

COMDIAL
unis yn

Telephone System,

System Manual

This publication is applicable to the following common equipment:
Model TO308 Rev. A and later
Model TO616 Rev. A and later
Model T0308-INT Rev. A and later
Model T0616-INT Rev. A and later

COMDIAL
Made right in the USA

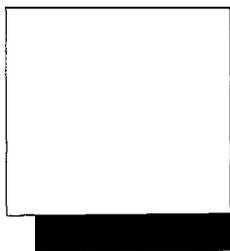


Table Of Contents

1. Introducing The Unisyn System

- 1.1 Using This Book 1-1
- 1.2 Using Related Publications 1-2
- 1.3 Getting To Know The Unisyn System 1-2
- 1.4 Understanding The Hardware 1-4
- 1.5 Knowing The General Specifications 1-10
- 1.6 Seeking Technical Assistance 1-12

2. Installing The Unisyn

- 2.1 Using Chapter Two 2- 1
- 2.2 Using The Right Tools 2-1
- 2.3 Installing The Cabinet 2-2
- 2.4 Connecting The Power 2-4
- 2.5 Connecting The Lines 2-8
- 2.6 Connecting The Stations 2-12
- 2.7 Installing System Options 2-16
- 2.8 Checking The System 2-25
- 2.9 Isolating System Failures 2-27
- 2.10 FCC Rules And Regulations 2-28

3. Programming The System

| | | |
|------|-------------------------------------|------|
| 3.1 | Using Chapter Three | 3-1 |
| 3.2 | Understanding How To Program | 3-1 |
| 3.3 | Understanding System Programming | 3-3 |
| 3.4 | Master Clearing and System Defaults | 3-4 |
| 3.5 | 'Programming The System | 3-6 |
| 3.6 | Programming The Lines | 3-14 |
| 3.7 | Programming The Stations | 3-19 |
| 3.8 | Button Mapping | 3-33 |
| 3.9 | Voice Mail | 3-39 |
| 3.10 | Toll Restriction Programming | 3-44 |
| 3.11 | Programming Reference Chart | 3-48 |
| 3.12 | Feature Code Numbering Plan | 3-49 |

4. Programming Records 4-1

5. System Features 5-1

6. Index 6-1

1

Introducing The Unisyn System-

1. / Using This Book

This manual for the Unisyn telephone system, IMI66-112, provides step-by-step instructions for installing and programming the system. We have designed the manual with you, the installer/programmer, in mind, and we have tried to “walk you through” all of the steps needed to fully install and program the system. If you are unsure about installing the system, read through this book *at least once* before you begin any installation.

IMI66-112 contains five chapters, each of which has a unique purpose.

- Chapter One introduces the Unisyn system and explains how to use this manual
- Chapter Two covers installation and check-out
- Chapter Three focuses on programming—perhaps the most important aspect of the installer’s job. The telephone system is capable of a great deal, but you must program it to meet the user’s needs.
- Chapter Four contains records for all of your programming decisions. **Use this chapter!** When the time comes for you to troubleshoot or reprogram the system, you will be glad to have a record of what you have done.
- Chapter Five lists all of the system’s features and gives brief descriptions of how the features work. We recommend that you read through this chapter before you do anything. There may be new features you never knew existed, and of course you want to be positive that the feature you are installing is exactly what the customer wants.

1.2 Usina Related Publications

We have not included some information, such as general user information, in this publication, but you can find such information in the following related publications.

1.2.1 General Information

- IMI 01-001 Compliance Requirements To FCC Rules and Regulations Part 68 and 15
- IMI 01-005 Handling Of Electrostatically Sensitive Components

1.2.2 User Information

- GCA 70-293 LCD Speakerphone System User's Guide
- GCA70-296 Station User's Guide
- GCA70-297 Industry Standard Telephone User's Guide

1.2.3 Accessory Module Information

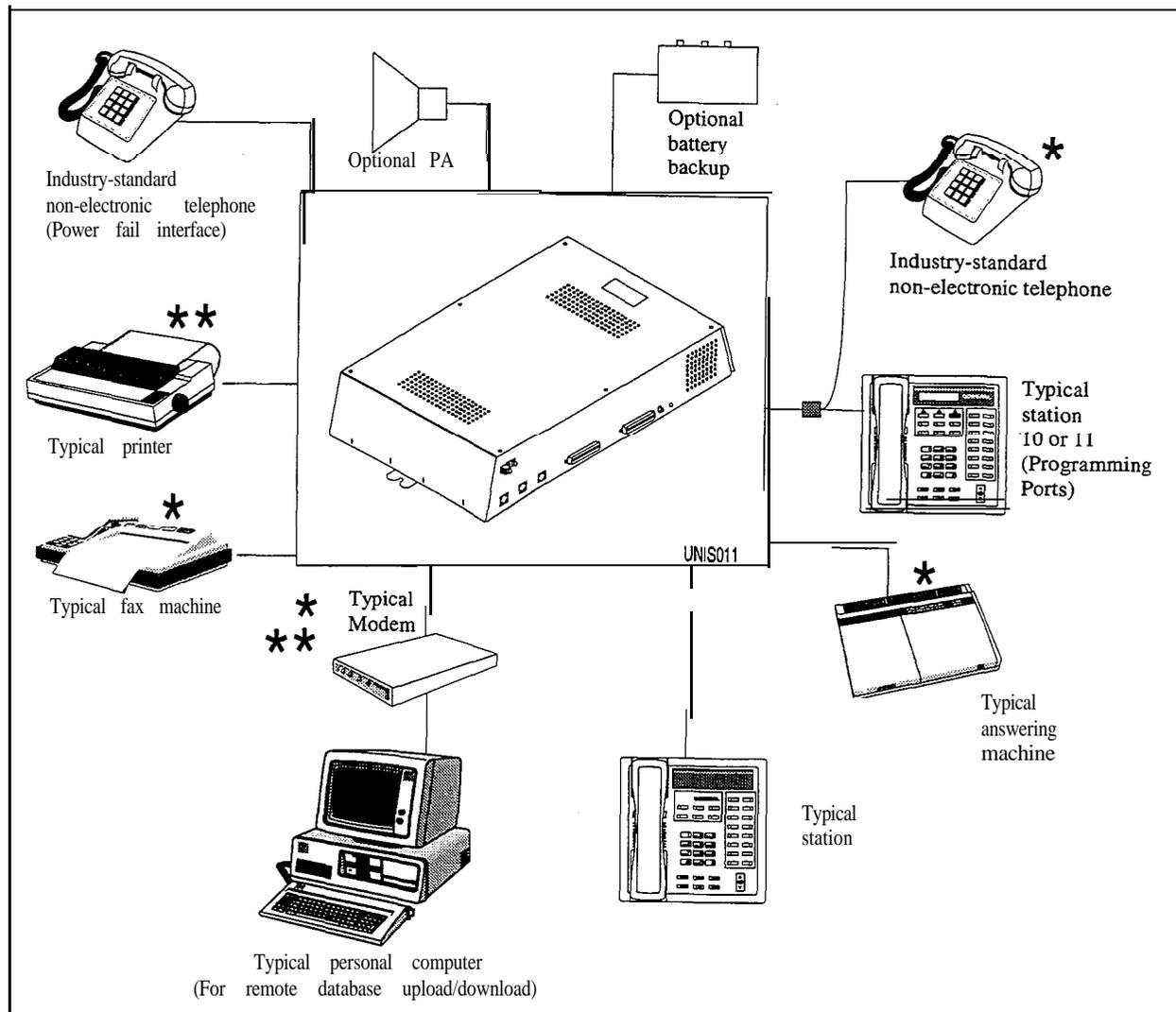
- IMI89-133 Industry Standard Board (TXIST) Installation
- IMI89-134 Ring Generator (TXRNG) Installation
- IMI89-135 Message Waiting Board (TXMWG) Installation
- IMI89-136 Call Metering Board (TXCMX-16, TXCMX-12) Installation
- IMI89-137 RS232 Board (TX232) Installation

1.2.4 Battery Backup Information

- IMI89-064 Battery Backup Installation

1.3 Getting To Know The System

The Unisyn telephone system provides dozens of different features, and programming options. We have designed the system so that you, the installer, can customize the operations to fit each customer's individual telephone needs. Each system consists of hardware and software. The common equipment cabinet and telephones, for example, are considered hardware. The software determines what functions you can program into the system. **Figure 1.1** illustrates all of the possible options for the system. For further information on programming, see Chapter 3 of this manual.



* Means you must have an IST board. (If you have TXIST board installed either the bridged IST or stand alone IST can be used for power fail.)

** Means you must have an RS232 board installed.

Figure 1.1 System Options

1.4 Understanding The Hardware

Each Unisyn system has the following hardware capabilities:

- Common Equipment cabinet. Each common equipment unit is full featured for basic operation.
- Optional Feature Enhancement Circuit Boards (IST Board, Ring Generator, Message Wait Generator, Call Metering Board, RS232 Board)
- Telephones. All currently produced Unisyn telephones will work on the T0308, T0616, T0308-INT, and T0616-INT.
1 0 2 2 % x x
1122S-xx
1122X-xx
- Optional Battery Backup (BBU01, BBU02, BBL02)—see Section 2.4.2.

1.4.1 Knowing The Common Equipment

The common equipment is essentially a special purpose computer system. Common equipment acts as a communications controller between central office (CO), private branch exchange (PBX), or CENTREX supplied telephone lines and the proprietary telephone or IST stations. We have designed the common equipment cabinet in a modem and functional style. **Figure 1.2** shows the four models of the common equipment and their dimensions.

There are four models of the Unisyn common equipment (two for domestic use and two for international use), each with different station and line capacity.

| Model Number | CO / PBX Capacity | Station Capacity |
|--------------|-------------------|------------------|
| T0616 | 6 | 16 |
| T0308 | 3 | 8 |
| T0616-INT | 6 | 16 |
| T0308-INT | 3 | 8 |

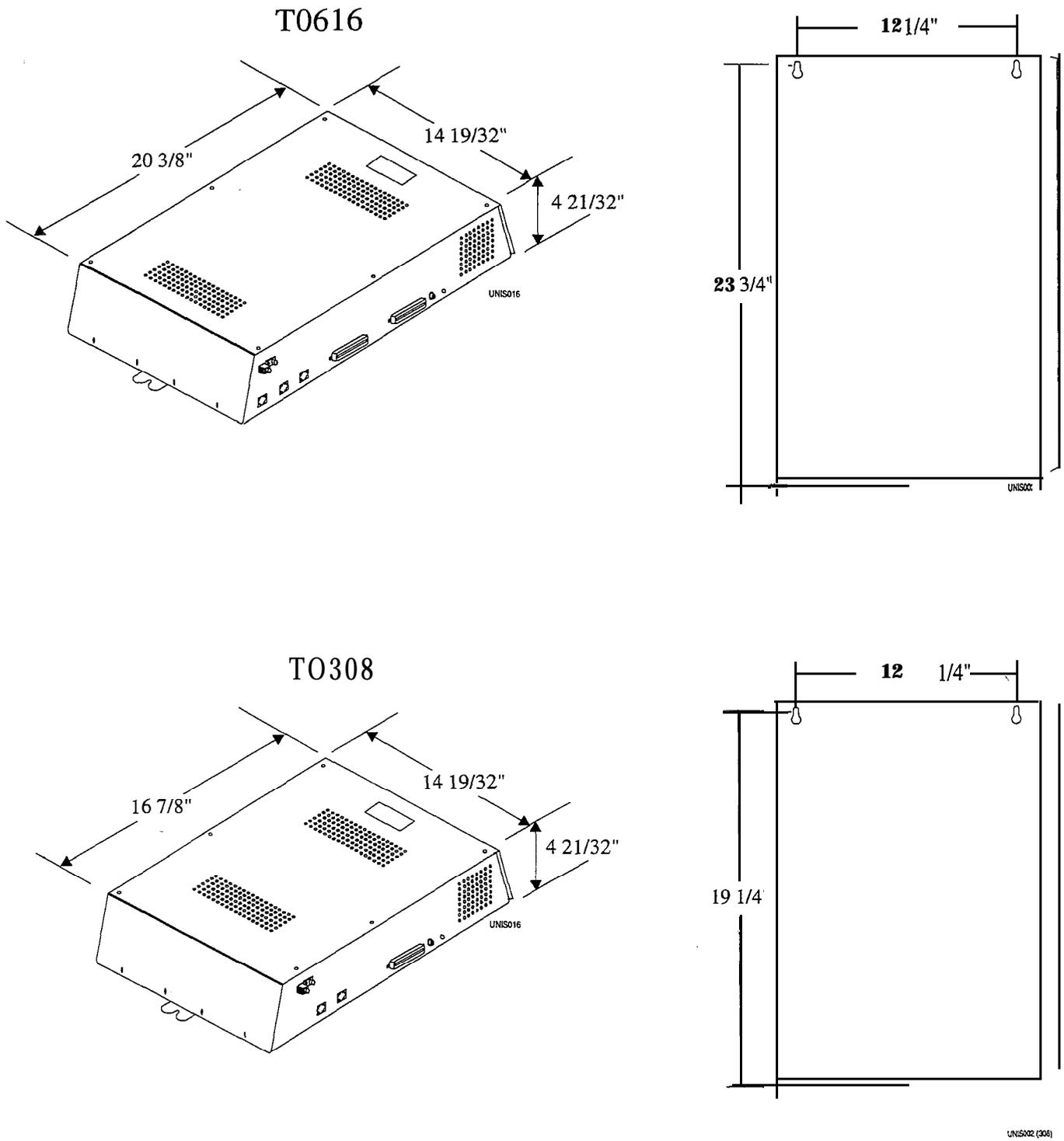


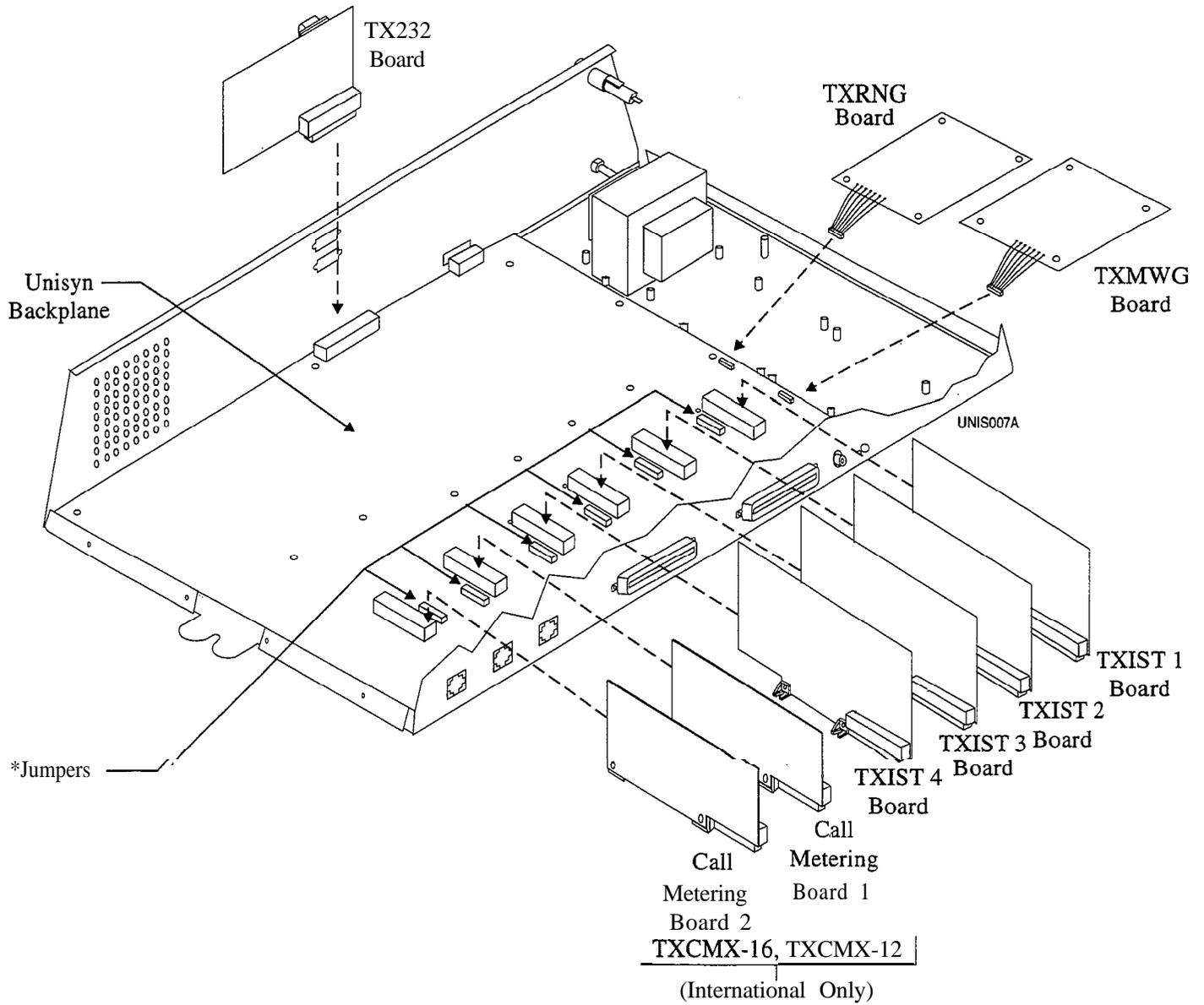
Figure 1.2 Common Equipment Cabinets

1.4.2 Understanding The Options Boards

You can add any or all of the optional boards into the Unisyn system. The following list describes each board and its function. Refer to **Figure 1.3** for board installation locations.

- **The Unisyn Industry Standard Telephone (TXIST) Board-makes the** system compatible with IST devices in addition to proprietary telephones. Adding a TXIST board changes the station ports from proprietary only to universal ports-universal ports support both proprietary and / or IST devices. Each TXIST board converts four proprietary-only ports to universal ports. **You** must remove the jumpers next to the corresponding **TXIST** board upon installation; the board will not function with the jumpers installed. You must install a TXRNG for IST devices to function. For more information see **IMI89-133**.
- **The Unisyn Ring Generator (TXRNG) Board-supports** the use of industry standard telephones (ISTs) or other IST devices such as a facsimile machine or modem. **The** ring generator sends the ring signal that the IST module (TXIST) needs to ring industry standard devices. You must have a **TXRNG** if you are using IST telephones, but you only need one TXRNG no matter how many TXIST boards you install. For more information see **IMI89-134**.
- **The Unisyn Message Waiting Generator (TXMWG) Board-also** supports the use of the TXIST board. The TXMWG generates the message waiting signal that the TXIST board uses to provide message waiting indication to IST devices. The TXMWG is not required to provide message waiting indication for any proprietary sets. For more information see **IMI89-135**.
- **The Unisyn Call Metering (TXCMX-16, TXCMX-12) Boards-provide** 16 Khz (12 Khz on the **TXCMX-12**) transverse call-metering tone detection on three CO lines. When the CO offers call metering service, the call metering board provides an accurate method of determining the cost of any outside call. You must remove the jumpers next to the corresponding TXCMX board upon installation; the board will not function **with** the jumpers installed. Call metering service normally is not offered in the United States (This service is only available on **T0308-INT**, and **T0616-INT**). For more information see **IMI89-136**.
- **The Unisyn Serial Port (TX232) Board-provides** two serial ports for information transfer to and from the Unisyn system. Use port A for PC Access (defaulting the system, setting the clock, master clearing **the** system), or remote-modem programming; use port B for SMDR and Caller ID (Caller ID is a future feature). For more information see **IMI89-137**.

NOTE: *You must remove the jumpers next to the corresponding TXIST and TXCMX board upon installation. The board will not function with the jumpers installed.*



NOTE: You must remove the jumpers next to the corresponding TXIST and TXCMX board upon **installation**. The board will not function with the jumpers installed.

Figure 1.3 Optional Boards (TO616 shown)

1.4.3 Knowing The Stations

You can install many different types of telephone stations, either proprietary Unisyn electronic microprocessor-controlled devices, or industry standard, (IST) telephones like the 2500. The stations provide users with not only multiline pickup but also single button access to features available from the serving CO, PBX, or CENTREX switch and common equipment. You can program each telephone station to have a unique set of features and operating parameters (see Chapter 3.7). All currently produced Unisyn telephones will work with the Unisyn system, as will any industry standard telephone, or accessory such as a facsimile machine or modem, (with TXIST board). Figure 1.4 shows a typical station's mounting dimensions, and figure 1.5 shows all of the available telephones.

You can install all of the following:

- Proprietary Multiline Unisyn Telephones
 - 1022S-xx
 - 1122S-xx
 - 1122X-xx
- Industry Standard Telephones-including any Analog Device (facsimile machine, modem)
 - You must have a TXIST board for IST support.
- Four-conductor twisted-pair cable (used for multiline station connections).
- Two-conductor twisted cable (used for single line IST station connections).

NOTE: Any industry-standard device should be fully compatible with a 24 V battery. feed. We also recommend that ISTs have the TAP (Flash) and Positive Disconnect features to have access to system features and to prevent false signaling.

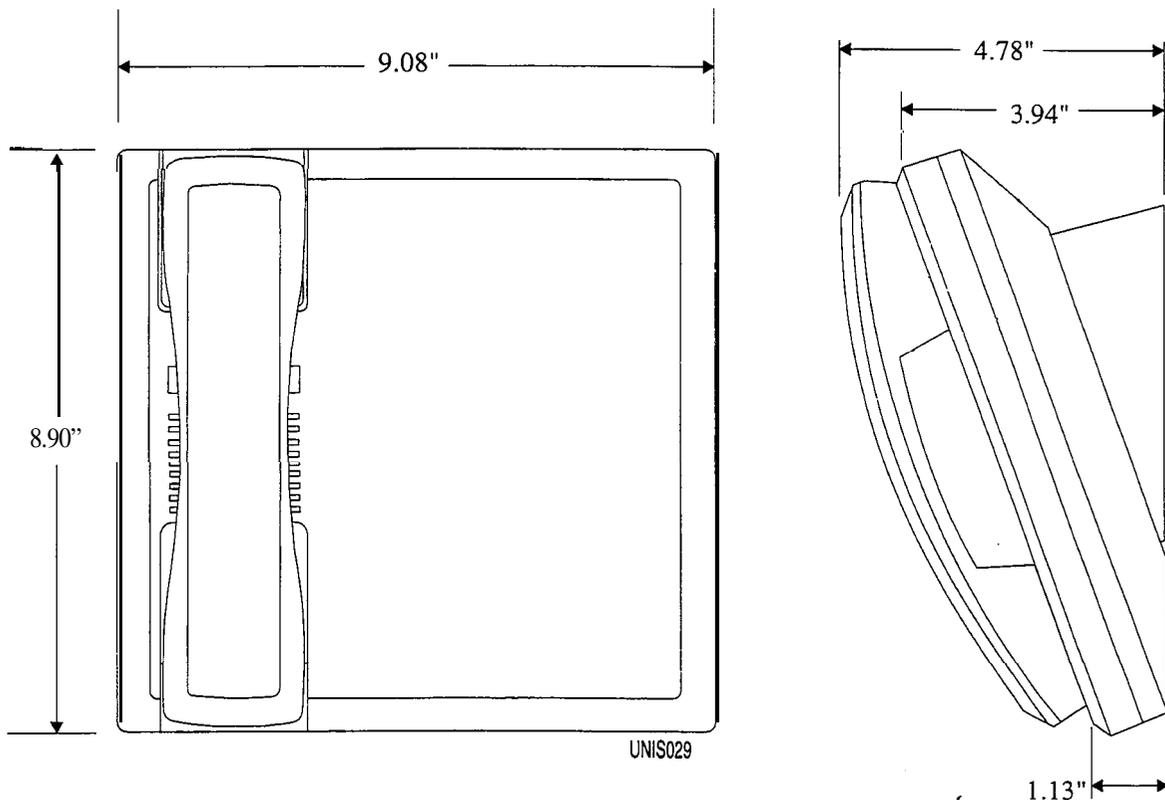
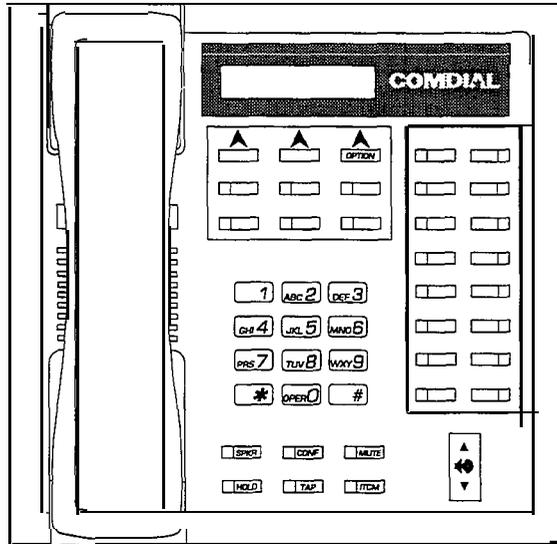
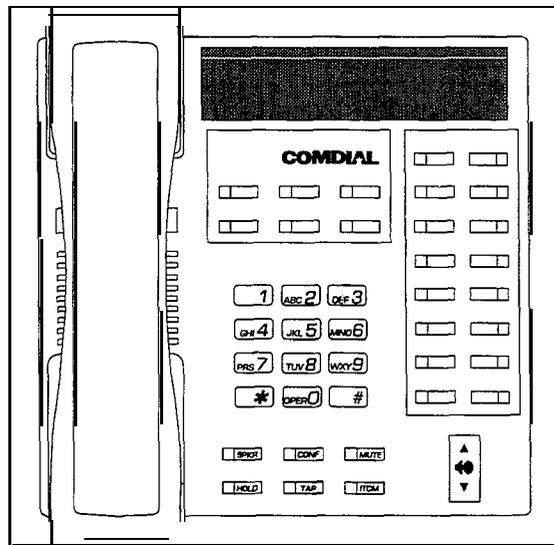


Figure 1.4 Telephone Station Dimensions

UNIS017



1022S - 6-Line LCD Speakerphone



1122S - 6-Line Speakerphone
1122X - 6-Line Monitor Telephone

Figure 1.5 Telephone Stations

1.5 Knowing The General Specifications

| | Base Unit | |
|--|---|--|
| | 3-Line, 8-Station Q-0308, T0308-INT) | 6-Line, 16-Station (T0616, T0616,-INT) |
| System Capacity | | |
| Lines: | 3 | 6 |
| stations: | 8 | 16 |
| Intercom Paths: | 3 | 6 |
| Proprietary / IST stations: | 8 | 16 |
| Maximum Simultaneous: Intercom Conversations: | 3 | 6 |
| Power Requirements-Domestic (Fully loaded system) | | |
| AC Power: | 117V +/- 10 % 60 Hz Single-phase - all models | |
| | 0.4 A | 0.8 A |
| | 35 W | 64 W |
| | 50 VA | 80 VA |
| Heat Dissipation: | 120 BTU / hr | 220 BTU / hr |
| Power Requirements-International (-INT models) (Fully loaded system) | | |
| AC Power: | 120V/ 220V + 10 % / - 14 % Single-phase - all models | |
| | 50 / 60 Hz | 50 / 60 Hz |
| | 0.4 A (220V 0.3A) | 0.8 A (220V 0.5A) |
| | 35 w | 64 W |
| | 50 VA | 80 VA |
| Heat Dissipation: | 120 Btu / h | 220 Btu / h |
| Dimensions (approximate) Common Equipment | | |
| Width (inches): | 14.5 | 14.5 |
| Height(inches): | 20.5 | 24.7 |
| Depth (inches): | 4.7 | 4.7 |
| Weight (pounds): | 19 | 23 |
| Proprietary Multiline Stations | | |
| Footprint (inches): | 8.9" x 9.08" | |
| Weight (pounds): | 2.1 | |
| Station Cable Requirements | | |
| Type: | 4-wire (2-pair) twisted, non-shielded for multiline telephone, 2-wire twisted, non-shielded for IST, using 24 AWG | |
| Maximum Length: | 1000 feet for multiline, 1500 for IST (with 300 Ohm IST device) | |
| Switching Principle: | Solid-state, space-division analog switching with stored program control | |
| IST Requirements | | |
| | Only use IST devices that are compatible with 24 V battery service. Tap (Flash) and Hookswitch Positive Disconnect are recommended features. | |

Operating Environment

Temperature: 32 to 122 degrees F (0 to 50 degrees C)
 Humidity: Up to 90 percent relative, non-condensing

Terminations

Station: Standard 50-pin female connectors for connection to external distribution field
 Line: Standard, 4-conductor mini-jack (USOC 14C)

Station Message Detail Recording Port (Default)

Format: Serial, pseudo RS-232C
 Parity: None
 Data Bits: 8
 Stop Bits: 1
 Baud Rate: 1200
 Handshaking: X on - X off
 CTS / RTS Available
 Cable Length: 500 Feet maximum

Music Interface

Input Level: 3 Volts peak-to-peak maximum
 Input Impedance: Approximately 600 Ohms
 Connector: RCA phono jack

Central Office Limits

Loop Limits: 1,900 Ohms maximum loop DC Resistance
 Cable Insulation Leakage: 15,000 Ohms minimum

Industry/Regulatory Standards

FCC Part 15, Class A
 FCC Part 68
 DOC
 Listed by OSHA-accredited, nationally recognized test laboratory to UL and CSA safety standards.
 EIA / TIA - 464 - A

Memory Retention After Power Loss 70 hours minimum (typically 200 hours)

Clock Retention After Power Loss Minimum 24 hours

FCC Registration-Number CVW7WC-12829-KF-E (Key System) CVW7WC-16553-MF-E (Hybrid System)

Ringer Equivalence Number 0.4B

Load Number 4.0

Product Codes

| | |
|-------------------------------|--------------------|
| 3 x 8 System | TO308 |
| 6 x 16 System | TO616 |
| 3 x 8 System (International) | T0308-INT |
| 6 x 16 System (International) | T0616-INT |
| Universal IST Board | TXIST |
| Call Metering Board | TXCMX-16, TXCMX-12 |
| Ring Generator Board | TXRNG |
| Message Wait Board | TXMWG |
| RS-232 Board | TX232 |
| 6-line LCD Speakerphone | 1022S-xx |
| 6-line Speakerphone | 1122S-xx |
| 6-line Monitor Telephone | 1122X-xx |

1.6 Seeking Technical Assistance

We have designed the Unisysn system and its accompanying manual to be so easy to use that you can install and program the entire system without any additional assistance. If, however, you should run into a problem in installation, checkout, or programming that **YOU** cannot solve, we have a technical support number that you can call for assistance. This service exists for you to use in *emergency* situations-it is not an alternative to using the manual. Should you need to call the technical services number, make sure you are on-site with the equipment and a copy of this manual, opened to the appropriate page. Please don't call for technical support until you have thoroughly read through the appropriate section of the manual and tested the problem. For assistance, call the following number:

Comdial Technical Service staff-1-800-366-8224

1.6.1 Repair Service

If your common equipment or an individual station should need repair after the warranty, you may return the defective equipment to Comdial. Comdial will, at their option, either repair the equipment or replace it with a remanufactured unit. There is a fixed charge for a repair. For information on repair charges, please call or write to the following address:

Comdial
P.O. Box 7266
Charlottesville, VA 22906-7266
Attention: Repair Department

Telephone Number: (800) 8774448 (Outside the United States, call (804) 978-2200)

When returning equipment for repair, pack it carefully to prevent damage. Any damages incurred during shipment will be the responsibility of the purchaser. Always ship the equipment freight or postage prepaid. The shipping address for reparations is as follows:

Comdial
1180 Seminole Trail
Charlottesville, VA 22901-2829
Attention: Repair Department

1.6.2 Finding The Fuses

Comdial has included a fuse in the common equipment to protect it against short circuit damage. The fuse is located on the left side of the common equipment cabinet. If you should need to replace a fuse, always replace the fuse with one of the same value and type; otherwise the equipment could be damaged. Refer to the following list when replacing a fuse:

- . T0308, T0308-INT—0.5A, 250V Slow-Blow
- . T0616, T0616-INT—1A, 250V Slow-Blow

2

Installing The Unisyn System

- 2.1 Using This Chapter 2- 1
- 2.2 Using The Right Tools 2-1
- 2.3 Installing The Cabinet 2-2**
 - 2.3.1 Mounting The Cabinet 2-2
- 2.4 Connecting The Power 2-4**
 - 2.4.1 Connecting AC Power 2-4
 - 2.4.2 Connecting A Battery Back-up 2-6
 - 2.4.3 Grounding The System 2-7
- 2.5 Connecting The Lines 2-8**
 - 2.5.1 Connecting The Line Jacks 2-10
 - 2.5.2 Protecting The Lines 2-11
- 2.6 Connecting The Stations 2-12**
 - 2.6.1 Understanding Station Connections 2-12
 - 2.6.2 Understanding Paired Ports Overload Protection 2-12
 - 2.6.3 Connecting The Station Cable Clips 2-12
 - 2.6.4 Connecting A Three Line, Eight Station
Common Equipment Cabinet 2-14
 - 2.6.5 Connecting A Six Line, Sixteen Station
Common Equipment Cabinet 2-15
- 2.7 Installing System Options 2-16**
 - 2.7.1 Understanding A Key System or Hybrid System 2- 16
 - 2.7.2 Connecting A Power Failure Station 2-17
 - 2.7.3 Connecting A Common Audible and Auxiliary Station Interface 2-18
 - 2.7.4 Connecting An External Paging Interface-Station PA Port 2-20
 - 2.7.5 Connecting An External Paging Interface-Line PA Port 2-21
 - 2.7.6 Connecting A Data Device 2-22
 - 2.7.7 Connecting A Music Interface 2-24

| | | | |
|-------------|--|-------------|------|
| 2.8 | Checking The System | 2-25 | |
| 2.8.1 | Checking The Installation and Wiring | 2-25 | |
| 2.8.2 | Checking The Wiring Resistance to Ground | 2-25 | - |
| 2.8.3 | Powering Up The System And Doing A General Check | 2-25 | |
| 2.8.4 | Checking The DC Voltages to The Station Ports | 2-25 | |
| 2.8.5 | Checking The Default Conditions | 2-26 | |
| 2.8.6 | Checking The Battery and Battery Charged DC Voltages | | 2-26 |
| | | | |
| 2.9 | Isolating System Failures | 2-27 | |
| 2.9.1 | Checking The System Status Indicator | 2-27 | |
| 2.9.2 | Doing A Station Self-test | 2-27 | |
| 2.9.3 | Checking Failure Indications | 2-27 | |
| | | | |
| 2.10 | Installer / User Information-FCC Rules | 2-28 | |

2

Installing The Unisyn System

2.1 Using Chapter Two

Chapter two provides you with a step-by-step procedure for installing the Unisyn System. We have presented the information in the *most common order for installation* and recommend that you follow the manual when installing. Always do a pre-installation check to make sure you have the necessary equipment and documentation.

Use the following list as a general guideline for installing the system. This list is by no means the only possible order for installation.

1. Unpack the system and read through this manual
2. Select the correct tools (2.2)
3. Install any option boards into the common equipment (see corresponding publication(s))
4. Mount the cabinet in a suitable location (2.3)
5. Mount the punch-down blocks and any auxiliary equipment
6. Mount the battery backup, but don't connect the battery (2.4.2)
7. Wire earth-ground to Common Equipment (2.4.3)
8. Wire the CO Lines to the Common Equipment (2.5)
9. Wire-station connector to Common Equipment (2.6)
10. Wire the stations to the station connector (2.6)
11. Connect auxiliary equipment-for example, music interface, or data device (2.7)
12. Inspect all wiring (2.8.1)
13. Check DC resistance of stations and lines to ground (2.8.2)
14. Power-up system (AC); check green LED (2.8.3)
15. Check DC voltages of stations (2.8.4)
16. Check Battery and Battery Charger DC voltages (2.8.5)
17. Connect Battery Backup (2.4.2)
18. Master clear the system (3.4)
19. Check default functionality (2.8.6)
20. Program the system

2.2 Using The Right Tools

As a minimum, the tools and hardware required for installation include the following:

- Fasteners-wood screws ($\frac{1}{4}$ x 1-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-for testing power source, CO Lines, and Stations

2.3 Installing The Cabinet

Before you mount the cabinet, consider the following list in the layout and connection of the telephone system. It might be helpful to put a check-mark in each box as you complete that task.

- Attach the common equipment cabinet vertically to any sturdy flat surface. You may vertically rack-mount the system.
- Locate the cabinet 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 5-15R).
- FCC requirements state that the distance between the common equipment and the TELCO/PBX jacks must be 25 feet or less. We recommend that you use a nominal distance of 7 feet.
- Make sure the mounting location is secure and dry and has adequate ventilation. The temperature range of the location must be within 32 to 122 degrees F (0 to 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, 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.
- If you choose to install battery backup, install the optional external batteries, cable assembly, common equipment, and the wiring connections in a dedicated equipment room-except for BBL02 (as defined in the *National Electric Code* published by The National Fire Protection Association, Quincy MA, 02269).

2.3.1 Mounting The Cabinet

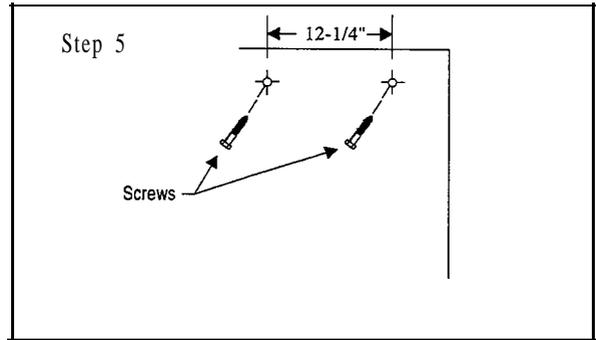
1. Unpack and carefully inspect all equipment for shipping damage. Notify the shipper immediately of any damages. Verify that the packages contain all parts and accessories needed for proper installation and operation.

2. If you use a backboard at the mounting location, attach it securely to provide a stable mounting surface for the equipment.

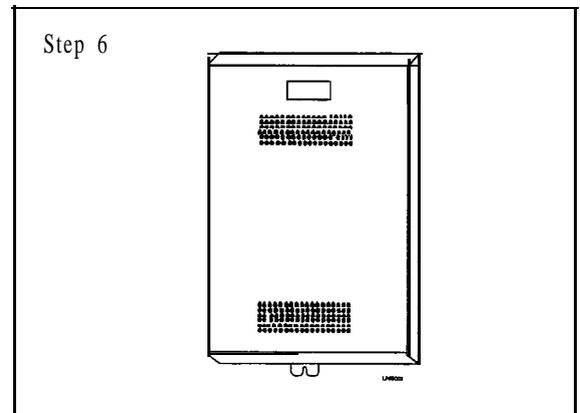
3. Mark the locations for the screws on the mounting surface (see step five for the mounting dimensions).

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.

5. 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 slide down on the screws to secure the mounting when the cabinet is hung on them.



7. Insert and tighten a third screw through the mounting tab located on the lower edge of the cabinet and into the mounting surface.

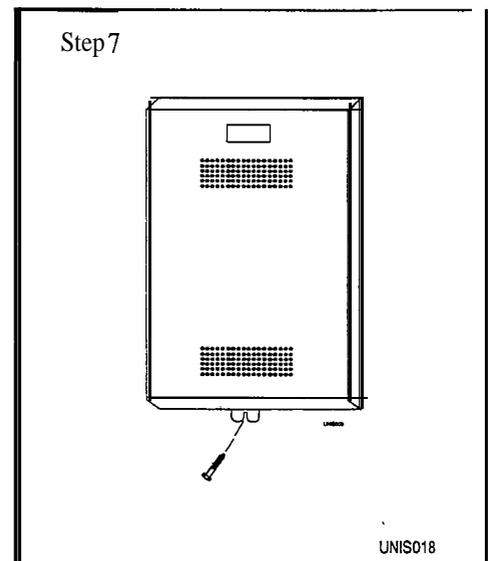


Figure 2.1 Mounting The Cabinet

2.4 Connecting The Power

2.4.1 Connecting AC Power

For a domestic system, use 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. For an international system (-INT), wire power supply according to input AC voltage (120V AC / 220V AC). International systems default wired for 220V AC (see figure 2. 3).

Be sure to adhere to the following when connecting the power:

- A plug-in power line surge protector should be installed between the power cord and the AC outlet (see 1.5 for surge protector specifications).
- Do not connect the AC power cord until you have checked the installation.
- To apply AC power, **connect** the power cord to the electrical outlet through the power-line surge protector.
- Do not attach power cord directly to the building surface.
- Read the sections on battery backup (2.4.2) and system grounding (2.4.3) before you apply power to the system.

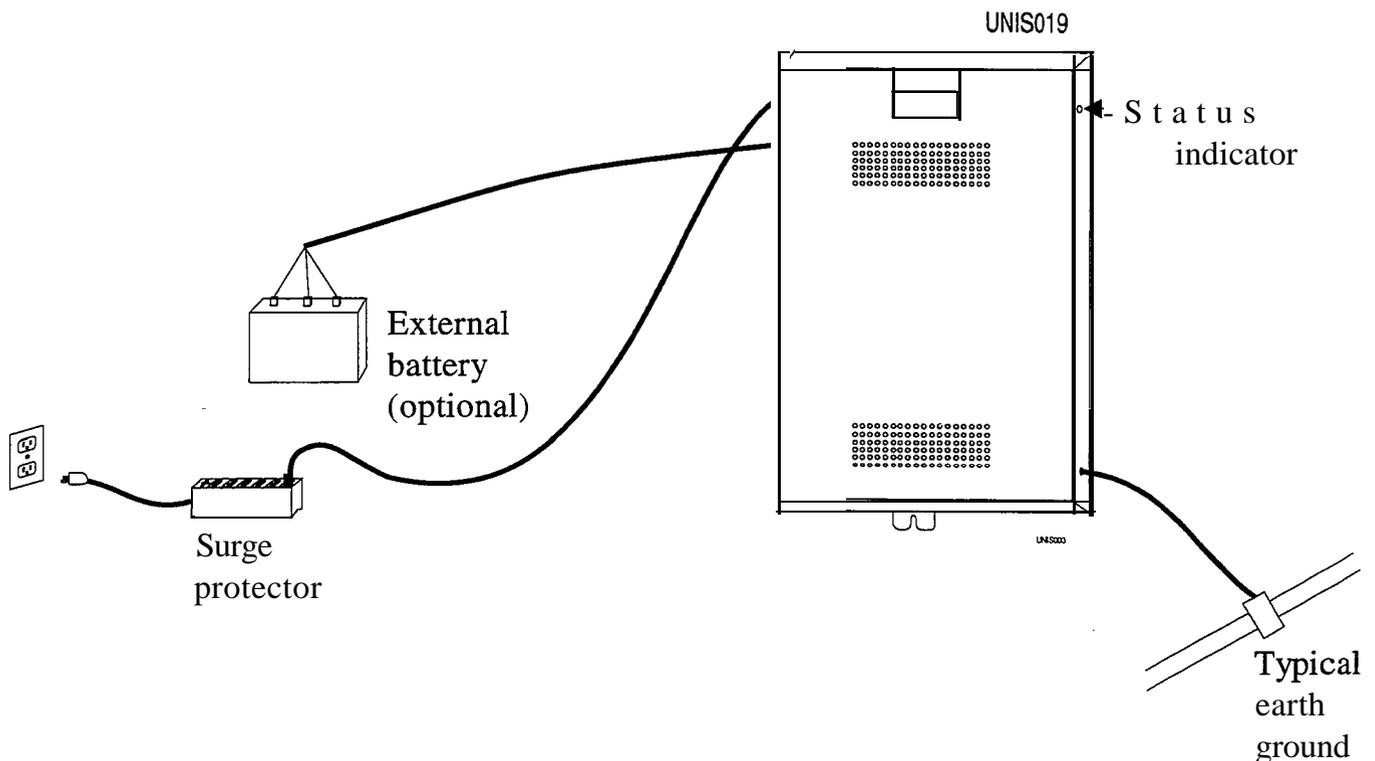
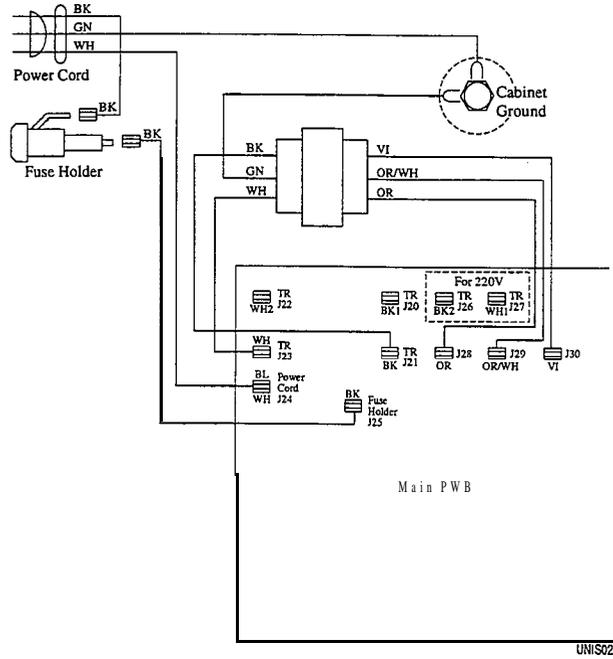
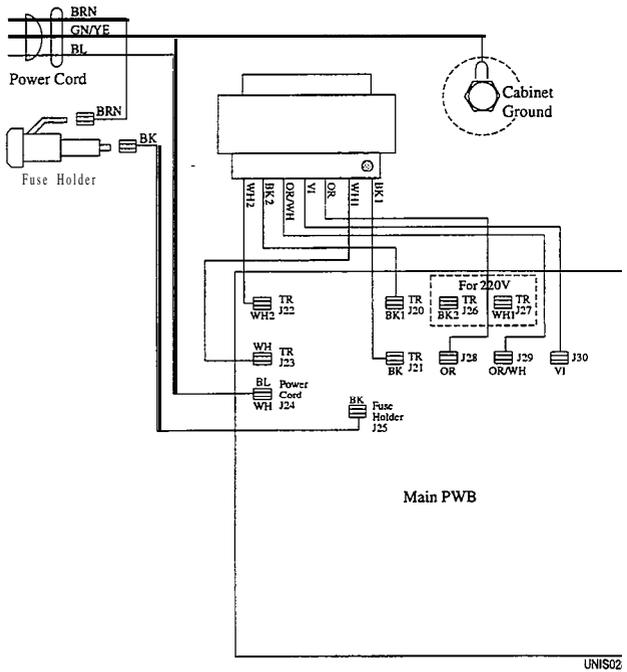


Figure 2.2 AC Power Connections and Grounding

T0308
T0616
Domestic 120 VAC



T0308-INT
T0616-INT
International 120 VAC



T0308-INT
T0616-INT
International 220 VAC

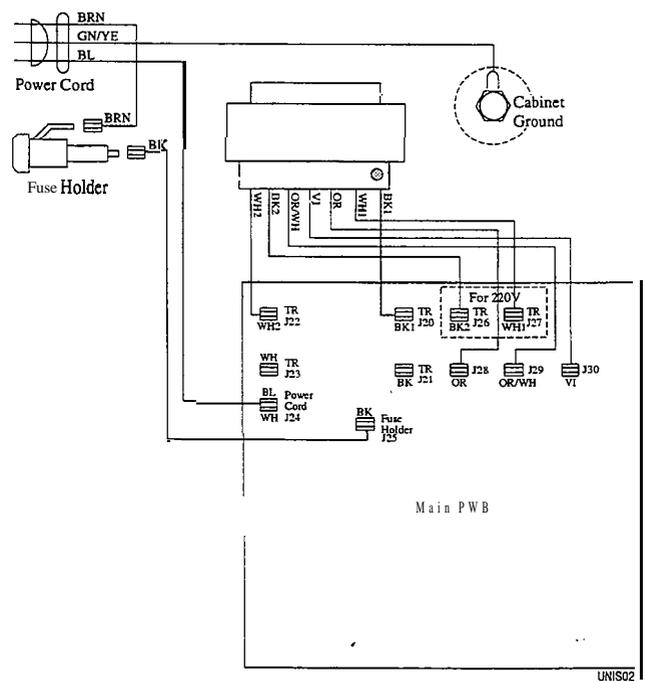


Figure 23 Domestic and International Power Connections

2.4.2 Connecting A Battery Back-Up

The common equipment provides an interface connector for the connection of an optional external battery assembly. This assembly is available separately as a kit.

CAUTION

Be sure that the AC power cord is connected to the electrical outlet before connecting the 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 Comdial model BBU01, BBU02, BBL02 external battery assembly provides a minimum of one hour of operation should the AC power to the system be interrupted. To calculate the actual minimum battery back-up time use the following equation:

$$T = \frac{(0.8) e}{1 + [(0.1) N] + [(0.04) M]}$$

T= Back up time in hours for multiline telephones

e = Ampere-hour capacity of batteries (BBU01, e = 6.5 Ampere hours; BBU02, BBL02, e = 15 Ampere hours)

N=Total Number of Multiline Stations

M=Total Number of IST Stations

Maximum Configuration Examples

The following two equations demonstrate how to calculate the battery backup time for a fully loaded system.

BBU01

$$T = \frac{(0.8) 6.5}{1 + [(0.1) 16] + [(0.04) 16]}$$

$$T = \frac{5.2}{3.24} \quad (1.6 \text{ hours of backup time})$$

BBU02, BBL02

$$T = \frac{(0.8) 15}{1 + [(0.1) 16] + [(0.04) 16]}$$

$$T = \frac{12}{3.24} \quad (3.7 \text{ hours of backup time})$$

The BBU02 external battery assembly may include batteries from either of the following suppliers:

- Model PS-12150 from Power-Sonic Corporation, Redwood City CA, 94032.
- Model PE12V 15 from GS PORTALAC, City Of Industry CA, 9 1748

During AC operation, the common equipment provides recharging current to maintain the voltage potential of the external battery assembly at an operational level.

NOTE: The optional external battery assembly requires approximately ten (10) hours to completely recharge to full potential after it has been completely discharged and, in some cases, when initially installed.

CAUTION

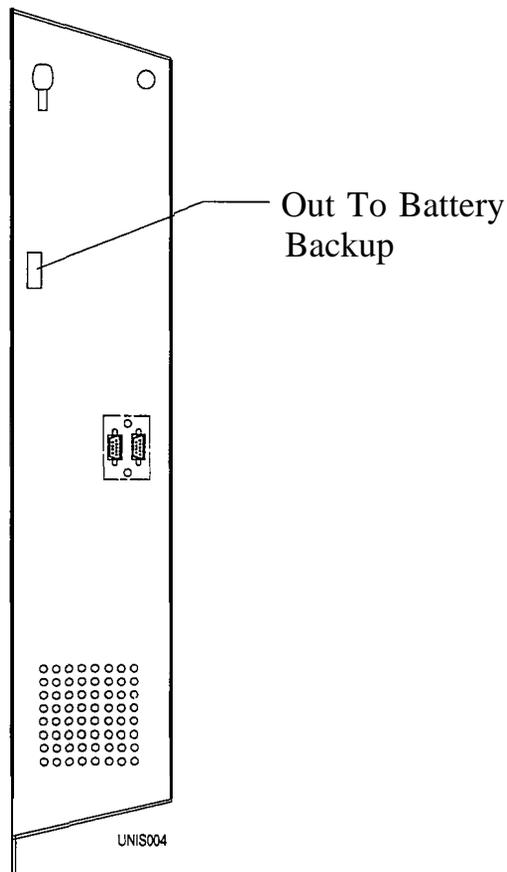
Before installing a battery backup, check that the following voltage measurements are all accurate:

- Correct voltage of battery charger circuit without the batteries connected is as follows: between + 13.6V DC and +13.8V DC for the positive battery and between -13.6V DC and -13.8V DC for the negative battery (contact Comdial if the voltage is higher or lower),
- Nominal voltage of each of the batteries is 12V DC,
- Each fully charged and disconnected battery should not exceed a voltage of 13.1V DC. A completely discharged battery may check as low as 10V DC,

When the battery backup is installed and the system is powered, check the following:

- Each fully charged battery connected to the system should have a voltage of less than or equal to 13.8V DC (if the value is greater than 13.8V DC, contact Comdial).

NOTE: The typical battery service check is every three months.



2.4.3 Grounding The System

The common equipment cabinet has internal secondary surge protection on all line ports. In order for this protection to be effective, you *must* connect the cabinet to a reliable earth ground such as a metal cold water pipe or a building frame ground. The grounding wire *must be* #10 or #12 insulated, solid copper and separate from the three-wire AC line cord. The common equipment cabinet has a ground stud for this **purpose**. In addition, this ground also serves as an "RFI" ground that reduces the possible effects of radio frequency interference.

2.5 Connecting The Lines

Once you have mounted the common equipment, it is time to begin connecting the telephone lines.

Connect the common equipment telephone line jacks to a Type 66M-xx connector block and then connect that block to the telephone company's demarcation point. Individual 4-position modular jacks may be used instead of the type 66M-xx connector. We recommend the use of an external lightning / transient protection between the common equipment and the telephone company line connections (see Section 2.5.2).

The line connections for the common equipment cabinet are standard modular plug/jack connections. Each modular jack provides termination for two lines (see figure 2.4). Use twisted-pair wiring for the line cord that you route between the outside line termination and the common equipment termination. Table 2.1 shows the line connection details for all four of the common equipment base units. Figures 2.4 and 25 illustrate typical line connections.

CAUTION

Refer to the following list when installing any telephone lines:

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

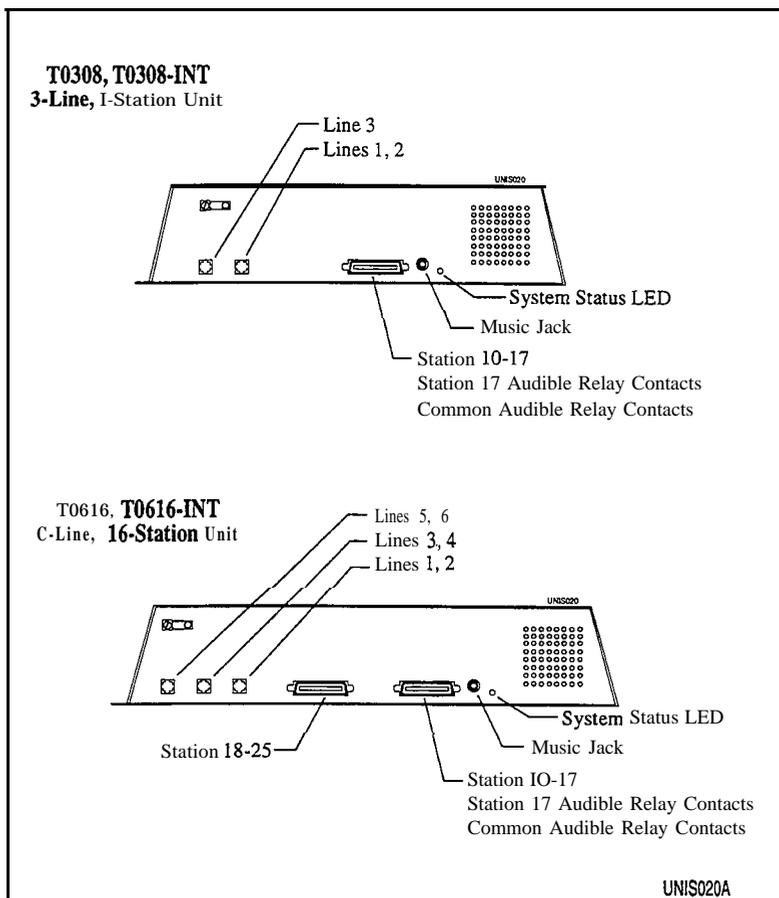


Figure 2.4 Typical Common Equipment Line Connections

T0616, T0616-INT

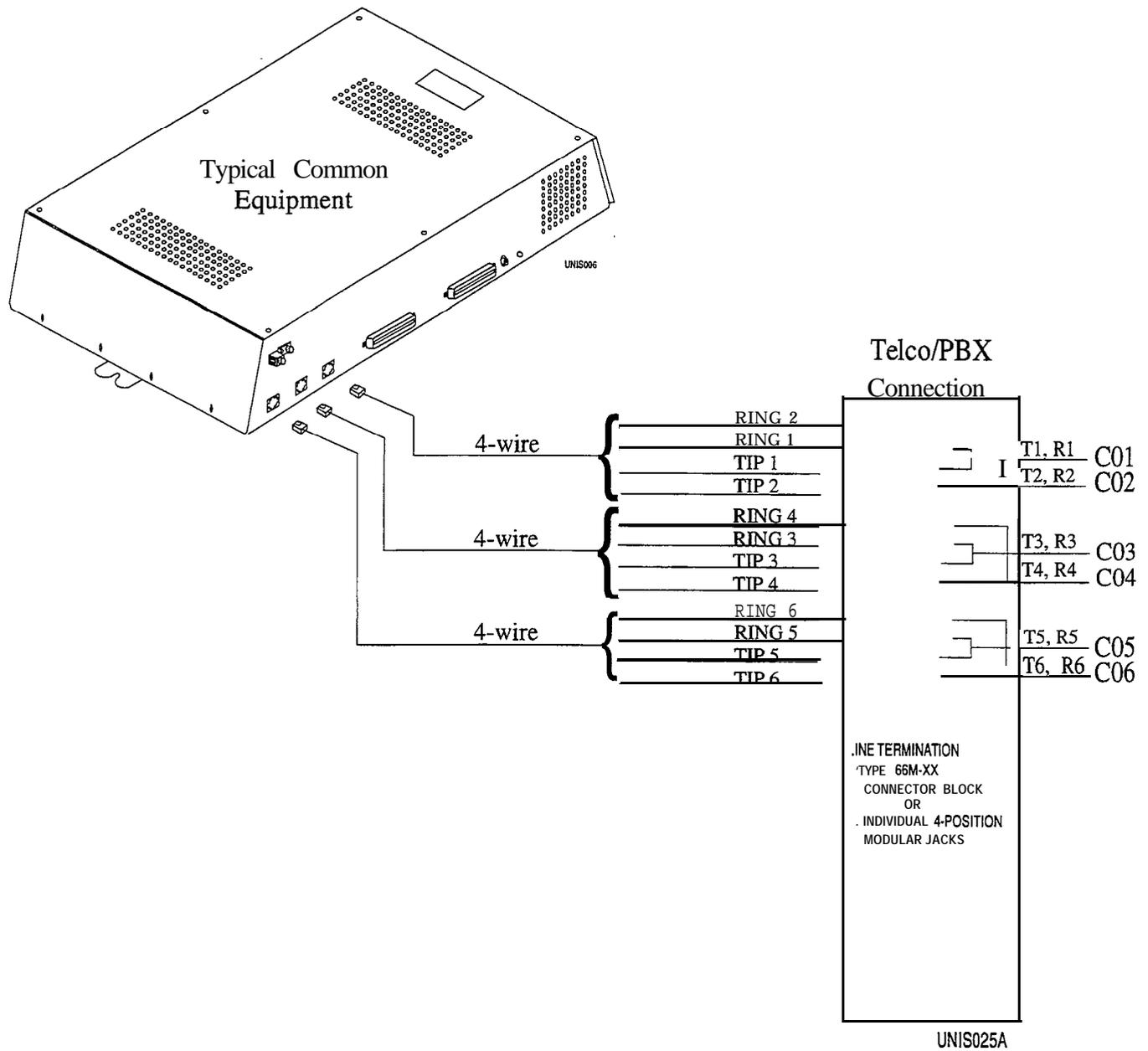


Figure 2.5 Typical Common Equipment to CO Line Connections

2.5.1 Connecting The Line Jacks

Table 2.1, below, shows the connections for each line on each common equipment cabinet.

Table 2.1 **Line Connections**

| Common Equipment | Jack | Pin Number | Connection | Telephone Number |
|--|------|------------|---------------|------------------|
| T0308, T0308-INT T061 6, T061 6-INT * T061 6, T061 6-INT Only | 1 | 1 | No Connection | |
| | | 2 | Line 2 Tip | |
| | | 3 | Line 1 Tip | |
| | | 4 | Line 1 Ring | |
| | | 5 | Line 2 Ring | |
| | | 6 | No Connection | |
| | 2 | 1 | No Connection | |
| | | 2 | Line 4 Tip * | |
| | | 3 | Line 3 Tip | |
| | | 4 | Line 3 Ring | |
| | | 5 | Line 4 Ring * | |
| | | 6 | No Connection | |
| T0616, T0616-INT -Continued- | 3 | 1 | No Connection | |
| | | 2 | Line 6 Tip | |
| | | 3 | Line 5 Tip | |
| | | 4 | Line 5 Ring | |
| | | 5 | Line 6 Ring | |
| | | 6 | No Connection | |

2.5.2 Protecting The Lines

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 this supplied surge protection will also provide some protection to the common equipment, it should not be relied upon for total protection. To help ensure that external over-voltage surges do not damage the system, we recommend that you install and properly ground gas discharge tubes, or similar primary protection devices, on all lines.

2.6 Connecting The Stations

Usually, the connections you make between the common equipment and the stations are via type **66M-xx** connector blocks that are cable connected to the common equipment XI-pin male connector. The maximum total distance allowed from the common equipment to the stations is 1000 feet for multiline telephones and 1500 feet for industry standard telephones using #24 gauge, twisted-pair cable.

If spare conductors exist in the cables that are run between the **66M-xx** connector blocks and the station jacks, it is a good practice to connect them to earth ground to help prevent them from inducing radio frequency and/or **AC** interference into the system.

CAUTION

The polarity between the individual wires in a particular voice or data pair is not critical; however, do not connect the voice circuits to the data circuits, and do not connect wires from adjacent stations together.

Tables 2.2-2.3 show the station connection details for all four common equipment base units. **Figure 2.6** illustrates typical station connections.

2.6.1 Understanding Station Connections

Multiline proprietary stations require connection to both the voice and data pair of a station port (for example, station 10, 11). If you have installed **TXIST** card(s), you can also connect an **IST** device to the multiline station port (see Section 1.4.3). Connect an **IST** device to the voice pair of the station port only.

- The 6-line, l&station base unit (T0616, T0616-INT) has ports 10 through 25
- The 3-line, g-station base unit (T0308, T0308-INT) has ports 10 through 17

2.6.2 Understanding Paired Ports Overload Protection

Station ports are paired for overload protection. Because of this power pairing, a problem with station ten may actually manifest in station 11—keep this in mind when you are troubleshooting. The station ports are paired as follows:

| Overload Pairing |
|------------------|
| 10-11 |
| 12-13 |
| 14-15 |
| 16-17 |
| 18-19 |
| 20-21 |
| 22-23 |
| 24-25 |

2.6.3 Connecting The Station Cable Clips

Each cabinet-mounted **50-pin** male connector has a retaining clip, which secures the mated connection. The clip secures the connection by snapping into a slot on the cable-mounted connector. You must pull back the retaining clip to unsnap it before you can separate the connectors.

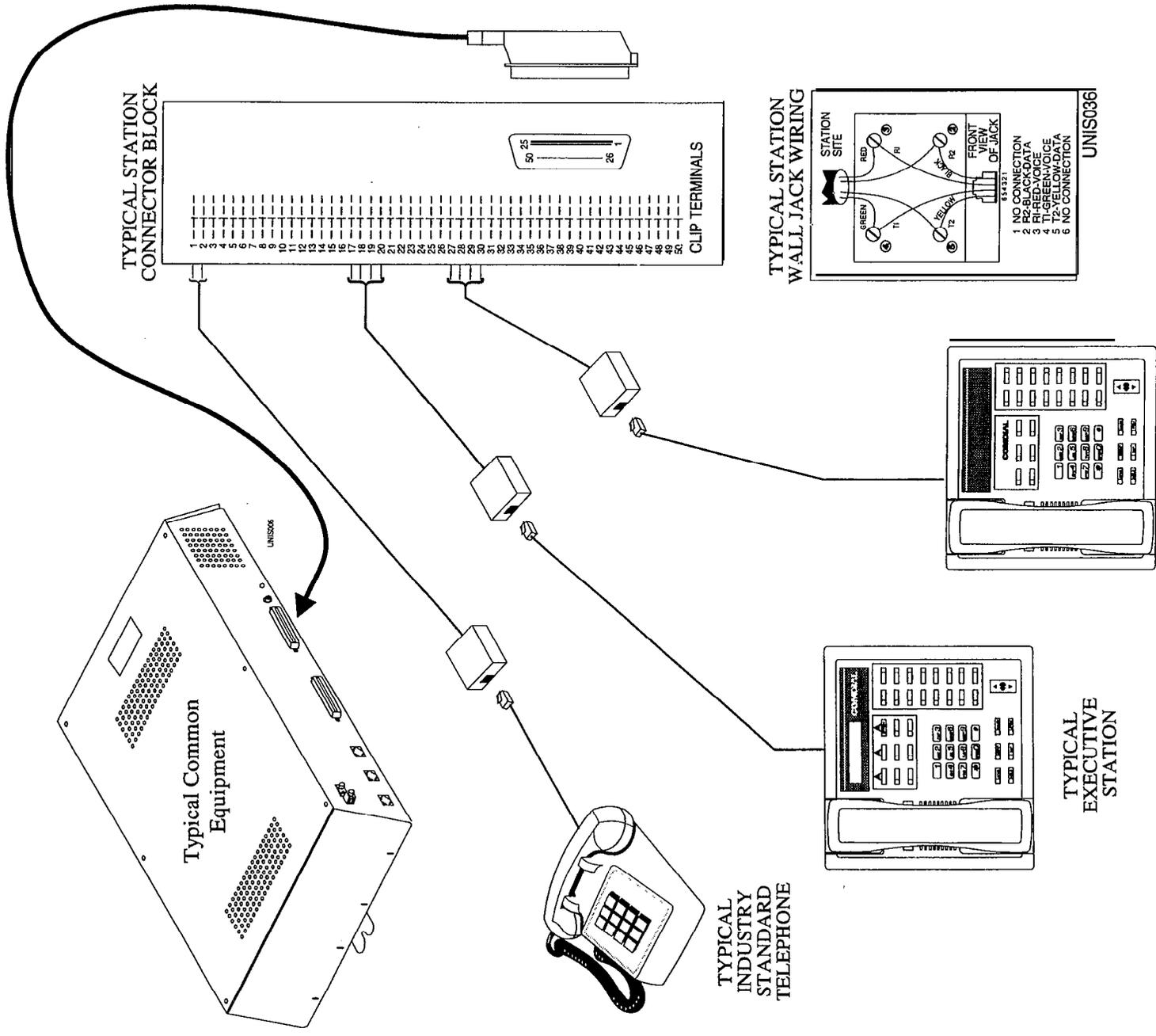


Figure 2.6 Typical Station Connections

2.6.4 Connecting A Three Line, Eight Station Common Equipment (T0308, T0308-INT)

Table 2.2, below, shows the color coded connections on a type 66-xx connector block for a three line, eight station system (T0308, T0308-INT).

Table 2.2 Three Line, Eight Station Common Equipment Connections

| 25-PAIR CABLE CONNECTIONS | | | 4-WIRE CONNECTIONS | | J-1 CONNECTIONS | | |
|---------------------------|------|---------|--------------------|-------|-----------------|------|----------|
| WIRE COLOR | PAIR | PIN NO. | CLIP TERM. | PAIR | WIRE COLOR | STA. | LOCATION |
| WHITE-BLUE | 1 | 26 | 1 | VOICE | GREEN | 10 | |
| BLUE-WHITE | | 1 | 2 | | RED | | |
| WHITE-ORANGE | 2 | 27 | 3 | DATA | YELLOW | | |
| ORANGE-WHITE | | 2 | 4 | | BLACK | | |
| WHITE-GREEN | 3 | 28 | 5 | VOICE | GREEN | 11 | |
| GREEN-WHITE | | 3 | 6 | | RED | | |
| WHITE-BROWN | 4 | 29 | 7 | DATA | YELLOW | | |
| BROWN-WHITE | | 4 | 8 | | BLACK | | |
| WHITE-SLATE | 5 | 30 | 9 | VOICE | GREEN | 12 | |
| SLATE-WHITE | | 5 | 10 | | RED | | |
| RED-BLUE | 6 | 31 | 11 | DATA | YELLOW | | |
| BLUE-RED | | 6 | 12 | | BLACK | | |
| RED-ORANGE | 7 | 32 | 13 | VOICE | GREEN | 13 | |
| ORANGE-RED | | 7 | 14 | | RED | | |
| RED-GREEN | 8 | 33 | 15 | DATA | YELLOW | | |
| GREEN-RED | | 8 | 16 | | BLACK | | |
| RED-BROWN | 9 | 34 | 17 | VOICE | GREEN | 14 | |
| BROWN-RED | | 9 | 18 | | RED | | |
| RED-SLATE | 10 | 35 | 19 | DATA | YELLOW | | |
| SLATE-RED | | 10 | 20 | | BLACK | | |
| BLACK-BLUE | 11 | 36 | 21 | VOICE | GREEN | 15 | |
| BLUE-BLACK | | 11 | 22 | | RED | | |
| BLACK-ORANGE | 12 | 37 | 23 | DATA | YELLOW | | |
| ORANGE-BLACK | | 12 | 24 | | BLACK | | |
| BLACK-GREEN | 13 | 38 | 25 | VOICE | GREEN | 16 | |
| GREEN-BLACK | | 13 | 26 | | RED | | |
| BLACK-BROWN | 14 | 39 | 27 | DATA | YELLOW | | |
| BROWN-BLACK | | 14 | 28 | | BLACK | | |
| BLACK-SLATE | 15 | 40 | 29 | VOICE | GREEN | 17 | |
| SLATE-BLACK | | 15 | 30 | | RED | | |
| YELLOW-BLUE | 16 | 41 | 31 | DATA | YELLOW | | |
| BLUE-YELLOW | | 16 | 32 | | BLACK | | |
| 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 | | 19 | 38 | | | | |
| YELLOW-SLATE | 20 | 45 | 39 | | | | |
| SLATE-YELLOW | | 20 | 40 | | | | |
| VIOLET-BLUE | 21 | 46 | 41 | | | | |
| BLUE-VIOLET | | 21 | 42 | | | | |
| VIOLET-ORANGE | 22 | 47 | 43 | | | | |
| ORANGE-VIOLET | | 22 | 44 | | | | |
| VIOLET-GREEN | 23 | 48 | 45 | | | | |
| GREEN-VIOLET | | 23 | 46 | | | | |
| VIOLET-BROWN | 24 | 49 | 47 | | YELLOW | CA | COMMON |
| BROWN-VIOLET | | 24 | 48 | | BLACK | | |
| VIOLET-SLATE | 25 | 50 | 49 | | GREEN | STA. | STA. 17 |
| SLATE-VIOLET | | 25 | 50 | | RED | | |

UNIS03:

2.6.5 Connecting A Six Line, Sixteen Station Common Equipment (T0616, T0616-INT)

Table 2.3, below, shows the color coded connections on two type 66-xx connector blocks for a six line, sixteen station (T0616, T0616-INT).

Table 23 Six Line, Sixteen Station Common Equipment Connections

| 25-PAIR CABLE CONNECTIONS | | 4-WIRE CONNECTIONS | | J-1 CONNECTIONS | | J-2 CONNECTIONS | | | |
|---------------------------|------|--------------------|------------|-----------------|------------|-----------------|----------|------|----------|
| WIRE COLOR | PAIR | PIN NO. | CLIP TERM. | PAIR | WIRE COLOR | STA. | LOCATION | STA. | LOCATION |
| WHITE-BLUE | 1 | 26 | 1 | VOICE | GREEN | 10 | | 18 | |
| BLUE-WHITE | | 1 | 2 | | RED | | | | |
| WHITE-ORANGE | 2 | 27 | 3 | DATA | YELLOW | | | 1 | - |
| ORANGE-WHITE | | 2 | 4 | | BLACK | | | | |
| WHITE-GREEN | 3 | 28 | 5 | VOICE | GREEN | 11 | | 19 | |
| GREEN-WHITE | | 3 | 6 | | RED | | | | |
| WHITE-BROWN | 4 | 29 | 7 | DATA | YELLOW | | | | |
| BROWN-WHITE | | 4 | a | | BLACK | | | | |
| WHITE-SLATE | 5 | 30 | 9 | VOICE | GREEN | 12 | | 20 | |
| SLATE-WHITE | | 5 | 10 | | RED | | | | |
| RED-BLUE | 6 | 31 | 11 | DATA | YELLOW | | | | |
| BLUE-RED | | 6 | 12 | | BLACK | | | | |
| RED-ORANGE | 7 | 32 | 13 | VOICE | GREEN | 13 | | 21 | |
| ORANGE-RED | | 7 | 14 | | RED | | | | |
| RED-GREEN | 8 | 33 | 15 | DATA | YELLOW | | | | |
| GREEN-RED | | 8 | 16 | | BLACK | | | | |
| RED-BROWN | 9 | 34 | 17 | VOICE | GREEN | 14 | | 22 | |
| BROWN-RED | | 9 | 18 | | RED | | | | |
| RED-SLATE | 10 | 35 | 19 | DATA | YELLOW | | | | |
| SLATE-RED | | 10 | 20 | | BLACK | | | | |
| BLACK-BLUE | 11 | 36 | 21 | VOICE | GREEN | 15 | | 23 | |
| BLUE-BLACK | | 11 | 22 | | RED | | | | |
| BLACK-ORANGE | 12 | 37 | 23 | DATA | YELLOW | | | | |
| ORANGE-BLACK | | 12 | 24 | | BLACK | | | | |
| BLACK-GREEN | 13 | 38 | 25 | VOICE | GREEN | 16 | | 24 | |
| GREEN-BLACK | | 13 | 26 | | RED | | | | |
| BLACK-BROWN | 14 | 39 | 27 | DATA | YELLOW | | | | |
| BROWN-BLACK | | 14 | 28 | | BLACK | | | | |
| BLACK-SLATE | 15 | 40 | 29 | VOICE | GREEN | 17 | | 25 | |
| SLATE-BLACK | | 15 | 30 | | RED | | | | |
| YELLOW-BLUE | 16 | 41 | 31 | DATA | YELLOW | | | | |
| BLUE-YELLOW | | 16 | 32 | | CK | | | | |
| 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 | | 19 | 38 | | | | | | |
| YELLOW-SLATE | 20 | 45 | 39 | | | | | | |
| SLATE-YELLOW | | 20 | 40 | | | | | | |
| VIOLET-BLUE | 21 | 46 | 41 | | | | | | |
| BLUE-VIOLET | | 21 | 42 | | | | | | |
| VIOLET-ORANGE | 22 | 47 | 43 | | | | | | |
| ORANGE-VIOLET | | 22 | 44 | | | | | | |
| VIOLET-GREEN | 23 | 40 | 45 | | | | | | |
| GREEN-VIOLET | | 23 | 46 | | | | | | |
| VIOLET-BROWN | 24 | 49 | 47 | | YELLOW | CA | | | |
| BROWN-VIOLET | | 24 | 48 | | BLACK | | | | |
| VIOLET-SLATE | 25 | 50 | 49 | | GREEN | STA. 17 | | | |
| SLATE-VIOLET | | 25 | 50 | | RED | | | | |

UNISO:

2.7 Ins falling Sys tem Options

The Unisyn system offers several options that are not part of the regular installation of the common equipment. You may consider an option board or a power failure station connection, for example, as a non-mandatory installation option. The following is a list of the non-mandatory options:

- Power Failure Station(s)--Addition power fail stations are available through the use of a **TXIST Board**
- Common Audible Interface
- Auxiliary Station Interface
- External Paging Interface-Station PA Port
- External Paging Interface-Line Port
- Data Device (Through the TX232 Module)
- Music Interface

2.7.1 Understanding a Key System /Hybrid System

The Unisyn telephone system automatically assumes the hybrid mode whenever a programmer assigns lines to line groups (see Section 3.6.5). The hybrid system may have a higher monthly tariff from the telephone company, so the FCC requires that the installer report the equipment category designation number (**KF** for key system, **MF** for hybrid system) to the telephone company at the time of installation.

2.7.2 Connecting A Power Failure Station

The base system provides a power-fail circuit that connects the voice pair (Tip and Ring) of certain station port(s) to the line port(s) in the event of a commercial AC power failure. You can connect an industry-standard, single-line telephone, such as a model 2500-xx, to the appropriate station ports and use those station(s) to provide communications capability until the AC power to the system is restored. Connect only the voice pair (T and R) to the IST telephone. Each TXIST board provides an additional power-fail relay (see IMI89-133). If you have installed TXIST board(s), the regular Station IST device can also serve as the power-fail IST device for the appropriate station port. The power failure is detailed in Figure 2.7, below.

NOTE: When power is interrupted or restored, the powerfail relays will interrupt calls in progress.

Use the following chart for power-fail reference.

| System | Configuration | Power Fail Connection |
|--------------------|-----------------|----------------------------------|
| TO308 T0308-INT | Base System | Station 10-CO 1 |
| | TXIST in Slot 1 | Station 13-CO 2 |
| | TXIST in Slot 2 | Station 17-CO 3 |
| TO616 T0616-INT | Base System | Station 10-CO 1, Station 11-CO 2 |
| | TXIST in Slot 1 | Station 13-CO 3 |
| | TXIST in Slot 2 | Station 17-CO 4 |
| | TXIST in Slot 3 | Station 21-CO 5 |
| | TXIST in Slot 4 | Station 25-CO 6 |

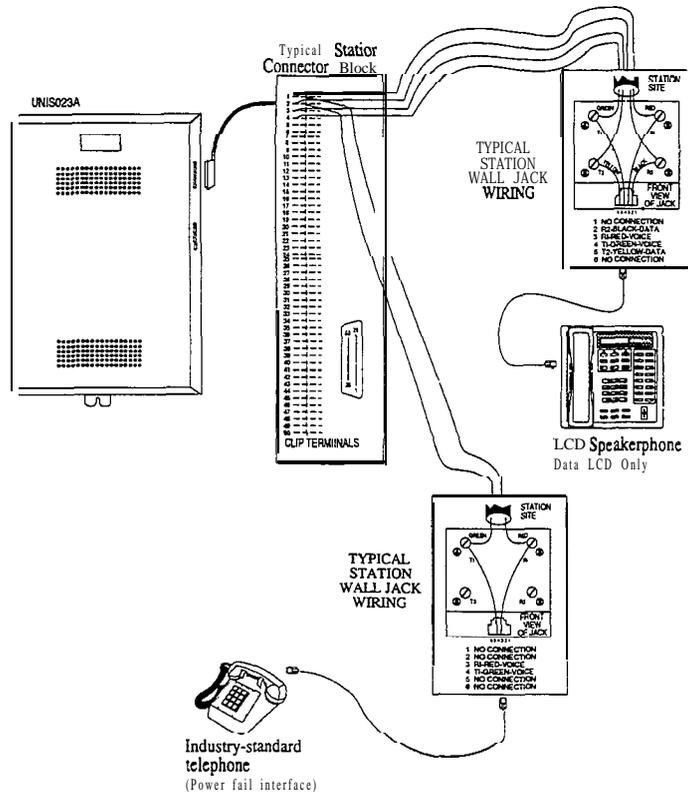


Figure 2.7 Typical Power Failure Station Connection

2.7.3 Connecting A Common Audible And Auxiliary Station Interface

You can connect an external audible ringer, such as a loud bell or flashing light, that will operate when the system receives an outside call. The contact points for this operation are dry, meaning that the external ringer or light must have its own power supply.

There are two different ways to install an external ring indicator device. The two sets of relay closures with dry contact points are as follows:

- One set (common audible) provides a dry-contact relay closure whenever any *of the* outside *lines*, connected to the common equipment, ring.
- The other set (station 17 audible) provides a dry-contact relay closure whenever *station 17* rings. You must program the lines that you want to ring on station 17 (station 17 defaults to all lines, and you must remove the lines that you do not want to ring the external ringer).

These contact closures track the ringing pattern in both cases. The contacts are closed during the **ringing** period and are open during the silent period.

CAUTION

Do not exceed a load of 1 amp at 24 volts (0.5 amp at 48 volts) on these control terminals. If the load requirements exceed this limit, connect the load through an external she relay. Do not connect these control terminals directly to the 117vac line.

Refer to the section 2.7.5 for a discussion on using these terminals in an alternate paging function.

Contact closure connections are located as follows.

- Clip terminals 47-48 on the station connector jack J-1 for Common Audible
- Clip terminals 49-50 on the station connector jack J-1 for Station 17

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

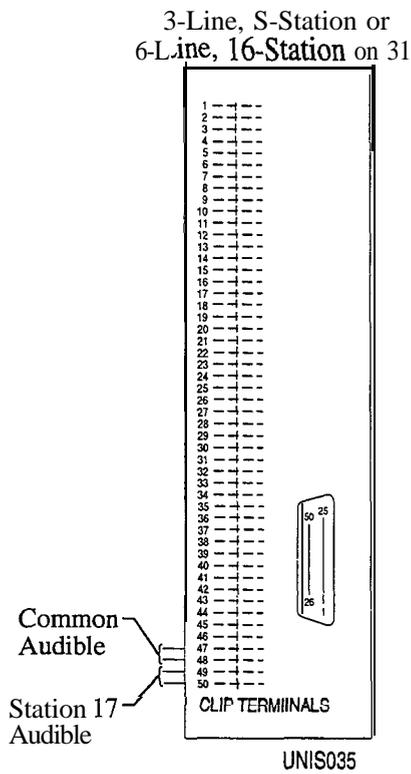
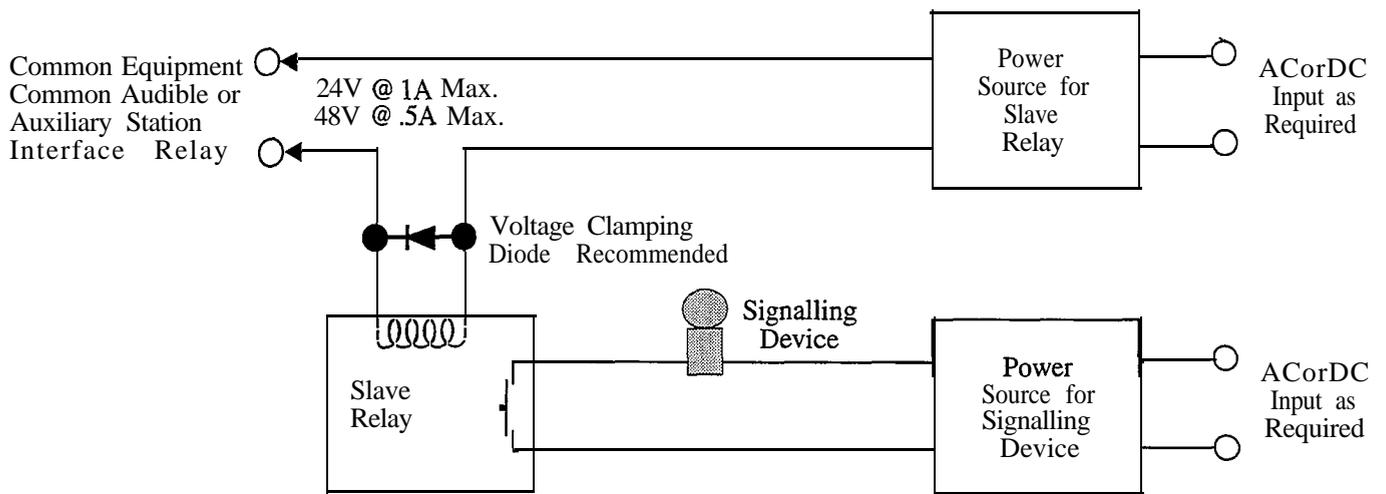


Figure 2.8 Common Audible Auxiliary Interface

2.7.4 Connecting An External Paging In terface—Sta tion PA Port

You can program any station port, except for station 10, as a PA port. The station port that you choose then couples a station voice path to an external paging amplifier. You can configure the external paging amplifier so that an external music source plays music over the PA. When someone wants to voice-over the music, the station 17 contact disconnects the music source and enables the voice connection. You must use station 17; no other station port allows voice over. Refer to Chapter 3, section 3.7.19 for more information on programming a PA port. Before you configure a port as a PA port, consider the following:

- The audio input connection of the paging amplifier must be isolated with a 600 ohm to 600 ohm audio matching transformer. Terminate the audio input of the paging amplifier with a 600 ohm (nominal value) resistor.
- If you program station port 17 as a PA port, the Auxiliary Station Interface (station 17 audible) contact points are automatically re-configured as PA enable terminals. The contact closure now occurs when a user dials the code for PA station 17. The normal auxiliary station interface function, as discussed in section 2.7.3, is disabled as long as station 17 is a PA station.

Connect the audio input of an external paging amplifier to the audio pair of the desired station port (refer to Tables 2-2 through 2-3 for station connection details). If the paging amplifier needs to be enabled in order to function, connect the audio input to station port 17 and the enabling leads according to the following discussion and as illustrated below.

- 6-line, 16-station (T0616, T0616-INT) and 3-line, 8-station (T0308, T0308-INT) base unit: connectors 49-50 on terminal clip J1

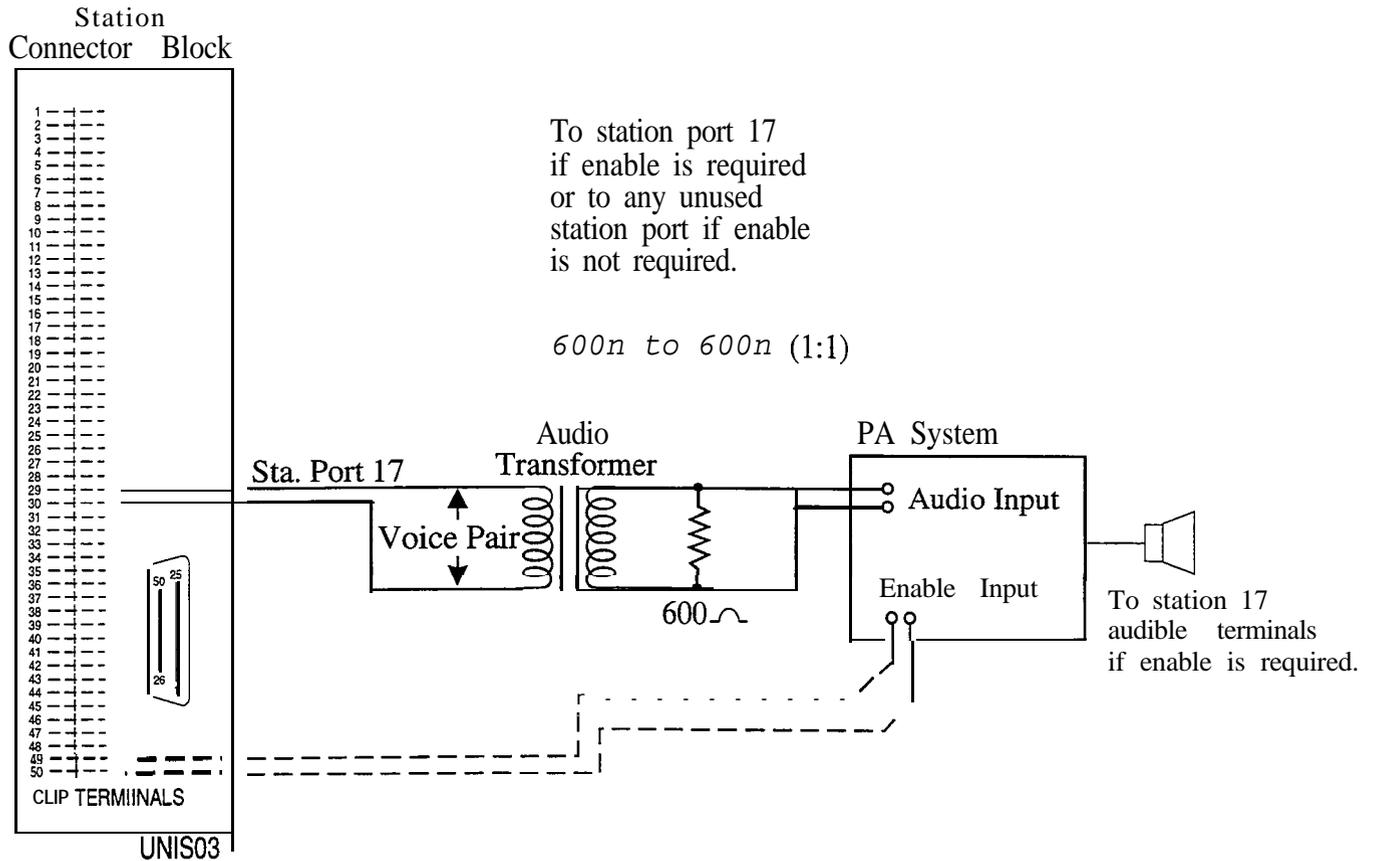


Figure 2.9 Typical PA Connection—Station Port

2.7.5 Connecting An External Paging Interface-Line Port

You can program a line port to be an “auxiliary port” external paging device. As an external paging port, the line port can be used to couple a station voice path to an external paging device. Any station with that line appearance can use the PA port simply by selecting the line. Users can dial DTMF tones or dial pulses to the external paging device through the Auxiliary port. If users need to be able to voice-over PA music, you must connect the external paging device to a station port as described in Section 2.7.4. For more information, see Chapter 3, Section 3.6.7.

When configuring a line port as a PA port, consider the following:

- The audio input of an external paging amplifier can be connected to the tip and ring leads of the Auxiliary port as shown below.
- You can use DTMF tone select, zone-paging amplifier if desired. If you install this type of amplifier, users must dial the zone-select code after pressing the paging port line select button.

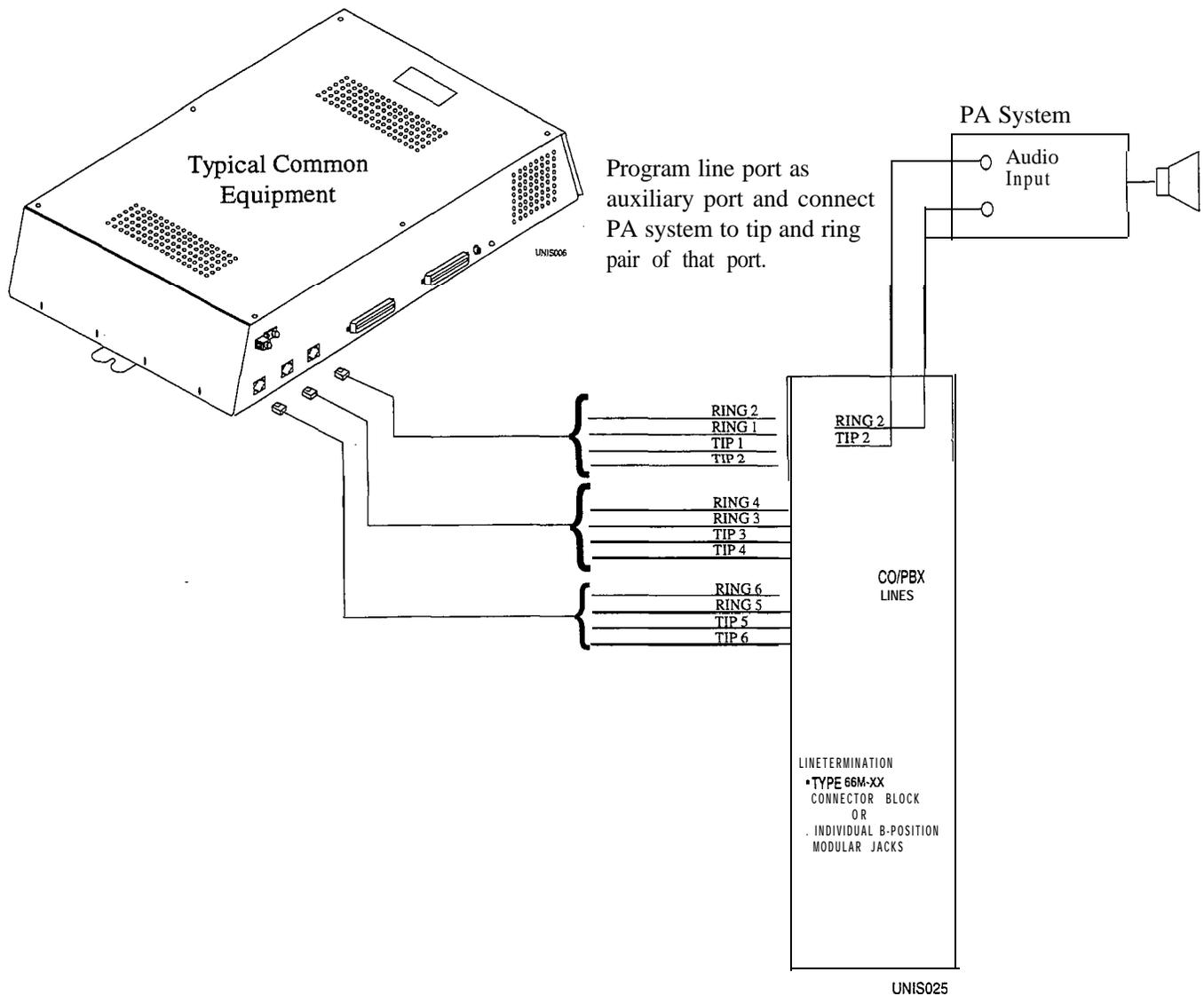


Figure 2.10 Typical PA Connection-Line Port

2.7.6 Connecting A Data Device

With the TX232 module, the system provides two RS232 Data Ports for use in connecting a data printer, personal computer (PC), or modem for remote upload / download. Before you connect anything to a data port, consider all of the following:

- When you use a personal computer to perform class of service programming, connect it to RS232 Data Port A (future feature).
- When you use a serial data printer for SMDR (and Caller ID, future), connect it to the RS232 Data Port B.
- The distance between the data device and the common equipment can be up to 500 feet in a quiet electrical environment. Shielded cable may be required at some sites for long runs. For longer distances, a limited distance modem must be used to relay the data communications between the common equipment and the data device.

Wiring The Data Device

NOTE: You can use a commercially available straight through 9-pin cable to connect the TX232 to a standard PC DB9 serial port.

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:

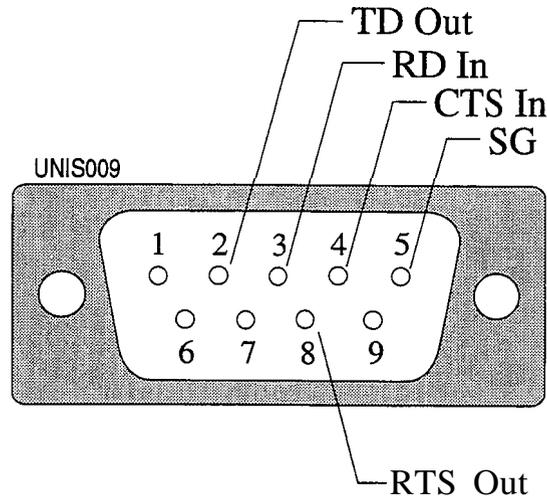
- Wire the common equipment RD (data from device to common equipment) connection to the device TD (transmit data) connection.
- Wire the common equipment TD (data to device from common equipment) connection to the device RD (receive data) connection.
- Wire the common equipment SG (signal ground) connection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

Configuring The Data Device

The default data format is as follows. **Configure** the data device to match this data format for initial operation.

- 8-bit data with 1 stop bit and no parity
- Baud rate of 1200 baud



Typical DB 9 Connection

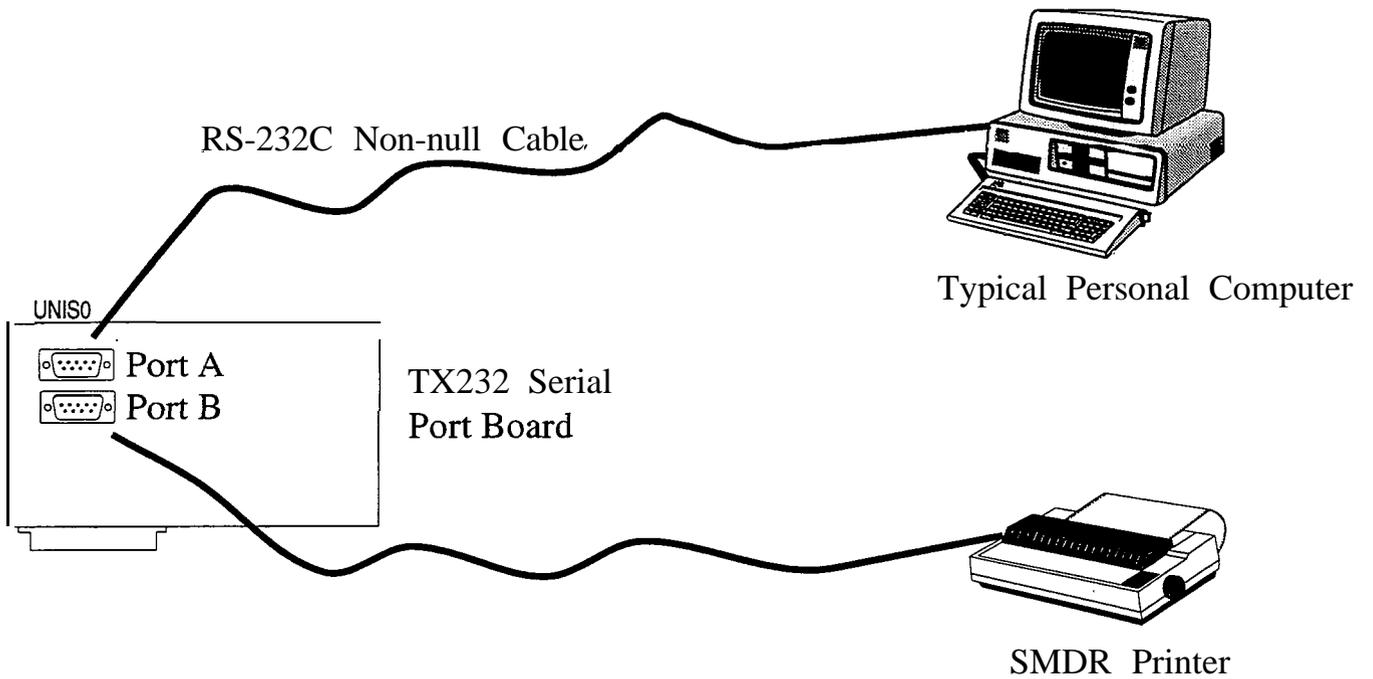
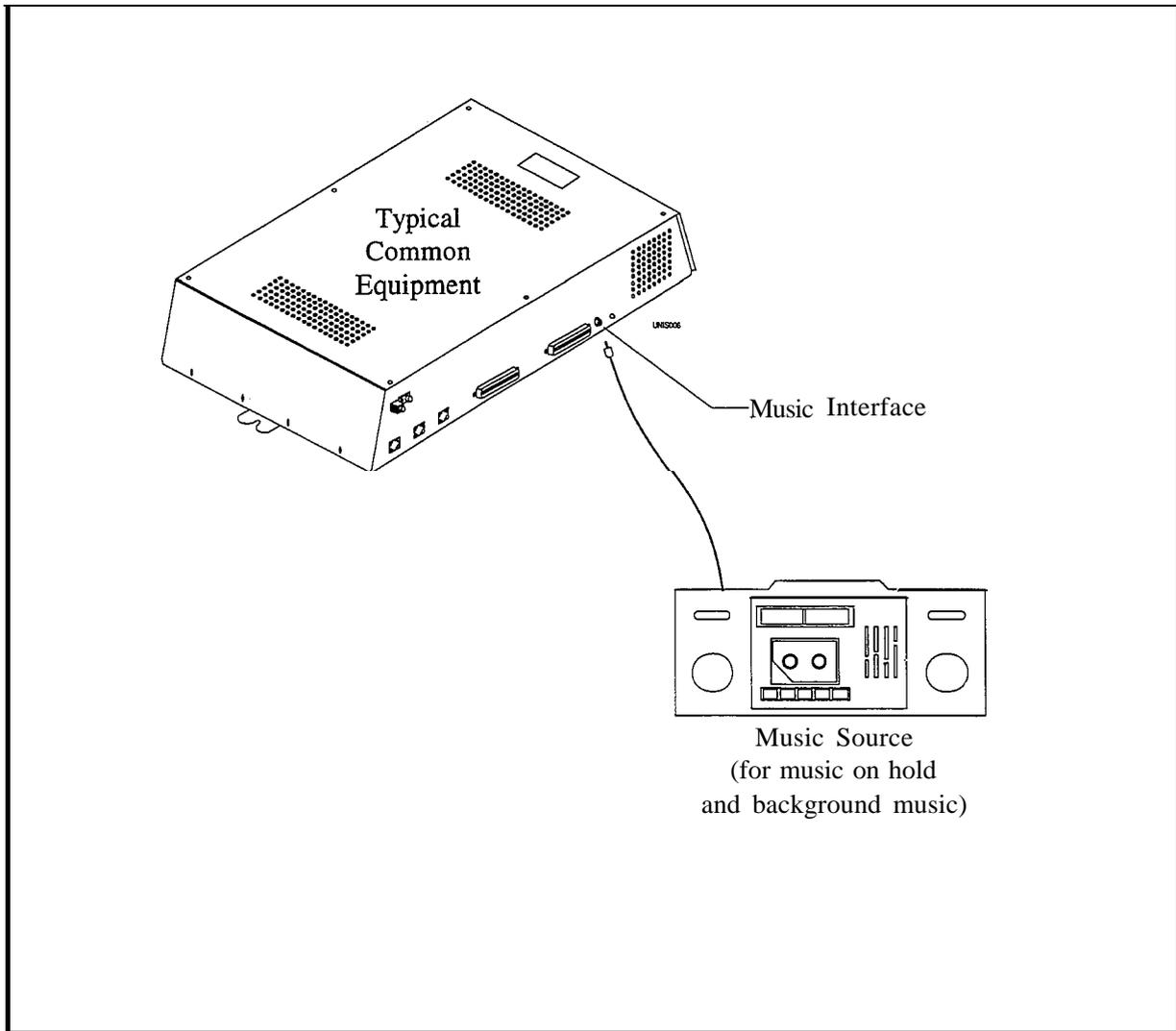


Figure 2.11 Typical Data Device Connection

2.7.7 Music Interface

If music is to be part of the system, connect a music source to the common equipment music interface jack (phono jack) provided for this purpose. The impedance of this input is approximately 600 ohms. Level adjustment of the music source may be necessary. The system will not support background music at stations with bridged proprietary and auxiliary devices connected. See Section 3.5.6 for more information.



UNIS027

Figure 2.11 Music Interface

2.8 Checking The System

2.8.1 Checking The Installation and Wiring

Verify that the common equipment is mounted properly and that all wiring is correct. Check all of the following wiring carefully: the chassis ground wiring, the line port wiring, the station port wiring, the AC wiring, and any accessory wiring.

Once the basic system is verified as operational, perform the class of service programming as described in Chapter 3.

2.8.2 Checking the Wiring Resistance To Ground

With the system unpowered, check the DC resistance from each individual wire terminal to earth ground. When Ohm-meter measurements show low DC resistance (under 1 Megaohm) disconnect the wire and correct the problem.

2.8.3 Powering-Up The System And Doing A General Check

Connect the AC power. Check the green light emitting diode (LED) system status indicator. Be sure that it is on steady. If it is off or flashing, refer to Section 2.9, Isolating System Failures.

2.8.4 Checking The DC Voltages of The Station Ports

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

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

- Bridging clips installed
- AC power connected to the common equipment
- All telephones on-hook

Measure the voltage across each voice pair and across each data pair (See Tables 2.2 and 2.3). The measured voltage must be as follows:

| Unit Under Test | 66M-xx Block Connection | Meter Lead Polarity | Measured Voltage |
|---|-------------------------|---------------------|----------------------|
| Typical Station (Repeat for each station) | Voice 1 (Grn) | (+) | + 24 VDC * / OVDC |
| | Voice 2 (Red) | ▪ | |
| | Data 1 (Yel) | (+) | + 24 VDC to + 42 VDC |
| | Data 2 (Blk) | ▪ | |
| Variant readings can indicate a possible wiring, station, or common equipment problem. * -24 VDC on Universal ports (TXIST ports) 0 VDC on Proprietary-only ports. | | | |

2.8.5 Checking Battery And Battery Charger DC Voltages

- Correct voltage of battery charger circuit without the batteries connected is as follows: between + 13.6V DC and +13.8V DC for the positive battery and between -13.6V DC and -13.8V DC for the negative battery (contact Comdial if the voltage is higher or lower),
- Nominal voltage of each of the batteries is 12V DC,
- Each fully charged and disconnected battery should not exceed a voltage of 13.1V DC. A completely discharged battery may check as low as 10V DC,
- When the battery backup is installed and the system is powered, check the following:
- Each fully charged battery connected to the system should have a voltage of less than or equal to 13.8V DC (if the value is greater than 13.8V DC, contact Comdial).

NOTE: The typical battery service check is every three months.

2.8.6 Checking The Default Conditions

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. For more information, see Chapter 3, section 3.4.

2.9 Isolating System Failures

2.9.1 Checking The System Status Indicator

A green LED located on the common equipment cabinet near the music port is the system status indicator. When the system has power, this indicator stays lit. If the indicator flashes after power-up, it is 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.

2.9.2 Doing A Station Self Test

You can self test the multiline stations for proper operation using the following instructions:

1. Disconnect line cord at station base.
2. Press and hold the 1 button and reconnect line cord to station connector. Station will automatically perform self test routine.

NOTE: Active calls to the adjacent port may be dropped when you do a self test.

3. Release the 1 button as soon as test begins. Sequence of test is as follows:
 - LED Indicators will light in sequence
 - LED Indicators will then turn off
 - Ringer will sound
4. Replace any station that does not pass the self test.

2.9.3 Checking Failure Indications

If erratic light indications or ring signals occur at a paired station, an open data pair at either station may be the cause. A station with an erratic data line connection may work properly on a short loop but fail on a long loop.

Stations are paired for overload current protection (2.6.2). If a fault occurs that causes more than 300 milliamps of current to be drawn, the overload paired stations are disabled by circuit action. Disconnect the disabled stations and reconnect them one at a time to isolate the faulty one.

2.10 FCC Rules And Regulations

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

2.10.1 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.

2.10.2 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.

2.10.3 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.

2.10.4 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.

2.10.5 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.

2.10.6 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.

2.10.7 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 common equipment, 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. 20402. Stock No. 004-000-00345-4.

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

Le présent appareil n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils (de la class A) prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministre des Communications du Canada

CAUTION

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.10.8 Ringer Equivalence Number, Load Number

The REN of each line is 0.4B. The FCC requires the installer to determine the total REN for each line, and record it at the equipment. The Load number is 4.0

3

Programming Unisyn

| | | |
|--------|--|------|
| 3.1 | Using This Chapter | 3-1 |
| 3.2 | Understanding How To Program | 3-1 |
| 3.3 | Understanding System Programming | 3-3 |
| 3.3.1 | Using A Telephone To Program | 3-3 |
| 3.3.2 | Master Clearing The System | 3-3 |
| 3.3.3 | Finding The Programming Buttons | 3-3 |
| 3.4 | Master Clearing And System Defaults | 3-4 |
| 3.4.1 | Master Clearing | 3-4 |
| 3.4.2 | Defaulting The System | 3-4 |
| 3.4.3 | Defaulting The Lines | 3-4 |
| 3.4.4 | Defaulting The Stations | 3-5 |
| 3.4.5 | Defaulting Button Assignments | 3-5 |
| 3.4.6 | Defaulting Toll Restriction Tables | 3-5 |
| 3.5 | Programming The System | 3-6 |
| 3.5.1 | Attendant / Line Access | 3-6 |
| 3.5.2 | Data Baud Rate | 3-7 |
| 3.5.3 | DTMF Dialing Feedback | 3-7 |
| 3.5.4 | Exclusive Hold | 3-8 |
| 3.5.5 | Make / Break Ratio | 3-8 |
| 3.5.6 | Music On Hold | 3-8 |
| 3.5.7 | System Clock | 3-9 |
| 3.5.8 | System Speed Dial | 3-9 |
| 3.5.9 | Tone or Voice Signaling | 3-10 |
| 3.5.10 | Timing Feature-DTMF Extended Tones | 3-10 |
| 3.5.11 | Timing Feature-PA Port | 3-11 |
| 3.5.12 | Timing Feature-Pause Time | 3-11 |
| 3.5.13 | Timing Feature-Recall Flash | 3-12 |
| 3.5.14 | Timing Feature-Timed Hold Recall | 3-12 |
| 3.5.15 | Timing Feature-Unanswered Call Transfer Recall | 3-13 |

3.6 Programming The Lines 3-14

- 3.6.1 Introduction 3-14
- 3.6.2 Abandoned Hold Release 3-15
- 3.6.3 Automatic Privacy 3-15
- 3.6.4 Automatic Privacy Release 3-15
- 3.6.5 Line Groups 3-16
- 3.6.6 Line Port Functions-Line Disable 3- 17
- 3.6.7 Line Port Functions-Auxiliary Lines 3-17
- 3.6.8 Line Port Functions-Central Office Lines 3-17
- 3.6.9 Pulse / Tone Switchable-Pulse 3-18
- 3.6.10 Pulse / Tone Switchable-Tone 3-18

3.7 Programming The Stations 3-19

- 3.7.1 Introduction 3-19
- 3.7.2 Access Denied (Line Access Denied) 3-19
- 3.7.3 All Call and Zone Paging 3-20
- 3.7.4 All Call and Zone Paging Button 3-20
- 3.7.5 Automatic Hold 3-21
- 3.7.6 Automatic Hold for Intercom 3-21
- 3.7.7 Automatic Privacy 3-22
- 3.7.8 Automatic Privacy Release 3-22
- 3.7.9 Call Forwarding On Busy / Ring No Answer 3-23
- 3.7.10 Intercom Hunt Group 3-23
- 3.7.11 Call Origination Denied (Line Origination Denied) 3-24
- 3.7.12 Data Security Port 3-24
- 3.7.13 Dedicated ITCM for Attendant 3-25
- 3.7.14 Direct / Delayed Ringing 3-25
- 3.7.15 External Paging Interface 3-25
- 3.7.16 Flexible Ringing Assignment-Direct / Delayed Ring 3-26
- 3.7.17 Flexible Ringing Assignment-Line / Station Assignments 3-26
- 3.7.18 Flexible Ringing Assignment-Night Ringing Mode 3-27
- 3.7.19 Flexible Ringing Assignment-PA Port 3-27
- 3.7.20 Flexible Station Numbering 3-28
- 3.7.21 Headset Interface 3-28
- 3.7.22 IST Distinctive Ringing 3-28
- 3.7.23 Idle Line Preference 3-29
- 3.7.24 Languages 3-29
- 3.7.25 Personal Ringing Tones 3-30
- 3.7.26 Port Definition 3-30
- 3.7.27 Prime Line / Prime Group And Prime Intercom 3-31
- 3.7.28 Message Wait Originate 3-3 1
- 3.7.29 Ringing Line Preference 3-32
- 3.7.30 Voice Announce Blocking 3-32

| | | | |
|--------|--|------|--|
| 3.8 | Button Mapping | 3-33 | |
| 3.8.1 | Automatic Call-back Button | 3-33 | |
| 3.8.2 | Blank Buttons | 3-34 | |
| 3.8.3 | Call Forward Button | 3-34 | |
| 3.8.4 | Do Not Disturb Button | 3-35 | |
| 3.8.5 | DSS / BLF Button | 3-35 | |
| 3.8.6 | Line Button | 3-36 | |
| 3.8.7 | Line Group Button | 3-36 | |
| 3.8.8 | Line Group Queue Button | 3-36 | |
| 3.8.9 | Dual Intercom Button | 3-37 | |
| 3.8.10 | Privacy Release Button | 3-37 | |
| 3.8.11 | Save Button | 3-37 | |
| 3.8.12 | Shift Button | 3-38 | |
| 3.8.13 | Voice Announce Block Button | 3-38 | |
| 3.8.14 | Zone Page / All-Call Button | 3-38 | |
| 3.9 | Voice Mail Interface | 3-39 | |
| 3.9.1 | Voice Mail Port | 3-39 | |
| 3.9.2 | Voice Mail Port / Direct Ringing For Attendant | 3-40 | |
| 3.9.3 | Voice Mail Port / Delayed Ringing For Attendant | 3-40 | |
| 3.9.4 | Voice Mail Port / Night Ringing For Attendant | 3-41 | |
| 3.9.5 | Voice Mail Port-Assign Voice Mail Ports To Hunt Groups | 3-41 | |
| 3.9.6 | Automatic Transfer of Voice Mail | 3-42 | |
| 3.9.7 | Voice Mail ID Line | 3-42 | |
| 3.9.8 | Voice Mail Transfer on Busy | 3-43 | |
| 3.10 | Toll Restriction | 3-44 | |
| 3.10.1 | Assign Entries To Toll Tables | 3-45 | |
| 3.10.2 | Assign Toll Tables To Lines | 3-45 | |
| 3.10.3 | Assign Toll Tables To Stations | 3-46 | |
| 3.10.4 | Assign Toll Tables To Stations For Night Ringing | 3-46 | |
| 3.10.5 | Assign Toll Tables To Stations For Speed Dials | 3-47 | |
| 3.10.6 | Toll Restriction Override | 3-47 | |
| 3.11 | Programming Reference Chart | 3-48 | |
| 3.12 | Feature Code Numbering Plan | 3-49 | |

3

Programming The System

3.1 Using Chapter Three

programming the customer's new system is the most intricate and important aspect of the installer's job. The benefit of the Unisyn system is that you can program every system differently to fit each customer's individual needs. Chapter 3 is divided into six programming sections:

- System,
- Lines,
- Stations,
- Button Mapping,
- Voice Mail,
- Toll Restriction.

Each of these sections lists the applicable features in alphabetical order. If you do not know where to find the feature you need, look in the features chapter, Chapter 5, for a section number (for example, Master Clearing The System is 3.4.1), or look in the index. Each programming step does include a brief explanation of that feature; however, before you begin programming you should familiarize yourself with *all* of the system's features, listed in chapter 5, so that you can be certain that what you are programming is what the customer wants.

NOTE: Prior to taking any programming action, determine the desired parameters and requirements. Record this data on the programming reference tables provided in the Records chapter in the back of the manual.

3.2 Understanding How To Program

Once you have selected all of the features **you** are going to program into a new system, go to chapter 5, *Description of System Features*, and write down the numbers that correspond to that feature (for example, Master Clearing The System is 3.4.1). Then locate the feature in chapter 3, *Programming The System*, and reread the description to make sure it is the feature you are looking for. Remember, if you have not already done so you must be in the configuration mode to do any programming (ITCM * #746 *). When you are finished programming, press SPKR to end.

3.2.1 Class of Service Programming

The installer performs the Class of Service Programming when the system is first installed. Any programming function can be done under this type of programming. Class of service programming includes System, Station, and Line programming. The password for COS programming is *#746*—this places the system in the configuration mode. You must program from either station 10 or 12.

3.2.2 Administration Programming

Administrators can use administration programming to program all system features except line attributes and the master clear. Administrators may perform this programming whenever system needs may dictate. The administration password is *#236*

3.2.3 Attendant Programming

While all of the system programming is generally done by the installer, there are a few functions that can later be done by the system attendant. The Attendant programming password is *# plus the number of the feature. Attendant Programming features are as follows:

- System clock setting (3.57)
- System speed dial (3.5.8)
- Night transfer of ringing (3.7.18)
- Music on hold (3.5.6)

3.3 Understanding System Programming

3.3.1 Using A Telephone To Program The System

Perform Class of Service 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 proprietary telephone and use it for programming, visual feedback of the programming operations will not be available.

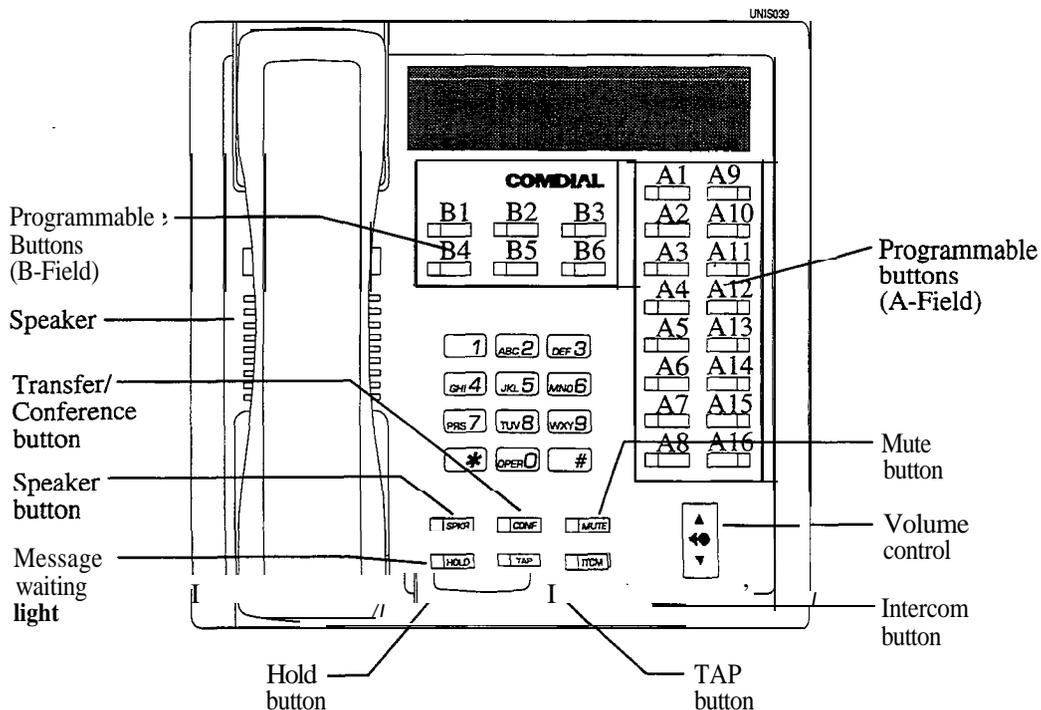
NOTE: Do not program a domestic system (TO308, TO61 6) with an industry-standard telephone.

3.3.2 Master Clearing The System

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 taken 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 all data stored there. Master clearing 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 section 3.4, *Master Clearing and System Defaults*, for programming details. You can also default certain sections of programming, such as system, line, station, button mapping, and toll restriction.

3.3.3 Finding The Programming Buttons

The following picture details the telephone's programming buttons. Refer to this picture if you are unsure about a button's location.



3.4 Master Clearing And System Defaults

You can return the entire programming configuration to the factory settings using the master clear procedure. You can also return the individual system, line, and station class of service configurations to their factory settings using the system, line, and station default procedures. The operating parameters and class of service values provided 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 default state of operation, but it also clears all currently stored autodial and speed dial numbers.

3.4.1 Master Clearing

Description: Returns entire system configuration to factory settings *and clears all stored auto and speed dial numbers.*

To Program:

1. Press ITCM Dial * # 7 4 6 * "CONFIG. MODE"
2. Dial **90** "MASTER CLEAR"
3. Dial 5 **16 8 4** to clear the entire system.
System returns to normal operation mode automatically.

3.4.2 Defaulting The System

Description: Returns the system configuration features to factory settings.

To Program:

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.

3.4.3 Defaulting The Lines

Description: Returns the line configuration features to factory settings,

To Program:

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.

3.4.4 Defaulting The Stations

Description Returns the station configuration features to factory settings.

- To Program:**
1. Press ITCM Dial *#746* "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 – 25, Dial **10 – 25** or press **A1 – A16**
 4. Dial * for next station to default,
—OR—
Dial ** for configuration mode or SPKR to quit.

3.4.5 Defaulting Button Assignments

Description: Returns the button mapping of individual stations to its factory setting.

- To Program:**
1. Press ITCM Dial *#746*"CONFIG.MODE"
 2. Dial **56** "BUTTON MAPPING "
 3. Dial **01** "BUTTON DEFAULT "
 4. Select station ports to be defaulted: Station 10 – 25, Dial **10 – 25** or press **A1 – A16**
 5. Dial * for next button mapping feature,
—OR—
Dial ** for configuration mode or SPKR to quit.

3.4.6 Defaulting Toll Restriction Tables

Description: 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 (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.

- To Program:**
1. Press ITCM Dial *#746*"CONFIG.MODE"
 2. Dial **70** "DEFAULT TOLL"
 3. Press # to default toll tables
 4. Dial * for configuration mode or SPKR to quit.

3.5 Programming The System

Programming the system means that *you* are setting the parameters that will be true system wide. If you are unsure whether or not you are programming the correct function, check chapter 5, *Description Of System Features*, in the back of this manual for a full definition of the feature. You should make a record of all your programming decisions -it will help you keep track of what you have done and will help you troubleshoot any problem that might arise later. When you need to make a record of the programming configuration, mark the desired requirements in the system class of service records chart found in Chapter 4.

NOTE: A lighted LED next to the programming button shows which choice you have selected.. 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 *. When you want to end the programming, press the **SPKR** button to end the programming procedure and return the system to normal operation.

3.5.1 Attendant/Line Access

Description: You can set the system so that the user accesses a line and the attendant in one of two ways:

Dial 9= Attendant
Dial 0= Line Group 1

—OR—

Dial 0= Attendant
Dial 9= Line Group 1

Default = Dial 0 for Attendant (AI LED = Off)

- To Program:**
1. Dial 17 “SYSTEM FEATURES”
 2. Dial 04 “0 ATTN 9 LINE”
 3. Press AI to toggle between two selections (LED Off = 0 for Attendant)
- OR—
- Dial 1 for 9 for Attendant “9 ATTN 0 LINE”
 - Dial 2 for 0 for Attendant “0 ATTN 9 LINE”
4. Press * * for configuration mode

3.5.2 Data Baud Rate

Description: 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.

NOTE: If you use XMODEM protocol for data transfer between a PC and the common equipment, you must use 8-bit data. Data transfer can only be done on port A.

Default = W8D 1S 1200 (AS, A16 LED = On)

- To Program:**
1. Dial 15 "BAUD RATE"
 2. Dial **1** for data port A
—OR—
Dial 2 for data port B
 3. Choose baud rate.

| | |
|---|-----------------|
| Dial 01 or Press A1 | "W nD nS 110" |
| Dial 02 or Press A2 | "W nD nS 150" |
| Dial 03 or Press A3 | "W nD nS 300" |
| Dial 04 or Press A4 | "W nD nS 600" |
| Dial 05 or Press A5 | "W nD nS 1200" |
| Dial 06 or Press A9 | "W nD nS 2400" |
| Dial 07 or Press A10 | "W nD nS 4800" |
| Dial 08 or Press All | "W nD nS 9600" |
| Dial 09 or Press A12 | "W nD nS 19200" |
| Dial 10 or Press A8 for 7 data bits and 2 stop bits | "W7D 2S ZZZZZ" |
| Dial 11 or Press A16 for 8 data bits and 1 stop bit | "W 8D 1S ZZZZZ" |
 4. Dial * for next data port.
 5. Dial * * for configuration mode.

3.5.3 DTMF Dialing Feedback

Description: You can program either DTMF or monotone feedback during dialing.

Default = Monotone (A1 LED = On)

- To Program:**
1. Dial 27 "XXXX FEEDBACK"
 2. Press A1 to alternate between monotone and **DTMF** feedback (A1 LED on = monotone feedback)
—OR—
Dial **1** for monotone feedback "TONE FEEDBACK"
Dial 2 for **DTMF** feedback "DTMF FEEDBACK"
 3. Press * for configuration mode.

3. 5. 4 Exclusive Hold

Description: 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.

Default = Disabled (AI LED = Off)

- To Program:**
1. Dial 23 "XXXXXXXX EXC HOLD"
 2. Press **AI** to toggle between enable and disable (LED On = Enable)
- OR—
- Dial **1** to enable "ENABLE EXC HOLD"
 - Dial **2** to disable "DISABLE EXC HOLD"
 3. Dial * for configuration mode.

3.5.5 Make /Break Ratio

Description: Set the make / break ratio for rotary dial signaling to match rotary dial line requirements. You can set the ratio to two different values: 60/40 or 67/33.

Default = 60 / 40 (AI LED = Off)

- To Program:**
1. Dial 17 "SYSTEM FEATURES"
 2. Dial 03 "MAKE / BREAK XX / XX"
 3. Press **AI** to toggle between 60/40 and 67/33 ratios (LED Off = 60/40)
- OR—
- Dial **1** for 67/33 "MAKE/BREAK 67/33"
 - Dial **2** for 60/40 "MAKE/BREAK 60/40"
 4. Dial * * for configuration mode.

3. 5. 6 Music On Hold

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

*NOTE: You can enter any attendant programming with the base level entry of ITCM * #.*

Default = Enabled (AI LED = On)

- To Program:**
1. Dial 04 "MOH XXXXXXXX"
 2. Press **AI** to toggle between enable and disable (LED On = Enabled)
- OR—
- Dial **1** to Enable "MOH ENABLE"
 - Dial **2** to Disable "MOH DISABLE"
 3. Dial * for configuration mode.

3.5.7 System Clock

Description: 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.

*NOTE: You can enter any attendant programming with the base level entry of ITCM *#.*

- To Program:**
- | | | | | | | | | | | | | | |
|---|---|------------------|-------------------|----------------------|----------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------------|----------------------|--|-----------------------|--|
| <ol style="list-style-type: none"> 1. Dial 01 "SET CLOCK" | <table border="0"> <tr> <td style="padding-right: 20px;"><u>LONG FORM</u></td> <td><u>SHORT FORM</u></td> </tr> <tr> <td>Dial 00 - 99 for yr.</td> <td>- Dial 00-23 for hr.</td> </tr> <tr> <td>Dial 01 - 12 for mo.</td> <td>- Dial 00-59 for min.</td> </tr> <tr> <td>Dial 01 - 31 for day</td> <td>- Dial #to assign hours and minutes</td> </tr> <tr> <td>Dial 00 - 23 for hr.</td> <td></td> </tr> <tr> <td>Dial 00 - 59 for min.</td> <td></td> </tr> </table> | <u>LONG FORM</u> | <u>SHORT FORM</u> | Dial 00 - 99 for yr. | - Dial 00-23 for hr. | Dial 01 - 12 for mo. | - Dial 00-59 for min. | Dial 01 - 31 for day | - Dial #to assign hours and minutes | Dial 00 - 23 for hr. | | Dial 00 - 59 for min. | |
| <u>LONG FORM</u> | <u>SHORT FORM</u> | | | | | | | | | | | | |
| Dial 00 - 99 for yr. | - Dial 00-23 for hr. | | | | | | | | | | | | |
| Dial 01 - 12 for mo. | - Dial 00-59 for min. | | | | | | | | | | | | |
| Dial 01 - 31 for day | - Dial #to assign hours and minutes | | | | | | | | | | | | |
| Dial 00 - 23 for hr. | | | | | | | | | | | | | |
| Dial 00 - 59 for min. | | | | | | | | | | | | | |
| <ol style="list-style-type: none"> 2. Dial * for configuration mode. | | | | | | | | | | | | | |

3.5.8 System Speed Dial

Description: 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.

*NOTE: You can enter any attendant programming with the base level entry of ITCM *#.*

Default = None Assigned

- To Program:**
1. Dial 02 "SYS SPEED DIAL "
 2. Dial 01 - 99 for storage location "XXXXXXXXX.."
 3. Dial # to clear current entry "LINE:"
 4. Choose line, line group, or intercom to be used with speed dial number "LINE XX "
 - Line port 1-6 = Dial **01 - 06** or press **B1- B6**
 - OR—
 - Dial 90 for last line used or prime line "PRIME LINE"
 - OR—
 - Dial **91 - 94** for line group 1-4 "LINE GROUP I "
 - Press **ITCM** button for intercom line "INTERCOM"
 5. Dial number for storage (32 digits max) "XXXXX..." — If required, press **HOLD** button to store a pause. If required, press **TAP** button to store a hookflash
 6. Press **CONF** button to save the number
 7. Repeat steps 2-6 for all speed dial numbers,
 - OR—
 - Press * for configuration mode.

3.5.9 Tone or Voice Signaling

Description: Intercom calls can be tone signaled or voice signaled. Use this programming feature to select the system's signaling choice. With either method set as the system's **first** choice, the user can choose the **other** method as needed by pressing the ITCM key again.

Default = Voice First (AI LED = On)

- To Program:**
1. Dial 16 "XXXXXX ANN. FIRST"
 2. Press **AI** to toggle between Voice To Tone. (LED On = voice signaling)
—OR—
 Dial **1** for Voice First "VOICE ANN. FIRST"
 Dial **2** for Tone First "TONE ANN. FIRST"
 3. Dial * for configuration mode.

3.5.10 Timing Features-Extended DTMF Tones

Description: The system can access outside equipment, answering machines or banking computers, for example, that require DTMF tones that are longer than the standard 80 msec. tone. The system automatically shifts to a longer tone 10 seconds after the last digit of a number is dialed. A user can shift from one tone length to the other by pressing the hold button and then reselecting the line.

Default = 80 msec. (AI LED = On)

- To Program:**
1. Dial 26 "DTMF DIALNG XXXX"
 2. Choose DTMF tone length
 Press **AI** or dial **1 = 80 msec.**
 Press **A2** or dial **2 = 160 msec.**
 Press **A3** or dial **3 = 240 msec.**
 Press **A4** or dial **4 = 320 msec.**
 Press **A5** or dial **5 = 400 msec.**
 Press **A9** or dial **6 = 480 msec.**
 Press **A10** or dial **7 = 560 msec.**
 Press **All** or dial **8 = 720 msec.**
 Press **A12** or dial **9 = 880 msec.**
 Press **A13** or dial **0 = 1040 msec.**
 3. Dial * for configuration mode.

3.5.11 Timing Features-PA Port

Description: You can set PA ports to either timeout of the system for a programmed length of **time** or to remain on the system as long as necessary without timing out. The system default is set for no timeout option.

Default = No Timeout (A13 LED = On)

- To Program:**
1. Dial 92 "PA TIMEOUT XXX"
 2. Choose Timeout length:

| | |
|--|------------------|
| Press A1 or dial 1 = 30 sec. | "PA TIMEOUT 30" |
| Press A2 or dial 2 = 60 sec. | "PA TIMEOUT 60" |
| Press A3 or dial 3 = 90 sec. | "PA TIMEOUT 90" |
| Press A4 or dial 4 = 120 sec. | "PA TIMEOUT 120" |
| Press A5 or dial 5 = 150 sec. | "PA TIMEOUT 150" |
| Press A9 or dial 6 = 180 sec. | "PA TIMEOUT 180" |
| Press A10 or dial 7 = 210 sec. | "PA TIMEOUT 210" |
| Press All or dial 8 = 240 sec. | "PA TIMEOUT 240" |
| Press A12 or dial 9 = 300 sec. | "PA TIMEOUT 300" |
| Press A13 or dial 0 = No timeout | "NO TIMEOUT" |
 3. Dial * * for configuration mode.

3.5.12 Timing Features-Pause Time

Description: 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 the pause with this programming feature.

Default = 1 sec. (A2 LED = On)

- To Program:**
1. Dial 13 "PAUSE TIME XXX"
 2. Select time:

| | |
|---|-------------------|
| Dial 1 or Press A1 = 0.50 sec. | "PAUSE TIME 0.50" |
| Dial 2 or Press A2 = 1 sec. | "PAUSE TIME 1" |
| Dial 3 or Press A3 = 1.50 sec. | "PAUSE TIME 1.50" |
| Dial 4 or Press A4 = 2 sec. | "PAUSE TIME 2" |
| Dial 5 or Press A5 = 3 sec. | "PAUSE TIME 3" |
| Dial 6 or Press A9 = 5 sec. | "PAUSE TIME 5" |
| Dial 7 or Press A10 = 7.50 sec. | "PAUSE TIME 7.50" |
| Dial 8 or Press All = 10 sec. | "PAUSE TIME 10 " |
| Dial 9 or Press A12 = 15 sec. | "PAUSE TIME 15" |
| Dial 0 or Press A13 = 20 sec. | "PAUSE TIME 20" |
 3. Dial * for configuration mode.

3.5.13 Timing Features—Recall/Flash

Description: The system can generate either a line disconnect (recall) or a host system feature access signal (flash) depending upon the programmed time.

Default = 2 sec. (A12 LED = On)

- To Program:**
1. Dial **12** "*RECALL/FLSH XXXX*"
 2. Select time:

| | |
|---|---------------------------|
| Dial 1 or Press A1 = 0.08 sec. | <i>"RECALL/FLSH 0.08"</i> |
| Dial 2 or Press A2 = 0.30 sec. | <i>"RECALL/FLSH 0.30"</i> |
| Dial 3 or Press A3 = 0.50 sec. | <i>"RECALL/FLSH 0.50"</i> |
| Dial 4 or Press A4 = 0.60 sec. | <i>"RECALL/FLSH 0.60"</i> |
| Dial 5 or Press A5 = 0.75 sec. | <i>"RECALL/FLSH 0.75"</i> |
| Dial 6 or Press A9 = 0.88 sec. | <i>"RECALL/FLSH 0.88"</i> |
| Dial 7 or Press A10 = 1 sec. | <i>"RECALL/FLSH 1"</i> |
| Dial 8 or Press All = 1.50 sec. | <i>"RECALL/FLSH 1.50"</i> |
| Dial 9 or Press A12 = 2 sec. | <i>"RECALL/FLSH 2"</i> |
| Dial 0 or Press A13 = 3 sec. | <i>"RECALL/FLSH 3"</i> |
 3. Dial * for configuration mode.

3.5.14 Timing Features-Timed Hold Recall

Description: After a call has been on hold for a programmed length of time, the system will recall the station that placed the call on hold. Set the hold recall time with this programming procedure.

Default = 60 sec. (A2 LED = On)

- To Program:**
1. Dial **14** "*HOLD RECALL XXXX*"
 2. Select time:

| | |
|--|--------------------------|
| Dial 1 or Press A1 = 30 sec. | <i>"HOLD RECALL 30"</i> |
| Dial 2 or Press A2 = 60 sec. | <i>"HOLD RECALL 60"</i> |
| Dial 3 or Press A3 = 90 sec. | <i>"HOLD RECALL 90"</i> |
| Dial 4 or Press A4 = 120 sec. | <i>"HOLD RECALL 120"</i> |
| Dial 5 or Press A5 = 180 sec. | <i>"HOLD RECALL 180"</i> |
| Dial 6 or Press A9 = 240 sec. | <i>"HOLD RECALL 240"</i> |
| Dial 7 or Press A10 = 300 sec. | <i>"HOLD RECALL 300"</i> |
| Dial 8 or Press All = 360 sec. | <i>"HOLD RECALL 360"</i> |
| Dial 9 or Press A12 = 420 sec. | <i>"HOLD RECALL 420"</i> |
| Dial 0 or Press A13 = 0 sec. | <i>"HOLD RECALL 0"</i> |
 3. Dial * for configuration mode.

3.5.15 Timin Features-Unanswered Call Transfer Recall Time

Description: A transferred call that remains unanswered after a programmed length of time will return to the transferring station for answering. Set the transfer recall time with this programming procedure.

Default = 20 sec. (A2 LED = On)

To Program:

1. Dial 11 "*STA XFR RCL XXX*"
2. Choose transfer time:

| | |
|--|--------------------------|
| Dial 1 or Press A1 = 10 sec. | <i>"STA XFR RCL 10"</i> |
| Dial 2 or Press A2 = 20 sec. | <i>"STA XFR RCL 20"</i> |
| Dial 3 or Press A3 = 25 sec. | <i>"STA XFR RCL 25"</i> |
| Dial 4 or Press A4 = 30 sec. | <i>"STA XFR RCL 30"</i> |
| Dial 5 or Press A5 = 45 sec. | <i>"STA XFR RCL 45"</i> |
| Dial 6 or Press A9 = 60 sec. | <i>"STA XFR RCL 60"</i> |
| Dial 7 or Press A10 = 90 sec. | <i>"STA XFR RCL 90"</i> |
| Dial 8 or Press A11 = 120 sec. | <i>"STA XFR RCL 120"</i> |
| Dial 9 or Press A12 = 180 sec. | <i>"STA XFR RCL 180"</i> |
| Dial 0 or Press A13 = 400 sec. | <i>"STA XFR RCL 400"</i> |
3. Press * for configuration mode.

3.6 Programming The Lines

3.6.1 In troducfion

You can program the parameters for individual lines by using line class of service programming. The programming decisions you make, therefore, will only be true for that line and not for the entire telephone system, as is the case for system configuration. You should keep a record of all programming decisions that you make-it will help you keep track of what you have done and will help you troubleshoot any problem that might arise later. When you need to make a record of the programming configuration, mark the desired requirements in the line class of service records chart located in Chapter 4.

NOTE: A lighted LED next to the programming button shows which choice you have selected. 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 ***#746***. 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:

| KEYPAD BUTTONS | PROG. BUTTONS | LINE |
|----------------|---------------|-------|
| 01-06 | B1 - B6 | 1 - 6 |

3.6.2 Abandoned Hold Release

Description: When a distant party abandons a hold condition and disconnects from a line (hangs up), the central office sends a positive disconnect signal to the Unisyn telephone system. This signal can be either 50 msec. or 350 msec. Check the signal length from the telephone company and program all of the central office line ports to match that signal length.

Default = 50 msec. (B1 - B6 LEDs = On)

To Program:

1. Dial **38** "HOLD RELEASE 50 "
2. Select hold release time for line ports (LED On = 50 msec, LED Off = 350 msec)
Line port 1-6 = Dial 01 • 06 or Press **B1** • B6
3. Dial * for configuration mode.

3.6.3 Automatic Privacy

Description: 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.

Default = Privacy (B1 - B6 LEDs = Off)

To Program:

1. Dial **40** "PRIVACY RELEASE "
2. Select line ports to be non-private (LED On = Non Private)
Line port 1-6 = Dial 01 • 06 or Press **B1** • B6
3. Dial * for configuration mode.

3.6.4 Automatic Privacy Release

Description: You can arrange for individual stations to automatically release privacy while on certain lines. With this arrangement, other stations can join that particular station whenever it is on the privacy released line.

Default = Privacy (All LEDs = Off)

NOTE: This feature, and all level 54 programming features are toggle on/toggle off. If the feature defaults as enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.

To Program:

1. Dial 54 "STA/LINE CONFIG."
2. Dial 4 "PRIVACY RELEASE"
3. Select line ports:
Line port 1-6 = Dial 01 • 06 or Press **B1** • B6
4. Dial #when all line ports are selected
5. Select station ports to be programmed: Station 10 25, Dial 10 • 25 or press **A1-A16**
6. Dial * when all station ports are selected,
—OR—
Dial * * for next station/line feature,
—OR—
Dial * * * for configuration mode.

3.6.5 Line Groups

Description: Group outside lines of the same type together for dial-up outgoing access. Access codes for the line groups are as follows:

- Group 1 = Dial 9 or Dial 0 (See Section 3.5.1)
- Group 2 = Dial 81
- Group 3 = Dial 82
- Group 4 = Dial 83

NOTE: *Assigning lines to groups automatically arranges the system for hybrid operation. Remember, hybrid operation may incur a higher monthly tariff than the key system operation incurs. Ask the local telephone company for details.*

Default = No line groups (B1 – B6 LEDs Off)

- To Program:
1. Dial 35 **"ASSIGN LINE GRPS"**
 2. Dial 0 for no groups assigned **"NO LINE GROUP"**
—OR—
Dial 1 for Line Group 1 **"LINE GROUP 1 "**
Dial 2 for Line Group 2 **"LINE GROUP 2"**
Dial 3 for Line Group 3 **"LINE GROUP 3"**
Dial 4 for Line Group 4 **"LINE GROUP 4"**
 3. Select line ports to be assigned (LED On = Lines Assigned)
Line port 1-6 = Dial 01 - 06 or Press **B1 - B6**
 4. Dial * for next group,
—OR—
Dial * * for configuration mode.

NOTE: *To remove lines from a line group enter 0 for the line group.*

3.6.6 Line Port Functions-Line Disable

Description: You can take a line port out of service when necessary (because of defect, for example) using this programming procedure. Return the line to service with the central office lines programming procedure (Section 3.6.8).

Default = None disabled (B1 - B6 LEDs Off)

- To Program:**
1. Dial 31 "DISABLE LINES"
 2. Select line ports to be disabled (LED On = Disabled)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
 3. Dial * for configuration mode.

3.6.7 Line Port Functions-Auxiliary Lines

Description: You can condition a line port to serve as a port for an external paging amplifier, ensuring that the line cannot be put on hold.

Default = No auxiliary (B1 - B6 LEDs Off)

- To program:**
1. Dial 32 "AUXILIARY LINES"
 2. Select line ports to be assigned (LED On = Assigned)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
 3. Dial * for configuration mode.

3.6.8 Line Port Functions-Central Office Lines:

Description: You can condition line ports to serve as ports for standard telephone company supplied central office lines.

Default = All CO (B1 - B6 LEDs On)

- To program:**
1. Dial 33 "C.O. LINES"
 2. Select line ports to be assigned (LED On = Assigned)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
 3. Dial * for configuration mode.

3.6.9 Pulse/Tone Switchable-Pulse

Description: If the installer has connected rotary dial lines to the system, you must condition those line ports as pulse dial ports.

NOTE: The user can switch **from** pulse (rotary dial signaling) to tone (dual tone multiple frequency - DTMF) accessing special circuits requiring DTMF tones, such as banking machines, when they need to do so **from** a rotary dial line by dialing **#** **after** dialing access number.

Default = No pulse (B1 - B6 LEDs Off)

- To Program:**
1. Dial 36 "PULSE DIAL"
 2. Select pulse dial line ports (LED On = Pulse)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
—OR—
Dial 00 to default all lines to pulse dial
 3. Dial * for configuration mode.

3.6.10 Pulse/Tone Switchable-Tone

Description: If the installer has connected tone dial lines to the system, you must condition those line ports as tone dial ports.

Default = Tone (B1 - B6 LEDs On)

- To Program:**
1. Dial 37 "TONE DIAL"
 2. Select tone dial line ports (LED On = Tone)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
—OR—
Dial 00 to default all lines to tone dial.
 3. Dial * for configuration mode.

3.7 Programming The Stations

3.7.1 Introduction

Station programming means that you are programming the functions for one particular station, or port. While it isn't necessary, it is a good idea to do station programming after you have done system and line programming. You should keep a record of programming decisions that you make-it will help you keep track of what you have done and will help you troubleshoot any problem that might arise later. When you need to make a record of the programming configuration, mark the desired requirements in the station class of service records chart found at the back of this manual.

NOTE: A lighted LED next to the programming button shows which choice you have selected. **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 a programming button as in the following reference chart.

| KEYPAD BUTTONS | PROGRAM BUTTONS | STATION PORTS |
|----------------|-----------------|---------------|
| 10 - 25 | A1 - A4 | 10-25 |

CAUTION

You should program feature 3.7.26, Port Definition, before you do any other station programming. All programming for a port is lost when the port is redefined in 3.7.26.

3.7.2 Access Denied (Line Access Denied)

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

Default = None denied (AU LEDs = Off)

NOTE: This feature and all level 54 programming features are toggle on/toggle off. If the feature defaults as enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.

- To Program:**
1. Dial 54 "STA/LINE CONFIG."
 2. Dial **5** 'ACCESS DENY'
 3. Select line ports (LED On = Access Denied) Line port 1-6 = Dial 01 - 06 or press **B1- B6**
 4. Dial # when all line ports are selected
 5. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial **10 - 25** or press **A1 - A6**
 6. Dial * when all station ports are selected,
 —OR—
 Dial * * for next station/line feature,
 —OR—
 Dial * * * for configuration mode.
 7. To change setting, repeat procedure and make opposite selection.

3.7.3 All-Call and Zone Paging

Description: Telephone users can receive voice announcements through their telephone loudspeakers or through an external paging amplifier and speaker connected to a PA port. They can transmit these voice announcements with their telephone handsets. You can arrange the programming so that the users can make announcements to stations located in certain areas of the site or to all of the stations. You can also arrange stations to originate but not receive zone pages (or receive but not originate). You cannot send a page to an IST station.

Default = All call to all stations

- To Program:**
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 8 for all-call receive | "ALL-CALL RECEIVE" |
| Dial 9 to clear all assignments | "CLEAR PAGING" |
 3. Select station ports (LED On = Feature Active): Station 10 - 25: Dial 10 - 25 or press A1 - A16
 4. Dial * to assign other paging,

—OR—

 Dial ** for configuration mode.
 5. To change setting, repeat procedure and make different selection.

3.7.4 All-Call and Zone Paaina-Button

Description: If you wish, you can assign a paging button to provide a station with one-button access to the all-call and zone paging feature. If you have already programmed this feature under 3.8.14, you do not need to program it again here.

Default = None assigned

- To Program:**
1. Dial 56 "BUTTON MAPPING "
 2. Dial 09 "ASSIGN ZONE"
 3. Select button to be programmed (LED Flash = Paging Button): Press A1 - A16, B1 - B6
 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 - 25, Dial 10 - 25 or press A1 - A16
 6. Dial * for further paging button assignment,

—OR—

 Dial ** for next button mapping feature,

—OR—

 Dial *** for configuration mode.
 7. To clear a paging button, dial 5604, press paging button, dial #, and repeat above steps 5 and 6.

3.7.5 Automatic Hold

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

Default = Not enabled (AH LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial **11** "AUTO HOLD "
 3. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial **10 - 25** or press **A1 - A16**
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.6 Automatic Ho/d For Intercom

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

Default = Not enabled (All LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 12 "ITCM AUTO HOLD"
 3. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial **10 - 25** or press **A1 - A16**
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.7 Automatic Privacy

Description: You can make a line private or non-private. In the private mode, a station has exclusive use of a line during a call. This information is repeated in 3.6.3. You do not need to program this feature again if you have done so in 3.6.3.

Default = Privacy (B1 –B6 LEDs = Off)

To Program:

1. Dial **40 "PRIVACY RELEASE "**
2. Select line ports to be non-private (LED On = Non Private Port)
Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
3. Dial ***** for configuration mode.
4. To change setting, repeat procedure and make opposite selection.

3.7.8 Automatic Privacy Release

Description: You can arrange for individual stations to automatically release privacy while on certain private lines. 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 (also see 3.8.10, Privacy Release Button).

NOTE: *This feature and all level 54 programming features are toggle on/toggle off. If the feature defaults as enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.*

Default = Privacy (All LEDs = Off)

To Program:

1. Dial 54 "STA/LINE CONFIG."
2. Dial **4 'PRIVACY RELEASE'**
3. Select line ports (LED On = Selected Ports) Line port 1-6 = Dial **01 - 06** or Press **B1 - B6**
4. Dial **#** when all line ports are selected.
5. Select station ports (LED On = Feature Assigned) : Station **10 - 25**, Dial **10 - 25** or press **A1 - A16**
6. Dial ***** when all station ports are selected,
—OR—
Dial ****** for next station/line feature,
—OR—
Dial ******* for configuration mode.
7. To change setting, repeat procedure and make opposite selection.

3.7.9 Call Forward On Busy/Ring – No Answer

Description: The system can automatically forward busy and ring-no answer calls. When a user places a call to station A, for example, that call can be automatically forwarded to any other station associated by intercom hunt group. Use this feature to arrange for calls to cycle rapidly through such associated stations testing each one in turn with several rings. You can set stations within the hunt group to ring at different intervals. For this feature to work, you must program hunt groups (3.7.10).

NOTE: If you enable this feature, also program the system intercom signaling as tone first.

Default = Not enabled (AU LEDs = Off)

- To Program:**
1. Dial **53** "STATION FEATURES"
 2. Dial 21 "CALL FWD RNA "
 3. Dial 1 - 9 for 1 - 9 rings before forwarding "RING S= X"
 4. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial **10 - 25** or press **A1 - A16**
 5. To change setting, repeat procedure and make different selection (0 to cancel)
 6. After you have enabled Call Forward, set tone first intercom signaling by doing the following:
 7. Dial 16 "XXXXX ANN. FIRST"
 8. Press **A1** to toggle from Voice To Tone (LED Off = Tone),
—OR—
Dial 2 for Tone First. "TONE ANN. FIRST"
 9. Dial * for configuration mode
 10. To change setting, repeat procedure and make opposite selection
 11. Dial * for additional station ring assignments,
—OR—
Dial * * for next station feature,
—OR—
Dial * * * for configuration mode.

3.7.10 Intercom Hunt Group

Description: 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.

Default = None linked (All LEDs = Off)

- To Program:**
1. Dial **53** "STATION FEATURES"
 2. Dial **18** "ITCM HUNT LINK"
 3. Select first linking station: Station 10 - 25, Dial **10 - 25** or press **A1 - A16**
 4. Select second linking station: Station 10 - 25, Dial **10 - 25** or press **A1 - A16**
 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),
- O R -
Dial * * for next station feature,
—OR—
Dial * * * for configuration mode.
 6. Disable link by repeating procedure.

3.7.11 Call Origination Denied (Line Origination Denied)

Description: 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.

Default = None denied (AU LEDs = Off)

NOTE: This feature and all level 54 programming features are toggle on/toggle off. If the feature defaults as enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.

- To Program:**
1. Dial 54 "STA/LINE CONFIG."
 2. Dial 6 "ORIGINATION DENY"
 3. Select line ports (LED On = Selected Ports)
Line port 1-6 = Dial 01 - 06 or press B1 - B6
 4. Dial # when all line ports are selected
 5. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 6. Dial * when all station ports are selected,
—OR—
Dial * * for next station/line feature,
—OR—
Dial * * * for configuration mode.
 7. To change setting, repeat procedure and make opposite selection.

3.7.12 Data Security Port

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

Default = None assigned (AU LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 26 "DATA SECURE PORT"
 3. Select station port (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.13 Dedicated ITCM For Attendant

Description: An intercom link can be reserved for exclusive use by a station. This feature should be used for stations that process a high rate of calls, usually the attendant.

Default = None dedicated (AU LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 17 "RESERVE ITCM"
 3. Dial 1-5 for link 1-5
(For 308, dial 1-2, For 616, dial 1-5)
 4. Select station port (LED On = Feature Assigned): Station 10 - 25, Dial 10 • 25 or press A1 • A16
 5. Dial * and repeat steps 3 and 4 to reserve another link
Dial * * for next station feature,
—OR—
Dial * * * for configuration mode.

NOTE: When a link is reserved, it reduces the number links for other stations use.

3.7.14 Direct/Delayed Ringing

Description: See Flexible Ringing Assignments for this feature (3.7.16).

3.7.15 External Paging Interface

Description: A station port can be programmed to interface with an external paging amplifier (PA Port).

Default = None assigned (AU LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 01 "PA PORT"
 3. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 • A16
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.16 Flexible Ringing Assignments— Direct/Delayed Ringing

Description: 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 immediate, or direct, ringing to some lines and delayed ringing to others.

Default = Direct ring all lines on stations 10 and 17 (B1-B6, A1, A8 LEDs = On)

NOTE: *This feature and all level 54 programming features are toggle on/toggle off. If the enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.*

- To Program:**
1. Dial 54 "STA/LINE CONFIG."
 2. Dial 1 "DIRECT RING"
—OR—
Dial 2 "DELAY RING"
 3. Select line ports for ringing (LED On = Selected Ports)
Line port 1-6= Dial 01 - 06 or press B1 - B6
 4. Dial # when all line ports are selected
 5. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 6. Dial * when all station ports are selected,
—OR—
Dial * * for next station/line ringing assignment,
—OR—
Dial * * * for configuration mode.
 7. To change setting, repeat procedure and make opposite selection.

3.7.17 Flexible Ringing Assignments— Night Ringing-Line/ Station Assignments

Description: You, or the system attendant, can place the system into the night transfer (of ringing) mode of operation. While in this mode of operation, the system will activate special line/station ringing assignments. You must also program 3.7.18.

Default = Night ring all lines on stations 10 and 17 (B1-B6, A1, A8 LEDs = On)

NOTE: *This feature and all level 54 programming features are toggle on/toggle off. If the feature defaults as enabled, dialing the code automatically disables the feature. Similarly, if the feature defaults as disabled, dialing the code automatically enables the feature.*

- To Program:**
1. Dial 54 "STA/LINE CONFIG"
 2. Dial 3 "NIGHT RING"
 3. Select line ports for night ringing (LED On = Selected Ports)
Line port 1-6= Dial 01 - 06 or press B1 - B6
 4. Dial # when all line ports are selected
 5. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 6. Dial * when all station ports are selected,
—OR—
Dial * * for next station/line feature,
- O R -
Dial * * * for configuration mode.
 7. To change setting, repeat procedure and make opposite selection.

3.7.18 Flexible Ringing Assignments— Night Ringing Mode

Description: After you have assigned Night Ringing to the stations and lines desired, the attendant must enable the feature to activate night ringing.

Default = (AI LED = Off)

*NOTE: You can program a speed dial button at the attendant's telephone with a * # 0 3 string for easy activation.*

- To Program:**
1. Dial 03 "NIGHT XFER XXX "
 2. Press AI to toggle between enable and disable (LED On = Enabled)
—OR—
Dial 1 to enable "NIGHT XFER ON"
- O R -
Dial 2 to disable "NIGHT XFER OFF"
 3. Dial * for configuration mode.
 4. To change setting, repeat procedure and make opposite selection.

3.7.19 Flexible Ringing Assignments— (PA Port)

Description: You can assign a PA port to a station port and then enable that PA port with a particular ringing assignment.

Default = No flexible ring (All LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 23 to enable ringing at PA port "PA RING PORT"
 3. Identify PA port Station 10 - 25, Dial 10 - 25 or press AI - AI6
 4. Dial * for next station/line feature,
—OR—
Dial * * for configuration mode.

3.7.20 Flexible Station Numbering

Description: The system supports a flexible station numbering plan for calling individual stations. You can program each station port to respond to the dialing of any available number between 10 and 79, 100 and 799, or 1000 and 7999. However, the system will not allow you to assign an extension number conflict such as 15 and 1500.

Default = 10 - 25

- To Program:**
1. Dial **52** "ASSIGN EXT. NUM. "
 2. Select station port: "EXT. XXXX " - Station 10 - 25 = Dial **10 - 25** or press **Al • Al6**
 3. Dial new extension number "EXT. XXXX YYYY "

NOTE: Extension numbers can be maximum of four digits. If an extension number is less than four digits, you must dial leading zeros before the number. For example: For extension number 15, dial 0015

4. Select next station number and assign extension number,
—OR—
Dial * for configuration mode.
5. To change setting, repeat procedure and make opposite selection.

3.7.21 Headset Interface

Description: A station port can be enabled to allow headset operation through the handset jack. To use the headset, you must have the handset off of the cradle; use the SPKR button to disconnect a call.

Default = None enabled (All LEDs = Off)

- To Program:**
1. Dial **53** "STATION FEATURES"
 2. Dial 13 "HEADSET MODE"
 3. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial **10 • 25** or press **Al • Al6**
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.22 IST Distinctive Ringing

Description: All IST telephones are defaulted for distinctive ringing on (the normal intercom ring cadence— $\frac{1}{2}$ second on, $\frac{1}{2}$ second off, $\frac{1}{2}$ second on, 4.5 seconds off). You can program IST telephones to give an outside call ring cadence (1.5 seconds on, 4.5 seconds off).

Default = Distinctive Ringing On (Al LED = On)

- To Program:**
1. Dial **53** "STATION FEATURES"
 2. Dial **33** "DIST RING ON"
 3. Press Al to toggle between Distinctive Ring on / off (LED On = DIST RING ON)
—OR—
Dial **1** to enable "DIST RING ON"
—OR—
Dial **2** to disable "DIST RING OFF"
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.23 Idle Line Preference

Description: When you enable idle line preference, a station will automatically connect to any assigned and idle line when the user takes the station off hook.

Default = None enabled (All LEDs = Off)

NOTE: *If you have already assigned prime ITCM, you must remove it in order to assign Idle Line Preference.*

- To Program:**
1. Dial 54 "STALINE CONFIG."
 2. Dial 7 "IDLE LINE PREF. "
 3. Select line ports (LED On = Selected Port)
Line port 1-6=Dial 01 - 06 or press B1 - B6
 4. Dial # when all line ports are selected
 5. Select station ports (LED On = Feature Assigned): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 6. Dial * when all station ports are selected,
—OR—
Dial * * for next station/line feature,
—OR—
Dial * * * for configuration mode.
 7. To change setting, repeat procedure and make opposite selection.

3.7.24 Languages

Description: You can program stations to display LCD messages in one of three languages:

- 1 = English
- 2 = French
- 3 = Spanish

Default = English (A1-A16 LEDs = On)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 38 "LCD LANGUAGES"
 3. Select Language
Dial 1 for English "ENGLISH"
Dial 2 for French "FRANCAIS"
Dial 3 for Spanish "ESPANOL"
 4. Select station ports (LED On = Feature Assigned) : Station 10 - 25, Dial 10 - 25 or press A1 - A16
 5. Dial * for next language assignment,
—OR—
Press * * for next station feature,
—OR—
Press * * * for configuration mode.
 6. To change setting, repeat procedure and make different selection.

3.7.25 Personal Ringing Tones

Description: You can program stations to ring in one of four distinctive tones:

1. 509/610 Hz @ 10 Hz warble
2. 763/1016 Hz @ 10 Hz warble
3. 509/610 Hz @ 19 Hz warble
4. 763/1016 Hz @ 19 Hz warble

Default = Tone 1 (A1-A16 LEDs = On)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 14 "RINGING TONE"
 3. Select Ringing Tone

| | |
|-------------------|------------------|
| Dial 1 for tone 1 | "RINGING TONE 1" |
| Dial 2 for tone 2 | "RINGING TONE 2" |
| Dial 3 for tone 3 | "RINGING TONE 3" |
| Dial 4 for tone 4 | "RINGING TONE 4" |
 4. Select station ports (LED On = Feature Assigned) : Station 10 - 25, Dial **10 • 25** or press **A1 • A16**
 5. Dial * for next tone assignment,

—OR—

 Press * * for next station feature,

—OR—

 Press * * * for configuration mode.
 6. To change setting, repeat procedure and make different selection.

3.7.26 Port Definition

Description: You can program a station port to accept one of several different types of station equipment, such as the following:

Multiline Telephone—Multiline without LCD
 LCD-LCD Speakerphone
 Comdial Voice Mail

Default = LCD (A1-A16 LEDs = On)

CAUTION

You should program feature Port Definition, before you do any other station programming. AU programming for a port is lost when the port is redefined here.

- To Program:**
1. Dial 51 "PORT TYPE"
 2. Select port definition

| | |
|----|--|
| 03 | (Multiline) "MULTILINE" |
| 07 | (LCD) "LCD" |
| 08 | (ExecuMail) "EXECUMAIL" (Future Feature) |
 3. Select all station ports to match definition: Station 10-25, Dial **10-25** or press **A1-A16**
 4. Press * for next port definition,

—OR—

 Press * * for configuration mode.

3.7.27 Prime Line-Prime Group And Prime Intercom

Description: If you assign a group of lines, an intercom line, or one individual line to a particular station for use as its prime line, the station automatically selects that line for use when the user takes it off-hook. Single line telephones must have either line groups or intercom already programmed.

Default = Prime Intercom (All LEDs = On)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 15 "PRIME LINE"
 - 3a. Assign prime line "PRIME LINE XX"
Line port 1- 6 = Dial 01 - 06 or press B1 - B6
 - 3b. Assign prime group, Dial 51-54 for groups 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 - 25, Dial 10 • 25 or press A1 - A16
 5. Dial * for next prime line, group, or intercom assignment,
—OR—
Press * * for next station feature,
—OR—
Press * * * for configuration mode.
 6. To change setting, repeat procedure and make different selection.

3.7.28 Message Wait Originate

Description: Any station that you program with this feature can control the message waiting light at other stations in the system. When a station user sees his or her message waiting light on, he or she can press ITCM HOLD to call the station that activated the light.

Default = Feature enabled (A1-A16 LEDs = On)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 06 "MSG. WAIT ORIG. "
 3. Select station ports (LED On = Feature Enabled): • Station 10 - 25, Dial 10 • 25 or press A1 - A16
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.29 Ringing Line Preference

Description: When you assign this feature to a station, that station will automatically answer a ringing line when its user goes off-hook. The ringing line shows as an orange LED (only when you have canceled **Ring**ing Line Preference). IST ports must have ringing line preference assigned.

NOTE: Without Direct Ringing assigned, Ringing Line Preference will only function on transferred calls.

Default = Feature enabled (A1-A16 LEDs = On)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 09 "RING LINE PREF. "
 3. Select station ports (LED On = Feature Selected): Station 10 - 25, Dial 10 - 25 or press A1 - A16
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.
 5. To change setting, repeat procedure and make opposite selection.

3.7.30 Voice Announce Blocking

Description: This feature allows a proprietary station user to block voice signaled intercom calls.

Default = Not assigned (A1-A16 LEDs = Off)

- To Program:**
1. Dial 53 "STATION FEATURES"
 2. Dial 04 "VOICE BLOCK "
 3. Select station ports to be programmed: Station 10 - 25, Dial 10 - 25 or press A1 - A16
 4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.

3.8 Button Mapping (Non-Square System Configuration)

Description: You can assign (map) every programmable “A-field” and “B-field” button at each station to be direct station select (DSS) buttons that provide quick access to system stations, to be special purpose buttons that provide telephone users one-button access to features, or to be idle buttons that provide **autodial** locations for the station user. You can also assign B-field buttons to be line select buttons that provide access to outside lines.

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.

Use the following chart for mapping from an IST telephone.

NOTE: Only put line buttons at B-field locations.

| | | |
|-----------------|-----------------|------------------|
| B1 = 100 | A1 = 120 | A9 = 119 |
| B2 = 101 | A2 = 118 | A10 = 117 |
| B3 = 102 | A3 = 116 | A11 = 115 |
| B4 = 103 | A4 = 114 | A12 = 113 |
| B5 = 104 | A5 = 112 | A13 = 111 |
| B6 = 105 | A6 = 110 | A14 = 109 |
| | A7 = 108 | A15 = 122 |
| | A8 = 121 | A16 = 123 |

Default: B Field = Line Buttons, A Field = DSS Buttons

3.8.1 Automatic Call-Back Button

Description: When a user presses this button after he or she encounters a busy tone, the system will automatically ring both the called station and the user’s station when the called station becomes idle.

- To Program:**
1. Dial 56 **"BUTTON MAPPING"**
 2. Dial **10** **"ASSIGN CALL BACK"**
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with CALL-BACK button: Station 10 - 25, Dial **10 - 25** or press **A1 -A16**
 5. Dial * for next auto call-back button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.2 Blank Buttons

Description: Blank those buttons that you want to be speed dial buttons.

NOTE: When blanking buttons, be sure a previously assigned button is idle (feature not selected by user) before you blank it.

- To Program:**
1. Dial 56 "BUTTON MAPPING"
 2. Dial **04** "BLANK/AUTODIAL"
 3. Select button(s) to be cleared: Press **A1 - A16, B1 - B6**
 4. Dial #
 5. Select station ports to be programmed with this blank button assignment: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
 6. Dial * for further button blanking,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.3 Call Forward Button

Description: This button provides one-button forwarding of all calls to another extension.

- To Program:**
1. Dial 56 "BUTTON MAPPING"
 2. Dial **11** "ASSIGN CALL FWD "
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with a CALL FWD button: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
 5. Dial * for next call forward button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.4 Do Not Disturb (DND) Button

Description: Pressing the DND button prevents other stations from ringing the DND station.

To Program:

1. Dial 56 "BUTTON MAPPING "
2. Dial 07 "ASSIGN DND CODE "
3. Select button to be programmed: Press **A1 - A16, B1 - B6**
4. Select station ports to be programmed with a DND button: Station **10 - 25, Dial 10 - 25** or press **A1-A16**
5. Dial * for further DND button assignment,
—OR—
Dial * * for next button mapping feature,
—OR—
Dial * * * for configuration mode.

3.8.5 DSS/BLF Button

Description: DSS buttons provide quick access to system stations and their lights and show the busy status of the monitored stations.

To Program:

1. Dial 56 "BUTTON MAPPING"
2. Dial 03 "ASSIGN DSS/BLF"
3. Select button to be programmed: Press **A1 - A16, B1 - B6,**
4. Select station port to be assigned: Station **10 - 25, Dial 10 - 25** or press **A1-A16**
5. Repeat steps 3 and 4 until **all** ports are assigned
6. Dial #
7. Select station **ports** to be programmed with this **DSS/button** assignment: Station **10 - 25, Dial 10 - 25** or press **A1 - A16**
8. Dial * for further **DSS/button** assignment,
—OR—
Dial * * for next button mapping feature,
—OR—
Dial * * * for configuration mode.

3.8.6 Line Button

Description: Line select buttons provide access to outside lines.

To Program:

1. Dial 56 "BUTTON MAPPING"
2. Dial 02 "ASSIGN LINE"
3. Select button to be programmed:- Press **B1 - B6**,
4. Select line ports to be assigned.- Line port 1- 6 = Dial **01 - 06** or Press **B1 - B6**
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 - 25: Dial **10 - 25** or press **A1-A16**
8. Dial * for further line/button assignment,
—OR—
Dial * * for next button mapping feature,
—OR—
Dial * * * for configuration mode.

3.8.7 Line Group Button

Description: This button provides one-button access to a line group.

To Program:

1. Dial 56 "BUTTON MAPPING"
2. Dial 13 "ASSIGN LINE GP"
3. Select button to be programmed: Press **A1 - A16, B1 - B6**
4. Dial 1 - 4 for line group 1 - 4 "ASSIGN LINE GP X"
5. Select station ports to be programmed with GROUP button: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
6. Dial * for next line group button assignment,
—OR—
Dial * * for next button mapping feature,
—OR—
Dial * * * for configuration mode.

3.8.8 Line Group Queue Button

Description: A station user can queue for a busy line by pressing a line group queue button.

To Program:

1. Dial 56 "BUTTON MAPPING "
2. Dial 15 "ASSIGN LINE GP Q"
3. Select button to be programmed: Press **A1 - A16, B1 - B6**
4. Select station ports to be programmed with QUEUE button: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
5. Dial * for next line group queue button assignment,
—OR—
Dial * * for next button mapping feature,
—OR—
Dial * * * for configuration mode.

3.8.9 Dual Intercom Button

Description: You can assign a second intercom button to stations that may make many intercom calls.

- To Program:**
1. Dial 56 "*BUTTON MAPPING*"
 2. Dial 05 "*ASSIGN 2ND ITCM*"
 3. Select button to be programmed:- Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with a second intercom button: Station 10 - 25, Dial **10 . 25** or press **A1-A16**
 5. Dial * for further intercom button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.10 Privacy Release Button

Description: A user engaged in a private call can press the privacy button to change a private call into a non-private one.

- To Program:**
1. Dial 56 "*BUTTON MAPPING*"
 2. Dial 06 "*ASSIGN PRIVACY*"
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with a PRIVACY button: Station 10 - 25, Dial **10 . 25** or press **A1-A16**
 5. Dial * for further privacy release button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.11 Save Button

Description: A telephone user can press the SAVE button to store the last dialed number for later redid.

- To Program:**
1. Dial 56 "*BUTTON MAPPING*"
 2. Dial 08 "*ASSIGN SAVE*"
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with a SAVE button: Station 10 - 25, Dial **10 . 25** or press **A1-A16**
 5. Dial * for further Save button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.12 Shift Button

Description: You can use a shift button to access **autodial** numbers that are programmed under DSS buttons. At default, the shift button appears at the location of your **DSS/BLF** button.

- To Program:**
1. Dial 56 "**BUTTON MAPPING** "
 2. Dial **18** "**ASSIGN SHIFT**"
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station **ports** to be programmed with a Shift button: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
 5. Dial * for next shift button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.13 Voice Announce Block Button

Description: Telephone users can block voice announced intercom calls by pressing this button (all call and zone paging calls are not blocked).

- To Program:**
1. Dial 56 "**BUTTON MAPPING** "
 2. Dial 14 "**ASSIGN VA B**"
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Select station ports to be programmed with a Voice Announce Block button: Station 10 - 25, Dial **10 - 25** or press **A1-A16**
 5. Dial * for next voice announce block button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.8.14 Zone Page/All-Call Button

Description: This button will provide a station with one-button access to ah-call and zone paging.

- To Program:**
1. Dial 56 "**BUTTON MAPPING** "
 2. Dial 09 "**ASSIGN ZONE**"
 3. Select button to be programmed: Press **A1 - A16, B1 - B6**
 4. Dial **1 - 3** for zone 1 - 3 "**ASSIGN ZONE X**"
—OR—
Dial 4 for all-call "**ASSIGN ALL CALL** "
 5. Select station ports to be programmed: Station 10 - 25: Dial **10 - 25**, or press **A1 - A16**
 6. Dial * for further paging button assignment,
—OR—
Dial ** for next button mapping feature,
—OR—
Dial *** for configuration mode.

3.9 Voice Mail Interface *

*NOTE: The * denotes that this feature is currently a future feature.*

The Unisyn system supports the use of the Comdial proprietary voice mail system. 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 are optional for use as needed.

NOTE: A lighted LED next to the programming button for the selection shows which choice you have selected. 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.

3.9.1 Voice Mail Port

Description: When you connect the voice mail system to a station port, you must use this programming feature to enable the station port as a voice mail port.

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.

Default = None enabled (All LEDs = Off)

To Program:

1. Dial 51 "PORTTYPE"
2. Dial 08 "EXECUMAIL"
3. Select station ports to be programmed: Station 11 - 25, Dial 11 - 25 or press A2 - A16
4. Dial * for next feature,
—OR—
Dial * * for configuration mode.

3.9.2 Voice Mail Port-Direct Ringing For Automatic Attendant Operation

Description: With this feature, the voice mail system automatically answers any line that is ringing at 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.

Default = No direct ring (All LEDs = Off)

To Program:

1. Dial 54 "STA/LINE CONFIG"
2. Dial 1 "DIRECT RING"
3. Select line ports for direct ringing
Line port 1- 6 = Dial 01 - 06 or press **B1 - B6**
4. Dial # when all line ports are selected
5. Select station ports to be programmed: station 1 1- 25, dial **11 - 25** or press A2 - **A16**
6. Dial * when all station ports are selected
7. Dial * * for configuration mode.

3.9.3 Voice Mail Port-Delayed Ringing For Automatic Attendant Operation

Description: You can program the voice mail port to delay ring to the automatic attendant.

Default = No delay ring (All LEDs = Off)

To Program:

1. Dial 54 "STA/LINE CONFIG."
2. Dial 2 "DELAYRING "
3. Select line ports for delayed ringing
Line port 1- 6 = Dial 01 - 06 or press **B1 - B6**
4. Dial # when all line ports are selected
5. Select station ports to be programmed: station 1 1- 25, Dial **11 - 25** or press A2 - **A16**
6. Dial * when all station ports are selected
7. Dial * * for configuration mode.

3.9.4 Voice Mail Port-Night Ringing For Automatic Attendant Operation

Description: You can program the voice mail port to ring differently in night mode.

Default = No night ring (All LEDs = Off)

- To Program:**
1. Dial 54 "*STA/LINE CONFIG*"
 2. Dial 3 "*NIGHT RING*"
 3. Select line ports
Line port 1- 6 = Dial 01 - 06 or press **I31 - B6**
 4. Dial # when all line ports are selected
 5. Select station ports to be programmed: station 11 - 25, Dial **11 - 25** or press **A2 - A16**
 6. Dial * when all station ports are selected
 7. Dial * * * for configuration mode.

3.9.5 Voice Mail Port-Assign Voice Mail Ports To Hunt Group

Description: You must assign all voice mail ports to a circular hunt group to take advantage of that feature's multiple-port interface capability. Make a circular hunt group by linking all voice mail ports to one another and then linking the last voice mail port in the hunt group with the first voice mail port in the hunt group. For example, with the voice mail system connected to station ports 013, 014, 015, and 016, place port 013 in a hunt group and link 014 to it, then place 014 in a hunt group and link 015 to it, then place 015 in a hunt group and link 016 to it, and finally place 016 in a hunt group and link 013 to it to complete the circle. With this arrangement, a call will first try to ring at port 013, then try port 014 and so forth until it tries all four voice mail ports.

Default = None assigned (AU LEDs = Off)

- To Program:**
1. Dial 53 "*STATION FEATURES*"
 2. Dial 18 "*ITCM HUNT LINK*"
 3. Select first linking station: station 11 - 25, Dial **11 - 25 A2 - A16**
 4. Select second linking station: station 11 - 25, Dial **11 - 25 A2 - A16**
 5. Dial * for another link
—OR—
Dial * * for next station feature
—OR—
Dial * * * for configuration mode.

3.9.6 Automatic Transfer of Voice Mail

Description: When you include a voice mail system with the Unisyn telephone system, use this programming feature to arrange for an immediate line transfer without delay from the voice mail system to a 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.

Default = Disabled (AI LED = Off)

- To Program:**
1. Dial 25 "V MAIL AUTO XFER"
 2. Press AI to toggle between enable and disable (LED On = Enable)
- OR—
- Dial 1 to enable (AI LED is on)
 - Dial 2 to disable
 3. Dial * for configuration mode

3.9.7 Voice Mail Line ID

Description: When you have included the voice mail system with the Unisyn 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.

Default = None assigned (B1-B6 LEDs = Off)

- To Program:**
1. Dial 43 "VOICE MAIL LN ID"
 2. Select line port (LED On = Line assigned)
Line port 1- 6 = Dial 01 - 06 or press B1 - B6
 3. Dial # to clear current ID
 4. Dial ID number (6 digit maximum)
 5. Dial * for further ID assignment,
- OR—
- Dial * * for configuration mode.

3.9.8 Voice Mail Transfer on Busv

Description: Normally, the 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.

Default = Not enabled (A1-A16 LEDs = Off)

To Program:

1. Dial 53 "STATION FEATURES".
2. Dial 31 "VMAIL XFR ON BSY"
3. Select station ports to be programmed. Station ports 10 - 25, Dial **10 - 25** or press **A1 - A16**
4. Dial * for next feature,
—OR—
Dial * * for configuration mode.

3.10 Toll Restriction Table Configuration

In order for toll restriction to take effect, you must perform all of the following functions:

- Program entries in one or more toll tables
- Assign toll tables to all appropriate lines.
- Assign toll tables to all appropriate stations.

Description:

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 1804 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 327, 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 a 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 have created.
7. If the system is installed behind a PBX, include an access code as part of every table entry.

NOTE: 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 = deny

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, they can be changed as needed to meet different toll restriction needs.*

3.10 Toll Restriction Configuration

NOTE: A lighted LED next to the programming button for the selection shows the choice you have selected. 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.

You can return the-toll table values to the default state by entering base level, dialing **70#**, and pressing SPKR.

*NOTE: When you bridge an **IST** telephone across a proprietary station, the system cannot verify toll restriction from the bridged IST telephone. You **should** use caution when installing a bridged system in areas where abuse could occur. Also note that **if all DTMF** receivers are being used it is still possible to get a line and dial using a non-toll restricted IST telephone.*

3.10.1 Assign Entries To Toll Restriction Tables

Description: Program the entries that you want each toll restriction table to contain.

Default = Entries in tables 1, 2.

To Program:

1. Dial 71 "TOLL TABLE"
2. Dial 01 - 16 or Press **A1 - A16** for toll table 1 - 16 "XXXXXX TABLE Y"
3. Dial 5 or Press **A1** to establish an allow toll table (A1 LED on = allow) "ALLOW TABLE Y"
—OR—
Dial 6 or Press **A2** to establish a deny toll table (A2 LED on = deny) "DENY TABLE Y "
4. Dial **1 - 4** or Press **A9, A10, All**, or **A12** for entry number **1 - 4** "XXXXXX"
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.

3.10.2 Assign Toll Restriction Tables To Lines

Description: Once you have created a toll restriction table, assign it to the appropriate line(s).

*Default = AU tables assigned to **all** lines.*

To Program:

1. Dial 72 "ASSIGN TOLL-LINE"
2. Dial 01 - 16 or Press **A1 - A16** for toll table 1 - 16 (LED On = Selected Table)
3. Dial # to finish entry and display lines
4. Select line ports
Line port 1- 6 = Dial **01 - 06** or Press **B1 - B6**
5. Dial * and repeat steps 2-4 for next toll table to line assignment,
—OR—
Dial ** for configuration mode.

3.10.3 Assign Toll Restriction Tables To Stations

Description: Assign the toll restriction table to each appropriate station.

Default = None assigned.

- To Program:**
1. Dial 73 "ASSIGN TOLL-STA. "
 2. Dial 01 - 16 for toll tables 1-16 to be assigned to station
—OR—
Press **Al - Al6** for tables 1-16 (LED On = Selected table)
 3. Dial # to finish entry
 4. Select station ports to be programmed: Station 10 - 25, Dial **10 - 25** or press **Al - Al6**
 5. Dial * for next toll table to station assignment,
—OR—
Dial * * for configuration mode.

3.10.4 Assign Toll Restriction Tables To Stations For Night Ringing

Description: Toll tables assigned with this feature have an effect only when the attendant places the telephone system in the night ringing mode of operation.

Default = None assigned.

- To Program:**
1. Dial 74 "ASSIGN TOLL-NITE"
 2. Dial 01 - 16 for toll tables 1 - 16 to be assigned
—OR—
Press **Al - Al6** for tables 1-16 (LED On = Selected table)
 3. Dial # to finish entry
 4. Select station ports to be programmed: Station 10 - 25, Dial **10 - 25** or press **Al - Al6**
 5. Dial * for next toll table to night answer assignment,
—OR—
Dial * * for configuration mode.

3.10.5 Assign Toll Restriction Tables To System Speed Dial Calls

Description: 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.

Default = None assigned.

To Program:

1. Dial 53 "STATION FEATURES"
2. Dial 05 "SYS SPD TOLL RST"
3. Select station ports to be programmed: Station 10 - 25, Dial 10 - 25 or press A1 - A16
4. Dial * for next station feature,
—OR—
Dial * * for configuration mode.

3.10.6 Toll Restriction Override

Description: Toll Restriction override allows a user to override any toll restriction that he or she encounters at another station with their own toll restriction assignments.

Default = Not enabled.

To Program:

1. Dial 53 "STATION FEATURES"
2. Dial 25 "TOLL R OVERRIDE"
3. Select station ports to be programmed: Station 10 - 25, Dial 10 - 25 or press A1 - A16
4. Dial four digit TRO code "NNNN"
To remove TRO code, repeat step three and dial #
5. Repeat steps three and four for next station port,
—OR—
6. Dial * for next station feature,
—OR—
Dial * * for configuration mode.

3. // Programming Reference Chart

The following chart lists all of the Unisyn programming options in their numerical order and provides you with an excellent reference., You *do not have to program the system in this order.*

| <u>Code #</u> | <u>Feature</u> | <u>Code #</u> | <u>Feature</u> |
|---------------|------------------------------------|---------------|--|
| 01 | System Clock | 53,17 | Dedicated Intercom For Attendant |
| 02 | System Speed Dial | 53,18 | Intercom Hunt Group |
| 03 | Night Mode | 53,21 | Call Forward on Busy / RNA |
| 04 | Music On Hold | 53,23 | Flexible Ringing Assignment Of PA Port |
| 10 | System Default | 53,25 | Toll Restriction Override |
| 11 | Station Transfer Recall Time | 53,26 | Data Security Port |
| 12 | Recall / Flash Time | 53,27 | LCD Display of Call Cost * |
| 13 | Pause Time | 53,31 | Voice Mail Transfer on Busy * |
| 14 | Hold Recall Time | 53,33 | IST Distinctive Ringing |
| 15,1 | Baud Rate Port A | 53,36 | Caller ID Stations * |
| 15,2 | Baud Rate Port B | 53,38 | LCD Languages |
| 16 | Tone or Voice First | 54,1 | Direct Ringing |
| 17,01 | CID First Ring * | 54,2 | Delayed Ringing |
| 17,02 | CID Distribution * | 54,3 | Night Ringing |
| 17,03 | Make / Break Ratio | 54,4 | Privacy Release |
| 17,04 | Attn / Line Access | 54,5 | Access Denied |
| 23 | Exclusive Hold | 54,6 | Call Originate Denied |
| 25 | Automatic Transfer of Voice Mail * | 54,7 | Idle Line Preference |
| 26 | Extended DTMF | 55 | All-Call and Zone Paging |
| 27 | DTMF Dialing Feedback | 56,01 | Default Button Mapping |
| 30 | Line Default | 56,02 | Line Button |
| 31 | Line Disable | 56,03 | DSS Button |
| 32 | Auxiliary Lines | 56,04 | Blank Button |
| 33 | C,O, Lines | 56,05 | Dual Intercom Button |
| 35 | Line Groups | 56,06 | Privacy Button |
| 36 | Pulse Dial | 56,07 | DND Button |
| 37 | Tone Dial | 56,08 | Save Button |
| 38 | Abandon Hold Release | 56,09 | Zone page / All Call Button |
| 40 | Automatic Privacy | 56,10 | Automatic Call-Back Button |
| 43 | Voice Mail ID Line * | 56,11 | Call Forward Button |
| 47 | Caller ID Lines * | 56,13 | Line Group Button |
| 50,00 | Station Default | 56,14 | Voice Announce Block Button |
| 51 | Port Definition | 56,15 | Line group Queue Button |
| 52 | Station Extension Number | 56,18 | Shift Button |
| 53,01 | External Paging Interface | 70 | Toll Restriction Table Default |
| 53,04 | Voice Announce Blocking | 71 | Toll Table Entry |
| 53,05 | System Speed Dial Toll Restriction | 72 | Assign Toll Table To Line |
| 53,06 | Message Wait Originate | 73 | Assign Toll Table To Station |
| 53,07 | Thm Dialing / IST | 74 | Assign Toll Table for Night Ringing |
| 53,09 | Ringing Line Preference | 77,1 | SMDR Cost Reporting * |
| 53,11 | Automatic Hold | 77,2 | SMDR Printout |
| 53,12 | Automatic Hold For Intercom | 90 | Master Clear |
| 53,13 | Headset Interface | 92 | PA Timeout |
| 53,14 | Personal Ringing Tones | | |
| 53,15 | Prime Line | | |

* Denotes a future feature.

3.12 Feature Code Numbering Plan

| Feature | | Dialing Code |
|---------------------------------------|---|--|
| All Call Page | | ITCM 87 |
| Attendant Calling | | ITCM 0 (or ITCM 9) |
| Automatic Redialing | | Programmed Button /Interactive Button |
| Background Music | On Off | ITCM * 1 ITCM # 1 |
| Automatic Callback | Activate Cancel | ITCM, Extension, * 6 ITCM # 6 |
| Call Forward | All Calls Cancel | ITCM * 5, Extension ITCM # 5, |
| call Pickup | Directed System | ITCM *4, Extension ITCM # 4, |
| Call Waiting Tone | Send Cancel | ITCM, Extension , * 01 Hang Up |
| Do Not Disturb | Set Cancel | Programmed Button / Interactive Button Programmed Button / Interactive Button |
| Handsfree Answer Inhibit | Set Cancel | MUTE MUTE |
| Hold | Manual Exclusive | HOLD HOLD, HOLD |
| Line Group Access | Group 1 Group 2 Group 3 Group 4 | ITCM 9 (or ITCM 0) ITCM 81 ITCM 82 ITCM 83 |
| Line Queuing | Enable Line Enable Line Group Cancel | HOLD ITCM (Group code) * 8 ITCM # 8 |
| Message Waiting | Set Cancel From Idle Retrieve Message | ITCM * 3, Extension ITCM # 3, Extension ITCM, HOLD (ITCM * 7 from IST) |
| Night Transfer (Attendant Station) | On Off | ITCM * # 03 (A1) ITCM * # 03 (A1) |
| Personal Ringing Tones | Set Tone 1-4 | ITCM * * 4 (1-4) |
| Pulse / Tone Switching | | # (While on a line) |
| Redial (Last Dialed Number) | | # |
| Saved Number Redial | Use Store | HOLD, Programmed Button Programmed Button |
| Speed Dial | Station System | 1-0 / Programmed Button * 01-99 |
| Toll Restriction Override | Activate | ITCM ** 6, Code |
| Voice Announce Block | Block Unblock | ITCM *2 ITCM # 2 |
| Zone Page | Zone 1 Zone 2 Zone 3 | ITCM 84 ITCM 85 ITCM 86 |

4

Programming Records

4.1 System Programming—Miscellaneous Features

| Data Baud Rate | A | B |
|---------------------|---|---|
| 110 Baud | | |
| 150 Baud | | |
| 300 Baud | | |
| 600 Baud | | |
| 1200 Baud | | |
| 2400 Baud | | |
| 4800 Baud | | |
| 9600 Baud | | |
| 19200 Baud | | |
| 7 Data / 2 Stop Bit | | |
| 8 Data / 1 Stop Bit | | |

Default = 1200 Baud 8 Data / 1 Stop Bits

| | | |
|---------------------------|---------|---------|
| Attendant / Line Access | O = Att | 9 = Att |
| Default = 0 For Attendant | | |

| | | |
|--------------------|------|------|
| Dialing Feedback | Mono | DTMF |
| Default = Monotone | | |

| | | |
|------------------------|------|-------|
| Tone / Voice Signaling | Tone | Voice |
| Default = Voice | | |

| | | |
|-------------------|--------|---------|
| Exclusive Hold | Enable | Disable |
| Default = Disable | | |

| | | |
|--------------------|---------|---------|
| Make / Break Ratio | 60 / 40 | 67 / 33 |
| Default = 60 / 40 | | |

| PA Options | | | |
|--|--------------|--------|-------------------|
| Direct Ringing Lines (1-6) | | | |
| Delayed Ringing Lines (1-6) | | | |
| Night Ringing Lines (1-6) | | | |
| Zone Paging Enabled | Zone 1 | Zone 2 | Zone 3 I All Call |
| Ringing Port Relay Tracking | I Station 17 | | Paging Port |
| Default = No Ringing Lines, All-Call Paging Station 17 Ringing | | | |

| System Speed Dial Record | | (Be sure to record a line or line group number with each speed dia number.) | | | | | |
|--------------------------|--------|---|--------|-----|--------|-----|--------|
| LOC | NUMBER | LOC | NUMBER | LOC | NUMBER | LOC | NUMBER |
| 01 | | 36 | | 51 | | 76 | |
| 02 | | 27 | | 52 | | 77 | |
| 03 | | 28 | | 53 | | 78 | |
| 04 | | 29 | | 54 | | 79 | |
| 05 | | 30 | | 55 | | 80 | |
| 06 | | 31 | | 56 | | 81 | |
| 07 | | 32 | | 57 | | 82 | |
| 08 | | 33 | | 58 | | 83 | |
| 09 | | 34 | | 59 | | 84 | |
| 10 | I | 35 | | 60 | | 85 | |
| 11 | | 36 | | 61 | | 86 | |
| 12 | | 37 | | 62 | | 87 | |
| 13 | | 38 | | 63 | | 88 | |
| 14 | | 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 | | 49 | | 74 | | 99 | |
| 25 | | 50 | | 75 | | | |

4.2 System Programming — Timing Features

| | | | | | | | | | | |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Recall / Flash Time | .08 sec | .30 sec | .50 sec | .60 sec | .75 sec | .88 sec | 1.0 sec | 1.5 sec | 2.0 sec | 3.0sec |
| <i>Default = 2 seconds</i> | | | | | | | | | | |

| | | | | | | | | | | |
|---------------------------|--------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| 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 |
| <i>Default = 1 second</i> | | | | | | | | | | |

| | | | | | | | | | | |
|-------------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|-------|
| Timed Hold Recall Time | 30 sec | 60 sec | 90 sec | 120 sec | 180 sec | 240 sec | 300 sec | 360 sec | 420 sec | Never |
| <i>Default = 60 seconds</i> | | | | | | | | | | |

| | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Unanswered Call Transfer Recall Time | 10 sec | 20 sec | 25 sec | 30 sec | 45 sec | 60 sec | 90 sec | 120 sec | 180 sec | 240 sec |
| <i>Default = 20 seconds</i> | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|--------|--------|--------|---------|---------|---------|---------|--------|--------|------|
| Paging Port Timeout | 30 sec | 60 sec | 90 sec | 120 sec | 150 sec | 180 sec | 210 sec | 260sec | 300sec | None |
| <i>Default = None</i> | | | | | | | | | | |

| Extended DTMF Tones For Automatic Dialing | |
|--|-----------|
| 80 msec | 480 msec |
| 160 msec | 560 msec |
| 240 msec | 720 msec |
| 320 msec | 880 msec |
| 400 msec | 1040 msec |
| <i>Default = 80 msec</i> | |

4.4 Line Configuration Records

| Feature | Line Port (Write number, name, group, or other data) | | | | | |
|--|--|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Abandoned Hold Release (50/350 msec) | | | | | | |
| Automatic Privacy (On/Off) | | | | | | |
| Privacy Release Lines | | | | | | |
| Line Port Disable (On/Off) | | | | | | |
| Line Groups (0, 1-4) | | | | | | |
| Line Port Function (AUX/CO) | | | | | | |
| Pulse/Tone Switchable (pulse/tone) | | | | | | |
| Voice Mail ID (6 digits max) (* Future Feature) | | | | | | |
| <i>Default = 50 msec hold release, privacy on all with no station released, no disabled lines, no groups assigned, all ports co, all tone dialing, no VM ID.</i> | | | | | | |

4.5 Station Configuration

(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)

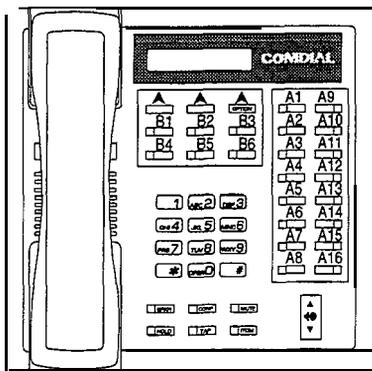
| Feature | Choice | Default | Enter Station Port Numbers | | | | | | | | | | | | | | | | | |
|---|--------------|-------------------|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Access Denied (Line) | Lines 1-6 | None | | | | | | | | | | | | | | | | | | |
| All-Call and Zone Paging Receive | All/1-3 | All | | | | | | | | | | | | | | | | | | |
| Originate | All/1-3 | All | | | | | | | | | | | | | | | | | | |
| Automatic Hold | Yes/No | No | | | | | | | | | | | | | | | | | | |
| Automatic Hold - Intercom | Yes/No | No | | | | | | | | | | | | | | | | | | |
| Automatic Privacy | | | | | | | | | | | | | | | | | | | | |
| Privacy Release | None/1 -6 | None | | | | | | | | | | | | | | | | | | |
| Call Forward On Busy/ Ring - No Answer | No/1-9 Rings | No | | | | | | | | | | | | | | | | | | |
| Call Origination Denied | Lines 1-6 | None | | | | | | | | | | | | | | | | | | |
| Data Security Port | Yes/No | No | | | | | | | | | | | | | | | | | | |
| Dedicated ITCM For Attendant | 1-5 | None | | | | | | | | | | | | | | | | | | |
| External Paging Interface | 10-25 | None | | | | | | | | | | | | | | | | | | |
| Flexible Ringing | Direct | Lines 1-6 | All (Sta. 10, 17) | | | | | | | | | | | | | | | | | |
| | Delayed | Lines 1-6 | None | | | | | | | | | | | | | | | | | |
| Flexible Ringing PA Port | 11-25 | None | | | | | | | | | | | | | | | | | | |
| Night Transfer (of ringing) | Lines 1-6 | All (Sta. 10, 17) | | | | | | | | | | | | | | | | | | |
| Flexible Station Numbering | 10-7999 | Ext = Port | | | | | | | | | | | | | | | | | | |
| Headset Interface | Yes/No | No | | | | | | | | | | | | | | | | | | |
| Idle Line Preference | Lines 1-6 | No | | | | | | | | | | | | | | | | | | |
| Intercom Hunt Group | 10-25 | None | | | | | | | | | | | | | | | | | | |
| Languages | Span, French | English | | | | | | | | | | | | | | | | | | |
| Personal Ring Tones | 1-4 | 1 | | | | | | | | | | | | | | | | | | |
| Prime | Line | 1-6 | None | | | | | | | | | | | | | | | | | |
| | Group | 1-4 | None | | | | | | | | | | | | | | | | | |
| Intercom | Icm. | Yes | | | | | | | | | | | | | | | | | | |
| Message Wait Originate | Yes/No | Yes | | | | | | | | | | | | | | | | | | |
| Ring Line Preference | Yes/No | Yes | | | | | | | | | | | | | | | | | | |
| Toll Restriction Override | 0000 - 9999 | None | | | | | | | | | | | | | | | | | | |
| Voice Announce Blocking | Yes/No | No | | | | | | | | | | | | | | | | | | |

| | | |
|----------------------------------|----|-----|
| IST Distinctive Ringing | On | Off |
| Default = Distinctive Ringing On | | |

Station Configuration Records- continued

Station Button Mapping Record

(Complete one record sheet for each station. Copy this blank record sheet as required for additional stations.)



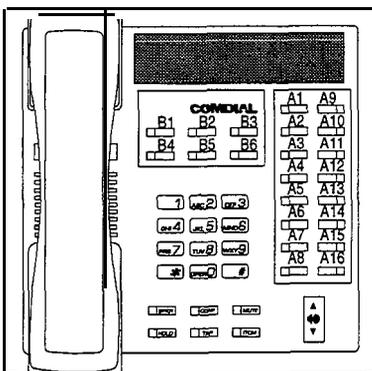
6-Line LCD Speakerphone

| BUTTON | DESCRIPTION |
|--------|---------------------|
| BLK | Bhnk |
| Lnn | Lines 1 - 24 |
| Snn | Stations 10 - 57 |
| DND | Do Not Disturb |
| PRI | Privacy Release |
| IC2 | Second Intercom |
| SAV | Save |
| ZPn | Zone Page 1 - 3 |
| A C | All-Call Page |
| A C B | Automatic Call Back |
| CF | Call Forward |
| TGn | Line Group 1 - 4 |
| VAB | Voice Announce Back |
| TGQ | Line Group Queue |
| SHF | Shift |

UNIS074

| | |
|------------------|---------------|
| PORT NUMBER | |
| INTERCOM NUMBER | |
| STATION LOCATION | |
| TELEPHONE | TYPE MODEL |

| BUTTON ASSIGNMENT CHART | | |
|-------------------------|-----|----|
| A1 | A9 | B1 |
| A2 | A10 | B2 |
| A3 | A11 | B3 |
| A4 | A12 | B4 |
| A5 | A13 | B5 |
| A6 | A14 | B6 |
| A7 | A15 | |
| A8 | A16 | |



n 6-Line Speakerphone
 6-Line Monitor Telephone

DEFAULT SETTINGS:

| | |
|-------------|-----------------------------|
| 308 | 616 |
| B1 = Line 1 | B1 = Line 1 B4 = Line 4 |
| B2 = Line 2 | B2 = Line 2 B5 = Line 5 |
| B3 = Line 3 | B3 = Line 3 B6 = Line 6 |
| A1 = DSS 10 | A1 = DSS 10 A9 = DSS 18 |
| A2 = DSS 11 | A2 = DSS 11 A10 = DSS 19 |
| A3 = DSS 12 | A3 = DSS 12 A11 = DSS 20 |
| A4 = DSS 13 | A4 = DSS 13 A12 = DSS 21 |
| A5 = DSS 14 | A5 = DSS 14 A13 = DSS 22 |
| A6 = DSS 15 | A6 = DSS 15 A14 = DSS 23 |
| A7 = DSS 16 | A7 = DSS 16 A15 = DSS 24 |
| A8 = DSS 17 | A8 = DSS 17 A16 = DSS 25 |

*Shift button is defaulted at the location of your own DSS button.

4.6 Voice Mail

| Voice Mail Port |
|------------------------------|
| 11 |
| 12 |
| 13 |
| 14 |
| 15 |
| 16 |
| 17 |
| 18 |
| 19 |
| 20 |
| 21 |
| 22 |
| 23 |
| 24 |
| 25 |
| <i>Default = Not Enabled</i> |

| Automatic Transfer Of Voice Mail |
|----------------------------------|
| Enable |
| Disable |
| <i>Default = Disabled</i> |

| Voice Mail Line Port Identification | |
|-------------------------------------|-------|
| Port | Entry |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| <i>Default = No ID Assigned</i> | |

| Automatic Attendant— | | | |
|---------------------------------|--------|-------|-------|
| Ringing Lines (1-6) Per Station | | | |
| Station | Direct | Delay | Night |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| <i>Default = None Assigned</i> | | | |

| Voice Mail Transfer On Busy |
|------------------------------|
| 10 |
| 11 |
| 12 |
| 13 |
| 14 |
| 15 |
| 16 |
| 17 |
| 18 |
| 19 |
| 20 |
| 21 |
| 22 |
| 23 |
| 24 |
| 25 |
| <i>Default = Not Enabled</i> |

4.12 Toll Restriction Table Configuration

Toll Restriction Tables

| | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 1 | | | | | | | | | | | | | | | | |
| Type: Allow Deny X | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 1 | | | | | | | | | | | | | | | |
| 2 | 9 | 7 | 6 | | | | | | | | | | | | | |
| 3 | 4 | 1 | 1 | | | | | | | | | | | | | |
| 4 | 0 | | | | | | | | | | | | | | | |
| Table Assignment: Lines All Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 5 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | I | I | I | | I | I | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 2 | | | | | | | | | | | | | | | | |
| Type: Allow X Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 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 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines All Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 6 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 3 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 7 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 4 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 8 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

Toll Restriction Tables - continued

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 9 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 13 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 10 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 14 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 11 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 15 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 12 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Toll Restriction Table 16 | | | | | | | | | | | | | | | | |
| Type: Allow Deny | | | | | | | | | | | | | | | | |
| Entry Entry Numbers (16 Maximum) | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| Table Assignment: Lines Stations | | | | | | | | | | | | | | | | |

Assign Toll Restriction Tables To Lines

| Assign Toll Restriction Tables To Lines | |
|---|---------------|
| Port | Tables |
| 1 | |
| 2 | |
| | |
| 5 | |
| 6 | |
| Default = All Tables Assigned To All Ports | |

Assign Toll Restriction To Stations

| Station Port | Toll Table Assignments | | |
|--------------------------------|-------------------------------|-----------------------------|-------------------------|
| | Normal Calls | Night Transfer Calls | Speed Dial Calls |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| Default = None Assigned | | | |

| Toll Restriction Override (TRO) Code | |
|---|--|
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |

5

System Features

A

Abandoned Hold Release—3.6.2—

When a distant party abandons a Hold condition (hangs up), causing an interruption in the line current, the system drops the line from hold and returns it to service. You can program the time interval between hang-up and line-drop between either 50 msec. or 350 msec. This feature usually depends 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 has been abandoned.

Access Denied—3.7.2—

You can deny access to particular lines at certain stations in the system through system programming. A station user cannot select a denied line for use. You can program this feature on a per line/per station basis in station class of service programming.

All-Call Paging-3.7.3, 3.7.4—

All-call paging allows all multiline stations to receive announcements through the station speaker at once. Origination of announcements must be via the station handset. You can program each station to receive and/or originate all-call page. Also see--Zone Paging.

All Intercom Links Busy Indication

When all intercom paths are busy, the system causes the intercom light at each station to be on steady. No class of service programming is required to enable this feature; however, station class of service programming will allow an intercom link to be reserved for exclusive use by a particular station (3.7.13). **IST** users will not get ITCM dial tone if all links are busy.

Area Paging Interface

See-External Paging Interface.

Automatic Call-back —3.8.1—

When a user encounters a busy tone or a ring-no-answer on an intercom call, he or she can dial a special code (or use interactive button) that causes the system to automatically ring both the calling and called stations when the called station becomes idle. No class of service programming is required to enable this feature.

Automatic Hold For Intercom—3.7.6—

If a user selects the second intercom line while a call is active on the first intercom line, this feature causes the first intercom call to be automatically placed on hold.

Automatic Hold—Transfer To Intercom (Answer Hold)—3.7.5—

If the intercom line is selected while an outside line call is active, this system feature causes the outside call to be automatically placed on hold. No class of service programming is required to enable this feature.

Automatic Hold-Transfer To Line—3.7.5—

When you enable this feature, an active line will automatically go on hold when the user presses any line button. 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.

Automatic Privacy—3.6.3, 3.7.7—

You can program a line to be private or non-private. In the private mode, a station has exclusive use of the line during a call, and no other station can access that line unless the user includes the add-on station through the use of the privacy or add-on conference feature. In the non-private mode, all stations with that line appearance can gain access at the same time (sometimes known as common line pickup). Use line class of service programming to make a line private or non-private. Through station class of service programming, you can make a line non-private at a particular station. Also *see-Conference -Add-On*

Automatic Privacy Release—3.6.4, 3.7.8—

You can arrange for individual stations to automatically release privacy while on certain private lines. 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.

Auxiliary Station Ringer Interface—2.7.4, 2.7.5—

The auxiliary station ringer interface provides “dry-contact” relay closures whenever station 17 rings. The contact closures track the ringing pattern of station 17 and can control an external signaling device. When you program station port 17 to function as a PA port, the auxiliary ringer interface relay contacts automatically become supervisory contacts and close when someone calls the PA port. No class of service programming is required. Also *see-Common Audible Ringer Interface*.

B

Background Music (External Music Source Required)

If the system user provides an external music source, station users can turn on background music at their particular stations. Users adjust the loudness of the background music with the speaker volume control. The background music automatically turns off during calls. No class of service programming is required to provide this feature. The system will not support background music with bridged proprietary and auxiliary devices connected. Also *see-Music on Hold*

Basic Key Service (1a2) Emulation

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

Battery Back-up Interface —2.4.2—

We have made it possible to attach a Comdial-provided optional battery back-up kit to the common equipment. Battery back-up gives full uninterrupted system power in case of an AC power loss. The switching and trickle charge circuitry are in the common equipment, while batteries, chassis, and cable are packaged as a separate option. When plugged into an active AC power source, the common equipment constantly charges the attached batteries with a trickle current. 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. No class of service programming is required.

C

Call Announce With Handsfree Answerback

The internal speaker at each multiline station provides call-announce capability over the intercom link. Users can make handsfree response to a call-announce. The microphone built into the telephone transmits this response. No class of service programming is required (Handsfree Answerback not available on 1122X).

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 you have enabled call forwarding when night transfer of ringing is activated, the system also forwards the night ringing assignment of the station. The system can also forward calls that have been forwarded once. Therefore, 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. For each intercom call that a station receives while calls are forwarded, a short tone burst will occur at the forwarding station as a reminder that call forwarding is enabled. When you designate a programmable button to serve as a call forward button, the associated LED will turn on when the user presses the button. The LED indicates that the feature is enabled. If you program the call forward button as a second level to a **DSS/BLF** button, the LED indication is always reserved 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. No class of service programming is required. Also **see-Call Forwarding-Busy Ring No-Answer**

Call Forwarding-Busy /Ring-No-Answer-3.7.9,3.X3-

The system can automatically forward busy or ring-no answer calls to a different station for answering. The system sends these calls to any idle station associated by intercom hunt group.

Call Pickup-Directed

A station user can dial a code, followed by the extension number of a ringing station, to answer the ringing call. No class of service programming is required.

Call Pickup

If a call rings to any station in the system and another user wishes to answer the call, that user must dial the pickup code to answer the call.

Call Transfer-Screened

Screened call transfer allows a user 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, they can simply use a common line pickup transfer-the transferred station merely presses the line button of the incoming call. If the other station does not have access to the incoming line, transfer can still take place using the system transfer feature. For a screened transfer, a user transfers a call with a pre-transfer announcement. Users can transfer calls with the CONF button. No class of service programming is required. Also *see-Call Transfer-Unscreened*.

Call Transfer-Unscreened—3.5.15—

A user can transfer an active call without being announced. The transferred call camps-on to the other station where it rings and awaits 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 can be camped onto another station. A transferred call will only ring if the station is idle. The system class of service programming determines the recall time for an unanswered transferred call.

Call Transfer-Unscreened (with Automatic Camp-on to Busy Station)

A user can transfer an active call without being announced. The transferred call immediately rings at that station if it is idle. If a user transfers a call to a busy station, the transferred call automatically camps-on at the busy station. If the user transfers additional calls to the busy station, the system places those calls in a camp-on queue. When the user who has received all of the transferred calls hangs up the current call, the first queued transferred call will ring. This sequence continues until the user has answered all transferred calls. Stations that have line appearance for a transferred line will show a “my-line” held call status indication for the transferred call. The transferred call will automatically ring back to the transferring station after a programmable transfer recall period.

Call Waiting Tone

A user can send the call waiting tone to a busy station to indicate that he or she wants to contact the busy station. Users dial a special code to activate the tone. No class of service programming is required..

Calling Station Identification On BLF

If you have programmed the station number of a calling station into the direct station select/busy lamp field (DSS/BLF) of a called station, the caller will be identified by a flashing BLF light. The lights also indicate the status of the DSS telephones: dark = idle, steady-on = in use, flash = calling, and flutter = call back request. No class of service programming is required for this feature.

Class Of Service Programming (From Main Station)

Use class of service (COS) programming to configure and assign all system, line, station, and special purpose operating features. Enter COS programming by dialing an access code over the intercom line. System administrators can enter COS programming with another code to re-program any system, station, or special purpose operating feature that may require change at a later date. Line reprogramming ability and defaults are 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, 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) to the lowest (the station user) level. However, only the station user can program the speed dial locations at his or her telephone.

Perform all class of service (COS) programming from station 10 or 12. Any multiline station combination functions in this mode and provides visual feedback with the LED associated with the programming button. By employing an LCD speakerphone, however, the programmer has the benefit of display prompts and verifications to simplify and clarify the programming procedures. Class of service programming access is as follows:

- Installer dials: ITCM * # 7 4 6 *
- Administrator dials: ITCM * # 2 3 6 *
- Attendant dials: ITCM * #
- User dials: ITCM * *

Common Audible Ringer Interface—2.7.2—

Connections are available at the common equipment that provide “dry-contact” relay closures whenever an incoming line rings. These contact closures track the ringing pattern and can be used to control an external signaling device. When you program station port 17 to be a PA port, the common audible ringer interface contact points automatically become supervisory contacts that close when someone *calls* the PA port. Also, see—*Auxiliary Station Ringer Interface*.

Conferencing-Add-on

With this feature, a station operating in a private mode can add another station to an outside call. No class of service programming is required.

Conferencing-Multiline

This feature allows one multiline station to access two outside lines at the same time resulting in a conference arrangement. A user can establish conferencing by using the CONF button. Conference transmission levels are not compensated. No class of service programming is required.

Conferencing-Unsupervised

After a conference between an internal party and two external parties has been established, 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. No class of service programming is required. Also see—*Conferencing - Multiline*. There is no unsupervised conferencing on IST stations.

D

Data Baud Rate—3.5.2—

You must program 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, to match the requirements of the data device.

Data Security—3.7.12—

Data security prevents any type of tone (DTMF, call waiting, barge-in, etc.) from interrupting an active call on a port programmed with the feature. This feature prevents interference to non-voice communications from occurring when you are using the port as an auxiliary bridged device or a stand-alone IST data port.

Dedicated Intercom for Attendant—3.7.13—

This programmable feature ensures that an attendant at a principal call answering position will always have a free intercom link to use for announcing the incoming calls to the stations. You can also reserve intercom links for exclusive use by any particular station in the system.

Defaults—3.4—

At initial power-up of the system, the operating features are set to a specific group of operating conditions (default conditions). The default conditions provide a complete operating system for normal use. You can leave the system as a defaulted system or reprogram. You can reset the default conditions by system, line, and station class of service programming. A master clear will default the entire system and erase all stored programmable button information.

Default Toll Restriction—3.4.6—

The system defaults two toll restriction tables with pre-programmed values and assigns those tables to all lines. All you have to do is assign the tables to the stations to put them into effect. You can reprogram the defaulted tables using the normal programming procedure. Assign toll tables to stations using station class of service programming. Reprogram toll tables using toll restriction table configuration class of service programming.

Delayed Ringing-3.7.1 6—

You can program delayed ringing assignments for individual stations. You can program a station to provide delayed ringing on some lines while providing immediate ringing on other lines (delayed ringing occurs on the fourth ring from the CO). *See-Flexible Ringing Assignments.*

Designated Programmable Buttons —3.8—

You can assign station programmable buttons to provide one-button access to a broad range of features. There are some designated buttons that you must assign at each station using station class of service programming, but the station user can assign many others.

Dial 0 / 9 For System Attendant—3.5.1—

Whenever any station user dials 0 (or 9) on the intercom line, the system signals the attendant station (station 10).

Direct Station Selection (DSS) Programmable

See-Programmable DSS/BLF.

Direct Ringing

See-Flexible Ringing Assignments.

Distinctive Ringing—3.7.22—

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. Class of service programming is required for IST ports.

Do-Not-Disturb-3.8.6

You can set any station 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, however; line appearance and ITCM will flash. A party making an intercom call to a station set in the DND mode hears a fast busy tone.

Dual Intercom—3.8.9—

This feature provides two separate intercom lines at the same station. One intercom line is fixed, and a user can access that intercom line by pressing the **ITCM** button. You can program the other intercom line, and a user can access that intercom line by pressing the programmable button selected for that purpose. A user would handle calls on the intercom lines in much the same manner as he or she would handle outside calls. Special considerations for dual intercom operation are as follows:

- Remote call pickup is not available.
- 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 receives a busy signal.
- 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.

E

End-to-end Signaling on Intercom

After a user has established an intercom call, the system can continue to send dialing signals (**DTMF** tones) through the intercom path to IST devices. Users can perform this feature from every station in the system, and it can be used with peripherals such as voice mail equipment. No class of service programming is required.

End-to-end Signaling on Lines

After a user has established an outside call, 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. No class of service programming is required.

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, audible and visual signaling will occur and the exclusive hold condition reverts to a normal line hold condition. Default is disabled.

Exclusive Hold System-wide Enable/Disable—3.5.4—

This feature allows you to turn on or off exclusive hold system-wide.

External Paging Interface—2.7.3, 2.7.4, 3.7.15—

You can program a station port or line port to interface with an external paging amplifier. Users can then access the **paging** amplifier through the station port or directly through the line port from other stations in the system. The user can dial DTMF tones through the line port to provide zone selection if provided by the external **paging amplifier**. The line class of service programming arranges a line port for external paging interface, and the station class of service arranges a station port for external paging interface.

Extended Dual Tone Multiple Frequency (DTMF)-3.5.10—

The system can access outside equipment, answering machines, banking computers, voice mail equipment, for example, that require **DTMF** tones that are longer than the standard 80 maser tone. A shift to a longer tone, of pre-programmed length, is automatically made **10** seconds after a line is selected or 10 seconds after the last digit of a number is dialed. A user **can** shift from one tone length to the other by pressing the hold button and then re-selecting the line.

F**Flexible Ringing Assignments-3.7.16—3.7.20—**

You can program ringing assignments on a per station/per line basis for every line that has an appearance at each station. Also *see-Delayed Ringing and Night Ringing*.

Flexible Ringing Assignments Of PA Ports—3.7.19—

Stations ports that you program as PA ports **can** also be programmed for flexible ringing assignments. You can program any desired lines to direct or delay ring at this port. You can connect a speaker to the voice pair of this port and when connected, it will sound the ringing that is generated by the system and sent to this port as if it were a regular station port. Using such an arrangement, the user can 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. You can only program one PA port per system as a ringing PA port. Users cannot use the speaker for voice response as the path is one-way only.

Flexible Station And Trunk Class Of Service Control

See Line-to-Line Port Reassignment and Station-to-Station Port Reassignment

Flexible Station Numbering Plan—3.7.20—

You can program each station to respond to the dialing of any available number between 10-79, 100-799, or 1000-7999. Also, you can assign any combination of two, three, or four digit extension numbers as long as they do not conflict. For example: If you assign 21 as an extension number, there cannot be any other extension number assigned that begins with a 21.

Full Button Programmability Of Features

You can make most Unisyn features available at programmable buttons by programming the feature buttons or the specific access codes necessary for dialing the features. Programmable features include those that can utilize lamp (on/off) supervision. You can store all feature access codes, except for those requiring T/C button action. You can also store continuous strings of digits, including ITCM button presses, up to sixteen digits per button.

H

Handsfree Answer Inhibit

A user can press the MUTE button on a multiline station 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 the user presses the button, all handsfree answerback is disabled thus inhibiting any off-site monitoring. The mute LED is steady-on to indicate that this feature is active. Any user activity at the telephone cancels the mute condition. No class of service programming is required. Also *see—Mute*.

Headset Interface—3.7.21—

You can enable a station port to allow headset operation through the handset. You must program that telephone to accept the headset.

Hunt Group On Intercom—3.7.10—

You can assign station ports 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 that station 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. Up to 16 stations can be placed in one hunt group. You can program the ringing time at any one station.

I

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 green or flashing green; the light indication at the other stations in the system is red or flashing red. No class of service programming is required.

Idle Line Preference

When you program a station for idle line preference, it will automatically **connect to the** first assigned idle line. You can program the system 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 user will not have to press the line button. If someone uses this feature 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.

Intercom Call Progress Tones

The system marks intercom **call** progress by special tones. A steady tone sounds for dial tone. A one-second-on and three-seconds-off tone sounds for ring-back. For tone signaled intercom calls, a double-ring burst sounds every four seconds at a called station and returns to the caller as ring-back. For a voice-signaled intercom call, a single tone burst sounds at a called station. When a called station is busy on an intercom call, a busy signal of one-half second on and one-half second off sounds at the calling station. When a station is busy on an outside call, the called station gets a subdued ring, and the calling station gets a ring back tone. A fast busy tone will be supplied when the called station is in the do-not-disturb mode. No **class of** service programming is required.

Intercom Line Timeout

Should the intercom line be selected with no dialing or other action taking place, the intercom “times out” after ten seconds, and returns to an idle state. No class of service programming is required. If no intercom is available on an IST telephone, the system does not provide an intercom tone until an intercom does become available. -

L**Languages—3.7.24—**

You can program the system to display all LCD prompts in one of three languages: English, Spanish, or French.

Last Number Redial

The system provides each station 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 prime line is busy or unavailable, the system will choose any line assigned to idle line preference. If they too 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. Also **see Automatic Pause Insertion**.

LCD Support

The system supports the use of speakerphones having a Liquid Crystal Display (LCD). The LCD speakerphone ports are identified by station class of service programming.

Line Port Functions-Line Disable—3.6.6—

You can take a line port out of service when necessary (because of defect, for example) using this programming procedure. Return the line to service with the central office lines programming step, 3.6.8.

Line Port Functions-Auxiliary Lines—3.6.7—

You can program a line to serve as a port for an external paging amplifier. **See—External Paging Interface**.

Line Port Functions-Central Office Lines—3.6.8—

You can condition a line port to serve as a port for a standard telephone company supplied central office line.

Line Groups-3.6.5, 3.8.7—

You can group outside lines together in up to four different groups. Each group is accessible through a unique dialing code or is automatically selected with the programmable **autodial** feature. Grouping can reserve certain lines for certain clusters of stations as in a tenant-service arrangement or reserve certain lines for access only by single-line sets. The assignment of line groups frees station buttons normally used for line selection thus making these buttons available for use with a feature such as a second ITCM key.

Line Preselection—3.6.5—

A user can manually select a line before lifting the handset (for handsfree dialing) or after the handset is lifted. No class of service programming is required.

Line Queuing

With the line queuing feature, a user can dial a special code number that will place a station in a queue where it awaits the availability of a line or line group. When the line is available to it for use, the system automatically signals the station with five tone bursts. Each station can queue one line at a time. No class of service programming is required.

M

Manual Hold

A button activated feature at each station will place an outside line on hold. Pressing the HOLD button holds the call, provides a distinctive flash rate of the line button indicator, and allows the user to access other station features. The holding station or any other station that has access to the line can retrieve the held call. No class of service programming is required.

Memory Retention Without Batteries

An electronic device sometimes referred to as a “super-cap,” electronically protects the system memory during AC power failures. The stored program data will remain in memory for a minimum of 70 hours, provided that the system has been powered continuously for at least 30 minutes prior to the power failure or disconnection. Some models include a system clock. On those models, the system clock will continue to run and keep time for at least 24 hours after an AC power failure or disconnection. No class of service programming is required.

Message Waiting-3 7.28—

Special feature access codes enable a station user to control the message waiting (MW) light at other stations in the system. When a user turns on the message waiting at a station, a call can be automatically placed to the station that turned it on. The message-waiting light automatically turns off when the called party answers.

If a station has a DSS/BLF appearance at another station, the station user can leave a call-back message indication at that other station. By dialing a special code, the user can activate the BLF light at the called station. This light indicates that the user’s station has requested a callback. The system automatically turns off the light if a successful callback is made.

Mixed Station Capacities

See-Port Definition.

Modular Wiring And Jacks/4-conductor Wire System

You can completely interconnect the system by employing industry standard 50-pin connectors and modular plug/jack combinations. Station wiring is 4-conductor, twisted-pair cable (2-conductor twisted pair cable for IST) throughout the system. No class of service programming is required.

Music Interface (External Source Required)—2.7.6—

We have provided the system with a jack for the connection of a customer-provided ASCAP registered music source. No class of service programming is required. Also see—**Background Music** and **Music-On-Hold**.

Music-on-Hold

The system provides music to outside lines that are placed on hold if an external music source is connected to the system. No class of service programming is required. Also see—**Music Interface**.

Music-on-hold System-wide Enable/Disable—3.5.6—

The system provides music to outside lines that are placed on hold if an external music source is connected to the system. Music-on-hold can be disabled system-wide by attendant action. Also see **-Music Interface** and **Music-On-Hold**.

Mute

Each station has a MUTE button that, 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 comes on to indicate a muted condition. The button provides push-on/push-off operation. No class of service is required. Mute is automatically canceled when anyone disconnects by hanging up or pressing the mute key. Also see—**Handsfree Answer Inhibit**.

N

Night Ringing—3.7.18—

Night transfer 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. Select the individual lines at each station that are to have ringing transferred with this feature with station class of service programming.

O

On-Hook Dialing

Every multiline station provides manual and/or automatic dialing while the station handset is on-hook. An internal speaker monitors call progress for completion. (The handset must be taken off-hook to provide the voice link on non-speakerphone stations.) No class of service programming is required.

Originating Denied-3.7.1 I—

You can deny individual stations the ability to originate calls on certain lines through system programming. Program the originating denied feature 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.

P

Pause Time—3.5.12—

During speed dials, it is sometimes necessary to delay the sending of digits to give switching equipment time to prepare for receiving those digits. The system stores a pause for this purpose whenever the user presses the HOLD button. You can program the length of the pause through class of service programming.

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. No class of service programming is required. The system supports IST hookflash for CENTREX features via access code.

Personalized Ringing Tone—3.7.25—

This feature allows a station user to choose one of four different ring tones to aid in distinguishing one ringing station from another.

Pooled Line Access —3.6.5—

Users can dial a special access code instead of pushing a line button to access one of four different groups of lines. Single-line telephones do not have line appearances, so a user must use this feature for accessing an outside line for dialing out. Lines are arranged into groups with the line class of service programming.

Port Definition—3.7.26—

You can program a station port to accept one of several different types of equipment, such as an LCD speakerphone or a multiline line telephone.

Power Failure Transfer—2.7.1—

A power failure line connection is available for connecting industry-standard telephones such as a Comdial model 2500. These power-fail telephones automatically connect directly to certain lines whenever there is an AC power failure. Normal origination and reception of calls on a power-fail station is possible during the power failure condition. The power-fail stations will automatically disconnect as soon as power is restored. No class of service programming is required.

Prime Line Automatic—3.7.27—

If you program a station for prime line automatic, the system automatically selects the designated outside line, intercom line, or line group when the user takes the handset off hook. Users may pre-empt prime line pickup by selecting another line before lifting the handset. If the prime line is ringing, it is automatically answered when the user lifts the handset.

Privacy Release -Designated Programmable Button—3.8.10—

You can program 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.

Private Lines (Access Denied)

See -Access Denied.

Programmable DSS/BLF (Direct Station Selection/Busy Light Field)

A multiline station user can store one-button, direct station selection (DSS) at any programmable button location to create a DSS button. When a user presses this button, the system automatically places any active outside call on hold and then makes an intercom call 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. You can also program a speed-dial number as a secondary function at every DSS/BLF memory location. No class of service is required. Also see *Tone or Voice Signaling (Intercom)*.

Programmable Buttons

See-Full Button Programmability of Features, Programmable DSS/BLF, and Dedicated Programmable buttons.

Pulse/Tone Switchable—3.6.9, 3.6.10—

You can program the system on a per-line basis to allow the stations to switch from pulse to DTMF dialing as needed. Alternately, you can program the system to only allow tone dialing.

R

Remote Access And Administration

Remote upload and download of the system and SMDR output for printing are both available through serial data ports. These data ports will support X-on X-off control codes for terminal control as well as a DTR signal for handshaking. They also have the popular XMODEM protocol so that the system database can be uploaded or downloaded, error free, from or to a remote computer running software that supports the XMODEM protocol. Use serial port one for programming and serial port two for SMDR.

Ringling Line Preference—3.7.29—

You can program the system on a per-station basis to provide ringing line preference on all lines programmed for ringing at the station; ringing line preference activates the yellow lamp.

When you enable ringing line preference at a station, taking it off-hook automatically connects it to any outside line that is ringing. 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 with line selection is enabled by the station class of service programming.

S

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 user can **redial** the saved number at a later time. The saved number is permanently available for later use until the user replaces it with a new number. No class of service programming is required.

Self Diagnostics—2.9—

Each station can execute a self test when so enabled. This test verifies processor, indicator, and tone functions. No class of service programming is required. For a self diagnostic, hold down the keypad 1 key when plugging telephone into the common equipment.

Speakerphone Support

The optional speakerphone (1022S-xx, 1122S-xx) provides handsfree operation of all features, except origination of call announce; the user must lift the handset for this purpose. No class of service programming is required.

Square /Non-Square Configuration—3.8—

You can program 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, you may assign each line select button at every station individually to select any line. You can perform button mapping for line appearance on each station using the station class of service programming.

Station By Station Privacy

See *-Automatic Privacy*.

Station Message Detail Recording (SMDR)

The SMDR feature generates a call record for printing as soon as the record is collected by the system. The call record is presented at the RS-232 port as an ASCII transmit data in an 80-column format. No class of service programming is required.

Station Speed Dial

You can program each proprietary station to provide up to 36 speed dial numbers. Station speed dial numbers can be up to 16 digits in length and can include line or intercom selection, numbers, #, *, pauses, and flash signals. The system stores a pause each time the user presses the HOLD button, and it stores a flash signal each **time** the user presses the TAP button. No class of service programming is required.

Subdued Ringing

When a station is busy on a call and another call comes to the same station, the ringing of the second call will automatically be subdued to a lower volume. No class of service programming is required.

System Clock—3.5.7—

The system provides current time and date information, which is displayed on all LCD speakerphones and captured on SMDR printout.

System Speed Dial—3.5.8—

The system provides up to ninety-nine system-wide speed dial numbers. The system speed dial numbers can be up to 16 digits in length and can include numbers, #'s, *'s, pauses, and flash signals. Program system speed dial numbers at station 10 or 12 for use at every station in the system. No class of service is required.

T**Tap (Flash) /Recall**

When host system custom-calling features are available via a hookflash signal, you can program the system so that the TAP (RECALL) button will generate a “flash” signal when a user presses it. When custom calling features are not available, the TAP (RECALL) button functions as a positive disconnect, or dial tone, recall button. These two features are mutually exclusive. IST support is feature code activated (future feature).

Tenant Service

You can have one telephone system function for multiple tenants by having flexible line appearance at each station. You can use button mapping for line appearance on each station using the station class of service programming. Refer to the discussion titled: *Square/Non-Square Configuration*.

Timed Hold Recall—3.5.14—

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.

Toll Restriction (0 And 1)

See the discussion titled: *Toll Restriction (flexible)*.

Toll Restriction (Flexible)-3.1 0—

You can program toll 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. All you need to do is to default the 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 contain up to four entries with each entry containing up to 16 digits.

You can program 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. For example, the dialing of 1-800-xxx-xxxx numbers can be allowed even though the dialing of all 1-xxx-xxx-xxxx numbers is denied.

The system can store a “match anything” symbol (#) to represent any digit from 1 to 0. Assign the programmed toll restriction tables to each appropriate station and line. When a user dials an outside call, the system examines the dialed number and makes a comparison between it and the toll restriction tables. Any tables assigned to **BOTH** the station being used and the selected line determine the restrictions to be imposed.

Dialing a restricted number on a restricted line from a restricted station will cause the line to be automatically disconnected from the station.

Note: On bridged proprietary and IST stations, the system cannot always verify toll restriction from the IST telephone. You should use caution when installing a bridged telephone in areas where abuse could occur.

Toll Restriction (Night Mode)-3.10.6

You can assign toll restriction tables that will only take effect when the system is in the night transfer of ringing mode. You can assign these night mode tables to any or all stations in the system. These toll tables work in addition to any tables that may already be assigned to the station. For example: You can program a station that has no other toll restriction table assigned to receive a toll restriction table that 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 a user can make toll calls from this station during daytime operation, he or she cannot make toll calls when the attendant programs the system for nighttime operation using the night transfer of ringing feature.

Note: This night mode toll restriction table assignment should not be confused with the night transfer of ringing feature.

Toll Restriction Override—3.10.6—

A station user can override a toll restriction at a particular station with his or her own toll restriction table.

Tone Or Voice Signaling (Intercom)

You can program the system as either tone or voice first for the primary intercom. The user can activate the alternate method at his or her station. The system marks intercom call progress by special tone signals. Also see—*Intercom Call Progress Tones*.

Transfer / Conference Button

The system provides a fixed "CONF" button that gives quick, easy transferring and conferencing. No class of service programming is required.

Trunk Access Restriction

See-Access Denied.

U**Unanswered Call Transfer Recall Timing—3.5.15—**

A transferred call that goes 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 you have enabled the tandem attendant feature. When the station uses an LCD speakerphone, the display will show the station number as well as the line that is being re-called.

V**Voice Announce Blocking—3.7.30—**

This feature allows the user of multiline stations to block voice announced intercom signaling by dialing a special code (or using a preprogrammed button).

Z**Zone Paging (Via Station Speakers)—3.7.3—**

Zone paging allows groups of stations to receive announcements through the station speakers. You can enable zone paging in up to four different zones. Zone paging can be received at a station port that has been programmed as a PA port and connected to an external loudspeaker. Also see—*All-Call Paging (Via Station Speakers)*.

6

Index

A

| | |
|---|--------|
| Abandoned Hold Release | 3.6.2 |
| AC Power, Connecting | 2.4.1 |
| Access Denied (Line Access Denied) | 3.7.2 |
| All Call and Zone Paging | 3.7.3 |
| All Call and Zone Paging Button | 3.7.4 |
| Assign Entries To Toll Tables | 3.10.1 |
| Assign Toll Tables To Lines | 3.10.2 |
| Assign Toll Tables To Stations | 3.10.3 |
| Assign Toll Tables To Stations For Night Ringing | 3.10.4 |
| Assign Toll Tables To Stations For Speed Dials | 3.10.5 |
| Attendant, Dedicated ITCM for | 3.7.13 |
| Attendant / Line Access | 3.5.1 |
| Automatic Call-back Button | 3.8.1 |
| Automatic Hold | 3.7.5 |
| Automatic Hold for Intercom | 3.7.6 |
| Automatic Privacy, Lines | 3.6.3 |
| Automatic Privacy Release, Lines | 3.6.4 |
| Automatic Privacy, Stations | 3.7.7 |
| Automatic Privacy Release, Stations | 3.7.8 |
| Automatic Transfer of Voice Mail | 3.9.6 |
| Auxiliary Lines | 3.6.7 |
| Auxiliary Station Interface, Connecting | 2.7.3 |

B

| | |
|--|-------|
| Battery Backup, Connecting | 2.4.2 |
| Battery and Battery Charged DC Voltages, Checking The | 2.8.6 |
| Baud Rate, Data | 3.5.2 |
| Blank Buttons | 3.8.2 |
| BLF / DSS Button | 3.8.5 |
| Book, Using This | 1.1 |
| Break / Make Ratio | 3.5.5 |

| | |
|-------------------------|-------|
| Button Mapping | 3.8 |
| Busy /RNA, Call Forward | 3.7.9 |

C

| | |
|---|--------------|
| Cable Clips, Station | 2.6.3 |
| Cabinet, Installation | 2.3 |
| Call-back Button, Automatic | 38.1 |
| Call Forwarding On Busy / Ring No Answer | 3.7.9 |
| Call Forward Button | 3.8.3 |
| Call Origination Denied (Line Origination Denied) | 3.7.11 |
| Call Transfer Recall Time, Unanswered | 35.15 |
| Central Office Lines, Line Port Functions | 3.6,8 |
| Checking Failure Indications | 2.9.3 |
| Checking The System Status Indicator | 2.9.1 |
| Checking The System | 2.8 |
| Checking The DC Voltages to The Station Ports | 2.8.4 |
| Checking the Battery and Battery Charged DC Voltages | 2.8.6 |
| Checking The Default Conditions | 2.8.5 |
| Checking The Installation and Wiring | 2.8.1 |
| Checking The Wiring Resistance to Ground | 2.8.2 |
| Clock, System | 3.5.7 |
| Codes, Feature | 3.12 |
| Common Audible and Auxiliary Station Interface, Connecting A | 2.7.3 |
| Common Equipment, Connecting The | 2.6.4, 2.6.5 |
| Connecting The Power | 2.4 |
| Connecting AC Power | 2.4.1 |
| Connecting A Battery Back-up | 2.4.2 |
| Connecting The Lines | 2.5 |
| Connecting The Line Jacks | 2.5.1 |
| Connecting The Station Cable Clips | 2.6.3 |
| Connecting A Three Line, Eight Station | 2.6.4 |

| | |
|---|-------|
| Connecting A Six Line, Sixteen Station Common Equipment Cabinet | 2.6.5 |
| Connecting The Stations | 2.6 |
| Connecting A Power Failure Station | 2.7.2 |
| Connecting A Common Audible and Auxiliary Station Interface | 2.7.3 |
| Connecting An External Paging Interface — Station PA Port | 2.7.4 |
| Connecting An External Paging Interface — Line PA Port | 2.7.5 |
| Connecting A Data Device | 2.7.6 |
| Connecting A Music Interface | 2.7.7 |

D

| | |
|--|--------|
| Data Device, Connecting A | 2.7.6 |
| Data Security Port | 3.7.12 |
| Data Baud Rate | 3.5.2 |
| DC Voltages to The Station Ports, Checking The | 2.8.4 |
| Dedicated ITCM for Attendant | 3.7.13 |
| Default Conditions, Checking The | 2.8.5 |
| Defaulting The System | 3.4.2 |
| Defaulting The Lines | 3.4.3 |
| Defaulting The Stations | 3.4.4 |
| Defaulting Button Assignments | 3.4.5 |
| Defaulting Toll Restriction Tables | 3.4.6 |
| Direct / Delayed Ringing Flexible Ringing Assignment- | 3.7.16 |
| Direct Ringing For Attendant, Voice Mail Port/ | 3.9.2 |
| Delayed Ringing For Attendant, Voice Mail Port / | 3.9.3 |
| Doing A General Check | 2.8.3 |
| Do Not Disturb Button | 3.8.4 |
| Doing A Station Self-test | 2.9.2 |
| Dual Intercom Button | 3.8.9 |
| DSS / BLF Button | 3.8.5 |
| DTMF Dialing Feedback | 3.5.3 |
| DTMF Extended Tones, Timing Feature | 3.5.10 |

E

| | |
|---|--------|
| Exclusive Hold | 3.5.4 |
| External Paging Interface-Line PA Port, Connecting An | 2.7.5 |
| External Paging Interface-Station PA Port, Connecting An | 2.7.4 |
| External Paging Interface, Programming | 3.7.15 |

F

| | |
|--|--------|
| Failure Indications, Checking | 2.9.3 |
| Finding The Programming Buttons | 3.3.3 |
| Feature Code Numbering Plan | 3.1.2 |
| Flexible Ringing Assignment- Direct / Delayed Ring | 3.7.16 |
| Flexible Ringing Assignment- Line / Station Assignments | 3.7.17 |
| Flexible Ringing Assignment- Night Ringing Mode | 3.7.18 |
| Flexible Ringing Assignment- PA Port | 3.7.19 |
| Flexible Station Numbering | 3.7.20 |
| FCC Rules, Installer / User Information | 2.10 |

G

| | |
|-----------------------------------|--------|
| General Specifications | 1.5 |
| Getting To Know The System | 1.3 |
| Grounding The System | 2.4.3 |
| Group, ITCM Hunt | 3.7.10 |
| Groups, Line | 3.6.5 |
| Groups, Line Button | 3.8.7 |
| Group, Line Queue Button | 3.8.8 |

H

| | |
|--------------------------------------|--------|
| Hardware, Understanding The | 1.4 |
| Headset Interface | 3.7.21 |
| Hold, Automatic | 3.7.5 |
| Hold for Intercom, Automatic | 3.7.6 |
| Hold, Exclusive | 3.5.4 |
| Hold Release, Abandoned | 3.6.2 |
| How To Program, Understanding | 3.2 |
| Hunt Group, ITCM | 3.7.10 |
| Hybrid / Key System, Understanding A | 2.7.1 |

I

| | |
|--|--------|
| Idle Line Preference | 3.7.23 |
| Installation and Wiring, Checking The | 2.8.1 |
| Installer / User Information-FCC Rules | 2.10 |
| Installing The Cabinet | 2.3 |
| Installing System Options | 2.7 |
| Intercom Hunt Group | 3.7.10 |
| Intercom, Dual Button | 3.8.9 |
| IST Distinctive Ringing | 3.7.22 |
| ITCM, Dedicated Attendant for | 3.7.13 |

J

Jacks, Connecting The Line 2.5.1

K

Key /Hybrid System, Understanding A 2.7.1
 Knowing The General Specifications 1.5

L

Languages 3.7.24
 Lines, Connecting The 2.5
 Line Access / Attendant 3.5.1
 Line Access Denied (Access Denied) 3.7.2
 Line Button 3.8.6
 Line Disable, Line Port Functions 3.6.6
 Line Groups 3.6.5
 Line Group Button 3.8.7
 Line Group Queue Button 3.8.8
 Line Port Functions-Auxiliary Lines 3.6.7
 Line Port Functions-Central Office Lines 3.6,8
 Line Port Functions-Line Disable 3.6.6
 Lines, Programming The 3.6

M

Make / Break Ratio 3.5.5
 Master Clearing The System 3.3.2
 Master Clearing And System Defaults 3.4
 Master Clearing 3.4.1
 Message Wait Originate 3.7.28
 Mounting The Cabinet 2.3.1
 Music On Hold 3.5.6
 Music Interface, Connecting A 2.7.7

N

Night Ringing, Assign Toll Tables To Stations For 3.10.4
 Night Ringing Mode, Flexible Ringing Assignment 3.7.18

O

Options, Installing System 2.7
 Overload Protection, Understanding Paired Ports 2.6.2
 Override, Toll Restriction 3.10.6

P

PA Port, Flexible Ringing Assignment 3.7.19
 PA Port, Timing Feature 3.5.11
 Paired Ports Overload Protection 2.6.2
 Pause Time, Timing Feature 3.5.12
 Personal Ringing Tones 3.7.25
 Port Definition 3.7.26
 Power, Connecting The 2.4
 Power Failure Station, Connecting A 2.7.2
 Powering Up The System And Isolating System Failures 2.9
 Pulse / Tone Switchable-Pulse 3.6.9
 Pulse / Tone Switchable-Tone 3.6.10
 Privacy, Automatic-Lines 3.6.3
 Privacy Release, Automatic-Lines 3.6.4
 Privacy, Automatic—Stations 3.7.7
 Privacy Release, Automatic-Stations 3.7.8
 Privacy Release Button 3.8.10
 Programming Buttons, Finding The 3.3.3
 Programming The Lines 3.6
 Protecting The Lines 2.5.2
 Programming The Stations 3.7
 Programming The System 3.5
 Programming Reference Chart 3.11
 Programming The Stations 3.7
 Prime Line / Prime Group And Prime Intercom 3.7.27
 Publications, Finding Related 1.2

R

Recall Flash, Timing Feature, 3.5.13
 Reference Chart, Programming 3.11
 Related Publications, Finding 1.2
 Ringing Line Preference 3.7.29
 RNA / Busy, Call Forward 3.7.9

S

Save Button 3.8.11
 Shift Button 3.8.12
 Specifications, Knowing The 1.5
 SMDR 2.7.6
 Speed Dial, System 3.5.8
 Station Connections, Understanding 2.6.1

