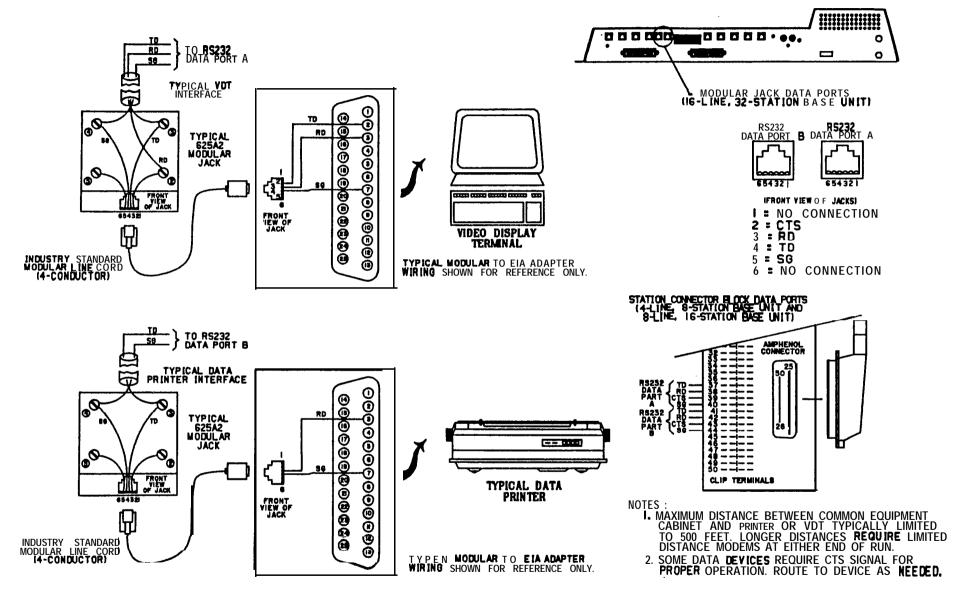


Figure 3-12. Typical Data Device Connections

Music Interface

If music is to be part of the system, connect a customer-provided music source to the common equipment music interface jack (phono jack) provided for this purpose as shown below in **Figure 3-13.** The

impedance of this input is approximately 500 ohms. Use the volume control on the music source to adjust the audio level of the music as required.

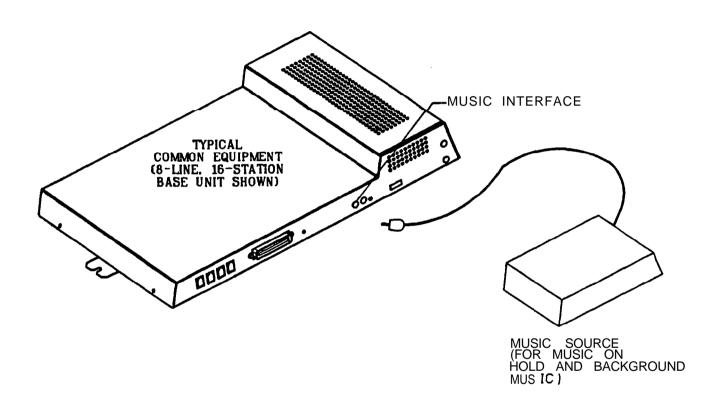


Figure 3-13. Music Interface

IMI66-107 Installation

Add-On Expansion Module

Introduction

You can install one or two optional add-on expansion modules on the common equipment base unit to increase the line and station capacity of an installed system. The add-on module is as follows:

408 Expansion Module - A four-line by eight-station expansion unit

The expansion capabilities provided by the add-on module are shown in **Figure 3-14** on the next page.

The default numbering of the expanded lines and stations begin with the next higher line or station port number from that provided by the host base unit. The numbering continues sequentially from top module to bottom module if two modules are installed. For example: The defaulted 8-line, 16-station base unit

provides station ports 10 through 25 and lines 1 through 8. When installed, a 408 Expansion module will provide station ports 26 through 33 and lines 9 through 12 thus creating a twelve line by twenty-four station system.

Each expansion module provides a tip and ring pair as an emergency power failure circuit. This circuit is connected to the first module-provided line.

The line connections of the expansion module are available at two modular jacks. When facing the jack openings, lines 1 and 2 are provided by the jack on the right and lines 3 and 4 are provided by the jack on the left. Line connections are detailed in **Table 3-5**, below.

The station connections are available at a **50-pin** connector. **Table** 3-6 detail these station connections.

Table 3-5. Line Connections - 408 Expansion Module

| LINE JACK | PIN NO. | CONNECTION | TELEPHONE NUMBER |
|-----------|---------|---------------|------------------|
| 1 | 1 | No Connection | |
| | 2 | Line 2M TIP | |
| | 3 | Line 1M TIP | |
| | 4 | Line 1M RING | |
| | 5 | Line 2M RING | |
| | 6 | No Connection | |
| 2 | 1 | No Connection | |
| | 2 | Line 4M TIP | |
| | 3 | Line 3M TIP | |
| | 4 | Line 3M RING | |
| | 5 | Line 4M RING | |
| | 6 | No Connection | |

Add-On Expansion Module - continued on **next** page . . .

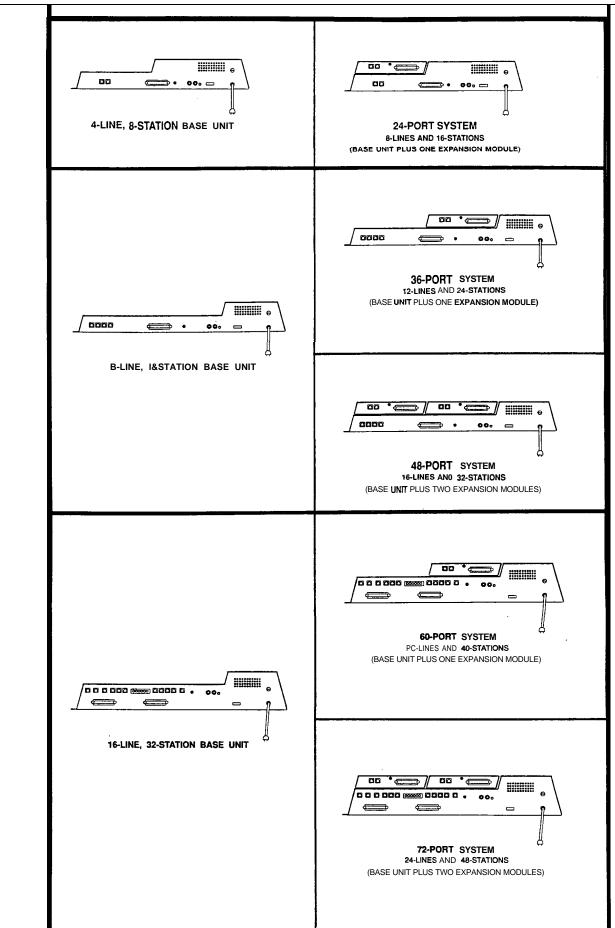


Figure 3-14. Add-On Expansion Module Configuration

Add-On Expansion Module • continued on next page. . .

IMI66-107 Installation

Table 3-6. Station Connections - 408 Expansion Module

| | | | | | | ONNECTIONS |
|----------------|--------------|---------------|--|-------------------|---|---|
| PAIR | PIN . NO. | CLIP TERM. | PAIR | WIRE | STA | LOCATION |
| 1 | 26 | 1 | SIGNAL | GREEN | 1M | |
| - 1 | 1 | 2 | PATH | RED | | |
| 2 | 27 | 3 | SIGNAL | GREEN | 2M | |
| _ | 2 | 4 | PATH | RED | | |
| 3 | 28 | 5 | SIGNAL | GREEN | 3M | |
| _ | | 1 - I | PATH | 1 | | |
| 4 | | 7 | SIGNAL | GREEN | 4M | |
| 7 | | ! I | | RED | | |
| | | | | GREEN | 5M | |
| ١ ١ | | l - I | | | | |
| _ _ | | | | | 6M | |
| ٥ | | 1 1 | | | 0111 | |
| | | | | | 784 | |
| 1 | | | | | , IAI | |
| | | | | | ORA | |
| 8 | | 1 · · · I | | | OIVI | |
| | | | PAIR | RED | l | <u> </u> |
| ⁹ | | | | | | |
| 10 | | | | | | |
| 10 | | | | | | |
| 44 | | | | | | |
| 11 | | | | | | |
| 40 | | _ | | | | |
| 12 | | | | | | |
| 40 | | | | | | |
| 13 | | | | PC | ORTS | |
| | | | | | | |
| 14 | | | | | | |
| 4.5 | | | | | | |
| 15 | | | | | | |
| | | | | | | |
| 16 | | | | | | |
| | | | | | | |
| 17 | | 1 | | | | |
| 40 | | | | | | |
| 18 | | 4 | | | | |
| 10 | | | | | | |
| 19 | | | | | | |
| 00 | | | | | | |
| 20 | | 1 | | | | |
| 05 | | | | | | |
| 21 | | | | | | |
| 20 | | | | | | |
| 22 | | | | | | |
| - 00 | | | | | | |
| 23 | | | | | | |
| 2/ | | | | | | |
| 4 | 49 74 | 48 | | | | |
| | | | | | | |
| 25 | 50 | 49 | TIP | | POWER | FAII |
| | PAIR 1 | NO. 1 | PAIR PIN. NO. TERM. 1 26 1 26 1 2 2 27 3 28 5 3 6 3 5 30 9 5 10 11 6 31 11 6 12 7 32 13 7 14 8 8 33 15 8 16 9 9 34 17 9 18 16 10 20 11 11 36 21 11 22 24 13 38 25 13 26 14 14 39 27 14 28 15 40 29 15 30 16 41 31 16 4 | PAIR NO. TERM. 1 | PAIR NO. PIN. CLIP TERM. PAIR COLOR 1 26 1 SIGNAL GREEN RED 2 27 3 SIGNAL GREEN RED 3 28 5 SIGNAL GREEN RED 3 6 PATH RED GREEN RED 4 29 7 SIGNAL GREEN RED 5 10 PATH RED RED 6 12 PATH RED RED 7 32 13 SIGNAL GREEN RED 6 12 PATH RED RED 7 14 PATH RED RED 8 16 12 PATH RED 8 16 12 PATH RED 9 34 17 PATH RED 10 35 19 RED 10 35 19 RED 10 35 19 RED 11 36 21 RED 12 24 23 AB 15 | PAIR NO. PIN. DETERM. CLIP TERM. PAIR COLOR STA COLOR 1 26 1 SIGNAL GREEN GREEN GREEN AM RED 2M 2 27 3 SIGNAL GREEN AM RED 3M 3 28 5 SIGNAL GREEN AM RED 3M 4 29 7 SIGNAL GREEN AM RED 5M 5 10 PATH RED 5M 6 31 11 SIGNAL GREEN FED 5M 6 12 PATH RED 6M 6M 7 14 PATH RED 6M 6M 8 13 15 RED 6M 7M 8 16 PATH RED 7M 7M 8 16 PATH RED 8M 8M 9 34 17 9A 18 16 PATH RED 8M 10 20 11 36 21 21 24 SPARE PORTS 12 37 23 24 24 |

Add-On Expansion Module ${\color{red} \bullet}$ continued on next page . . .

Add-On Expansion Module Installation

Each add-on expansion module measures 15.5 wide x 9.4 high x 1.6 wide and weighs approximately 4 pounds. The modules are designed so that you can attach them to the base unit and connect them to it via cabling.

CAUTION

You must always connect the first module to the top location on the base unit.

To install an expansion module to a base unit, refer to **Figure 3-15** and perform the procedure detailed in steps 1 • 11.

NOTE: If you p/an to a/so up-grade the system software at the same time that you add expansion modules, be sure to add the expansion modules first by following steps 1 through 1 1. After you have installed the expansion modules and programmed for the new stations and line ports, you can then up-grade the software as described in the discussion beginning on page 3-36 titled, Software Cartridge. Following this installation sequence insures that the new software recognizes the new stations and lines that are made available by the expansion modules.

- 1. Disconnect both AC power and external battery back-up power from the system.
- Remove and set aside nameplate from base unit. This action exposes internal cable connector on base unit circuit board.
- 3. Reach through opening in base unit and mate module cable plug with base unit circuit board connectors.
- 4. Push excess cable inside base unit housing through connector opening.
- Install expansion module in place on all four mounting holes. Be sure excess cable is not pinched between add-on module and base unit.
- 6. Pull module down to latch in place.
- 7. Use flat-blade screw driver to tighten module securing screw into base unit threaded fastener.
- 8. Snap nameplate into slots on top of module housing.
- Attach #10 or #12 insulated, solid copper wire between the grounding terminal on the expansion module and the grounding terminal on the common equipment cabinet.
- 10. Reconnect the power to the system.
- 11 **.Refer** to Chapter 4, and perform configuration programming for new station and line ports.

IMI66-107 Installation

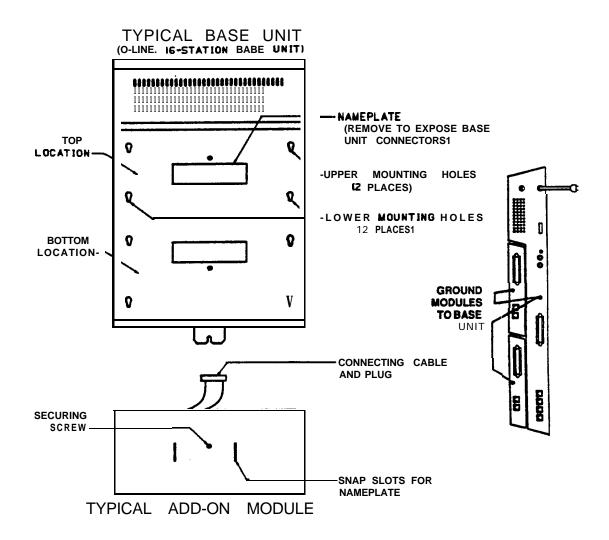


Figure 3-15. Add-On Expansion Module Installation

Software Cartridge

Introduction

The system requires a plug-in module with the common equipment base unit to provide the following functions:

- Operating System Software Control
- Default Functional Program
- Call Cost Storage For System Collected Records

The installed software cartridge provides the operating system software control of the digital telephone system.

The system stores call cost records in the software cartridge and, if you exchange the present software cartridge with a new one, all call cost records that the system stored in the present cartridge are lost. Because of this, be sure to obtain a print-out of all call cost records and then delete them from memory before exchanging a new cartridge for the currently installed one.

The system stores all of the class of service data that you program into its common equipment memory and not in the software cartridge; therefore, the system does not lose any current class of service parameters if you replace the existing software cartridge with one that has the same software revision number. However, when you *up-grade* the system software by exchanging the existing software cartridge with one that has a later revision number, there are several steps that you should take. If you take these steps, you will ensure proper system operation with the *up-graded* software and you will not have to reprogram the class of service parameters for the system, line, and station features.

When up-grading the system software,

- Make a copy of the call cost records and then delete them from the system memory per the following procedure:
 To print records: press INTERCOM, dial * # 076 #, and press SPEAKER.
 To delete records: press INTERCOM, dial * # 0777#, and press SPEAKER.
- 2. Use a personal computer and a communications software program to save the currently stored system data base. Refer to the Chapter 4 discussion titled Video Terminal Programming Procedure, Remote Programming Configuration complete details for doing this.

- Remove AC power from the system and disconnect any battery back-up that may be connected to it.
- **4.** Exchange the current software cartridge with the one that has a later revision number using the installation instructions below.
- 5. Restore power to the system.
- **6.** Perform the master clear procedure from the VDT or at the programming station as follows:
 - press INTERCOM,
 - dial * # 746 *.
 - dial 90.
 - dial 51684.
 - press SPEAKER.
- Use the VDT procedure referred to in step 2 and re-load the system data base into the system memory.

Installation

The software cartridge plugs into the common equipment base unit housing as shown in **Figure 3-16.**

CAUTION

To avoid any chance of electrostatic discharge damage to the software cartridge, avoid touching the connector with your fingers while handling it. Also, be sure to disconnect the AC power to the base unit (also disconnect battery backup power If it is connected) before installing or removing a software cartridge.

To install a cartridge,

NOTE: Before installing a software cartridge into a base unit, be sure the product code matches the product code of the base unit (i.e., place an 408 cartridge into a 408 base unit; place an 816 cartridge into a 816 base unit; and place an 7632 cartridge into a 7632 base unit.

- Orient the cartridge so that the connector end is toward the base unit opening and the removal notch, located at the top rear of the cartridge, is toward the front of the base unit.
- Insert the cartridge into the base unit cabinet with a steady gentle pressure until it seats into place.
 Then, press the cartridge into place firmly to fully mate the connections.

To remove a cartridge,

- Place the bit of a flat-blade screwdriver into the removal notch. Lift up on the cartridge with the screwdriver to un-mate the connections.
- Slide the cartridge out of the base unit.

for

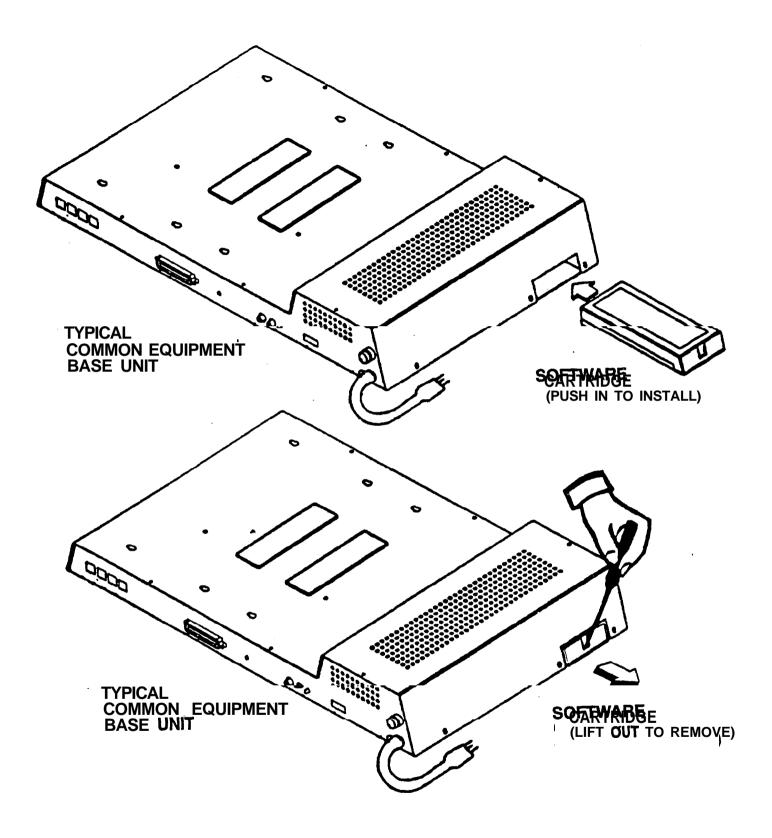


Figure 3-16. Software Cartridge Installation and Removal

Data Communications With The Digital Telephone System

Arrange both station-to-line and station-to-station data communications through the system telephones, using a data device, a modem, and a data switch.

Equipment Required

- Any data device (such as a VDT or a personal computer equipped with communications software)
- Any Hayes-compatible modem
- A data switch (such as the model PC-787JJ-PS from Precision Components Telephone, Addison IL, 60101, telephone 1-708-543-6400). This data switch is applicable for use with modems, FAX machines, and audio tape recorders.

Connections

Refer to **Figure 3-17**, and connect the equipment as illustrated. Use the cable supplied with the data switch to make the connection between the switch and the telephone handset jack, and use customer-supplied cables to make the remaining connections. Make the modem and data device connections using cabling specified in the literature accompanying this equipment.

Certain digital telephone models include a headset jack located on the rear housing near the line jack. You can use this headset jack for the data communications path but you must make the following changes to the illustrated connections:

- Leave the handset connected to the telephone and keep it on-hook.
- Connect the accessory headset to the handset jack of the data switch.
- Connect the telephone jack of the data switch to the headset jack of the telephone (instead of to the handset jack as illustrated).

The data switch has a compatibility control located on the bottom of the cabinet. Set this control to match the telephone equipment being used. Change the settings +/- 2 positions from the specified settings to provide the quietest data path possible.

Use a flat blade screw driver to set the compatibility control per the following chart:

Control Setting Condition

Position 5 Handset connected to data switch Position 9 Headset connected to data switch

The data switch has a phase switch located on the right side of the cabinet. Set this switch to the **NORMAL** position (toward the rear of the cabinet).

It is **very important** to set the telephone volume control to the minimum level when using the data switch arrangement for data communications.

Communication Procedures

Station-To-Line

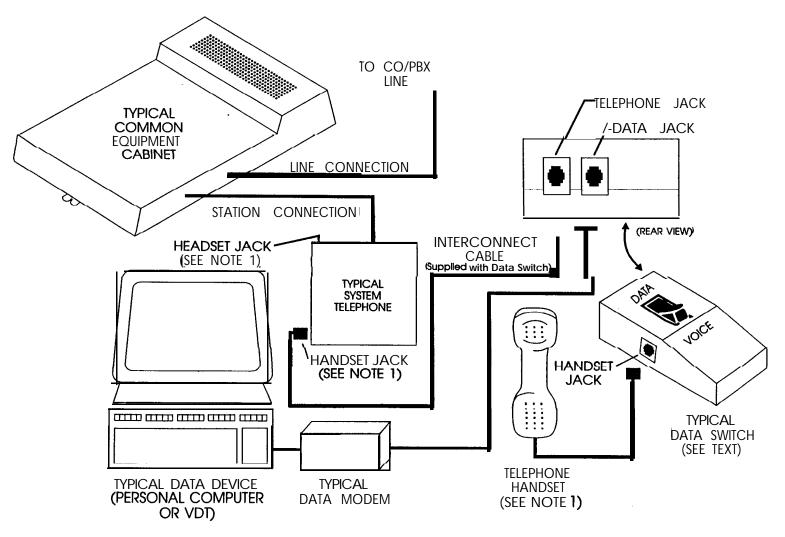
To make-a-data transmission to a distant site over a **CO/PBX** line,

- 1. Set data switch to VOICE.
- Prepare modem and data device for data communications. Refer to information supplied with software and equipment.
- 3. Press telephone line button and hear dial tone.
- 4. Set data switch to DATA.
- Issue dialing command to modem from data device keyboard.

Station-lo-Station

To make a data transmission to another station equipped and connected as shown in **Figure 3-17**,

- 1. Set data switch to VOICE.
- 2. Prepare modem and data device for data communications. Refer to information supplied with software and equipment.
- 3. Press **ITCM** (INTERCOM on some models) on telephone and hear dial tone.
- 4. Dial other station and set up voice call.
- Type "ATX1 D" on data device keyboard but do press ENTER. Ask intercom party to type "ATA" on their data device keyboard but do not press ENTER.
- Complete voice conversation, ask intercom party to set their data switch to DATA and to press ENTER on their keyboard.
- 7. Set data switch to **DATA**, and press **ENTER** on data device keyboard. Modems will automatically complete data connection.



NOTE 1: When the telephone is equipped with a headset Jack leave the telephone handset connected to the telephone and keep it on-hook. Connect the accessory headset to the handsetjack of the data switch. Connect me cable that is supplied with the data switch between the telephone jack of the data switch and the headset jack of the telephone.

Figure 3-17. Data Communications Interconnection Diagram

Caller Identification Service Support

You can provide caller ID information through the RS232 data port B using the Caller ID Interface (product code CID08) and a special equipment-supplied cable. Caller ID information for incoming calls shows on the displays of the system's LCD speakerphones.

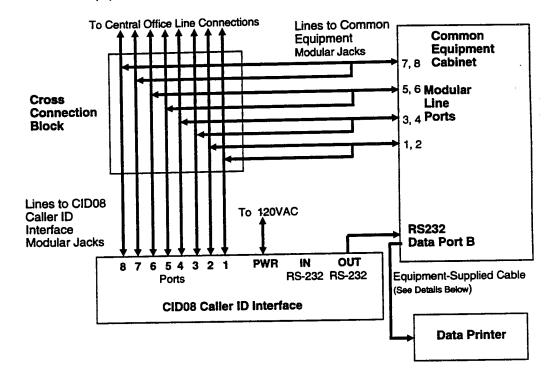
Refer to **Figure 3-18** below and **Figure 3-12** on page 3-29 for interfacing details and make the following connections:

- Connect the CO lines providing caller ID data to both the common equipment and the CID08 line jacks in the same numerical order.
- Connect the CID08-supplied cable between the CID08 and the common equipment.

If you connect it to a G1632, connect its modular plug to RS232 Data Port B on the cabinet.

If you connect it to a G0816 or a G0408, you must remove the cable's modular plug to provide individual RD and SG leads that you can punch down at terminals 42 and 44 of the J1 station connector block.

• With the Caller ID Interface installed, you can also add two leads to provide the TD and SG signals to a data printer or personal computer (PC). These leads are useful for adding caller ID enhancement to the SMDA/SMDR printout or for providing messages in the ASCII format suitable for use with PC-based applications programs.



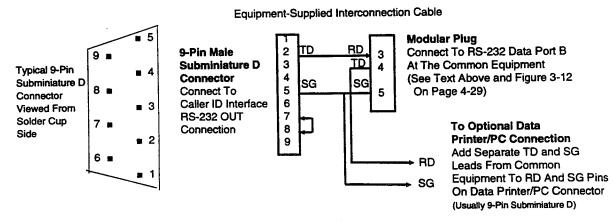


Figure 3-18. Caller ID Interface, Common Equipment, and Data Printer Interconnection

IMI66-107 Installation

System Checkout And Failure Isolation

Initial Condition

The system operating features are set to default conditions at initial power-up. These conditions provide a basic operating system with a known set of parameters, and the system should be initially checked out with the default conditions in place. At any time while the system is operating, default conditions can be reset from station port 10 or 12 per the instructions provided in Chapter 4, Programming.

Check Out

Check the common equipment and telephone installation for proper operation by performing the following resistance and voltage measurements.

Resistance Check

Measure the resistance at the station connector blocks under the following conditions.

- AC power cord disconnected from electrical outlet.
- Common equipment connected to station connector blocks.
- Stations wired and wiring punched down on blocks.
- Bridging clips removed from blocks to isolate stations from common equipment.

Measure the resistance of each installed station and wiring from the station side of the connector blocks. Resistance values will vary with cable length and station type but should be within the following limits:

• Greater than 700 Kohms

Voltage Check

Make the following voltage measurements at the station connector blocks under the following conditions:

- Bridging clips installed
- AC power connected to the common equipment
 Measure the voltage across the signal pair. The measured voltage must be within the following limits:
- 28 36 VDC

General Check

- 1. Check the red light emitting diode (LED) system status indicator. Be sure that it is on steady. If it is off or flashing, refer to the paragraph below titled, Failure Isolation.
- Refer to Chapter 5 for operating information and perform a general operational test of the system by exercising the features from station port 10 or 11.
 Operational parameters are per the system default conditions as detailed in Chapter 4 until class of service programming is performed.
- Once the basic system is verified as operational, perform the class of service programming as described in Chapter 4.

Failure Isolation

System Status Indicator

A red LED located on the common equipment cabinet near the music port is the system **status indicator.**This indicator is turned on steady when power is applied to the system. If the indicator flashes after power up, it could be indicating a processor failure. Unplug and reconnect the AC power to the power supply and observe the LED indication. If it still shows a flashing indication, equipment replacement may be necessary.

Station Self Test

Self test the multiline stations for proper operation per the following instructions:

- 1 Disconnect line cord at station base.
- Press and hold test button (1 for *Impact* telephones or MUTE for DigiTech or Americom telephones) and reconnect line cord to station connector. Station will automatically perform self test routine.
- Releasetest button as soon as test begins.Sequence of test is as follows:
 - Indicators will light in sequence
 - Ringer will sound be sure volume is set to low or high
 - Indicators and ringer will then turn off at the same time
- 4. Replace any station that does not pass the self test.

Installer/User Information Regarding FCC Rules And Regulations

This electronic key system complies with Federal Communications Commission (FCC) Rules, Part 68. The FCC registration label on the KSU contains the FCC registration number, the ringer equivalence number, the model number, and the serial number or production date of the system.

Notification To Telephone Company

Unless a telephone operating company provides and installs the system, the telephone operating company which provides the lines must be notified before a connection is made to them. The lines (telephone numbers) involved, the FCC registration number, and the ringer equivalence number must be provided to the telephone company. The FCC registration number and the ringer equivalence number of this equipment are provided on the label attached to the common equipment. The user/installer is required to notify the telephone company when final disconnection of this equipment from the telephone company line occurs.

Compatibility With Telephone Network

When necessary, the telephone operating company provides information on the maximum number of telephones or ringers that can be connected to one line, as well as any other applicable technical information. The telephone operating company can temporarily discontinue service and make changes which could affect the operation of this equipment. They must, however, provide adequate **notice**, in writing, of any future equipment changes that would make the system incompatible.

Installation Requirements

Connection of the electronic key system to the telephone lines must be through a universal service order code (USOC) outlet jack supplied by the telephone operating company. If the installation **site** does not have the proper outlet, ask the telephone company business office to install one. The correct outlet jack for this system is either a type **RJ21X** or type **RJ14C**.

Party Lines And Coin Lines

Local telephone company regulations may not permit connections to party lines and coin lines by anyone except the telephone operating company.

Troubleshooting

If a service problem occurs, first try to determine if the trouble is in the on-site system or in the telephone company equipment. Disconnect all equipment not owned by the telephone company.

If this corrects the problem, the faulty equipment must not be reconnected to the telephone line until the problem has been corrected. Any trouble that causes improper operation of the telephone network may require the telephone company to

discontinue service to the trouble site after they notify the user of the reason.

Repair Authorization

FCC regulations do not permit repair of customer owned equipment by anyone except the manufacturer, their authorized agent, or others who might be authorized by the FCC. However, routine repairs can be made according to the maintenance instructions in this publication, provided that all FCC restrictions are obeyed.

Radio Frequency Interference

The electronic key system contains incidental radio frequency generating circuitry and, if not installed and used properly, may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules. These limits are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference to radio and television reception: in which case the user is encouraged to take whatever measures may be required to correct the interference. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient the television or radio's receiving antenna, and/or relocate the KSU, the individual telephone stations, and the radio or TV with respect to each other. If necessary, the user should consult the manufacturer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the Government Printing Office, Washington D.C. 26402. Stock No. **004-000-00345-4**.

This digital apparatus does not exceed the (Class A) limits for radio noise emissions from digital **appartus** set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'ément pas de bruits radioélectriques dépassant les limites applicables aux appareils mumériques (de la class A) prescrites dans le Réglement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Ringer Equivalence Number

The REN of each line is 1.38. The FCC requires the installer to determine the total REN for each line, and record it at the equipment.

Chapter 4 System Programming

General Programming Information

Perform configuration programming from station port 10 or station **port** 12. The system will not accept programming commands from any other station port in the system. For best programming results, employ an LCD speakerphone. While you can install any non-LCD digital telephone and use it for programming, visual feedback of the programming operations will not be available. Configuration programming from station port 10 or 12 is unlimited as to the features that you can program using it. Usually you perform this procedure when you first place the system into service.

✓ Always keep the handset of the LCD speakerphone on-hook while programming the system. Plus, you must be sure that the system is not in the night transfer (of ringing) mode of operation when you program it.

Alternately, you can **perform** programming using a customer-provided Video Display Terminal **(VDT)** with an RS-232 compatible, serial interface. VDT programming is completely menu driven and easy to follow. It is arranged somewhat differently from station port programming categories to facilitate menu usage. VDT programming is discussed in the Chapter 4 procedure titled video *Display Terminal Programming*. You can find a complete **diccussion** of VDT programming in publication **IM166-094**, **Digital** Telephone System VDT **P** rogramming Reference Manual

Prior to taking any programming action, determine the desired parameters and requirements. Record this data on the class of service programming reference charts located at the end of Chapter 4.

You can program a group of lines or stations to have the same configuration as one that you have already programmed. This block programming feature eliminates the need to individually program every line or station that requires the same configuration.

After you have completely installed a telephone system for the first time or if a system that you previously installed has been turned off and placed out of service for a period of time (several weeks, for example), perform a master clear programming procedure before placing it into service. If you plan to perform a master clear procedure, perform it first before performing **any** other programming procedure. The master clear procedure, clears all memory locations of any unwanted data that may be stored there. It also clears any previously programmed data, such as **autodial** numbers and defaults all **class-of-**

service conditions. Therefore, never perform a master clear procedure on an existing installed system unless data loss and COS default are acceptable. Refer to the information provided in the procedure titled *Master Clear* for programming details

The system provides time and date information for display on LCD speakerphones. After installing, checking out, and master clearing a system, set the system clock with the current date and time information using the procedures provided in the procedure titlted System Configuration. You cal also use the configuration programming procedures to set certain attendant features (as also discussed in the System Attendant's Guide) that affect day-to-day operations such as: system clock setting, system speed dial, night transfer of tinging, music on hold, LCD messages, station names, and SMDA reports.

Programming Overlays

The literature **packa**ge with the system includes programming overlays for use in identifying the buttons required for programming. The overlays fit **over** the buttons of the programming station. A full size copy of available programming overlays are included at the end of this chapter for use as needed.

Supporting DigiTech Telephones With A Revision Letter Of I And Later

There are several items that you need to consider when installing the revision I and later DigiTech telephone to the digital telephone system. These items are detailed below.

- ✓ While the system software cartridges (product code Snnnn) with software release 11 A and later supports the use of all DigiTech telephones regardless of their revision letter, any systems with a software release of 9 or earlier will not support the revision I and later telephones. In other words, whenever a system includes revision I or later telephones, be sure that the system software cartridge has a software release revision of 11A or later.
- ✓ Always program station ports to provide ringing line preference to revision I and later DigiTech telephones (and to all *Impact* telephones) that are connected there. This action is necessary before the orange LED feature can become active. The orange status light indicates a ringing line to distingush it from lines that are in use or on hold.

System Programming IMI66-107

Converting Button Designations

When you first power a new system with no telephones connected, it defaults its station ports as follows:

Software type
Snnnn
Telephone type
Snnnn
Digitech 24-line telephones

Innnn Impact **24-line** telephones
When you connect a telephone to a powered-up system or when you turn on the AC power to a system after you have connected a telephone to it, the telephone identifies itself to the system but its button mapping will be defaulted for the telephone types denotes above until you master clear the system.

The buttons on *Impact* and Americom telephones are designated as L buttons while the buttons on a DigiTech telephone are designated as A and B buttons These different button designations relate to one another in the manner detailed in the following chart. There are times when you are programming the system parameters that you may need to use this chart for conversion purposes. At other times, you can use the proper telephone programming **overlay** with A and B designations that you can find included in the literature package for the digital telephone system. You can find sample overlays included at the end of this chapter.

| DIGITECH | IMPACT | AMERICOM | DIGITECH | IMPACT | AMERICOM |
|----------|--------|----------|----------|--------|----------|
| A1 | L01 | L1 | A13 | L13 | L21 |
| A2 | L02 | L3 | A14 | L14 | L22 |
| A3 | L03 | L5 | B9 | L15 | L23 |
| A4 | L04 | L7 | B10 | L16 | L24 |
| A5 | L05 | L9 | B1 | L17 | L2 |
| A6 | L06 | L11 | B2 | L18 | L4 |
| A7 | L07 | L13 | B3 | L19 | L6 |
| A8 | L08 | L15 | B4 | L20 | L8 |
| A9 | L09 | L17 | B5 | L21 | L10 |
| A10 | L10 | L18 | B6 | L22 | L12 |
| A11 | L11_ | L19 | B7 | L23 | L14 |
| A12 | L12 | L20 | B8 | L24 | L16 |

When you perform class of service programming from stations 10 or 12 and you have placed an *Impact* or an Americom telephone at the programming port, you should place the programming overlay on it. This makes the button designations match the A and B designations called for in this system programming manual.

When you perform button mapping from stations 10 or

12 using the non-square system programming feature to reassign telephone buttons to different functions, you may need either the overlay or the above chart depending upon the type of telephone that you have installed at the programming port.

If all system telephones are the same type, when you press a button at the programming station, you select

the same button on the telephone that you are mapping. No overlay or conversion chart is needed here.

When you mix telephones on the same system and you are cross-model button mapping, you will need either the overlay or the conversion chart. The overlay works best when you are using an *Impact* or Americom telephone at the programming station to button map a DigiTech telephone located elsewhere. The chart is more convenient when you have a DigiTech telephone at the programming station and you are button mapping an *Impact* or Ameticom telephone located elsewhere. In either case, when you map a line to a selected button, it is best if you choose the line by dialing its code rather than by pressing a button on the programming station to represent it. To choose lines 1 through 24, you must dial 01 through 24.

The following examples explain when you need to use conversions.

To select button L21 for reprogramming on an *Impact* telephone using another *Impact* telephone at station 10 for programming, press button L21 on the station 10 telephone. Note that no conversion is required in this example.

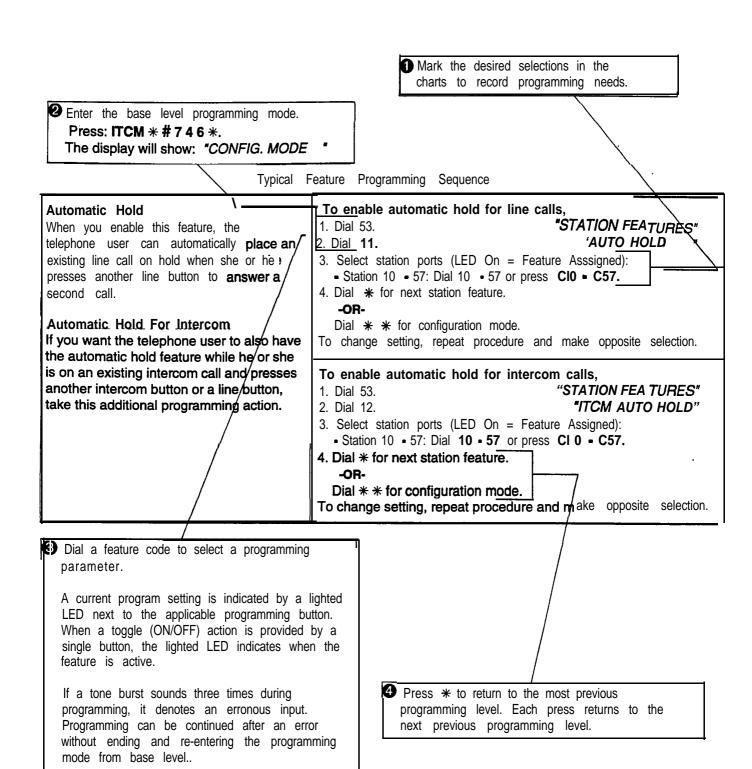
To select button **B5** for reprogramming on a DigiTech telephone while using an *Impact* telephone for programming, press the button designated as **B5** by the programming overlay on the *Impact* telephone at station 10 (this is actually L21 but the overlay did the conversion for you).

To select button L21 for reprogramming on an *Impact* telephone while using a DigiTech telephone for programming, press button B5 on the DigiTech telephone at station 10 (you use the conversion chart to convert the B5 button to an L21 button).

If you are programming the system from a VDT, it is best to allow the telephones to identify themselves to the system before you button map them. When you do this, the VDT presents the proper button designations in its prompt and you will not need an overlay or conversion chart. Beginning with software release 13B on the Innnn software cartridges, the system queries you to designate the telephone type for unoccupied station ports. Upon your response, the system presents the proper button designations in the prompts for these ports.

Class Of Service Programming

Class of service programming provides you with the means for programming all of the system variables; however, you may elect to program only the line attributes and leave the remainder of the system variables set to their default values. **Perform** the class of service programming in the sequence shown below.



Master Clear and Class Of Service Defaults

You can return the entire programming configuration to the factory settings using the master clear procedure or you can return the individual system, line, and station class of service configurations to their factory settings using the system, line, and station default procedures. Keep in mind that the operating parameters and class of service values effected by the factory settings will provide satisfactory performance in a broad range of site applications.

CAUTION

Not **only** does the master clear procedure return ALL programmed variables to a known state of **operation**, it also clears all currently stored **autodial** and speed dial numbers.

| State Of Operation, it also clears | s all currently stored autodial and speed dial numbers. |
|---|--|
| Master Clear Returns entire system configuration to factory settings and clears all stored auto and speed dial numbers. | 1. Press ITCM Dial * # 7 4 6 * "CONFIG. MODE". 2. Dial 90 "MASTER CLEAR ". 3. Dial 5 1 6 8 4 to clear the entire system. System returns to normal operation mode automatically. |
| System Default Returns the system configuration features to factory settings. | 1. Press ITCM Dial * # 7 4 6 * "CONFIG. MODE". 2. Dial 10 "SYSTEM DEFAULT". 3. Press #to default system features. System returns to configuration mode automatically |
| Line Default Returns the line configuration features to factory settings. | 1. Press ITCM Dial * #7 4 6 * "CONFIG. MODE". 2. Dial 30 "LINE DEFAULT". 3. Press # to default line features. System returns to configuration mode automatically. |
| Station Default Returns the station configuration features to factory settings. | 1. Press ITCM Dial * # 7 4 6 * "CONFIG. MODE". 2. Dial 50 "STATION DEFAULT". 3. Dial 00 to default station ports system-wide. OR- Select individual station port to be defaulted: Station 10 • 57: Dial 10 • 57 or press CI 0 • C57. 4. Dial * for next station to default. OR- Dial * * for configuration mode. |
| Default Button Assignments Returns the button mapping of individual stations to its factory setting. | 1. Press ITCM Dial * # 7 4 6 * "CONFIG. M O D E". 2. Dial 56. "BUTTON MAPPING" 3. Dial 01. "BUTTON DEFAULT" 4. Select station ports to be defaulted: • Station 10 • 57: Dial 10 • 57. 5. Dial * for next button mapping feature. -OR- Dial * * for configuration mode. |
| Toll Restriction Table Default The system defaults two toll restriction tables with preprogrammed values and assigns them to the lines. You need only to assign them to the stations to put them into effect. The preprogrammed values are as follows: Table 1 (deny) Table 2 (allow) Entry 1 = 1 Entry 1 = 1800 Entry 2 = 976 Entry 2 = 911 Entry 3 = 411 These values will provide satisfactory system performance in a broad range of site applications; however, they can be changed as needed to meet different toll restriction needs. | 1. Dial 70. "DEFAULT TOLL " 2. Press #to default toll tables. 3. Dial ** for configuration mode |

IMI66-107 System Programing

System Configuration - Miscellaneous Features

- To make a record of the programming configuration, mark the desired requirements in the system class of service records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a sing/e button provides a toggle (on/off) action, the lighted LED indicates the active feature.

■ The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

Automatic Station Relocation

Nith this feature, the system will automatically recognize a particular station should that station be re-located o a different station port. It will supply the same COS parameters at this new port as was programmed for the station at the original port. This feature allows users to relocate their telephone from one station port location to another yet retain their original telephone features. NOTE: If you turn this feature on, be sure to make the station users understand that their telephone parameters could change if they trade telephones from port to port.

1. Dial 27

"A UTO STA RELOCA **T"**

Press AI to toggle between enable and disable (LED On = Enable)

-OR-

Dial 1 to Enable (Al LED On)

Dial 2 to Disable

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Data Baud Rate

The speed or baud rate of the data bit stream, which carries the SMDR and configuration data between the system and an external data device, must be programmed to match the requirements of the data device.

All of these programmable baud rate entries provide a **no parity** condition.

NOTE: If you use XMODEM protocol for data transfer between a VDT and the common equipment, you must use 8-bit data.

1. Dial 15.

2. Dial 1 for data port A.

-OR-

Dial 2 for data port B

3. Choose baud rate.
Dial 01 or Press Al.
Dial 02 or Press A2.
Dial 03 or Press A3.
Dial 04 or Press A4.
Dial 05 or Press AS.
Dial 06 or Press A6.
Dial 07 or Press A9.
Dial 06 or Press A10.

Dial 09 or Press Al 1.

Dial 10 or Press A7 for 7 data bits and 2 stop bits.

Dial 11 or Press Al4 for 8

data bits and 1 stop bit.

4. Dial * for next data port.5. Dial * * for configuration mode.

"BAUD RATE "

"W nD nS110" "W nD nS150" "W nD nS 300"

"W nD nS 300" "W nD nS 600" **"W** nD nS 1200"

"W **nD nS** 2400" "W **nD nS** 4800"

"W nD nS 9600" "W nD nS 19200"

"W 7D 2S ZZZZZ"

"W 8D 1s **ZZZZZ**"

To change setting, repeat procedure and make different selection.

System Configuration - Miscellaneous Features - continued

Press ITCM *#746*

No Not Disturb (DND), Button, nhibit, and Override

A telephone user can press a button either one that you have mapped on is or her station or one that is provided by an interactive button on an LCD speakerphone) to set his or her station o a DND condition.

Ou can inhibit the user's ability to set NND on a system-wide basis if you vish.

Also, a caller to a DND station can werride a DND condition if you **program** the calling station to have the **DND** override feature.

NOTE: When you enable the do not disturb override feature, the system automatically enables the executive override feature for the station as wel/.

To program a DND button,

1. Dial 56.

"BUTTON MAPPING "

2. Dial 07.

"ASSIGN DND CODE "

- 3. Select button to be programmed:
 - Press AI A14, B1 B8.
- 4. Select station ports to be programmed with a DND button (LED On = Selected Station):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 5. Dial * for further DND button assignment

-OR-

Dial * * for next button mapping feature.

-OR-

Dial * * for configuration mode.

To clear, dial 5664, press button, dial # and repeat above steps 4 and 5.

To inhibit DND system-wide,

1. Dial 19.

DNDXXXXXXXXX

2. Press AI to toggle between enable and disable (LED On = Enable).

-OR-

Dial 1 to Enable

"DND ENABLED "

(A1 LED on).

Dial 2 to Disable.

"DND DISABLED "

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To assign DND override capability to a station,

1. Dial 53

"STATION FEATURES"

2. Dial 03.

"DND OVERRIDE "

- 3. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Exclusive Hold: This feature prevents a telephone user at one station from picking up a call that a user placed on hold at another station. You can enable or disable it system-wide using this procedure.

1. Dial 23.

"XXXXXXX EXC HOLD"

Press A1 to toggle between enable and disable (LED On = Enable).
 OR-

Dial 1 to enable

*ENABLE EXC HOLD *

(A1 LED on). Dial 2 to disable.

"DISABLE EXC HOLD"

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

IMI66-107 System Programing

System Configuration • Miscellaneous Features • continued

Press ITCM *#746*

LCD Messaging

You can create messages that elephone users can set at their stations to be displayed by any LCD speakerphone that calls them on the ntercom line. The system provides two standard messages but you can use this programming procedure to create up to 10 custom messages.

System attendants also have access to this feature.

1. Dial **05**.

"LCD MESSAGES "

2. Dial 1 • 0 for message number.

- "XXXX... "
- 3. Dial # to clear current message.
- 4. Refer to Table below and compose message (16 digits max.).
- 5. Dial all two-digit codes needed message.
- "YYYYYYY...

-OR-

Dial 10 for pre-programmed message.

"BACK AT

-OR-

'CALL

Dial 20 for pre-programmed message.

- 6. Dial * for next message location and repeat steps 2 5.
- 7. Dial * * for configuration mode.

Music On Hold

When you connect an external music source to the system, it will provide music to outside lines that are placed on hold. You can disable the music using this programming procedure. System attendants also have access to this feature

X

Z

92

93

13

1. Press 04.

"MOH XXXXXXXXX "

2. Press AI to toggle between enable and disable (LED On = Enabled).

Dial 1 to enable (Al LED on).

"MOH ENABLED "

Dial 2 to disable

"MOH DISABLED "

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

| | | | | _ | | |
|------|------|-----|---|------|----------|-----|
| CHAR | CODE | CHA | R | CODE | CHAR | |
| A | 31 | а | ļ | 24 | Space | 12 |
| В | 22 | b | | 25 | - | 15 |
| С | 23 | С | | 26 | ; | 17 |
| D | 31 | d | | 34 | 1 | 18 |
| Е | 32 | е | | 35 | 19 | 19 |
| F | 33 | f | | 36 | • | 27 |
| G | 41 | g | | 44 | • | 28 |
| Н | 42 | h | | 45 | : | 29 |
| Ï | 43 | i | | 46 | <u> </u> | 0 1 |
| | 51 | | | 54 | 2 | 0.7 |
| K | 52 | k | | 55 | 3 | 03 |
| ļ | 53 | | | 56 | 4 | 04 |
| M | 61 | m | | 64 | 5 | 05 |
| N | ေ | n | 1 | 6.5 | 6 | 0.6 |
| 0 | 71 | 0 | | 66 | 7 | 07 |
| Ρ | | D | | 74 | 8 | 08 |
| Q | 11 | q | | 14 | 9 | 09 |
| R | 72 | r | | 75 | 0 | 00 |
| S | 73 | S | | 76 | | |
| T | 81 | t | | 84 | | |
| U | 82 | u | | 85 | | |
| V | 83 | V | | 86 | | |
| W | 91 | W | | 94 | | |

95

96

16

X

٧

Z

System Programing IMI66-107

System Configuration - Miscellaneous Features - continued

Press ITCM *#746*

³A Port Options

fou can assign lines to the PA port for **firect** ring, delayed ring, or night ransfer (of ringing). You can also **assign** zone or all-call paging to the PA **port**.

You can select the tracking source for he ringing relay to be either station 17 inging or the ringing that you have **assigned** to the paging port. Making it rack the ringing that you have **assigned** to the PA port provides relay **control** for the customer-supplied PA **amplifier** if needed.

To set ringing type,

I. Dial 60.

"P.A. OPTIONS "

2. Choose ringing assignment.

Dial 1 for direct ring.

"DELAY RING".

Dial 2 for delay ring.

Dial 3 for night ring.

'NIGHT RING "

3. Select line ports (LED On = Line Selected):

Line port I-14 = Dial 01 • 14 or press AI • AI4

Line port 15, 16 = Dial 15, 16 or press B1, B2

Line port 17-24 ≈ Dial 17 • 24 or press HOLD then press Al • A8

1. Dial * for next PA option.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To set zone paging,

I. Dial 60.

"P.A. OPTIONS "

2. Dial 4 to assign zone paging

'PA ZONES

3. Choose zone (LED On = Selected Zone).

Press AI or dial 1 for zone 1.

Press A2 or dial 2 for zone 2.

Press A3 or dial 3 for zone 3.

Press A4 or dial 4 for all-call.

1. Dial * for next PA option

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To set ringing relay tracking,

1. Dial 60.

"P.A. PORT

2. Dial 5.

"RELAY XXXXXXX

3. Choose relay tracking assignment,

Press AI to toggle between paging port and station port 17.

(LED On = paging port)

-OR-

Dial **1** for station port 17.

"RELAY STA. 17"

Dial 2 for paging port.

"RELAY P.A. PORT"

4. Dial **★** for next PA option.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

IMI66-107 System Programing

System Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Station Monitoring: The DSS/BLF at a station provides idle, busy, and ringing status of all of the monitored stations. If users deem the flashing BLF lights associated with visual ring indication distracting, you can disable this visual ndication system-wide using this procedure.

f you enable this visual ring indication, you can also enable audible indication of both direct and delayed ringing on a per station basis if you wish.

To enable visual ring indication,

1. Dial 20. "MONITOR XXXXXXX"

2. Press AI to toggle between enable and disable (LED On = Enable).

-OR-

Dial 1 to Enable "MONITOR ENABLED"

(Al LED ON).
Dial 2 to Disable.

'MONITOR DISABLED"

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To assign audible monitoring,

1. Dial 63. "STATION FEATURES"
2. Dial 20. "AUDIBLE MONITOR"

3. Dial **1** for no audible monitoring. **NONE**

Dial 2 for direct ring monitoring.
 *DIRECT RING **

5. Dial 3 for delayed ring "DELAYED RING"

5. Select station ports (LED On = Selected):

• Station 10 • 57: Dial 10 • 57 or press CIO • C57...

7. Dial * next monitoring condition.

-OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

System Alarm Reporting: The system can send special codes that convey certain system alarm conditions to selected stations where they will show on their LCD displays.

To enable the alarm reporting feature,

Dial 28 "ALARM REPORTS "

2. Press AI to toggle between enable and disable.

(LED On = Enable)

-OR-

Dial 1 to enable.

Dial 2 to disable.

3. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

To select the alarm reporting stations,

1. Dial 53.

"STATION FEATURES"

2. Dial 28.

"ALARM RECEIVE "

3. Select station ports (LED On = Selected):

• Station 10 • 57: Dial 10 • 67 or press CIO • C57.

4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

IMI66-107 System Programing

System Configuration - Miscellaneous Features - continued

Press ITCM *#746*

System Clock

The system clock maintains current date and time information. The system provides this information to LCD speakerphones for display. Set the system time with this feature. The system attendant also has access to this feature.

I. Dial **01.**

- ONG FORM
- Dial 00 99 for yr. - Dial **01 - 12** for mo.
- Dial **01 31** for day
- Dial 00 23 for hr.
- Dial 00 69 for min.

To change setting, repeat procedure and make different selection.

2. Dial * for configuration mode.

System Speed Dial

You can program a special system-wide list of numbers that all users can use for automatic dialing. The system attendant can also program the system speed dial numbers.

1. Dial 02.

- 2. Dial **01** 99 for storage location.
- 3. Dial # to clear current entry.
- 4. Choose line, line group, or intercom to be used with speed dial number.
 - Line port 1-14 = Dial 01 14 or press AI A14.
 - Line port 15,16 = Dial 15, 16 or press B1, B2.
 - Line port 17-24 = Dial 17 24 or press HOLD, AI A8.
 - Dial **90** for last line used or prime line. 'PRIME L/NE
 - 'LINE GROUP 1 " Dial 91 - 94 for line group 1-4.
 - "INTERCOM - Press **ITCM** button for intercom line.
- 5. Dial number for storage (32 digits max).
- If required, press **HOLD** button to store a pause.
 - If required, press **TAP** button to store a hookflash.
- 6. Press TRANS/CONF button to save the number.
- 7. Repeat steps 2-6 for all speed dial numbers.

-OR-

Press * for configuration mode.

Press SPKR to end.

"SET CLOCK "

SHORT FORM

- Dial 00-23 for hr.

Dial # to assign

- Dial **00-59** for min.

hours and minutes.

"SYS SPEED DIAL "

"LINE XX

"XXXXX...

"XXXXXXXXX..."

"LINE: "

IMI66-107 System Programing

System Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Tandem Attendant

When you enable this feature, a recall from an unanswered call transfer or timed hold recall will ring at both attendant stations. When you disable it, only the attendant station that transferred the call will ring.

1. Dial 24.

"TANDEM ATTN XXX "

2. Press AI to toggle between enable and disable (LED On \blacksquare Enable).

-OR-

Dial 1 to enable.

"TANDEM **ATTN** OFF

Dial 2 to disable

(Al LED is on).

"TANDEM ATTN ON "

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Tone or Voice Signalling

Intercom calls can be tone signalled or voice signalled. Use this programming feature to select the system's signalling choice. With either method set as the system's first choice, the user can choose the other method as needed.

1. Dial 16.

"XXXXX ANN. FIRST"

Press AI to toggle between Voice To Tone. (LED On = voice signalling).

-OR-

Dial 1 for Voice First.

"VOICE ANN. FIRST"

Dial 2 for Tone First.

"TONE ANN. FIRST"

3. Dial ***** for configuration mode.

To change setting, repeat procedure and make opposite selection.

Press SPKR to end.

4+5 System 2+3 Hours

System Configuration -Timing Features

Press **ITCM** *#746*

Sall Park Recall Time

A call that remains in a parking orbit for he length of time set with this programming feature automatically etums to a timed hold recall condition **It** the parking station.

1. Dial 22.

2. Select recall time: (LED On = Selected Time)

■ Dial 1 or press AI = 1 min. Dial 2 or press A2 = 2 min.

• Dial 3 or press A3 = 3 min • Dial 4 or press A4 = 4 min.

• Dial 5 or press **A5** = 5 min. • Dial 6 or press A6 = 6 min

■ Dial 7 or press A9 = Never Recall

3. Dial * for configuration mode.

C.P. RECALL X "

"C.P. RECALL 1"

"C.P. RECALL 2" "C.P. RECALL 3"

"C.P. RECALL 4 "

"C.P. RECALL 5"

"C.P. RECALL 6"

'NEVER RECALL"

To change setting, repeat procedure and make different selection.

Extended DTMF Tones For Automatic Dialing

When a telephone user dials a number automatically (autodial, saved number redial, etc), the duration of the generated DTMF tones are as you set them with this programming option. This is useful when automatically dialed numbers access answering machines, banking computers, voice mail, etc that require DTMF tones that are longer than standard tones.

1. Dial 26.

2. Choose DTMF tone length: (LED On = Selected Time)

• Dial 01 or press AI = 60 msec.

• Dial 02 or press A2 = **60** msec. - Dial 03 or press A3 = 100 msec.

• Dial **04** or press **A4** = 120 **msec**

■ Dial 05 or press **A5** = 160 msec. ■ Dial 08 or press A6 = 240 msec. • Dial 07 or press **A7 = 320** msec.

• Dial 08 or press **A8 = 400** msec. • Dial 09 or press A9 = 480 msec.

• Dial 10 or press A10 = 560 msec. • Dial 11 or press All = 720 msec.

■ Dial 12 or press Al2 = 680 msec.

■ Dial 13 or press **Al3** = 1040 msec. 3. Dial * for configuration mode.

"DTMF DIALNG XXXX"

"DTMF DIALNG 60 "DTMF DIALNG 80

"DTMF DIALNG 100 "

. "DTMF DIALNG **120 "** "DTMF DIALNG 160"

PTMF DIALNG 240 " "DTMF DIALNG 320"

*DTMF DIALNG 400 " "DTMF DIALNG 480"

"DTMF DIALNG 560" "DTMF DIALNG 720"

"DTMF DIALNG 880"

PTMF DIALNG 7040"

To change setting, repeat procedure and make different selection.

Pause Time

During auto dials and speed dials, it is sometimes necessary to delay the sending of digits to give switching equipment time to prepare for receiving them. A pause is stored for this purpose whenever the user presses the HOLD button. You can set the length of a pause with this programming feature.

1. Dial 13

2. Select time: (Program button LED On = selected time)

■ Dial 1 or Press Al = .5 sec. • Dial 2 or Press A2 = 1 sec.

• Dial 3 or Press A3 = 1.5 sec. Dial 4 or Press A4 = 2 sec.

- Dial 5 or Press A5 = 3 sec. Dial 6 or Press A8 = 5 sec. • Dial 7 or Press **A9 =** 7.5 sec.

 Dial 8 or Press A10 = 10 sec. • Dial 9 or Press All = 15 sec.

• Dial 0 or Press Al2 = 20 sec. 3. Dial * for configuration mode.

"PAUSE TIME XXX "

"PAUSE **TIME** 0.50 "

"PAUSE TIME 1 "PAUSE TIME 1.50

"PAUSE TIME 2

"PAUSE **TIME** 3

'PAUSE TIME 5 "PAUSE TIME 7.50"

"PAUSE TIME 10 " "PAUSE TIME 15"

"PAUSE TIME 20

To change setting, repeat procedure and make different selection.

System Configuration Timing Features continued on next page . . .

IMI66-107 System Programing

System Configuration -Timing Features - continued

Press ITCM *#746*

| Recall/Flash: The system can generate either a line disconnect (recall) or a host system feature access signal (flash) depending upon the programmed time. | I. Dial 12 2. Select time (LED On = Selected Time) • Dial 1 or Press Al = .08 sec. • Dial 2 or Press A2 = .30 sec. • Dial 3 or Press A3 = .50 sec. • Dial 4 or Press A4 = .60 sec. • Dial 5 or Press A5 = .75 sec. • Dial 6 or Press A8 = .88 sec. • Dial 7 or Press A9 = 1 sec. • Dial 8 or Press A10 = 1.5 sec. • Dial 9 or Press AII = 2 sec. • Dial 0 or Press AI2 = 3 sec. 3. Dial * for configuration mode. I-o change setting, repeat procedure and | "RECALL/FLSH 0.08" 'RECALUFLSH 0.30" WECALUFLSH 0.50" "RECALUFLSH 0.60" "RECALUFLSH 0.88" "RECALUFLSH 1" "RECALUFLSH 1.50" "RECALUFLSH 3" |
|---|--|---|
| Timed Hold Recall After a call has been on hold for the length of time set with this programming feature, the system will recall the station that placed the call on hold. | I. Dial 14 2. Select time (LED On = selected Time): • Dial 1 or Press AI = 30 sec. • Dial 2 or Press A2 = 60 sec. • Dial 3 or Press A3 = 90 sec. • Dial 4 or Press A4 = 120 sec. • Dial 5 or Press A5 = 180 sec. • Dial 6 or Press A8 = 240 sec. • Dial 7 or Press A9 = 300 sec. • Dial 8 or Press AI0 = 360 sec. • Dial 9 or Press AI 1 = 420 sec. • Dial 0 or Press AI2 = 0 sec. 3. Dial * for configuration mode. To change setting, repeat procedure and | "HOLD RECALL XXXX" "HOLD RECALL 30 " "HOLD RECALL 60 " "HOLD RECALL 90 " "HOLD RECALL 120 " "HOLD RECALL 180 " "HOLD RECALL 240 " "HOLD RECALL 300 " "HOLD RECALL 360 " "HOLD RECALL 420 " "HOLD RECALL 420 " "HOLD RECALL 0 " |
| Unanswered Call Transfer Recall Time A transferred call that remains unanswered after the length of time sel with this programming feature will return to the transferring station for answering. | 1. Dial 11. 2. Dial 1 (station transfer recall). '-OR- Dial 2 (department transfer recall). 7. Choose transfer time (LED On = Selection of S | ted Time): "STA XFR RCL 10 " "STA XFR RCL 20 " "STA XFR RCL 25 " "STA XFR RCL 30 " "STA XFR RCL 45 " "STA XFR RCL 60 " "STA XFR RCL 90 " "STA XFR RCL 120" "STA XFR RCL 180" "STA XFR RCL 400" |

IMI66-107 System Programing

System Configuration - Feature Inhibiting

Press ITCM *#746*

eature Inhibit Programming 'ou can disable certain features ystem-wide to provide a basic elephone system for use in nstallations where a large proportion of ne stations are accessible to nauthorized users thus subject to smpering.

'ou can re-enable the features that **'OU** disable with this procedure by lialing 34 while you have this rogramming feature active or by performing the system default procedure.

1. Dial 29.

Select feature:

- Dial 01 to disable Line Group 1.
- Dial 02 to disable Line Group 2.
- Dial 03 to disable Line Group 3.
- Dial 04 to disable Line Group 4.
- Dial 05 to disable Zone 1 Paging.
- Dial 08 to disable Zone 2 Paging.
- Dial 07 to disable Zone 3 Paging.
- Dial 08 to disable All Call.
- Dial 09 to disable Meet Me Page.
- Dial 10 to disable Night Transfer.
- Dial 11 to disable Background Music.
- Dial 12 to disable Voice Announce Block.
- Dial 13 to disable Message Waiting.
- Dial 14 to disable Call Pickup.
- Dial 15 to disable Call Forward.
- Dial 18 to disable Automatic Call Back.
- Dial 17 to disable Station-to-Station Messaging.
- Dial 18 to disable Line Group Queue.
- Dial 19 to disable Directed Station Hold.
- Dial 20 to disable Call Park Orbit 1.
- Dial 21 to disable Call Park Orbit 2.
- Dai122 to disable Call Park Orbit 3.
- Dial 23 to disable Call Park Orbit 4.
- Dial 24 to disable Call Park Orbit 5.
- Dial 25 to disable Call Park Orbit 6.
- Dial 28 to disable Call Park Orbit 7.
- Dial 27 to disable Call Park Orbit 8.
- Dial 28 to disable Call Park Orbit 9.
- Dial 29 to disable Call Waiting.
- Dial 30 to disable LCD Messaging.
- Dial 31 to disable Executive Override/Service Observing.
- Dial 32 to disable Account Code.
- Dial 33 to disable Personal Call Forward
- Dial 34 to enable all features.
- Dial * for next item.
- Dial * * for configuration mode.

Press SPKR to end.

"FEATURE INHIBIT"

System Programming IMI66-107

Line Configuration

- To make a record of the programming configuration, mark the desired requirements in the line class of service records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current **configuration.** When a sing/e button provides a toggle **(on/off)** action, the lighted LED indicates the active feature.

- The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press ITCM then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.
- To make a line port selection, press a programming button or dial a selection number on the keypad as follows:

LINES PROG. BUTTONS KEYPAD BUTTONS

1-14 Al -A14 01-14 15, 16 B1, B2 15, 16 17-24 HOLD plus Al • A8 17-24

Abandoned Hold Release

When a distant party abandons a hold condition and disconnects from a line (hangs up), the central office will send a forward disconnect signal to the digital telephone system. This signal can be either 50 msec. or 350 msec. in length. Find out from the telephone company what the signal length is, and program all of the central office line ports to match it using this procedure.

- 1. Dial 38. "HOLD RELEASE 50"
- Select hold release time for line ports.
 (LED On = 50 msec and Off = 350 msec.)
 Line port I-14 = Dial 01 14 or Press Al Al4
 Line port 15, 16 = Dial 15, 16 or press B1, B2
 Line port 17-24 = Dial 17 24 or press HOLD then press Al A8.
 Dial * for configuration mode.
- To change setting, repeat procedure and make different selection.

Line Configuration - continued

Press ITCM *#746*.

Automatic Privacy, Privacy Release

You can make a line private or non-private. In the private mode, a station has exclusive use of a line during a call. Lines are private unless you re-program them and make them non-private. Further, you can arrange for individual station to automatically release privacy while on certain lines. With this arrangement, other stations can join that particular station whenever it is on the privacy release line.

To make a line private or non-private,

- 1. Dial 40. "PRIVACY RELEASE"
- Select line ports to be non-private (LED On = Non Private):
 Line port 1-14 = Dial 01 14 or Press AI AI4
 Line port 15, 16 = Dial 15, 16 or press B1, B2
 Line port 17-24 = Dial 17 24 or press HOLD then press AI A8
- 3. Dial * for configuration mode.
- To change setting, repeat procedure and make different selection.

To arrange for a station to automatically release privacy on a private line,

- 1. Dial **54**. "STA/LINE CONFIG."
- 2. Dial 4. "PRIVACY RELEASE
- 3. Select line ports for privacy release (LED On = Privacy Release):
 Line port 1-14 = Dial 01 14 or press Al Al4
 Line port 15, 16 = Dial 15, 16 or press B1, B2.
 Line port 17 24 = Dial 17 24 or press HOLD then press Al Al
- 4. Dial # when all line ports are selected.
- 5. Select station ports to be programmed:
 - Station 10 57: Dial 10 67 or press Cl 0 C57.
- 6. Dial * when all station ports are selected.
 - -OR-

Dial * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Line Disable

Take a line port out of service when necessary (because of defect or some other reason) using this programming procedure.

- 1. Dial 31.
- "DISABLE LINES "
- 2. Select line ports to be disabled (LED On = Line Disabled).

 Line port 1-14 = Dial 01 14 or Press Al Al4

 Line port 15, 16 = Dial 15, 16 or press B1, B2

 Line port 17-24 = Dial 17 24 or press HOLD then press Al A8
- 3. Dial * for configuration mode.

Return the line to service with the *Line Ports Function* programming procedure.

System Programming IMI66-107

Line Configuration - continued

Press ITCM *#746*.

Line Groups

Group outside lines of the same type together for dial-up outgoing access.

NOTE: When you do this, the feature
automatically arranges the
system for hybrid operation.
Remember, hybrid operation
may incur a higher monthly
tariff than the key sysrem
operation incurs. Ask the local
telephone company for details

User access codes for the line groups are:

Group 1 = Dial 9

Group 2 = Dial 81 Group 3 = Dial 82

Group 4 = Dial 83

1. Dial 35

"ASSIGN LINE GRPS"

2. Dial 0 for no groups assigned "NO LINE GROUP"

-OR-

Dial 1 for Line Group 1

Dial 2 for Line Group 2

Dial 3 for Line Group 3

Dial 4 for Line Group 4.

"LINE GROUP 2"

"LINE GROUP 3"

3. Select line ports to be assigned (LED On = Lines Assigned).

Line port I-14 = Dial 01 - 14 or Press AI - AI4 Line port 15, 16 = Dial 15, 16 or press BI, B2

Line port 17-24 = Dial 17 = 24 or press HOLD then press AI = A8.

4. Dial ★ for next group.

-OR-

Dial * * for next feature;

-OR-

Dial * * for configuration mode.

To change settings, repeat procedure and make different selections.

Line Configuration - continued

Press ITCM *#746*.

.ine Names

'ou can name lines as to their function to dentify them for use. Names such as VATS, CO, etc., when appearing on the CD speakerphone displays, make locating desired line easier for the station user to lo. A line name can contain up to five characters.

1 Dial 34.

"LINE NAME"

- Select line ports to be named (LED On = Selected).
 Line port 1-14 = Dial 01 14 or Press AI AI4
 Line port 15, 16 = Dial 15, 16 or press B1, B2
 Line port 17-24 = Dial 17 24 or press HOLD then press AI A8.
- 3. Press # to clear current name.
- 4. Dial line name character codes (5 characters maximum for each line **port** from chart shown below).
 - Examples:
 - WATS = Dial 91 21 81 73
 - -0156 = Dial **00**, **01**, **05**, **06**

(Each character must be represented by two digits.)

5. Dial $* *$ and repeat last three steps for next line.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Character Dialing Code

| | | J.,214515 | | | |
|-----------------------|------|-----------|------|-------|------|
| CHAR | CODE | CHAR | CODE | CHAR | CODE |
| A | 21 | а | 24 | Space | 12 |
| В | 22 | b | 25 | | 15 |
| B C D E F | 23 | С | 26 | , | 17 |
| D | 31 | d | 34 | 1 | 18 |
| E | 32 | е | 35 | u . | 19 |
| F | 33 | f | 36 | | 27 |
| G | 41 | g | 44 | | 28 |
| Н | 42 | h | 45 | : | 29 |
| H | 43 | i | 46 | 1 | 01 |
| J | 51 | j | 54 | 2 | 02 |
| K | 52 | k | 55 | 3 | 03 |
| L | 53 | | 56 | 4 | 04 |
| M | 61 | m | 64 | 5 | 05 |
| N | 62 | n | 65_ | 6 | 06 |
| 0 | 63 | 0 | 66 | 7 | 07 |
| Р | 71 | р | 74 | 8 | 08 |
| Q | 11 | q | 14 | 9 | 09 |
| R | 72 | r | 75 | 0 | 00 |
| S | 73 | S | 76 | | |
| T | 81 | t | 84 | | |
| U | 82 | u | 85 | | |
| V | 83 | V | 86 |] | |
| W | 91 | W | 94 | [| |
| X | 92 | Х | 95 |] | |
| Υ | 93 | V | 96 |] | |
| Ζ | 13 | Z | 16 | | |

Line Configuration - continued

Press ITCM *#746*.

Line Port Functions

<u>Auxiliary 1 ines</u>: You can condition a line port to serve as a **port** for an external paging amplifier.

ports to serve as a **ports** for standard telephone company supplied central off ice lines.

To program an auxiliary line port,

- 1. Dial 32. "AUXILIARY LINES
- Select line ports to be assigned (LED On = Aux. Line Port).
 Line port 1-14 = Dial 01 14 or Press Al Al4
 Line port 15, 16 = Dial 15, 16 or press Bl, B2
 Line port 17-24 = Dial 17 24 or press HOLD then press Al A8.
- 3. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

To program central office line ports,

- 1. Dial 33. "C.O. LINES"
- Select line ports to be assigned (LED On = CO Line Port).
 Line port 1-14 = Dial 01 14 or Press AI AI4
 Line port 15, 16 = Dial 15, 16 or press BI, B2
 Line port 17-24 = Dial 17 24 or press HOLD then press AI A8
- 3. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

Line To Line Port M-Assignment

You can reassign the programming attributes for a line that the installer has connected to a particular line port to a different line port with this programming action (logical to physical reassignment). This feature allows you to automatically exchange all software attributes for a line (logical assignment) connected at one line port with those attributes assigned to another line at a different line port without physically re-locating the lines (physical assignment) or reprogramming any of the attributes.

1. Dial 41. "ASSIGN LOGICAL/PHYS"

- Select currently assigned line port number. "PHYS LATCH XX" Line port 1-14 = Dial 01 14 or Press Al Al4 Line port 15, 16 = Dial 15, 16 or press Bl, B2 Line port 17-24 = Dial 17 24 or press HOLD then press Al A8
- 3. Dial new line port number **(01 -** 24 = line 1 24).

"LOGICAL LINE XX "

- 4. Dial # to make assignment.
- 5. Repeat steps 2 -4 for another assignment.

-OR-

6. Dial * for configuration mode.

To change setting, repeat procedure and make different selection or make same port selections in both steps 2 and 3 to match logical to physical assignment.

System Programming

Line Configuration - continued

Press ITCM *#746*.

Pulse/Tone Switchable

f the installer has connected rotary dial ines to the system, you must condition hose line ports as pulse dial ports.

Alternately, if the installer has connected one dial lines to the system, you must condition those line ports as tone dial ports. The user can switch from pulse (rotary dial signalling) to tone (dual tone multiple requency • DTMF) for accessing special circuits requiring DTMF tones such as canking machines, etc when they need to do so while on a rotary dial line.

To condition line ports for pulse dialing,

1. Dial 36. "PULSE DIAL"

Select pulse dial line ports (LED On = Pulse Dial Line Port):
 Line port 1-14 = Dial 01 • 14 or Press Al • Al4
 Line port 15, 16 = Dial 15, 16 or press B1, B2
 Line port 17-24 = Dial 17 • 24 or press HOLD then press Al • A8, • OR-

Dial 00 to default all lines to pulse dial.

3. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

To condition line ports for tone dialing,

1. Dial 37 "TONE DIAL "

2. Select tone dial line ports (LED On = Tone Dial Line Port):
Line port 1-14 = Dial 01 - 14 or Press AI - AI4
Line port 15, 16 = Dial 15, 16 or press B1, B2
Line port 17-24 = Dial 17 - 24 or press HOLD then press AI - A6
-OR-

Dial 00 to default all lines to tone dial.

3. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

Line Configuration - Block Programming

Press ITCM *#746*.

3lock Programming

'ou can use this line configuration procedure to assign those features that you rave assigned to any one line (using the **procedures** detailed on the previous pages) any other line or to an entire block of ines.

Line Button Method

1. Dial 42.

"BLK PROGRAMMING " "MODEL LINE XX "

2. Select model line port. Line port I-I 4 = Press AI • AI 4 Line port 15, 16 = Press B1, B2

Line port 17-24 = Press HOLD then press AI - A8.

3. Select lines to match model line (as detailed above).

4. Dial * and repeat steps 2 and 3 for next model line.

-OR-

Dial * * for configuration mode.

Keypad Method

1. Dial 42.

"BLK PROGRAMMING " "MODEL LINE XX "

2. Select model line port Line port 1 • 24 = Dial 01 • 24.

- 3. Dial first line port in block (dial 01 24).
- 4. Dial #.
- 5. Dial last line port In block (dial 01 24).
- 6. Dial #.
- 7. Dial * for next model line.

-OR-

Dial * * for configuration mode.

NOTE: The first, last and all lines in between will be block programmed like the model line. To block program an individual line, select the first line and last line to be the same number. For example: 01, 02#, 02# programs line 02 the same as line 01 is programmed.

Station Configuration

- ▶ To make a record of the programming configuration, mark the desired requirements in the station class of service records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

VOTE: A lighted LED **next to** the programming button for the selection indicates **the** current configuration. When a single button provides a **toggle** (on/off) action, **the** lighted LED indicates **the** active feature.

▶ The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press **ITCM** then dial *# 7 4 6 *. The last step is to press the **SPKR** button to end the programming procedure and return the system to normal operation.

Make station port selection by dialing a selection number on the keypad or pressing the console button per the following reference chart.

STATION PORTS

KEYPAD BUTTONS

CONSOLE BUT-TONS

10-57

10-57

C10 - C57

Station Configuration • Miscellaneous Features

Access Denied

You can deny access to certain lines at **:ertain** stations. When you do this, a **:tation** user cannot select a denied line.

1. Dial **54**.

- "STA/LINE CONFIG."
- 2. Dial 5. "ACCESS DENY"
- 3. Select line ports (LED On = Access Denied):
 Line port 1-14 = Dial 01 14 or press Al Al4
 Line port 15. 16 = Dial 15, 16 or press B1, B2.

Line port 17-24 = Dial 17 • 24 or press HOLD then press AI • A8

- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press CIO C57.
- 6. Dial * when all station ports are selected.

-OR-

Dial * * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Programing IMI66-107 System

Station Configuration • Miscellaneous Features • continued

Press ITCM *#746*

M-Call and Zone Paging

elephone users can receive voice innouncements through their telephone budspeakers, or through an external paging amplifier and speaker connected to PA port. They can transmit these voice innouncements with their telephone landsets. You can arrange the programming so that the users can make **innouncements** to stations located in **ertain** areas of the site or to all of the itations.

f you wish, you can assign a paging button o provide a station with one-button access o the all-call and zone paging feature.

To assign the all-call or zone paging feature,

1. Dial 55. "PAGING"

2. Choose paging assignment.

■ Dial 1 for zone 1 originate. "ORIGINATE ZONE 1" Dial 2 for zone 2 originate. "ORIGINATE ZONE 2" ■ Dial 3 for zone 3 originate "ORIGINATE ZONE 3"

 Dial 4 for all-call originate. "ALL-CALL ORIG." ■ Dial 5 for zone 1 receive "RECEIVE ZONE 1"

 Dial 6 for zone 2 receive "RECEIVE ZONE 2" Dial 7 for zone 3 receive "RECEIVE ZONE 3"

 Dial 6 for all-call receive. "ALL-CALL RECEIVE

 Dial 9 to clear all assignments. 3. Select station ports (LED On = Feature Active):

• Station 10 • 57: Dial 10 • 57 or press Cl 0 • C57.

4. Dial * to assign other paging.

-OR-Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To assign an all-call or zone paging button,

"BUTTON MAPPING" 1. Dial 56.

"ASSIGN ZONE " 2. Dial 99.

3. Select button to be programmed (LED On = Paging Button): - Press AI - A14, B1 - B8.

4. Dial **1 • 3** for zone 1 • 3.

"ASSIGN ZONE X "

-OR-

Dial 4 for all-call. "ASSIGN ALL CALL "

5. Select station ports (LED On = Button Assigned To Port): • Station 10 • 57: Dial 10 • 57 or press Cl 0 • C57.

6. Dial * for further paging button assignment.

-OR-

Dial * * for next button mapping feature.

-OR-

Dial * * for configuration mode.

To clear a paging button, dial 5694, press paging button, dial and repeat above steps 5 and 6.

Press SPKR to end.

"CLEAR PAGING"

System Programing IMI66-107

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Audible Monitoring

The DSS/BLF at a multiline station provides visual indication of idle, busy and ringing status of the monitored stations. You can also provide audible indication of direct and delayed ringing for selected stations; nowever, you must first enable the station nonitoring feature on a system-wide basis.

To enable the station monitoring feature,

1. Dial 20. "MONITOR XXXXXXXX"

2. Press AI to switch between enable and disable (LED On = Enable).

Dial 1 to Enable "MONITOR ENABLED"

-OR-

Dial 2 to Disable. "MONITOR DISABLED"

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To assign audible monitoring to stations,

1. Dial 53. "STATION FEATURES"

2. Dial 20. "AUDIBLE MONITOR "

3. Dial 1 for no audible monitoring. "NONE"

4. Dial 2 for direct ring monitoring. "DIRECT RING"

5. Dial 3 for delayed ring monitoring. "DELAYED RING"

6. Select stations **ports** (LED On = Feature Assigned)):

• Station 10 • 57: Dial 10 • 57 or press CIO • C57.

7. Dial * next monitoring condition.

-OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Automatic Hold

When you enable this feature, the telephone user can automatically place an existing line call on hold when she or he Dresses another line button to answer a second call.

Automatic Hold For Intercom

If you want the telephone user to also have the automatic hold feature while he or she s on an existing intercom call and presses another intercom button **or**:a line button, take this additional programming action.

To enable automatic hold for line calls,

1. Dial 53.

'STATION FEATURES"

2. Dial 11.

"AUTO HOLD "

- 3. Select station ports (LED On = Feature Asssigned):
- Station 10 57: Dial 10 57 or press CIO C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To enable automatic hold for intercom calls.

1. Dial 53.

"STATION FEATURES"

2. Dial 12.

"ITCM AUTO HOLD"

- 3. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Station Configuration • Miscellaneous Features • continued

Press ITCM *#746*

Automatic Privacy/Privacy Release

You can make a line private or non-private. n the private mode, a station has exclusive JSE of a line during a call. You can arrange 'or individual stations to automatically release privacy while on certain private ines. With this arrangement, other stations can join that particular station whenever it is on the line that you have assigned as a privacy release line.

To make a line private or non-private,

1. Dial 40. "PRIVACY RELEASE"

Select line ports to be non-private (LED On = Non Private Port):
 Line port 1-14 = Dial 01 - 14 or Press Al - Al4
 Line port 15, 16 = Dial 15, 16 or press B1, B2
 Line port 17-24 = Dial 17 - 24 or press HOLD then press Al - A8

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To arrange for a station to automatically release privacy on private lines,

1. Dial 54.

"STA/LINE CONFIG."

2. Dial 4. "PRIVACY RELEASE"

Select line ports (LED On = Selected Ports):
 Line port 1-14 = Dial 01 • 14 or press Al • Al4
 Line port 15, 16 = Dial 15, 16 or press B1, B2.
 Line port 17-24 = Dial 17 • 24 or press HOLD then press Al • A8

- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Feature Assigned) :
 Station 10 57: Dial 10 57 or press CI0 C57.
- 6. Dial * when all station ports are selected.

-OR-

Dial * * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Call Forward On Busy/Ring • No Answer

The system can automatically forward busy and ring-no answer calls that callers make to one station to another station for answering. The system sends these calls to any idle station associated either by intercom hunt group or by department with the called station. Use this feature to arrange for calls to cycle rapidly through such associated stations testing each one in turn with several rings.

NOTE: If you enable 'this feature, also program the system intercom signalling as tone for the first choice.

To enable call forwarding,

1. Dial 53.

"STATION FEATURES"
"CALL FWD RNA"

2. Dial 21.

ng. "RING **S=** X

- 3. Dial 0 9 for 0 9 rings before forwarding. "RIN
 4. Select station ports (LED On = Feature Assigned):
- Station 10 57: Dial 10 57 or press Cl 0 C57.
- 5. Dial * for additional station ring assignments.

-OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To set tone first intercom signalling,

1. Dial 16.

"XXXXX ANN. FIRST"

Press AI to toggle from Voice To Tone (LED Off = Tone).
 OR-

Dial 2 for Tone First.

"TONE ANN. FIRST"

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

System Programing IMI66-107

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Call Origination Denied

You can deny users of selected stations the ability to originate calls on specified lines. This feature does not prevent the user from answering incoming calls on these lines.

1. Dial 54. 2. Dial 6.

"STA/LINE CONFIG."

- "ORIGINATION DENY"
- 3. Select line ports (LED On = Selected Ports):
 Line port 1-14 = Dial 01 14 or press AI AI4
 Line port 15, 16 ≈ Dial 15, 16 or press B1, B2.
 Line port 17-24 = Dial 17 24 or press HOLD then press AI A6
- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Feature Assigned):
 Station 10 57: Dial 10 57 or press CI0 C57.
- 6. Dial * when all station ports are selected.

-OR-

Dial * * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Central Message Desk

Use this feature to designate one station in the system as the central message desk. When you do this, the system automatically arranges for the central message desk station to have message wait originate capability so that it can control message waiting lights at other stations.

Dial 53.
 Dial 06.

"STATION FEATURES"

"MSG DESK"

- 3. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Data Security Port

While port is active on a call, this feature prevents any incoming tones associated with other system features from interrupting the call.

Dial 53.
 Dial 26.

'STATION FEA **TURES"**'DATA SECURE **PORT"**

- 271710
- 3. Select station port (LED On = Feature Assigned):
 Station 10 57: Dial 10 57 or press CI0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Dual Console Feature

The dual console feature allow users to have two **DSS/BLF** consoles to complement one telephone.

To program station port for second-console feature,

1. Dial 53 for station features.

"STATION FEATURES"

- 2. Dial 34 to enable second console.
- 'SECOND CONSOLE"
- 3. Select console port.
 - Station 10 57: Dial 10 57 or press CIO C57.
- 4. Select station port that console is to complement
 - Station 10 57: Dial **10 57** or press Cl 0 C57.
- 5. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To clear second-console feature assignment,

- 1. Repeat steps 1 through 3 above.
- 2. Type console port number twice.
- 3. Dial * * for configuration mode.

Executive Override

You can provide selected stations with busy override. This feature allows the station to override a busy condition at a station, sound a warning tone, and gain access to the existing conversation.

- 1. Dial 53
- 2. Dial 02.

"STATION FEATURES".
"EXEC. OVERRIDE"

- 3. Select station ports (LED On = Feature Assigned):
 Station 10 57: Dial 10 57 or press CI0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Flexible Ringing Assignments

You must program ringing assignments on a per station/per line basis. You can control ringing for every line that has appearance at a station assigning irnmediate, or direct, ringing to some lines and delayed ringing to others.

NOTE: Do not program direct **ringing** for lines that you assign to the direct department calling feature.

Night Transfer (Of Ringing)

You or the system attendant can place the **system** into the night transfer (of ringing) rnode of operation. While in this mode of operation, the system will activate special **Ine/station** ringing assignments. Use this procedure to program these assignments.

To make direct or delayed ringing line/station assignements,

1. Dial 54.

"STA/LINE CONFIG." "DIRECT RING '

2. Dial 1.

-OR-

"DELAY RING "

Dial 2. 3. Select line ports for ringing (LED On = Selected Ports): (For no ringing, skip this assignment and go to step 4.) Line port 1-14 = Dial 01 = 14 or press AI = AI4 Line port 15, 16 = Dial 15, 16 or press BI, B2.

Line port 17-24 = Dial 17 - 24 or press HOLD then press AI - A8

None = skip this step and make no line selection.

- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Feature Assigned):
- Station 10 57: Dial 10 57 or press Cl 0 C57.
- 6. Dial * when all station ports are selected. -OR-

Dial * * for next station/line ringing assignment -OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To make the night transfer (of ringing) line/station assignments,

1. Dial 54.

"STA/LINE CONFIG"

2. Dial 3.

"NIGHT RING" 3. Select line ports for night ringing (LED On = Selected Ports):

Line port I-14 = Dial 01 • 14 or press AI • AI4 Line port 15, 16 = Dial 15, 16 or press BI, B2.

Line port 17-24 = Dial 17 • 24 or press HOLD then press AI • AI3

- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Feature Assigned): Station 10 - 57: Dial 10 - 57 or press CIO - C57.
- 6. Dial * when all station ports are selected.

-OR-

Dial * * for next station/line feature.

-OR-

Dial * * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To put the system in the night transfer (of ringing) mode of operation,

1. Dial 03.

"NIGHTXFER XXX "

2. Press AI to toggle between enable and disable (LED On = Enabled).

-OR-

Dial 1 to enable (Al LED on).

"NIGHTXFER ON "

Dial 2 to disable.

"NIGHTXFER OFF"

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection,

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Flexible Station Numbering

The system supports a flexible station lumbering plan for calling individual stations and departments. You can program each station port to respond to the tialing of any available number between 10 and 7999; however, the system will not allow you to assign the same dialing code as both a station extension number and a department access code, nor will the system allow you to assign an extension number or access code conflict such as 15 and 1500.

1. Dial 52.

"ACCESS CODE "

2. Dial 1 to assign extension number

"ASSIGN EXT. NUM. "

3. Select station port:

"EXT. XXXX

• Station 10 • 57 = Dial **10 - 57** or press **C10 -** C57.

4. Dial new extension number. "EXT. XXXX YYYY" NOTE: Extension number can be max. of four digits. If less

than four digits, leading zeros must be dialed before number. Example: For ext. no. 15, dial 0075).

Select next station number and assign extension number.
 OR-

Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection,

Group Call Pickup

f a call rings to any station in a **prearranged** group, a user at another station in that group can dial a group pickup **code** and answer the call. Assign the stations to call pickup groups using this **procedure**. 1. Dial 53.

'STATION FEA TURES"

2. Dial 16. "GRP. CALL PICKUP"

3. Dial 0 for no group -OR-

4. Dial **1** • 4 for group 1 • 4.

"GROUP X

5. Select station ports (LED On = Feature Assigned):

• Station 10 • 57: Dial 10 • 57 or press CI0 • C57.

6. Dial * for next group

-OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

To remove station from call pickup group, assign it to group 0.

Headset Interface

When employing DigiTech (product code 7700S rev. H and earlier) and Americom [product code 7016S all revs.) LCD speakerphones, you must use this programming procedure to enable a station port to allow headset operation.

When employing Impact (product code 8124S all rev.) and DigiTech (product codes 7700S rev I and later) LCD speakerphones, either you or the individual station user must program a headset button at his or her LCD speakerphone to activate the headset operation.

NOTE: The system delivers subdued off-hook voice announcements (SOHVA) to the headset. Because a headset exhibits a coupling effect between the earpiece and microphone, it may allow the outside party to hear the SOHVA message. You should inform the user of this possibility.

To arrange for headset operation as a class of service,

1. Dial 53.

"STATION FEATURES"

2. Dial 13.

"HEADSETMODE " '

3. Select station ports (LED On = Feature Assigned):

- Station 10 - 57: Dial 10 - 57 or press CIO - C57.

4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To arrange for headset operation at a user's telephone,

- 1. Press **ITCM** at the user's telephone.
- 2. Dial * * 1.
- 3. Select button to be programmed:
 - Press Al A14, B1 810.
- 4. Dial 94.
- 5. Press SPKR to end.

Station Configuration • Miscellaneous Features • continued

Press ITCM *#746*

Idle Line Preference

When you enable idle line preference, a station will automatically connect to any assigned and idle line that you have programmed for this purpose when the user takes the station off hook.

1. Dial 54.

"STA/LINE CONFIG."

2!. Dial 7.

"IDLE LINE PREF. "

3. Select line ports (LED On = Selected Port):
Line port I-14 = Dial 01 - 14 or press AI - AI4
Line port 15, 16 = Dial 15, 16 or press B1, B2.

Line port 17-24 = Dial 17 = 24 or press HOLD then press Al - A6

- 41. Dial # when all line ports are selected.
- **5**. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial **10 57** or press **C10 •** C57.
- Dial * when all station ports are selected.
 OR-

Dial * * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Interactive Buttons

The system supports the operation of interactive buttons on all currently produced Comdial proprietary LCD speakerphones. interactive buttons provide users with quick easy access to system features and an expanded display that prompts them on feature operation and progress. DigiTech and *Impact* LCD speakerphones provide interactive buttons to the user at all times: however, the Americom LCD speakerphone does not provide themat default. You must take this programming action to enable interactive buttons on Americom LCD speakerphones. When you enable interactive buttons, the system recognizes which Americom LCD speakerphone that the installer has connected to the station port and assigns the buttons accordingly. If the installer replaces an Americom 701 OS model with a **7016S** model, the system automatically reassigns the buttons from the L3, L5, and L7 locations to the L22, L23, and L24 locations. The buttons on the 7016S models are factory marked with red, blue, and green labels while the 7010S model includes a special button designation strip for use when needed.

1. Dial 53.

"STATION FEATURES"

'SOFT KEYS"

- Dial 17.
 Select station ports (LED On = Feature Assigned):
- Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial * for next station/line feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

IMI66-107 Programing System

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

| Intercom | Hunt | Group |
|----------|------|-------|
|----------|------|-------|

You can link stations together to form intercom hunt groups. Calls to a busy station in a hunt group will search the group for an idle station to ring.

- 1. Dial 53. "STATION FEATURES"
- 2. Dial 18. "ITCM HUNT LINK
- 3. Select first linking station.
 - Station 10 57: Dial 10 57 or press CIO C57.
- 4. Select second linking station
- Station 10 57: Dial 10 57 or press Cl 0-C57.
- 5. Dial * for another link

(Example A: 17 to 16, 18 to 16 and 19 to 16; Example B: 16 to 17, 17 to 18, and 18 to 16.)

-OR-

6. Dial * * for next station feature.

-OR-

Dial * * for configuration mode; Disable link by repeating procedure.

PersonalRingingTones

fou can program stations to ring in one of six distinctive tones:

- I. **666/571** Hz **@** 16 Hz warble
- 2. 1000/800 Hz @ 16 Hz warble
- 3. **666/571** Hz **@** 23 Hz warble
- 1. 1000/800 Hz @ 23 Hz warble
- 5. **5001444** Hz **@** 16 Hz warble
- 3. 5001444 Hz @ 23 Hz warble

1. Dial 53.

- 2. Dial 14.
- 3. Select ringing tone.
 - Dial **1** for tone 1.
 - Dial 2 for tone 2.
 - Dial 3 for tone 3.
 - Dial 4 for tone 4.
 - Dial 5 for tone 5.
 - Dial 6 for tone 6.

"STATION FEATURES"

"RINGING TONE"

- "RINGING TONE 1 "
- "RINGING TONE 2 "
- "RINGING TONE 3 " .
- "RINGING TONE 4"
- "RINGING TONE 5 ".
- "RINGING TONE 6"
- 4. Select station ports (LED On = Feature Assigned) :
 - Station 10 57: Dial 10 57 or press CI 0 C57.
- 5. Dial * for next ringing tone assignment.

-OR-

Press * * for next station feature.

-OR-

Press * * for configuration mode.

To change setting, repeat procedure and make different selection.

Prime Line (also prime group or prime intercom)

If you assign a group of lines, an intercom ine, or one individual line to a particular station for use as its prime line, the station automatically selects it for use when the user takes it off-hook.

- 1. Dial 53.
- 2. Dial 15.

- 'STATION FEATURES"
 - "PRIME LINE "
- 3a. Assign prime line. "PRIME LINE XX " Line port 1-14 = Dial **01 - 14** or press **AI - AI4**

Line port 15, 16 = Dial 15, 16 or press B1, B2.

Line port 17-24 = Dial 17-24 or press HOLD then press Al - Al

3b. Assign prime group,

Dial 51-54 for gps. 1-4.

"PRIME LINE GRP X"

3c. Assign prime intercom,

Dial 50 for intercom line.

"PRIME INTERCOM"

- 4. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press C10 C57.
- 5. Dial * for next prime line, group, or intercom assignment. -OR-

Press * * for next station feature.

-OR-

Press * * for configuration mode.

To change setting, repeat procedure and make different selection.

System Programing IMI66-107

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Message Wait Originate 1. Dial 53. "STATION FEA TURES" Any station that you program with this 2. Dial 08. "MSG. WAIT ORIG." eature can control the message waiting 3. Select station ports (LED On = Feature Selected): light at other stations in the system. When • Station 10 • 57: Dial 10 • 57 or press Cl 0 • C57. a station user observes the message 4. Dial * for next station feature. waiting light turn on, he of she can press -OR-**TCM** HOLD to call the station that Dial * * for configuration mode. controlled the light. To change setting, repeat procedure and make opposite selection. "STATION FEATURES" 1. Dial 53. Ringing Line Preference "RING LINE PREF. " When you assign this feature to a station, it 2. Dial **09.** will automatically answer a ringing line 3. Select station ports (LED On = Feature Selected): when its user takes it off-hook. Station 10 - 57: Dial 10 - 57 or press C10 - C57. 4. Dial * for next station feature. -OR-Dial * * for configuration mode. To change setting, repeat procedure and make opposite selection. **"STATION** FEATURES" Subdued Off-Hook Voice Announce 1. Dial 53 .SOHVA * 2. Dial 24 (SOHVA) Disable 3. Select station port (LED On = Feature Assigned) The SOHVA feature is standard for every station; however, you can disable it for • Station 10 • 57: Dial 10 • 57 or press CI 0 • C57. selected stations with this programming 4. Dial * for next station feature. -ORselection. Dial * * for configuration mode. To change setting, repeat procedure and make opposite selection. **Subdued Off-Hook Voice Announce** 1. Dial 53. STATIONFEATURES" 'SOHVA GROUP * 2. Dial 30. (SOHVA) Groups 'SOHVA GROUP X Use this procedure to arrange station ports 3. Dial **1 • 8** for gp. 1-8. to originate and/or receive SOHVA calls by 4. Select all station ports to receive assigning SOHVA calling groups to them. SOHVA group (LED On ≥ Feature Assigned): Also provide selective SOHVA calling to the -Station 10 • 57: Dial 10 • 57 or press C10 • C57. system by arranging certain station ports 5. Dial * and repeat steps 4 and 5 for additional together into groups for SOHVA calling SOHVA group/station assignments between one another, while excluding other -ORstation ports in the system. Dial * * for next station feature -OR-Dial * * for configuration mode. To change setting, repeat procedure and make opposite selection. SOHVA Groups - continued on next page . .

Station Configuration - Miscellaneous Features - continued

jetting Subdued Off-Hook Voice
Announce (SOHVA) Tone Burst
Quantities: Use this procedure to set the
quantity of SOHVA tone bursts that sounds
at stations to a choice of one through six.

To program from station 10,

1. Press ITCM *#746*, "CONFIG. MODE"

2. Dial 17, "SYSTEM FEATURES"
3. Dial 03, "SOHVA TONES n"

4. Select the quantity of tone bursts,

- Dial 1 - 6 or press AI - A5, A8 (LED On = enabled)

5. Dial * for configuration mode.

6. Press **SPEAKER** to end.

To program from the VDT,

1. Type 1*746* for the programming mode,

2. From main menu, select system COS and press RETURN,

3. From the system COS menu, select system options and press **RETURN**,

4. From the system options menu, select SOHVA tones and press **RETURN**,

5. Type 1 • 6 to select desired quantity of tones and press **RETURN**,

6. To return to main menu, press and hold CTRL and type C.

4-32A

(TAB1 17p29)

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

| 30 | HV | Δ | Grouns | | continued |
|----|--------|------------|--------|---|-----------|
| 30 | 'I I V | ~ ' | GIUUDS | - | Continued |

The system provides eight different ixed-configuration SOHVA groups.

| | Fixed | SOH | /A Gi | oups | | | | |
|--------------|----------|----------|----------|--------------|----------|------------|------------|------------|
| SOHVA GROUP | 9 (| GROU | P CO | NFIG | URA] | IONS | 3 | |
| GROUP 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | Χ | | <u> </u> | | | | | |
| Originate To | X | LX. | X | X | | | | |
| GROUP 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | X | X | | | | | ļ <u> </u> | |
| Originate To | | X | X | LX. | | | <u> </u> | |
| GROUP 3 | 1 | 2_ | 3 | 4 | 5 | 6 | 7 | 8 |
| Receive From | <u> </u> | _X_ | X | | | | | L |
| Originate To | ↓ | ļ | X | X | | | | <u>L</u> . |
| GROUP 4 | 1 | 2 | 3_ | 4 | 5 | 6 | 7 | 8 |
| Receive From | <u> </u> | X | LX. | ļ | | | | |
| Originate To | | | | | 1 | | | _ |
| GROUP 5 | 1 | 2 | 3_ | 4 | 5_ | 6 | 7 | 8 |
| Receive From | <u> </u> | | | | X | ļ <u>.</u> | | <u> </u> |
| Originate To | <u> </u> | ļ | | ļ | X_ | ļ | | ↓_ |
| GROUP 6 | 1 | 2 | 3 | 4 | 5_ | 6 | 7 | 8 |
| Receive From | ļ | ļ | | | | X | ļ | <u> </u> |
| Originate To | <u> </u> | | | ļ | <u> </u> | X | | <u> </u> |
| GROUP 7 | 1 | 2 | 3 | 4 | 5_ | 6 | 7 | 8 |
| Receive From | | | | | | | X. | <u> </u> |
| Originate To | | | | | <u> </u> | | X | ↓_ |
| GROUP 8 | 1 | 2 | 3_ | 4 | 5 | 6 | 7_ | 8 |
| Receive From | | | | | | <u> </u> | | ĻХ |
| Originate To | <u> </u> | <u> </u> | | | 1 | | | ⊥x |

Service Observing

You can give selected stations the capability to monitor, in an un-announced manner, an active call at another station.

NOTE: Since this feature requires the executive override feature to function, the system automatically enables that feature for the station when you enable servicing observing.

You can also arrange selected stations so that they cannot be serviced observed.

Assign Service Observing

1. Dial 53.

"STATION FEATURES"

2. Dial **10.**

"SERVICE OBSERVE "

- 3. Select station ports (LED On = Feature Assigned):
 - Station 10 57: Dial 10 57 or press CI 0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Block Service Observing

Dial 53.
 Dial 29.

"STATION FEATURES"

"UNOBSERVABLE"

- 3. Select station ports (LED On = Feature Assigned):
- Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial * for next station feature.

-OR-

Dial * * for configuration

To change setting, repeat procedure and make opposite selection.

Station Disable

You can disable station ports on a per station basis.

1. Dial 59.

"DISABLE STATIONS"

- 2. Select station ports to be disabled (LED On = Disabled):
- Station 10 57: Dial 10 57 or press Cl 0 C57.
- 3. Dial * for configuration mode.
- To enable station, repeat procedure and make opposite selection.

System Programing IMI66-107

Station Configuration - Miscellaneous Features - continued

Press ITCM *#746*

Station Names

You can assign individual names or category names to stations. These names will then be displayed by LCD speakerphones when they are called by the named stations. Typical names could be TEC SER, MKT 1, J Smith.

System attendants also have access to this station naming feature.

1. Dial 66.

"STATION NAMES"

- 2. Select station port (LED On = Selected): "XXXXXX
 Station 10 57: Dial 10 57 or press Cl 0 C57.
- 3. Dial # to clear current station name.
- 4. Refer to Table below and compose station name (7 digits max.).
- 5. Dial all two-digit codes necessary to enter a new station name. "XX

"XxXxXxX **YYYYYY**Y

- 6. Dial * for next station and repeat steps 2-5.
- 7. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

| CHAR | CODE | CHAR | CODE | CHAR | CODE |
|------|------|------------|------|----------|------|
| Α | 21 | а | 24 | Space | 12 |
| В | 22 | b | 25 | - | 15 |
| С | 23 | С | 26 | : | _17 |
| D | 31 | d | 34 | 1 | 18 |
| E | 32 | е | 35 | 11 | 19 |
| F | 33 | f | 36 | | 27 |
| G | 41 | a | 44 | | 28 |
| Н | 42 | h | 45 | | 29 |
| | 43 | i | 46 | 1 | 01 |
| J | 51 | i | 54 | 2 | 02 |
| K | 52 | k | 55 | 3 | 03 |
| L | 53 | | 56 | 4 | 04 |
| М | 61 | | 64 | 5 | 05 |
| N | 62 | <u> </u> n | 65 | 6 | 06 |
| 0 | 63 | 0 | 66 | 7 | 07 |
| P | 71. | p | 74 | 8 | 08 |
| Q | 11 | q | 14 | 9 | 09 |
| R | 72 | r | 75 | 0 | 00 |
| S | 73 | s | 76 | <u> </u> | |
| I | 81 | t | 84 | | |
| U | 82 | u | 85 | | |
| V | 83 | V | 86 | | |
| W | 91 | w | 94 | | |
| X | 92 | x | 95 | | |
| Y | 93 | У | 96 | | |
| Z | 13 | Z | 16 | | |

Station Configuration • Miscellaneous Features • continued

Press ITCM *#746*

Station To Station Port Reassignment: You an use this programming action to exchange ne extension number and all other rogrammable attributes that you have ssigned to a station at one port with a tation at a different port (logical to physical 3assignment).

'his feature automatically reassigns the **oftware** attributes (logical assignment) of a **tation** at one port to a different port without **elocating** the station (physical assignment). This feature allows you to make adds, loves, and changes without relocating the **tation** wiring.

station extension numbers. Use the Flexible Station Numbering feature for that purpose. Also, do not confuse this feature with the Automatic Station Relocation feature discussed in the system configuration portion of these programming procedures. Further, note that the system will riot allow you to ressign the station IO/station port 10 assignment.

I. Dial 57 to reassign station to port.

'ASSIGN STA/PORT "

2. Dial station extension number. 0010 • 7999.

"PHYS PORTXX "

3. Dial physical port number 10 - 57 or press CI 0 - C57.

"LOGICAL STA XX "

1. Dial # to make assignment.

5. Dial * for configuration mode.

To change setting, repeat procedure and make different selection.

System Alarm Report Station: If you **arrange** the system to report alarms, also use his programming feature to enable stations o display alarm reports after the station user akes appropriate action.

To enable the alarm reporting feature,

1. Dial 28.

"ALARM REPORTS"

2. Press Al to toggle between enable and disable.

(LED On = Enable)

-OR-

Dial 1 to enable.

Dial 2 to disable.

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To select the alarm reporting stations,

1. Dial 53.

"STATION FEATURES"

2. Dial 28.

"ALARM RECEIVE"

Select station ports (LED On = Feature Assigned):
 Station 10 = 57: Dial 10 = 57 or press CI0 = C57.

4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make diierent selection.

Voice Announce Blocking: This feature allows a station user to block voice signalled intercom calls.

Dial 53.
 Dial 04.

"STATION FEATURES"
"VOICE BLOCK"

3. Select station ports (LED On = Feature Assigned):

• Station 10 • 57: Dial 10 • 57 or press CI0 • C57.

4. Dial * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make diierent selection.

Station Configuration - Button Mapping (Non-Square System Configuration)

You can assign (map) every programmable button at each digital station to be line select buttons to provide access to outside lines, to be direct station select (DSS) buttons to provide quick access to system stations, to be special purpose buttons to provide telephone users one-button access to features, or to be idle buttons to provide **autodial** locations for the station user.

Three Idle buttons serve as dynamic line buttons. Dynamic line buttons provide a location for the system to temporarily assign a line appearance to a station that normally does not have that particular line assigned to it. While a line is in appearance there, the user can perform any normal call handling operations that he or she wishes to **perform**. They are identified as follows: **B1, B2,** and **B3** on **DigiTech** telephones (product code **7700S,** 7114X, and **7114S)** or **L1**, **L2,** and L3 on **Impact** telephones (product codes **8012S,** 80248,811 N, **8112S,** and **8124S), L2, L4,** and L6 on Americom telephones (product codes **7010S** and 7110X) or **L22,** I-23, and **L24** on Americom telephones (product code **7016S)**. Turn to pages 4-94 through 4-99 for button illustrations if needed. When you map a button at a station port, press the corresponding button on the programming station to select the button to be mapped. If you must map buttons at a station port while using a programming telephone that does not provide a full **complement** of buttons, you can dial a **3-digit** code-to select the buttons to be mapped.

| Code | DigiTech | Impact | Americom | Code | <u>DiaiTech</u> | Impact | <u>Americom</u> | <u>Code</u> | <u>DigiTech</u> | <u>Impact</u> | Americom |
|------|-----------------|---------------|-------------|-------|-------------------|---------------|-----------------|-------------|-----------------|---------------|-----------------|
| 120 | Αľ | L01 | L1 | 1199 | / (49) | L09 | L17 | 100 | B1 | L17 | <u>L2</u> |
| 118 | A2 | LO2 | L3 | 117 | A10 | L10 | L18 | 101 | B2 | L18 | L4 |
| 116 | A3 | LO3 | L5 | 115 | AII | L11 | L19 | 102 | B3 | L19 | L6 |
| 114 | A4 | LO4 | L7 | 113 | AI2 | L12 | L20 | 103 | B4 | L20 | L8 |
| 112 | A5 | LO5 | L9 | 111 | AI3 | L13 | L21 | 104 | B5 | L21 | L10 |
| 110 | A6 | LO6 | L11 | 109 | AI4 | L14 | L22 | 105 | B6 | L22 | L12 |
| 108 | A7 | L07 | L13 | 122 | B9 | L15 | L23 | 106 | B7 | L23 | L14 |
| 121 | A8 | L08 | <u>L</u> 15 | 1 2 3 | | L16 | L24 | 107 | B8 | L24 | L16 |

Press ITCM *#746*

Account Code Button

Press the account code button and then dial an account code to record a call into a particular category without interrupting the call.

- 1. Dial 56.
- 2. Dial 17.

- **"BUTTON** MAPPING"
- "ASSIGN ACCT KEY "
- 3. Select button to be programmed:
 - Press Al A14, B1 B8 (LED On = Selected)
- 4. Select station ports to be programmed with ACCOUNT CODE button:
 - Station 10 57: Dial 10 57 or press CIO C57.
- 5. Dial * for further ACCOUNT CODE button assignment.

-OR-

Dial * for next button mapping feature.

-OR-

Dial * * for next configuration mode.

To clear, dial 5664, press button, dial #, select station, dial ***.

Automatic Call-Back Button

When a user presses this button after they encounter a busy tone, the system will automatically ring both the called station and the user's station when the called station becomes idle.

- 1. Dial 56.
- 2. Dial 10.

- "BUTTON MAPPING"
 "ASSIGN CALL BACK"
- 3. Select button to be programmed:
 - Press AI A14, B1 B8 (LED On = Selected).
- 4. Select station ports to be programmed with CALL-BACK button:
 - Station 10 57: Dial 10 57 or press Cl0 C57.
- 5. Dial * for next auto call-back button assignment. -OR-

Dial * * for next button mapping feature.

-OR-

Dial * * for configuration mode.

To clear, dial 5664, press button, dial #, select station, dial ***.

Station Configuration - Button Mapping - continued

Press ITCM *#746*

| 3lank Buttons 3lank those buttons that you want to be 1ynamic line buttons or autodial buttons. VOTE When blanking buttons, be sure a previously assigned button is idle (feature not selected by user) before you blank it. | 1. Dial 56. 2. Dial 04. 3. Select all buttons to be programmed: • Press AI • A14, B1 • B8 (LED On = Selected). 4. Dial #. 5. Select station ports to be programmed with auto dial buttons: • Station 10 • 57: Dial 10 • 57 or press CI0 • C57. 6. Dial * for further button blanking. • OR- Dial * * for next button mapping feature. • OR- Dial * * for configuration mode. |
|---|---|
| Call Forward Button: This button provides one-button forwarding of all calls to another extension. | 1. Dial 56. 2. Dial 11. 3. Select button to be programmed: • Press AI • A14, B1 • B8 (LED on = Selected). 4. Select station ports to be programmed with a CALL FWD button: • Station 10 • 57: Dial 10 • 57 or press CI 0 • C57 . 5. Dial * for next call forward button assignment. • OR - Dial * * for next button mapping feature. • OR - Dial * * * for configuration mode. To clear, dial 5604, press button, dial #, select station, dial ***. |
| Call Park Orbit Button The call park orbit button will automatically park an active call in orbit when the user presses it. | 1. Dial 56. 2. Dial 12. 3. Select button to be programmed: Press AI • A14, B1 • B8 (LED Winks = Selected, On = Asgn'd). 4. Dial 1 • 9 for parking orbit 1 • 9. Select station ports to be programmed with ORBIT button: Station 10 • 57: Dial 10 • 57 or press CI 0 • C57. 6. Dial * for next call park orbit button assignment. OR- Dial * * for next button mapping feature. OR- Dial * * for configuration mode. To clear, dial 5604, press button, dial *, select station, dial ***. |
| Jo Not Disturb (DND) Button Pressing the DND button prevents other stations from calling the DND station. | 1. Dial 56. 2. Dial 07. 3. Select button to be programmed: • Press Al • A14, B1 • B8 (LED On = Selected). 4. Select station ports to be programmed with a DND button: • Station 10 • 57: Dial 10 • 57. 5. Dial * for further DND button assignment • OR- Dial * * for next button mapping feature. • OR- Dial * * * for configuration mode. To clear, dial 5864, press button, dial #, select station, dial ***. |

Station Configuration - Button Mapping - continued

Press ITCM *#746*

)SS/BLF Button 1. Dial 56. "BUTTON MAPPING" **)SS** buttons provide quick access to 2. Dial 03. "ASSIGN **DSS/BLF** " system stations and their lights and show 3. Select button to be programmed: the busy status of the monitored stations. Press Al - A14, B1 - B8 (LED Winks = Selected, On = Asgn'd). 4. Select station port to be represented by this button: - Station 10 - 57: Dial 10 - 57 or press CI0 - C57. 5. Repeat steps 3 and 4 until all required ports are represented. 6. Dial #. 7. Select station ports to be programmed with **DSS/BLF** buttons: - Station 10 - 57: Dial 10 - 57 or press CIO - C57. 8. Dial * for further DSS/BLF button assignment. -OR-Dial * * for next button mapping feature -OR-Dial * * for configuration mode. To clear, dial 5684, press button, dial #, select station, dial ***. "BUTTON MAPPING" 1. Dial 56. Line Button 2. Dial **02.** "Assign line " iine select buttons provide access to 3. Select button to be programmed: outside lines. Press AI - A14, B1 - B8 (LED Winks = Selected, On = Asgn'd) 4. Select line ports to be assigned: Line port 1-14 = Dial 01 - 14 or Press AI - A14. Line port 15, 16 = Dial 15, 16 or Press B1, B2 Line port 17-24 = Dial 17 - 24 or press HOLD then press AI - A8 5. Repeat steps 3 and 4 until all lines are assigned. 6. Dial # to finish button mapping. 7. Select station port to be programmed: • Station 10 • 57: Dial 10 • 57 or press CIO • C57. 8. Dial * for further line/button assignment. -OR-Dial * * for next button mapping feature. Dial * * for configuration mode. To clear, dial 5684, press button, dial #, select station, dial ***. **1**. Dial 56. "BUTTON MAPPING" Line Group Button This button provides one-button access to "ASSIGN LINE GRP" 2. Dial 13. a line group. 3. Select button to be programmed: Press AI - A14, B1 - B8 (LED Winks = Selected, On = Asgn'd). 4. Dial **1** • 4 for line group 1 • 4. "ASSIGN LINE GRP X" 5. Select station ports to be programmed with GROUP button: • Station 10 • 57: Dial 10 • 57. 6. Dial * for next line group button assignment. -OR-Dial * * for next button mapping feature. -OR-Dial * * for configuration mode. To **clear**, dial 5664, press button, dial #, select station, dial ***.

Station Configuration - Button Mapping - continued

Press ITCM *#746*

Line Group Queue Button "BUTTON MAPPING" 1. Dial 56. 2. Dial 15. A station user can queue for a busy line by "ASSIGN LINE GRP Q" 3. Select button to be programmed: pressing a line group queue button. Press Al - A14. B1 - B8 (LED On = Selected). 4. Select station ports to be programmed with QUEUE button: - Station 10 - 57: Dial 10 - 57 or press CI0 - C57. 5. Dial * for next line group queue button assignment. -OR-Dial * * for next button mapping feature -OR-Dial * * for configuration mode. To clear, dial 5604, press button, select station, dial ***. "BUTTON MAPPING " Multiple Intercom Button 1. Dial 56. 2. Dial 05. "ASSIGN 2ND ITCM" You can assign a second intercom button 3. Select button to be programmed: to stations that may make many intercom Press AI • A14, B1 • B8 (LED On = Selected). calls. 4. Select station ports to be prog'med with multiple intercom button: Station 10 - 57: Dial 10 - 57 or press CI0 - C57. 5. Dial * for further intercom button assignment Dial * * for next button mapping feature. Dial * * for configuration mode. To clear, dial 5684, press button, dial #, select station, dial ***. "BUTTON MAPPING" **Privacy Button** 1. Dial 56. "ASSIGN PRIVACY " 2. Dial 86. A user engaged in a private call can press 3. Select button to be programmed: the privacy button to change a current call Press AI - A14, B1 - B8 (LED On = Selected). into a non-private one. 4. Select station ports to be programmed with a PRIVACY button: - Station 10 - 57: Dial 10 - 57 or press CI0 - C57. 5. Dial * for further privacy button assignment. Dial * * for next button mapping feature. Dial * * for configuration mode. To clear, dial 5604, press button, dial #, select station, dial ***. Save Button: 1. Dial 56. **"BUTTON** MAPPING" 2. Dial 88. "ASSIGN SAVE " A telephone user can press the SAVE 3. Select button to be programmed: button to store the last dialed number for Press AI - A14, B1 - B8 (LED On = Selected). later redial or dial the last caller ID received 4. Select station ports to be programmed with a SAVE button: by a station when that feature is available. Station 10 • 57: Dial 10 • 57 or press CI0 • C57. 5. Dial * for further Save button assignment Dial * * for next button mapping feature. Dial * * for configuration mode. To clear, dial 5684, press button, dial #, select station, dial ***.

Station Configuration - Button Mapping - continued

Press ITCM *#746*

| Voice Announce Block Button Telephone users can block voice announced intercom calls and station paging by pressing this button. | Dial 56. Dial 14. Select button to be programmed Press Al - A14, B1 - B8 (LEE) Select station ports to be programmed Station 10 - 57: Dial 10 - 57: Dial * for next voice announce OR-Dial * * for next button mapping OR-Dial * * for configuration mapping To clear, dial 5604, press button. | O On = Selected): n'ed with a V.A. BLOCK button: or press CI 0 • C57. e block button assignment. ing feature. |
|--|---|---|
| Zone Page/All-Call Button This button will provide a station with one-button access to all-call and zone paging. | 4. Dial 1 • 3 for zone 1 • 3. •OR- Dial 4 for all-call. 5. Select station ports to be prog • Station 10 • 57: Dial 10 • 57 6. Dial * for further paging buttor •OR- Dial * * for next button mapp •OR- Dial * * for configuration m | D Winks = Selected, On = Asgn'd). "ASSIGN ZONE X" "ASSIGN ALL CALL" grammed: or press CI 0 • C57. n assignment. bing feature. |

Station Configuration - Block Programming

Press ITCM *#746*

Block Programming

You can use this last station configuration procedure to assign those features that you have assigned to any one station (using the procedures detailed on the previous pages) to any other station or to an entire block of stations.

1. Dial 68.

"BLK PROGRAMMING"

- 2. Select model station port:
 - Station 10 57 = dial 10 57 or press CI 0 C57.

 "MODEL STA XX"
- 3. Select first station port in block (same code as above).
- 4. Dial #.
- 5. Select last station port in block (same code as above).
- 6 Dial #
- 7. Dial * for further block programming.

-OR-

Dial * * for configuration mode.

NOTE: The first, last and all station ports in between will be block programmed like the model station port. To block program an individual station port, select the first and last port to be the same number. (For example: 25, 26# 26# programs station 26 exact/y as 25 .)

Miscellaneous Programming Features

The following miscellaneous programming features are optional and provide you with the means to add versatility to the system.

- Account Codes (With Positive Verification) Configuration
- Analog Terminal Interface Configuration
- Caller Identification (ID) Service Support Configuration
- Direct Department Calling Configuration
- Direct Inward Station Dialing (DISD) Configuration
- Data Printer Service Configuration
- ExecuMail Interface Configuration
- Integrated Call Costing Configuration
- Station Message Detail Accounting/Reporting Configuration
- Toll Restriction Table Configuration

Account Code (With Positive Forced Verification) Configuration

The digital telephone system uses account codes to identify calls by category, or by any other desired grouping so that it can record the cost of the calls by that category or grouping. The account code can be either verified or not verified by the system plus the system can either force the users to use the account codes or make their use optional. When you enable account code verification, the system compares the account code entered by a station user with the account entries that you have programmed. If the system does not find a match and the account code entry is optional, the system sounds an error tone through the telephone but does not prevent dialing; however, if forced entry is enabled, the system prevents further dialing until the user enters a matching account code

- ▶ To make a record of the programming configuration, mark the desired requirements in the account code records chart found at the end of Chapter 4.
- ▶ To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

VOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a sing/e button provides a toggle (on/off) action, the lighted LED indicates the active feature.

The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press ITCM then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

Account Codes (Feature Enabled Or Disabled)

Jse this procedure to enable or disable the **account** code feature for the system.

1. Dial 75.

"SMDA PROGRAMMING

2. Dial 0 7.

"XXXXXXXX ACCOUNT

- 3. Press AI to toggle the feature on or off (LED On = Enabled).

 •OR-
- 4. Dial 1 to enable account codes. "ENABLE ACCOUNT Dial 2 to disable account codes. "DISABLEACCOUNT
- 5. Dial * * for configuration mode.
- To change setting, repeat procedure and make opposite selection

Account Codes (Forced Or Optional Entry)
Jse this programming procedure to
arrange for the system to either force the
Jser's to enter account codes before they
an make calls or to make the enter of
account codes an optional condition.

Emergency Numbers: Even if you arrange for the system to force account code entries, users can always dial emergency lumbers without first entering an account code. Use this programming feature to enter up to three emergency numbers. Each number can be a minimum of 1 digit and a maximum of 12 digits.

1. Dial 53.

"STATION FEATURES"

2. Dial 35.

"FORCE ACCT. CODE" .

3. Press AI for forced account codes on all stations -OR-

Press A2 for optional account codes on all stations

- Select station ports to be exempted. (If forced, these will be optional. If optional, these will be forced).
 - Dial 10 57 or press C10 C57

(LED On = Feature Enabled, Off = Exempted).

- 5. Dial * * for configuration mode.
- To change setting, repeat procedure and make opposite selection

To specify emergency numbers,

1. Dial 75.

'SMDA PROGRAMMING"

2. Dial 16.

"SET EMER. NUMBER"

- 3. Dial emergency number (up to 12 digits) then dial #.
- 4. To enter another emergency number, repeat step 3.
- 5. Dial ** for configuration mode.

To clear emergency numbers,

1. Dial 75.

"STATION FEATURES

2. Dial 17.

"CLR EMER. NUMBER"

- 3. Dial number to be cleared (up to 12 digits) then dial #.
- 4. To clear another number, repeat step 3.
- 5. Dial * * for configuration mode.

Account Code (With Positive Forced Verification) Configuration - continued

Press ITCM *#746*.

Account Codes (Verified Entry)

Use this programming procedure to arrange for the system to either verify or not verify the account codes that the user's enter.

- 1. Dial 75 "SMDA PROGRAMMING".
- 2. Dial 08 " VERIFICATION XXX'.
- Press AI to toggle the feature on or off (LED On = Verified).
 OR-
- 4. Dial **1** to enable verification.

 Dial 2 to disable verification.

 "VERIFICATION ON ".

 "VERIFICATION OFF:
- 5. Dial * 8 for configuration mode.
- To change setting, repeat procedure and make opposite selection.

Account Code Length (For Verified Codes) This feature defines the number of digits that the system will verify before it accepts the account code as valid. Verified account code length also defines the number of valid account codes that the system will store (as shown in the following table). Be aware that when you change the verified account code length, the system empties the current list of valid account codes.

Digits Verified Number Of Codes 1000 400

266

 7, 8
 200

 9, 10
 160

 11, 12
 133

 13, 14
 114

 15, 16
 100

5.6

Account Code Length (For Entered Codes)
This feature defines the number of account code digits that a user must enter before the system will accept the code. Account code length can range from 3 to 16 digits; however, its length must always be equal to or greater than the current verified account code length.

To specify the number of verifiable account code digits,

- 1. Dial 75. "SMDA PROGRAMMING
- 2. Dial 15. "DIGITS VALID X "
- 3 Dial number of digits 3 16 to be verified.
- 4. Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To specify the number of entered account code digits,

- 1. Dial 75. "SMDA PROGRAMMING"
- 2. Dial **09**. "MAX ACCT CODE X "
- 3. Dial number of digits (3 16) for account code length.

 Entered digits must be at least equal to verifiable digits specified above but can be a maximum of 16.
- 4. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

Account Code List

Use this programming feature to create the list of account codes for use.

To create the list of usable account codes,

- 1. Dial 75. "SMDA PROGRAMMING"
- 2. Dial 05. "SET ACCT. CODE "
- 3. Dial account code digits. Maximum number of digits must be equal to number of account code digits specified in previous programming step titled *Account Code Length* (*Verfied*).
- 4. To enter another account code, dial #, then dial its number.
- 5. Dial ** for configuration mode.

To clear account codes from list,

- 1. Dial 75. "SMDA PROGRAMMING"
 2. Dial 06. "CLEAR ACCT. CODE
- 3. Dial account code to be removed.
- 4. To remove another account code, dial #, then dial its number.
- 5. Dial * * for configuration mode.

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Account Code (With Positive Forced Verification) Configuration - continued

Press ITCM *#746*.

Account Code Message Display Time Nhen you have enabled the account code eature, LCD speakerphones will prompt **isers** with a displayed message that the system clears at the end of the **programmable** display time. Valid range for he display time is 1 to 20 seconds The **system** defaults the setting to 5 seconds.) f account codes are forced, the system **Irops** the line if the user fails to enter a **/alid** account code during the display **period.** You also can make this prompting nessage appear in the telephone display when the user answers an incoming call. This will prompt users to enter account codes for answered calls.

To set the account code display time,

1. Dial 75. "SMDA PROGRAMMING"
2. Dial 10. "DISPLA Y TIME X"

3. Dial **01** - 20 to select new display time (in seconds).

5. Diai **vi** • 20 to select new display time (in seco

4. Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To enable or disable account code prompt for incoming calls,

1. Dial 75. "SMDA PROGRAMMING"

2. Dial 11. • XXXXXXX INCOMING"

3. Press AI to toggle feature on or off LED On = Enabled)

•OR-

Dial 1 to enable. "ENABLE INCOMING"

Dial 2 to disable. "ENABLE INCOMING"

4. Dial ★ ★ for configuration mode.

To change setting, repeat procedure and make opposite selection.

To enable or disable account code prompt for outgoing calls,

1. Dial 75.

"SMDA PROGRAMMING "XXXXXXXX OUTGOING".

2. Dial 12.

AAAAAA OOTGOIN

3. Press AI to toggle feature on or off (LED On = Enabled).

-OR-

4. Dial **1** to enable. Dial 2 to disable.

"ENABLE OUTGOING"
"DISABLE OUTGOING"

5. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Analog Terminal Interface Configuration

The Analog **Terminal** Interface device (ATI-D) is a multipurpose <u>on-premise</u> accessory for the digital telephone system. It has dual circuits that allows external analog telephony equipment, such as an **ExecuMail** voice mail system, an industry-standard model 2500 tone dial telephone, a model 500 rotary dial telephone, etc., to interface with two digital station ports. Refer to Comdial publication **IMI89-037**, *Installation Instructions For The Analog Terminal Interface (AT/-D)* for complete details for using the ATI-D to interface between the digital, telephone system and external analog equipment.

- To make a record of the programming configuration, mark the desired requirements in the analog terminal interface records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a single button provides a toggle (on/off) action, the lighted LED indicates the active feature.

■ The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press ITCM then dial * # 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

ATI Distinctive Ringing

Intercom calls that **ring** at equipment connected through an ATI-D have a different cadence than outside calls have. Intercom ring cadence is: 1 sec. on, 0.5 sec. off, 1 sec. on, 3.5 sec. off. Outside call ring cadence is: 2 sec. on, 4 sec. off. If needed, you can disable this distinctive ringing feature to make the intercom ring cadence the same as that for outside calls.

1. Dial 53.

"STATION FEATURES"

2. Dial 33.

"DIST. RING XX "

3. Press **AI** to toggle between enable and disable (LED On = Enable)

-OR-

4. Dial 1 to Enable.

IST. RING ON

(Al LED on)

Dial 2 to Disable.

"DIST. RING OFF "

5. Dial * for **next** feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make opposite selection.

ATI Thru Dialing

With this programming feature enabled, DTMF signalling tones that are generated by the external analog equipment pass through the ATI-D, the common equipment, and any line connection into the switched network. The system automatically enables this feature when you connect the ATI-D to the digital station port. Equipment such as the Execumail voice mail system and the 2500 tone dial telephone require thru dialing; however, you should disable this feature for equipment such as model 500 rotary-dial telephones.

- 1. Dial 53.
- "STATION FEATURES"
- 2. Dial 07.
- "ATI THRU DIALING"

 ED On = Selected)
- 3. Select station ports (LED On = Selected)
 Station 10 57: Dial 10 57 or press Cl 0 C57.
- 4. Dial ★ for next feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Caller Identification (ID) Service Support Configuration

- To make a record of this programming configuration, mark the desired requirements in the caller ID records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a single button provides a toggle (on/off) action, the lighted LED indicates the active feature.

The central office sends caller ID data over lines that it has assigned to the Caller ID service. After being received and decoded by the external caller ID decoder device, the caller ID information is displayed at a system LCD speakerphone. This will happen only after you have assigned the station to the Caller ID service, and then only happen for those lines that you have programmed for caller ID service, assigned to that station, and arranged to ring audibly there so that the user can answer them by pressing a button for the ringing incoming line or one that is transferred to the station.

Since the station receives caller ID data for a call between the first and second rings, you can arrange for the first ring on caller ID lines to be either audible or silent. Selecting the silent option insures that the caller ID data is displayed prior to ringing, which nearly eliminates the loss of caller ID data due to premature answering.

A station user may automatically retrieve and dial the last caller ID number displayed at his or her station by using a SAVE button that you have assigned to the station.

NOTE: Seven-, eight-, and 11-digit numbers are always dialable while 10-digit numbers must be transformed by the system before they are dialable. To arrange for the system to transform a 10-digit number into a dialable format you must use the VDT programming method to program the local area code and 6-digit area/office codes into the system's memory. You cannot do this from station 10 or 12.

All of the caller ID features require that the customer-supplied caller ID interface (product code CID08) deliver its data to the system's RS232 data port B. You must configure this port to match the output of the decoder device. The recommended configuration is 9600 baud, with eight data bits and one stop bit. Furthermore, the system software revision number must be 13B or later for complete caller ID operation.

The system provides caller ID information as part of the SMDR printout. An example of this follows below:

| | Sta # | Line # | Date | Time | Cali length | Ans time | Called or Calling # | Call cost |
|-----|----------|-----------|----------|-------|----------------|-------------|------------------------|--------------|
| (1) | 1000 | 12 | 10/15/92 | 04:38 | 0.1 | | 1234567890123456 | \$ 0.51 |
| (2) | 12 | 3 | 10/15/92 | 00:56 | 0.2 | | 5551212 | |
| (3) | | 1 | 10/15/92 | 00:56 | NOANS | .2 | /5551234 | |
| (4) | 10 | 1 | 10/15/92 | 00:56 | 0.1 | .1 | /5551234 | Ì |
| (5) | | 4 | 10/15/92 | 01:00 | NOANS | .2 | , 1 | |
| (6) | 10 | 4 | 10/15/92 | 01:00 | 0.1 | .0 | | |
| (7) | 10 | 1(D) | 10/15/92 | 04:23 | 0.2 | .1 | /5556789 | \$ 0.00 |
| (8) | 10 | 1(D) | 10/15/92 | 04:19 | 0.2 | .1 | | \$ 0.00 |

- (1) outgoing call
- (2) outgoing call
- (3) unanswered incoming call, with caller ID
- (4) answered incoming call, with caller ID

- (5) unanswered incoming call, without caller ID
- (6) answered incoming call, without caller ID
- (7) answered incoming DISD call, with caller ID
- (8) unanswered incoming DISD call, without caller ID

If SMDR printout is not already turned on (default), enter base level and turn it on as follows,

- 1. Dial 772.
- "SMDR PRINT XXX"
- 2. Dial 1 to enable printout.
- "SMDR PRINT ON"
- 3. Dial ** for configuration mode.

continued on next page . . .

Caller Identification (ID) Service Support Configuration - continued

As an option, you can arrange for the system to provide caller ID data distribution through the RS232 data port B to a personal computer (PC) just as it supplies SMDA data to a data printer. This data consists of four special purpose messages and is in the ASCII format suitable for use with PC-based application programs. The messages are as follows:

Typical Message 1 - sent out as soon as caller ID data arrives from the CO

| kde | sg. II and entific Bytes | er | Lir No (2 B) | ٥. | | - | | | | | | Dat 5 Bytes | | | | | | | | | |
|-------------|-----------------------------------|----|--------------------|----|----|----|----|----|----|----|----|----------------|----|----|----|----|----|----|----|----|----|
| 3E | 3C | 31 | 30 | 31 | 31 | 2D | 38 | 30 | 34 | 2D | 39 | 37 | 38 | 2D | 32 | 32 | 30 | 30 | 20 | QD | 0A |
| <u>></u> | ~ | 1 | 0 | 1 | 1 | _ | 8 | 0 | 4 | _ | 9 | 7 | 8 | - | 2 | 2 | 0 | 0 | | CR | LF |

Typical Message 2 - sent when a ringing line with CID is answered or retrieved from hold

| | kde | sg. i and entifi Bytes | er | Lii No (2 B) | ٥. | Stat No (2 B) | o. | End Of Msg. (2 Bytes) | | |
|---|-----|---------------------------------|----|--------------------|----|---------------------|----|--------------------------------|----|--|
| I | 3E | 3C | 32 | 31 | 32 | 31 30 | | OD OA | | |
| I | > | < | 2 | 1 | 2 | 1 | 0 | CR | LF | |

Typical Message 3 - sent when CID data is not received from answered line or when a line is taken off-hook

| ide | sg. 1 and entifi | ier | Lii No (2 B) | ٥. | Stati No (2 By |). | End Of Msg. (2 Bytes) | | |
|-----|------------------------|-----|--------------------|----|----------------------|----|--------------------------------|----|--|
| 3E | 3C | _33 | 30 | 35 | 31 | 32 | OD. | 0A | |
| > | < | 3 | 1 | 5 | 1 | 2 | CR | LF | |

Typical Message 4 - sent when line is made idle

| Msg. ID and Identifier (3 Bytes) | Line No. (2 Bytes) | End Of Msg. (2 Bytes) |
|---|--------------------------|--------------------------------|
| 3E 3C 34 | 30 35 | OD OA |
| > < 4 | 0 5 | CR LF |

Programming Steps

The first step in any programming sequence is to enter the base level. Enter the base level with the following procedure: press ITCM then dial *# 7 4 6 *. To change a programming setting, repeat a procedure and make a different selection.

Required Programming

To assign Caller ID lines,

- 1. Dial 47.
- "CALLER ID LINES"
- Select line ports (LED On = Selected)
 Line Port 1-14 = Dial 01 14 or press A1-A14
 Line Port 15, 16 = Dial 15, 16 or press B1, B2
 Line Port 17-24 = Dial 17 24 or press HOLD
 and then press A1 A8.
- 3. Press * for configuration mode.

To assign Caller ID stations,

- 1. Dial 53.
- "STATION FEATURES"
- 2. Dial 36.

- "CALLER ID STA. "
- 3. Select station ports (LED On = Selected):
 - Station 10-57: Dial 10 57 or press C10 C57.
- 4. Press * * for configuration mode

To configure RS232 data port B,

1. Dial 15.

- "BAUD RATE
- 2. Dial 2 for data port B.
- 3. Press A10 for 9600 baud.
- "W nD nS 9600"
- 4. Dial 11 or Press A14 for 8 data bits
- and 1 stop bit.
- "W 8D 1S ZZZZZ"
- 5. Dial * * for configuration mode.

Optional Programming

To set the Audible First Ring feature,

- 1. Dial 17.
- "SYSTEM FEATURES"
- 2. Dial 01.

- "CID FIRST RING "
- 3. Dial 1 to silence the first ring on Caller ID lines.
 - Dial 2 to enable the audible first ring.
- 4. Press * * for configuration mode

To set the Caller ID Distribution To data port B for PC operation.

- 1. Dial 17.
- "SYSTEM FEATURES"
- 2. Dial 02.

- "CID DISTRIBUTION"
- 3. Dial 1 to disable caller ID distribution.
 - -or-

Dial 2 to enable caller ID distribution.

4. Press * * for configuration mode.

To assign the SAVE button for recall and redial of last caller ID no..

1. Dial 56.

"BUTTON MAPPING"

2. Dial 08.

- "ASSIGN SAVE
- 3. Select button to be programmed:
 - Press A1 A14, B1 B8.
- Select station ports to have SAVE button (LED On = Asgn'd): Station 10 - 57: Dial 10 - 57 or press C10 - C57.
- 5. Press * * * for configuration mode.

Direct Department Calling Configuration

- To make a record of the programming configuration, mark the desired requirements in the direct department calling class of service records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a single button provides a toggle (on/off) action, the lighted LED indicates the active feature.

 The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

Direct Department Calling - Access Codes

You can program department access codes to be any number between 10 and 7999; however, the system will not allow you to assign the same dialing code as both a station extension number and a department access code nor will the system allow an extension number conflict such as 15 and 1500. Further, with system defaulted extension numbers, the assigned department access codes must start at 0058 or larger.

1. Dial 52.

"ACCESS CODE " 2. Dial 2 to assign access codes to

depts.

'DEPT. CALLING "

3. Dial 1 - 4 for dept. 1 - 4.

"DEPTX YYYY "

4. Dial new access code.

"DEPT X YYYY ZZZZ"

NOTE: New code can be maximum of four digik. If it is less than four digits, you must dial leading zeros before dialing the number. The code must not conflict with any sktion extension numbers.

5. Dial next department number and program the access code.

Dial * for next access code feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Direct Departmental Calling - Line Ports You can assign outside lines to one of four different departments if you wish. If you do this, calls received on a line that you have assigned to a department will hunt for any idle station in that department to ring.

1. Dial 39.

2. Select department.

Dial 0 for none.

Dial 1 for dept 1.

Dial 2 for dept 2.

Dial 3 for dept 3. Dial 4 for dept 4.

"DEPARTMENT 1 "DEPARTMENT2

'NO DEPARTMENT "

"DEPT. CALLING "

"DEPARTMENT 3" "DEPARTMENT4

3. Select line ports to be assigned (LED On = Assigned). Line port 1-14 = Dial 01 - 14 or Press AI - AI4

Line port 15, 16 = Dial 15, 16 or press B1, B2

Line port 17-24 = Dial 17 • 24 or press HOLD then press AI • AI

4. Dial * for next department.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Direct Department Calling Configuration - continued

Press ITCM *#746*.

Direct Department Calling - Station Ports

You can group stations by department to allow a call to search for an idle station within a department. This search occurs when a busy or RNA is encountered at a called department station. The system allows up to four departments with up to 16 stations in each one. You can place one additional station in each department to serve as a termination station. Calls that roll 0 a termination station will follow a call orward if it is set at that station.

1. Dial 53.

"STATION FEATURES"

2. Dial 19.

"DEPT. CALLING "

- 3. Dial **1** 4 for dept. 1 4. "DEPARTMENT X
- 4. Select department stations: Station 10 57: Dial 10 57.
- 5. Dial * to program next department.
- 6. Dial 5 8 for termination station in dept. 1 4. "DEPARTMENT X"
- 7. Select termination station:- Station 10 57: Dial 10 57.
- 8. Dial * to program next department termination station.. -OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

Unanswered Call Transfer Recall Time

4 call that a user has transferred to a department that remains unanswered after the length of time that you set with this programming feature will return to the transferring station for answering.

1. Dial 11. "TRANSFER RECALL"

- 2. Dial 2 . "DEPT XFR RCL XXX"
- 3. Choose transfer time (LED On = Selected Time):
 - Dial 1 or Press AI = 10 sec. "STA XFR RCL 10"
 - Dial 2 or Press A2 = 20 sec."STA XFR RCL 20"
 - Dial 3 or Press A3 = 25 sec. "STA XFR RCL 25"
 - Dial 4 or Press A4 = 30 sec. "STA XFR RCL 30"
 - Dial 5 or Press **A5 = 45 sec**. "STA XFR RCL 45"
 - Dial 6 or Press A8 = 60 sec. "STA XFR RCL 60"
 - Didi 0 01 F1655 AO = 00 Sec. SIA AFR ROL 00
 - Dial 7 or Press A9 = 90 sec. "STA XFR RCL 90"
 - Dial 8 or Press A10 = 120 sec. "STA XFR RCL 720"
 - Dial 9 or Press All = 180 sec. "STA XFR RCL 180"
 - Dial 0 or Press Al2 = 400 sec. "STA XFR RCL 400"
- 4. Press * for next transfer recall feature.
- 5. Press * for configuration mode.
- To change setting, repeat procedure and make different selection.

Direct Inward Station Dialing (DISD) Configuration

The **DISD** feature allows an external party to call an intercom station directly without assistance by the attendant. The system must receive the **DISD** call on a line that you have programmed to allow this feature. You can program any line to be a **DISD** line for both the normal mode of operation and the night transfer (of ringing) mode of operation.

You can program the number of rings that the system will allow to occur on a number of rings, the system allows stations that have a line appearance for the number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings to 0 disables the line for number of rings line. If you set a large number of rings line time to service the call in a regular manner. Setting the number of rings to 0 disables the line for number of rings line time to service the call in a regular manner. Setting the number of rings to 0 disables the line for number of rings line time to service the call in a regular manner. Setting the number of rings to 0 disables the line for number of rings line time to service the call in a regular manner. Setting the number of rings to 0 disables the line for number of rings line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner. Setting line time to service the call in a regular manner manner manner manner manner manner manner manner manner manner manner manner manner manner manner mann

It is a good practice for you to connect a music source to the system to provide a reassurance to the caller during a camp-on situation when the **DISD** feature is being used.

- To make a record of the programming configuration, mark the desired requirements. in the direct inward station dialing records chart found at the end of this section.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A **lighted** LED next to the programming button for **the** selection indicates the current **configuration**. When a sing/e button **provides** a toggle **(on/off)** action, the lighted LED indicates the active feature;

● The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press **TCM** then dial *# 7 4 6 *. The last step is to press the **SPKR** button to end the programming procedure and return the system to normal operation.

Dial Time Limit

When a caller does not complete extension number dialing within the programmed dial time limit, the system routes a DISD call to the assist station if you have programmed one; otherwise, it drops the line.

1. Dial 44.

"DISD DIALTIME X "

2. Press program button to select dial time limit:

(LED On = Enabled)

- Dial 1 or press Al = 6 seconds.
- Dial 2 or press A2 = 9 seconds.
- Dial 3 or press A3 = 12 seconds.
- Dial 4 or press A4 = 15 seconds.
- Dial 5 or press A5 = 30 seconds.
- 3. Press * for configuration mode.
- To change setting, repeat procedure and make different selection.

Direct Inward Station Dialing Configuration - continued

Press ITCM *#746*.

)ISD Assist Station

Yhen a caller does not complete extension lumber dialing within the programmed dial ime limit, the system routes the call to the DISD assist station.

1. Dial 46.

"DISD ASSIST "

- 2. Choose operating mode to be programmed:
 - Dial 1 or press AI = normal mode.

"DISD ASSIST DAY X "

-OR-

- Dial 2 or press A2 = night transfer (of ringing) mode.
 - "DISD ASSIST NITE"
- 3. Select assist station.
 - Dial 00 for no station (line drops after timeout).

-OR-

- Dial 10 57 to select **DISD** assist station. (LED On = lines assigned to assist station).
- Dial #then assign line ports to assist station.
 Line port 1 14 = Dial 01 14 or Press AI AI4
 Line port 15, 16 = Dial 15, 16 or Press B1, B2
 Line port 17 24 = Dial 17 24

-OR-

Press HOLD then press AI - A8

4. Press * and repeat steps 2 and 3 for further assist station programming.

Press * * for configuration mode.

DISD incoming Rings

The number of rings which occurs on a DISD line before it is answered is programmable. Setting a large number of ings allows time for a call to be serviced in a regular manner by stations that have line appearance for the DISD line if such action s desired.

1. Dial 45.

"DISD RINGS "

- 2. Press program button to choose operating mode
 - Dial 1 or press AI = normal mode.

"DISD RINGS DAY X"

-OR

• Dial 2 or press A2 = night transfer (of ringing) mode.

"DISD RNGS NITE X"

- 3. Select rings to occur before line is answered.
 - Dial 0 for no rings. This disables **DISD** for line. -OR-
 - Dial **1 9 =** rings 1 9

(LED On = lines assigned to number of rings).

- Dial # then assign line ports to ring number.

Line port 1 - 14 = Dial 01 -14 or Press A1 - A14 Line port 15, 16 = Dial 15, 16 or Press B1, B2 Line port 17 - 24 = Dial 17 - 24

-OR-

Press HOLD then press AI - A8

4. Press * and repeat steps 2 and 3 for further **DISD** ring assignment.

-OR-

Press * * for configuration mode.

To change setting, repeat procedure and make different selection.

Data Printer Service Configuration

When you connect a data printer to the system, the system automatically prints the station message detail record (SMDR) for the entire system without any programming or user intervention.

You call also command the data printer to print partial or complete printouts of the configuration data for the system. While you are using the printer to print the configuration data or SMDA information, the system temporarily halts the SMDR printout although it continues to collect the SMDR data. You should note, however, that if it logs more than two calls for any one line, call records may be lost.

To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOT. A lighted LED next to the programming button for the selection indicates the current configuration. When a single button provides a toggle (on/off) action, the lighted LED indicates the active feature.

▶ The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press ITCM then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

| Enable data printer operation | 1. Dial 91. | "PRINT CONFIG. " |
|-------------------------------|--|-------------------------|
| · | 2. Choose configuration: | |
| | Dial 1 to print all configuration data. | "PRINT ALL " |
| | Dial 2 to print system data. | "PRINT SYSTEM " |
| | Dial 3 to print line data. | "PRINT LINES " |
| | Dial 4 to print data for all stations. | "PRINT STATIONS" |
| | Dial 5 to print data for selected station. | "PRINT STA. " |
| | Select station to be printed. | "PRINT STA. XXX" |
| | Dial 10-57 for stations 10 • 57. | |
| | Dial 6 to print toll restriction assignn | nent. "PRINT TOLL" |
| | Dial 7 to abort printing | "ABORT PRINT" |
| | 3. Dial * for configuration mode. | |
| | | |
| | | |

ExecuMail/Eloquence Interface Configuration

The digital telephone system supports the use of the **ExecuMail** voice **mail** equipment connected to the system's station ports through the Comdial ATI-D analog terminal interface device. The ATI-D is a multipurpose **on-premise** accessory that has dual circuits to allow a **2-port** voice mail system to interface to two digital station ports. Two ATI-D devices are needed to interface **4-port** voice mail systems. Refer to Comdial publication **IMI89-037**, **Installation Instructions** For The Analog Terminal **Interface** (AT/-D) for complete details for using the ATI-D to interface between the digital telephone system and the voice mail system. In addition, the system supports the Eloquence **VI/VIA** series of voice mail equiptment connected directly to a station port. Along with the required programming task of identifying the station ports as voice mail ports, there are several other programming considerations associated with voice mail operation that are optional for use as needed.

- To make a record of the programming configuration, mark the desired requirements in the analog terminal interface records chart found at the end of Chapter 4.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a **single** button **provides** a toggle (on/off) action, the lighted LED indicates the active feature.

● The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press **ITCM** then dial *# 7 4 6 **. The last step is to press the **SPKR** button to end the programming procedure and return the system to normal operation.

ExecuMail/Eloquence Interface Configuration - Required Feature

Voice Mail Port

When you connect the voice mail system to a station port through the ATI-D, you must use this programming feature to enable the station port as a voice mail port.

NOTE: The system automatically disables this feature if you replace the ATI-D with a digital multiline telephone at the programmed station port. You must manually disable the station port as a voice mail port when you use it to interface a mode/ 2500 telephone through the A TI-D.

With its automatic attendant feature, the voice mail system automatically answers any line that is ringing at a voice mail port. As a default, the system automatically enables ringing line preference for any port that you have identified as a voice mail port. You must choose a ringing assignment for the lines that you have assigned to the voice mail ports before the voice mail system can provide the automatic attendant feature.

To assign voice mail ports,

1. Dial 53.

"STATION FEATURES"

2. Dial 32.

"VOICE MAIL PORT "

- 3. Select station ports (LED On = Selected):
- Station 10 57 = dial 10 57 or press Cl 0 C57.
- 4. Dial * for next feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To assign direct ringing for automatic attendant operation,

1. Dial 54.

"STA/LINE CONFIG"

2. Dial 1.

"DIRECT RING "

3. Select line ports for direct ringing:

Line port 1-14 = Dial 0 -14 or press AI - A14,

Line port 15, 16 = Dial 15, 16 or press B1, B2,

Line port 17-24 = Dial 17-24 or press HOLD then press Al - A8)

- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Selected):
 - Station 10- 57: Dial 10 57 or press CI 0 C57.
- 6. Dial * when all station ports are selected.
- 7. Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

continued on next page . . .

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ExecuMail/Eloquence Interface Configuration - Required Feature - continued

Press ITCM *#746*.

Voice Mail Port - continued

'ou must assign all voice mail ports to a ircular hunt group to take advantage of nat feature's multiple-port interface apability. Make a circular hunt group by nking all voice mail ports to one another nd then linking the last voice mail port in **1e** hunt group with the first voice mail port 1 the hunt group. For example, with the oice mail system connected through the TI-D to station ports 013, 014, 015, and 116, place port 013 in a hunt group and link 114 to it, then place 014 in a hunt group ınd link 015 to it, then place 015 in a hunt **Iroup** and link 016 to it, and finally place 116 in a hunt group and link 013 to it to complete the circle. With this arrangement, ι call will first try to ring at port 013, then try port 014 and so forth until it trys all four **roice** mail ports.

To assign delayed ringing for automatic attendant operation,

- 1. Dial 64.
- "STA/LINE CONFIG."
- 2. Dial 2.

- "DELAY RING "
- 3. Select line ports for delayed ringing (LED On = Selected):
 Line port I-14 = Dial 01 14 or press AI A14,
 Line port 15, 16 = Dial 15, 16 or press B1, B2.,
 Line port 17-24 = Dial 17-24 or press HOLD then press AI A8).
- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Selected):
 Station 10- 57: Dial 10 57 or press CI 0 C57...
- 6. Dial * when all station ports are selected.
- 7. Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

To assign night transfer of ringing for automatic attendant operation,

- 1. Dial 64.
- "STA/LINE CONFIG"
- 2. Dial 3.

- **'NIGHT RING"**
- 3. Select line ports (LED On = Selected):
 Line port 1-14 = Dial 01 14 or press Al A14,
 Line port 15, 16 = Dial 15, 16 or press B1, B2,
 Line port I-24 = Dial 17-24 or press HOLD then press Al A8.
- 4. Dial # when all line ports are selected.
- 5. Select station ports (LED On = Selected):
 - Station 10 57: Dial 10 57 or press CI 0 C57.
- 6. Dial * when all station ports are selected.
- 7. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

To assign voice mail ports to hunt group,

- 1. Dial 53.
- **'STATION FEATURES"**
- 2. Dial 18.
- "ITCM HUNT LINK"
- 3. Select first linking station (LED On = Selected):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 3. Select second linking station (LED On = Selected):
 - Station 10 57: Dial 10 57 or press CI 0 C57.
- 4. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

ExecuMail/Eloquence Interface Configuration - Optional Features

Press ITCM *#746*.

Automatic Transfer Of Voice Mail

When you include a voice mail system with the digital telephone system, use this programming feature to arrange for an immediate line transfer without delay from the voice mail system to a digital station port.

NOTE: Do not **turn** on **this** feature if you **turn** on the screen **and/or** confirm options provided by the voice mail system. This is because the

 immediate transfer will preclude any screen or confirm action that the voice mail can provide.

1. Dial 25

"V MAIL AUTO XFER"

2. Press **AI** to toggle between enable and disable. (LED On = Enable)

-OR-

Dial **1** to enable. (Al LED On)

Dial 2 to disable.

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Voice Mail Line ID

When you have included a voice mail system with the digital telephone system, assign voice mail identification (ID) numbers to the lines. A voice mail ID number Can **contain** up to a **maximum** Of **six** digits. A voice mail ID number allows the **voice** mail equipment **to** identify which line it is answering. The ID numbers that you assign here must match the ID numbers that you assign when you program the voice mail equipment.

1. Dial 43.

'VOICE MAIN LN ID"

2. Select line port (LED On = Line assigned)
Line port 1-14 = Dial 01 - 14 or Press Al - Al4
Line port 15, 16 = Dial 15, 16 or press B1, B2
Line port 17-24 = Dial 17-24 or press HOLD then press Al - A6.

- 3. Dial # to clear current ID.
- 4. Dial ID number (6 digit maximum).
- 5. Dial * for further ID assignment.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Voice Mail Transfer on Busy

Normally, the voice mail voice mail system automatically routes calls that are made to a busy station to that station's voice mail box. Alternately, you can arrange for the **system** to alert the busy station when the voice mail system is attempting a call transfer to it. **You may** need to Program the attendant station to have this option.

1. Dial 53.

"STATION FEATURES".

2. Dial 31.

'VMAIL XFR ON **BSY".**

- 3. Select station ports (LED On = Selected):
 Station ports 10 57: Dial 10 57 or press CI0 C57.
- 4. Dial * for next feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Integrated Call Costing Configuration

Call costing provides a means of establishing costing that the system can apply to outside calls made from system telephones. Call costing computes charges for a call after it is completed. It does not restrict dialing as toll restriction does. The system provides several ways of establishing call costing. They are as follows:

- Exception tables
- Area code band tables
- Zone call band tables
- Call rate tables
- Office code band tables
- Call rate table of last resort

With this range of costing methods, it is possible to apply reasonable rates for the entire country. The system applies call costing to a dialed number as described below. Refer to the call costing diagram shown on page 4-60 for an illustration of the call costing process.

1. Exception Tables (Local Calls And Long Distance Calls)

The system first compares all calls to entries in four exception tables (one entry per table). These tables provide the <u>first priority level of costing</u>. The system searches these tables on a first match basis. This means that the first programmed entry that matches the call is the one that the system uses. It does not make a search for the best possible match. The system costs matched calls using the values that you have programmed into the call rate tables that you have assigned to the call costing exception tables. You can use these call costing exception tables to provide very specific exceptions to a bracket of calls similar to the following example.

Example: With all calls to area code 804 costed per a particular rate, make an exception for 804-555-1212 by programing exception table 1 with that number. Since exception table entries are the highest priority, the values in the call rate table assigned to exception table 1 are applied to all calls made to the 804-555-1212 number.

2. Office Code Band Tables (local Calls)

The system measures calls that do not match exception tables for the number of digits dialed. It compares calls with numbers that have less than 10 digits (local calls) to entries that you have made in office code banding tables. Office code band tables are the second priority level of costing for local calls. They provide a means for you to assign local office codes into different bands and apply a separate call costing rate table to each band. Bands 1 - 7 are associated with call rate tables 18 - 24 respectively. Use office code band tables to cost calls made within a specific area code but to sites located at different geographic distances from the calling location.

Example: A telephone company exchange consists of office codes 976, 977, and 978. Office code 976 is assigned to an outlying area while office codes 977 and 978 are assigned to the heart of the city. Assign 977 and 978 to one office code band table and 976 to another one. Program a special call costing rate for each banding table. Then, the system costs the calls that users make to 976-nnnn at a different rate than it costs the calls that users make to 977-nnnn or 978-nnnn.

3. Zone Call Band Tables (Long Distance Calls)

In certain heavily populated geographic areas, different area codes exist within the same geographic distance (zone) from the calling location. In these cases, use zone call band tables to cost calls based upon the zone, or geographic distance, from the calling location.

The system measures all calls that do not match exception tables for the number of digits that the user dials. It then compares those calls with numbers that have 10 digits or more (long distance calls) to entries that you have made in the zone call band tables. Zone call band tables are the second priority level of costing for long distance calls. They provide a means of assigning office codes and corresponding area code into different zones and applying a separate call costing rate table to each zone. Zone call band tables 1 - 4 are associated with call rate tables 25 - 28. A call must match both the office code and area code of an entry before the system costs it by a zone call band table.

Example: Zone 1 contains area code 203 with office codes 445 and 456. It also contains area code 412 with office code 508. Zone 2 contains area code 203 with office code 545. Zone 2 also contains area code 412 with office code 654. Zone 1 is costed at one rate and zone 2 is costed at another rate. A call made to 1-203-445-nnnn, 1-203-456-nnnn, or 1-412-508-nnnn is costed at a different rate than a call made to 1-203-545-nnnn or 1-412-654-nnnn.

continued on next page . .

Integrated Call Costing Configuration - continued

4. Area Code Band Table (Long Distance Calls)

The system compares the long distance calls that do not match entries in zone call band tables to entries that you have made in area code band tables. Area code band tables are the distance calls. Area code band tables 1 • 7 are associated with call rate costing tables 11 • 17. Use area code band tables to cost calls based upon the area code of the called number. Assign any or all area codes nnn (200-999) to one of seven different bands. Group area codes into bands based on frequently called areas, distance from the caller, or any other desired category.

Example: Assign area codes 703 and 804 to area code band table 1. Assign area code 415 to area code band table 7. Calls made to numbers such as **1-703-nnn-nnnn** and **1-804-nnn-nnnn** are costed with values assigned to call rate table **11.** calls made to numbers such as I-41 **5-nnn-nnnn** are costed with values assigned to call rate table 17.

5. Call Rate Tables (Local And Long Distance Calls)

The system compares local calls and long distance calls that do not match entries in any exception table, off ice code band table, zone call band table or area code band table with the entries that you have made in any of the call rate tables 2 • 33 and costs them accordingly. This is the fourth priority vel of costing for long distance calls. You can use the call rate tables to cost any calls that require special or extraordinary rates such as 1-800-555-l 212 or 1-900-976-nnnn. If the system can not match a called number with any entries that you have made in the call rate tables, it costs that call with the entries that you have made in call rate table 1 (the table of last resort for costing all calls). When you are making entries in the call rate tables, note the following items:

- You can program a maximum of 16 digits into each call rate table.
- Since a dialed number must match all of the digits that you have pmgrammed into a table before it is considered a match, you can program a # character into the table in place of a specific character to serve as a "match anything" digit.
- Select digits so that the system can match a particular dialed number or number group to a particular rate table.
 Remember, the system uses the table with the best match to a dialed number to cost the call.
- If a dialed number does not match all of the digits programmed into any call rate table, the system costs the call with the values programmed into the call rate table of last resort (table 1).

6. Discard Digits

When the digital telephone system is installed behind a host system such as a PBX or **CENTREX**, users must dial access codes before obtaining an outside line dial tone. To ensure that the system costs a call on just the actual telephone number that the user dials, you should arrange for the system to ignore these access codes, You can program up to six different access codes entries with up to eight digits per entry.

Example: If the system is installed behind a PBX using a 9 as an outside line access code, program a 9 as the discard digit. When a number such as g-555-1212 is dialed, the **9** is discarded and the call is costed based on 555-1 212.

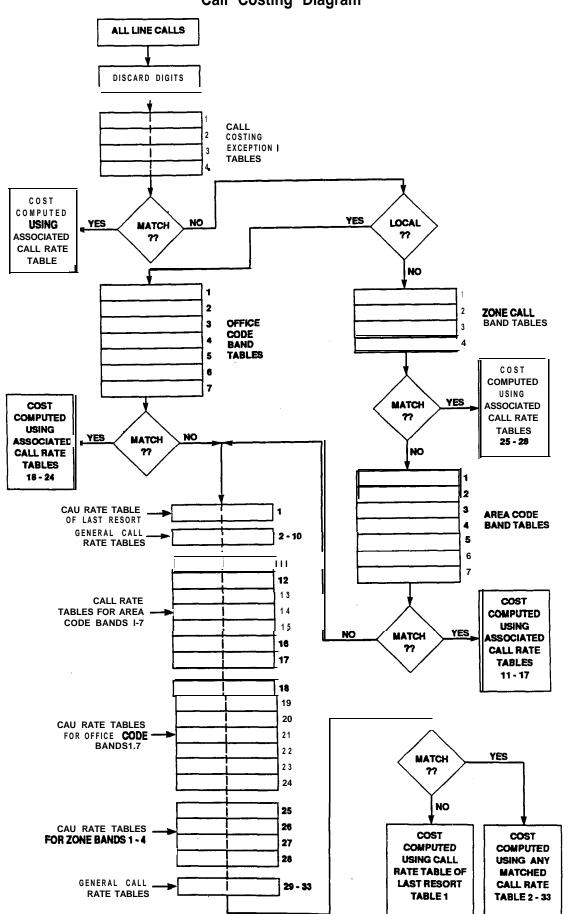
7. Dialing Time And Answer Time

The system does not include dialing time when **it** records the time of a call for costing. You can program the amount of time that the system ignores for dialing purposes. Plus, you can program the system to wait for a period of time before beginning to record costs for a call. This answer time allows a call to ring and be answered by the called party before the system costs it.

8. LCD Speakerphone Display of Costed Calls

When you arrange the digital telephone **system** to cost the calls, you should also arrange for the LCD speakerphones being employed with the system to display the cost of each call the user make from that station.

Integrated Call Costing Configuration - continued Call Costing Diagram

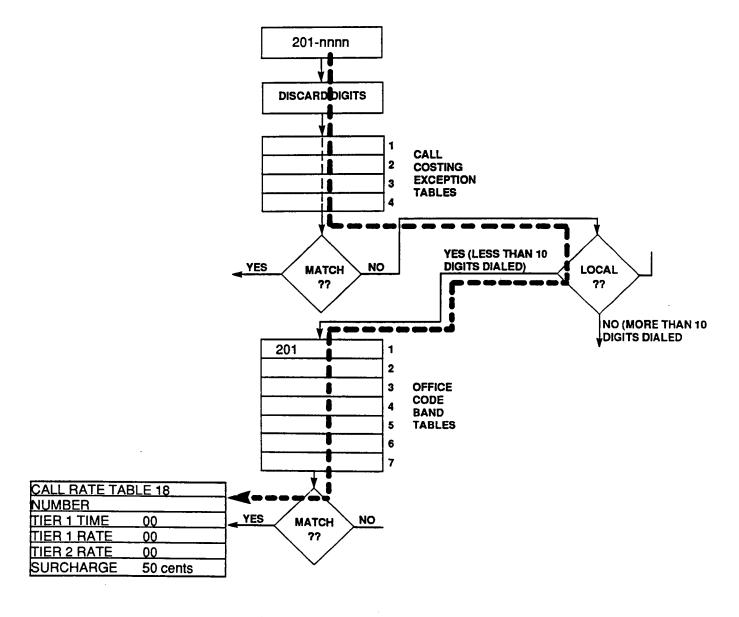


Integrated Call Costing Configuration - continued Call Costing Examples

Assume that the telephone system is installed in a location where callers have an opportunity to dial number combinations that contain a common number sequence in both the area code and office code.

Example A: Dialing Sequence 201-nnnn

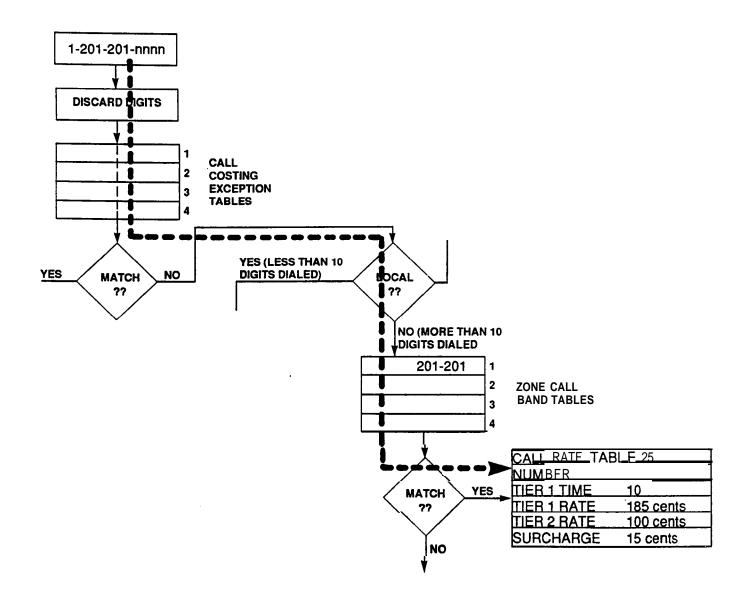
This sequence is a local call (less than 10 digits) and 201 is the office code. Program call rate table 18 to cost calls of this sequence. Also program the office code band table adding office code 201 into band 1. Band tables will accept unlimited entries.



Integrated Call Costing Configuration - continued Call Costing Examples - continued

Example B: Dialing Sequence 1-201-201-nnnn

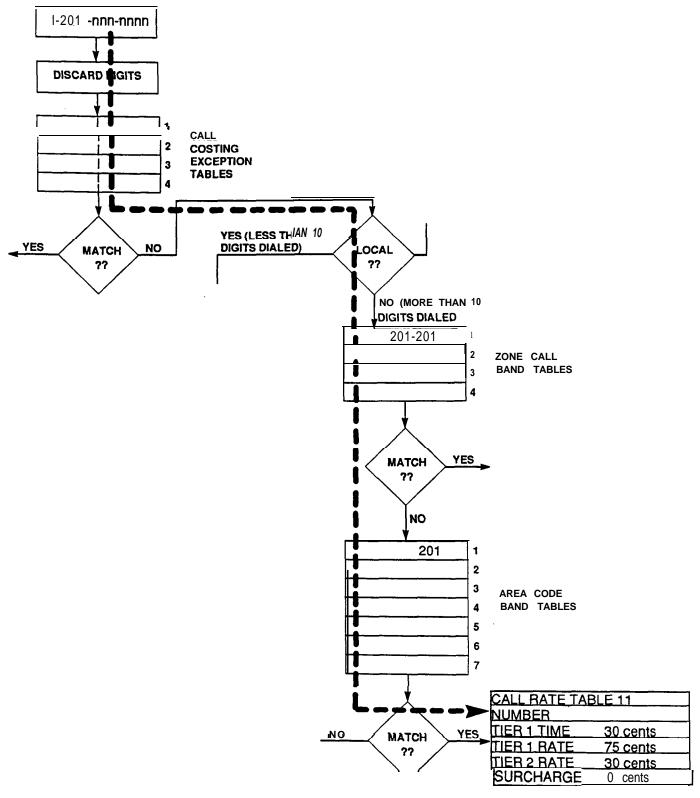
This Sequence is a long distance call (more than 10 digits) with 201 as both the area code and the office code. To cost, program call rate table 25 to cost calls of this sequence. Also program the zone call band table adding office code 201 to area code 201 in band 1. Add any other office codes (for example 478) to area code 201 in band 1 as required.



Integrated Call Costing Configuration - continued Call Costing Examples - continued

Example C: Dialing Sequence - 201-nnn-nnnn

This sequence is a long distance call (more than 10 digits) with 201 as the area code. To cost, program call rate table 11 to cost calls in this sequence. Also, program the area code band table adding area code 201 to band 1.

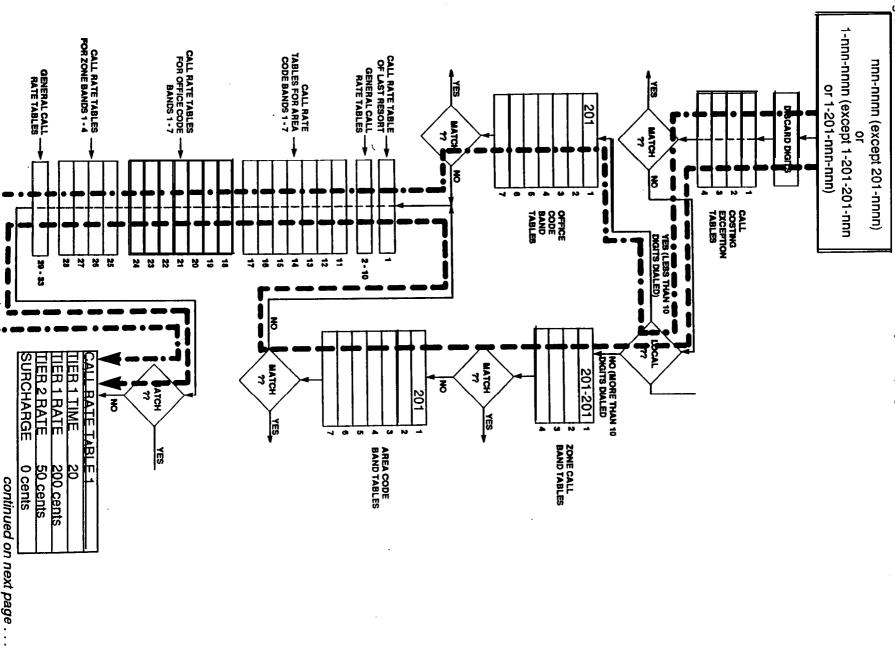


continued on next page, . .

Integrated Call Costing Configuration - continued Call Costing Examples - continued

Example D:Dialing Sequence nnn-nnnn, 1-nnn-nnnnnnnn

Program call rate table 1 to cost calls that do not match any other programmed call rate table



Integrated Call Costing Configuration - continued Call Costing Examples - continued

Typical SMDR Call Report For The Call Costing Example

| 10 | 1 | 12/28/90 16 | : 05 0. | . 9 | 2014567 | \$ 0.50 | (see note 1) |
|----|---|-------------|----------------|-----|-------------|------------|--------------|
| 10 | 1 | 12/28/90 16 | :06 1. | . 8 | 12017894567 | \$ 1.35 | (see note 3) |
| 10 | 1 | 12/28/90 16 | :08 1. | .5 | 12014785693 | \$ 1.12 | (see note 3) |
| 10 | 1 | 12/28/90 16 | :11 | . 5 | 2012014563 | \$ 2.50 | (see note 2) |
| 10 | 2 | 12/28/90 16 | :12 0. | . 5 | 5551212 | \$ 1.00 | (see note 4) |
| 10 | 1 | 12/28/90 16 | :13 1. | .1 | 2012013 | \$ 0.50 | (see note 1) |

Note 1: Costed by rate table 18 Note 2: Costed by rate table 25 Note 3: Costed by rate table 11 Note 4: Costed by rate table 1

ipical SMDA Call Report For The Call Costing Example

Station Report for Extension - 10

Date: 12/28/90 Time: 16:15

| DATE | TIME | STATION | ACCOUNT | LNGTH | CO | ST | I/O RING | LINE | NUMBER | |
|--------|-------|---------|---------|-------|----|------|----------|------|-------------|---|
| 12/28 | 16:05 | 10 | | 0.9 | \$ | 0.50 | 0 | 1 | 2014567 | |
| 12/28 | 16:06 | 10 | | 1.8 | \$ | 1.35 | 0 | 1 | 12017894567 | |
| 12/28 | 16:08 | 10 | | 1.5 | \$ | 1.12 | 0 | 1 | 12014785693 | |
| 12/28 | 16:11 | 10 | | 1.5' | \$ | 2.50 | 0 | 1 | 2012014563 | |
| 12/28 | 16:12 | 10 | | 0.5 | \$ | 1.00 | 0 | 2 | 5551212 | |
| 12/28 | 16:13 | 10 | | 1.1 | \$ | 0.50 | 0 | 1 | 2012013 | |
| TOTALS | : | | | 5.8 | \$ | 6.97 | | | INCOMING | 0 |
| AVERAG | ES : | | | 0.9 | \$ | 1.16 | | | OUTGOING | 6 |
| | | | | | | | | | TOTAL CALLS | 6 |

Integrated Call Costing Configuration - continued Programming The Call Costing Examples

Press ITCM *#746*.

Second Priority Costing For Local Calls - Office Code Band Tables

The system measures calls that do not match exception tables for the number of the digits the caller dialed. It then compares calls with numbers that are have less than 10 digits (local calls) to your entries in seven different office code band tables. Program the cost values for these office code band tables in call rate tables 18 - 24.

1. Dial 75.

"SMDA PROGRAMMING"

- 2. Dial 01 to program costing bands. "COSTING BANDS"
- 3. Dial 1 to program office code bands.

"OFFCE CODE BANDS"

4. Dial 1 for band 1.

- "BAND 1
- 5. Dial 201 to assign office code.
- 8. Dial ** for next SMDA feature.

Second Priority Costing For Long Distance Calls - Zone Call Band Tables

The system measures calls that do not match exception tables for the number of the digits the caller dialed. It then compares calls with numbers that have 10 digits or more (long distance calls) to your entries in four different zone call band tables. Program the cost values for zone call band tables in call rate tables 25 - 28.

- 1. Dial 01 to program costing bands. "COSTING BANDS"
- 2. Dial 3 to program zone call bands. "ZONE BANDS
- 3. Dia 1 for zone 1.

- "ZONE 1
- 4. Dial 201 to assign an area code.
- 5. Dial #.
- 6. Dial 201 to assign an office code.
- 7. Dial # and then dial 478 for another office code.
- 8. Dial * * for next SMDA feature.

Third Priority Costing For Long Distance Calls - Area Code Band Table

The system matches long distance calls that do not match entries in zone call band tables with your entries in seven different area code band tables. Program the cost values for area code band tables in call rate tables 11 - 17.

- 1. Dial 01 to program costing bands. "COSTING BANDS"
- 3. Dial 2 to program area code bands.

"AREA CODE BANDS"

4. Dial 1 for band 1.

- "BAND 1
- 6. Dial 201 to assign area code.
- 5. Dial * * * for configuration mode.

Integrated Call Costing Configuration - continued Call Costing Programming Procedures

- To make a record of the programming configuration, mark the desired requirements in the integrated call costing records chart found at the end of Chapter 4. There are companies in business that formulate custom call costing tables for use with this digital telephone system. Contact Comdial's Inside Sales Department at 1-800-347-I 432 for complete details.
- To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration. When a single button provides a togale (on/off) action, the lighted LED indicates the active feature.

◆ The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.

First Priority Costing - Exception Tables

The system first compares calls to your sntries in the call cost exception tables to determine if it can make a match.

- 1. Dial 78.
- "EXCEPTION TBL"
- 2. Dial 1 4 for entry 1 4.
- "ENTRY X
- 3. Dial 1 to assign the call rate table.

"CALL COST TBL XX"

- 4. Dial **01** 33 for call rate table number.
- 5. Dial *.
- 6. Dial 2 to assign matching digits.
- **"**XXXXXXXXXXXXXXXXXXXXXX"
- 7. Dial #to clear current entry.
- 8. Dial matching digits (16 max. # = match anything).

*XXXXXXXXXXXXXXXXXX

- 9. Dial * * for next entry, and repeat steps 2 9 until all entries are made.
- 10. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

Second Priority Costing For Local Calls . Office Code Band Tables

The system measures calls that do not match exception tables for the number of the digits the caller dialed. It then compares calls with numbers that are have less than 10 digits (local calls) to your entries in seven different off ice code band tables. Program the cost values for these office code band tables in call rate tables 18-24.

1. Dial 75.

- **"SMDA** PROGRAMMING"
- Dial 01 to program costing bands. "COSTING BANDS"
- 3. Dial 1 to program

off ice code bands.

"OFFCE CODE BANDS"

4. Dial 0 if no band is to be as'gned. "NO BAND

-OR-

Dial **1** • 7 for bands 1 • 7.

"BAND Χ

- 5. Dial 200 999 to as'gn office code.
- 6. Dial # and repeat step 5 for additional code.
- 7. Dial ★ and repeat steps 4-6 to program next band.
- 8. Dial * * for next SMDA feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Integrated Call Costing Configuration - continued Call Costing Programming Procedures

Press ITCM *#746*.

Second Priority Costing For Long
Distance Calls • Zone Call Band Tables

The system measures calls that do not match exception tables for the number of the digits the caller dialed. It then compares calls with numbers that have 10 digits or more (long distance calls) to your entries in four different zone call band tables.

Program the cost values for zone call band tables in call rate tables 25 • 28.

1. Dial 75.

"SMDA PROGRAMMING"

- 2. Dial 01 to program costing bands. "COSTING BANDS"
- 3. Dial 3 to program zone call bands. "ZONE BANDS
- 4. Dial 0 if no zone is to be as'gned. "NO ZONE"

Dial 1 • 4 for zones 1 • 4.

"ZONE X

- 5. Dial 200 999 to assign an area code.
- 6. Dial #.
- 7. Dial 200 999 to as'gn an office code.
- 8. Dial # and repeat step 7 for another office code.
- 9. Dial * and repeat steps 3-9 to add another area code to same zone or to program next zone.

10. Dial * * for next SMDA feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Third Priority Costing For Long Distance Calls - Area Code Band Tables

The system matches long distance calls that do not match entries in zone call band tables with your entries in seven different area code band tables. Program the cost values for area code band tables in call rate tables 11 • 17.

1. Dial 75.

2. Dial 01 to program costing bands.

3. Dial 2 to program area code bands.

4. Dial 0 if no band is to be as'gned.

Dial **1** • 7 for bands 1 • 7.

"BAND X "

'NO BAND

"SMDA PROGRAMMING"

"COSTING BANDS "

"AREA CODE BANDS"

- 6. Dial 200 999 to as'gn area code.
- 5. Dial # and repeat step 6 for additional code.
- 6. Dial * and repeat steps 3-6 to program next band.
- 7. Dial * * for next SMDA feature.
- 8 **-OR**-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Integrated Call Costing Configuration - continued Call Costing Programming Procedures

Press ITCM *#746*.

Third Priority Costing For Local Calls
And Forth Priority Costing For Long
Distance Calls - Call Costing Tables

When the system can not match local calls and long distance calls with the entries you have made in any exception table, office code band table, zone call band table or area code band table, it compares them with your entries in call rate tables 2 = 10 and 29 = 33 and costs them accordingly. Use these call rate tables to cost calls that require special or extraordinary rates.

The system costs any calls for which it can find no match with your entries in call rate table 1 (the table of last resort for costing all (calls).

Consider the code of the code

NOTE: Dialing a 00 or a 000 as an **entry** in steps 7, 9, **11,** and 13 **will** clear the current entry for those steps.

1. Dial 76.

"CALL COST TBL"

2. Dial table number (01 - 33).

"CALL COST TBL XX"

3. Dial 1 to enter matching digits. "XXXXXXXX NOTE: Call Cost Table 1 will not accept matching digits."

- 4. Dial # to clear previous digits.
- 5. Dial matching digits for costed number (32 max.# = match anything digit)."XXXXXXXXX
- 6. Dial * to end matching digits.
- 7. Dial 2 then dial 01 99 for Tier 1 time in tenths of minutes. "TIER 1 TIME XX "
- 8. Dial *.
- 9. Dial 3 then dial **001 -** 999 for Tier 1 rate in cents.

"TIER 1 RATEXXX"

10 Dial *.

- 11. Dial 4 then dial 001 999 for Tier 2 rate in cents.

 "TIER 2 RATE XXX"
- 12. Dial *.
- 13. Dial 6 then dial **001** 999 for surcharge rate in cents. "SURCHARGE XXX "
- **14.** Dial * * to program next call cost table and repeat steps 2-14 until all tables are entered.
- 15. Dial * * for configuration mode.

To change setting, repeat procedure and make **different** selection.

| prog. | step | 2 |
|-------|------|----|
| prog. | step | 5 |
| prog. | step | 7 |
| prog. | step | 9 |
| prog. | step | 11 |
| prog. | step | 13 |

| Example | Call Rate Table | | | | |
|-------------|--------------------|--|--|--|--|
| | Call Rate Table 33 | | | | |
| Number | 19009762525 | | | | |
| Tier 1 Time | 30 (30 mimutes) | | | | |
| Tier 1 Rate | 120 (\$1.20) | | | | |
| Tier 2 Rate | 75 (\$0.75) | | | | |
| Surcharge | 50 (\$0.50) | | | | |
| | | | | | |

Discard Digits

When the digital telephone system is installed behind a host system such as a PBX or **CENTREX**, users must dial access codes before obtaining an outside line dial tone. To ensure that the system costs a call on just the actual telephone number that the user dials, you should arrange for the system to ignore these access codes. You can program up to six different access codes entries with up to eight digits per entry.

- 1. Dial 75.
 - Diai 73.
- 2. Dial 01 to program costing bands.
- 3. Dial 4 to program discard digits.
- 4. Dial 1 6 to select entry 1 6.
- - -
- 5. Dial # for no discard digits.

-OR-

Dial up to 8 discard digits

then dial #.

"XXXXXXXX

"ENTRY X

"SMDA PROGRAMMING"

"ASSGN DSCRD DIGITS"

"COSTING BANDS"

- 6. Repeat steps 4-5 to program next discard digit entry.
- 7. Dial * for next costing band feature.

-OR-

Dial * * for next SMDA feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Integrated Call Costing Configuration - continued Call Costing Programming Procedures

Press ITCM *#746*.

| Dial Time Limit The system does not include dialing time when it records the time of a call for costing. You can program the amount of time that the system ignores for dialing purposes. | Dial 75. Dial 02 to program dial time limit. Dial time in tenths of a minute (001 or dial 000 to clear). Dial * for next SMDA feature. Dial * * for configuration mode. To change setting, repeat procedure as | - 999. "XXXX" |
|---|---|---------------------------------|
| Answer Time Limit You can program the system to wait for a period of time before beginning to record costs for a call. This answer time allows a call to ring and be answered by the called party before the system costs it. | Dial 75. Dial 03 to program answer time limit Dial time in tenths of a minute (001 or dial 000 to clear). Dial * for next SMDA feature. Dial * * for configuration mode. To change setting, repeat procedure | "ANSWER TIME XXX " • 999 "XXX " |
| LCD Speakerphone Display of Costed Calls Use this programming feature to arrange an LCD speakerphone to display the cost of a call as it is made from the station. | Dial 53. Dial 27. Select station ports (LED On = Select Station 10 • 57: Dial 10 • 57 or percentage of the station feature. OR-Dial ** for configuration mode. To change setting, repeat procedure | ress CIO • C57. |

Specialized Route Access (SRA) Configuration

- To make a record of the programming configuration, mark the desired requirements in the records chart.
- Use the sequence of steps listed below to program for the specialized route access (SRA) feature using your VDT. You can on/y program the SRA feature from the VDT and not from station 10.

Enable The SRA Feature: The SRA feature allows the system to select a line group based on the digits the user has dialed. By doing this, it matches calls with their best suited routes. The feature provides a table-driven routing scheme where the numbers the users dial cause the system to chose a line group after comparing the dialed number with entries in an office code table, and area code table or, four special area code tables.

When you enable the SRA feature, you must first clear all assigned prime line, idle line preference and direct line appearance to inhibit all direct line access-for the system stations, and you must assign lines to the line groups that you plan for the system to use.

- 1. Type I * 7 4 6 * and press RETURN,
- 2. From the main menu, type **1** and press **RETURN** for system COS menu.
- 3. From the system COS menu, type 16 for specialized route access menu and press RETURN,
- 4. From specialized route access menu, type **1** for enable/disable choice menu and press **RETURN**,
- 5. Type **1** to enable or type 0 to disable feature and press **RETURN**,
- 6. To return to the main menu, press and hold CTRL and type C.

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Specialized Route Access (SRA) Configuration - continued

Off ice Code And Area Code Tables: The office code table matches a dialed office code with one of the office codes that you have entered in the table, and routes the call over the line group that you have entered for that office code. The area code table matches a dialed area code with one of the area codes that you have entered in the table, and routes the call over the line group that you have entered for that area code.

NOTE: When programming the tables, note that all table entries are defaulted to line group 1; therefore, to minimize programming effort, assign area/office codes with rhe fewest entries to line groups 2 through 4. For example: if you are entering area codes 200 through 299 and codes 200 through 209 requires one line group while codes 210 through 299 requires another line group, leave line group 1 assigned to the larger quantity of entries that require the most programming effort (21 O-299) and reprogram the line group for the smaller quantity of entries.

- To program office code table,
- 1. Type I * 7 4 6 * and press RETURN,
- 2. From the main menu, type 1 and press RETURN for system COS menu,
- 3. From the system COS menu, type 16 for specialized route access menu and press RETURN,
- 4. From specialized route access menu, type 2 for off ice code table menu and press RETURN,
- 6. Type **1-4** for line group to match office codes and press RETURN.
- Type office code(s) for routing over programmed group number and press RETURN
 - (type <u>nnn</u> or <u>nnn.nnn.nnn</u> for one code or several codes)

(type ALL to assign every office code from 000 through 999),

7. To return to the main menu, press and hold CTRL and type C.

To program **area** code table,

- 1. Type I * 7 4 6 * and press RETURN,
- 2. From the main menu, type 1 and press RETURN for system COS menu,
- From the system COS menu, type 16 for specialized route access menu and press RETURN,
- 4. From specialized route access menu, type 3 for area code table menu and press RETURN,
- 5. Type 1-4 for line group to match area codes and press RETURN,
- 6. Type area code(s) for routing over programmed group number and press RETURN
 - (type nnn or nnn.nnn.nnn for one code or several codes)

(type ALL to assign every area code from 000 through 999),

7. To return to the main menu, press and hold CTRL and type C.

IMI66-107 System Programming

Specialized Route Access (SRA) Configuration - continued

Special Area Code Tables: The four special area code tables must first match a dialed area code and then match the dialed office code with office code entries in the matched table. With a complete match found, the system routes the call over the line group that you have assigned to the matched office code in the matched special area code table.

NOTE: When programming the special area code tables, note that all office code entries are defaulted to line group 1; therefore, to minimize programming effort, assign those codes with the fewest entries to line groups 2 through 4. For example: if you are programming for code entries 200 through 299, and codes 000 through 209 requires one fine group while codes 210 through 299 requires another line group, leave fine group 1 assigned to the larger quantity of entries that require the most programming effort (2 1 O-299) and reprogram the line group for the smaller quantity of entries.

To assign the special area codes to the four tables,

- 1. Type I * 7 4 6 * and press RETURN,
- 2. From the main menu, type 1 and press RETURN for system COS menu,
- 3. From the system COS menu, type 16 for specialized route access menu and press **RETURN**,
- 4. From specialized route access menu, type 6 to assign area code to special table and press **RETURN**,
- 5. Type 1-4 to choose special table 1-4 and press RETURN,
- 6. Type specific area code for table and press RETURN,
- 7. Repeat steps 4 through 5 for each remaining special table and press **RETURN**,
- To clear the special area code tables if needed, type 7 and press RETURN, then type 1-4 for table 1-4 and press RETURN, and repeat as necessary.
- 9. Return to the system COS menu.

To assign line groups to the office code entries,

- 1. From the system COS menu, type 16 for specialized route access menu and press **RETURN**,
- 2. From specialized route access menu, type 4 for special area code table menu and press **RETURN**,
- 3. Type 1-4 for special table 1-4 and press RETURN,
- 4. Type 14 to choose line group 1-4 and press RETURN,
- Type all office code(s) that require call routing over the line group that you set in step 4; and press RETURN (type nnn or nnn,nnn,nnn for one code or several codes)
 OR-

(type ALL to assign every office code from 000 through 999),

- 6. Type 4 and repeat steps 3 through 5 to add additional line groups to office codes in the same table or to program the next special area code table,
- 7. To return to the main menu, press and hold CTRL and type C.

Specialized Route Access (SRA) Configuration - continued

Ilnsert Digits: You can program the system, on a per line group basis, to insert up to six digits before a dialed number. This **feature** is useful if the dialed number must match a specific format for the line group **being** used.

Assign or clear insert digits by performing the following steps,

- 1. Type I * 7 4 6 * and press **RETURN**,
- From the main menu, type 1 and press RETURN for system COS menu,
- 3. From the system COS menu, type 16 for specialized route access menu and press **RETURN**,
- 4. Type 8 for assign insert digit menu and press RETURN,
- 5. Type 1-4 for line group number and press RETURN,
- 6. Type SRA insert digits (maximum of six) and press RETURN,
- 7. Repeat steps 1-3 to assign insert digits for each line group,
- 8. To clear the insert digits if needed, type 9 and press **RETURN**, then type **1-4** for line group number and press **RETURN** repeat as necessary,
- 9. To return to the main menu, press and hold CTRL and type C.

Overflow Line Group: You can assign an overflow line group that the system can route calls over when no lines are free in the line group assigned to the matching entry; otherwise, the system will return busy tone to the caller when this condition exists.

NOTE: if you have arranged for the system to insert digits on a particular line group, consider arranging for the system to insert digits in the overflow line group as well. This consideration is necessary only if it is important for the call to route through the same common carrier as was the original line group.

1. Type I * 7 4 6 * and press RETURN,

- 2. From the main menu, type **1** and press **RETURN** for system COS menu,
- 3. From the system COS menu, type 16 for specialized route access menu and press **RETURN**,
- 4. From specialized route access menu, type 6 for overflow line group and press **RETURN**,
- 5. Type 1 4 for line group 1-4 or 0 for no line group and press **RETURN**,
- 6. To return to the main menu, press and hold CTRL and type C.

SRA Wait Time: Once a caller begins to dial digits, he or she has a certain period of time in which to dial each new digit. After the caller has stopped dialing digits and the end of the time-out period has occurred, the system analyzes the dialed digits and routes the call by following the table-driven routing scheme. Use this procedure to select the SRA wait time.

Assign ARS wait time by performing the following steps,

- 1. Type I * 7 4 6 * and press **RETURN**,
- 2. From the main menu, type 1 and press **RETURN** for system COS menu,
- 3. From the system COS menu, type 16 for specialized route access menu and press **RETURN**,
- 4. Type 10 for assign ARS wait time menu and press RETURN,
- 5. Type 2, 3, or 4 for 2, 3, or 4 seconds and press RETURN,
- 6. To return to the main menu, press and hold CTRL and type C.

Station Message Detail Accounting/Reporting Configuration

The system produces five different call cost reports for printing. They are:

- 1. Detailed report of all station
- 2. Detailed report of all accounts
- 3. Trunk summary report
- 4. Department summary report
- 5. All records

The system generates reports automatically for printing whenever it detects that its records storage area is 95 percent full. You can use class of service programming to choose the reports that you want the system to generate. It generates the reports for printing in the order that you selected and at a certain time each day. You can also take programming action that causes the system to delete all printed records except for those it collects during-the printing operation. It stores these records for later printing.

- To make a record of the **programming** configuration, mark the desired requirements in the station message detailed accounting records found at the end of Chapter 4.
- ▶ To make the programming selections, dial the feature code and then dial the configuration code (or press the Programming button where appropriate).

NOTE: A lighted LED **next** to the programming button for the selection indicates the current configuration. When a **single button provides** a toggle **(on/off)** action, the lighted LED indicates the active feature.

• The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press **ITCM** then dial *# 7 4 6 *. The last step is to press the **SPKR** button to end the programming procedure and return the system to normal operation.

Station Message Detail Accounting Departments Numbers and Stations

Use this programming feature to define different department numbers and assign stations to the departments so that SMDA call cost reports will only include information concerning that specific station arrangement.

To define the department numbers,

- 1. Dial 75. **"SMDA** PROGRAMMING"
- 2. Dial 04 to define dept. numbers. "SMDA DEPARTMENTS"
- 3. Dial **1** 8 for dept. 1-8. "DEPTX
- 4. Dial 0000 9999 for department number.

'DEPTX YYYY "

- 5. Dial * for next department, and repeat steps
 - 3 7 until all departments are numbered.
- 6. Dial * * for next SMDA feature.
- 7. Dial * * for configuration mode.
- To change setting, repeat procedure and make different selection.

To assign stations to departments,

1. Dial 53.

"STATION FEATURES"

2. Dial 22.

- **"SMDA** DEPARTMENTS"
- 3. Dial 0 for no SMDA department. "DEPARTMENT 0"
 -OR-
- 4. Dial **1** 8 for dept 1 8.
- "DEPARTMENT X "
- 5. Select stations for SMDA department (LED On = Selected):
 - Station 10 57: Dial 10 57 or press Cl 0 C57.
- 6. Dial * for additional department/station assigments. -OR-

Dial * * for next station feature.

-OR-

Dial * * for configuration mode.

To change setting, repeat procedure and make different selection.

Station Message Detail Accounting/Reporting Configuration - continued

Press JTCM *#746*.

Station Message Detail Accounting (SMDA) Printout

Call cost reports, produced by the system for printing, are generated automatically whenever the system detects that the records storage area is ninety-five percent full. Program the system to automatically generate these reports for printing at a certain time each day if desired. You can command the system to print several different types of SMDA reports and to delete all stored SMDA records.

Beginning with software release revision **13A** on Innnn and Snnnn software cartridges, you can specify a specific station that you wish an SMDA printout for.

NOTE: The departmental calldistribution report reflects statistics based on current departmental station assignments. Before you use the previous programming feature to reassign stations to different departments, it is a good practice to: (1) print the departmental call report and any other desired SMDA reports,

- (2) make any desired reassignements,
- (3) delete all SMDA records.

o arrange for automatic reports,

"SMDA PROGRAMMING" . Dial 75.

!. Dial 13 for auto report time. "AUTO TIME XXXX"

- Dial new time in hours and minutes (HH MM in 24 hour time) or dial * to accept current time.

Dial 14 for report definition. "AUTO REPORT"

. Choose reports for printing.

 Dial 1 for station report. "STATION REPORT" "ACCOUNT REPORT" Dial 2 account report. Dial 3 line report. "LINE REPORT " - Dial 4 department report. "DEPT. REPORT " Dial 5 print all. "PRINT RECORDS " "DELETE RECORDS" Dial 6 delete records.

 Dial 7 for DCD report. 5. Dial * for next SMDA feature.

Dial * * for configuration mode.

change setting, repeat procedure and make different selection.

To obtain an SMDA report printout,

- "SMDA REPORTS " I. Dial 07.
- 2. Choose report for printout
- Dial 1 # for all stations.
 - Dial 1 # 10 -67 for one sta.

 - Dial 2 # for all lines.
 - Dial 3 # for SMDA department.
 - Dial 4 # for account code.
 - Dial 5 # for auto report.
 - Dial 6 # for all records.
 - Dial 7 # to delete records.

 - Dial 0 # for DCD report
 - Dial 8 to obtain the number of free records remaining in system.
 - Dial 9 to abort printout.
- 3. Dial * for configuration mode.

"DCD REPORT "

"STATION REPORT" "STATION REPORT"

"TRUNK REPORT"

"DEPT. REPORT "

"ACCOUNTREPORT

"AUTO REPORT "

"PRINT RECORDS

"DELETE RECORDS"

"DCD REPORT "

"FREE RECS XXXXXX"

"ABORT PRINT "

To change setting, repeat procedure and make different selection.

System Programming

Station Message Detail Accounting/Reporting Configuration - continued

Press ITCM *#746*.

Station Message Detail Reporting (SMDR) Printout

Program the system for the SMDR to **provide** continuous printout of system-wide station call activity as it is collected by the system if desired.

Additional programming action will cause the printing of the cost of each reported call to be included when the printout occurs.

To program for SMDR printout as the system collects it,

1. Dial 77.

2. Dial 2. "SMDR PRINT XXX "

3. Press Al to toggle between enable and disable (Al LED On = Enabled) -OR-

"SMDR PRINT ON " - Dial 1 to enable printing. (Al LED on).

"SMDR PRINT OFF" Dial 2 to disable printing

4. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

To add SMDR cost reporting to the printout,

"SMDR PRINT " 1. Dial 77. "XXXXXXXX COSTING" 2. Dial **1**

3. Press Al to toggle between enable and disable (Al LED On = Enabled). -OR-

 Dial 1 to enable **'WITH COSTING "** (Al LED on)

WITHOUT COSTING " - Dial 2 to disable.

4. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

Station Message Detail Accounting (SMDA) Records Deleted By The Attendant

This programming step gives the attendant station the ability to delete SMDA records when commanded to do so by its user. **During** day-to-day system operation, when **SMDA** records exceed storage capacity, the attendant can delete current records to make room for additional ones if you **perform** this programming step. Typically the attendant would do this after he or she has requested the system to print an SMDA report. If you have set the system to delete the records after it has generated an automatic report, you usually do not need o give the attendant this manual deletion eature.

1. Dial 18.

"ATTN DELETE XXX "

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2. Press AI to toggle between enable and disable (LED On = Enable).

-OR-

Dial 1 to Enable "ATTN DELETE ON " (Al LED On). Dial 2 to Disable

"ATTN DELETE OFF "

3. Dial * for configuration mode.

To change setting, repeat procedure and make opposite selection.

System Programming IMI66-107

Toll Restriction Table Configuration

Before programming the toll restriction configuration, enter the toll restriction requirements on the toll restriction reference tables found at the end of Chapter 4.

In order for toll restriction to take effect, the following three-fold process must occur.

- Program entries in one or more toll tables
- Assign toll tables to all appropriate lines.
- Assign toll tables to all appropriate stations.

After you program the toll tables, you must assign them to both a line and the station that uses that line before the system will activate any programmed toll restriction at the station.

- 1. Determine the types of dialing restrictions that you wish imposed on the system. Typically, this includes access codes which result in toll charges, and certain local numbers as desired.
- 2. If you wish the restricted dialing codes to be imposed consistently on most or all stations in the system, list them on one or two tables. If you must allow for a wide variation in the dialing restrictions, spread the listing out across several tables.
- 3. Strategically group the listings on the tables so that a list of restrictions can be applied to a particular station or group of stations.
- 4. Designate each table as a DENY table or as an ALLOW table. The system prevents the dialing of numbers entered in a DENY table. ALLOW tables take precedence over DENY tables. Therefore, an entry in an allow table will provide an **explicit** exception to an entry in a DENY table. Note that the system always permits the dialing of any number not explicitly denied. Also, note that the system will not toll restrict system speed dial numbers unless you specify them to be restricted with a separate programming step.

Example A: Provide a simple and broad toll restriction format by creating a DENY table with two entries: ENTRY (1) = 1; ENTRY (2) = 0. This format prevents all long distance and operator calls.

Example B: Prevent the dialing of all numbers within the (804) area code, while allowing the dialing of one specific number within that area code. by entering 1604 in a DENY table and 18049782200 in an ALLOW table.

5. Press the # button in place of a particular digit to condense a range of numbers into one entry. The # character is a "match-anything" digit, and can be included in an entry in either a DENY table or an ALLOW table.

Example A: If 357,377, 387, and 397 dialing is to be prohibited, list one entry of **3#7** on a DENY table to cover them all.

Example B: Since area codes typically have a 1 or a 0 as a middle digit, prevent long distance calls to those area codes by entering **1#1#** and **1#0#** in an DENY table.

- 6. Since it is important that emergency numbers never be restricted, always create an allow table with entries of **911** and 1911 to override any DENY tables that you havecreated.
- 7. If the system is installed behind a PBX, include an access code as part of every table entry.
- 8. The system defaults two toll restriction tables with preprogrammed values and assigns them to the lines. You need only to assign them the stations to put them into effect. The preprogrammed values are as follows:

Table 1 = denv Entry 1 = 1 Entry 2 = 976 Entry 3 = 411

Table 2 = allow Entry 1 = 1800 Entry 2 = 911

These Values will provide satisfactory system performance in a broad range of site applications; however, the! can be changed as needed to meet different toll **restriction** needs.

continued on next page. .

Toll Restriction Table Configuration - continued

• To make the programming selections, dial the feature code and then dial the configuration code (or press the programming button where appropriate).

NOTE: A lighted LED next to the programming button for the selection indicates the current configuration.

When a sing/e button provides a toggle (on/off) action, the lighted LED indicates the active feature.

- The first step in any programming sequence is to enter the base level. Once in this mode, you can dial the feature code for any desired configuration. Enter the base level with the following procedure: press **ITCM** then dial *# 7 4 6 *. The last step is to press the SPKR button to end the programming procedure and return the system to normal operation.
- You can return the toll table values to the default state by entering base level, dialing 70#, and pressing SPKR.

| · | , | |
|---|---|--|
| Assign Entries To Toll Restriction Tables | 1. Dial 71. 2. Dial 01 • 16 or Press Al • A14, B1, B2 for toll table 1 • 16. 3. Dial 5 or Press Al to establish an allow toll table. (Al LED on = allow) -OR- Dial 6 or Press A2 to establish a deny toll table. (A2 LED on = deny) 4. Dial 1 • 4 or Press A8, A9, A10, All for entry number 1 • 4. 5. Dial # to clear current entry. 6. Dial keypad digits (0 • 9, #) to enter numbers. "XXXXXX" 7. Dial * for next entry and repeat steps 4 • 6 until all table restrictions are entered. 8. Dial * * for next table and repeat steps 2 • 7 until all tables are entered. 9. Dial * * * for configuration mode. To change setting, repeat procedure and make different selection. | |
| Assign Toll Restriction Tables To Lines | Dial 72. "ASSIGN TOLL-LINE" .Dial 01 • 16 or Press AI • A14, B1, B2 for toll table 1 • 16. Dial # to finish entry and display lines. Select line ports (LED On = Lines selected to receive tables). Line port 1-16 = Dial 01 • 14 or Press AI • A14. Line port 15, 16 = Dial 15, 16 or Press B1, B2 Line port 17-24 = Dial 17-24 or press HOLD then dial AI • A8 Dial * and repeat steps 2-4 for next toll table to line assignment. OR- Dial * * for configuration mode. To change setting, repeat procedure and make different selection. | |

Toll Restriction Table Configuration - continued

Press ITCM *#746*.

| Assign Toll Restriction Tables To Stations | 1. Dial 73. 2. Dial 01 • 16 for toll tables 1-16 to be assigned to station. •OR- Press AI • A14, BI, B2 for tables I-16. (LED On = Selected table) 3. Dial # to finish entry. 4. Select station ports (LED On = station ports to receive tables): • Station 10 • 57: Dial 10 • 57 or press CI0 • C57. 5. Dial * for next toll table to station assignment. •OR- Dial * * for configuration mode. To change setting, repeat procedure and make different selection. |
|--|---|
| Assign Toll Restriction Tables To Stations For Night Transfer (of ringing) Toll tables assigned with this feature have an effect only when the attendant places the telephone system in the night transfer (of ringing) mode of operation. | 1. Dial 74. 2. Dial 01 • 16 for toll tables 1 • 16 to be as'gnd. •OR- Press AI • A14, BI, B2 for tables I-16. (LED On = Selected table) 3. Dial # to finish entry. 4. Select station ports (LED On = station ports to receive tables): • Station 10 • 57: Dial IO • 57 or press CIO • C57. 5. Dial * for next toll table to night answer assignment. •OR- Dial * * for configuration mode. To change setting, repeat procedure and make different selection. |
| Assign Toll Restriction Tables To System Speed Dial Calls When you enable this feature, the system applies toll restriction tables that you have assigned to a station to the system speed dial calls that users make from that station. | 1. Dial 53. 2. Dial 05. 3. Select station ports (LED On = station ports assigned): - Station 10 - 57: Dial IO - 57 or press CIO - C57. 4. Dial * for next station featureOR- Dial * * for configuration mode. To change setting, repeat procedure and make different selection. |

Toll Restriction Configuration - continued

Assign Toll Restriction Override (TRO)

Code: The TRO feature allows users to preserve the toll restriction that they encounter at other stations with their own station's toll restriction assignments. In programming for this feature, create a four-digit TRO code that users can dial to override the toll restrictions of any station that they happen to be using and replace it with a toll restriction that matches their home station.

NOTE: The system marks outgoing line calls that users make after entering a TRO code with a (T) in its SMDR/SMDA printouts.

The station number that it prints is that of the overriding station and not the actual station that the call was made from.

You can use the sequence of steps listed below to program a TRO code from station 10.

- 1. Press **ITCM** and dial * # 7 4 6 * to enter COS programming, "CONFIG. MODE"
- 2. Dial 53 for station features, "STATION FEATURES"
- 3. Dial 25 for toll restriction override codes, "TOLL R. OVERRIDE"

NOTE: If you are programming with a **DSS/BLF** console, notice that it's status **LEDs** turn on to indicate stations that have an assigned TRO code (ClO • C57 = station ports 10 - 57).

- Select station port (LED flashes = selected station port, display shows TRO if assigned.),
 -station 10 57 = dial 10 57 or press Cl 0 C57
- 5. Type four-digit TRO code, "NNNN
- 6. Repeat steps 4 and 5 for next station port,
- 7. Dial * for configuration mode -OR-

press SPEAKER to end,

8. To remove a TRO code, repeat steps 1 through 3, select station port, type # and press SPEAKER

You can use the sequence of steps listed below to program a TRO code using your VDT.

- 1. Type I * 7 4 6 * and press RETURN to enter COS programming
- 2. Type 3 and press RETURN for station COS menu,
- 3. Type 8 and press **RETURN** for <u>toll restriction administration</u> menu,
- 4. Type 4 and **RETURN** to choose **toll restriction_override** feature,
- 5. Type 1 and RETURN to choose assign toll restriction override codes item,
- 6. Type station port number (10 57) and press RETURN,
- 7. Type four-digit toll restriction override code and press RETURN,
- 8. Press and hold CTRL and type C to return to main menu.

You can remove a TRO code from a station **port** by following a similar procedure.

- 1. Repeat above steps 2 through 4,
- 2. Type 2 and **RETURN** to choose <u>remove toll restriction</u> <u>override codes</u> item,
- 3. Type station port number (10 57) and press RETURN,
- 4. Press and hold CTRL and type C to return to main menu



Video Display Terminal Programming Feature

You can program the class of service features from a video display terminal **(VDT)** instead of from the programming station if you wish. The VDT that you use must be a serial-data, RS-232 type, asynchronous device.

You can employ a personal computer (PC) if it will run a communications software program that allows it to emulate a data terminal device (DTE equipment). Many effective communications software programs are available for this purpose. You can use any that you can arrange to match the following data communications parameters:

- Full Duplex
- XMODEM communication protocol (8 bit data required)

Regardless of the type of programming terminal that you employ, you must connect it to the digital telephone system data **port A.** Refer to the Chapter 3 paragraph titled, *Data Device Connections* for complete connection details.

The pages that follow provide an overview of the VDT programming feature. For a more detailed, step-by-step procedure, refer to **IMI66-094,** Digital Telephone System VDT Programming Reference Manual.

Video Display Terminal Programming Procedure

Introduction

The programming procedure is menu driven.

- A list of selections are presented for consideration which differ in content and required response.
- Each selection, when responded to, either causes a further breakdown of selections to be presented or causes a particular COS programming action to take place.
- This menu system prompts the programmer for the required response and, where appropriate, will repeat prompts to allow programming of more than one device without having to make another menu selection.
- All of the menus operate in the same manner.
 They differ in only the required response.
- Each prompt requires a response followed by a Carriage Return (RETURN). The responses usually consist of a one or two-digit number or a string of numbers or alpha-numeric characters when programming names and messages. Separate successive entries in a string by a space or a comma; however, do not end a string of entries with a comma. If you do, the system will reject the string.

General Information

There are two responses which allow a programmer to quit a procedure.

- RETURN (ENTER on some keyboards) This action returns the user to the top of the current menu.
- CONTROL C .This action returns the user to the top of the main menu.

There are certain other responses which have special functions.

- Responding with the @ key will print or display the menu that the programmer is currently using. The system is waiting at the same prompt line as it was before the menu was repeated.
- Responding with the ? key will cause a help menu to be printed if one is available. The system is

waiting at the same prompt line as it was before the help menu was requested.

There are special line edit characters.

- Backspace, Delete, Rub-out Used to delete characters from the response line as they are being typed.
- **CONTROL R** Causes the current response line to be echoed for review.
- CONTROL D Causes the current response line to be deleted.
- **CONTROL** S Causes printing or display action stop.
- CONTROL Q Causes the printing or display to resume

There are two system acknowledgement messages to a response line.

- COMMAND ACCEPTED Response accepted.
- ***COMMAND REJECTED*** Response not accepted. The terminal bells also sounded.

Procedure

- 1. Determine the system programming parameters, and record them for future reference.
- 2. Turn on the AC power to the system and the VDT.
- Press the RETURN (ENTER) key. The system enters an approximate 20 second timeout cycle. Step 4 must be performed within this timeout period or the programming sequence will be aborted.
- 4. Type the password: I * 7 4 6 *, and press RETURN (ENTER). The VDT will display the main programming menu. The system enters an approximate 3 minute timeout cycle. A selection or response must be entered within this timeout period, otherwise; the programming sequence is aborted.
- **5.** Execute the programming procedures by responding to the prompts listed in first the main menu and then in subsequent menus.

IMI66-107 System Programming

Video Display Terminal Programming Procedure - continued Remote Programming Configuration

You can program the digital telephone system remotely using the following equipment:

- VDT or a PC and appropriate software program,
- Pair of data modems.

The data modems must be: "Hayes-compatible", capable of 300-, 1200-, 2400-, or 9600-baud data speeds, and have auto-answer capability. Be sure to verify the auto-answer capability before purchasing the units. You are assured of best results if you employ modems of the same make and model at both the installation site and the remote programming site.

Installation

The equipment connections at the customer location are as illustrated on page 4-61. Connect the equipment for remote programming as illustrated therein and discussed below.

- Determine the signal needs of the modem from the user's manual for it. (The digital telephone system only requires TD, RD, and SG but the modems may require more signals).
- Wire the proper connector (to match the data jack) on one end of a length of multiline cable.
- Punch down the appropriate leads on the connector block. Refer to Chapter 3 for connection details as needed.
- Connect the network jack of the data modem to an outside telephone line. (If a line is not reserved for remote programming, have a line switch installed so that on site personnel can switch the outside telephone line between the data modem and the digital telephone system cabinet when you are going to perform remote programming.)
- Refer to the user's manual for the modem, and program the modem to automatically answer after the first ring.
- **Interface** the VDT or PC with the modem at the programming site per the user's manuals for the equipment be used.

If you experience difficulty in establishing a communications path between your VDT, modems, and the digital telephone system, note the following suggestions:

- 1. Insure that you have enabled the modem auto-answer feature.
- 2. Insure that the modems are wired correctly. Reverse connections at pins 2 and 3 if necessary.
- 3. Check the modem wiring requirements stated in its instruction manual. You may have to connect more wiring than that connected at pins 2, 3, and 7.
- 4. Sometimes you must strap pin 4 to 5, or pin 6 to 7, or pin 6 to 6 to 20 in the modem wiring. Check the modem's installation manual for this requirement.
- 5. Use a Breakout Box Data Tester to **troubleshoot** the data communications lines.

Operation

To establish a communications link for programming the system **from** a remote site, proceed as follows:

- If you have had a line switch installed at the customer site, call someone there and ask them to set it for modem operation.
- After the outside line is connected to the modem, you can make the data link between the originating and the remote modems.

You can then perform programming from your remote site just as if the VDT or PC was connected directly to the system.

Typical PC Operation

The following procedure is given as a typical example for using a PC and an XMODEM-type communications software program to program the digital telephone system. It is only provided for illustration and reference purposes and describes a set-up using a typical communications software program known as **PROCOMM** (produced by Datastorm Technologies, Inc.). Many other communications software programs are also available that you can use for this purpose. While individual operating procedures will vary with different.communications software programs, the general process is similar to this.

- Perform turn-on and program-load procedures. If operating through modems, take action to establish a communications link between the PC and the digital telephone system.
- 2. If you have direct connected your PC to the digital telephone system, match the data communications parameters of the software Program to those now programmed at the digital telephone system.

continued on next page. . .

System Programming IMI66-107

Video Display Terminal Programming Procedure - continued Remote Programming Configuration - continued

If you are employing remote programming, the data parameters of the PC must match the modem connected to it. The modem connected to the digital telephone system must match the data parameters of it as well.

- NOTE: Remember, 8-bit data is required for XMODEM protocol. If the digital telephone system is not now programmed to provide 8-bit data, you will have to reprogrammed it from station 10 before data communications can take place. You should set the baud rate to match the modem or the PC at the same time.
- 3. Set the data communication parameters as follows:
- Press ALT P.
- Type 11 the press ENTER. This action selects a baud rate of 9600 baud.
- **NOTE:** Remember, the baud rate setting of the **PC** Or data terminal, the data modems, and the digital telephone system must be the same.
- Type 17 then press ENTER. This action selects
 8-bit data.
- Type 18 the press ENTER. This action selects one stop bit.
- Type 24 then press ENTER. This action saves the data parameters.
- 4. Set the terminal parameters as follows:.
- Press ALT S.
- Type 2 then press ENTER.
- Type 1 then press ENTER.
- Use arrow keys to select VDT-100 or similar emulation then press ENTER.
- NOTE: Setting the terminal emulation for a Wyse-50 or VT- 100 emulation will provide a compatible set of default values; however, any emulation which provides full duplex operation is satisfactory.
- Press ESC to finish.
- Press S then press ENTER. This action saves the terminal parameters.
- Press ESC then press ENTER to end the terminal parameter set up.

- When computer screen displays a prompt for password, type I * 7 4 6 * then press ENTER. This causes main COS programming menu to be displayed.
- From main menu, type 1 then press ENTER. This causes system COS programming menu to be displayed.
- From system menu, make all selections necessary to perform class of service programming then return to the main menu.
- 6. From the main menu, type 4 then press ENTER. This causes load/save menu to be displayed.
- From load/save menu, down-load COS data from digital telephone system to computer or up-load COS data from computer to digital telephone system,

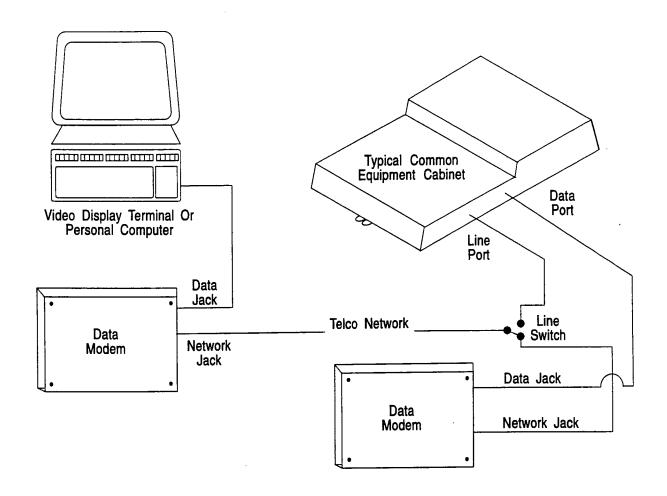
Down-Load COS Data From Digital Telephone System To PC

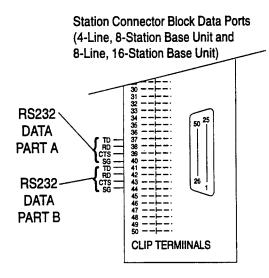
- Type 1 then press ENTER.
- Press PAGE DOWN.
- Type **1** to choose XMODEM protocol.
- Type file name for down-loaded COS data to save into.
- Press ENTER. The COS data, as programmed in the digital telephone system, is automatically down-loaded to the computer file.

Up-Load COS Data From PC To Digital Telephone System

- Type 2 then press ENTER.
- Press PAGE UP.
- Type 1 to choose XMODEM protocol.
- Type file name of saved COS data.
- Press ENTER. The COS data, as stored in the computer file, is automatically up-loaded to the digital telephone system.
- Repeat step 6 except type 3 to down-load currently stored auto dial and speed dial numbers or type 4 to up-load them.
- 11. Return to main menu and log off.

Video Display Terminal Programming Procedure - continued Remote Programming Block Diagram

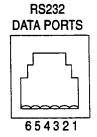




| DATA CONNECTIONS | | | |
|------------------------------|-----------|--|--|
| SYSTEM | MODEM | | |
| DATA PORT | DATA JACK | | |
| CTS | | | |
| RD | TD | | |
| TD | RD | | |
| SG SG | | | |
| System requires that the CTS | | | |

System requires that the CTS pin be at a high logic level before it will send data. It will force the pin high if no modem connection is supplied.

Modular Jack Data Ports (16-Line, 32-Station Base Unit)



(Front View of Jack)

1 = --2 = CTS 3 = RD

4 = TD

5 = SG

6 = --

CAJS013

System Programming IMI66-107

Video Display Terminal Programming Procedure - continued Menu Descriptions

Main Menu Selections

C.O.S. Programming

- 1. System C.O.S.
- 2. Line C.O.S.
- 3. Station C.O.S.
- 4. Toll Restriction Table Administration
- 5. Information
- 6. Logoff

Enter Selection:

- Selection 1: Chooses system COS programming.
- Selection 2: Chooses line COS programming.
- Selection 3: Chooses station COS programming.
- **Selection** 4: Chooses toll restriction table administration programming.
- Selection 5: Choses an information menu to provide assistance with VDT programming.

System Cos Menu Selections

System C.O.S. Programming

- 1. System Defaults
- 2. System Options
- 3. System Timing
- 4. Load / Save C.O.S. Data
- 5. Serial Communication Parameters
- 6. C.O.S. Data Printout
- 7. Set Clock Date /Time
- 8. SMDA Programming
- 9. SMDR Print Parameters
- 10. Logical / Physical Assignments Stations
- 11. Logical / Physical Assignments Lines
- 12. Automatic Station Relocation
- 13. Feature Inhibit Programming
- 14. Enable All Inhibited Features
- 15. LCD Messages
- 16. 'Software Version Number
- 17. Return To Previous Menu

Enter Selection

- Selection 1: System defaults
 - Default All System Data
 - Default All Line Data
 - Default All Station Data
 - Default Selected Station Data

- Pulse Dial on All Lines
- Tone Dial on All Lines
- Default Button Mapping on all Stations
- Master Clear System Data
- Default Toll Restriction Tables

On each default selection, the system questions the user as to whether the default should be made. If response to the question is yes (Y), the default is performed.

When defaulting selected station data, the station to be defaulted must be identified by port number (10 • 57)

- Selection 2: System Options
 - Voice/Tone Announce First on Intercom (Choose either Voice or Tone signalling as standard intercom signalling method.)
 - Station Message Desk (Assign or clear one station port as the central message desk.)
 - Assign Extension Number to Port (Gives a station flexible extension numbers from 2 - 4 digits.)
 - Assign Pilot Number to Department (Gives an entire department one extension number.)
 - Music on Hold
 - Do Not Disturb Inhibit
 - Station Monitoring (Visual ring indication for station with BLF appearance at programmed station can be enabled or disabled.)
 - Tandem Attendent (One or both attendants can receive timed hold recall and recall from transfer.)
 - Voice Mail Auto Transfer (Enables immediate line transfer when voice mail unit is included with system.)
 - Disable Stations (Disable station ports)
 - System Alarm Reporting
 - PA Options (Enables direct ringing, delayed ringing, or night transfer (of ringing) and zone paging on the PA port. Also chooses ringing port relay control as either paging port or station port 17.

The station to be programmed must be identified by port number (10 • 57).

When assigning extension numbers, enter station port or department number then make extension number entry.

IMI66-107 System Programming

Video Display Terminal Programming Procedure • continued Menu Descriptions • continued

- **Selection** 3 : System timing (system **timing** requirements)
 - Recall / TAP Time
 - Pause Time
 - Timed Hold Recall Time
 - Transfer Recall Time
 - · Call Park Recall Time
 - Extended DTMF Dialing Tones
- Selection 4: Load/Save COS data
- Selection 5 : Serial communication parameters (for data port A and data port B)
- Selection 6: COS data printout
- Selection 7: Set clock date/time.
- Selection 8: SMDA programming (Configures the Station Message Detailed Accounting feature. Also refer to the previous discussions titled Integrated Call Costing Configuration and Station Message Detail Accounting/Reporting Configuration for explainations of call costing and SMDA.)
 - Assign Area Codes / Prefixes to Bands
 - Enter band number O-7, enter 0 for no band, or enter area codes or prefixes as 200-999.
 - Set Dial Time Limit (non-costed time allowed for dialing to take place in 1/10 min)
 - Set Answer Time Limit (non-costed time allowed for call to ring and be answered in 1/10 min)
 - Define Department Numbers (Calls can be costed on a department basis by department basis.)
 - Assign Stations to Departments (for costing by department)
 - Set Account Code Parameters
 - Call Cost Tables
 - Call Cost Exception Tables
 - Automatic Reports (Call cost reports can be produced for printing.)
 - SMDA Delete By Attendant (allows attendant to delete SMDA records)
 - SMDA Reports
- Selection 9: SMDR print parameters (enables or disables call cost reporting along with a Station Message Detail Report).
- Selection 10: Logical/physical assignments stations (For example; assign station extension 25 to station port 25.

- Selection 11: Logical/physical assignments lines (For example; assign line 1 to line port 1.
- Selection 12: Automatic station relocation (allows individual features to be physically relocated without losing their programming parameters and extension asignments)
- **Selection** 13: Feature inhibit programming (allows individual features to be inhibited)
- **Selection 14:** Enable all inhibited features (will enable all features inhibited with selection 13)
- Selection 15: LCD messages (programs the messages for the LCD messaging and response messaging features)
- Selection 16: Software version number (identifies the software release version of the system)

Line Cos Menu Selections

Line C.O.S. Programming

- 1. Line Type
- 2. Line Group Assignment
- 3. Line Dialing Mode
- 4. Line Privacy Release
- 5. Line Toll Restriction Table Assignments
- 6. Line Abandoned Hold Release Time
- 7. Set Up a Line (Using a Model Line)
- 8. Assign Name to Line
- 9. Assign Line to Department
- 10. Exclusive Hold
- 11 .Voice Mail Line I.D.
- 12. D.I.S.D. Assignments
- 13. Caller ID Assignments
- 14. Return To Previous Menu

Enter Selection:

In each line COS menu selection, after choosing the feature, enter all line port numbers which are to be assigned to it.

- Selection 1: Line type (specifies the characteristics of the line port)
 - Disabled
 - Auxiliary (Configures port for installation of external paging amplifier.)
 - CO/PABX (Typical line connection)

System Programming IMI66-107

Video Display Terminal Programming Procedure - continued Menu Descriptions - continued

- Selection 2: Line group assignment
- **Selection 3:** Line dialing mode (pulse or tone to match the connected line)
- **Selection** 4: Line privacy release (releases privacy on a line)
- **Selection** 5: Line toll restriction table assignment
- **Selection** 6: Line abandoned hold release time
- Selection 7: Set up a line (Using a model line) (provides a means of programming a group of lines to match the programming of a model line)
- Selection 6: Assign name to line
- Selection 9: Assign line to department
- Selection 10: Exclusive hold
- **Selection 11:** Voice mail line ID (Specifies identification number of a particular line to the voice mail accessory for personalized call coverage)
- **Selection 12: DISD** assignment (Assigns **DISD** to lines and specifies calling characteristics of them)
- Selection 13: Caller ID assignment
 - Assign Caller ID To Lines
 - · Assign Caller ID To Stations
 - Assign Area/Office odes For Dial Feature
 - Audible First Ring
 - Caller ID Distribution

Station COS Menu Selection

Station C.O.S. Programming

- 1. Set Up a Station (Using a Model Station)
- 2. Assign Name to Station
- 3. Assign Station to Department
- 4. Assign Station to SOHVA Group
- 5. Line/ Intercom Features
- 6. Ringing Assignment
- 7. Button Mapping
- 8. Toll Restriction Administration
- 9. Automatic Busy/ RNA Call Forwarding
- 10. Miscellaneous Feature Programming
- 11. Speakerpone Coefficients
- 12. Return To Previous Menu

Enter Selection:

In each station COS menu selection, after choosing the feature, enter a station port number which is to be assigned to it and enter line port numbers where prompted. Multiple station number entries are allowed for some features as prompted.

- **Selection 1:** Set up a station (Using a model station) (program a group of stations to match the programming of a model station)
- **Selection** 2: Assign name to station
- **Selection** 3: Assign station to department
- Selection 4: Assign station to SOHVA groups
- **Selection** 5: Line/Intercom features
 - Prime Line (assign prime line, prime group, prime intercom, or clear all)
 - Ringing tine Preference (enable or disable)
 - Line Access Deny (enable or disable station access to a line)
 - Line Originate Deny (enable or disable station ability to originate a call on a line)
 - Idle Line Preference (enable or disable access to an idle line when station is taken off hook)
 - Block Voice Announce Intercom Call
 - Audible Monitoring (audible ringing sounded for stations with BLF appearance at programmed station)
- Selection 6: Ringing assignment
 - Personal Ringing Tones (Choose one of six different tones.)
 - Direct/Delayed Ringing (of each line assigned to programmed station)
 - Night Ringing (enable or disable night transfer, of ringing, to programmed station for programmed lines)
 - Distinctive Ringing For ATI-D
- Selection 7: Button mapping (assign functions to buttons)

Special Note: When button mapping a **DigiTech** telephone, you must type an "A " or "B" before typing its button numbers when identifying them for function assignment; however, when button mapping an Impact or an Americom telephone do not type an "L" before its button numbers when identifying them. To do so, causes the system to interpret the typed **entry** as a line number choice instead of a button number choice.

IMI66-107 System Programming

Video Display Terminal Programming Procedure - continued Menu Descriptions - continued

 Functions that can be assigned are identified per the following list:

To display list, enter ?. Return to key mapping with **Control Z.**

BLK Blank
Lnn Line (1 - 24)
Snn Station (10 - 57)
DND Do Not Disturb
P R I Privacy

IC2 2nd Intercom SAV Save

ACC Account Code Button ZPn Zone Page (I-3)

ΑC All Call ACB Auto Callback CF Call Forward CPn Call Park (I-9) TGn Line Group (I-4) Voice Announcé Block VAB TGQ Line Group Queue EX Exit Button Mapping

System displays list of current button mapping at station. Some buttons listed may not be present on the station being programmed.

Enter new function for button and press **ENTER**, press **ENTER** to accept current function.

- Selection 8: Toll restriction administration (assigns toll tables to station)
 - Toll Restriction Table Assignment (assign pre-programmed toll restriction tables to be applied to all regular calls)
 - Night Mode Toll Restriction Table Assignment (assign pre-programmed table to be applied to calls on night transferred line)
 - System Speed Dial Toll Restriction (assign pre-programmed toll restriction tables applied to system speed dial numbers)
- Selection 9: Automatic busy/RNA forwarding (Links programmed station to another one to form hunt group. Also, selects number of rings to occur at programmed station before ring-no answer (RNA) call is forwarded to linked station.
- Selection 10: Miscellaneous feature programming (programs a variety of features for the station)

- Automatic Privacy Release (Enable or disable automatic privacy release or a per line basis.)
- Line Auto Hold (active line automatically held when new line is selected)
- Intercom Auto Hold (intercom automatically held when new line is selected)
- Thru **Dialing/ATI** (arrange port to allow DTMF tones to pass through to connected equipment)
- Executive Override
- Do Not Disturb Override
- Service Observing
- All-Call and Zone Paging
- Message Wait Originate
- Head Set Mode
- Group Call Pickup
- Subdued Off Hook Voice Announce
- Data Security Ports
- LCD Call Costs (display of cost for current call)
- Americom Dynamic Line Buttons
- System alarm recipient
- Unobservable station
- Voice mail transfer on busy for station
- Voice mail port
- Second console
- Americom interactive buttons

Toll Restriction Table Administration

- 1. Build / Modify an Allow Table
- 2. Build / Modify a Deny Table
- 3. Clear a Table / Entry
- 4. Return To Previous Menu

Enter Selection

Toll Restriction Table Administration

Use the toll restriction table administration menu to build toll restriction tables for line and station assignment. Refer to the previous discussion titled *Toll Restriction Table Configuration* for a discussion concerning toll restriction table construction and assignment.

Class; Of Service Configuration Records

The following pages provide you with a permanent record of the programming parameters. You can copy these pages to provide a separate record to leave with the common equipment if you wish.

System Configuration Records

System Configuration - Miscellaneous Features

Enable Disable Automatic Station Relocation Default = disable Do Not Disturb Inhibit System-Wide Enable Disable **Data Baud Rate** Do Not Disturb Override Stations (1 O-57) 110 Baud 150 Baud DND Button (AI - A14, B1 - B8) 300 Baud Default = inhibit enabled. 600 Baud no override assigned, 1200 Baud no DND button 2400 Baud 4800 Baud 9600 Baud **PA Options** 19200 Baud Direct ringing lines (1-24) 7 Data/2 Stop Bits Delayed ringing lines (1-24) Night ringing lines (1-24) 8 Data/1 Stop Bits Zone paging enabled Zone 1 Zone 2 Zone 3 All-Call Default = 300 baud, Ringing port relay tracking Station 17 | Paging Port 7-data/2 stop bits Default = no ringing lines, all-call paging, Exclu we Hold Enable Disable station 17 ringing Default = enabled Extended DTMF Tones For Automatic Dialing 60 msec 80 msec System Alarm Reporting/ Enable Disable 100 msec Default = disable 120 msec 160 msec 240 msec 320 msec **Station Monitoring** 400 msec Visual Ring Indication | Enable | Disable 480 msec Audible Ring Indication Stations (10 - 57) 560 msec 720 msec Default = visual indication disabled, 880 msec no audible indication assigned 1040 msec Default = **80** msec.

| ļ | Tandem | Attendant/ | | |
|---|--------|------------|-----------|---------|
| ļ | | | Default = | disable |

| Tone or Voice | Signalling | Voice | Tone |
|---------------|------------|-----------|--------|
| | (| Default : | = tone |

System Configuration Miscellaneous Features - continued

| SOHVA Tone Bursts | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|---|---|---|---|---|---|
| Default = 6 | | | | | | |

System Configuration Records - continued System Configuration - Miscellaneous Features - continued

| Msg. | LCD Messages Location | | | | | | | | | | |
|----------|------------------------|----|----|----|----|----|----|----|----|-----|--|
| No. | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | _10 | |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 6 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | _ | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | ļ | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 15 16 | | | | | | | | | | 1 | |

| | n Speed Dial Recor | | | | oup number with each | | |
|----------|--------------------|------|--------|-----|----------------------|-----|--------|
| oc | NUMBER | LOC | NUMBER | LOC | NUMBER | LOC | NUMBER |
| 01 | | 26 | | 51 | | 76 | |
| 02 | | 27 | | 52 | | | · |
| 03 | | 28 | | 53 | | 78 | |
| 04 | | 29 | | 54 | | 79 | |
| 05 | | 30 | | 55 | | 80 | |
| 06 | · '1-14 | 31 | | 56 | | 81 | |
| 07 | | 32 | | 57 | | 82 | |
| 08 | | 33 | | 58 | | 83 | |
| 09 | | 34 | | 59 | | 84 | |
| 10 | | 35 | | 60 | | 85 | |
| 11 | • | 36 | | 61 | | 86 | · |
| 12 | | 37 | | 62 | ··· | 87 | |
| 13 | <u> </u> | 38 | | 63 | | 88 | |
| 14 | <u> </u> | 39 | | 64 | | 89 | |
| 15 | | 40 | | 65 | | 90 | |
| 16 | | 41 | | 66 | | 91 | |
| 17 | | 42 | | 67 | | 92 | |
| 18 | | 43 | | 68 | | 93 | |
| 19 | | 44 | | 69 | | 94 | |
| 20 | | 45 | | 70 | | 95 | |
| 21 | | 46 | | 71 | | 96 | |
| 22 | | 47 | | 72 | | 97 | |
| 23 | | 48 | | 73 | | 98 | |
| 24 25 | | 49 | | 74 | | 99 | |
| 25 | | 50 1 | | 75 | | | |

System Configuration Records - continued

System Configuration - Timing Features

| Cali Park | 1 min | 2 min | 3 min | 4 min | 5 min | 6 min | Never | | | |
|--|-----------|------------|----------------|---------|---------|----------|---------|-------------|---------|---------|
| Recall Time | Default : | = 2 minute | es | | | | | | | |
| | | | | | | | | | | |
| Pause Time. | 5 sec | 1.0 sec | 1.5 sec | 2.0 sec | 3.0 sec | 5.0 sec | 7.5 sec | 10 sec | 15 sec | 20 sec |
| | Default : | = 1 secon | <u>d</u> | | | | | | • | |
| | | | | | | | | | | |
| | T | 1 | 1 = 2 | 60 | .75 sec | .88 sec | 1.0 sec | 1.5 sec | 2.0 sec | 3.0 sec |
| Recall/Flash | 08 sec | 130 sec | | .60 sec | ./5 sec | 1.00 Sec | 1,0 350 | 110 560 | 2.0 360 | 0.0 360 |
| Time | Detauit : | = 2 secon | as | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | T | 1 | 1 | |
| Timed Hold | 30 sec | 60 sec | 90 sec | 120 sec | 180 sec | 240 sec | 300 sec | 360 sec | 420 sec | Never |
| Recall Time | Default | = 60 seco | nds | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Unanswered | 10 sec | 20 sec | 25 sec | 30 sec | 45 sec | 60 sec | 90 sec | 120 sec | 180 sec | 240 sec |
| Unanswered Call Transfer | 10 sec | 20 sec | 25 sec | 30 sec | 45 sec | | | 120 sec | 180 sec | 240 sec |
| 0 | | 20 sec | | 30 sec | 45 sec | | 90 sec | 120 sec | 180 sec | 240 sec |
| Call Transfer | | = 20 seco | onds | | | ☐ For St | ations | | | |
| Call Transfer Recall Time Unanswered | | = 20 seco | | 30 sec | 45 sec | | | | 180 sec | |
| Call Transfer Recall Time | Default | = 20 seco | onds 25 sec | | | For St | ations | 120 sec | | |

System Configuration Records - continued

System Configuration - Feature Inhibiting

| FEATURE | DISABLED | ENABLED |
|--------------------------|-------------------|---------------|
| Line Group 1 | | |
| Line Group 2 | | |
| Line Group 3 | | |
| Line Group 4 | | |
| Zone 1 Paging | | |
| Zone 2 Paging | | |
| Zone 3 Paging | | |
| Ali Cali | | |
| Meet Me Page | | |
| Night Transfer | | |
| Background Music | | |
| Voice Announce Block | | |
| Message Waiting | | |
| Call Pickup | | |
| Call Forward | | |
| Automatic Call Back | | |
| Station-to-Station Mesg. | , | |
| Line Group Queue | | |
| Directed Station Hold | | |
| Call Park Orbit 1 | | |
| Call Park Orbit 2 | | |
| Call Park Orbit 3 | | |
| Call Park Orbit 4 | | |
| Call Park Orbit 5 | | |
| Call Park Orbit 6 | | |
| Cli Park Orbit 7 | | |
| Call Park Orbit 8 | | |
| Call Park Orbit 9 | | |
| Call Waiting | | |
| LCD Messaging | | |
| Executive Override/ | | |
| Service Observing | | · |
| Account Code | <u> </u> | |
| Personal Call Fwd. | | |
| Enable All Features | 5 (" " " | |
| | Default = all fea | tures enabled |

| Line Co | onfigu | ratio | n Reco | ords | | | | |
|---|---------------|--------------|-----------|--------------------|--|-------------------|---------|--------------|
| Feature | Line Po | ort (Writ | e number | . name. g | roup. or o | other date | a) | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Abandoned Hold Release (50/350 msec) | | | | <u> </u> | | | | |
| Automatic Privacy (On/Off) | | | | | | | | |
| Privacy Release Stations (10-57) | | | | | | | | |
| Line Port Disable (On/Off) | | | | | | | | |
| Line Groups (0, 1-4) | | | | | | | | |
| Line Name (5 characters) | | | | | | | | |
| Line Port Function (AUX/CO) | | | | | | | | |
| Line To Line Port Reassignment (1/1, etc.) | | | | | | | | |
| Pulse/Tone Switchable (pulse/tone) | | | | | | | | |
| | | | | | | | | |
| Voice Mail ID (6 digits max) Default = 50 msec hold release, privacy on all | with no st | ation re | eleased | no disal | oled line: | s. | | |
| no groups asgn'd., no names asgn'd | wiiii no si | anon re | me line/i | nort all | tone dial | ina. no | VM ID. | |
| | | | | | | | | |
| Feature | | 1 | te number | 12 | 13 | 14 | 15 | 16 |
| | 9 | 10 | | 16_ | 13 | 1 4 | 15_ | 10_ |
| Abandoned Hold Release (50/350 msec) | - | | | | | | | |
| Automatic Privacy (On/Off) | | | | | | | | +- |
| Privacy Release Stations (10-57) | | | | | | | | |
| Line Port Disable (On/Off) | | | | | _ | | | |
| Line Groups (0. 1-4) | | | | + | | - | | |
| Line Name (5 characters) | | | | | | | | |
| Line Port Function (AUX/CO) | | ļ | | | - | - | - | |
| Line To Line Port Reassignment (1/1, etc.) | | ļ | | | _ | | _ | |
| Pulse/Tone Switchable (pulse/tone) | | | | | | - | | |
| Voice Mail ID (6 digits max) | | ļ | | | | | | |
| Default = 50 msec hold release, privacy on all | with no s | tation r | eleased, | no disa | bled line | s, | | |
| no groups asgn'd., no names asgn'd., a | all ports c | o, same | line/p | ort <u>, all t</u> | one dialir | ig, no V | M ID. | - |
| Feature | | ort_(| W | r | i t | e 22 | 23 | 24 |
| | 17 | 18 | 19 | 20 | 21 | 22 | | 24 |
| Abandoned Hold Release (50/350 msec) | | - | | - | | | | |
| Automatic Privacy (On/Off) | | | | | | | - | |
| Privacy Release Stations (10-57) | | | | | | | | |
| Line Port Disable (On/Off) | | ļ | | | | | | |
| Line Groups (0, 1-4) | | | | | | | | |
| Line Name (5 characters) | | | | | | | | |
| Line Port Function (AUX/CO) | | | <u> </u> | | - | - | _ | _ |
| Line To Line Port Reassignment (1/1, etc.) | | | | _ | | _ | | |
| Pulse/Tone Switchable (pulse/tone) | | 4 | | | | | | _ |
| Voice Mail ID (6 digits max) | | | | | | | | |
| Default = 50 msec hold release, privacy on all | with no s | tation r | eleased, | no disa | bled line | es, | | |
| no groups asgn'd., no names asgn'd | | | | | | | VM ID. | |
| | Progran | | | - | | | | |
| | art Line F | | | | | End Lin | ne Port | |
| | · · · · · · · | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Station Confiauration Records

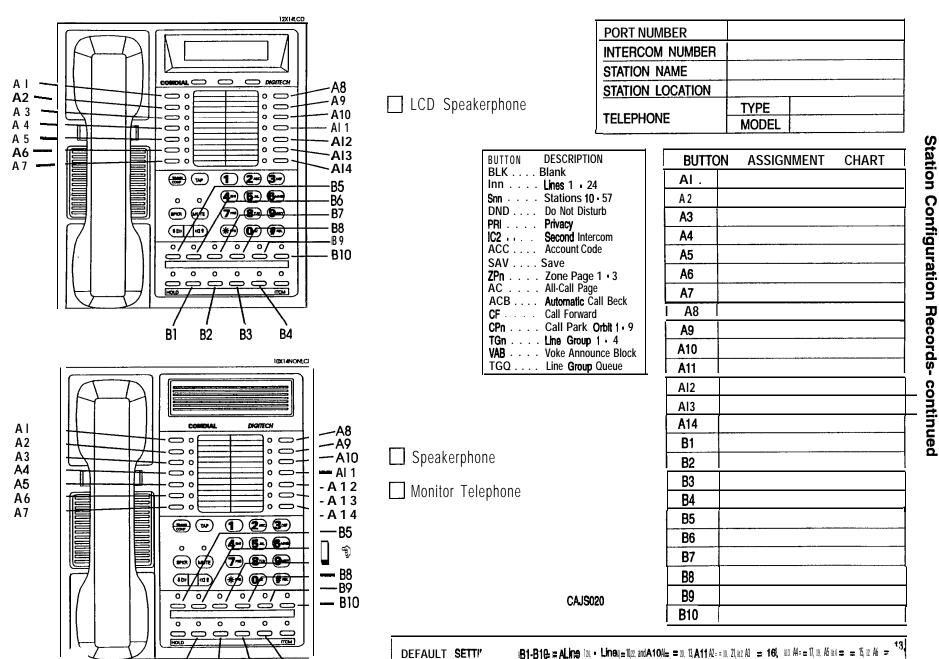
(Use this sheet as an individual station record or as a record for a block of like-programmed stations. You can make copies of this blank sheet as needed to meet the system capacity)

| Feature | Choice | Default | Enter | Station | Port N | umber | s) | T | | |
|-------------------------------------|-----------------|---------------------------|--|---------|--------|--|--|--|--|--|
| Access Denied | Lines 1-24 | None | | | | | | | | 1 |
| All-Call and Zone Paging | LIIICS I LT | 140/10 | | | | | | | | |
| Receive | AII/1-3 | All | | | | | | ļ | | |
| Originate | All/1-3 | All | | | , | | | | | |
| Audible Monitoring | None/Dir./Delay | | | | | | | | | |
| Automatic Hold | Yes/No | No | | | | | | | | |
| Automatic Hold - Intercom | Yes/No | No | | | | | | | | |
| Automatic Privacy | I.ES/INO | NO | | | | | | | | |
| Privacy Release | None/1-24 | None | | | | | | | | |
| Call Forward On Busy/ | NOILE/ 1-24 | NORE | | | | | | | | |
| Ring - No Answer | No/0-9 Rings | No | | | | | | | • | |
| Call Origination Denied | No/1-24 | No | | | | | | | | |
| Central Message Desk | Yes/No | No | | | | | | | | \Box |
| Data Security Port | Yes/No | No | | | | | | | | |
| Do Not Disturb Override | Yes/No | No | | | | | | | | |
| Dual Console Feature | No/10-57 | No | | | | 1 | | | | |
| Executive Override | | No | | | | | <u> </u> | <u> </u> | | \square |
| | Yes/No 1-24 | NU All (Sta. 10, 17) | | | | | | | | |
| Flexible Ringing Direct | 1-24 | None | | | | | | | | |
| Night Transfer (of ringing) | 1-24 | None All (Sta. 10, 17) | | | | | | 1 | | |
| Flexible Station Numbering | | Ext = Port | 1 | | | | | | | |
| | 1-4 | EXI = FUIL | | | | | | | | |
| Group Call Pickup Headset Interface | Yes/No | No | | | | | | | | |
| | No/1-24 | No | | | | | | | | |
| Idle Line Preference | | None | - | | | | † | | | |
| Intercom Hunt Group | 10-57 | INONE 1 | | | | | | - | | \vdash |
| Personal Ring Tones | 1-6 | | | | | | | 1 | | $\vdash \vdash \vdash$ |
| Prime Line - | 1-24 | None | | | | | | | | |
| Group | 1-4 | None | | | | <u> </u> | | | | |
| Intercom | Itcm. | None | | | | <u> </u> | | | | + |
| Message Wait Originate | Yes/No | No | | | | | <u> </u> | | | |
| Ringing Line Preference | Yes/No | No | | | | | | | | + |
| SOHVA Disable | Yes/No | Yes | | | | | | | - | - |
| SOHVA Groups | None/1-8 | None | | | | | - | | | |
| Service Observing | Yes/No | No | | | | | | | | |
| Station Disable | Yes/No | No | | | | - | | | ļ | ┼ |
| Station To Station Port | 40/57 | Ot | | | | | | | | |
| Reassignment | 10/57 | Sta = Port | | | | | | ļ | - | |
| System Alarm Report | Yes/No | No | | | | - | ₩ | | ļ | |
| Voice Announce Blocking | Yes/No | No | 1 | | | <u> </u> | | <u> </u> | | |

| | Block Programming | | | | | |
|--------------------|-------------------|--|--|---|--|--|
| Model Station Port | | | | | | |
| First Station Port | | | | - | | |
| Last Station Port | | | | | | |

Station Button Mapping Record

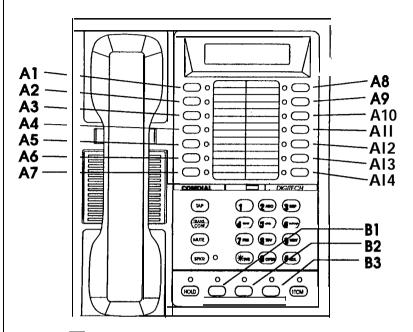
(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



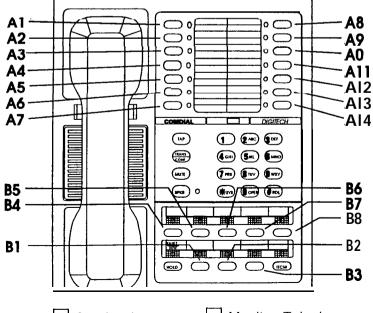
חח

Station Button Mapping Record

(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



LCD Speakerphone



| - | | |
|------------------|-------|--|
| PORT NUMBER | | |
| INTERCOM NUMBER | | |
| STATION NAME | | |
| STATION LOCATION | | |
| TEL EDUANE | TYPE | |
| TELEPHONE | MODEL | |

BUTTON DESCRIPTION ELK . . . Blank Lnn . . . Lines 1 • 24 Snn . . . Stations 10 • 57 DND . . . Do Not Disturb PRI . . . Privacy
IC2 . . . Second Intercom
ACC . . . Account Code SAV . . . save ZPn . . . Zone Page 1 · 3 AC . . . All-Call Page ACB . . . Automatic Call Back . Call Forward

CPn . . Call Park Orbit 1 9 TGn . . . Line Group 1 4 . Voice Announce Block TGQ . . . Line Group Queue

| BUTTON | ASSIGNMENT | CHART |
|-----------------|------------|-------|
| Al | | |
| A2 ⁻ | | |
| A 3 | | |
| A4 | | |
| A5 | | |
| A6 | | |
| A7 | | |
| A8 | | |
| A 9 | | |
| A10 | | |
| A11 | | |
| A12 | | |
| A13 | | |
| A14 | | |
| B1 | | |
| B2 | | |
| B3 | | |
| B4 | | |
| B5 | | |
| B6 | | |
| B7 | | |
| B8 | | |

CAJS021

B1-B89= ALin= 22. Lin(A9=920, an A10 A) = 18,21,AIA2 :: IN ASA2 == 17,14,AIA3 = = 15,12,A5A4=13, = 10 A6 = 11.

DEFAULT SETTINGS:

Speakerphone

Monitor Telephone

Call Forward
Call Park Orbit 1 - 9
Line Group 1 - 4
Voice Announce Block
Line Group Queue

All-Call Page Automatic Call Back

Zone Page 1 - 3 Account Code Save

Stations 10 - 57 Do Not Disturb Privacy Second Intercom

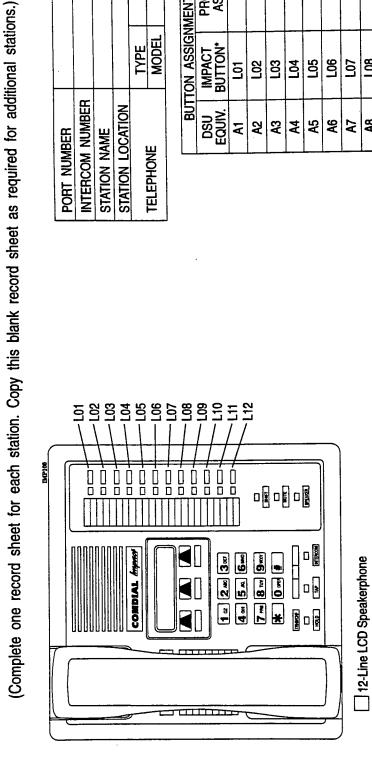
DESCRIPTION Blank Lines 1 - 24

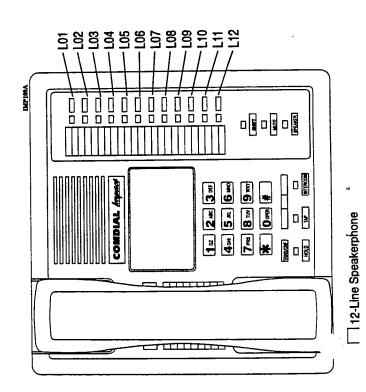
Station Button Mapping Record

Station Configuration Records- continued

| PORT NUMBER | | |
|------------------|-------|--|
| INTERCOM NUMBER | | |
| STATION NAME | | |
| STATION LOCATION | | |
| | TYPE | |
| TELEPHONE | MODEL | |

| BUTTON ASSIGNMENT CHART | PROGRAMIMED ASSIGNIMENT | | | | | | | | | | | | | JLT: 1 - LINE 12 |
|-------------------------|----------------------------|-----|------------|-----|------------|-----|-----|-----|-------------|------------|-----|-----|-----|--------------------------------|
| TON ASSIGN | IMPACT BUTTON* | L01 | L02 | E07 | F07 | 507 | 907 | L07 | 80 7 | F00 | L10 | L11 | L12 | *DEFAULT: L1-L12 = LINE 1 - |
| BUT | DSU EQUIV. | A1 | A 2 | E¥ | A 4 | A5 | A6 | A7 | A8 | A 9 | A10 | A11 | A12 | = |

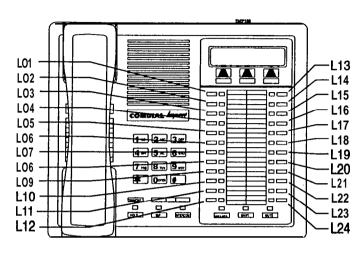




4-96

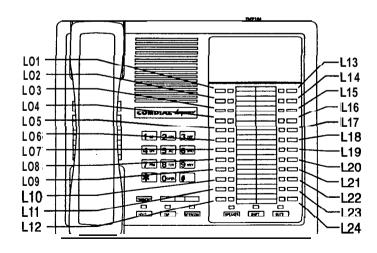
Station Button Mapping Record

(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



24-Line LCD Speakerphone

4-97



24-Line Speakerphone

| PORT NUMBER | | |
|------------------|-------|--|
| INTERCOM NUMBER | | |
| STATION NAME | | |
| STATION LOCATION | | |
| TEL EDUANE | TYPE | |
| TELEPHONE | MODEL | |
| | | |

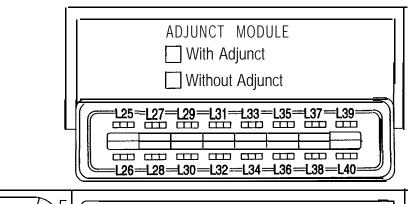
| I I |
|---------------------------|
| BUTTON DESCRIPTION |
| BLK Blank |
| Lnn · · · · Lines 1 • 24 |
| Snn Stations 10 • 57 |
| DND Do Not Disturb |
| PRI Privacy |
| IC2 Second Intercom |
| ACC Account Code |
| SAV Save |
| ZPn Zone Page 1 · 3 |
| AC All-Call Page |
| ACB Automatic Call Back |
| CF Call Forward |
| CPn Call Park Orbit 1 . 9 |
| TGn Line Group 1 • 4 |
| VAB Voice Announce Block |
| TGQ Line Group Queue |
| · |

CAJS016

| BU | BUTTON ASSIGNMENT CHART | | | | | |
|-----------------------|--|--------------------------|--|--|--|--|
| DSU EQUIV . | IMPACT Button' | PROGRAMMED ASSIGNMENT | | | | |
| Al | L01 | | | | | |
| A2 | L02 | | | | | |
| A3 | L03 | | | | | |
| A4 | L04 | | | | | |
| A5 | L05 | | | | | |
| A6 | L06 | | | | | |
| A 7 | L07 | | | | | |
| A8 | L06 | | | | | |
| A9 | L09 | | | | | |
| A10 | L10 | | | | | |
| AII | L11 | | | | | |
| AI2 | L12 | | | | | |
| AI3 | L13 | | | | | |
| AI4 | L14 | | | | | |
| B9 | L15 | | | | | |
| B10 | L16 | | | | | |
| B1 | L17 | | | | | |
| B2 | L18 | | | | | |
| B 3 | L19 | | | | | |
| B4 | L20 | | | | | |
| B 5 | L21 | | | | | |
| B6 | L22 | | | | | |
| B7 | L23 | | | | | |
| B8 | L24 | | | | | |
| | 'DEFAULT: L1-L24 = LINE 1 • LINE 24 | | | | | |

Station Button Mapping Record

(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



| HOLD TICM C C C L22 L23 L24 |
|-----------------------------|
|-----------------------------|

| 16- | Line | LCD | Spea | kerpho | ne |
|-----|------|-----|------|--------|----|
| | | | | | |

| PORT NUMBER | | |
|------------------|-------|--|
| INTERCOM NUMBER | | |
| STATION NAME | | |
| STATION LOCATION | | |
| | TYPE | |
| TELEPHONE | MODEL | |

| BUTTON DESCRIPTION |
|----------------------------------|
| BLK Blank |
| Lnn Lines 1 - 24 |
| Snn Stations 10 • 57 |
| DND Do Not Disturb |
| PRI Privacy |
| IC2 Second Intercom |
| ACC Account Code |
| SAV Save |
| ZPn Zone Page 1 - 3 |
| AC All-Call Page |
| ACB Automatic Call Back |
| CF Call Forward |
| CPn Call Park Orbit 1 • 9 |
| TGn Line Group 1 • 4 |
| VAB · · · · Voice Announce Block |
| TGQ Line Group Queue |

CAJS017

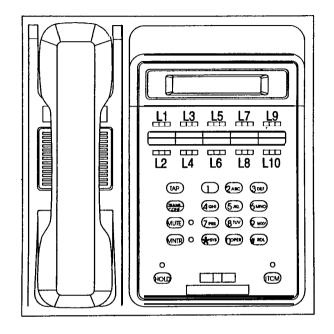
| BUT | BUTTON ASSIGNMENT CHART | | | | |
|-----|-------------------------|---------------------------------|--|--|--|
| | AMERICOM BUTTON* | PROGRAMMED ASSIGNMENT | | | |
| A I | L1 | ASSIGNMENT | | | |
| A2 | L3 | | | | |
| A3 | L5 | | | | |
| A4 | L7 | | | | |
| A 5 | L9 | | | | |
| A 6 | L11 | | | | |
| A7 | L13 | | | | |
| A8 | L15 | | | | |
| A9 | L17 | | | | |
| A10 | L18 | | | | |
| A11 | L19 | | | | |
| A12 | L20 | | | | |
| Al3 | L21 | | | | |
| Al4 | L22 | | | | |
| B9 | L23 | | | | |
| B10 | L24 | | | | |
| B1 | L2 | | | | |
| B2 | L4 | | | | |
| B3 | L6 | | | | |
| B4 | L8 | | | | |
| B5 | L10 | | | | |
| B6 | L12 | | | | |
| B7 | L14 | | | | |
| B8 | L16 | | | | |
| L1 | 'DEFA - L16 = LINE | AULT: E 1 = LINE 16 ; | | | |

L17 • L40 = BLANK; L22 = DND; L23 = VAB; L24 = AUTO

Station Configuration Records- continued

Station Button Mappin Record

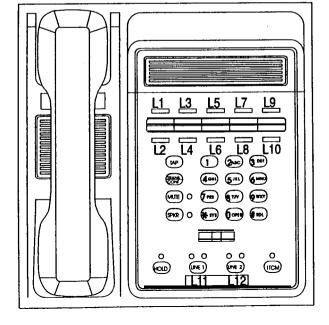
(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



1 O-Line LCD Speakerphone

| PORT NUMBER | |
|------------------|-------|
| INTERCOM NUMBER | |
| STATION NAME | |
| STATION LOCATION | |
|] | TYPE |
| TELEPHONE | MODEL |

| BU1 | TON ASSIGN | NMENT CHART | | | |
|---------------|--|--------------------------|--|--|--|
| DSU EQUIV. | AMERICOM BUTTON* | PROGRAMMED ASSIGNMENT | | | |
| A1 | L1 | | | | |
| B1 | L2 | | | | |
| A2 | L3 | | | | |
| B2 | L4 | | | | |
| A3 | L5 | | | | |
| B3 | L6 | | | | |
| A 4 | L7 | | | | |
| B4 | L6 | | | | |
| A 5 | L9 | | | | |
| B 5 | L10 | | | | |
| A6 | L11 | | | | |
| B6 | L12 | | | | |
| L1 | *DEFAULT: L1-L10 = LINE 1 - LINE 10 | | | | |



12-Line Monitor Telephone

| BUTTON DESCRIPTION |
|---|
| BLK Blank |
| Lnn Lines 1 • 24 |
| Snn Stations 10 • 57 |
| DND Do Not Disturb |
| PRI Privacy |
| IC2 Second Intercom |
| ACC Account Code |
| SAV Save |
| ZPn Zone Page 1 • 3 |
| AC All-Call Page |
| ACB Automatic Čall Back |
| CF Call Forward |
| CPn Call Park Orbit 1 • 9 |
| TGn Line Group 1 • 4 |
| VAB Voice Announce Block |
| TGQ Line Group Queue |

Miscellaneous Programming Features - Account Code Records

| Account Code | Catagory | Account Code | Catagory |
|--------------|----------|--------------|----------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |

| Account Code Usage | Enabled | Disabled | | | |
|--|----------------------------|----------|-------|--|--|
| Verification | On | Off | | | |
| Usage Status | Forced | Optional | ····· | | |
| Station Exceptions | | | | | |
| Verified Digits | | | | | |
| Account Code Length | | | | | |
| Emergency No. 1 | | | | | |
| Emergency No. 2 | | | | | |
| Emergency No. 3 | Emergency No. 3 | | | | |
| LCD Display Time | LCD Display Time | | | | |
| Display On Incoming | Display On Incoming Yes No | | | | |
| Display On Outgoing Yes No | | | | | |
| Default = Account Code Usage: Disabled, Verified Status: On, | | | | | |
| Usage Status: Optional, Exceptions: None, Verified Digits 3, | | | | | |
| Account Code Digits: 3, Display Time: 5 sec., Incoming Display: On | | | | | |

IMI66-107 System Programming

Analog Terminal Interface Records

| Distir | ctive Ringing |
|-----------|---------------|
| Enabled | |
| Disabled | |
| Default = | Enabled |

| | Thru | Dialing Port |
|----|------|-------------------|
| 10 | 26 | 42 |
| 11 | 27 | 43 |
| 12 | 28 | 44 |
| 13 | 29 | 45 |
| 14 | 30 | 46 |
| 15 | 31 | 47 |
| 16 | 32 | 48 |
| 17 | 33 | 49 |
| 18 | 34 | 50 |
| 19 | 35 | 51 |
| 20 | 36 | 52 |
| 21 | 37 | 53 |
| 22 | 38 | 54 |
| 23 | 39 | 55 |
| 24 | 40 | 56 |
| 25 | 41 | 57 |
| • | Defa | ult = Not Enabled |

Caller Identification (ID) Service Support Configuration Record

| Caller ID Lines (list 1 - 24 for lines) |
|--|
| |
| |
| |
| |
| Default = None Assigned |
| |
| |
| Caller ID Stations (list lo - 57 for stations) |
| Canon is Stations (not to - 67 for stations) |
| |
| |
| |
| |
| Default = None Assigned |
| 3 |
| |
| |
| Audible First Ring Enable Disable |
| Default = Disabled |
| |
| |
| SAVE Button Stations (list 10 - 57 for stations) |
| |
| |
| |
| |
| Default = None Assigned |
| |
| |
| |
| Caller ID Distribution To Data Port B Enable Disable |
| Default = Disabled |
| |
| |

| RS232 Data Port B Configuration | | | | |
|--|----------------------------------|--|--|--|
| Baud Rate 9600 Other (see system configuration record) | | | | |
| Data Bits | Bits 7 Data/2 Stop 8 Data/1 Stop | | | |
| Default = 300 Baud , 7 Data Bits /2 Stop Bits | | | | |

Direct Department Calling Records

| | Danarimani 4 |
|------------------------|--------------|
| | Department 1 |
| Access Code 10-7999 | |
| Line Ports 1-24 | |
| Station Ports 10-57 | |
| | |
| | Department 2 |
| | Department 2 |
| Access Code 10-7999 | |
| Line Ports | |
| Station Ports | |
| | |
| | |
| | Department 3 |
| Access Code 10-7999 | |
| Line Ports I-24 | |
| Station Ports | |
| | |
| | |
| | Department 4 |
| Access Code 10-7999 | |
| Line Ports | |
| Station Ports | |
| 10-57 | |
| | |

Defaults = No Access Code Assigned, No Line Potts Assigned, No Station Ports Assigned

Direct Inward Station Dialing (DISD) Records

| Dial Time Limit | 6 sec. | 9 sec. | 12 sec | 15 sec. | 30 sec. |
|----------------------|--------|--------|--------|---------|---------|
| Default = 12 Seconds | | | | | |

| Assist Station | | | | |
|-------------------------|---------------------|--|--|--|
| Station Port Assigned | Line Ports Assigned | | | |
| Day Station | | | | |
| Night Station | | | | |
| Default = Station 10 Da | y And Night | | | |

| Incoming | Line Ports Assigned |
|-----------|---------------------|
| Rings | |
| 0 | |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | · |
| 9 | |
| Default = | 0 Ring's |

ExecuMail Interface Records

| | Voice Mai | Port | |
|-----------|-------------|------|--|
| 10 | 26 | 42 | |
| 11 | 27 | 43 | |
| 12 | 28 | 44 | |
| 13 | 29 | 45 | |
| 14 | 30 | 46 | |
| 15 | 31 | 47 | |
| 16 | 32 | 48 | |
| 17 | 33 | 49 | |
| 18 | 34 | 50 | |
| 19 | 35 | 51 | |
| 20 | 36 | 52 | |
| 21 | 37 | 53 | |
| 22 | 38 | 54 | |
| 23 | 39 | 55 | |
| 24 | 40 | 56 | |
| 25 | 41 | 57 | |
| Default = | Not Enabled | | |

| Automatic Attendant - Ringing Lines (1-24) Per Station Station Direct Delay Night Station Direct D | | | | | | | | | |
|---|----------|-------|---------------------------------------|----|--------|--------------|-------|--|--|
| | Direct | Delay | Night | 1 | Direct | <u>Delay</u> | Night | | |
| 10 | | | | 34 | | | | | |
| • | | | | 35 | | | | | |
| 12 | 1 | | | 36 | | | | | |
| 13 | <u> </u> | | | 37 | | | | | |
| 14 | | | | 38 | | | | | |
| 15 | | | | 39 | | - | - | | |
| 16 | | | | 40 | | | | | |
| 17 | | | | 41 | | | | | |
| 18 | | | | 42 | | | | | |
| 19 | | | | 43 | | | | | |
| 20 | | | | 44 | | | | | |
| 21 | | | | 45 | | | | | |
| 22 | | | | 46 | | | | | |
| 23 | | | | 47 | | | | | |
| 24 | | | | 48 | | | | | |
| 25 | | | | 49 | | | | | |
| 26 | ļ | | · · · · · · · · · · · · · · · · · · · | 50 | | | | | |
| 27 | | | | 51 | | | | | |
| 28 | | | | 52 | | | | | |
| 29 | | | | 53 | | | | | |
| 30 | | | | 54 | | | | | |
| 31 | | | | 55 | | | | | |
| 37 | | | | 56 | | | | | |
| 33 | | | | 57 | | | | | |

Continued on next page . . .

ExecuMail Interface Records - continued

| Automatic Transfer of Voice Mail | | | | | | |
|----------------------------------|---------|--|--|--|--|--|
| Enable | | | | | | |
| Disable | | | | | | |
| Default = | Disable | | | | | |

| Voice Mail Line Port Identification | | | | | |
|-------------------------------------|----------------|----|--|--|--|
| 1 | 9 | 17 | | | |
| 7 | 10 | 18 | | | |
| 3 | 11 | 19 | | | |
| 4 | 12 | 20 | | | |
| 5 6 | 13 | 21 | | | |
| 6 | 14 | 22 | | | |
| 7 | 15 | 23 | | | |
| 8 | 16 | 24 | | | |
| Default = | No ID Assigned | | | | |

| | Voice Mail Trans | fer On Busy Port | |
|----------------|------------------|------------------|--|
| 10 | 26 | 42 | |
| 11 | 27 | 43 | |
| 12 | 28 | 44 | |
| 13 | 29 | 45 | |
| 14 | 30 | 46 | |
| 15 | 31 | 47 | |
| 16 | 32 | 48 | |
| 17 | 33 | 49 | |
| 18 | 34 | 50 | |
| 19 | 35 | 51 | |
| 20 | 36 | 52 | |
| 21 | 37 | 53 | |
| 22 | 38 | 54 | |
| 22 23 24 | 39 | 55 | |
| 24 | 40 | 56 | |
| 25 | 41 | 57 | |
| Default = | Not Enabled | | |

Integrated Call Costing Configuration Records

| Exception Tables | | | | | | | | | | | | | | | | | |
|------------------|-----|--------|----|-----|-----|---|---|---|---|----|----|----|---------------|----|----|----|--|
| Execpt. Table | | Digits | | | | | | | | | | | Cost Table | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| 1 | T | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| Default = | = N | one | As | sig | nec | 1 | | + | | | | • | | | | | |

| | Office Code Band Tables | | | | |
|-------------------------|-------------------------|--|--|--|--|
| Band | Office Code Prefix(es) | | | | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| Default = None Assigned | | | | | |

| | 7one Call Band Tables | | | | |
|-------------------------|-----------------------|--|--|--|--|
| Band) | Area Code Pref ix(es) | | | | |
| 1 ′ | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Δ | | | | | |
| Default = None Assiuned | | | | | |

| | Area Code Band Tables | | | | | |
|---------|-----------------------|--|--|--|--|--|
| Band | Area Code Prefix(es) | | | | | |
| 1 | • | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| Default | = None Assigned | | | | | |

Integrated Call Costing Configuration Records - continued

| | Discard Digits | | | | | | | |
|----------------------|-----------------|---|---|---|---|---|---|---|
| Entry | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 5 6 | | | | | | | | |
| Default = No Discard | | | | | | | | |
| | Digits Assigned | | | | | | | |

| Dial Time Limit | | | | | |
|--------------------|----|--|--|--|--|
| (01 - 999 Sec.) | | | | | |
| Default = 0 Second | Is | | | | |

| Answer Time Limit |
|---------------------|
| 0 • 999 Sec.) |
| Default = 0 Seconds |

System Programming

Integrated Call Costing Configuration Records - continued - Call Rate Tables

| | 11 | illegrateu | Call | CUSII |
|------------------------|--------------|------------|------|---------|
| | DALL DATE TO | UDI E 4 | | |
| 1 A O T | CALL RATE TA | BLE 1 | | |
| LAST | TIER 1 TIME | | | |
| RESORT | TIER 1 RATE | | | |
| TABLE | TIER 2 RATE | | | |
| _ | SURCHARGE | | | |
| | | . = : = = | | |
| | CALL RATE TA | BLE 2 | | |
| | NUMBER | | | |
| | TIER 1 TIME | ļ | | |
| | TIER 1 RATE | ļ | | |
| | TIER 2 RATE | | | |
| | SURCHARGE | | | |
| | | | | |
| | CALL RATE TA | ABLE 3 | | |
| | NUMBER | | | |
| | TIER 1 TIME | | | |
| | TIER 1 RATE | | | |
| | TIER 2 RATE | | | |
| | SURCHARGE | | | |
| | | | | |
| | CALL RATE TA | ABLE 4 | | |
| | NUMBER | ļ | | |
| | TIER 1 TIME | | | |
| | TIER 1 RATE | | | |
| | TIER 2 RATE | | | <u></u> |
| | SURCHARGE | | | |
| | | | | |
| | CALL RATE TA | BLE 5 | | |
| | NUMBER | | | |
| δ | TIER 1 TIME | | | |
| ž | TIER 1 RATE | | | |
| <u>ה</u> | TIER 2 RATE | | | |
| e | SURCHARGE | | | |
| 9 | | | | |
| 2 2 | CALL RATE TA | BLE 6 | | |
| e X | NUMBER | | | |
| ğ | TIER 1 TIME | | | |
| Continued on next page | TIER 1 RATE | | | |
| | TIER 2 RATE | | | |
| : | CUDOUADOE | <u> </u> | | |

SURCHARGE

| onfiguration Records • | continued |
|------------------------|---------------------------------------|
| CALL RATE TABLE 7 | |
| NUMBER | |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | |
| SURCHARGE | |
| DONOHARIGE | ···· |
| CALL RATE TABLE 8 | |
| NUMBER | |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | |
| SURCHARGE | |
| | · |
| CALL RATE TABLE 9 | |
| NUMBER | ······ |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | |
| SURCHARGE | |
| CALL RATE TABLE 10 | |
| NUMBER | |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | |
| SURCHARGE | |
| | |
| CALL RATE TABLE 11 | |
| NUMBER | |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | · · · · · · · · · · · · · · · · · · · |
| SURCHARGE | - |
| GALL DATE TABLE 40 | |
| CALL RATE TABLE 12 | |
| NUMBER TIPE A TIME | |
| TIER 1 TIME | |
| TIER 1 RATE | |
| TIER 2 RATE | |
| SURCHARGE | |

| CALL RATE TABLE 13 |
|-----------------------|
| NUMBER |
| TIER 1 TIME |
| TIER 1 RATE |
| TIER 2 RATE |
| SURCHARGE |
| |
| CALL RATE TABLE 14 |
| NUMBER |
| TIER 1 TIME |
| TIER 1 RATE |
| TIER 2 RATE |
| SURCHARGE |
| CALL RATE TABLE 15 |
| NUMBER |
| TIER 1 TIME |
| TIER 1 RATE |
| TIER 2 RATE |
| SURCHARGE |
| |
| CALL RATE TABLE 16 |
| NUMBER |
| TIER 1 TIME |
| TIER 1 RATE |
| TIER 2 RATE |
| SURCHARGE |
| GALL BATE TABLE 47 |
| CALL RATE TABLE 17 |
| NUMBER TIER 1 TIME |
| TIER 1 TIME |
| TIER 2 RATE ! |
| SURCHARGE |
| SONOTIANGE |
| CALL RATE TABLE 18 |
| NUMBER |
| TIER 1 TIME |
| TIER 1 RATE |
| TIER 2 RATE |
| SURCHARGE |
| |

| Call Rate Tables - continued | CALL RATE TABLE 31 NUMBER TIER 1 TIME TIER 2 RATE SURCHARGE | CALL RATE TABLE 32 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE | CALL RATE TABLE 33 NUMBER TIER 1 TIME TIER 2 RATE SURCHARGE | | | |
|---|---|---|---|---|---|---|
| Configuration Reords - continued - Call Rate Tables - continued | CALL RATE TABLE 25 NUMBER TIER 1 TIME TIER 1 RATE SURCHARGE | CALL RATE TABLE 26 NUMBER TIER 1 TIME TIER 2 RATE SURCHARGE | CALL RATE T/BLE 27 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE | CALL RATE T.BLE 28 NUMBER TIER 1 TIME TIER 2 RATE SURCHARGE | CALL BATE T.BLE 29 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 BATE SURCHARGE | CALL RATE TIBLE 30 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE |
| Integrated Call Costing | CALL RATE TABLE 19 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE | CALL RATE TABLE 20 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE | CALL RATE TABLE 21 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE SURCHARGE | CALL RATE TABLE 22 NUMBER TIER 1 TIME TIER 1 BATE TIER 2 RATE SURCHARGE | CALL RATE TABLE 23 NUMBER TIER 1 TIME TIER 1 RATE SURCHARGE | CALL RATE TABLE 24 NUMBER TIER 1 TIME TIER 1 RATE TIER 2 RATE |

Continued on next page. , .

Station Message Detail Accounting/Reporting Records

| Dept | Dept. | Numbe | , | Department | Station | | | | |
|-------------|---------|-----------|-----|------------|---------|---|---------------------------------------|----------|--|
| 1 | | | | · | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | · · · · · · · · · · · · · · · · · · · | <u> </u> | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | _ | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | _ | |
| Defa | ilt = N | one Assig | ned | | | - | _ | | |

| Automatic Report Time | |
|-------------------------|--------------|
| Hours | |
| Minutes | |
| Selected Records | (Check) |
| All Stations | |
| One Station | |
| Account Report | |
| Line Report | |
| Department Report | |
| Print All Records | |
| Delete Records | |
| DCD Report | |
| Default = None Assigned | |

| SMDR Cost Reporting | Enabled | Disabled | |
|----------------------------|------------|----------|--|
| SMDR Printout | Enabled | Disabled | |
| Default = No Cost Reported | Printout E | nabled | |

Specialized Route Access (SRA) Records

| Specialized R | oute Access |
|----------------|-------------|
| . Enabled | Disabled |
| Default = Disa | abled |

| Office Code Table | | | | | | | |
|-------------------|--|--------------|--|--|--|--|--|
| Office Code | | Line (| Group | | | | |
| | 4 | 2 | 3 | 4 | | | |
| | | | | | | | |
| | - | | + | - | | | |
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| Area Code Table | | | | | | |
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| Area Code | | ine G | roup | | | |
| 711 901 90919 | 1 | 7 | 3 | 4 | | |
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Default = Line group 1 assigned to all codes

Specialized Route Access (SRA) Records - continued

| Special Area | a Code | <u>Table</u> | <u>1 </u> | | Spe | cial Area | a Code | <u>Table</u> | e 2 | |
|---------------------------------------|----------------|--------------|--|--|---------|---------------|--|--------------|---------------|----------|
| Area Code = | | | | | Area Co | | -+ | | | |
| Off ice Code | Line Group | | | | | Office Code | Line Group | | | |
| 000-999 | 1 | 2 | 3 | 4 | 000-999 | | 1 | 2 | 3 | 4 |
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| Special Are | a Code | Table | 3 | | Sne | cial Are | a Code | e Tabl | e 4 | |
| Special Area Area Code = | 1 | | | | Area Co | | | | | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | 1 | | | 4 | Area Co | ode = Code | | | | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | p 4 |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| <u>Area Code = </u> | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
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| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
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| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |
| Area Code = Off ice Code | | Ļine (| Group | | Area Co | ode = Code | | Line (| irou | |

Default = Line group 1 assigned to all codes

Specialized Route Access (SRA) Record - continued

| Line Group | Insert Digits | | | | | |
|------------|---------------|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | ı | | | |

| Overflow Line Group | |
|---------------------|--|
| Default = None | |

| SRA Wait Time | <u> 7 sec.</u> | 3 Sec. | 4 Sec. |
|------------------|----------------|--------|--------|
| Default = 4 seco | nds | | |

System Programming IMI66-107

Toll Restriction Table Configuration Records

Toll Restriction Tables

| TOLL | RES | TRIC | CTIC | N | TAB | LE | | | | 1 | | | | | | |
|-------|------|------|------|-----|------|-----|------|-----|-----|-----|-----|----|----|----|----|----|
| TYPE: | ALL | ٥٧_ | / | | DE | NY | | | | Χ | | | | | | |
| ENTR | Υ | ΕN | NTR | ΥN | IJΝ | BE | R (1 | 6 N | ΊΑΧ | IML | IM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 1 | | | П | Г | | | Г | | П | | | | | | |
| 2 | 9 | 7 | 6 | | Ī | Г | | Г | | | | | | | | |
| 3 | 4 | 1 | 1 | Г | | | | | | | | | | | | |
| 4 | 0 | | | | | Г | Г | Π | Π | Γ | | | | | | |
| TABLE | E AS | SIG | ΝM | EN. | T: L | INE | S | ALL | S | TAT | ION | S | | | | |

| TOLL F | REST | ΓRIC | CTIO | N . | TAB | LE | | | | 5 | | | | | | |
|--------|------|------|------|-----|------|-----|-----|---|-----|-----|-----|----|----|----|----|----|
| TYPE: | ALL | .OW | l | | DΕ | NΥ | | | | | | | | | | |
| ENTRY | | ΕN | ITR' | 'Ν | UME | BER | (16 | N | IAX | IMU | IM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | П | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| TABLE | ASS | SIG | NM | EN | r: L | INE | S | | ST | ATI | ON | S | | | | |

| TOLL R | ES' | TRI | ITC | ON | TAI | BLE | | | | 2 | | | | | | |
|--------|-----|-----|-----|-----------------|----------|-----|------|------------|--------|-----|-----|----|----|----|----|----|
| TYPE: | ALI | 10. | | (| DΕ | NY | | | | | | | | | | |
| ENTR\ | Y | EI | TR | ΥÑ | UM | BE | R (1 | 6 N | ΛAX | IML | JM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 1 | 8 | 0 | 0 | | | | | | | | | | | | |
| 2 | 9 | 1 | 1 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | \Box | | | | | | | |
| TABLE | AS: | SIG | ИM | EN ² | <u> </u> | INE | S | \LL | . S | TAT | ION | S | | | | |

| TOLL F | RES | TRIC | CTIC | N | TAE | BLE | | | | 6 | | | | | | |
|--------|-----|------|------|-----|------|-----|----|-----|------|-----|----|-----------|----|----|----|----|
| TYPE: | ALI | ٥٧_ | V | | DE | NΥ | | | | | | | | | | |
| ENTRY | | ΕN | ITR۱ | / N | UMI | BER | (1 | 6 N | IAXI | MUI | M) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
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| TABLE | AS | SIG | ΝM | EN1 | r: L | INE | S | | ST | ATI | ON | <u>s_</u> | | | | |

| TOLL TYPE: | | | | N | | LE NY | | | | 3 | | | | | | |
|---------------|----|-----|-----|----|----------|----------|----------|-----|----------|-----|-----|----------|----|----------|----|----|
| ENTR | | | VTR | ΥN | | .,, | R (1 | 6 N | 1AX | IML | JM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
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| 3 | 1 | | | _ | | | Г | | \vdash | | | \vdash | | | П | |
| 4 | 1 | | Г | ┢ | | | \vdash | | \vdash | | | | | \vdash | Н | _ |
| TABLE | AS | SIG | NM | EN | : L | INE | s | _ | ST | ATI | ON | S | | | | |

| TOLL F | | | | | TAB | LE | | | | 7 | | | | | | |
|--------|-----|-----|------|-----|-----|-----|----|-----|------|-----|-----|----|----|----|-----|----|
| TYPE: | ALL | .OW | I | | DE | NΥ | | | | | | | | | | |
| ENTRY | | EN | ITR۱ | / N | UME | BER | 11 | 6 N | IAXI | MUN | Л) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 1,5 | 16 |
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| TABLE | ASS | SIG | NM | ENT | : L | INE | S | | ST | ATI | ON: | S | | | | |

| TOLL F | _ | _ | _ | N | TAB | LE | | | | 4 | | | | | | |
|--------|-----|-----|------|-----|------|-----|----|------------|-----|-----|----|----|----|----|----|----|
| TYPE: | ALI | _OW | / | | DΕ | NΥ | | | | | | | | | | |
| ENTRY | ′ | ΕN | ITR\ | ΛN | UME | BER | (1 | 6 N | ЛΑХ | IMU | M1 | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | į | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | Г | Г | | | | | |
| 3 | П | | | | | | | | | Г | | | | Ü | | |
| 4 | | | | | | | | | | | | | | | | |
| TABLE | AS | SIG | NM | EΝΊ | Γ: L | INE | S | | ST | ATI | ON | S | • | | | |

| TOLL F | RES | TRIC | CTIC | N | TAB | LE | | | | 6 | | | | | | |
|--------|-----|------|------|-----|------|------|-----|-------------|-----|-----|-----|----|----|----|----|----|
| TYPE: | ALL | ٥٧_ | / | | DE | NΥ | | | | | | | | | | |
| ENTRY | 1 | ΕN | ITRY | / N | JME | BER. | 116 | 5_ N | IAX | IMU | IM) | | | | | Į |
| | 4 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
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| TABLE | ASS | SIG | ΝM | ENT | ſ: L | INE | S | | ST | ATI | ON | S | | | | |

continued on next page. . .

Toll Restriction Table Configuration - continued, Toll Restriction Tables - continued

| TOLL F | RES | TRIC | CTIC | N | TAB | LE | | | | 9 | | | | | | |
|--------|-----|------|-------------|----|------|-----|------|-----|-----|--|-----|----|----|----|----|----|
| TYPE: | ALL | -OW | / | | DE | NΥ | | | | | | | | | | |
| ENTRY | | E١ | IT R | ΥN | UN | BE | R (1 | 6 N | 1AX | IML | JM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
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| TABLE | AS | SIG | NM | EN | r: L | INE | S | | ST | ATI | ON | s | | | | |

| | | | | N | TAE | BLE | | | | 13 | | | | | | |
|--------------|-----|-----|-----|------|------|-----|------|-----|-----|-----|------|----|----|----|----|----|
| TYPE: | AL. | | | | | NY | | | | | | | | | | |
| ENTRY | · | E١ | NTR | Y' N | ÜМ | BER | . (1 | 6 N | ИΑХ | IMU | M)) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | Г | | Г | | | | | Г | | Г | | | | | | |
| 2 | Г | | | Г | | Π | | | | Г | | | Г | | | |
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| TABLE | AS: | SIG | ΝM | EN. | ſ: L | INE | S | | ST | ATI | ON: | S | | | | |

| TOLL F | | | | N | TAB | LE | | | | 1 9 | | | | | | |
|--------|-----|-----|------|-----|----------|-----|----|-----|------|-----|----|----|----|----|----|----|
| TYPE: | ALL | .OV | / | | DE | NY | | | | | | | | | | |
| ENTRY | Ιď | EN | ĮΤR\ | / N | UMI | BER | (1 | 6 N | 1AXI | MU | M) | | | | | |
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
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| TOLL I | RES | TRIC | CTIC | N | TAE | BLE | | | | 14 | | | | | | |
|--------|-----|------|------|-----|------|-----|----|-----|-----|--------|----|----|----|----|----|----|
| TYPE: | AL | LOV | V | | DE | NY | | | | | | | | | | |
| ENTRY | | E١ | ITR' | ΥN | IUM | BER | (1 | 6 N | ΙAΧ | IMU | M) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | Г | | | Π | Г | Г | Г | |
| 2 | Г | Г | | | Г | | Г | Г | Г | | Г | | | | | |
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| TABLE | AS: | SIG | NM | EN: | T: L | INE | S | | ST | ATI | ON | S | | | | |

| TOLL | | | | ON | TAI | BLE | - | | | 11 | - | - | | | | |
|-------|-----|-----|-----|----------|------|-----|------|-----|-----|----------|-----|----------|----|----|----|----|
| TYPE: | ALI | LOV | ٧ | | DE | NY | | | | | | | | | | |
| ENTRY | _ | E١ | NTR | ΥÑ | UM | BE | R (1 | 6 N | ΙΑΧ | IML | JM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | П | | | | |
| 2 | Т | | | | | | | | | Г | | | | _ | | |
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| TABLE | AS | SIG | NМ | EN. | r: L | INE | S | - | ST | ATI | ON | Š | | | | |

| TOLL F | RES | TRI | CTI | ON | TA | 3LE | | | | 15 | | | | | | |
|--------|-----|-----|-----|-----|------|-----|------|-----|-----|-----|----|----|----|----|----|----|
| TYPE: | ALI | OV | V | | DE | NY | | | | | | | | | | |
| ENTRY | , | E١ | ITR | ΥN | UM | BE | R (1 | 6 N | IAX | IMU | M) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | Γ | | | | | | | | | | | Г | | | | |
| 2 | Г | | | | Π | | | | | | | | | | | |
| 3 | | | | | | | Г | | | | | | | | | |
| 4 | | | | | | | | | | | | 1 | | | | |
| TABLE | AS: | SIG | NM | ENT | ſ: L | INE | S | | ST | ATI | ON | S | | | | |

| TOLL | RES | TRI | CTIC | N | TAE | BLE | | | | 12 | | | | | | |
|-------|-----|-----|------|----|-----|-----|------|-----|-----|----------|-----|----|----------|----------|----|----|
| TYPE: | ALI | LOV | ٧ | | DE | NY | | | | | | | | | | |
| ENTRY | | E١ | NTR | ΥN | UN | BE | R (1 | 6 N | ΙΑX | IMU | IM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | Г | | Г | | | | Г | | | | |
| 2 | Г | | | | | | | | _ | | | | | | П | _ |
| 3 | | | | | | | | Г | | | - | | \vdash | \vdash | П | |
| 4 | | | | | | | | | | \vdash | | | | | П | _ |
| TABLE | AS | SIG | NMI | NT | : L | NES | 5 | | ST | ATIO | ONS | 3 | | • | | |

| TOLL F | RES | TRI | СТІ | ÓN | TAI | BLE | | | | 16 | _ | | | _ | | |
|--------|-----|-----|-----|-----|------|-----|------|-----|-----|-----|-----|----|----|--------|----|----|
| TYPE: | ALI | LOV | ٧ | | DE | NY | | | | | | | | | | |
| ENTRY | ′ | E١ | NTR | ΥN | UN | IBE | R (1 | 6 N | 1AX | IML | JM) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | Г | | Г | Г | | | | | | |
| 2 | | | | Г | | | | _ | Г | | | _ | | \Box | | |
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| 4 | | | | | | | | | T | | | | Г | _ | Н | |
| TABLE | AS | SIG | NM | EN. | T: L | INE | S | | ST | ATI | ON | S | | | | |

System Programming IMI66-107

Toll Restriction Table Configuration - continued Assign Toll Restriction Tables To Lines

| | Assign Toll Restriction | n Tables To Lir | nes |
|------|-------------------------|-----------------|---------------|
| Port | <u> Tables</u> | Port | <u>Tables</u> |
| 1 | | 14 | |
| 2 | | 15 | |
| 3 | | 16 | |
| 4 | · | 17 | |
| 5 | | 18 | |
| 8 | | 19 | |
| 9 | | 20 | |
| 10 | | 21 | |
| 11 | | 22 | |
| 12 | | 23 | |
| 13 | | 24 | |

Toll Restriction Table Configuration - continued Assign Toll Restriction To Stations

| Station | | Toll Table Assignments | |
|--|---------------|------------------------|------------------|
| Port | Normal Calls | Night Transfer Calls | Speed Dial Calls |
| 10 | | | |
| <u> 11 </u> | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
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| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |
| 43 | | | |
| 44 | | | |
| 43 44 45 | | | |
| 46 | None Assigned | | |
| 47 | | | |
| 48 | | | |
| 49 | | | |
| 50 | | | |
| <u>51</u> | | | |
| 52 | | | |
| 53 | | | |
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| 56 | | | |
| | | | |

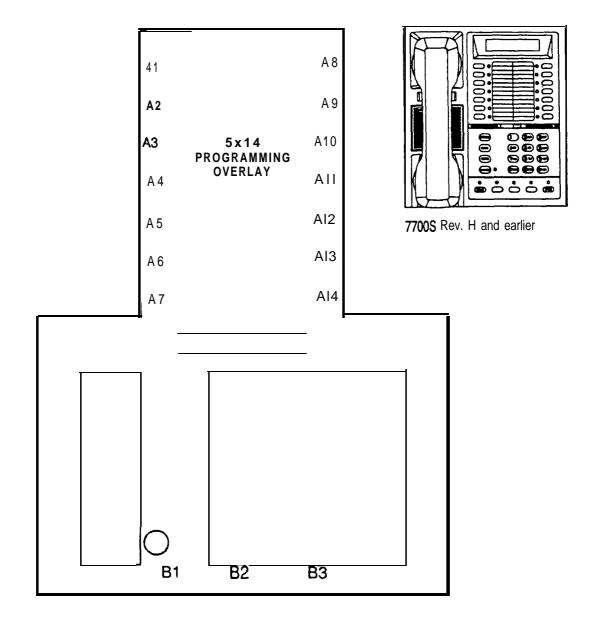
Toll Restriction Table Configuration Records - continued

| Toll Restriction (TRO) Code | Toll Restriction Override (TRO) Code |
|------------------------------------|--------------------------------------|
| Station No. TRO Code (Four Digits) | Station No. TRO Code (Four Digits) |
| 10 | 33 |
| 11 | 34 |
| 12 | 35 |
| 13 | 36 |
| 14 | 37 |
| 15 | 38 |
| 16 | 39 |
| 17 | 40 |
| 18 | 41 |
| 19 | 42 |
| 20 | 43 |
| 21 | 44 |
| 22 | 45 |
| 23 | 46 |
| 24 | 47 |
| 25 | 48 |
| 26 | 49 |
| 27 | 50 |
| 28 | 51 |
| 29 | 52 |
| 30 | 53 |
| 31 | 54 |
| 32 | 55 |
| • | 56 |
| | 57 |

Default = No code assigned

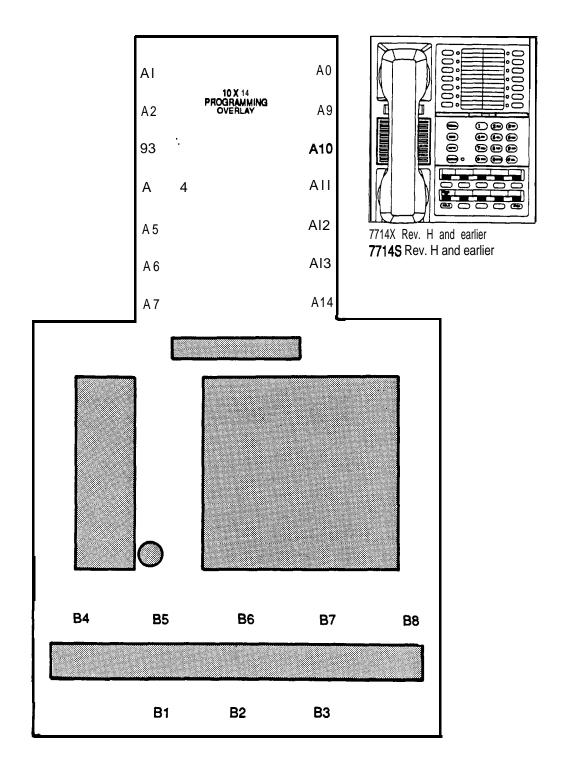
IMI66-107 System Programming

- Cut out along border.
- · Cut out shaded openings where necessary.
- Fit over station faceplate.



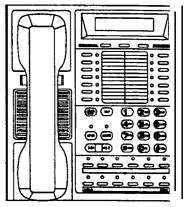
IMI66-107 System Programming

- Cut out along border.Cut out shaded openings where necessary.Fit over station faceplate.

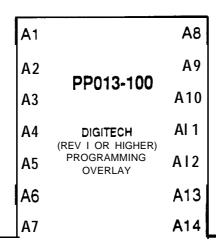


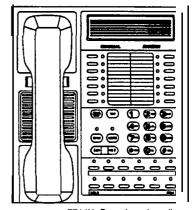
IMI66-107 System Programming

- · Cut out along border.
- Cut out shaded openings where necessary.
- · Fit over station faceplate.

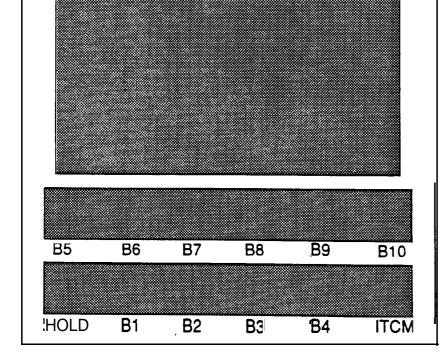


7700\$ Rev. I and later



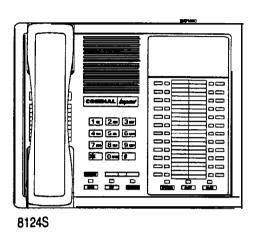


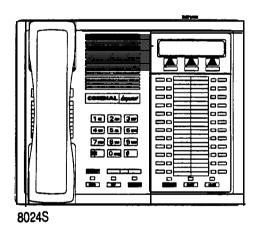
7714X Rev. I and earlier **7714S** Rev. I and earlier



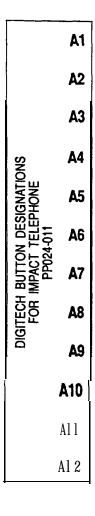
- · Cut but along border.
- Cut out shaded openings where necessary.
 Fit over station faceplate.

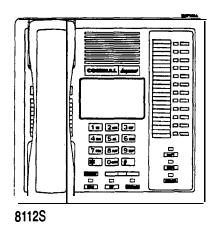
| ΑI | | A 13 |
|------------|-------------------------------------|-------------|
| A2 | | A1 4 |
| A3 | | ВЕ |
| A4 | SNC | B10 |
| A 5 | I DESIGNATIONS TELEPHONE -010 | B1 |
| A6 | | B2 |
| A7 | I BUTTON IMPACT PP024 | В3 |
| A 8 | DIGITECH E FOR IN | B 4 |
| A 9 | | B 5 |
| A10 | | В6 |
| A11 | | B7 |
| 412 | | B8 |

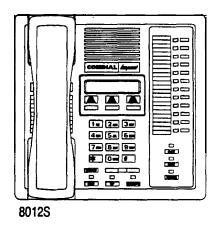




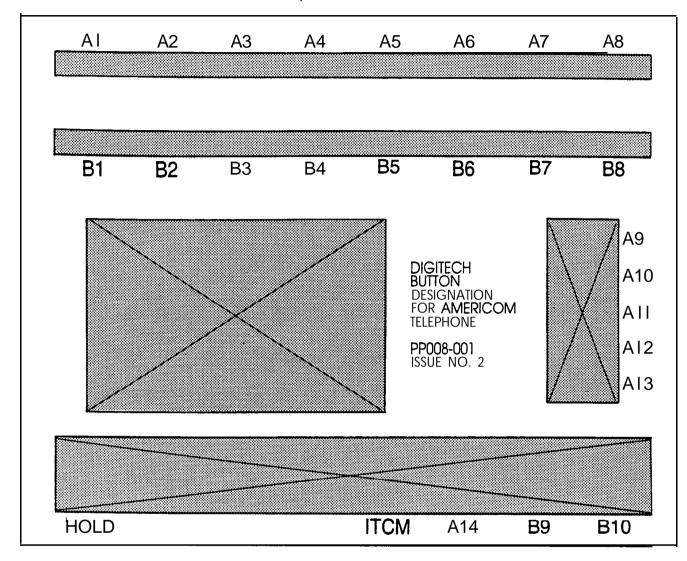
- Cut out along border.Cut out shaded openings where necessary.
- Fit over station faceplate.

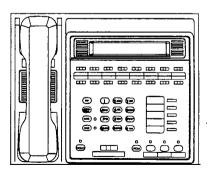






- Cut out along border.
- · Cut out shaded openings where necessary.
- Fit over station faceplate.



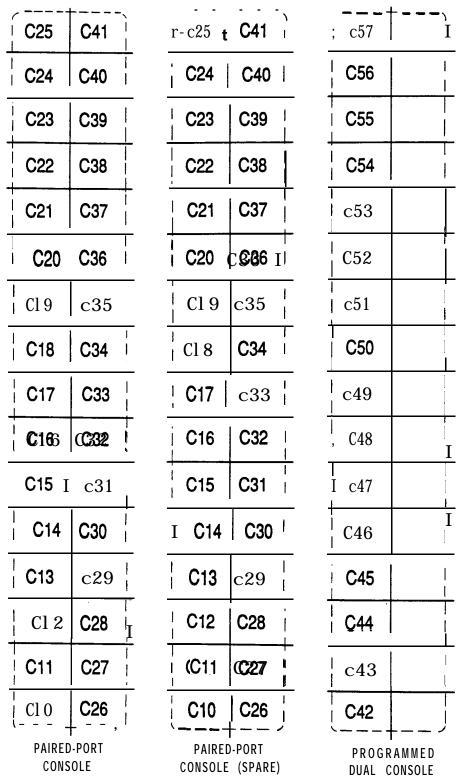


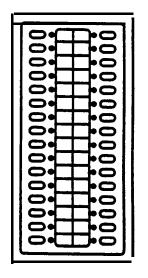
7016S 16-Line LCD Speakerphone

- · Cut out along border.
- · Cut out shaded openings where necessary.
- · Fit over station faceplate.

PP016-000

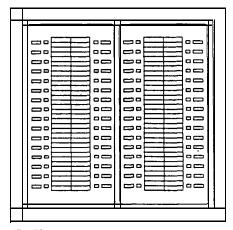
PROGRAMMING OVERLAY, DD32X



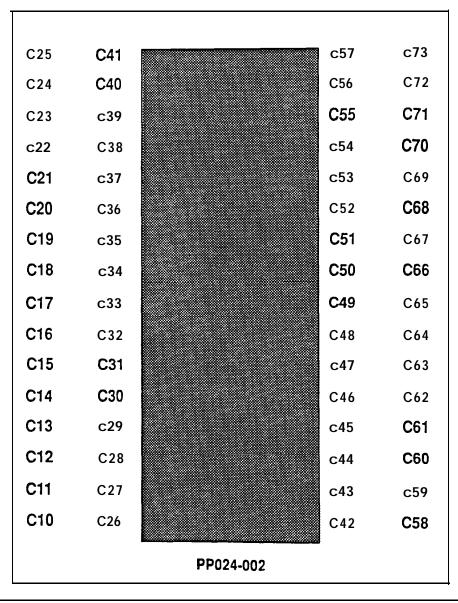


32-BUTTON DSS/BLF CONSOLE DD32X-xx IMI66-107 System Programming

- Cut out along border.
- Cut out shaded openings where necessary.
- Fit over station faceplate.



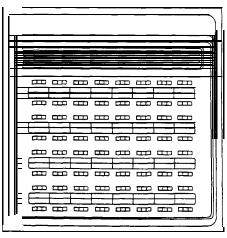
IB64X



IMI66-107 System Programming

- Cut out along border.
 Cut out shaded openings where necessary.
 Fit over station faceplate.

| C50 | C5I | C52 | C53 | C54 | C55 | C56 | C57 |
|-------|-------|-------|------------|-------|-------|-------|-------|
| | | | | | | | |
| C 4 2 | c 4 3 | c 4 4 | c 4 5 | C 4 6 | c 4 7 | C48 | c 4 9 |
| C34 | C35 | C36 | C37 | C38 | C39 | C40 | C41 |
| | | | | | | | |
| C 2 6 | C27 | C28 | c 2 9 | C30 | C31 | C 3 2 | c 3 3 |
| C18 | CI9 | C20_ | _ C2I | C22 | C23 | C24 | C25 |
| | | | | | | | |
| CIO | CII | CI2 | CI3 | CI4 | CI5 | Cl6 | CI7 |
| | | | | | | | |



XD64X 64-Button Console

IMI66-107 System Operation

Chapter 5 System Operating Characteristics

Operator's Manuals

System operation is documented in separate publications that are shipped in the literature package that accompanies the common equipment cabinet. The publications that document system operation are listed below.

Operation With DigiTech Telephones and Consoles

(product codes **7700S**, 7714X, and **7714S** - all with revision A through H and later, and **DD32X**)

• GCA70-183 DigiTech Multiline Telephone System User's Guide

• GCA70-182 DigiTech Attendant's Guide

• GCA70-184 DigiTech Station User's Guide

• GCA70-232 DigiTech Single-Line Proprietary Telephone User's Guide

• GCA70-187 DigiTech DSS/BLF Console User's Guide

Operation With DigiTech Telephones and Consoles

(product codes **7700S**, 7714X, and **7714S** • all with revision I and later, and **DD32X**)

- GCA70-220 DigiTech LCD Speakerphone System User's Guide
- GCA70-221 DigiTech Multiline Telephone System User's Guide
- GCA70-228 DigiTech Attendant's Supplement
- GCA70-184 DigiTech Station User's Guide
- GCA70-232 DigiTech Single-Line Proprietary Telephone User's Guide
- GCA70-187 DigiTech DSS/BLF Console User's Guide

Operation With Impact Telephones and Consoles

(product codes **8024S**, **8124S**, **8012S**, **8112S**, **8112N**, 8101 N, and **IB64X**)

• GCA70-245 Impact LCD Speakerphone System User's Guide

• GCA70-244 Impact Multiline Telephone System Users Guide

• GCA70-247 Impact Attendant's Supplement

• GCA70-248 Impact Station User's Guide

• GCA70-246 Impact Single-Line Proprietary Telephone User's Guide

• GCA70-256 Impact DSS/BLF Console User's Guide

dperation With Americom Telephones and Consoles

(product codes 701 OS, 7016S, 711 OX, XD64X)

 GCA70-257 Americom LCD Speakerphone System User's Guide

• GCA70-151 Americom Multiline Telephone System User's Guide

• GCA70-153 Americom Attendant's Guide

• GCA70-149 Americom Station User's Guide

• GCA70-142 Americom 64-Button DSS/BLF Console User's Guide

Operation With Industry-Standard Telephones Through The ATI-D

• GCA70-239 User's Guide For The Industry-Standard Telephone

Should you need additional copies of these publications, contact your Comdial inside sales representative for details on how to obtain them.

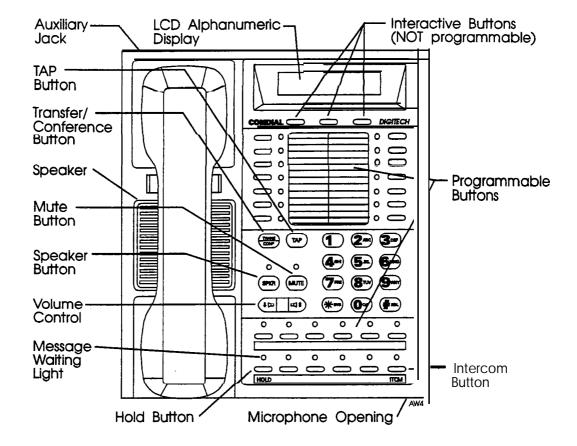
Comdial

Inside Sales Department

P.O.Box 7266

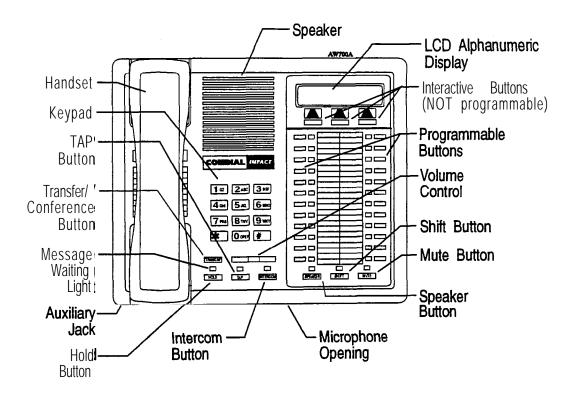
Charlottesville, VA 22906 Call: **1-800-347-1432** System Operation IMI66-107

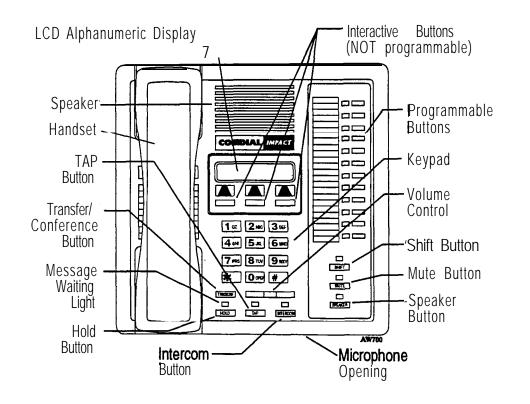
Typical DigiTech Telephone Features



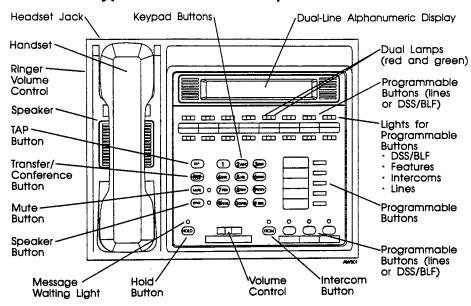
IMI66-107 System Operation

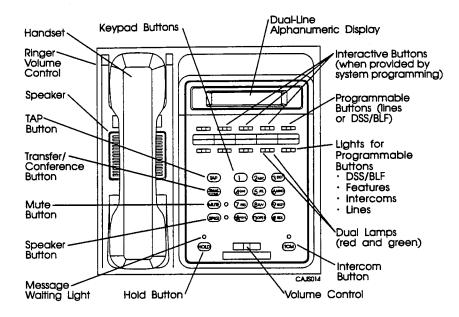
Typical Impact Telephone Features

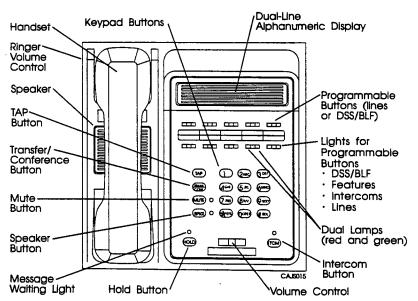




Typical AmericomTelephone Features







Feature Dialing Code Numbering Plan

| FEATURE | | DIALING CODES |
|---------------------|--------------------|-------------------------|
| All Call Page | All Call Page | |
| Attendant Calling | | ITCM 0 |
| Automatic Redialing | | Programmed Button |
| Background Music | On | ITCM * 1 |
| | off | ITCM # 1 |
| Automatic | Activate | ITCM, Ext., *, 8 |
| Call Back | Cancel | ITCM # 8 |
| Station-to-Station | Activate | ITCM, Ext., * 7 |
| Messaging | Cancel | ITCM, # 7, Ext. |
| LCD Messaging | Set | ITCM * 02 (1 • 0) |
| | I Cancel | ITCM # 02 |
| Call Forward | Personal | ITCM * 05, Ext. |
| | Cancel | ITCM # 05 |
| | All Calls | ITCM * 5. Ext. |
| | l Cancel | ITCM # 5 |
| Call Park | Park Orbits 1-9 | ITCM * (91 • 99) |
| | Pick Up | ITCM # (91 • 99) |
| Call Pickup | Directed | ITCM, * 4, Ext |
| | Group | ITCM # 4 |
| Call Waiting Tone | Send | ITCM, Ext., * 01 |
| | Cancel | Hang up |
| Do Not Disturb | Set | Programmed Button |
| | Cancel | Programmed Button |
| Executive Override | | ITCM, Ext., * 03 |
| External Page | | ITCM 89 |
| Handsfree Answer | Set | MUTE |
| Inhibit | Cancel | MUTE |
| Hold | Manual | HOLD |
| | Exclusive | HOLD, HOLD |
| | Direct | ITCM * 90, Ext. |
| | Direct Hold Pickup | ITCM # 90 |

| FEATURE | | DIALING CODES |
|--------------------------------------|-------------------|-------------------------|
| Line Answer From Any Station | | ITCM 80 |
| Line Group Access | Group 1 | ITCM 9 |
| | Group 2 | ITCM 81 |
| | Group 3 | ITCM 82 |
| | Group 4 | ITCM 83 |
| Line Queuing | Enable Line | HOLD |
| | Enable Line Group | ITCM (Group code) * 8 |
| | Cancel | ITCM # 8 |
| Meet Me Answer (Pagi | g) | ITCM 88 |
| Message Waiting | Set | ITCM * 3, Ext. |
| | Cancel From Idle | ITCM # 3. Ext. |
| | Cancel On Line | ITCM |
| | Retrieve Message | ITCM, HOLD |
| Night Transfer | On | ITCM * # 03 (L1) |
| (Attendant Station) | Off | ITCM * # 03 (L1) |
| Personal Set Tone 1 -8 Ringing Tones | | ITCM * * 4 (1 - 6) |
| Pulse/Tone Switching | I | # |
| Saved Number | Use | HOLD, Programmed Button |
| Redial | Store | Prwrammed Button |
| Service Observing | <u> </u> | ITCM # 03, Ext |
| Speed Dial | Station | 1-0 |
| | System | * 01-99 |
| Redial (Last Dialed Number) | | # |
| Voice Announce | Block | ITCM *2 |
| Block | Unblock | ITCM #2 |
| Zone Page | Zone 1 | ITCM 84 |
| - | Zone 2 | ITCM 85 |
| | Zone 3 | ITCM 86 |

System Operation IMI66-107

Controls And Indicators

Ringer Volume Control

Each station has a ringer volume control. Adjust the ringer volume of each station as desired by its user.

| Telephone | Control Location | |
|--|---|--|
| 7114S, 7114s 8012S, 8024S 8012S, 8112S | Rocker switch located on front faceplate. Adjust while ringing to set volume. | |
| 7701X, 8101N 8112N | Switch on bottom housing. Set for fixed volume levels. | |
| 701 OS, 711 ox 7016S | Switch on left side of telephone. Set for fixed volume levels. | |

Status Indicators And Tone Sequences

The following pages describe the light and ring patterns associated with system operation.

NOTE: The values shown are **typical**. They are provided for illustration purposes only.

Display Intensity

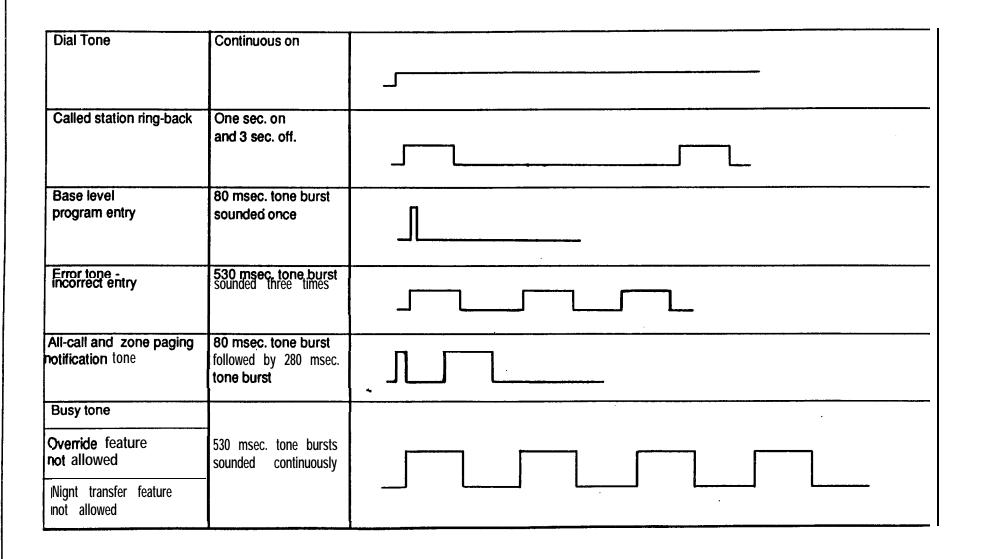
A user can adjust the intensity (brightness and contrast) of the liquid crystal display (LCD) readout that is included on some digital telephones to a desired operating level at any time that the telephone is idle and on-hook.

To adjust the display intensity,

• Press and hold the **MUTE** button until the desired intensity is achieved.

| CO/PBX Line Ring | Host system ring cadence | RING CADENCE DEPENDENT UPON HOST SYSTEM |
|--|---|--|
| Intercom Tone Signalling | Two 150 msec. tone bursts sounded every 4 seconds | |
| Voice Signalling alert | One 215 msec , tone burst | |
| Timed hold recall at station that put call on hold | Three 150 msec. tone bursts sounded at the end of each timeout period | |
| `all back alert | One 80 msec. tone burst ollowed by three 150 msec. | M to to to M |
| lueue Enabled | !one bursts and one 80 msec. :one burst | |
| Call forward alert | 3ne 80 msec. tone burst | |
| ransfer ringing | Two 1 .1 sec tone bursts sounded every 4 seconds | |

INTERCOM CALL PROGRESS TONES (Heard through handset **receiver** or over monitor speaker)



| Call waiting tone | Three 80 msec. tone bursts soundedonce | |
|--|---|-----|
| Called station in do-not- disturb mode | 140 msec.tone burst sounded twice every 1.5 sec. | MMM |
| Call-back busy feature on | 260 msec. tone burst soundedonce | |
| System is awaiting memory dial number or key mapping entry after location is specified | 80 msec. tone bursts sounded continuously | |
| Override feature on warning tone OHVA tone | Six 100 msec tone bursts sounded for 1.5 sec. | |
|)ISD ringback tone | Dual 440/480 Hz tone sounded 1 sec.on/1 sec off | |
| NSD dial tone | 381 Hz tone sounded continuously | |
| NSD confirmation tone | Two 125 sec. bursts of 381 Hz tone sounded once | |
| IISD busy/error tone | Three 500 msec. bursts of 381 Hz tone sounded once | |

LINE SELECT LIGHTS

| idle | | Steady off | | |
|------------------------------------|---|--|--|--|
| Ringing | | Continuous flash (560 msec. on • 560 msec. off) | | |
| In use | Your station | Green indicator • on steady | | |
| | Other station | Red indicator • on steady | | |
| On hold | Your station | Green indicator • continuous winking (490 msec. on • 70 msec. off) | | |
| | Other station | Red indicator • continuous winking (490 msec. on • 70 msec. off) | | |
| Exclusive hold at other station | ixclusive hold red indicator • steady on to their station Red indicator • steady on | | | |
| Held call time out | Your station | Green indicator • continuous flutter (70 msec. on • 70 msec. off) | | |
| | Other station | Red indicator - continuous flutter (70 msec. on - 70 msec. off) | | |

CAJS022

MESSAGE WAITING LIGHT

| Message Waiting Continuous flash (560 msec. on - 560 msec. off) |
|---|
|---|

INTERCOM LIGHT

| In use - your station | Steady on with wink off (2.3 sec. on • 70 msec. off) | |
|----------------------------------|---|--|
| Auto redial active | Continuous flash (70 msec. on • 70 msec. off) | |
| Messaging display | Continuous winking (490 msec. on • 70 msec. off) | |
| Night mode -Station 10 and 12 | Flutter with repeative off periods (flutter rate - 560 msec. off) | |

CAJS023

CAJS024

IMI66-107 Maintenance

Chapter 6 Maintenance

Technical Assistance And Repair Service

Technical Assistance

Should you experience difficulty with installation, checkout, or programming, and have made an attempt to isolate the problem using information provided herein; or should you encounter problems at a later date which cannot be resolved by referring to this manual, call the **Comdial Technical Service** staff. They can be reached at **1-800-366-8224** between the hours of 8:00 AM and 8:00 PM Eastern time, Monday through Friday.

When calling for technical assistance, you should be at the job site and you should have in your possession, as a minimum, an accurate volt-ohm meter and a copy of this manual.

Repair Service

If your common equipment cabinet or an individual station needs repair, it may be returned to Comdial. Comdial will, at their option, either repair the defective equipment or replace it with a remanufactured unit. This repair will be done for a fixed charge. For information on this charge, please call or write to the address given below.

Comdial

P.O. Box 7266 Charlottesville, VA 22906 Attention: Repair Department Telephone: (604) **978-2400**

I-800-877-4448

When returning equipment for repair, pack it carefully to prevent damage. Any damages during shipment will be the responsibility of the purchaser. The equipment should be shipped freight or postage prepaid. The shipping address is:

Comdial

1180 Seminole Trail Charlottesville, VA 22901 Attention: Repair Department

Fuse Location

The system is protected against short circuit damage by a slow-blow fuse located on the right side of the common equipment cabinet. Always replace the fuse with one of the same value and type, **otherwise**, equipment damage could result.

- 4-Line, 8-Station Base Unit 1A, 250V Slow-Blow
- 8-Line, 16-Station Base Unit 3A, 250V Slow-Blow
- 16-Line, 32-Station Base Unit 3A, 250V Slow-Blow

Wiring

Refer to **Chapter** 3 section titled Checkout and **Failure Isolation** for instructions for testing the system wiring and components for possible failure.

Maintenance IMI66-107

Frequently Asked Questions Concerning The Digital Telephone System

| Question | Answer | System Manual Reference |
|--|---|-------------------------------------|
| What prevents the speaker light from turning off? | Check to see if background music is turned on. Verify if the station port is programmed in the headset mode | Pages 2-3, 2-1 3, 2-18, 4-29 |
| Why is the display on the LCD speakerphone difficult to read? | Adjust the LCD contrast level by holding the MUTE button down for more than five seconds and let contrast levels 0 -7 scroll through until the desired darkness appears. | see system user's guide |
| Why will the system not communicate with the printer? | Make sure the parameters of the printer (such as the baud rate, data bits, and so forth) match the system. Also, verify that the wiring configuration is correct. | Pages 3-28, 3-38, 4-5, 4-54 |
| Why does a printer that is hooked up for SMDA reports print at the completion of each outside call? | SMDR printout is enabled. | Page 4-72 |
| Even though the telephone is programmed to ring, something is preventing it from ringing. What could that be? | Check to see if there is a visual indication of ringing. If there is, check the ringer volume setting of the telephone. If it still does not ring, reprogram the feature. | Pages 2-21, 4-9 |
| What could prevent a programmer from programming a DSS appearance or a feature appearance at an unused line button? | The button's previous function is interfering. A programmer must first use the button mapping programming procedure to blank the default line assignment to the button before reprogramming that button for another purpose. | Page 4-38 |
| What would prevent the TAP button of a station from generating a flash on a system that is installed behind CENTREX or a PBX? | A programmer must reprogram the telephone system's TAP button flash time to match the hook flash time of the host system. | Page 4-l 3 |
| The customer has requested toll restriction for certain telephones but wants certain people to be able to override these restrictions. How can this be arranged? | First disable the system speed dial toll restriction, then program a system speed dial location to choose a line and dial a pause when it is used. Provide this speed dial location to only those users that need to override toll restrictions. These users can press this speed dial button and then dial their desired telephone number. | Page 4-78 |
| What could prevent a programmer from programming lines into line groups? | On systems with revision 8T and earlier software, the installer must first strap the common equipment to provide hybrid operation. On currently produced systems, this is not necessary. | Page 3-1 |

| Question | Answer | System Manual Reference |
|--|---|--|
| Speed dial locations are programmed but sometimes will not dial when the users use them. What causes this to happen? | This is could happen when the speed dial is programmed to only access a specific line. If this line is busy, no action will ensue. When programming speed dial numbers, select a line group instead of an individual line. (Remember, on systems with a software revision of 8T or earlier, the installer must install the hybrid strap to allow line group use.) For line groups to be active, you must assign lines to them. Alternately, consider enabling idle line . preference. | Pages.2-2, 2-16, 2-18, 2-22, 3-1, 4-10, 4-17 |
| What could prevent a line light from turning on when auxiliary equipment that is hooked up ahead of the system on that line is in use? | Automatic off-hook detection only works if the device is connected to the auxiliary interface connections of lines two or four. | Pages 2-3, 3-23 |
| Why cannot an attendant (station port 10 or 12) program the night transfer code under a programmable button? | The feature may not be available. It is available only in software releases 8A and later. | Check software revision number of cartridge. |
| Why cannot an attendant (station port 10 or 12) delete call accounting records? | The programmer must first enable this capability for the attendant using the system class of service programming. | Page 4-73 |
| How can the system be arranged so that the user can access more than two lines on a two-line telephone? | There several solutions to this problem. They are as follows: 1. Reprogram one of the lines as a line group button and have it access a group of lines. 2. Use dynamic line buttons. 3. Use idle line preference. | Pages 4-17, 4-36, 4-38 |
| What prevents voice announce from operating? | Called station could have the voice announce blocking feature turned on. | Pages 4-35, 4-40 |
| What prevents the user from programming a button for a response message? | The programmer or the attendant must first program the system LCD message, before the user can assign it to a dedicated button. | Page 4-7, also see system user's guide |

Maintenance IMI66-107

| Question | Answer | System Manual Reference |
|--|--|------------------------------|
| How does one set up a DCD department? | The procedure for setting up a DCD department is as follows: 1. Assign stations to departments. 2. Program call forward RNA for each station. 3. Assign access codes to departments. 4. Assign fines to departments. | Pages 4-50 |
| How can a user enable a line port that was disabled? | He or she cannot do this. The programmer must reprogram the line as a CO line in order to enable it again. This is because line type programming does not toggle on and off. | Page 4-16 |
| During a programming session, how does a programmer delete something that he or she has programmed into station class of service? | Most station programming is a toggle action. A programmer merely performs the same procedure that he or she initially performed to toggle the opposite choice. | Page 4-22 |
| There is a flashing status LED on the common equipment cabinet during the initial installation. How does an installer clear it? | Reset the system by interrupting power for at least ten seconds. While power is off, make sure the software cartridge is inserted properly. | Page 3-36 |
| How can I check to see what programming is presently on a station? | The easiest procedure is to program with a VDT or a personal computer that is running an appropriate communications software program. With this programming method, the information is easily displayed and retrieved. Another method is to install a DSS/BLF console into the station port adjacent to the programming station. The console will use lighted LEDs to indicate the stations that are programmed with a particular feature. When using a console on a port where a telephone was previously used, be sure to default the port. Also, in order to view programming with a console, the system must be using revision 8A software or later. Alternately, you can connect a data printer to the system and request a printout of the system programming. | Pages 4-4, 4-54, 4-77 |

| Question | Answer | System Manual Reference |
|--|--|-------------------------|
| How does automatic station relocation work after it is programmed? | When relocating an LCD speakerphone, the display will prompt the users to press the HOLD button if features originally assigned to that station must be retained; however, if they press the # button the system will reconfigure the station for the port to which it is now connected. Non-LCD stations are relocated in a similar fashion, except there are no LCD prompts. The Hold button will flash, indicating that the user should press it to relocate the station. Telephones may be completely disconnected for an extended period of time and still retain relocation capability. | Pages 2-3, 4-5 |
| How does the ASSIST button operate after it is programmed? | A station user may activate the assist feature in an on- or off-hook condition. Pressing the button will notify a pre-determined station that the user needs assistance. An assist message (determined by the LCD programming) will appear in the pre-determined station's LCD display if the telephone is not in use. A short tone, generated each time a user presses the ASSIST button, will also notify the pre-determined station that someone needs assistance. To answer a request for assistance, the assisting user should contact the station needing assistance via the intercom, the executive override feature, or the subdued off-hook voice announce. | Pages 2-2, 2-17 |

Maintenance IMI66-107

| Question | Answer | System Manual Reference |
|---|---|-------------------------|
| How does the system alarm report feature operate? | Use station class of service to assign one or more stations to receive the alarm signal. Once this is done, there are three possible events that could trigger an alarm. They are: 1. Parity errors • These indicate data transmission problems between the telephone and the common equipment. 2. Disconnected telephone • This indicates the station number, the time, and the date that a station was disconnected. 3. Printer off line • This indicates when the printer has gone off line. When an alarm occurs, a flashing * appears in the upper right comer of the LCD display of the telephone that is programmed to receive the alarm signal. To process the alarms, the user must press and hold the • key until the first alarm message appears in the display. After this, he or she can press the • key to scroll through any subsequent alarm messages. The user can clear individual messages by dialing 0 after each message appears. To exit the system alarm mode, the user must dial #. | Pages 2-24, 4-9, 4-35 |

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| Question | Answer | System | Manual | Reference |
|-------------------------------------|---|--------|--------|-----------|
| How long will battery back-up last? | Anyone can calculate the actual minimum battery back-up time for any configured system by using the following formula: | | | |
| | $T = \frac{(K) (e)}{1 + [(0.1) (N)]}$ | | | |
| | T = Back-up time in hours | | | |
| | K = Constant: 0.9 for 408 system with or without a 408 expansion module 0.8 for 816 system with or without one or two 408 expansion modules .8 for 1632 system with or without one or two 408 expansion modules | | | |
| | e = Ampere-hour capacity of battery (for example = BBL02 = 15) | | | |
| | N = Total number of stations | | | |
| | Example: Assume that a 1632 system, two 408 expansion modules, and 48 stations are installed, along with a BBU02 battery assembly to provide backup power. | | | |
| | $T = \frac{(0.8) (15)}{1 + [(0.1)(48)]} = \frac{12}{5.8} = 2.1 \text{ hrs.}$ | | | |

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