SYSTEM PRACTICE 01750 IMG

ULTRACOM AT

System Manual Issue 4-0 September 8, 1987

This manual has been developed by TIE/communications, Inc. It is intended for the use of its customers and service personnel, and should be read in its entirety before attempting to install or program the system. Any comments or suggestions for improving this manual would be appreciated. Forward your remarks to:

TIE/communications, Inc. 8 Progress Drive Shelton, CT 06484

Attention: Manager, Technical Publications

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ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS INTRODUCTION

Section 1, SYSTEM DESCRIPTION, introduces the reader to the system. Section 1 contains general descriptive information about the system components, and details the telephone company, site and FCC requirements. It also includes a specification table.

Section 2, FEATURES, provides a detailed description of every feature available in the system. Additional data on key callouts, flash and signaling patterns, and display messages is also included.

Section 3, HARDWARE CONFIGURATION, allows the reader to develop the Order Sheet. The Order Sheet is used to record the equipment (hardware) requirements of the installation site.

Section 4, SOFTWARE CONFIGURATION, consists of the instructions necessary to configure the system programmable options. The data base developed in this section is entered on the Program Record Form (Appendix A). The codes on the Program Record Form are entered into system memory during installation.

Section 5, INSTALLATION, includes all the information required to successfully install the system.

Section 6, INSTALLATION OF OPTIONAL EQUIPMENT, contains descripton and installation data on each piece of optional equipment that can be used with the system.

Section 7, PROGRAM ENTRY, tells the reader how to enter the data base recorded on the Program Record Form into system memory. All systems must be programmed to some degree before being operational.

Section 8, MAINTENANCE, is the final section of the manual and provides maintenance instructions for the system...

Appendix A contains the Program Record Form.

Appendix B contains the Operational Specification.

Appendix C describes the SMDR PCB.

Appendix D describes the C-STU-D PCB, Off Premises Extension PCB.

Appendix E describes the C-22SU-A PCB, Off-Premises Extension.

Appendix F describes the Battery Backup Box for the UMT-32 system with a 15120H Power Supply or for the UMT-64 system with a 15320H Power Supply.



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1. INTRODUCTION

- 1.01 The System Description Section provides basic information pertaining to the ULTRACOM AT family of Electronic Key Telephone Systems. The ULTRACOM AT family contains the UMT-8/16/32/64 products.
- **1.02** This section describes the various components of the system, stations, instruments, specifications, site and FCC/telco requirements.

2. SYSTEM DESCRIPTION

- 2.01 The UMT-8/16/32/64 use Z80 microprocessors as the main processors and additional processors for task sharing between the Main Processing Unit and the station Printed Circuit Boards (PCBs). A space division matrix is also used.
- 2.02 The UMT-8 has a maximum capacity of three Central Office (CO) lines, two Intercom links and eight stations. Privacy is provided on all calls.
- **2.03** The UMT-16 has a maximum capacity of six Central Office (CO) lines, two Intercom links and sixteen stations. Privacy is provided on all calls.
- 2.04 The UMT-32 has a maximum capacity of twelve Central Office (CO) lines, six Intercom links and thirty-two stations. Privacy is provided on all calls.
- **2.05** The UMT-64 has a maximum capacity of twenty-four CO lines, six Intercom links and sixty-four stations. Privacy is provided on all calls.



KEY SERVICE UNIT AND POWER SUPPLY

- 2.06 The Key Service Units (KSUs) are equipped with replaceable PCBs that control the system. The KSUs are designed for wall mounting.
- 2.07 The power supply units have input requirements of 117V @ 60Hz and are designed for wall mounting.

TELEPHONES

- 2.08 Any UMT system can be used with any telephone from the UMT family.
- 2.09 The UMT-16 Six Line, the UMT-32 Twelve Line, and the UMT-64 Twenty-four Line Standard telephones (Figures 1-1 through 1-3) are equipped with speakers to accommodate tone signaling and Intercom voice/tone announcements. Various keys have red Light Emitting Diodes (LEDs) which provide a visual indication of call or feature status. Ten function (DSS) keys are available and can be used as storage bins for Speed Dial and/or Intercom numbers. A slide control is used for speaker volume adjustment. A microphone is standard hardware which permits Handsfree Reply on Intercom.
- 2.10 The Six Line, Twelve Line and Twenty-four Line Executive Display telephones (Figure 1-1, 1-2 and 1-3) are equipped with all the features of Standard telephones as well as some extras as detailed in the next paragraph.

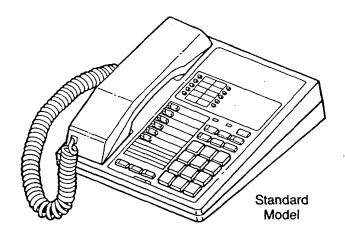
- 2.11 Speakerphones are factory equipped on Executive Display telephones. Speakerphones permit two-way handsfree conversations. CO line keys have both red and green LEDs which give a visual indication of CO line status. A liquid crystal display is provided which displays time and date, and can be used as a visual indication of CO and Intercom numbers.
- 2.12 When installed in a UMT-8/16 system, the UMT-16 BLF telephone provides Busy Lamp Field (BLF) indications for stations in the system.

Besides serving as a BLF, each of a set of keys on the phone serves as a means for Direct Station Selection so that the extension user can reach each of the first 12 stations at the touch of a button.

2.13 The Busy Lamp Field (BLF) phones for the UMT 32/64 systems provide a red LED to indicate the status of the ten extensions programmed under the DSS keys. The BLF indication is a solid LED for in use or in Do-Not-Disturb for all calls.

The number of BLF telephones that may be installed in a system is limited by the type of system:

System	Number
UMT 8/16 System	16
UMT 32 System	12
UMT 64 System	24



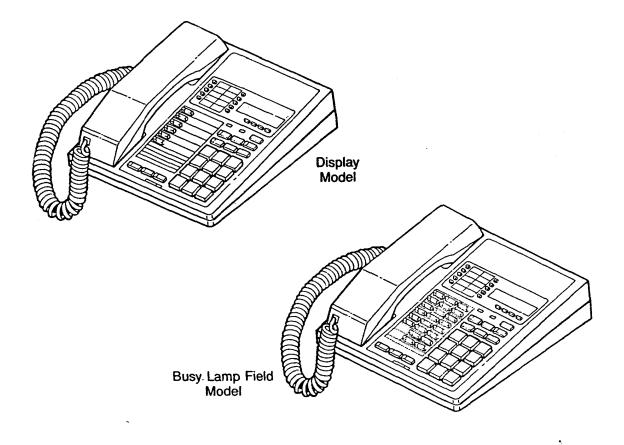


Figure 1-1 6-LINE TELEPHONES

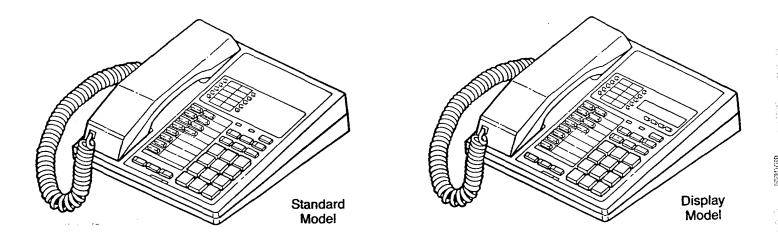


Figure 1-2 12-LINE TELEPHONES

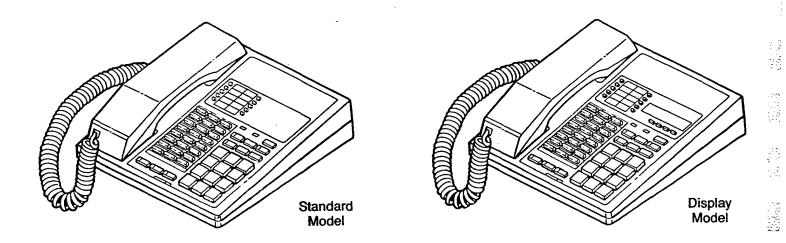


Figure 1-3 24-LINE TELEPHONES

- 2.14 A Display UMT-16 telephone with a Busy Lamp Field (BLF) can be installed on a UMT 8/16 system. Each of six line keys is equipped with a red LED and a green LED. The Busy Lamp Field shows off-hook status of sixteen stations in a system. The keys can also be used to call other stations in a system. This telephone is *not* equipped with a speakerphone.
- 2.15 The following list describes the UMT-8/16/32/64 family of telephones:

UMT-8/16/32/64 Family of Telephones

Telephone	Description
UAT-16	Standard 6-Line
UAT-16E	Exec. Display 6-Line
UAT-16 BLF	Exec. Display 6-Line with
	BLF
UAT-32	Standard 12-Line
UAT-32E	Exec. Display 12-Line
UAT-32 BLF	Standard 12-Line with
	BLF
UAT-32E BLF	Exec. Display 12-Line with
	BLF
UAT-64	Standard 24-Line
UAT-64E	Exec. Display 24-Line
UAT-64 BLF	Standard 24-Line with BLF
UAT-64E BLF	Exec. Display 24-Line with

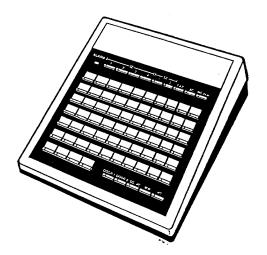
OPTIONS

2.16 DSS Consoles (Figure 1-4) permit easy and quick access to many features and all stations in the UMT-32 and UMT-64 systems.

Speakerphones, which can be installed in Standard telephones, permit handsfree conversations. The number of speakerphones permitted is as follows:

System	Max.
8/16	6
32	12
64	24

2.17 Other optional features include a Door Chime Box which can be placed outside the building and used as a doorbell and intercom. External paging zones, another option, can receive Background Music, CO audible, paging and alarm tones.



BLF

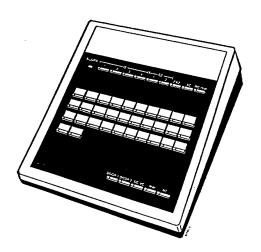


Figure 1-4 DSS CONSOLES



3. SPECIFICATIONS

3.01 Tables 1-1, 1-2, 1-3 and 1-4 show the technical specifications pertaining to the UMT-8/16/32/64.

4. SITE REQUIREMENTS

- 4.01 The KSU should be installed in a clean, dry, secure location that prevents access by unauthorized personnel. This location, as detailed in Section 5, should comply with Bell Functional Product Class Criteria of September, 1978, in publication PUB 48002 as stated in 3.4.3.2, paragraph C—Indoors With Environmental Control. The room must have adequate ventilation and have a temperature range which does not exceed 32 to 113 degrees F (0 to 45 degrees C) with a 5 to 95% noncondensing, relative humidity.
- 4.02 The installation site should provide ample room to mount the KSU on the wall along with the necessary connecting blocks and any ancillary equipment. The installation site should not be located in areas subject to static electricity (dry copiers), vibration (heavy machinery), or in areas likely to be flooded (basement level).
- 5-15R outlet with a 117V AC, @ 60Hz and a 15 Amp circuit. A separate earth ground is required in addition to the third-wire ground on the AC circuit. If a music source or optional external paging equipment is installed, it must be connected to an AC circuit other than the system's dedicated AC line. ONLY THE POWER SUPPLY SHOULD BE CONNECTED TO THE DEDICATED AC OUTLET.

5. FCC AND TELCO REQUIREMENTS

5.01 Rules and regulations for the operation and installation of telephone equipment have been established by the Federal Communications Commission (FCC).

According to Part 68, "Connection of Terminal Equipment to the Telephone Network" and its amendments, several actions are required before and during the installation of customer-provided telephone equipment. These actions are listed and described in the following paragraphs.

NOTIFICATION TO TELCO

- **5.02** As owner of this telephone system, you must give the following information to the operating telephone company (telco) before connecting or disconnecting it:
- 1. Sufficient notice of your intention to use privately owned telephone equipment.
- 2. The particular lines to be used (telephone numbers xxx-xxxx through xxx-xxxx).
- Model: ULTRACOM AT FCC Registration Number: BJ27JK-71381-KF-E (This FCC number pertains to the UMT-32 and UMT-64 systems only.)

Ringer Equivalence: 0.4B

FCC Registration Number: BJ27JK-71478-KF-E (This FCC number pertains to the UMT-8 and UMT-16 systems *onlu*.)

Ringer Equivalence: 0.3B Registered Jack: RJ21X

NOTE: Have telco drop the RJ21X connectors within 25 feet of the installation.

INCIDENCE OF HARM

5.03 If customer-provided equipment is causing harm to the telephone network, the telephone company must, whenever practical, notify the customer that service may be temporarily discontinued. The telephone company must also attempt to inform the customer before actually disconnecting service. The telephone company must provide customers with an opportunity to correct the problem and must advise customers of their right to bring complaint procedures before the FCC.

Table 1-1 SPECIFICATIONS, UMT-8

GENERAL SPECIFICATIONS

System Capacity:

MAX. NO.

CO Lines

3

Intercom Talkpaths

2

Stations

8

ELECTRICAL SPECIFICATIONS

Power Requirements: (AC Supply Must Be Dedicated)

KSU/Power Supply

Operating Range: 117V AC ± 10%

60 Hz ± 1 Hz

Power Dissipation:

KSU/Power Supply Unit: 258 Watts @ 2.2 Amps

880 BTU/HR.

Cable Requirements:

Six conductor, three-pair twisted station wire. 1000 feet (300 m) using 24 AWG. 1500 feet (450 m) using 22 AWG.

Grounding Requirements:

KSU Ground Lug, 14 AWG or larger; insulated copper wire to cold water pipe or known good earth ground

Background Music Specifications:

Limit for Alarm Circuit:

Input Impedance: 600 OHMS

Loop Resistance: 1000 OHMS Max.

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

Music On Hold Specifications:

External Paging Specifications:

Input Impedance: 600 OHMS

Output Impedance: 600 OHMS

Input Level:

Output Level:

Nominal 250 mV (-10dBm) Maximum Input: 1 Volt RMS Nominal 250 mV (-10 dBm) Maximum Output: 400 mV RMS

MECHANICAL SPECIFICATIONS

Dimensions and Weights:

KSU:	275 mm 11.0 in.	X X			68.75 mm 2.75 in.	8.17 kg. 18.0 lbs.
Power Supply:	137.5 mm 5.5 in.	× ×	143.75 mm 5.75 in.		75 mm 3.0 in.	1.81 kg. 4.0 lbs.
Executive/Key Telephone:	216 mm 8.5 in.		229 mm. 9.0 in.		57 mm. 2.25 in.	1.0 kg. 2.2 lbs.
Door Chime Box:	131 mm 5.1 in.		99 mm 3.9 in.		35 mm 1.4 in.	0.2 kg. 0.4 lbs.
DSS Console:	216 mm 8.5 in.	×	229 mm 9.0 in.	×	57 mm 2.25 in.	0.60 kg. 1.33 lbs.

ENVIRONMENTAL SPECIFICATIONS

Environmental Operating Conditions:

Temperature:

KSU and Telephones: 0 to 45 degrees C Door Chime Box: -20 to 60 degrees C Humidity: 10% to 95% noncondensing (32 to 113 degrees F) (-4 to 140 degrees F)

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Table 1-2 SPECIFICATIONS, UMT-16

GENERAL SPECIFICATIONS

System Capacity:

MAX. NO.

CO Lines

6

Intercom Talkpaths Stations

2 16

ELECTRICAL SPECIFICATIONS

Power Requirements: (AC Supply Must Be Dedicated)

KSU/Power Supply

Operating Range: 117V AC ± 10%

60 Hz ±1 Hz

Power Dissipation:

KSU/Power Supply Unit: 258 Watts @ 2.2 Amps

880 BTU/HR.

Cable Requirements:

Six conductor, three-pair twisted station wire. 1000 feet (300 m) using 24 AWG. 1500 feet (450 m) using 22 AWG.

Grounding Requirements:

KSU Ground Lug, 14 AWG or larger; insulated copper wire to cold water pipe or known good earth ground

Background Music Specifications:

Limit for Alarm Circuit:

Input Impedance: 600 OHMS

Loop Resistance: 1000 OHMS Max.

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

Music On Hold Specifications:

Input Impedance: 600 OHMS

Input Level:

Nominal 250 mV (-10dBm) Maximum Input: 1 Volt RMS

External Paging Specifications:

Output Impedance: 600 OHMS

Output Level:

Nominal 250 mV (-10 dBm) Maximum Output: 400 mV RMS

MECHANICAL SPECIFICATIONS

Dimensions and Weights:

KSU & Expansion Cabinet:	275 mm 11.0 in.	× ×	475 mm 19.0 in.		68.75 mm 2.75 in.	8.17 kg. 18.0 lbs.
Power Supply:	137.5 mm 5.5 in.		143.75 mm 5.75 in.	- •	75 mm 3.0 in.	1.81 kg. 4.0 lbs.
Executive/Key Telephone:	216 mm 8.5 in.		229 mm. 9.0 in.		57 mm. 2.25 in.	1.0 kg. 2.2 lbs.
Door Chime Box:	131 mm 5.1 in.		99 mm 3.9 in.	×	35 mm 1.4 in.	0.2 kg. 0.44 lbs.
DSS Console:	216 mm 8.5 in.	x x	229 mm 9.0 in.		57 mm 2,25 in.	0.60 kg. 1.3 lbs.

ENVIRONMENTAL SPECIFICATIONS

Environmental Operating Conditions:

Temperature:

KSU and Telephones: 0 to 45 degrees C Door Chime Box: -20 to 60 degrees C

(32 to 113 degrees F) (-4 to 140 degrees F)

Humidity: 10% to 95% noncondensing

Table 1-3 SPECIFICATIONS, UMT-32

GENERAL SPECIFICATIONS

System Capacity:

MAX. NO. 12

CO Lines Intercom Talkpaths

6 32

Stations

ELECTRICAL SPECIFICATIONS

Power Requirements: (AC Supply Must Be Dedicated)

KSU/Power Supply

Operating Range: 117V AC ± 10%

60 Hz ±1 Hz

Power Dissipation:

KSU/Power Supply Unit: 480 Watts @ 4.1 Amps

1640 BTU/HR.

Cable Requirements:

Six conductor, three-pair twisted station wire. 1000 feet (300 m) using 24 AWG. 1500 feet (450 m) using 22 AWG.

Grounding Requirements:

KSU Ground Lug, 14 AWG or larger; insulated copper wire to cold water pipe or known good earth ground

Background Music Specifications:

Limit for Alarm Circuit:

Input Impedance: 600 OHMS

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

External Paging Specifications:

Loop Resistance: 1000 OHMS Max.

Music On Hold Specifications: Input Impedance: 600 OHMS

Input Level:

Output Impedance: 600 OHMS Output Level:

Nominal 250 mV (-10dBm) Maximum Input: 1 Volt RMS

Nominal 250 mV (-10 dBm) Maximum Output: 400 mV RMS

MECHANICAL SPECIFICATIONS

Dimensions and Weights:

KSU:	546 mm 21.5 in.		418.75 mm 16.75 in.		218.75 mm 8.75 in.	16.3 kg. 36.0 lbs.
Power Supply:	237.5 mm 9.5 in.		306.25 mm 12.25 in.		118.75 mm 4.75 in.	5.8 kg. 12.8 lbs.
Executive/Key Telephone:	216 mm 8.5 in.		229 mm. 9.0 in.		57 mm 2.25 in.	1.0 kg. 2.2 lbs.
Door Chime Box:	131 mm 5.1 in.		99 mm 3.9 in.	-	35 mm 1.4 in.	0.2 kg. 0.44 lbs.
DSS Console:	216 mm 8.5 in.	×	229 mm 9.0 in.		57 mm 2.25 in.	0.60 kg. 1.3 lbs.

ENVIRONMENTAL SPECIFICATIONS

Environmental Operating Conditions:

Temperature:

KSU and Telephones: 0 to 45 degrees C Door Chime Box: -20 to 60 degrees C

(32 to 113 degrees F) (-4 to 140 degrees F)

Humidity: 10% to 95% noncondensing

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Table 1-4 SPECIFICATIONS, UMT-64

GENERAL SPECIFICATIONS

System Capacity:

MAX. NO.

CO Lines

24

Intercom Talkpaths

6

Stations

64

ELECTRICAL SPECIFICATIONS

Power Requirements: (AC Supply Must Be Dedicated)

KSU/Power Supply

Operating Range: 117V AC ± 10%

60 Hz ±1 Hz

Power Dissipation:

KSU/Power Supply Unit: 866 Watts @ 7.4 Amps

2720 BTU/HR.

Cable Requirements:

Six conductor, three-pair twisted station wire. 1000 feet (300 m) using 24 AWG. 1500 feet (450 m) using 22 AWG.

Grounding Requirements:

KSU Ground Lug, 14 AWG or larger; insulated copper wire to cold water pipe or known good earth ground

Background Music Specifications:

Limit for Alarm Circuit:

Input Impedance: 600 OHMS

Loop Resistance: 1000 OHMS Max.

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

Music On Hold Specifications:

External Paging Specifications:

Input Impedance: 600 OHMS

Output Impedance: 600 OHMS

Input Level:

Output Level:

Nominal 250 mV (-10dBm) Maximum Input: 1 Volt RMS

Nominal 250 mV (-10 dBm) Maximum Output: 400 mV RMS

MECHANICAL SPECIFICATIONS

Dimensions and Weights:

Expansion Cabinet:	546 mm 21.5 in.		418.75 mm 6.75 in.		218.75 mm 8.75 in.	16.3 kg. 36.0 lbs.
Power Supply:	337.5 mm 13.5 in.		306.25 mm 12.25 in.	x x		8.8 kg. 19.4 lbs.
Executive/Key Telephone:	216 mm 8.5 in.		229 mm. 9.0 in.		57 mm. 2.25 in.	1.0 kg. 2.2 lbs.
Door Chime Box:	131 mm 5.11 in.	× ×	99 mm 3.9 in.		35 mm 1,4 in.	0.2 kg. 0.44 lbs.
DSS Console:	216 mm 8.5 in.		229 mm 9.0 in.		57 mm 2,25 in.	0.60 kg. 1.3 lbs.

ENVIRONMENTAL SPECIFICATIONS

Environmental Operating Conditions:

Temperature:

KSU and Telephones: 0 to 45 degrees C Door Chime Box: -20 to 60 degrees C Humidity: 10% to 95% noncondensing

(32 to 113 degrees F) (-4 to 140 degrees)

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HEARING AID COMPATIBILITY

- **5.04** FCC rules prohibit the use of non-hearing aid-compatible telephones in the following locations:
- (1) Any public or semipublic location where coin-operated or credit card telephones may be found.
- (2) Elevators, highways, and tunnels (automobile, subway, railroad, or pedestrian) where a person with impaired hearing might be isolated in an emergency.
- (3) Places where telephones are specifically installed to alert emergency authorities such as fire, police, or medical assistance personnel.
- (4) Hospital rooms, residential health care facilities, convalescent homes, and prisons, specifically where telephones are used for signaling life-threatening or emergency situations if alternative signaling methods are not available.
- (5) Workstations for hearing impaired personnel.
- (6) Hotel, motel, apartment lobbies; in stores where telephones are used by patrons to order merchandise; in public transportation terminals where telephones are used to call taxis, or to reserve lodging or rental automobiles.
- (7) Hotel and motel rooms. At least ten percent of the rooms must contain telephones that are compatible with hearing aids; or contain jacks for plug-in telephones that are compatible with hearing aids, which will be provided upon request to hearing impaired customers.
- **5.05** Refer to the telephone packaging for hearing-aid compatibility information.

6. RADIO FREQUENCY INTERFERENCE

- the manufacturer's instructions, this equipment can interfere with radio and television reception. Other electrical or electronic equipment can affect system operation. There is no guarantee that interference will not occur in a particular installation. Interference to radio or television reception caused by this equipment can be determined by turning the equipment off and on. Similarly, other computing or radiating devices may cause interference to the system. If an interference problem exists, the problem can be solved in one or more of the following ways:
- (a) Reorient the receiving antenna.
- (b) Relocate the receiver with respect to the equipment.
- (c) Plug the equipment and receiver into different branch circuits.
- **6.02** If necessary, consult your television dealer for additional assistance. The following booklet, prepared by the FCC, can be helpful:

How To Identify And Remove Radio-TV Interference Problems

Order this booklet from:

U. S. Government Printing Office Washington, D. C. 20402 (Stock No. 004-000-00345-4).

ELECTRONIC KEY TELEPHONE SYSTEMS

SECTION 2, FEATURES

NOTE: This section applies to systems not equipped with the C-CPU-C PCB. If the system is equipped with a C-CPU-C PCB, refer to the 01751 SWU 01 manual.

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1. INTRODUCTION

1.01 This section lists and details the features available in the UMT-8/16/32/64. Both permanent and programmable features are discussed. This section should be used in conjunction with Section 4, SOFTWARE CONFIGURATION, when preparing the Program Record Form.

2. DESCRIPTION

2.01 This section is formatted in the following manner:

Description: discusses the basic elements of the feature.

Conditions: lists and describes any important aspects not covered in the Description. Included are feature limitations and interactions.

Basic Programming: lists required programming, i.e., programming necessary for feature operation.

Related Programming: lists programs which limit or expand feature operation.

Feature Interactions: lists features which directly affect the feature under discussion.

AUTOMATIC INTERCOM ANSWER

Description:

This feature permits the single-step answer of an internal call.

Conditions: None

Basic Programming: None

Related Programming: None

Feature Interactions:

Intercom

AUTOMATIC LINE ACCESS

Description:

Automatic Line Access allows a key phone user to access an outgoing line by dialing a single-digit code.

Conditions:

(a) This feature should not be used with Last Number Dialed (LND) or Save.

Basic Programming:

Program 21—Automatic Line Access

Related Programming:

Program 1-Line Type, Dial Mode, CO Queuing Group

Feature Interactions:

Outside Calls

BACKGROUND MUSIC (BGM)

Description:

Background Music (BGM) is an optional feature which can be broadcast to the external zones and station speakers.

Conditions:

- (a) The BGM source is supplied by the customer.
- (b) BGM can serve as a source for Music On Hold.
- (c) BGM is interrupted at the zone and/or given station by an incoming or, at a given station, by an outgoing call.
- (d) BGM is interrupted at stations utilizing Room Monitor.

Basic Programming:

Program 26—Background Music

Related Programming:

Program 18—External Paging Features

Feature Interactions:

CO Line Groups

Hold

Intercom

Music On Hold (MOH)

Room Monitor

BUSY LAMP FIELDS

Description:

The Busy Lamp Field (BLF) feature provides an LED indication of an extension associated with the BLF key. This indication may be provided on BLF telephones, DSS Consoles, or DSS Consoles installed as BLF-only devices.

Conditions:

(a) DSS Consoles may only be installed on UMT-32/64 systems.

Basic Programming: None

Related Programming: None

Feature Interactions:

Direct Station Selection Do Not Disturb Intercom

CALL DURATION TIMER

Description:

This feature permits the user of a display telephone to time the duration of an outgoing CO call. The timer is capable of starting upon seizure of a CO line or at anytime thereafter.

Conditions:

- (a) This feature is available only on Executive Display telephones.
- (b) The timer starts from 0 to 255 seconds after CO line seizure depending upon programming.
- (c) This feature can be manually started.
- (d) If a timed call is put on Hold, the timer is disabled and the display returns to its normal condition.

Basic Programming:

Program 50—Call Duration Timer

Related Programming:

Program 51—Call Duration Start Timer

Feature Interactions:

CO Line Groups Hold

CALL FORWARD WITH FOLLOW-ME

Description:

This feature permits the automatic transfer of incoming Intercom calls to a second station (Call Forward). The destination of the forwarded call can be changed to yet a third station and so on (Follow-Me).

Conditions:

- (a) The originating station can change the destination of the Call Forward.
- (b) The destination station can change the destination of the Call Forward.
- (c) Program 49 (Excluded/Allowed System Features) can disable this feature.
- (d) Dual Handsfree Hotline is disabled when Call Forward with Follow-Me is in use by either or both Executive stations.
- (e) Only the originating station can cancel a Call Forward.
- (f) A call cannot be forwarded to a station that has invoked DND.

Basic Programming: None

Related Programming:

Program 49—Excluded/Allowed System Features

Feature Interactions:

Intercom



CALL MONITOR

Description:

This feature permits the on-hook dialing of an Intercom or CO line telephone number.

Conditions:

- (a) Telephones without speakerphones must lift the handset to engage in a two-way conversation once the call is established.
- (b) The user can also monitor a CO call if placed on Hold.

Basic Programming: None

Related Programming: None

Feature Interactions:

CO Line Groups Intercom

CALL PICKUP

Description:

This feature permits a station user to intercept an Intercom call intended for another station.

Conditions:

(a) Program 49 (Excluded/Allowed System Features) can disable this feature.

Basic Programming: None

Related Programming:

Program 49—Excluded/Allowed System Features

Feature Interactions:

Intercom

CALL TRANSFER, ANNOUNCED

Description:

This feature permits the transfer of an established CO call to a second station. A voice announcement can be made. This feature can also be accessed from a DSS Console in the UMT-32 and UMT-64 systems.

Conditions:

- (a) Voice Announce is programmable.
- (b) Program 49 (Excluded/Allowed System Features) can disable this feature.
- (c) If the transferred call is not answered within a programmed period of time, the call reverts back to the transferring station.

Basic Programming: None

Related Programming:

Program 13—DSS Console Port Assignment[†]

Program 24—Voice-Announced/Tone-Signaled Calling

Program 38—Call Transfer Timer

Program 39—DSS Transfer Timer[†]

Program 49—Excluded/Allowed System Features

Feature Interactions:

CO Line Groups
Direct Station Selection (DSS) Console

onect station selection (boo) console

Intercom

[†]UMT-32/64 systems only.

CALL TRANSFER, UNANNOUNCED

Description:

This feature permits the transfer of an established CO call, with ringing, to a second station. This feature can also be accessed from a DSS Console in the UMT-32 and UMT-64 systems.

Conditions:

- (a) If the transferred call is not answered within a programmed period of time, the call reverts back to the transferring station.
- (b) Program 49 (Excluded/Allowed System Features) can disable this feature.

Basic Programming: None

Related Programming:

Program 13—DSS Console Port Assignment[†]

Program 38—Call Transfer Timer

Program 39—DSS Transfer Timer[†]

Program 49—Excluded/Allowed System Features

Feature Interactions:

CO Line Groups

Direct Station Selection (DSS) Console[†]

[†]UMT-32/64 systems only.

CALLBACK

Description:

This feature permits a station to receive a signal tone when a previously called busy station returns to an idle condition. If the caller then seizes the Intercom link, the idle station is called.

Conditions:

- (a) The Intercom link must be seized within 20 seconds after the initiation of the Callback signal or the recall is dropped.
- (b) Camp-On requests have priority over Callback requests.
- (c) Callback cannot be used if the automatic mode of Off-Hook Signaling (Intercom) is enabled.

Basic Programming: None

Related Programming: None

Feature Interactions:

Camp-On Intercom Off-Hook Signaling

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CAMP-ON

Description:

This feature permits a calling station to wait off-hook until a busy station returns to an idle condition. At this point, the station is automatically called.

Conditions:

- (a) Camp-On cannot be used if the Automatic mode of Off-Hook Signaling (Intercom) is enabled.
- (b) Program 49 (Excluded/Allowed System Features) can disable this feature.
- (c) Camp-On requests have priority over Callback requests.
- (d) When in use, Camp-On utilizes an Intercom link.

Basic Programming: None

Related Programming:

Program 49—Excluded/Allowed System Features

Feature Interactions:

Off-Hook Signaling

CO LINE GROUPS

Description:

This feature permits the formation of CO Line Groups for outgoing access and incoming access/audible. Lines can be grouped and identified according to the Conditions listed below.

Conditions:

- (a) Thirty CO Line Groups are permitted in a UMT 32/64.
- (b) Each CO Line Group can contain as many lines as required. Each line can be programmed for either Dial Pulse signaling or DTMF signaling.
- (c) Incoming audible (day, night or day/night) can be assigned on a station-by-station basis. Stations assigned day audible receive audible when Night Audible is deactivated. Stations assigned night audible receive audible when Night Audible is activated.
- (d) Outgoing and/or incoming access is assignable on a station-by-station basis.
- (e) Two CO Line Groups providing incoming access can be assigned to a station. Two CO Line Groups providing outgoing access can be assigned to a station.
- (f) Class of Service can be used to prohibit or limit outgoing access.
- (g) Flexible Line Appearance (Program 15) may change some conditions.

Basic Programming:

Program 1—Line Type, Dial Mode, CO Queuing Group Program 2—CO Line Group Assignments

Related Programming:

Program 3—Common Use Lines

Program 6-CO Line Outward Access Assignment

Program 7—CO Line Incoming/Audible Assignment

Program 15—Flexible Line Appearance

Program 17—Night Audible

Feature Interactions:

Flexible Line Appearance Night Class of Service Night Audible Toll Restriction

COMMON USE LINE

Description:

A Common Use Line is a line circuit that is shared by all users, regardless of CO Line Group assignments. It is accessible by any station, but it is subject to that station's Class of Service (COS).

Conditions:

- (a) Any line can be used as a Common Use Line.
- (b) Access to a Common Use Line can be restricted by the type of telephone instrument.
- (c) When programmed, Flexible Line Appearance does not permit Common Use Lines.

Basic Programming:

Program 3—Common Use Lines

Related Programming:

Program 15-Flexible Line Appearance

Feature Interactions:

Flexible Line Appearance

COMPONENT COMMONALITY

Description:

This feature permits the use of different system components in a single system, (e.g., a UAT 16 telephone can be used in any UMT-64 system).

Conditions:

- (a) If there are more lines assigned to a telephone than line keys available to accommodate them, a phantom ring sometimes occurs. For example, if line 13 has an incoming call and an UMT-32 Twelve-Line telephone is programmed for incoming access and audible for that line, the call rings in but no line key illuminates. The call can still be answered by lifting the handset or pressing the SPK key provided that Ringing Line Preference is programmed.
- (b) There are two types of Busy Lamp Field telephones:
 - Those designed for use on the UMT-8/16 systems only.
 - Those designed for use on the UMT-32/64 systems only.

Basic Programming: None

Related Programming:

Program 15—Flexible Line Appearance Program 20—Ringing Line Preference

Feature Interactions:

Flexible Line Appearance Ringing Line Preference

† Flexible Line Appearance is a feature which "shifts" lines to different line keys. See Flexible Line Appearance for further explanation.



CONFERENCE, ADD-ON

Description:

This feature permits up to six internal parties to conference with each other.

Conditions:

(a) This feature can be disabled in Excluded/Allowed System Features (Program 49).

Basic Programming: None

Related Programming:

Program 49—Excluded/Allowed System Features

Feature Interactions:

Executive Override (Barge In) Intercom

CONFERENCE, MEET-ME

Description:

This feature permits stations, programmed to receive announcements within a Paging group, to conference with a Paging station.

Conditions:

- (a) Five stations can conference with the page initiator.
- (b) The Paging station can use Internal Zone Paging or All Call Paging to initiate this feature.
- (c) If Internal Zone Paging is used, only those stations granted access to that zone are allowed to join the conference.
- (d) Only those stations programmed assignment to a Paging group are permitted to join in a Meet-Me Conference, (regardless of the Paging feature used to initiate the conference).
- (e) Program 49 (Excluded/Allowed System Features) can disable this feature.
- (f) When Meet-Me Conference is initiated, the zone is made unavailable to others in the system for a period of 30 seconds *or* until five stations enter the conference.
- (g) If All Call Paging is used, *any* station programmed to receive Paging can join the conference provided that it has been programmed into a Paging group.

Basic Programming: None

Related Programming:

Program 8—Paging Groups
Program 49—Excluded/Allowed System Features

Feature Interactions:

Paging, All Call Paging, Internal Zone

CONFERENCE, MULTI-LINE

Description:

This feature permits up to six internal parties to conference with as many as two external parties.

Conditions:

- (a) Stations can enter a Multi-Line Conference using Executive Override (Barge In), provided that fewer than six internal parties have already joined in the conference.
- (b) Audio quality diminishes as more parties are added to the conference.

Basic Programming:

Program 30—Multi-Line Conference

Related Programming: None

Feature Interactions:

CO Line Groups Executive Override (Barge In) Intercom

CONFERENCE, UNSUPERVISED

Description:

This feature permits an internal party to establish a conference between one or two external parties, wherein the conference can continue after the initiating party hangs up.

Conditions:

- (a) Multi-Line Conference and Release of Abandoned Calls on Hold/Line Supervision must be programmed for Unsupervised Conference to function.
- (b) The following station ports must be available, (i.e., station card installed) but unterminated:

System	Port
8/16	17
32	22
64	34

- (c) Lines used for Unsupervised Conference require open loop disconnect supervision.
- (d) The party who initiated the conference can re-enter the conference.
- (e) A 600 ohm resistor must be connected across the unsupervised station position. See Section 5, INSTAL-LATION for details.

Basic Programming:

Program 5—Unsupervised Conference Program 30—Multi-Line Conference Program 54—Release of Abandoned Calls on Hold/Line Supervision

Related Programming: None

Feature Interactions:

CO Line Groups Conference, Multi-Line



DIAL PULSE (DP)-TO-TONE (DTMF) CONVERSION

Description:

System dialing can be changed from Dial Pulse to DTMF while placing a call.

Conditions:

- (a) DTMF to Dial Pulse Conversion is not available.
- (b) Dial Pulse Sender Speed and the Make/Break Ratio are programmable.

Basic Programming: None

Related Programming:

Program 1—Dial Mode (Dial Pulse) Program 57—Dial Pulse Sender Speed Program 58—Make/Break Ratio

Feature Interactions:

CO Line Groups Speed Dial

DIRECT INWARD SYSTEM ACCESS (DISA)

Description:

This feature permits an outside party to call into a key system and directly dial a telephone extension.

Conditions:

- (a) DISA uses a CO line circuit and requires a DISA port, the C-STU-D PCB. Refer to Appendix D.
- (b) A DISA line may be used for placing outgoing calls, but incoming calls on the DISA line will always be answered by the DISA port.
- (c) The outside party calling in on a DISA line must use a DTMF telephone.

Basic Programming:

Program 3—DISA Line, FAX Line, Common Use Line Program 8—Night Class of Service, Confirmation Tone, Instrument Type, Do Not Disturb, Paging Groups.

Related Programming: None

Feature Interactions:

CO Line Groups

DIRECT STATION SELECTION (DSS)

Description:

This feature permits the storage of Intercom numbers under station function keys.

Conditions:

- (a) Ten station function keys are available on telephones.
- (b) Numbers for Paging zones and Door Chime Boxes can be stored under function keys on telephones.
- (c) Program 91 must be run following system initialization—Program 91 erases all user-stored Intercom numbers and replaces them with values 10 through 18 for keys 1 through 9 and 80 for key 10 on telephones.
- (d) DSS keys are programmed by the station user.

Basic Programming: None

Related Programming:

Program 91—Speed Dial Number Initialization

Feature Interactions:

Intercom

DIRECT STATION SELECTION (DSS) CONSOLE (UMT-32/64 ONLY)

Description:

This feature permits the quick access to various key system features by a Direct Station Selection (DSS) Console. The following can be accessed:

- (a) Announced Call Transfer
- (b) Call Transfer, Unannounced
- (c) Direct Station Selection (DSS)
- (d) Do Not Disturb (DND) Override by DSS Console
- (e) Door Chime Box
- (f) External Alarm Repeating
- (g) Hold, System
- (h) Message Waiting
- (i) Night Audible
- (j) Paging, All Call
- (k) Paging, External Zone
- (1) Paging, Internal Zone

Conditions:

- (a) Two DSS Consoles are permitted.
- (b) The use of one DSS Console requires one Intercom link only. A second DSS Console shares the available links with all stations (it *does not* use a dedicated link).
- (c) DSS Consoles can be assigned to any port through software but no port can have two DSS Consoles assigned to it.
- (d) A call extended to a station by the DSS Console must be answered within a programmed period of time or the transferring station is recalled.

- (e) Program 55 (Do Not Disturb [DND] Override by DSS Console) permits a Console to override a DND condition at another station. The exception being in cases of Executive Call Forward when the feature is activated.
- (f) DSS Consoles are associated with Attendant Telephones.

Basic Programming: None

Related Programming:

Program 39—DSS Transfer Timer Program 55—DND Override by DSS Console

Feature Interactions:

Paging, Internal Zone

Announced Call Transfer
Call Transfer, Unannounced
Direct Station Selection (DSS)
Do Not Disturb (DND) Override by DSS Console
Door Chime Box
External Alarm Repeating
Hold, System
Message Waiting
Night Audible
Paging, All Call
Paging, External Zone



DO NOT DISTURB (DND)

Description:

This feature when activated, permits the blocking of incoming CO and/or Intercom (ICM) audible and Paging at the initiating station.

Conditions:

- (a) Three DND levels are available:
 - (1) Incoming CO audible blocked (level 1).
 - (2) Incoming CO/ICM audible blocked (level 2).
 - (3) Incoming CO audible blocked only or incoming CO/ICM audible blocked (level 3).
- (b) DND (level 2) must be programmed for Executive Call Forward to operate.
- (c) DND, when activated, blocks all Paging announcements.
- (d) DND can be overridden by a DSS Console if so programmed.[†]
- (e) DND can be overriden by the secretary of an Executive Call Forward pair.

Basic Programming:

Program 7—CO Line Incoming/Audible Assignment Program 8—Do Not Disturb

Related Programming:

Program 13—DSS Console Port Assignment[†]

Feature Interactions:

CO Line Groups Do Not Disturb (DND) Override by DSS Console[†] Executive Call Forward Intercom

[†]UMT-32/64 systems only.

DO NOT DISTURB (DND) OVERRIDE BY DSS CONSOLE (UMT-32/64 ONLY)

Description:

This feature permits the override of a Do Not Disturb condition at another station by a DSS Console.

Conditions:

(a) The console cannot override a DND condition at an Executive station in an Executive Call Forward pair if DND is activated at that station.

Basic Programming:

Program 13—DSS Console Port Assignment Program 55—DND Override by DSS Console

Related Programming: None

Feature Interactions:

Direct Station Selection (DSS) Console Do Not Disturb (DND) Executive Call Forward

DOOR CHIME BOX

Description:

The Door Chime Box functions as a door bell and intercom. When the button is pressed, programmed stations receive chime tones. A two-way conversation is possible. This feature can be accessed from a station or a DSS Console (in the UMT-32 and UMT-64 systems).

Conditions:

- (a) Two Door Chime Boxes are permitted.
- (b) Two options are available for Chime Tones.
- (c) If programmed, ten stations can receive Door Chime Box tones.
- (d) When in use, this feature utilizes an Intercom link.
- (e) Both Door Chime Boxes cannot be in use simultaneously.
- (f) Each Door Chime Box has distinctive ringing.

Basic Programming:

Program 12-Door Chime Box

Related Programming:

Program 13—DSS Console Port Assignment[†] Program 32—Door Chime Box Signal

Feature Interactions:

Automatic Intercom Answer Direct Station Selection (DSS) Console[†] Intercom

[†]UMT-32/64 systems only.

DOOR UNLOCK

Description:

Relay contacts are available to activate customer-provided door unlock devices.

Conditions:

(a) The system must be equipped with Door Chime Boxes in order for the Door Unlock feature to be used.

Basic Programming: None

Related Programming:

Program 32—Door Chime Box Signal

Feature Interaction:

Door Chime Box

DUAL HANDSFREE HOTLINE

Description:

A key phone, designated as the Secretary station, can be paired with two other key phones, each designated as an Executive station. A Secretary station can simultaneously call both Executive stations. Both Executives may reply Handsfree.

Conditions:

- (a) When one Executive station answers by use of the handset or SPK key, the call to the other Executive station is disconnected.
- (b) A Secretary station is permitted assignment to more than one Executive pair.
- (c) Four Executive/Secretary groups are permitted.
- (d) This feature only operates when both Executive stations are in an idle state.
- (e) Handsfree Reply On Intercom is permitted at the Executive stations.

Basic Programming:

Program 10—Dual Handsfree Hotline

Related Programming: None

Feature Interactions:

Handsfree Reply to Intercom Calls Intercom



EXCLUDED/ALLOWED SYSTEM FEATURES

Description:

Certain features, which are enabled upon initialization, may be disabled by the use of this program.

Conditions:

(a) The following groups of features are disabled when Excluded/Allowed System Features is programmed (functions are disabled in groups; any or all groups can be disabled):

Group

Functions

- 1. Paging, Meet-Me; Conference, Meet-Me; Call Pickup
- 2. Call Forward with Follow-Me; Night Transfer
- 3. Call Transfer Unannounced; Announced Call Transfer
- 4. Conference, Add On
- 5. Step Calling, Camp-On; Message Waiting
- 6. Music On Hold (selectability)
- Class of Service Override for System Speed Dial Numbers
- (b) If Night Transfer is disabled and a DSS Console has been programmed for use (in the UMT-32 and UMT-64 systems), it retains the ability to activate Night Transfer if Night Transfer is programmed for exclusive initiation.
- (c) When Excluded/Allowed System Features is disabled for Group 7 (programmed with a 0), stations with Classes of Service 0-6 can access any System Speed Dial number. When Excluded/Allowed System Features is enabled for Group 7 (programmed with a 1), stations are restricted from accessing System Speed Dial numbers by their Classes of Service.

Basic Programming:

Program 49—Excluded/Allowed System Features

Related Programming:

Program 8—Night Class of Service, Headset, Instrument Type, Do Not Disturb, Paging Groups Program 13—DSS Console Port Assignment[†]

Feature Interactions:

Announced Call Transfer
Call Forward with Follow-Me
Call Pickup
Call Transfer, Unannounced
Camp-On
Conference, Add-On
Conference, Meet-Me
Direct Station Selection (DSS) Console†
Message Waiting
Music On Hold (MOH)
Night Audible
Paging, Meet-Me
Speed Dial, System
Step Calling

[†]UMT-32/64 systems only.

EXECUTIVE CALL FORWARD

Description:

This feature allows the transfer of incoming CO calls with ringing and Intercom calls from one station (designated the Executive) to another (designated the Secretary).

Conditions:

- (a) Eight Executive/Secretary pairs are permitted.
- (b) Any or all Executive stations can be assigned to the same Secretary station.
- (c) DND (level 2) *must* be programmed for the Executive station in order for Executive Call Forward to function.
- (d) Dual Handsfree Hotline is disabled if one or both Executive stations are using Executive Call Forward.
- (e) Executive Call Forward does not forward Paging announcements or group hunt.

Basic Programming:

Program 8—Do Not Disturb
Program 9—Executive Call Forward

Related Programming: None

Feature Interactions:

CO Line Groups Do Not Disturb (DND) Intercom

EXECUTIVE OVERRIDE (BARGE IN)

Description:

When this feature is enabled, a maximum of five internal parties can enter an established internal/external line conversation without issuing a warning tone.

Conditions:

- (a) Stations can barge in on all external conference calls except Unsupervised Conference.
- (b) This feature allows programmed stations to override Private Line conversations.
- (c) A call on Exclusive Hold cannot be overridden.

Basic Programming:

Program 4—Executive Override (Barge In)

Related Programming: None

Feature Interactions:

CO Line Groups Conference, Multi-Line Private Line



EXTERNAL ALARM, REPEATING

Description:

The system is equipped with inputs for External Alarm Devices. Both telephones and external zones can receive these alarm signals. A DSS Console can be programmed (in the UMT-32 and UMT-64 systems) to receive alarm indications. The DSS Console has an LED to indicate alarm status.

Conditions:

(a) Two special alarm inputs are available.

Basic Programming:

Program 18—External Paging Features

Program 28—Alarm Sensor

Program 53—Alarm Signal Tone

Related Programming:

Program 13—DSS Console Port Assignment[†]

Feature Interactions:

CO Line Groups

Direct Station Selection (DSS) Console[†]

[†]UMT-32/64 systems only.

FAX LINE INTERFACE OPTION

Description:

This feature permits ancillary devices to be connected ahead of the key system (i.e., FAX machine, modem, etc.). When the ancillary device is in use, an LED indicates that Exclusion is provided to the affected line key.

Conditions:

- (a) The system permits up to two FAX lines.
- (b) Each FAX line uses an ALARM INPUT.
- (c) When activating this feature, the ancillary device must provide a contact closure.

Basic Programming:

Program 3—DISA Line, FAX Line, Common Use Line Program 28—ALARM/FAX Sensor

Related Programming: None

Feature Interactions: None

FLASH

Description:

Flash allows a station user to acquire a new dial tone without losing the line in use. The system provides an open looped flash which is programmable for PBX or CO lines along with two Flash timers. Flash permits the user to access PBX features including transfer.

Conditions:

- (a) Flash timing ranges from 0.5 to 255 seconds.
- (b) A Flash can be stored in a Speed Dial Number.
- (c) The CO or PBX determines the Flash timing required.

Basic Programming:

Program 56—Flash Type/Timing

Related Programming:

Program 1-Line Type, Dial Mode, CO Queuing Group

Feature Interactions:

CO Line Groups Speed Dial

FLEXIBLE LINE APPEARANCE

Description:

UMT-8/16/32/64 telephones can be interchanged from one system to another (i.e., phones from one system used with those of another). In such cases, it is often useful to allow CO line calls on one set of line keys to appear on another set. For instance, an UMT-64 twenty-four line telephone has 24 CO line keys while an UMT-32 twelve line telephone has only 12. Programming permits higher numbered lines to appear on lower numbered line keys (e.g., lines 13, 14 and 15 can be programmed to appear on line keys 1, 2 and 3) on a 12-line telephone.

Conditions:

- (a) Only the primary CO Line Group assigned in Program 7 (CO Line Incoming/Audible Assignment) is shifted. The secondary CO Line Group is ignored.
- (b) Program 6 information is erased by the use of this program.
- (c) If there are more lines assigned to a telephone than line keys available, a phantom ring is heard in some cases. For example, if line 13 has an incoming call and an UMT-32 Twelve Line telephone is programmed incoming access (for lines 12-15) and audible for that line, the call rings in but no line key illuminates. The call can still be answered by lifting the handset or pressing the SPK key provided that Recall Line Preference is programmed.
- (d) A station can queue for a phantom line but must have Recall Line Preference in order to seize the line.
- (e) The type of telephone may restrict access to Common Use Lines.

Basic Programming:

Program 7—CO Line Incoming/Audible Assignment Program 15—Flexible Line Appearance

Program 47—Recall Line Appearance

Related Programming:

Program 20—Ringing Line Preference

Feature Interactions:

CO Line Groups Component Commonality Recall Line Preference

FLEXIBLE STATION NUMBER ASSIGNMENT

Description:

This feature permits the reassignment of station numbers via software. No hardware changes are required. To illustrate this feature more clearly, a discussion of ports is required.

Each system has a specific number of ports available by design. Upon initialization a station number is assigned to a port. That number is the same as the port (e.g., station number 10 is assigned to port 10). There are, however, more station numbers available than ports in the system. The port locations are fixed within the equipment, while the station numbers can be moved. The following specifies the station numbers and ports available upon initialization:

System	Station Numbers	Port Numbers	Available Station Numbers
8/16	10-25	10-25	10-79
32	10-41	10-41	10-79
64	10-73	10-73	10-79

Each port must be assigned a unique station number.

If a station number (from the initialized range above) is assigned to another port, a two-step process is necessary. First, assign the station number (e.g., assign station number 20 to port 10). Second, reassign the station number already occupying the port (e.g., reassign station number 10 to port 20). Port 20 is a possible designation. The assignment of station number 20 to port 10 left station number 10 designated to both ports 10 and 20.

Conditions:

- (a) A port must be assigned a unique station number.
- (b) A station number is assignable to only one port.
- (c) A port can be designated any station number between 10-79 through programming.

Basic Programming:

Program 14—Flexible Station Number Assignment

Related Programming: None

Feature Interactions:

Step Calling



GROUP HUNT

Description:

This feature permits the formation of station groups designated by a hunting group number. When this number is dialed, an idle station is sought out sequentially, starting from the first station entered in programming and ending with the final station entered. A CO call can be transferred to an idle group station by use of Group Hunt Transfer.

Conditions:

- (a) Ten Hunt Groups can be formed.
- (b) Eight stations are permitted per group.
- (c) A station can be assigned to more than one Hunt Group.

Basic Programming:

Program 11—Group Hunt

Related Programming: None

Feature Interactions:

Flexible Station Number Assignment Group Hunt Transfer Intercom Step Calling

GROUP HUNT TRANSFER

Description:

This feature permits the transfer of an established CO call, with or without ringing (announced or unannounced), to an idle station in a Hunt Group. Each Hunt Group has a group number. When a group number is dialed, an idle station in the Hunt Group is sequentially sought out. The sequence begins with the first station entered into Program 11 (Group Hunt) and ends with an idle station or the final station entered into programming.

Conditions:

- (a) Hunt Groups must be programmed.
- (b) If all stations in the Hunt Group are busy, the transfer does not proceed.
- (c) If the transferred call is not answered within a programmed period, the call reverts back to the transferring station. If Announced Transfer is used, Program 39 determines the time of recall. If Unannounced Transfer is used, Program 38 determines the time of recall.
- (d) Door Chime Boxes are not considered stations.

Basic Programming:

Program 11—Group Hunt

Related Programming:

Program 38—Call Transfer Timer Program 39—DSS Transfer Timer[†]

Feature Interactions:

CO Line Groups

[†]UMT-32/64 systems only.

HANDSFREE REPLY TO INTERCOM CALLS

Description:

This feature permits a called internal party to reply Handsfree.

Conditions:

- (a) Station microphones must be enabled.
- (b) A tone-signaled Intercom call disables this feature.

Basic Programming: None

Related Programming:

Program 24—Voice-Announced/Tone-Signaled Calling Program 25—Microphone On/Off

Feature Interactions:

Intercom

Microphone On/Off

HEADSET

Description:

This feature allows a Headset to be used in place of a handset at any key telephone.

Conditions:

- (a) The telephone must be equipped with a C-HSU-A PCB.
- (b) Telephones with speakerphones cannot use Headsets.
- (c) The Headset must be compatible with carbon-type handsets and must be equipped with the proper modular plug.
- (d) Hookswitch operation is ignored when a Headset is properly installed.

Basic Programming:

Program 8—Night Class of Service, Headset, Instrument Type, Do Not Disturb, Paging Groups

Related Programming:

Program 16—CO Off-Hook Signaling

Feature Interactions:

Background Music Intercom Microphone On/Off



HOLD

Exclusive Hold

Description:

Exclusive Hold is a temporary waiting condition for CO calls. Calls on Exclusive Hold can be retrieved only at the station where the call was put on Hold. If a call on Exclusive Hold is not answered within a programmed period of time, a reminder signal is issued to the Hold initiating station. If the call remains unanswered for the duration of the reminder signal, the Exclusive Hold is changed to a System Hold.

Conditions: None

Basic Programming:

Program 22—Exclusive Hold

Program 35—Exclusive Hold Recall

Program 36—Exclusive Hold Recall Duration

Related Programming: None

Feature Interactions:

CO Line Groups

System Hold

Description:

System Hold is a temporary waiting state for CO calls. Calls on System Hold are retrievable from any station that has access to the line on Hold. If a call remains on System Hold for more than a programmed period of time, a reminder signal is issued to the station where the call was placed on Hold. If a DSS Console is programmed (in the UMT-32 and UMT-64 systems), pressing a DOOR, AC or DSS station key places an outside call on System Hold.

Conditions:

(a) The recall can be disabled through programming.

Basic Programming: None

Related Programming:

Program 37—System Hold Recall

Feature Interactions:

CO Line Groups

Direct Station Selection (DSS) Console[†]

[†]UMT-32/64 systems only.

NIGHT CLASS OF SERVICE

Description:

Stations programmed for Night Class of Service assume a different Class of Service when Night Transfer is activated.

Conditions:

- (a) The Night Class of Service is programmed separately from Class of Service.
- (b) When activated, Night Class of Service supersedes a station's regular Class of Service.
- (c) This feature can be used to prohibit or limit a station's outward access.

Basic Programming:

Program 8—Night Class of Service Program 48—Night Class of Service Selection

Related Programming:

Program 17—Night Audible Program 49—Excluded/Allowed System Features

Feature Interactions:

Night Audible Toll Restriction

OFF-HOOK SIGNALING

Description:

Two types of Off-Hook Signaling are available:

- (a) Off-Hook Signaling—if a user is on a handset call, an incoming call on a CO line is allowed to ring through.
- (b) Intercom Off-Hook Signaling With Handsfree Reply—if a user is on a handset call, another incoming Intercom call may be allowed to voice-announce. The called party may reply Handsfree.

Conditions:

- (a) Off-Hook Signaling (Intercom) does not ring through to stations using Handsfree Reply To Intercom Calls.
- (b) Two levels of Off-Hook Signaling (Intercom) are available through programming:
 - (1) User-controlled—allows user to initiate the Off-Hook signal.
 - (2) Automatic—the Off-Hook signal is automatically initiated.
- (c) Callback and Camp-On are disabled when the automatic mode of Off-Hook Signaling (Intercom) is in use.
- (d) Off-Hook (CO) signals are blocked by all levels of Do Not Disturb when Do Not Disturb is in use. Off-Hook (Intercom) signals are blocked by Do Not Disturb (level 2 and level 3 where LED lights steadily) when Do Not Disturb is in use.

Basic Programming:

Program 16—CO Off-Hook Signaling Program 23—Intercom Off-Hook Signaling With Handsfree Reply

Related Programming:

Program 13-DSS Console Port Assignment[†]

Feature Interactions:

CO Line Groups
Direct Station Selection (DSS) Console[†]
Do Not Disturb (DND)
Intercom

[†]UMT-32/64 systems only.



OFF-PREMISES EXTENSION (OPX)

Description:

The system may be equipped with an interface card to provide off-premises extension capability. An off-premises extension is a single line (500/2500 type) telephone equipped with a standard ringer. This telephone has access to basic system features. While it may be installed either on or off premises, it will be referred to in this manual as an Off-Premises Extension (OPX). For additional information, refer to Appendix D for the C-STU-D PCB and to Appendix E, C-22SU-A PCB.

Conditions:

Refer to Appendix D, C-STU-D PCB, and to Appendix E, C-22SU-A PCB.

Basic Programming:

Program 8—Night Class of Service, Headset, Instrument Type, Do Not Disturb, Paging Groups.

Related Programming:

Refer to Appendix D, C-STU-D PCB, and to Appendix E, C-22SU-A PCB.

Feature Interactions:

Call Transfer
CO Line Groups
Flexible Station Number Assignment
Intercom
Line Queuing
Night Audible
Paging
Toll Restriction

PAGING, ALL CALL

Description:

All Call Paging is broadcast to all internal Paging zones. This feature can be initiated from a telephone or DSS Console (in the UMT-32 and UMT-64 systems).

Conditions:

(a) External zones can receive All Call Paging announcements.

- (b) A programmed double splash tone may precede an All Call Paging announcement.
- (c) When in use, All Call Paging utilizes an Intercom link.
- (d) When activated at a given station, Do Not Disturb blocks incoming All Call Paging at that station.

Basic Programming:

Program 8—Paging Groups

Related Programming:

Program 13—DSS Console Port Assignment[†]
Program 19—All Call Paging to External Zones
Program 52—Paging Splash Tone

Feature Interactions:

Direct Station Selection (DSS) Console[†]
Do Not Disturb (DND)
Intercom
Paging, External Zone

[†]UMT-32/64 systems only.

PAGING, EXTERNAL ZONE

Description:

Individual external zones can receive Paging, Background Music, CO Audible and Alarm signals. An external zone can be paged from a station or a DSS Console (in the UMT-32 and UMT-64 systems). External paging requires optional equipment.

Conditions:

- (a) Two external zones are permitted.
- (b) When in use, External Zone Paging utilizes an Intercom link
- (c) External page zones can receive All Call Paging.
- (d) Speakers and amplifiers are customer provided.
- (e) A programmed double splash tone can precede an External Zone Paging announcement.
- (f) Both external zones can be paged simultaneously.

Basic Programming:

Program 13—DSS Console Port Assignment[†]
Program 18—External Paging Features
Program 52—Paging Splash Tone

Related Programming:

Program 19—All Call Paging to External Zones

Feature Interactions:

Background Music (BGM)
Direct Station Selection (DSS) Console[†]
External Alarm Repeating
Intercom
Paging, All Call
Paging, External Zone

[†]UMT-32/64 systems only.

PAGING, INTERNAL ZONE

Description:

Four Internal page zones are available. The number of stations per group is limited only by the maximum allowed number of stations in the system. An Internal Zone Paging can be initiated from a telephone or DSS Console (in the UMT-32 and UMT-64 systems).

Conditions:

- (a) A programmed double splash tone may precede an Internal Zone Paging announcement.
- (b) When in use, Internal Zone Paging utilizes an Intercom link.
- (c) When activated at a given station, Do Not Disturb blocks incoming Internal Zone Paging (at that station).
- (d) A station may be in one zone (or none).

Basic Programming:

Program 8—Paging Groups

Related Programming:

Program 13—DSS Console Port Assignment[†] Program 52—Paging Splash Tone

Feature Interactions:

Direct Station Selection (DSS) Console[†]
Do Not Disturb (DND)
Intercom
Paging, All Call

[†]UMT-32/64 systems only.

PAGING, MEET-ME

Description:

When in use, this feature permits a party in a paged zone to reply to an All Call or Internal Zone Paging announcement.

Conditions:

- (a) The paged party must use a station which is programmed for access to a page group in order to respond.
- (b) Program 49 (Excluded/Allowed System Features) can disable this feature.
- (c) When in use, Meet-Me Paging utilizes an Intercom link.
- (d) When activated at a given station, Do Not Disturb blocks incoming Paging (at that station).
- (e) A programmed double splash tone can precede an Internal Zone Paging announcement.

Basic Programming:

Program 8—Paging Groups Program 52—Paging Splash Tone

Related Programming:

Program 49—Excluded/Allowed System Features

Feature Interactions:

Do Not Disturb (DND) Intercom Paging, All Call Paging, Internal Zone



PRIVATE LINE

Description:

A line can be dedicated to a specific station for exclusive use by that station.

Conditions:

- (a) Both exclusive incoming and outgoing access can be assigned through programming.
- (b) Executive Override allows programmed stations to intrude into a Private Line conversation.
- (c) Any line can be programmed as a Private Line.
- (d) A group of stations can share a Private Line.
- (e) The number of Private Lines is limited only by the maximum number of lines permitted in the system.

Basic Programming:

Program 2—CO Line Group Assignments

Program 6—CO Line Outward Access Assignment

Program 7—CO Line Incoming/Audible Assignment

Related Programming: None

Feature Interactions:

CO Line Groups

Executive Override (Barge In)

RECALL LINE PREFERENCE

Description:

This feature permits single-step seizure of a recalling line.

Conditions:

- (a) A recall can be issued by the use of any of the following: Announced Call Transfer Call Transfer, Unannounced Hold
 - Line Queuing
- (b) Exclusive Hold Recall is programmable.
- (c) Line Preselection overrides Recall Line Preference.

Basic Programming:

Program 47—Recall Line Preference

Related Programming:

Program 22—Exclusive Hold

Program 35—Exclusive Hold Recall

Feature Interactions:

Announced Call Transfer Call Transfer, Unannounced Hold Line Queuing Single Step Access

RELEASE OF ABANDONED CALLS ON HOLD/LINE SUPERVISION

Description:

If an outside party is placed on Hold and that party hangs up, the held line is released by the system (if so programmed).

Conditions:

- (a) Programming permits the system to recognize and drop abandoned calls when opens are detected with values between:
 - (1) 20ms 90ms
 - (2) 400ms 600ms
- (b) The Central Office must provide disconnect supervision.
- (c) If a PBX is installed, it must provide Calling Party Control (CPC).
- (d) Release of Abandoned Calls On Hold must be programmed in order for Unsupervised Conference to function properly.

Basic Programming:

Program 54—Release of Abandoned Calls on Hold/ Line Supervision

Related Programming:

Program 22—Exclusive Hold

Feature Interactions:

Hold

RING TRANSFER

Description:

This feature permits the automatic transfer of incoming CO calls to a specified station.

Conditions:

(a) Stations programmed for Night Audible receive calls on a priority basis over Ring Transfer calls when both features are simultaneously in use.

Basic Programming: None

Related Programming: None

Feature Interactions:

Night Audible

RINGING LINE PREFERENCE

Description:

This feature permits single-step seizure of an incoming CO call.

Conditions:

- (a) Two types of Ringing Line Preference are available:
 - (1) Automatic seizure for stations with both incoming access and audible.
 - (2) Automatic seizure for stations with incoming access only.

Basic Programming:

Program 2—CO Line Group Assignments Program 7—CO Line Incoming/Audible Assignment Program 20—Ringing Line Preference

Related Programming: None

Feature Interactions:

CO Line Groups





L RESTRICTION

cription:

selective use of this feature permits restricted dialing to ific stations. A Class of Service can be assigned to a icular station which prohibits or limits that station's ng ability.

ditions:

The following are the available Classes of Service:

- 30 & 1 No Restriction.
- 3 2 Can dial Permitted and Common Unrestricted Codes.
- 5 3 Can dial Permitted, Common Unrestricted
 Codes and 7-digit local numbers.
- S 4 Can dial Permitted, Common Unrestricted Codes, 7-digit local numbers and 1 + 7 toll numbers.
- S 5 Can dial Common Unrestricted Codes,
 7-digit local numbers and 1 + 7 toll numbers.
- S 6 Can dial Common Unrestricted Codes and 7-digit local numbers.
- S 7 Can dial Common Unrestricted Codes.
- S 8 Can dial ICM calls only.
- A Night Class of Service can be assigned to stations. When the Night Audible feature is in use, the programmed station assumes a Class of Service which overrides its regular Class of Service.
- Class of Service does not apply to PBX lines with the following qualifications:
 - Station users are permitted to dial any four-digit PBX extension number.
 - (2) Station users are permitted to dial any internal PBX operator.

asic Programming:

rogram 6-CO Line Outward Access Assignment

- rogram 8-Night Class of Service
- rogram 40-Class of Service
- rogram 41—Permitted Codes
- rogram 42—Permitted Code Digits
- rogram 43-PBX Access Codes
- rogram 44—Common Unrestricted Codes
- rogram 45—Digit Absorbing
- rogram 46—Second Digit Restriction
- rogram 48-Night Class of Service Selection

Related Programming: None

Feature Interactions:

CO Line Groups Night Audible Night Class of Service

TRANSFER RECALL DISPLAY (UMT-32/64 ONLY)

Description:

If an incoming CO call is transferred to a second station by use of the DSS console, and the transferred call is not answered within the programmed period of time, the call reverts back to the transferring station.

The Executive Display telephone associated with the DSS console can display the line number and the extension to which it was transferred.

Conditions:

- (a) An Executive Display telephone must be associated with the DSS console.
- (b) If more than one call returns at a time, the display scrolls to show each re-ringing call.

Basic Programming:

Program 13-DSS Console Port Assignment

Related Programming: None

Feature Interactions:

Announced Call Transfer Call Transfer, Unannounced Group Hunt Transfer 1e

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ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 3, HARDWARE CONFIGURATION

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1. INTRODUCTION

1.01 This section provides the information necessary to order system equipment. It also provides the instructions necessary to fill out the Order Sheet (Table 3-1).

2. DESCRIPTION

2.01 The following paragraphs describe the hardware for the telephone systems.

3. UMT-8/16 EQUIPMENT

UMT-8/16 KEY SERVICE UNIT (KSU)

- 3.01 The KSU houses the circuit boards for the telephone system. The UMT-8/16 KSU comes equipped with necessary circuit boards to serve three CO/PBX lines and eight key phones.
- 3.02 One KSU is used for both the UMT-8 and the UMT-16 systems combined.

UMT-8/16 POWER SUPPLY

- 3.03 Three power supplies are available; each is considered a V4S power supply. These power supplies are used for both the UMT-8 and UMT-16 systems.
- 3.04 The V4S power supply does not provide battery backup capability. An Uninterruptible Power Supply may be used with the V4S to provide this capability, if desired, but it is not available from TIE/communications.

UMT-8/16 PRINTED CIRCUIT BOARDS

3.05 The following is a description of the PCBs used in the systems:

Central Processor Unit (C-CP4SU-A)

3.06 The CPU provides Z80 control and contains:

- One 8K × 8 RAM
- One write protect circuit
- Four station enable leads
- Six line enable leads
- Two expansion enable leads
- Two intercom enable leads
- One 16Hz generator
- One power-on reset circuit to restart CPU
- One 3V non-rechargeable lithium battery for back-up of user-programmable RAM; battery normally good for several years
- One 4MHz clock
- Several timers
- One LED for confirmation of clock generation
- Three power LEDs
- Four Station Interface Circuits

One C-CP4SU-A PCB is required per system and comes equipped in the UMT 8/16 KSU.

The C-5ROU- Card

3.07 This card is an interchangeable PCB that provides ROM for user-programmable and system-operating software features. The system software features are determined by which C-5ROU- card is installed: the C-5ROU-1A or the C-5ROU-1B PCB.

C-5ROU-1A PCB

3.08 This card contains:

- Three 8K × 16 ROMS
- One 8K × 4 ROM
- System-operating software to support basic system features

C-5ROU-1B PCB

3.09 This card contains:

- Two 8K x 16 ROMS
- One 8K × 32 ROM
- System-operating software to support basic system features
- Enhanced OPX telephone feature operation
- SMDR compatibility
- FAX line interface option

Four Station Interface PCB (C-4STU-A or C-4STU-B)

- **3.10** The Four Station Interface PCB provides interface for:
- Four key telephones and crosspoint matrix for six lines, two ICM ports and two Page ports

A C-4STU-B must be ordered when expanding from eight to twelve stations.

A C-4STU-A must be ordered when expanding from twelve stations to sixteen stations.

One C-4STU-A PCB, installed on the C-CP4SU-A PCB, provides ports 5-8 in a UMT-8/16 KSU.

Three Circuit CO Line PCB (C-3COU-A or C-3COU-B)

3.11 The Three Circuit CO Line PCB provides:

- Interface circuitry for three CO/PBX lines
- One DTMF generator and crosspoints for MOH
- Timing circuits for release of Abandoned Calls on Hold
- Six one-amp fuses for tip and ring power cross connection.

Each interface circuit contains a ring detect circuit, seize detect circuit, an electronic dial pulse, a muting relay for dial pulse signaling and a negative impedance circuit to compensate for losses on the line.

The C-3COU-A PCB, used for lines 1-3, is factory-installed. The C-3COU-B PCB, an optional card, is used for lines 4-6.

Door Chime Box PCB (C-2DBU-A)

3.12 The Door Chime Box PCB provides interface for:

Two Door Chime Boxes

Speakerphone Unit PCB (C-SPDU-A)

- 3.13 The Speakerphone Unit PCB is standard on Executive telephones but can be ordered separately for Standard telephones. The C-SPDU-A PCB provides:
- Voice switch circuit located on this PCB only

The maximum number of Speakerphones permitted per system is:

System	Max.
UMT-8/16	6

Each Executive Display telephone is equipped with a C-SPDU-A PCB.

MODULAR ADAPTOR

3.14 A modular adaptor can be attached to the KSU. This adaptor eliminates the need for wiring the telephones to a station block: the telephones are plugged directly into the KSU.

4. UMT-32/64 EQUIPMENT

UMT-32/64 KEY SERVICE UNIT (KSU)

- **4.01** The KSU houses the circuit boards for the telephone system.
- 4.02 The UMT-32 KSU for both the UMT-32 and UMT-64 systems provides the backplane and the card connections for the first 12 CO/PBX lines and the first 32 extensions. It also provides the power supply connection for any UMT-32/64 system.
- 4.03 The UMT-64 Expansion Cabinet provides the backplane and card connections for an additional 12 CO/PBX lines and 32 extensions. Power connections are made directly to the UMT-32 KSU.

UMT-32/64 POWER SUPPLY

- **4.04** Two power supply types are available: the V4M power supply for the UMT-32 telephone system and the V4L power supply for the UMT-64 telephone system.
- **4.05** Two types of V4M power supplies are available: one provides battery backup box capability, and one does not provide this capability.
- **4.06** Two types of V4L power supplies are also available: one provides battery backup box capability, and one does not provide this capability.
- **4.07** To provide battery backup capability, the battery backup box power supply must be used with the Battery Backup Box. Refer to Appendix F Battery Backup Box.

UMT-32/64 POWER SUPPLY CORDS

- **4.08** The power supply cord is used to connect the KSU to the power supply.
- 4.09 Two power supply cords are used: the UMT-32 power supply cord (to connect the UMT-32 KSU to the V4M power supply) and the UMT-64 power supply cord (to connect the UMT-64 KSU to the V4L power supply).
- 4.10 The UMT-64 Expansion Cabinet uses a short 12-pin-to-12-pin cable to connect the power from the UMT-32 KSU with the Cabinet. The cable is included with the cabinet.



UMT-32/64 PRINTED CIRCUIT BOARDS

CENTRAL PROCESSOR PCB

4.11 The Central Processor PCB provides Z80 control and system memory to support all system functions of the UMT-32/64. One of the following Central Processor PCB is required per system.

Each of the following Central Processor PCBs contains:

- One write-protect circuit
- Sixteen station enable leads
- Six line enable leads
- Two expansion enable leads
- One 16 Hz generator
- One power-on reset circuit to restart CPU.
- One 3V non-rechargeable, replaceable lithium battery for back-up of user-programmable RAM; battery normally good for several years
- One 4MHz clock
- Several timers
- One LED for confirmation of clock generation

4.12 Central Processor Unit PCB (C-CPU-A)

The C-CPU-A PCB contains:

- Two 8K × 8 RAM
- Three 16K x 8 ROMs
- System-operating software to support standard features

4.13 Central Processor Unit PCB (C-CPU-B)

The C-CPU-B PCB contains:

- Three 8K × 8 RAMs
- Three 16K x 8 ROMs
- One 8K x 8 ROM
- System-operating software to support standard features

The C-CPU-B provides all the software features of the C-CPU-A plus:

- SMDR compatibility
- Enhanced OPX telephone operation, providing Toll Restriction for COS 8 and queuing for busy line groups on the OPXs[†]
- BLF telephone compatibility[†]
- Enhanced OPX telephone operation
- FAX line interface option
- [†]Requires a Series 2 or higher C-CPU-B PCB

The C-CPU-B PCB may be used in place of the C-CPU-A, but do not use both PCBs in the same system.

4.14 Central Processor Unit PCB (C-CPU-C)

The C-CPU-C PCB contains:

- Three 8K x 8 RAMs
- Two 8K x 32 ROMs
- System-operating software to support Enhancement Software features

The C-CPU-C PCB may be used in place of the C-CPU-A or the C-CPU-B PCB, but do not use all three PCBs in the same system.

For further information on the C-CPU-C PCB, see the ULTRACOM AT Software Maintenance and Installation Manual (P/N 01751SWU01).

Tone Sender PCB (C-TSU-A)

4.15 The Tone Sender PCB provides the following:

- 400 Hz interrupted tone used for Paging splash tones and DSS preemption tones
- 400 Hz tone used for ICM dial tone
- ICM busy tone
- ICM fast busy tone
- 800 Hz tone used for splash and alarm tones
- Internal MOH generator and switch SW1 to select between internal and external MOH
- · Six internal zone paging amplifiers, one for each port
- Interface circuitry for External MOH and (External) BGM inputs
- Provision for External Page Interface PCB (C-GCU-A PCB)
- Two alarm sensors for BGM and MOH
- A Door Unlock Relay

One C-TSU-A PCB is required per system.

Four Station Interface PCB (C-STU-A)

- **4.16** The Four Station Interface PCB provides interface for:
- Four key telephones and crosspoint matrix for 12 lines,
 6 ICM ports and 6 Page ports

Four Circuit CO Line PCB (C-COU-A)

4.17 The Four Circuit CO Line PCB provides:

- Interface circuitry for four CO/PBX lines
- Crosspoints for one DTMF generator
- Crosspoints for MOH

Each interface circuit contains a ring detect circuit, seize detect circuit, an electronic dial pulse, a muting relay for dial pulse signaling and a negative impedance circuit to compensate for losses on the line.

Matrix Expansion PCB (C-XPU-A)

4.18 The Matrix Expansion Card provides:

Crosspoints for lines 13 to 24 and 32 station ports

One or two C-XPU-A PCBs are required per system.

One expansion card is required for station ports 1 to 32 to access lines 13 to 24.

A second expansion card is required for station ports 33 to 64 to access lines 13 to 24.

Door Chime Box/Console PCB (C-DDU-A)

- **4.19** The Door Chime Box/DSS Console PCB provides interface for:
- Up to two Door Chime Boxes
- Up to two DSS consoles

External Page Interface PCB (C-GCU-A)

4.20 The External Page Interface PCB provides:

- Two external speaker zone audio outputs[†]
- Two external speaker zone relay contacts

[†]Customer-provided audio amplifiers required.

The C-GCU-A PCB is a daughter board for the Tone Sender PCB (C-TSU-A) and contains volume controls for the external speakers.

Speakerphone Unit PCB (C-SPDU-A)

- **4.21** The Speakerphone Unit PCB is standard on Executive Display telephones but can be ordered separately for Standard telephones. The C-SPDU-A PCB provides:
- Voice switch circuit located on this PCB only

The maximum number of Speakerphones permitted per system is:

System	Max.
UMT-32	12
UMT-64	24

TELEPHONES

4.22 Several types of key telephones may be used on the ULTRACOM AT.

"Standard" telephones provide:

- Nine feature keys, some with red LEDs
- One volume control for speaker volume level
- Ten DSS keys for Speed Dialing and Direct Station Selection (DSS) features
- Message Waiting (MW) and Room Monitor (MON) red LED indicators
- Red CO Line key LEDs
- Full-Duplex Handsfree Answerback Intercom
- On-hook dialing capabilities
- Replaceable DSS key designation card
- Extension/Directory card with support

"Busy Lamp Field (BLF)" telephones provide all "Standard" telephone features plus:

- Sixteen fixed-extension DSS/BLF keys with red LEDs (UAT-16 BLF phone only)
- Ten programmable DSS/BLF Keys with red LEDs (UMT-32/64 BLF phones only).

"Executive Display" telephones provide all of the Standard telephone features plus:

- Red and Green CO Line key LEDs
- Features of the LCD Display
- Speakerphone (C-SPDU-A PCB) module

The UAT-16 BLF Display phone is not factory-equipped with a speakerphone, but a speakerphone may be added. LCD Display features include:

- Date/Time display of the month, day, year, plus the hour, minute, and second
- Scrolling 12-digit display of dialed numbers
- Call Duration Timer
- Two user-programmable repeating Alarms
- Message Waiting originating extension number check
- System programming ability (when used at Port 10 position)
- Four Display feature keys
- Attendant transfer Recall Display feature (if used at Attendant positions).

UMT-32/64 DSS CONSOLES

4.23 DSS Consoles contain the following:

- DSS keys with LEDs
- Ring-Inward key
- All Call Paging key with LED
- External All Zone Paging key with LED
- Two External Zone Paging keys with LEDs
- Four Internal Zone Paging keys with LEDs
- Night Transfer key with LED
- Message Waiting key with LED
- Signal/Voice Call key
- Two Door Chime Box keys with LEDs
- Alarm LED

Two types of DSS Consoles are available:

- UAT-32 DSS for the UMT-32 system
- UAT-64 DSS for the UMT-64 system

DOOR CHIME BOXES

- 4.24 The Door Chime Box is optional. Two Door Chime Boxes can be used in the system. Distinctive Door Chime Box tones are provided when two Door Chime Boxes are installed.
- **4.25** The Door Unlock feature can be used with Door Chime Boxes.

Table 3-1 ORDER FORM, UMT-8/16/32/64 (Page 1 of 2)

The state of the s	
ITEM 1: MAJOR COMPONENTS:	
CABINETS:	1 required
UMT-16 KSU (P/N 10820 or P/N 10823)	•
UMT-32 KSU (P/N 10830)	
UMT-64 Exp. Cabinet (P/N 10840)	
POWER SUPPLY:	1 required
V4S Power Supply (P/N 62505 or P/N 15420H)	1 required
V4M Power Supply (P/N 15120)	1 required
V4M Battery Backup Power Supply (P/N 15120H)	required
V4L Power Supply (P/N 15320)	required
V4L Battery Backup Power Supply (P/N 15323H)	required
Battery Backup Box (P/N 15321H)	required
POWER SUPPLY CORDS:	
UMT-32 Power Supply Cord (P/N 10821)	required
UMT-64 Power Supply Cord (P/N 10822)	required
ITEM 2: PRINTED CIRCUIT BOARDS:	
UMT-8/16 PCBS:	
C-CP4SU-A (P/N 10807)	1 required
C-4STU-A (P/N 10804)	required
C-4STU-B (P/N 10805)	required
C-3COU-A (P/N 10814)	required
C-3COU-B (P/N 10815)	required
C-2DBU-A (P/N 15045)	required
C-SPDU-A (P/N 10812)	required
C-22SU-A (P/N 10826)	required
C-5ROU-1A (P/N 10806)	required
C-5ROU-1B (P/N 10809)	required
C-SMDR-SA (P/N 10827)	required
UMT-32/64 PCBS:	
C-CPU-A (P/N 10865)	1 required
C-CPU-B (P/N 10866)	required
C-CPU-C (P/N 10867)	required
C-TSU-A (P/N 10855)	required
C-COU-A (P/N 10835)	required
C-STU-A (P/N 10825)	required
C-STU-D (P/N 10836)	required
C-XPU-A (P/N 10845)	required
C-DDU-A (P/N 10875)	required
C-GCU-A (P/N 10885)	required
C-SPDU-A (P/N 10812)	required
C-SMDR-LA (P/N 10837-A)	required

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Table 3-1 ORDER FORM, UMT-8/16/32/64 (Page 2 of 2)

ITEM 3: TELEPHONES:	
UAT-16 KEY TEL (P/N 10816)	required
UAT-16E EXEC TEL (P/N 10816E)	required
UAT-16 BLF TEL (P/N 10817)	required
UAT-32 KEY TEL (P/N 10832)	required
UAT-32E EXEC TEL (P/N 10832E)	required
UAT-64 KEY TEL (P/N 10864)	required
UAT-64 EXEC TEL (P/N 10864E)	required
UAT-32 BLF TEL (P/N 10838)	required
UAT-32E BLF TEL (P/N 10838-E)	required
UAT-64 BLF TEL (P/N 10868)	required
UAT-64E BLF TEL (P/N 10868-E)	required
ITEM 4: OPTIONAL EQUIPMENT:	1
UAT-32 DSS (P/N 10831)	required
UAT-64 DSS (P/N 10841)	required
External paging equipment	yes/no
External music source	yes/no
Number of external speakers (customer-supplied)	required
Door Chime Box (P/N 15040)	required
XT-Wall Kit (P/N 15411)	required
Modular Adaptor for UMT-8/16 (P/N 10898)	required
ITEM 5: INSTALLATION EQUIPMENT:	
Surge Protector	1 required
Connecting Blocks (25-pair split blocks with punchdown terminals)	required
Bridging Clips	required
Insulated Copper Grounding Wire 14 AWG. or heavier (up to 25 feet)	1 required
Copper Ground Rod (1/2" dia. x 3' long) OR Ground Clamp for Cold Water Pipe	1 required
25-pair cable (for connection from RJ21X connector to KSU, maximum of 25 ft., with type 57 connector, female on one end)	1 required
Station Jacks (625-type, 6-conductor)	required
Three-pair twisted station cable	required
Mounting hardware depends on the installation site, standard practices and Natio	nal or local codes.

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ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 4, SOFTWARE CONFIGURATION

NOTE: This section applies to systems not equipped with the C-CPU-C PCB. If the system is equipped with a C-CPU-C PCB, refer to the 01751 SWU 01 manual.

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1. INTRODUCTION

- 1.01 This section provides the information necessary to construct a data format for customizing the system to individual needs.
- 1.02 The Program Record Form (Appendix A) is used as a convenient register for entering system programming data along with Section 7, PROGRAMMING.

2. DESCRIPTION

2.01 Each program is detailed in the following manner: Access Code: the code necessary to enter data for a particular feature is presented here.

Description: discusses the basic elements of the feature.

Conditions: the limits of a feature (e.g., the number of CO groups permitted) and the elements necessary for the feature to operate (e.g., DND required for Executive Call Forward) are defined.

Instructions: the step-by-step procedures for filling out the Program Record Form are specified.

Example: a sample of a possible configuration is illustrated along with a sample Program Record Form entry.

Default: initialized values are listed.

Related Programming: other programs which limit or enhance the feature under discussion are listed.

Feature Interactions: other features which affect the feature under consideration are listed.

PROGRAM 1: LINE TYPE, DIAL MODE, CO QUEUING GROUP

Access Code: 1

Description:

Two types of lines are available: PBX and CO lines.
Dial Modes available are: Dial Pulse and DTMF.
CO Queuing Groups are available. Four groups are permitted.

Conditions:

(a) It is recommended that similar lines be grouped together with respect to CO Queuing Groups.

Instructions:

- (1) In the C box, enter 0 if no line is installed; enter 1 if a CO line is required; enter 3 if a PBX line is required.
- (2) In the D box, enter 0 if Dial Pulse signaling is required; enter 1 if DTMF signaling is required.
- (3) In the E box, enter 0 if no CO Queuing Group is required; enter the group number (1-4) if required.
- (4) In the F box, enter 0.
- (5) In the G box, enter 0.

Example:

AB	•	_	E	•	_
0 1	1	1	2	0	0

A-B: Line number—Line 1 C: Line type — CO line (1) D: Dial Mode — DTMF (1) E: CO Queuing Group — CO Queuing Group Number 2 (2) F: Not Used — 0 (0) G: Not Used — 0 (0)

Default:

A B CDEFG

XX 1 1 1 0 0

C: Line Type—CO line (1)

D: Dial Mode-DTMF (1)

E: CO Queuing Group-All lines in

Group 1 (1)

F: Not Used -- 0 (0)

G: Not Used — 0 (0)

Related Programming:

Program 43—Private Branch Exchange (PBX) Access Codes

Program 56—Flash Type/Timing

Program 57—Dial Pulse Sender Speed

Program 58—Make/Break Ratio

Feature Interactions:

CO Line Groups

Dial Pulse (DP) to Tone (DTMF) Conversion

Line Queuing

PROGRAM 2: CO LINE GROUP ASSIGNMENTS

Access Code: 2

Description:

Software permits the formation of CO Line Groups. Each group can have as many lines as required.

Conditions:

- (a) Thirty CO line groups are permitted for the UMT-32/64. Eight CO line groups are permitted for the UMT-8/16.
- (b) Consecutively numbered lines must be assigned in each group.
- (c) Lines within one group are permitted to overlap with those of another group.
- (d) A Common Use Line provides an extra line group for incoming and outgoing calls and is accessible to all stations.

Instructions:

- (1) In the C/D boxes, enter the lowest numbered line in the
- (2) In the E/F boxes, enter the highest numbered line in the group.

Example:

A B CDEF

0 1

0 1 0 3

A-B: CO Line Group Number---CO

Group 1 (01)

C-D: Line 1 assigned as lowest numbered line in group-Line 1 (01) E-F: Line 3 assigned as highest numbered line in group-Line 3

(03)

Default:

A B CDEF

XX 0 1 1 2

All lines assigned to one CO Line

Group 1

C-D: Lowest numbered line in CO

Line Group-Line 1 (01)

E-F: Highest numbered line in CO Line Group—Line 12 (12)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing group

Program 3—Common Use Lines

Program 6—CO Line Outward Access Assignment

Program 7—CO Line Incoming/Audible Assignment

Program 17-Night Audible

Feature Interactions:

CO Line Groups

NOTE: It is recommended that you leave CO line group 01 at its default value.

PROGRAM 3: DISA LINE, FAX LINE, **COMMON USE LINE**

Access Code: 3

Description:

A Common Use Line provides another line for each station. It provides outgoing and incoming access to all stations.

A DISA line may be used for outgoing calls.

[†]This value will be 0124 if a 24-line system is installed.



A FAX (facsimile) line is a line circuit that is shared by the telephone system and some ancillary device. This option can provide line circuit supervision and privacy on that line circuit.

Conditions:

- (a) A Common Use Line is subject to a station's Class of
- (b) There can be more than one Common Use Line.
- (c) Flexible Line Appearance does not allow a Common Use Line.

Instructions:

- (1) In the C box, enter 0.
- (2) In the D box, enter 0.
- (3) In the E box, enter 0 to disable Common Use Line; enter 1 to enable Common Use Line.

Example:

CDE

0 0 1 A-B: CO Line -- CO Line 1 (01)

C: Not Used - Enter 0 D: Not Used - Enter 0

E: Common Use Line—Enabled (1)

Default:

CDE

XX 000 C: Not Used - Enter 0

D: Not Used - Enter 0

E: Common Use Line-Disabled (0)

Related Programming: None

Feature Interactions:

CO Line Groups Flexible Line Appearance

Toll Restriction

PROGRAM 4: EXECUTIVE OVERRIDE (BARGE IN)

Access Code: 4

Description:

Executive Override permits a programmed station to intrude into an established CO line conversation. No warning tone is issued.

Conditions:

- (a) Stations can enter CO conversations which are utilizing Multi-Line Conference.
- (b) Stations programmed for Executive Override can intrude into a Private Line conversation.
- (c) A station must have access to the line that is to be intruded upon.

Instructions:

(1) In the C box, enter 0 to disable Executive Override; enter 1 to enable Executive Override.

Example:

A B

10 11 A-B: Port number-Port 10

C: Executive Override—Enabled (1)

Default:

А В

XX 0

C: Executive Override—Disabled (0)

Related Programming:

Program 7—CO Line Incoming/Audible Assignment

Feature Interactions:

CO Line Groups

Conference, Multi-Line

Private Line

PROGRAM 5: UNSUPERVISED CONFERENCE

Access Code: 5

Description:

Unsupervised Conference permits an internal party to establish a three-way Conference with two external parties. The internal party can leave the Conference without affecting the link between the external parties.

Conditions:

- (a) Lines used for Unsupervised Conference must have open loop disconnect supervision provided.
- (b) The following ports have station PCBs installed, but not terminated:

SYSTEM	PORT
8/16	17
32	22
64	34

- (c) Program 30 (Multi-Line Conference) must be programmed for Unsupervised Conference to work.
- (d) Program 54 (Release of Abandoned Calls on Hold/Line Supervision) must be programmed for Unsupervised Conference to work.
- (e) See the INSTALLATION section for further considerations regarding Unsupervised Conference.

Instructions:

In the A box, enter 0 to *disable* Unsupervised Conference on a system-wide basis; enter 1 to *enable* Unsupervised Conference on a system-wide basis.

Example:

А 1

A: Unsupervised Conference— Enabled (1)

Default:

A

A: Unsupervised Conference—
Disabled (0)

Related Programming:

Program 30—Multi-Line Conference Program 54—Release of Abandoned Calls on Hold/Line Supervision

Feature Interactions:

Conference, Multi-Line

Release of Abandoned Calls on Hold/Line Supervision

PROGRAM 6: CO LINE OUTWARD ACCESS ASSIGNMENT

Access Code: 6

Description:

This program assigns outgoing access through CO Line Group assignment. Stations are permitted outgoing access to each line in the assigned group but are prohibited from accessing outgoing lines not in the assigned group.

Conditions:

- (a) Each station can be assigned two CO Line Groups.
- (b) A Common Use Line grants outgoing access to all stations subject to each station's Class of Service.
- (c) If Program 15 (Flexible Line Appearance) is enabled, all data in Program 6 is erased.
- (d) A Class of Service can be used to prohibit or limit a station's outward access.
- (e) Night Class of Service, if programmed, can be used to prohibit or limit a station's outward access. Night Class of Service, if programmed, is enabled when Night Audible is activated.

Instructions:

- (1) In the C/D boxes, enter the number of the first CO Line Group.
- (2) In the E/F boxes, enter the number of the second CO Line Group.
- (3) If no CO Line Groups are desired, enter 00 in the appropriate boxes.

Example:

AB CDEF

A-B: Port number—Station 10 C-D: First CO Line Group—CO Line Group 1 (01) E-F: Second CO Line Group—CO Line Group 2 (02)

Default:

AB CDEF XX 0100

All stations assigned access to CO Line Group 1 C-D: First CO Line Group—CO Line Group 1 (01) E-F: Second CO Line Group—Not Programmed (00)

Related Programming:

Program 2—CO Line Group Assignments Program 15—Flexible Line Appearance

Feature Interactions:

CO Line Groups Common Use Lines Flexible Line Appearance Night Class of Service Night Audible Toll Restriction

PROGRAM 7: CO LINE INCOMING/AUDIBLE ASSIGNMENT

Access Code: 7

Description:

This program assigns incoming access on a per station basis. Audible assignments are permitted for each CO Line Group.

Conditions:

- (a) Two CO Line Groups are permitted assignment to each station.
- (b) Stations assigned day audible receive Incoming Audible when Night Audible is not activated. Those assigned Night Audible receive incoming audible when Night Audible is activated.
- (c) Program 15 (Flexible Line Appearance) reassigns the primary CO Line Groups to other Line keys but ignores the secondary CO Line Group.
- (d) Common Use Lines are disabled with the use of Flexible Line Appearance.

Instructions:

- (1) In the C/D boxes, enter the primary CO Line Group number.
- (2) In the E box for the primary CO Line Group, enter 0 if no incoming audible is required; enter 1 if Day Audible is required; enter 2 if Night Audible is required; enter 3 if both Day and Night Audible are required.
- (3) In the F/G boxes, enter the secondary CO Line Group number.
- (4) In the H box, for the secondary CO Line Group, enter 0 if no incoming audible is required; enter 1 if Day Audible is required; enter 2 if Night Audible is required; enter 3 if both Day and Night Audible are required.
- (5) If one or no CO Line Groups are desired, enter 00 in the appropriate boxes.

Example:

A B bin C D E bin F G H
1010312043

A-B: Port number—Port 10
C-D: Primary CO Line Group
Number Line Group 3 (03)
E: Day/Night Audible
Assignment for Primary CO
Line Group—Day Audible
Assigned (1)
F-G: Secondary CO Line
Group Number—Line Group
4 (04)
H: Day/Night Audible
Assignment for Secondary CO
Line Group—Day/Night
Audible Assigned (3)

Default:

- (a) CO Line Group 1 assigned to all stations.
- (b) Station number 10 assigned Day/Night Audible. All others assigned no audible.

A B bin C D E bin F G H
X X 1 0 1 0 2 0 0 0

C-D: Primary CO Line Group number-Line Group 1 Assigned (01) E: Day/Night Audible Assignment for Primary CO Line Group—Both Day/Night Audible to station 10 (3); No incoming Audible at all other stations (0) F-G: Secondary CO Line Group number-Not Assigned (00)H: Day/Night Audible Assignment for secondary CO Line Group-Not Assigned (0)

Related Programming:

Program 2—CO Line Group Assignments

Feature Interactions:

CO Line Groups Flexible Line Appearance Night Audible

> PROGRAM 8: NIGHT CLASS OF SERVICE, HEADSET, INSTRUMENT TYPE, DO NOT DISTURB, PAGING GROUPS

Access Code: 8

Description:

The following five options can be assigned using Program 8:

- (1) **Night Class of Service**—Night Class of Service can prohibit or limit a station's outward access when Night Audible is activated.
- (2) **Headset**—A headset can be used in place of a handset at each key telephone.

- (3) **Instrument Type—**Four types are available: key telephone, DISA port, Dial Pulse OPX, DTMF OPX.
- (4) **Do Not Disturb—**Three levels of Do Not Disturb are available through programming:

Level 1—incoming CO audible blocked.

Level 2—incoming CO/Intercom audible blocked.

Level 3—(a) Level 1 DND with first key depression.

and

- (b) Level 2 DND with second key depression.
- (5) Paging Groups—Paging Groups are available and permit the separation of stations into different internal page groups.

Conditions:

- (a) A Night Class of Service supercedes a regular Class of Service at a programmed station when Night Audible is in use.
- (b) Four internal Paging Groups are permitted.
- (c) This program is used to make Night Class of Service available or not available. Program 48 is used to assign a Night Class of Service to specific stations (the default for Program 48 assigns no restrictions or limitations to any station when Night Audible is activated).
- (d) Do Not Disturb can be overridden by a DSS Console if the console is programmed (Program 13) and DND Override by DSS Console (Program 55) is also programmed (on UMT-32/64 systems only).
- (e) Stations not programmed to Paging Groups will not receive Paging.
- (f) When the system is installed behind a PBX it is necessary that a Night Class of Service of 3 through 6 be programmed. This allows stations to dial PBX extensions or access PBX features.
- (g) Headset operation requires C-HSU-A PCB.

Instructions:

- (1) In the C box, enter 0 to *disable* Night Class of Service; enter 1 to *enable* Night Class of Service.
- (2) In the D box, enter 0 if a handset operation is installed; enter 1 if a headset operation is installed.
- (3) In the E box, enter 0 for a key telephone.
- (4) In the F box, enter 0 if Do Not Disturb (DND) is not required; enter 1 if DND level 1 is required; enter 2 if DND level 2 is required; enter 3 if DND level 3 is required.



(5) In the G box, enter 0 if no Paging Group assignments are required: enter 1, 2, 3 or 4 if assignment to groups 1, 2, 3 or 4 is required, respectively.

Example:

CDEFG A B 10

0 1 0 2 1

A-B: Port Number—Port 10

C: Night Class of Service-Disabled

(0)

D: Headset Installed (1)

E: Instrument Type: Key

Telephone—0 (0)

F: Do Not Disturb-Level 2 (2)

G: Paging Group—Paging Group 1

(1)

Default:

CDEFG

00001

C: Night Class of Service-Disabled

D: Headset—not installed (0)

E: Instrument Type—Key Telephone

F: Do Not Disturb-Not required (0)

G: Paging Group—Paging Group 1

(1)

Related Programming:

Program 13—DSS Console Port Assignment (UMT-32/64 system only)

Program 48—Night Class of Service Selection

Program 55—Do Not Disturb (DND) Override by DSS

Console

Feature Interactions:

Direct Station Selection (DSS) Console (UMT-32/64 systems only)

Night Class of Service

Night Audible

Paging, All Call

Paging, Internal Zone

Paging, Meet-Me

Toll Restriction

PROGRAM 9: EXECUTIVE CALL FORWARD

Access Code: 9

Description:

Incoming calls to a station designated as the Executive, are transferred automatically to a partner station, the Secretary, when Do Not Disturb is in use.

Conditions:

- (a) Eight Executive/Secretary pairs are permitted.
- (b) Two or more Executive stations can have the same assigned Secretary station.
- (c) Do Not Disturb (level 2) must be programmed for the Executive station but should not be programmed for the Secretary station. The initiation of DND at an Executive station overrides a DND condition at the Secretary station.
- (d) CO calls are forwarded with ringing.
- (e) OPXs may be "secretary" extensions.

Instructions:

- (1) In the A/B boxes, enter Executive port number.
- (2) In the C/D boxes, enter Secretary port number.

Example:

bin A B CD 1 1 0

A-B: Executive station-Port

number 10

C-D: Secretary station-Port

number 12

Default:

bin A B 100

CD 00

Executive Call Forward—Not

programmed

A-B: Executive station—Not

programmed (00)

C-D: Secretary station-Not

programmed (00)

Related Programming:

Program 8-Night COS, Headset, Instrument Type, DND, Paging Groups

Feature Interactions:

Do Not Disturb

4

PROGRAM 10: DUAL HANDSFREE HOTLINE

Access Code: 10

Description:

A station, assigned as a Secretary, can simultaneously (via Dual Handsfree Hotline) call two (Executive) stations. The call will be announced over the speakers at the Executive stations. Both Executives may reply Handsfree. When one call is answered by use of the handset or SPK key, the other party is disconnected.

Conditions:

- (a) Four Executive/Secretary groups are permitted.
- (b) A Secretary station can be assigned to more than one Executive pair.
- (c) Dual Handsfree Hotline is disabled if one or both Executive stations are using Call Forward with Follow-Me or Executive Call Forward.
- (d) The user(s) at either or both Executive stations can answer using Handsfree Reply on Intercom.
- (e) Dual Handsfree Hotline functions only when both Executive Stations are idle.
- (f) OPX extension assignments in this Program are ignored.

Instructions:

- (1) In the A/B boxes, enter the Secretary port number.
- (2) In the C/D boxes, enter the first Executive port number.
- (3) In the E/F boxes, enter the second Executive port number.

Example:

AB CD EF 10 11 14

A-B: Secretary station—Port number 10

C-D: Executive station—Port

number 11

E-F: Executive station—Port number 14

Default:

A B C D

Dual Handsfree Hotline—Not programmed

A-B: Secretary station—Not programmed (00)

C-D: Executive station—Not programmed (00)

E-F: Executive station—Not

programmed (00)

Related Programming: None

E F

Feature Interactions:

Call Forward with Follow-Me Executive Call Forward Handsfree Reply to Intercom Calls Intercom

PROGRAM 11: GROUP HUNT

Access Code: 11

Description:

Stations can be grouped under a Hunting Group number. When this Hunting Group Number is dialed, the system searches for an idle station to contact. The search begins with the first station entered in programming and ends with the final station entered. An established CO call can be transferred to an idle hunt group station using Group Hunt Transfer.

Conditions:

- (a) Ten Hunting Groups are permitted.
- (b) Each Hunting Group can contain a maximum of eight stations.
- (c) Stations are permitted assignment to more than one Hunting Group.

Instructions:

(1) In the B/C boxes, enter the number(s) of the port(s) in the Group Hunt.

Example:

A bin	В	С
0 1	1	0
2	7	2
3	1	4

A: Hunting Group Number— Hunting Group Number 0 (0) B-C: Ports in Group Hunt 0:

Bin 1—10 Bin 2—12 Bin 3—14

Default:

A bin B C

0 1	0	0	
2	0	0	
3	0	0	
4	0	0	
4 5	0	0	
6	0	0	
7	0	0	
8	0	0	

B-C: Ports in Group Hunt:

Bin 1—00 Bin 2—00 Bin 3—00 Bin 4—00 Bin 5—00 Bin 6—00 Bin 7—00 Bin 8—00

Related Programming: None

Feature Interactions:

Group Hunt Transfer Intercom

PROGRAM 12: DOOR CHIME BOX

Access Code: 12

Description:

A Door Chime Box acts as a door bell and an Intercom.

Conditions:

- (a) Two Door Chime Boxes are permitted.
- (b) **Ten** stations can be programmed for Door Chime Box signals.
- (c) When in use the Door Chime Box utilizes an Intercom link.
- (d) The number of chime tones per button depression is programmable (Program 32).
- (e) Distinctive Door Chime Box tones are provided when two Door Chime Boxes are installed.
- (f) Refer to Section 6, INSTALLATION OF OPTIONAL EQUIPMENT for Door Chime Box.

Instructions:

(1) In the A/B boxes, enter the number(s) of the port(s) to receive signals from the Door Chime Box(es).

Example:

bln	A	В
01	1	0
ഹ	4	E

A-B: Ports to receive Door Chime

Box signals:

02 1 5 03 1 6

Bin 01—Port number 10

Bin 02—Port number 15 Bin 03—Port number 16

Default:

bin	Α	В
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

Door Chime Box-Not programmed

A-B: Ports to receive signal: Bin 01 (first port to receive

signal)-00

Bin 02 (second port to receive

signal)--00

Bin 03 (third port to receive

signal)-00

Bin 04 (fourth port to receive

signal)-00

Bin 05 (fifth port to receive

signal)-00.

Bin 06 (sixth port to receive

signal)---00

Bin 07 (seventh port to receive

signal)---00

Bin 08 (eighth port to receive

signal)--00

Bin 09 (ninth port to receive

signal)-00

Bin 10 (tenth port to receive

signal)--00

Related Programming:

Program 32—Door Chime Box Signal

Feature Interactions:

Automatic Intercom Answer Door Unlock Intercom

PROGRAM 13: DSS CONSOLE PORT ASSIGNMENT (UMT-32/64 ONLY)

Access Code: 13

Description:

The Direct Station Selection Console (DSS) must have a software designated port in order to function as a DSS Console. If a port is not designated, the DSS Console functions only as a Busy Lamp Field (BLF). The port to which the DSS Console is considered the attendant.

Conditions:

- (a) A maximum of two DSS Consoles is permitted. Each can be assigned to any port but no port can have more than one DSS Console assigned to it.
- (b) When an assignment has been properly entered for DSS Console 01, one intercom link is dedicated to that DSS Console position. DSS Console 02 "shares" intercom links with the stations in the system.

Instructions:

- (1) In A/B boxes, enter the port number of the first DSS Console.
- (2) In the second set of A/B boxes, enter the port number of the second DSS Console.
- (3) If one or both DSS Consoles are not required, enter 00 in the appropriate box(es).

Example:

bin A B 01 1 0

A-B:

02 2 0

Bin 01—Port 10 Bin 02—Port 20

Default:

oin A B

First DSS port—Unassigned A-B: Bin 01 —Not assigned (00) Second DSS port—Unassigned A-B: Bin 02—Not assigned (00)

Related Programming:

Program 39—DSS Transfer Timer

Feature Interactions:

Direct Station Selection (DSS) Console

PROGRAM 14: FLEXIBLE STATION NUMBER ASSIGNMENT

CAUTION: IT IS STRONGLY RECOMMENDED THAT THIS PROGRAM BE USED WITH CONSIDERABLE DISCRETION AS IT CAN LEAD TO CONFUSION WITH STATION NUMBERING.

Access Code: 14

Description:

This feature permits the reassignment of station numbers through programming alone.

Conditions:

- (a) A port can be assigned a station number ranging from 10-79.
- (b) If a station number is reassigned to a port within the range of ports listed below, two steps are necessary to complete the assignment:
 - (1) Assign the station number to a new port number as needed (e.g., assign station number 10 to port 20).
 - (2) Assign a new or different station number to the vacated port (e.g., in our example, assign 20 to 10). The initial assignment alone (step 1) allows one station number assignment to two ports. This is not permitted.
- (c) All programmed features stay with the port when a station number is changed. The features do not follow the station.

STATION NUMBER RANGE	RANGE OF PORTS
10-79	10-17
10-79	10-25
10-79	10-41
10-79	10-73
	RANGE 10-79 10-79 10-79

(d) Station appearances on the DSS Consoles will be arranged by ascending port numbers.



Instructions:

- (1) In the A/B boxes, enter the Main Distribution Frame (MDF) port number.
- (2) In the C/D boxes, enter the new station number.

Example:

A	В	С	D
1	0	2	0
2	0	1	0

A-B: Port number 10 C-D: Station number 20. A-B: Port number 20

C-D: Station number 10

Default:

Station numbers are coincidental with port numbers, (i.e., stations assume the port number to which they are connected).

Example:

AB CD

(For station 10)

Related Programming: None

Feature Interactions:

Intercom

When reassigning station numbers, assignment should be made in sequential ascending order of port numbers.

PROGRAM 15: FLEXIBLE LINE APPEARANCE

Access Code: 15

Description:

The primary CO Line Group assigned in Program 7 can be reassigned to appear on the lowest numbered keys at all stations. For instance, if the primary CO Line Group consists of lines 2-4, this feature permits these lines to appear on Line keys 1-3. The programming for the secondary CO Line Group is ignored.

Conditions:

- (a) Only the primary CO Line Group is shifted. The secondary CO Line Group is ignored.
- (b) The programming of this feature erases all data in Program 6.
- (c) If there are more lines in an assigned CO Line Group than Line keys on a station, a "phantom ring" can result. This occurs when an incoming call is on a line to a station which has no Line key to display that call.
- (d) In cases of a "phantom ring", a user is able to seize the incoming call only if Ringing Line Preference is programmed.
- (e) Stations using this feature can queue for a "phantom" line but must be programmed for Ringing Line Preference in order to seize the line.
- (f) Common Use Lines are not available when Flexible Line Appearance is programmed.
- (g) The lowest-numbered line in the primary CO Line Group appears on line key 1 when this program is enabled.

Instructions:

(1) In the A box, enter 0 to *disable* Flexible Line Appearance; enter 1 to *enable* Flexible Line Appearance.

Example:

A [1]

A: Flexible Line Appearance—

Enabled (1)

Default:

A

A: Flexible Line Appearance— Disabled (0)

Related Programming:

Program 2—CO Line Group Assignments Program 7—CO Line Incoming/Audible Assignment Program 20—Ringing Line Preference

Feature Interactions:

CO Line Groups Component Commonality Ringing Line Preference

PROGRAM 16: CO OFF-HOOK SIGNALING

Access Code: 16

Description:

If a station has seized a CO Line or Intercom link, it can still receive ringing for an incoming CO call on another line when this feature is programmed.

Conditions:

- (a) If this feature is not programmed and a CO Line is seized, a user can still answer an incoming call on another CO Line but receives no incoming audible for that call.
- (b) CO Off-Hook signals are blocked at a given station by all levels of Do Not Disturb when Do Not Disturb is activated at that station.
- (c) The station must be programmed for line access and audible (Program 7) for the appropriate CO Line.

Instructions:

(1) In the C box, enter 0 to *disable* CO Off-Hook Signaling; enter 1 to *enable* CO Off-Hook Signaling.

Example:

A B C

A-B: Port number—Port 10: C: CO Off Hook Signaling—

Enabled (1)

Default:

AB C

X X 1

C: CO Off Hook Signaling— Enabled (1)

Related Programming:

Program 7—CO Line Incoming/Audible Assignment

Feature Interactions:

CO Line Groups Do Not Disturb

PROGRAM 17: NIGHT AUDIBLE

Access Code: 17

Description:

When the system is programmed so that Night Audible is activated, incoming CO audible is sent to all stations programmed for Night Audible. Night Audible can be initiated at either the system programming station only (Exclusive Initiation) or at *any* station in the system (System-Wide Initiation). When any station can activate Night Audible, only stations in the same CO Line Group will be in the Night mode.

Conditions:

- (a) System-wide initiation is available through programming.
- (b) Night Audible has answering priority over Ring Transfer calls when both are in use simultaneously.
- (c) Stations programmed for Night Class of Service assume a different Class of Service when Night Audible is activated. Night Class of Service overrides "normal" Class of Service when Night Audible is activated.
- (d) Program 49 Excluded System Features can be used to disable Night Audible. If a DSS Console is programmed, it retains the ability to activate Night Audible if exclusive initiation for Night Audible is programmed.

Instructions:

(1) In the A box, enter 0 to permit Night Audible initiation at the system programming station only (Exclusive Initiation); enter 1 to permit Night Audible initiation at any station in the system (System-Wide Initiation).

[†]A 0 allows only the system programming station to initiate Night Audible (Exclusive Initiation). A 1 allows any station in the system to initiate Night Audible *including* the system programming station (System-Wide Initiation).

Example:

Α

1

A: Night Audible—System-Wide Initiation assigned (1)



Default:

A

A: Night Audible—Exclusive Initiation assigned (0)

Related Programming:

Program 2—CO Line Group Assignments

Program 7—CO Line Incoming/Audible Assignment

Program 8—Night Class of Service, Headset, Instrument

Type, DND, Paging groups

Program 48—Night Class of Service Selection

Program 49—Excluded/Allowed System Features

Feature Interactions:

CO Line Groups

Direct Station Selection (DSS) Console

Night Class of Service

PROGRAM 18: EXTERNAL PAGING FEATURES

Access Code: 18

Description:

External Speakers can receive incoming CO audible, Background Music and alarm tones. External paging is optional.

Conditions:

- (a) Two external zones are permitted.
- (b) Speakers and amplifiers are customer-provided items.
- (c) If a 1 is entered into the BGM position during programming (box D), and BGM is not programmed (Program 26), the system defaults the BGM entry to zero in Program 18.

Instructions:

- (1) In the B/C boxes, enter the number of the CO Line Group for which the external speaker will receive incoming CO Audible.
- (2) In the D box, enter 0 to *disable* Background Music; enter 1 to *enable* Background Music.
- (3) In the E box, enter 0 to *disable* alarm 1; enter 1 to *enable* alarm 1.

(4) In the F box, enter 0 to *disable* alarm 2; enter 1 to *enable* alarm 2.

Example:

A BC DEF

A: Speaker number-Speaker 1

(1)

B-C: CO Line Group number—

CO Line Group 1 (01)

D: BGM—Enabled (1)

E: Alarm tone 1—Disabled (0)

F: Alarm tone 2—Disabled (0)

Default:

A BC DEF

B-C: CO Line Group number—

Not programmable (0)

D: BGM—Disabled (0)

E: Alarm tone 1—Disabled (0)

F: Alarm tone 2—Disabled (0)

Related Programming:

Program 2—CO Line Group Assignments

Program 26—Background Music

Program 28—Alarm Sensor

Feature Interactions:

Background Music

CO Line Groups

External Alarm Repeating

PROGRAM 19: ALL CALL PAGING TO EXTERNAL ZONES

Access Code: 19

Description:

External zones can receive All Call Paging announcements. External paging is optional.

Conditions:

- (a) Two external zones are permitted in the UAT-32/64 system.
- (b) Speakers and amplifiers are customer-provided.
- (c) The C-GCU-A PCB must be installed on the C-TSU-A PCB in a UAT-32/64 system.

Instructions:

(1) In the A box; enter 0 to *disable* All Call Paging to an External Paging Zone. Enter 1 to *enable* All Call Paging to External Paging Zone 1. Enter 2 to *enable* All Call Paging to External Paging Zone 2. Enter 3 to *enable* All Call Paging to both External Paging Zones.

Example:

A Tal

A: All External Zone Paging-

Enabled (1)

Default:

A

0

A: All Call Paging to External Zones disabled (0)

Related Programming:

Program 52—Paging Splash Tone

Feature Interactions:

Paging, All Call

PROGRAM 20: RINGING LINE PREFERENCE

Access Code: 20

Description:

This feature permits single-step seizure of incoming CO calls.

Conditions:

- (a) Two levels of Ringing Line Preference are available through programming:
 - (1) Single-step seizure for stations with incoming access only (audible is not required).
 - (2) Single-step seizure for stations with both incoming access and audible (both access and audible are required).

Instructions:

(1) In the A box, enter 0 to *disable* Ringing Line Preference; enter 1 to *enable* Ringing Line Preference for stations with *incoming access only*; enter 2 to *enable* Ringing Line Preference for stations with *incoming access and audible*.

Example:

A

Â

A: Ringing Line Preference— Enabled for stations with incoming

access only (1)

Default:

Α

2

A: Ringing Line Preference— Enabled for stations with incoming access and incoming audible (2)

Related Programming:

Program 2—CO Line Group Assignments

Program 7—CO Line Incoming/Audible Assignment

Feature Interactions:

CO Line Groups

PROGRAM 21: AUTOMATIC LINE ACCESS

Access Code: 21

Description:

This program enables or disables Automatic Line Access for all extensions.

Conditions:

- (a) Program 21 cannot be used with LND and Save.
- (b) To use Automatic Line Access for a particular Line Group, a key phone must be programmed for outgoing access.
- (c) Outside lines must be programmed into Queue Groups.

Instructions:

- (1) In the A box, enter:
 - 0 to disable Automatic Line Access
 - 1 to enable SPK/dial 0 and SPK/dial Queue Group
 - 2 to enable 0 only
 - 3 to enable all procedures

Example:

<u>А</u> З

A: All three procedures for

Automatic Line Access are enabled:

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing Group Program 6—CO Line Outward, Access Assignment

Feature Interactions:

Line Type, Dial Mode, Queue Group, Outgoing Line Access

PROGRAM 22: EXCLUSIVE HOLD

Access Code: 22

Description:

Exclusive Hold is a temporary waiting condition for CO calls. Call retrieval is possible *only* at the station where Exclusive Hold was initiated.

Conditions:

- (a) If a call on Exclusive Hold is not answered within a programmed period of time, a reminder signal is sent to the initiating station.
- (b) If a CO call remains on Exclusive Hold throughout the duration of the reminder signal, it is automatically placed on System Hold. Once the call is placed on System Hold, retrieval is possible at any station.
- (c) If Exclusive Hold is programmed, a value other than 000 must be entered into Programs 35 and 36.

Instructions:

(1) In the A box, enter 0 to *disable* Exclusive Hold; enter 1 to *enable* Exclusive Hold.

Example:

A 1

A: Exclusive Hold—Enabled (1)

Default:

A [1]

A: Exclusive Hold—Enabled (1)

Related Programming:

Program 35—Exclusive Hold Recall Program 36—Exclusive Hold Recall Duration

Feature Interactions:

Hold

PROGRAM 23: INTERCOM OFF-HOOK SIGNALING WITH HANDSFREE REPLY

Access Code: 23

Description:

This program permits a station user to call another station which is busy.

Conditions:

- (a) Two calling options are available:
 - User-controlled Intercom Off-Hook Signaling With Handsfree Reply
 - (2) Automatic Intercom Off-Hook Signaling With Handsfree Reply
- (b) If the user-controlled option is programmed, the user can select whether or not to issue an Intercom Off-Hook signal with Handsfree Reply. If the automatic option is programmed, an Intercom Off-Hook signal with Handsfree Reply tone is automatically issued when the busy station is dialed.
- (c) Callback and Camp-On are not available if Intercom Off-Hook Signaling with Handsfree Reply is programmed for the automatic mode.

Instructions:

(1) In the C box, enter 0 to disable Intercom Off-Hook Signaling with Handsfree Reply at calling station; enter 1 to *enable* user-controlled Off-Hook Signaling at calling station; enter 2 to enable automatic Off-Hook Signaling at calling station.

Example:

1 0

0

A-B: Port number-Port 10 C: Intercom Off-Hook Signaling with Handsfree Reply—Disabled (0)

Default:

А В XX

C: Intercom Off-Hook Signaling With Handsfree Reply-User-controlled enabled (1)

Related Programming:

Program 24—Voice-Announced/Tone-Signaled Calling

Feature Interactions:

Callback Camp-On Intercom Microphone On/Off

PROGRAM 24: VOICE-ANNOUNCED/ TONE-SIGNALED CALLING

Access Code: 24

Description:

An Intercom call can be either voice-announced or tone-signaled.

Conditions:

(a) A voice-announced call can be answered using Handsfree Reply On Intercom. A tone-signaled call cannot be answered using Handsfree Reply On Intercom.

Instructions:

(1) In the A box, enter 0 to *enable* Voice Announce Calling; enter 1 to enable Tone Signal Calling.

Example:

1

A: Voice Announce/Tone Signal Calling—Tone Signal Calling Enabled

(1)

Default:

0

A: Voice Announce/Tone Signal Call-Voice Announce Calling

Enabled (0)

Related Programming: None

Feature Interactions:

Intercom

Off-Hook Signaling

PROGRAM 25: MICROPHONE ON/OFF

Access Code: 25

Description:

Microphones, which are standard on all telephones, permit stations to utilize Handsfree Reply On Intercom. Initialization enables all station microphones. This "normally on" condition can be changed by programming to a "normally off' condition.

Conditions:

- (a) The MIC key has an LED which indicates microphone status. When the LED is illuminated, the microphone is disabled (off).
- (b) Handsfree Reply on Intercom is disabled at a given station when the microphone at that station is disabled (off).

Instructions:

(1) In the A box, enter 0 to disable Microphone On/Off (Microphone on, LED off); enter 1 to enable Microphone On/Off (Microphone off, LED on).



Example:

A 1

A: Microphone On/Off— Microphone off, LED on

Default:

<u>А</u>

A: Microphone On/Off— Microphone on, LED off (0)

Related Programming: None

Feature Interactions:

Intercom

Off-Hook Signaling

PROGRAM 26: BACKGROUND MUSIC (BGM)

Access Code: 26

Description:

If enabled, Background Music can be provided to any station speaker when the station is idle. Background Music source can also serve as a source of Music On Hold. An external zone may be programmed to provide BGM.

Conditions:

- (a) BGM is a customer-supplied option.
- (b) An external zone is permitted access to BGM. Speakers and amplifier are customer-provided.
- (c) BGM is interrupted at the telephone when it is in use. BGM is interrupted at the external zone when a page to the zone is initiated.
- (d) BGM is disabled at both monitored and monitoring stations when Room Monitor is activated.
- (e) The system must be programmed for BGM if a BGM source is connected.

Instructions:

(1) In the A box, enter 0 to *disable* BGM; enter 1 to *enable* BGM.

Example:

A [1]

A: Background Music—Enabled (1)

Default:

A

A: Background Music-Disabled (0)

Related Programming:

Program 18—External Paging Features

Feature Interactions:

Paging, External Zone

Intercom

Music On Hold (MOH)

Room Monitor

PROGRAM 27: ROOM MONITORING

Access Code: 27

Description:

This feature permits the monitoring of the environmental sounds of a station.

Conditions:

- (a) When in use, Room Monitor utilizes an Intercom link.
- (b) Room Monitor is unavailable to monitoring stations if the monitored station:
 - (1) Seizes a CO line or an Intercom link.
 - (2) Lifts the handset or presses the SPK key (LED illuminates).

The monitor condition returns upon cancelation of the above.

(c) Background Music is *disabled* at both monitor and monitored stations when Room Monitor is activated.

Instructions:

(1) In the A box, enter 0 to *disable* Room Monitor; enter 1 to *enable* Room Monitor.

Example:

A 1

A: Room Monitor—Enabled (1)

Feature Interactions:

CO Line Groups Intercom

PROGRAM 28: ALARM SENSOR

Access Code: 28

Description:

The system provides the inputs for Alarm Sensors, each with the option of a normally open (NO) or a normally closed (NC) contact.

Conditions:

- (a) Two sensor inputs are provided.
- (b) Alarm Sensors are also used for FAX circuits.

Instructions:

- (1) In the B box, enter 0 for no Alarm Sensor; enter 1 for Alarm Sensor 1. Enter 2 for Alarm Sensor 2.
- (2) In the C box, enter 0 for a normally open contact or for FAX circuit. Enter 1 for a normally closed contact.

Example:

A: Alarm Sensor number—Alarm

Sensor 1

B: No Alarm Sensor (0)

C: Normally Open/Closed

Contact—Contact normally open (0)

Default:

B: No Alarm Sensor (0)

C: Normally Open/Closed

Contact—Contact normally open (0)

Related Programming:

Program 18—External Paging Features

Program 53—Alarm Signal Tone

Program 3—DISA Line, FAX Line, Common Use Line

Feature Interactions:

External Alarm Repeating

PROGRAM 30: MULTI-LINE CONFERENCE

Access Code: 30

Description:

Internal parties can conference with more than one external party.

Conditions:

- (a) Two external parties can conference with six internal parties.
- (b) If Executive Override is programmed, other internal parties can enter the Conference using the override feature (provided that the limit of six internal parties is not exceeded).
- (c) This feature must be programmed for Unsupervised Conference to work.

Instructions:

(1) In the A box, enter 0 to disable Multi-Line Conference; enter 1 to enable Multi-Line Conference.

Example:

1

A: Multi-Line Conference-Enabled

(1)

Default:

1

A: Multi-Line Conference-Enabled

(1)

Related Programming:

Program 4—Executive Override (Barge In)

Feature Interactions:

Executive Override (Barge In)



PROGRAM 31: THREE MINUTE WARNING TONE

Access Code: 31

Description:

When enabled, three quick splash tones are issued through the station speaker after a user initiates an outgoing call. The tones are issued every three minutes, beginning three minutes after the seizure of a CO line.

Conditions: None

Instructions:

(1) In the A box, enter 0 to *disable* Three Minute Warning Tone; enter 1 to *enable* Three Minute Warning Tone.

Example:

A

 $\ddot{\Box}$

A: Three Minute Warning Tone-

Enabled (1)

Default:

A

A: Three Minute Warning Tone—

Disabled (0)

Related Programming: None

Feature Interactions:

CO Line Groups

PROGRAM 32: DOOR CHIME BOX SIGNAL

Access Code: 32

Description:

When the Door Chime Box button is pressed, chime tones are sent to programmed stations. The duration of the chime tones is programmable.

Conditions:

- (a) Two durations of chime tones are available:
 - (1) Four seconds of double chime tones.
 - (2) Thirty seconds of double chime tones.
- (b) Door Chime Boxes provide distinctive tones.

Instructions:

(1) In the A box, enter 0 if double chime tones are required for a period of four seconds; enter 1 if double chime tones are required for a period of 30 seconds.

Example:

Α

0

A: Door Chime Signal:

Four seconds of double chime tones

(0)

Default:

<u>А</u>

A: Door Chime Signal:

Four seconds of double chime tones

(0)

Related Programming:

Program 12—Door Chime Box

Feature Interactions:

Door Chime Box

PROGRAM 33: SINGLE STEP ACCESS

Access Code: 33

Description:

This feature permits single step seizure of a CO line or Intercom link, by automatically activating the SPK Key when the call is accessed.

Conditions:

(a) Outgoing CO access is necessary.

Instructions:

(1) In the A box, enter 0 to *disable* Single Step Access; enter 1 to *enable* Single Step Access.

A: Single Step Access—Enabled (1)

Default:

A: Single Step Access-Enabled (1)

Related Programming:

Program 6—CO Line Outward Access Assignment

Feature Interactions:

CO Line Groups

PROGRAM 35: EXCLUSIVE HOLD RECALL

Access Code: 35

Description:

If a call is placed on Exclusive Hold and not retrieved within a programmed period of time, a reminder signal is issued to the station where Hold was originated.

Conditions:

- (a) The period prior to initiation of the reminder signal has a maximum limit of 2,550 seconds (approximately 421/2 minutes).
- (b) If Exclusive Hold is enabled, some value other than 000 must be entered into this program or exit from the programming is denied.

Instructions:

(1) In the A/B/C boxes, enter the length of time elapsed before Exclusive Hold Recall is initiated. (The value of each digit is equivalent to ten seconds [e.g., 002 = 20seconds].)

Example:

ABC

0 0 9

A-C: Exclusive Hold Recall-90

seconds (009)

Default:

ABC

006

A-C: Exclusive Hold Recall-60

seconds (006)

Related Programming:

Program 22—Exclusive Hold

Program 36—Exclusive Hold Recall Duration

Feature Interactions:

Hold (Exclusive)

PROGRAM 36: EXCLUSIVE HOLD RECALL **DURATION**

Access Code: 36

Description:

Upon termination of an Exclusive Hold Recall signal, the Exclusive Hold is canceled and a System Hold is implemented. The duration of the recall signal (to all extensions with audible for the line that is on Hold) is selected by this program.

Conditions:

(a) The duration of the recall signal has a maximum of 2,550 seconds (approximately 42½ minutes).

(b) If Exclusive Hold is enabled, a value other than 000 must be entered into this program or exit from the programming mode is denied.

Instructions:

(1) In the A/B/C boxes, enter the Exclusive Hold Recall duration. (The value of each digit is equivalent to ten seconds [e.g., 002 = 20 seconds].)

Example:

ABC

0 0 5

A-C: Exclusive Hold Recall

Duration-50 seconds (005)

Default:

ABC

0 0 3

A-C: Exclusive Hold Recall Duration-30 seconds (003)



Related Programming:

Program 22—Exclusive Hold

Program 35—Exclusive Hold Recall

Feature Interactions:

Hold (Exclusive)

PROGRAM 37: SYSTEM HOLD RECALL

Access Code: 37

Description:

If a call is placed on System Hold and not retrieved within a programmed period of time, a reminder signal is issued to the station that initiated the System Hold.

Conditions:

- (a) The duration of the reminder signal (8.5 seconds) is preset and cannot be altered.
- (b) The maximum period of time between each reminder signal is programmable and has a limit of 2,550 seconds (approximately 42½ minutes).
- (c) An entry of 000 disables the reminder signal.

Instructions:

(1) In the A/B/C boxes, enter the duration of time between each reminder signal. (The value of each digit is equivalent to 10 seconds [e.g., 005 = 50 seconds].)

Example:

ABC

0 0 4 A-C: System Hold Recall-40

seconds (004)

Default:

ABC

006 A-C: System Hold Recall-60

seconds (006)

Related Programming: None

Feature Interactions:

Hold (System)

PROGRAM 38: CALL TRANSFER TIMER

Access Code: 38

Description:

When an established call is transferred using Unannounced Call Transfer or Announced Call Transfer, a ring inward is issued to the destination station. If the transferred call remains unanswered throughout the programmed period of time, it reverts back to the transferring station.

Conditions:

(a) The maximum limit of the Call Transfer Timer is 2,550 seconds (approximately 421/2 minutes).

(b) If 000 is entered, the transferring station is instantly recalled.

Instructions:

(1) In the A/B/C boxes, enter the Call Transfer Timer value. (The value of each digit is equivalent to ten seconds [e.g., 007 = 70 seconds.)

Example:

ABC

0 0 4

A-C: Call Transfer Timer-40

seconds (004)

Default:

ABC

003

A-C: Call Transfer Timer-30

seconds (003)

Related Programming: None

Feature Interactions:

Call Transfer, Announced

Call Transfer, Unannounced

PROGRAM 39: DSS TRANSFER TIMER (UMT-32/64 ONLY)

Access Code: 39

Description:

When a call is transferred via a DSS Console key, a splash tone is initiated at the destination station. If the call is not answered within a programmed period of time, the DSS attendant station receives a recall tone.

Conditions:

(a) The maximum limit of the DSS Transfer Timer is 2550 seconds (approximately 42½ minutes).

Instructions:

(1) In the A/B/C boxes, enter the DSS Transfer Timer value. (The value of each digit is equivalent to ten seconds [e.g., 008 = 80 seconds].)

Example:

Α	В	C
0	0	6

A-C: DSS Transfer Timer-60

seconds (006)

Default:

ABC

A-C: DSS Transfer Timer—60

seconds (006)

Related Programming:

Program 13—DSS Console Port Assignment

Feature Interactions:

Direction Station Selection (DSS) Console

PROGRAM 40: CLASS OF SERVICE

Access Code: 40

Description:

A station's Class Of Service determines its dialing capabilities. Stations can be prevented from making toll calls or other unauthorized calls by the selective use of this feature.

Conditions:

- (a) There are eight different Classes Of Service.
- (b) Stations programmed for Night Class of Service assume the Class of Service designated in Program 48 when Night Audible is in use.

- (c) Class of Service *does not* apply to PBX lines with the following qualifications:
 - (1) Station users are permitted to dial any 4-digit PBX extension number.
 - (2) Station users are permitted to dial any internal PBX operator.
- (d) Items in condition (c) need the following in order to function:
 - (1) In Program 1, lines must be programmed as PBX lines (3).
 - (2) In Program 43, PBX Codes must be programmed.
- (e) Class of Service 08 is not provided to OPX extensions served by C-CPU-A or a C-5ROU-1A PCB.

Instructions:

(1) In the C box, enter the Station Class of Service from the following:

0-for COS 0	No Restriction.
1-for COS 1	No Restriction.
2 for COS 2	Can dial Permi

2-for COS 2 Can dial Permitted and Common Unrestricted Codes.

3-for COS 3 Can dial Permitted, Common Unrestricted Codes and seven-digit local numbers.

4-for COS 4 Can dial Permitted, Common Unrestricted Codes, seven-digit local numbers and 1 + seven-digit toll numbers.

5-for COS 5 Can dial Common Unrestricted Codes, seven-digit local numbers and 1 + seven-digit toll numbers.

6-for COS 6 Can dial Common Unrestricted Codes and seven-digit local numbers.

7-for COS 7 Can dial Common Unrestricted Codes.

8-for COS 8 Can dial Intercom calls only.

Example:

A B C 12 8

A-B: Port number—Port 12

C: Class of Service number—COS 8 (8)

Default:

AB C

C: Class of Service—Class of Service 0 programmed for all

stations (0)



Related Programming:

Program 6—CO Line Outward Access Assignment

Program 8-Night Class of Service, Headset, Instrument

Type, DND, Paging Groups

Program 41—Permitted Codes

Program 42—Permitted Code Digits

Program 43—PBX Access Codes

Program 44—Common Unrestricted Codes

Program 45—Digit Absorbing

Program 46—Second Digit Restriction

Program 48—Night Class of Service Selection

Feature Interactions:

CO Line Groups Night Class of Service Night Audible Toll Restriction

PROGRAM 41: PERMITTED CODES

Access Code: 41

Description:

Permitted Codes are selected numbers which allow programmed stations to dial out frequently-used numbers. These can include: area codes, toll free numbers, etc. Only stations with Classes of Service 0 through 4 can dial out using Permitted Codes. When dialing a Permitted Code call, only the programmed digits are compared to those dialed, and subsequent dialing is allowed.

Conditions:

- (a) Thirty Permitted Codes are allowed.
- (b) Each code can be twelve digits in length. If twelve digits are exceeded, the software retains only the final twelve digits entered.
- (c) Program 42 limits the length of a Permitted Code and the digits which can follow. However, no limitation is required by software.
- (d) The OPAC/CONF key can be used to erase a Permitted Code during its programming.
- (e) The DC key is used to program "Don't Cares". **Do not** enter 0 or DC as the first digit of a Permitted Code as this can defeat Toll Restriction.
- (f) If lines are assigned as PBX lines, the PBX Access Code is not required as a digit of the Permitted Code.

Instructions:

(1) In boxes C/D/E/F/G/H/I/J/K/L/M/N, enter the Permitted Code digits.

Example:

AB CDEFGHIJKLMN

0 1 1 00 00 00 5 5 5 1 2 1 2

A-B: Permitted Code number— Permitted Code 1 C-N: Code 1-DC DC DC-555-1212

Default:

C-N: Permitted Codes—All blanks (no value appears)

Related Programming:

Program 40—Class of Service Program 42—Permitted Code Digits

Feature Interactions:

CO Line Groups Toll Restriction

PROGRAM 42: PERMITTED CODE DIGITS

Access Code: 42

Description:

The number of digits in a Permitted Code and numbers which may follow are limited by use of this program.

Conditions:

- (a) The number of digits dialed including the Permitted Code can be limited from 1 to 30. However, the number of digits in a Permitted Code need not be limited.
- (b) If 00 is entered, any number of digits can be dialed.

Instructions:

 In the A/B boxes, enter the number of Permitted Code Digits.

Example:

A B

A-B: Permitted Code Digits—Limited to 10

Default:

A B

A-B: Permitted Code Digits—Not programmed (00)

Related Programming:

Program 40—Class Of Service Program 41—Permitted Codes

Feature Interactions:

CO Line Groups Toll Restriction

PROGRAM 43: PRIVATE BRANCH EXCHANGE (PBX) ACCESS CODES

Access Code: 43

Description:

When the system is installed behind a Private Branch Exchange (PBX), PBX Access Codes are required to access 20 lines. In order to obtain proper COS, up to 4 PBX Access Codes (consisting of 1 or 2 digits) can be programmed.

Conditions:

- (a) Four PBX Access Code entries are permitted.
- (b) The maximum length of each code is 2 digits.
- (c) The CONF/OPAC key can be used to erase a PBX Access Code during its programming.
- (d) Do not use 0 or DC ("Don't Care") as a first digit. This may defeat Toll Restriction. "Don't Cares" can be used as the second digit of a PBX Access Code. Do not enter "Don't Care" as second digit unless specifically needed.
- (e) The PBX can provide Night Audible or Call Pickup using dial access codes—these codes should be programmed as PBX Access Codes to avoid defeating Toll Restriction.
- (f) Toll Restriction is not applied until after the completion of the PBX Access Code.

Instructions:

(1) In the B/C boxes, enter the PBX Access Codes.

Example:

A B C

1 78

A: PBX Access Code number—PBX

Access Code 1

B-C: PBX Code---PBX Access Code

78

Default:

B-C: PBX Access Codes—All blanks (no value appears)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing group

Feature Interactions:

CO Line Groups

PROGRAM 44: COMMON UNRESTRICTED CODES

Access Code: 44

Description:

Stations with Classes of Service 2 through 7 can dial out using Common Unrestricted Codes. This feature is used to permit dialing of such codes as information, emergency, etc.

Conditions:

- (a) Four Common Unrestricted Codes are permitted.
- (b) Four digits are permitted in a Common Unrestricted Code.
- (c) The CONF/OPAC key can be used to erase a Common Unrestricted Code during its programming.
- (d) Do not use 0 or DC ("Don't Care") as a first digit as this defeats Toll Restriction.
- (e) Dialing after the Common Unrestricted Code is not permitted.

Instructions:

(1) In the B/C/D/E boxes, enter the Common Unrestricted Code.



Example:

BCDE 6 1 1

A: Common Unrestricted Code Number—Common Unrestricted

Code 2

B-E: Common Unrestricted Code-Common Unrestricted Code 611

Default:

B-E: Common Unrestricted Code-All blanks (no value appears)

Related Programming:

Program 40—Class Of Service

Feature Interactions:

CO Line Groups Toll Restriction

PROGRAM 45: DIGIT ABSORBING

Access Code: 45

Description:

This feature permits the system to ignore certain digits when dialed as the first digit for Toll Restriction purposes only.

Conditions:

- (a) Four entries are permitted.
- (b) Maximum code length is one digit.
- (c) The CONF/OPAC key can be used to erase a Digit Absorbing entry during its programming.
- (d) Do not use 0 or DC ("Don't Care") as a first digit as this defeats Toll Restriction.

Instructions:

(1) In the B box, enter the absorbed digit.

Example:

A: First, Second, Third, or Fourth

Entry made—First (1) B: Absorbed Digit-Digit 3

absorbed (3)

Default:

B: Absorbed Digit-Blank (no value

appears)

Related Programming: None

Feature Interactions:

CO Line Groups Toll Restriction

PROGRAM 46: SECOND DIGIT RESTRICTION

Access Code: 46

Description:

This program allows the restriction of dialing 1 or 0 as a second digit.

Conditions:

(a) This program is effective for Classes of Service 3-6.

Instructions:

(1) In the A box, enter 1 to *enable* Second Digit Restriction (restriction of 1 or 0 as a second digit); enter 0 to disable Second Digit Restriction (no restriction of 1 or 0 as a second digit).

Example:

0

A: Second Digit Restriction-

Disabled (0)

Default:

0

A: Second Digit Restriction—

Disabled (0)

Related Programming: None

Feature Interactions:

Toll Restriction

PROGRAM 47: RECALL LINE PREFERENCE

Access Code: 47

Description:

This feature permits single step seizure of a recalled line.

Conditions:

- (a) A recall can be issued in cases of:
 - (1) Call Transfer, Announced
 - (2) Call Transfer, Unannounced
 - (3) Hold (Exclusive)
 - (4) Line Queuing
 - (5) Hold (System)
 - (b) Exclusive Hold Recall is programmable.

Instructions:

(1) In the A box, enter 0 to *disable* Recall Line Preference; enter 1 to *enable* Recall Line Preference

Example:

Α

A: Recall Line Preference—Enabled

(1)

Default:

A 1

A: Recall Line Preference—Enabled (1)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing Group Program 35—Exclusive Hold Recall

Feature Interactions:

Call Transfer, Announced Call Transfer, Unannounced Hold (Exclusive) Line Queuing

PROGRAM 48: NIGHT CLASS OF SERVICE SELECTION

cess Code: 48

Description:

This program selects the Class of Service available to programmed stations when Night Audible is activated.

Conditions:

- (a) Night Class of Service must be programmed for this program to work (Program 8).
- (b) There are eight different Classes of Service:
 - **COS 0**—No Restriction.
 - COS 1—No Restriction.
 - COS 2—Can dial Permitted and Common Unrestricted Codes.
 - COS 3—Can dial Permitted, Common Unrestricted Codes and seven-digit local numbers.
 - COS 4—Can dial Permitted, Common Unrestricted Codes, seven-digit local numbers and 1 + seven-digit toll numbers.
 - COS 5—Can dial Common Unrestricted Codes, sevendigit local numbers and 1 + seven-digit toll numbers.
 - COS 6—Can dial Common Unrestricted Codes and seven-digit local numbers.
 - COS 7—Can dial Common Unrestricted Codes.
 - COS 8-Can dial ICM calls only.
- (c) Stations programmed for Night Class of Service assume the Class of Service selected by this program when Night Audible is activated.
- (d) COS 0 and 1 are the same.

CAUTION: THE DEFAULT VALUE OF NIGHT CLASS OF SERVICE DOES NOT ALLOW EMER-GENCY NUMBERS TO BE DIALED UNLESS PRO-GRAMMED AS COMMON UNRESTRICTED CODES.

Instructions:

(1) In the A box, enter the Class of Service.

Example:

Α

1

A: Night Class of Service

selection-Class of Service 1 (1)

Default:

A

7

A: Night Class of Service

selection—Class of Service 7 (7)



Related Programming:

Program 8—Night Class of Service

Feature Interactions:

CO Line Groups Night Audible Toll Restriction

PROGRAM 49: EXCLUDED/ALLOWED SYSTEM FEATURES

Access Code: 49

Description:

Certain features that are *enabled* upon initialization, are *disabled* by the use of this program.

Conditions:

- (a) The following Feature Groups can be disabled:
 - (1) Meet-Me Paging, Meet-Me Conference, Call Pickup
 - (2) Call Forward with Follow-Me, Night Audible
 - (3) Call Transfer, Unannounced; Call Transfer, Announced
 - (4) Add On Conference
 - (5) Step Calling, Camp-On, Message Waiting
 - (6) MOH (selectability)
 - (7) Class of Service Restriction Override for System Speed Dial Numbers
- (b) The Feature Group number preceding each feature list (1-7) represents when that number is entered into programming.
- (c) If Night Audible is disabled and a DSS Console is programmed for use, it retains the ability to activate Night Audible if exclusive enablement of Night Audible is programmed (in Program 17).
- (d) When Excluded/Allowed System Features is programmed with a 0 for Group 7, stations with Classes of Service 0-6 can access System Speed Dial numbers. When Excluded System Features is programmed with a 1 for Group 7, stations are restricted by their Classes of Service from accessing Speed Dial numbers.
- (e) Step 6 is permanently enabled when the system is equipped with a C-CPU-B PCB or a C-5ROU-IB PCB.

Instructions:

(1) In the B box, enter 0 to *allow* System Features for that Feature Group; enter 1 to *exclude* System Features for the Feature Group.

Example:

A [

H

A: Excluded/Allowed System Features Group—Feature Group

number 5 (5)

B: Excluded/Allowed System Features Group Disabled—

Excluded (1)

Default:

A B

B: Excluded/Allowed System

Features-Allowed for all groups (0)

Related Programming:

Program 13—DSS Console Port Assignment (UMT-32/64 systems *only*)

Feature Interactions:

Call Forward with Follow-Me

Call Pickup

Call Transfer, Announced

Call Transfer. Unannounced

Camp-On

Conference, Add-On

Conference, Meet-Me

Direct Station Selection (DSS) Console

(UMT-32/64 systems only)

Message Waiting

Music On Hold (selectability)

Night Audible

Paging, Meet-Me

Speed Dial, System

Step Calling

PROGRAM 50: CALL DURATION TIMER

Access Code: 50

Description:

Executive Display telephones have a timer which, if this feature is enabled, is automatically started at some point after an outgoing call is initiated. The timer is read on the display in hours, minutes and seconds.

Conditions:

(a) The timer can be programmed to start upon call initiation or at any time thereafter (Program 51).

Instructions:

(1) In the A box, enter 0 to *disable* Call Duration Timer; enter 1 to *enable* Call Duration Timer.

Example:

A 1

A: Call Duration Timer—Enabled (1)

)efault:

A o

A: Call Duration Timer—Disabled (0)

Related Programming:

Program 51—Call Duration Start Timer

Feature Interactions:

CO Line Groups

PROGRAM 51: CALL DURATION START TIMER

Access Code: 51

Description:

This program determines when the Call Duration Timer starts.

Conditions:

- (a) Call Duration Timer (Program 50) must be enabled.
- (b) The timer can be programmed to start from 0 to 255 seconds (approximately 4 minutes, 15 seconds) after CO line seizure.

Instructions:

(1) In the A/B/C boxes, enter the Call Duration Start Timer period (each digit is equal to one second [e.g., 009 = 9 seconds]).

Example:

ABC

008

A-C: Call Duration Start Timer-8

seconds (008)

Default:

ABC

020

A-C: Call Duration Start Timer-20

seconds (020)

Related Programming:

Program 50—Call Duration Timer

Feature Interactions:

Call Duration Timer

4



PROGRAM 52: PAGING SPLASH TONE

Access Code: 52

Description:

If programmed, a double splash tone precedes a Paging announcement.

Conditions: None

Instructions:

(1) In the A box, enter 0 to *disable* Paging Splash Tone; enter 1 to *enable* Paging Splash Tone.

Example:

A

A: Paging Splash Tone—Enabled

(1)

Default:

A

A: Paging Splash Tone—Enabled

(1)

Related Programming:

Program 8—Paging Groups

Feature Interactions:

Paging, All Call

Paging, External Zone

Paging, Internal Zone

Paging, Meet-Me

PROGRAM 53: ALARM SIGNAL TONE

Access Code: 53

Description:

Alarm signal tones, if programmed, are issued to designated stations and external zones.

Conditions: None

Instructions:

(1) In the C box, enter 0 to *disable* Alarm Signal Tone; enter 1 to *enable* Alarm Signal Tone.

Example:

A B

10 1

A-B: Port number-Port 10

C: Alarm Signal Tone—Enabled (1)

Default:

A B

c I

C: Alarm Signal Tone—Disabled (0)

Related Programming:

Program 28—Alarm Sensor

Feature Interactions:

CO Line Groups

External Alarm Repeating

•

PROGRAM 54: RELEASE OF ABANDONED CALLS ON HOLD/LINE SUPERVISION

Access Code: 54

Description:

When a CO call on Hold hangs up, the system, if programmed, releases the line. Certain Central Offices detect the disconnect and open the line for a given length of time. The system logic releases the line when prompted by the "open". This feature may be referred to as "Calling Party Control."

Conditions:

- (a) Two time-interval detections are programmable:
 - (1) Ignores "opens" of less than 20 msec. and may release between 20—90 msec. (electromechanical COs)
 - (2) Ignores "opens" of less than 400 msec. and may release between 400—600 msec. (electronic COs)
- (b) The CO must provide disconnect supervision.
- (c) If a PBX is used, it must provide Call Party Control (CPC).
- (d) This feature must be programmed for the proper operation of Unsupervised Conference.
- (e) If this capability is not provided, lines may be tied up due to "no disconnect supervision."

Instructions:

(1) In the A box, enter 0 to *disable* Release of Abandoned Calls on Hold; enter 1 to ignore "opens" of less than 20 msec. and release by 90 msec.; enter 2 to ignore "opens" of less than 400 msec. and release between 400 and 600 msec..

Example:

Α

0

A: Release of Abandoned Calls on

Hold-Disabled (0)

Default:

Α

2

A: Release of Abandoned Calls on Hold—Programmed to ignore "opens" less than 400 msec. and release between 400 and 600 msec.

(2)

Related Programming:

Program 22-Exclusive Hold

Feature Interactions:

Hold (Exclusive)



PROGRAM 55: DO NOT DISTURB (DND) OVERRIDE BY DSS CONSOLE (UMT-32/64 ONLY)

Access Code: 55

Description:

This program permits the DSS Console, if programmed, to override a Do Not Disturb condition at any station.

Conditions:

- (a) The DSS Console cannot override a Do Not Disturb condition at the Executive station of an Executive Call Forward pair, when Executive Call Forward is activated at that station.
- (b) The DSS Console must be programmed a port assignment.

Instructions:

(1) In the A box, enter 0 to disable DND Override By DSS Console: enter 1 to enable DND Override By DSS Console.

Example:

A: DND Override By DSS Console—Enabled (1)

Default:

A: DND Override By DSS Console—Disabled (0)

Related Programming:

Program 8-Night Class of Service, Headset, Instrument Type, DND, Paging Groups Program 9—Executive Call Forward Program 13—DSS Console Port Assignment

Feature Interactions:

Direct Station Selection (DSS) Console **Executive Call Forward**

PROGRAM 56: FLASH TYPE/TIMING

Access Code: 56

Description:

Flash allows a station user to acquire a new dial tone without losing the line in use. Flash is available through programming for both CO and PBX lines. Only Open Loop Flash may be provided.

Conditions:

- (a) Flash rates of approximately 0.5 seconds to 255 seconds (approximately 4 minutes, 15 seconds) are available through programming in .1 second increments.
- (b) A Flash can be stored in a Speed Dial Number.
- (c) The system provides an Open Loop Flash which is programmable for PBX or CO lines.
- (d) Flash allows the transfer of internal PBX calls to other PBX extensions.
- (e) The Flash timing required is determined by the CO or PBX.

Instructions:

- (1) In the first set of B/C/D boxes, enter the Flash rate for CO lines. (Each digit is equal to one tenth of a second.)
- (2) In the second set of B/C/D boxes, enter the Flash rate for PBX lines. (Each digit is equal to one tenth of a second.)

Example:

BCD 0 2 0

A: CO Line-CO Line 1 (1) B-D: Flash Type/Timing-2

Seconds (020)

Default:

BCD

B-D: Flash Type/Timing

CO line: 1.5 seconds (015) PBX line: 0.7 seconds (007)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing group

Feature Interactions:

CO Line Groups

4

PROGRAM 57: DIAL PULSE SENDER SPEED

Access Code: 57

Description:

This program determines the rate at which Dial Pulse signals are sent for lines programmed as Dial Pulse.

Conditions:

- (a) Two rates are available:
 - (1) Ten Pulses Per Second (pps)
 - (2) Twenty Pulses Per Second (pps)
- (b) PPS rate is determined by CO/PBX office.
- (c) Each line must be programmed separately.

Instructions:

(1) In the C box, enter 0 for a Dial Pulse Sender Speed of 10 pps; enter 1 for a Dial Pulse Sender Speed of 20 pps.

Example:

A B C

A-B: Line 1 number—Line 1 (01)

C: Dial Pulse Sender Speed-10 pps

(0)

Default:

AB C

.

C: Dial Pulse Sender Speed-10 pps

(0)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing group Program 58—Make/Break Ratio

Feature Interactions:

Dial Pulse (DP) to Tone (DTMF) Conversion

PROGRAM 58: MAKE/BREAK RATIO

Access Code: 58

Description:

Dial Pulse signaling involves the opening and closing of a solid state switch. The ratio of closing to opening is called the Make/Break Ratio.

Conditions:

- (a) Two Make/Break Ratios are available:
 - (1) 33%/67%
 - (2) 39%/61%
- (b) The choice of ratio is selected by CO/PBX office.

Instructions:

(1) In the A box, enter 0 for a Make/Break Ratio of 33%/67%; enter 1 for a Make/Break Ratio of 39%/61%.

Example:

A

1

A: Make/Break Ratio of 39%/61%

(1)

Default:

Α

n

A: Make/Break Ratio of 39%/61%

(1)

Related Programming:

Program 1—Line Type, Dial Mode, CO Queuing group Program 57—Dial Pulse Sender Speed

Feature Interactions:

Dial Pulse (DP) to Tone (DTMF) Conversion



PROGRAM 90: ERROR CHECK

Access Code: 90

Description:

If some parameter of the software is exceeded during programming, an error code, E, appears on the telephone display when program exit is sought. If no parameter is violated, an E0 is displayed and programming exit is permitted.

Conditions:

(a) All programming performed by the programmer is temporarily stored in a "buffer" memory before being transferred to system memory. This transfer is not allowed by the system until programming errors or conflicts are removed by the installer. Once the installer's entries have been "debugged", the new data may then be stored in the system memory when programming exit is performed.

Instructions: See Section 7, Program 90

Example: See Section 7, Program 90

Default: Not applicable

Related Programming: Not applicable

Feature Interactions: Not applicable

PROGRAM 91: SPEED DIAL NUMBER INITIALIZATION

Access Code: 91

Description:

This program erases all Speed Dial Numbers. This program must be run upon initialization to remove all unneeded entries.

Conditions:

- (a) This program initializes Speed Dial bins (function keys) with: 01—08 for bins 1-8 and reserves bins 9 and 10 as Save and Last Number Redial bins, respectively.
- (b) This program *does not* erase Last Number Redial bin data but *does* erase Save bin data.
- (c) This program initializes DSS keys with stations 10-18 for bins 1-9 and reserves bin 10 for an All Call Page (80).
- (d) This program resets clock alarm.

Instructions: See Section 7, Program 91

Example: Not applicable

Default: Not applicable

Kelated Programming: Not applicable

Feature Interactions:

Speed Dial

PROGRAM 99: PROGRAMMING CANCELATION

Access Code: 99

Description:

All programming in the programming buffer is erased and all previous values returned by the use of this program.

Conditions:

(a) This program *does not* affect data stored in the system memory. It erases only the data stored in the buffer.

Instructions: See Section 7, Program 99

Example: Not applicable

Default: Not applicable

Related Programming: Not applicable

Feature Interactions: Not applicable

ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 5, INSTALLATION

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CONTENTS

1. INTRODUCTION

1.01 The INSTALLATION Section provides detailed procedures for installing the UMT-32/64 systems. Read this entire section before proceeding with the actual installation.

2. PREPARATION

2.01 Factors in the following paragraphs must be considered before proceeding with the installation.

SITE REQUIREMENTS

- 2.02 The area for mounting the KSU and Power Supply should be clean, dry, temperature controlled and accessible to authorized personnel only. The site should be away from caustic chemicals, vibrations (e.g., heavy machinery) and static electricity (e.g., copying machines). The location should have ample room to mount and maintain the equipment.
- 2.03 The Power Supply requires a dedicated 117V AC @ 60Hz, 15 Amp circuit. The AC service used must be located within six feet of the power supply location. The AC service must provide a "third wire ground".
- 2.04 An earth ground must be provided within 25 feet (7.6m) of the installation. The third wire of the AC line cord is not an acceptable earth ground. In most installations, a cold water pipe that is metallic throughout (with all meters and joints bypassed with 14 gauge or larger metallic strapping; cast iron and other metals may not be suitable) provides a good earth ground.

- 2.05 The National Electrical Code (NEC) requires the local operating telephone company (telco) to provide primary protection devices on telephone lines terminated at customer sites. Check the entry point to see that a primary protection device has been installed. If no such device is present, notify the telco before proceeding with the installation.
- 2.06 Additional CO Line protection may be provided using devices such as "Lightning Protection" or "Spike Protectors" or equivalent. These devices must be provided by the customer.

WARNING: THIS ELECTRICAL TELEPHONE SYSTEM REQUIRES A PRIMARY PROTECTION DEVICE ON THE TELCO SIDE OF THE DEMARCATION POINT.

- 2.07 A power line surge protector (such as a EFI Model DPI 253, a TII Model 439 or equivalent) must be installed between the telephone system power supply and the AC outlet.
- 2.08 Do not run cable from the KSU to extensions or stations in other buildings. Off-Premises Extension (OPX) equipment must be used for installations requiring service between buildings.

TOOLS AND TEST EQUIPMENT

- **2.09** Service personnel must have the following tools and test equipment:
- Installation Manual and Feature Handbooks
- Volt/Ohm Meter—high input impedance (± 1% tolerance of accuracy)
- Lineman's test set
- Punch-down tool
- Flat-blade screwdriver
- Grounded wrist strap
- Work light or flashlight
- Spare PCBs

The following items should also be considered:

- Extension cord for AC power (possibly two)
- Ladder(s) (depending on location)—step type

- Handsaw for cutting wood
- Tape measure or folding ruler
- Level (for mounting backplane and equipment)
- Electric or hand-drill—for predrilling mounting holes.
 If mounting on masonry, suitable drilling equipment. (A "star-drill" and a hammer or masonry drill bit may be used.)
- Safety glasses
- Screwdrivers (wrenches or sockets if hex-head hardware is used)
- Electrical tape
- Fish tape
- Wire cutters
- Wire strippers
- Sheathing tool—for 25-pair cabling and station cabling
- Pliers
- Hammer
- Any tools necessary to install ground rod or cold water pipe ground lug (shovel, sledgehammer, pick, stone chisels, etc.)
- Needle-nose pliers
- Plastic probe or tuner tool
- Tone generation device—"Toner"
- Marking pens / pencils for marking mounting locations and block / jack labeling

EQUIPMENT REQUIREMENTS

- 2.10 Unpack the telephone equipment and compare the equipment received to a list of equipment ordered to ensure that all components are on site. Check for any physical damage. Verify the number and types of station instruments for the installation.
- 2.11 Have the necessary hardware and cables available. This includes: exterior grade plywood backboard for the Main Distribution Frame (MDF) (3/4 inch preferred), station line cords for telco connection (for UMT-8/16 systems only), three-pair twisted station cable, 25-pair cable with 57 series female connectors at one end, grounding wire (14AWG), connecting blocks (66M1-50 type) with bridging clips, modular station jacks (625A6, 625F6, or equivalent with screw terminals), power line surge protector, and appropriate mounting hardware (89-type blocks).

Jounting Hardware

2.12 The following are recommended:

Backplane mounting hardware:

- (a) ¼ inch lag bolts
- (b) ¼ inch masonry anchors or #12 or #14 wood screws or sheet metal screws

KSU and Power Supply mounting hardware:

- (a) #8 or #10 round head wood screws
- (b) #8 or #10 pan head sheet metal screws (at least the thickness of the backplane)
- (c) #12 round head machine screws with "tee-nuts" or other suitable fasteners (at least the thickness of the backplane)

Connecting Blocks Hardware

- 2.13 Varies with type of block. Most installers use #8 or $#10 \times \%$ " pan head sheet metal screws for mounting Distribution Rings and Spindles.
- **2.14** Verify that the following documents are complete and on the premises before starting the installation:
- (a) Building plan showing location and type of telephone instrument, extension numbering, special considerations.
- (b) Program Record Form prepared prior to installation.

3. INSTALLATION

3.01 Installation procedures are divided into four parts: KSU and Power Supply Installation, PCB Insertion, Station Cabling and System Connections, and CO Line Connections.

WARNING: ALTERATIONS OR MODIFICATIONS OF THIS EQUIPMENT NOT EXPRESSLY SHOWN IN THIS INSTALLATION MANUAL ARE PROHIBITED. IF EQUIPMENT MALFUNCTION IS SUSPECTED, DISCONNECT THE SYSTEM FROM THE TELEPHONE COMPANY LINES BY UNPLUGGING THE TELCO RJ21X CONNECTOR.

WARNING: FOR PROTECTION AGAINST RISK OF FIRE, REPLACE FUSES ONLY WITH FUSES OF THE SAME TYPE AND RATING.

KSU AND POWER SUPPLY INSTALLATION

CAUTION: ALLOW ROOM FOR CHANGES AND EXPANSION WITH YOUR KSU AND CONNECTING BLOCK MOUNTING LOCATIONS. POSITION EQUIPMENT ON MOUNTING SITE TO ALLOW FOR EASIEST SERVICE, VENTILATION AND DIRECT LIGHTING.

- 3.02 The Main Distribution Frame (MDF) is mounted on the same plywood backboard that is used for mounting the system equipment. The plywood should be painted or sealed if located in a damp environment or on masonry. Attach the plywood to the designated location with appropriate fasteners. Mark the equipment layout on the backboard using the installation layout.
- 3.03 A power line surge protector *must* be installed at the dedicated AC receptacle to minimize the effects from high static voltage, low level transients, and ripple effects. The protector should be a self contained, three-prong grounded receptacle with a 15A capacity, or equivalent. Connect this unit according to the manufacturer's instructions.

KSU Mounting

CAUTION: USE CARE WHEN UNPACKING THE KSU OR EXPANSION CABINET SO AS NOT TO INJURE THE RIBBON CABLES.

3.04 To mount the UMT-8/16 or UMT-32 KSU:

- Mark four points on the plywood backboard that correspond to the dimensions between the mounting hole centers (Figure 5-lb).
- Drill pilot holes at these points and insert suitable fasteners having a #10 shank diameter. Screw in fasteners until the clearance between the fastener head and the mounting surface is ¼ inch.
- Mount KSU on the four fasteners.[†]
- Tighten each fastener until the KSU is securely attached to the plywood backboard.

[†]If a Modular Adaptor is used, (in a UMT-8/16 system) brackets must be positioned as indicated in Figure 6-7, Section 6.

3.05 To mount the UMT-64 Expansion Cabinet:

- Remove the top of the UMT-32 KSU.
- Mark four points on the plywood backboard that correspond to the dimensions between the mounting hole centers (Figure 5-1c).
- Drill pilot holes at these points and insert suitable fasteners having a ¼ inch shank diameter. Screw in fasteners until the clearance between the fastener head and the mounting surface is ¼ inch.
- Mount the Expansion Cabinet on the four fasteners and gently place the UMT-64 Expansion Cabinet on top of the UMT-32 KSU.
- Connect the gray ribbon cables labeled CNF and CNG on the UMT-64 to the connectors in the UMT-32 KSU.
- Connect the red power cable labeled POW on the UMT-64 to the connector in the UMT-64 KSU.
- Install the two metal plates on the sides of the two cabinets (where the two cabinets meet).
- Tighten each fastener until the KSU is securely attached to the plywood backboard.

NOTE: The top of the UMT-32 KSU which is removed when adding the UMT-64 Expansion Cabinet should be placed on top of the Expansion Cabinet.

The C-5ROU- Card

3.06 This card is an interchangeable PCB that provides ROM for user-programmable and system-operating software features. The system software features are

determined by which C-5ROU- card is installed: the C-5ROU-1A or the C-5ROU-1B PCB.

The C-5ROU-1A PCB

3.07 This card contains:

- Three 8K x 16 ROMs
- One 8K x 5 ROM
- System-operating software to support basic system features

C-5ROU-1B PCB

3.08 This card contains:

- Two 8K x 16 ROMs
- One 8K x 32 ROM
- System-Operating software to support basic system features
- Enhanced OPX telephone feature operation
- SMDR compatibility
- FAX line interface option

KSU Grounding

3.09 Ground the KSU by connecting one end of a 14AWG, or heavier, insulated copper wire to the grounding lug on the left side of the KSU. Connect the other end of the wire to a grounding clamp and cold water pipe or other known earth ground (Figures 5-Ia, 5-Ib and 5-Ic). The ground wire should be as short as possible.

NOTE: Some PCBs are installed before shipping. **Do not** install any other PCBs at this point.

3.10 The UMT-64 Expansion Cabinet is grounded by connecting a short piece of 14 gauge wire from the ground lug on the UMT-32 KSU to the ground lug on the Expansion Cabinet.

Power Supply Mounting

- 3.11 The Power Supply should be mounted at least six inches above the KSU or to one side of it and within six feet of the AC outlet. To mount the Power Supply:
- Mark four points on the backboard that correspond to the dimensions between the mounting hole centers (Figures 5-la, 5-lb and 5-lc).

Drill pilot holes at these points and insert suitable fasteners with a #10 shank diameter. Screw in fasteners until the clearance between the fastener head and the mounting surface is ¼ inch.

- Mount Power Supply on the four fasteners.
- Tighten each fastener until the Power Supply is securely attached to the mounting surface.

Battery Backup Box Mounting

The Battery Backup Box must be mounted in a well-ventilated area. For additional installation instructions, refer to Appendix F, Battery Backup Box.

WARNING:

TO AVOID INJURY OR SYSTEM DAMAGE:

- DO NOT SMOKE NEAR BATTERY BOX
- DO NOT PLACE BATTERY BOX NEAR SOURCE OF OPEN FLAME
- DO NOT PLACE BATTERY BOX DIRECTLY BENEATH THE KSU OR POWER SUPPLY.

WARNING: BE SURE POWER IS OFF BEFORE DIS-CONNECTING OR CONNECTING POWER SUPPLY TO KSU.

- 3.12 Connect the KSU to the Power Supply using the proper cable. The connection for the Power Supply is located on the right side of the UMT-32/64 KSUs, and on the bottom of the UMT-8/16 KSU.
- Turn on the Power Supply and verify that the voltage indicators (LEDs on UMT-8/16 KSU; LEDs on UMT-32/64 Power Supply) are illuminated (Figures 5-1a, 5-1b and 5-1c).
- After checking the Power Supply voltage indicators, turn the Power Supply off.
- **3.13** The Power Supply is grounded only through the AC power outlet.

PCB INSERTION

Static Precautions

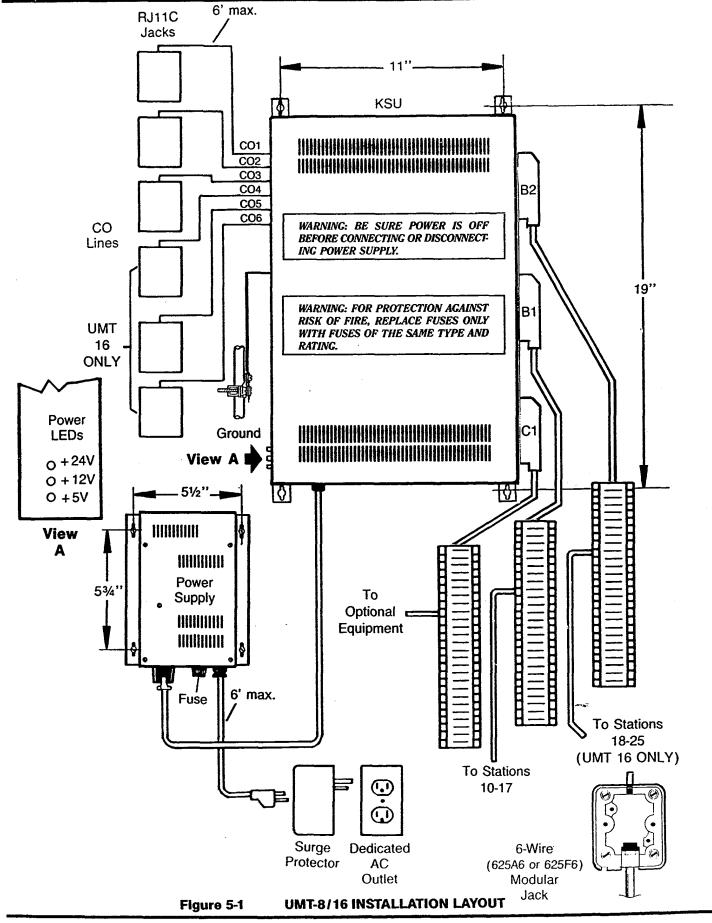
WARNING: TO PREVENT ANY DAMAGE, USE A GROUNDED WRIST-STRAP WHEN INSERTING OR REMOVING PCBs.

- 3.14 Printed Circuit Board (PCB) assemblies are sensitive to static electricity. Use the proper precautions to guard against static damage when installing or maintaining them. The following paragraphs describe safe techniques for handling static sensitive equipment.
- 3.15 Static-sensitive PCBs are shipped in static free bags. The PCBs should be handled only when they are fully protected and inside the bag. Do not use the bag as a holder for the PCB when it is outside the bag. To minimize static charges, first discharge any accumulated body static by touching a grounded object and then attach a grounded wrist strap.
- 3.16 When working with static-sensitive PCBs, keep the work area free of any objects that may contain a static charge. This includes plastic as well as metal objects. Never slide a PCB across a work surface. Keep foot movement to a minimum to prevent a charge build-up.

UMT-8/16 PCB Location

WARNING: BE SURE THAT THE SYSTEM POWER IS OFF BEFORE REMOVING OR INSERTING PCBs.

- 3.17 The UMT-8/16 KSU is factory-equipped with the necessary PCBs to serve three CO lines and eight key telephone extensions. Additional PCBs to expand this capacity up to six CO lines and 16 extensions may be installed at this point.
- 3.18 Printed Circuit Boards are held in place using plastic stand-offs and screws. The PCBs are interconnected with ribbon cables or multi-pin connectors, which are provided with the optional PCBs.



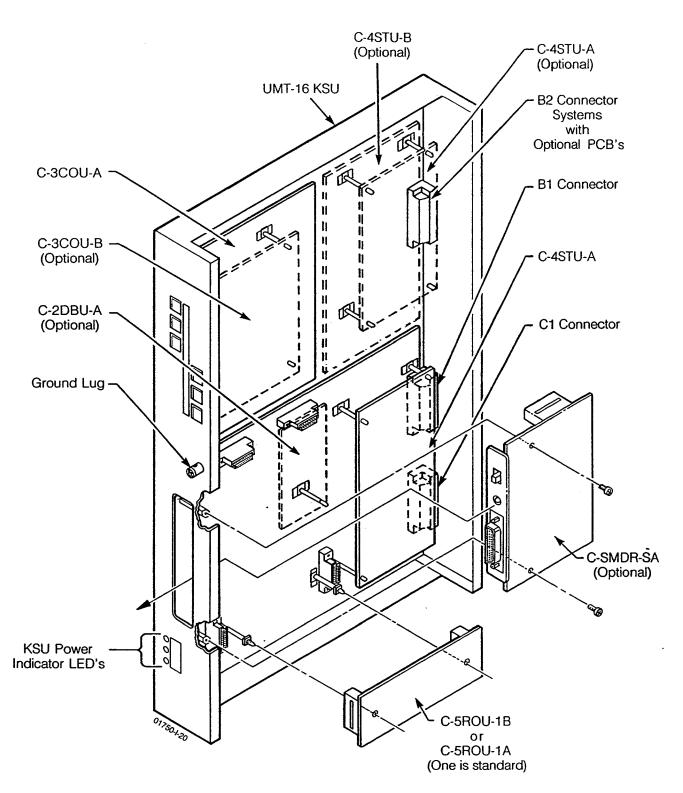


Figure 5-1a UMT-8/16 SYSTEMS PCB LOCATIONS



Table 5-1 UMT-8/16 CUTDOWN

CLIP NO.	CONN. PIN	CABLE COLOR	вьоск	B1	вьоск	B2	BLOCK	C1
1 2 3 4 5 6	26 1 27 2 28 3	WHT-BLU BLU-WHT WHT-ORN ORN-WHT WHT-GRN GRN-WHT	PORT 10	10AT 10AR 10BT 10BR 10CT 10CR	PORT 18	18AT 18AR 18BT 18BR 18CT 18CR	BELL 1 BELL 2	PF1T PF1R PF2T PF2R
7 8 9 10 11 12	29 4 30 5 31 6	WHT-BRN BRN-WHT WHT-SLT SLT-WHT RED-BLU BLU-RED	PORT 11	11AT 11AR 11BT 11BR 11CT 11CR	PORT 19	19AT 19AR 19BT 19BR 19CT 19CR	BELL 3	PF3T PF3R
13 14 15 16 17 18	32 7 33 8 34 9	RED-ORN ORN-RED RED-GRN GRN-RED RED-BRN BRN-RED	PORT 12	12AT 12AR 12BT 12BR 12CT 12CR	PORT 20	20AT 20AR 20BT 20BR 20CT 20CR	BELL 4 BELL 5	PF4T PF4R PF5T PF5R
19 20 21 22 23 24	35 10 36 11 37 12	RED-SLT SLT-RED BLK-BLU BLU-BLK BLK-ORN ORN-BLK	PORT 13	13AT 13AR 13BT 13BR 13CT 13CR	PORT 21	21AT 21AR 21BT 21BR 21CT 21CR	BELL 6	PF6T PF6R
25 26 27 28 29 30	38 13 39 14 40 15	BLK-GRN GRN-BLK BLK-BRN BRN-BLK BLK-SLT SLT-BLK	PORT 14	14AT 14AR 14BT 14BR 14CT 14CR	PORT 22	22AT 22AR 22BT 22BR 22CT 22CR	AMP RLY DOOR UNLK	EAT EAR EAC1 EAC2 DC DNO
31 32 33 34 35 36	41 16 42 17 43 18	YEL-BLU BLU-YEL YEL-ORN ORN-YEL YEL-GRN GRN-YEL	PORT 15	15AT 15AR 15BT 15BR 15CT 15CR	PORT 23	23AT 23AR 23BT 23BR 23CT 23CR	DOOR	DB1T DB1R DB2T DB2R
37 38 39 40 41 42	44 19 45 20 46 21	YEL-BRN BRN-YEL YEL-SLT SLT-YEL VIO-BLU BLU-VIO	PORT 16	16AT 16AR 16BT 16BR 16CT 16CR	PORT 24	24AT 24AR 24BT 24BR 24CT 24CR	BGM	MOHT MOHR BGMT BGMR 1ALT 1ALR
43 44 45 46 47 48	47 22 48 23 49 24	VIO-ORN ORN-VIO VIO-GRN GRN-VIO VIO-BRN BRN-VIO	PORT 17	17AT 17AR 17BT 17BR 17CT 17CR	PORT 25	25AT 25AR 25BT 25BR 25CT 25CR	CONT	2ALT 2ALR +TB -TB
49 50	50 25	VIO-SLT SLT-VIO			RING GEN	RG1 RG2		

T1750IM.5-1

The C-5ROU-1A PCB or C-5ROU-1B PCB is mounted directly to the C-CP4SU-A PCB. To identify his PCB, the system power must be turned off, and the PCB nust be removed from the C-CP4SU-A PCB.

3.20 When installing the C-3COU-B PCB, make sure to connect the green ground wire to the ground lug on the side of the KSU. Ribbon cables must be connected on the proper boards in the following manner:

ig.	Board	Connector
C-CF	4SU-A & C-3COU-A	CNA1—CNA1
		CNA2—CNA2
J-CF	4SU-A & C-3COU-B*	CNA3—A3
C-3C	COU-A & C-3COU-B*	CNA1A—A1A
C-CF	P4SU-A & C-4STU-B	CNB1A—B1A
2		CNB2A—B2A
	No.	CNB3—B3A
C-4S	TU-B & C-4STU-A*	B1A0—B1A
:		B2A0—B2A
		B4—B4A

NOTE: One side of the connecting edge of the cable is laminated and should have a blue stripe across it. The other is not laminated and is used as the contacting surface. It is side should always be inserted against the "teeth" in the connector.

NOTE: * indicates an optional board.

- **3.21** Be sure that the lithium battery is in place but unconnected.
- 3.22 Strap J3, located beneath switch SW1, which is located on the C-CP4SU-A board, selects for internal and external Music On Hold. If internal MOH is required, leave the straps in the 1, 2 position. If external MOH is required, bridge the straps in the 2, 3 position.
- **3.23** Potentiometer VR0, located on the C-CP4SU-A board, adjusts the MOH volume.
- **3.24** Potentiometer VR1, located on the C-CP4SU-A board, adjusts the volume of external paging.
- **3.25** Potentiometer VR2, located on the C-CP4SU-A board, adjusts the BGM volume.

UMT-32/64 PCB Location

WARNING: BE SURE THAT THE SYSTEM POWER IS OFF BEFORE REMOVING OR INSERTING PCBs.

- 3.26 Each PCB is keyed so that it fits a specific slot in the KSU. To insert a PCB, place the connector edge into the slot first, keeping the component side of the PCB facing the installer's left (Figures 5-1b and 5-1c).
- 3.27 A PCB should be installed with the thumb of each hand on the card edge and the fingers on the KSU frame (Figures 5-1b and 5-1c). Push the PCB until it is firmly seated and snaps into place.
- 3.28 Before installing the C-CPU-A/B/C, be sure that the lithium battery is in place and unconnected. If the battery is not connected, the display phones give an indication of this. The letters BAT are flashed in the upper right corner of the display. Set the WR switch on the C-CPU-A/B/C to the initial position. If the PCB is to be shipped or moved, the battery should be disconnected.

Plug the C-CPU-A/B/C PCB into the slot labeled "CPU", and seat the PCB firmly into the KSU backplane.

- 3.29 Switch SW1 which is located on the C-TSU-A board selects internal or external Music On Hold. If internal MOH is required, set SW1 to position 1. If external MOH is required, set SW1 to the opposite end of 1.
- **3.30** Potentiometer VR1 which is located on the C-TSU-A board adjusts background level for MOH.
- 3.31 Refer to Section 6 of this manual for INSTALLATION OF OPTIONAL EQUIPMENT.

STATION CABLING AND SYSTEM CONNECTIONS

3.32 Mount the required connecting blocks (66M1-50 or equivalent) to the right side of the KSU (Figures 5-1a, 5-1b and 5-1c). These blocks are recommended for station cable, console cable, external paging, background music and alarm terminations (Tables 5-1 and 5-2).



.33 Remove the metal strip preventing access to the KSU connectors.

NOTE: If installing a UMT-8/16 system with optional Modular Adaptors, please refer to Section 6, INSTALLATION OF OPTIONAL EQUIPMENT at this time.

3.34 Use 25-pair cables to connect the station blocks to the KSU (and Expansion Cabinet) connectors. Assignment of ports is designated on the block as follows:

8 System:

- B1 Ports 10-17
- C1 Power failure lines 1-6, Door Chime Boxes, MOH, an External Amplifier, BGM Source, Door Unlock Contacts and Alarms.
- 16 System:
- B1 Ports 10-17
- B2 Ports 18-25
- C1 Power failure lines 1-6, Door Chime Boxes, MOH, an External Amplifier, BGM Source, Door Unlock Contacts and Alarms
- 32 System:
- 1 Ports 10-17
- B2 Ports 18-25
- B3 Ports 26-33
- B4 Ports 34-41
- A1 Lines 1-12
- C1 Power failure lines 1-8, DSS Consoles, Door Chime Boxes, MOH, External Amplifiers, BGM Source, Door Unlock Contacts and Alarms
- 64 System:
- B1 Ports 10-17
- B2 Ports 18-25
- B3 Ports 26-33
- B4 Ports 34-41
- B5 Ports 42-49
- B6 Ports 50-57
- B7 Ports 58-65
- B8 Ports 66-73
- C1 Power failure lines 1-8, DSS Consoles, Door Chime Boxes, MOH, External Amplifiers, BGM Source, Door Unlock Contacts and Alarms
- A1 Lines 1-12
- A2 Lines 13-24

3.35 If Unsupervised Conference is used, a 600 OHM resistor with a rating of ½ WATT with a 10% tolerance must be punched down at the following points:

System	Block	Clip No.
8/16	B1	43, 44
32	B2	19, 20
64	B4	1, 2

3.36 Mount a modular jack assembly, 625A6 or 625F6 (Figures 5-la, 5-lb and 5-lc) at each station location.

NOTE: If a Modular Adaptor is being used with a UMT-8/16 system, there may be no need to mount modular jack assemblies.

Station Cabling

3.37 Use three-pair twisted station cable from the KSU and station blocks to the modular jacks at the telephones. Station cable is home run to the connecting block and should not exceed 1,000 feet for 24AWG wire or 1,500 feet for 22AWG wire.

CAUTION: THE USE OF 25-PAIR CABLE CAN CAUSE CROSSTALK AND/OR NOISE ON THE VOICE AND/OR DATA PAIRS.

3.38 Station cabling is terminated at the station blocks (KSU) and station jacks.

CAUTION: FOR PROPER OPERATION, IT IS IMPORTANT THAT PAIR-FOR-PAIR CONNECTIONS BE MAINTAINED AND POLARITY OF PAIRS BE OBSERVED AT ALL LOCATIONS WHERE TERMIN-ATIONS OR CROSS CONNECTIONS ARE MADE. **3.39** Each station jack should be wired in the following manner:

Station	Station	Jack
Block	Cable	Terminal
AΤ	WHT-BLU	GRN
AR	BLU-WHT	RED
BT	WHT-ORN	BLK
BR	ORN-WHT	YEL
CT	WHT-GRN	WHT
CR	GRN-WHT	BLU

NOTE: DSS Consoles (in the UMT-32/64 systems) are *not* wired as described above. See Section 6 of this manual for correct DSS Console wiring instructions.

- **3.40** Install bridging clips for the AT, AR, BT, BR, CT and CR terminals.
- **3.41** After al! PCBs have been installed but *before* the stations are installed, the following checks should be made:
- Measure the DC voltage at each 625-type station jack as follows:

Connect Voltmeter	Voltage
Green/Red AT to AR	13V DC (approximately)
Black/Yellow BT/BR	28V DC (approximately)
White/Blue CT/CR	0V DC

NOTE: Start measurements from first station.

- If these voltages are not obtained, check the station cabling and wiring from the Main Distribution Frame 66MI-50 block against the information shown on the cut down sheet provided.
- When the telephone is installed, the normal AT to AR voltages are:

12.8V DC on hook at the KSU (block) 7.4V DC off hook at the KSU (block)

CO LINE CONNECTIONS

CAUTION: HAVE THE TELCO PERSONNEL INSTALL THE CO LINES TO WITHIN 6 FEET OF THE SYSTEM INSTALLATION.

UMT-8/16 CO Line Connections

- 3.42 The telephone company installs RJ11C connectors to which the CO Line Jacks are connected.
- 3.43 Station line cords are plugged into the RJ11C connectors at one end, and into connectors located on the side of the KSU at the other. Each input is marked indicating the CO line (Figure 5-la). Fully modular station line cords must be provided by the customer.

UMT-32/64 CO Line Connections

- 3.44 The telephone company installs an RJ21X connector.
 The RJ21X is installed within 25 feet of the KSU.
- 3.45 A 25-pair cable is plugged into the RJ21X connector at one end. The other end of the cable is terminated on the A1/A2 block. Connections are then made from the A1/A2 block to the KSU/Expansion Cabinet as follows:

System	Connector
UMT-32	A1
UMT-64	A1 & A2

WARNING: ONLY FCC LICENSED PERSONNEL MAY INSTALL A CONNECTING BLOCK BETWEEN THE RJ21X AND THE KSU.

ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 6, INSTALLATION OF OPTIONAL EQUIPMENT

	CONTENTS	PAGE	2.	DESCRIPTION
-	INTRODUCTION DESCRIPTION Power Failure External Bells Door Chime Box Background Music (BGM) Music On Hold (MOH) External Paging Output External Page Contacts External Alarm Speakerphone (C-SPDU-A) PCB Wall-Mounting Kit DSS Console (UMT-32/64 Systems Modular Adaptor (UMT-8/16 Only) FAX Line Interface Option	6-1 6-1 6-4 6-6 6-7 6-7 6-8 6-8 6-9 6-10 Only) 6-11	2.01	Installation of the following equipment is detailed in this section: Power Failure External Bells Door Chime Box Background Music (BGM) Music On Hold (MOH) External Paging Output External Page Contacts External Alarm Speakerphone (C-SPDU-A) PCB Wall-Mounting Kit DSS Console (UMT-32/64 systems only) Modular Adaptor (UMT-8/16 systems only) FAX Line Interface Option
				-

1. INTRODUCTION

1.01 The INSTALLATION OF OPTIONAL EQUIP-MENT Section provides information on equipment and accessories required for optional features. Each subsection provides description and installation information.

POWER FAILURE EXTERNAL BELLS

Description

This section provides information for installing Power Failure External Bells. Power Failure External Bells provide ringing for incoming calls during an AC power failure. Normal ringing is not maintained during a power failure. Bells are customer-provided. Power failure single line sets (500/2500) can be used in place of power failure bells.

CAUTION: BEFORE REMOVING OR INSERTING PCBs MAKE SURE THE POWER SUPPLY IS OFF AND THAT A GROUNDED WRIST STRAP IS USED WHEN HANDLING PCBs.

UMT-8/16 Installation

Only installers certified by TIE/communications, Inc. are permitted to perform Power Failure strappings and connections.

- (1) Connect external bell wires to the C1 block at clips 1, 2 for PF line 1, clips 5, 6 for PF line 2, clips 9, 10 for PF line 3, etc. (Table 5-1).
- (2) PFC straps must be bridged in the 1, 2 positions for each line installed. The PFC straps are located on the C-COU-A and C-COU-B boards located in the KSUs (Figure 6-la). The strappings are as follows:

Board	Strap	Line
C-3COU-A	PFC 1	1
C-3COU-A	PFC 2	2
C-3COU-A	PFC 3	3
C-3COU-B	PFC 1	4
C-3COU-B	PFC 2	5
C-3COU-B	PFC 3	6

NOTE: In power failure operation, lines cut through the following stations:

Line	Port
1	10
2	11
3	12
4	14
5	15
6	16

Key telephones provide no power failure operation, but calls may be answered at key telephones installed at power failure ports. External ringers must be provided for these key telephones. For outgoing power failure operation, key telephones must be replaced by 500/2500 type telephones. Telco ringing power will be provided via the power failure port for the outside line which cuts through.

NOTE: The system's lines should be placed so that those circuits requiring emergency service be connected to CO1 - CO3 and CO4 - CO6. All other circuits are not cut through.

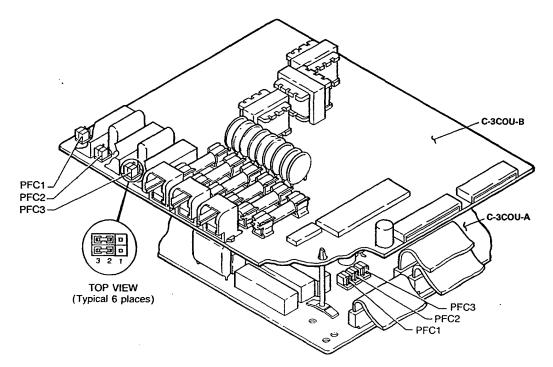


Figure 6-1a POWER FAILURE EXTERNAL BELLS STRAPPING, UMT-8/16

IMT-32/64 Installation

Only installers certified by TIE/communications, Inc. are permitted to perform Power Failure strappings and connections.

- (1) Connect external bell wires to the C1 block at clips 1, 2 for PF line 1, clips 3, 4 for PF line 2, clips 5, 6 for PF line 3, etc. (Table 5-2).
- (2) PFC straps must be bridged in the 1, 2 positions for each line installed. The PFC straps are located on the backplane located in the KSUs (Figure 6-1b). The strappings are as follows:

Strap	Line
PFC 1, 2	1
PFC 3, 4	2
PFC 5, 6	3
PFC 7, 8	4
PFC 9, 10	5
PFC 11, 12	6
PFC 13, 14	7
PFC 15, 16	8

NOTE: In power failure operation, lines cut through the following stations:

Line	Port
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17

Key telephones provide no power failure operation, but calls may be answered at key telephones installed at power failure ports. External ringers must be provided for these key telephones. For outgoing power failure operation, key telephones must be replaced by 500/2500 type telephones. Telco ringing power will be provided via the power failure port for the outside line which cuts through.

NOTE: The system's lines should be placed so that those circuits requiring emergency service be connected to CO1 - CO8. All other circuits are not cut through.

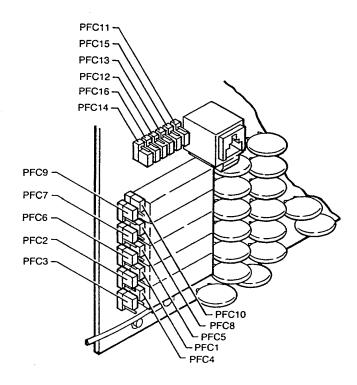


Figure 6-1b POWER FAILURE EXTERNAL BELLS STRAPPING, UMT-32/64

SYSTEM PRACTICE PART NO. 01750 IMG ISSUE 4-0 September 1987

DOOR CHIME BOX

Description

This section provides information for installing a Door Chime Box (Figure 6-2). A Door Chime Box acts as a door bell and intercom. Ten stations are permitted access to Door Chime Boxes. Two Door Chime Boxes are permitted.

UMT-8/16 Installation

Specifications:

500 feet (150M) wire maximum of 24 AWG.

(1) Connect a wire to the terminal marked R on the back of the box (Figure 6-2). Connect the other end to clip 33 on the C1 block for box 1 or clip 35 for box 2 (Figure 6-3).

- (2) Connect a wire to the terminal marked C on the back of the box (Figure 6-2). Connect the other end to clip 34 on the C1 block for box 1 or clip 36 for box 2 (Figure 6-3).
- (3) SW1 on the C-2DBU-A board must be in the proper position for the boxes to function. Located on SW1 are switches D1 and D2. If box 1 is used, move switch D1 to the position marked L1. If box 2 is used, move switch D2 to the position marked L1. If 2 boxes are used, move both D1 and D2 to the position marked L1. If both Door Chime Boxes are used, both switches must be set.
- (4) VR1 on the C-2DBU-A is used to adjust the audio level of the Door Chime Box.
- (5) Program necessary information—Programs 12, 32.

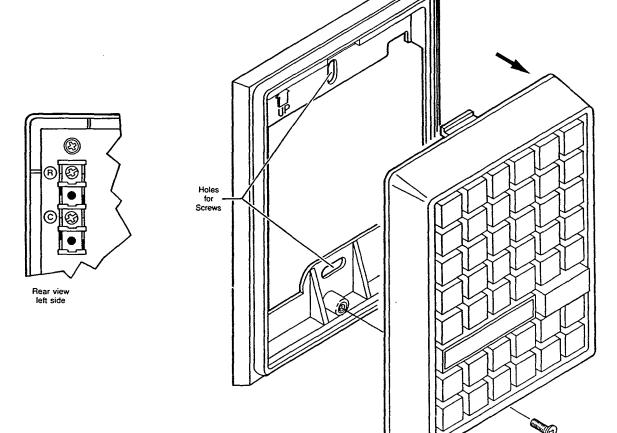


Figure 6-2 DOOR CHIME BOX INSTALLATION

C1 Block (UMT-8/16) C1 Block (UMT-32/64) WHT-BLU WHT-BLU To PF Bell 1 **BLU-WHT BLU-WHT** To PF Bell 1 8 2 ᇷ WHT-ORN 2 WHT-ORN 0 • 2 Ъ, ᇷ 0 O a 3 Ъ **ORN-WHT** 0 -0 3 To PF Bell 2 ORN-WHT 0 o 4 5 WHT-GRN Q ъ D. WHT-GRN • ᇷ Ъ 0 0 To PF Bell 2 GRN-WHT 5 Ъ 5 **GRN-WHT D** • 5 To PF Bell 3 ᇷ WHT-BRN ъ 0 0 6 WHT-BRN ъ ₽ a 0 6 7 **BRN-WHT** 0 0 O **BRN-WHT** Ъ 0 • 2 To PF Bell 4 7 3 o 8 0 a £ WHT-SLT Ъ WHT-SLT ø 8 5 ъ 0 o 9 To PF Bell 3 ᡖ Ъ SLT-WHT ٥ • 9 To PF Bell 5 SLT-WHT ᇷ Ъ Ď Q 10 Ъ 5 RED-BLU 0 **a** 10 RED-BLU Ъ D. 0 BLU-RED a 11 ъ 0o 2 **BLU-RED** 11 To PF Bell 6 3 0 0 **a** 5 RED-ORN 12 RED-ORN 0 • ᇷ 12 7 5 0 • 5 ORN-RED 13 To PF Bell 4 ᇷ Þ • To PF Bell 7 ORN-RED 13_ ᢓ 7 RED-GRN 0 o 9 ᇷ 14 **RED-GRN** 0 **-**14 る 0 0 7 GRN-RED a 15 **GRN-RED --**0 된 To PF Bell 8 15 5 o 16 7 5 RED-BRN 0 • RED-BRN 16 5 o ,€ To PF Bell 5 7 운 **BRN-RED** 0 17 BRN-RED 0 Q 17 To DSS 1 ح ъ • ᇷ RED-SLT 0 18 RED-SLT 2 0 18 5 o o 5 ᇷ SLT-RED 19 SLT-RED 0 a 19 To DSS 2 **BLK-BLU** ъ 0 0 • 20 BLK-BLU ъ 5 0 • 20 ъ Æ BLU-BLK **BLU-BLK** 0 • To PF Bell 6 2 2 21 0 21 To Door Chime Box 1 Ъ. 4 0 • ᠼ 22 ъ **BLK-ORN BLK-ORN** 0 • 22 Ъ o £ 23 <u></u> o 23 ъ ORN-BLK 0 • To Door Chime Box 2 ORN-BLK ъ 0 o **BLK-GRN** O 24 **6** 24 BLK-GRN 0 Q ъ ᠊ᠸ Þ O GRN-BLK 25 To External Amplifier **GRN-BLK** 7 0 Q **-** 25 To External MOH Source ъ o 2 **BLK-BRN** 26 ᇰ - 26 BLK-BRN ٥ • 3 5 RN-BLK 0 o 27 To Amplifier Relay ᇰ - 27 **BRN-BLK** 0 Q To External Speaker 1 Amplifier ъ શ્ LK-SLT 0 o 28 3 ٤, **BLK-SLT** Ď 0 28 ᇰ ᠊ᠳ <u> 29</u> SLT-BLK o 29 SLT-BLK ᇰ _ • To External Speaker 1 Contacts To Door Unlock Relay ъ 된 - 30 YEL-BLU 0 0 30 YEL-BLU ъ. 0 BLU-YEL 5 ٥ 0 4 ъ **-** 31 31 **BLU-YEL** 0 a To External Speaker 2 Amplifier 5 0 0 **-** 32 YEL-ORN 32 YEL-ORN ъ 0 • **€** 33 7 ORN-YEL 0 0 To Door Chime Box 1 ORN-YEL ъ 0 £ 33 To External Speaker 2 Contacts 5 4 YEL-GRN 0 0 34 ъ **-** 34 YEL-GRN 0 9 2 ᠳ **-**• 2 **6** 35 **GRN-YEL** 35 To Door Chime Box 2 **GRN-YEL** 0 0 To BGM Source Ъ 0 o 4 4 36 YEL-BRN 36 ᇰ YEL-BRN 0 5 4 0 Q 7 **BRN-YEL** 37 To External MOH Source BRN-YEL 0 • **4** 37 To Alarm Input 1 3 ᠊ᠽ - 38 0 ъ YEL-SLT 38 b • YEL-SLT 5 ъ SLT-YEL o o 39 ъ **-** 39 To BGM Source SLT-YEL 0 Q To Alarm Input 2 VIO-BLU ъ Q શ્ 0 40 **4**0 Ъ VIO-BLU 6 J ъ BLU-VIO 0 • ન્ 41 ጌ **4**1 To Alarm Input 1 **BLU-VIO** ь 9 7 ᢆ VIO-ORN 0 0 42 VIO-ORN Ъ. 0 4 42 ORN-VIO 6 0 Q ᠊ᠸ **4**3 ъ 43 To Alarm Input 2 ORN-VIO 0 • To Door Unlock Contact ᠳ VIO-GRN Ъ, **-**0 44 Ъ 6 VIO-GRN 0 • 44 Ъ. ક **GRN-VIO** 0 • 45 To Ring Box Power Ъ સ્ **GRN-VIO** o • To Door Unlock Contact 45 æ VIO-BRN 0 0 46 VIO-BRN Ъ 5 46 3 4 **BRN-VIO** 47 To OPX Battery Ъ ď **BRN-VIO** 0 0 47 To 48V Input 5 VIO-SLT 0 2 48 VIO-SLT ъ ዺ 48 0 0 SLT-VIO 3 <u></u> • 0 49 SLT-VIO 3-49 • o 9 0 0 50 50

Figure 6-3 OPTIONAL INSTALLATION WIRING



UMT-32/64 Installation

Specifications:

500 feet (150M) wire maximum of 24 AWG.

- (1) Connect a wire to the terminal marked R on the back of the box. Connect the other end to clip 21 on the C1 block for box 1 or clip 23 for box 2 (Figures 6-2 and 6-3).
- (2) Connect a wire to the terminal marked C on the back of the box. Connect the other end to clip 22 on the C1 block for box 1 or clip 24 for box 2 (Figures 6-2 and 6-3).
- (3) SW1 on the C-DDU-A board must be in the proper position for the boxes to function. Located on SW1 are switches D1 and D2. If box 1 is used, move switch D1 to the position marked L1. If box 2 is used, move switch D2 to the position marked L1. If 2 boxes are used, move both D1 and D2 to the position marked L1. If both Door Chime Boxes are used, both switches must be set.
- (4) VR1 on the C-DDU-A is used to adjust the audio level of the Door Chime Box.
- (5) Program necessary information—Programs 12, 32.

BACKGROUND MUSIC (BGM)

Description

Background Music can be broadcast over station speakers and External Speakers. BGM is customer provided. It can also serve as a source for Music On Hold.

UMT-8/16 Installation

Specifications:

Input Impedance: 600 OHMs

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

- (1) Inputs from an external BGM source are connected to clips 39, 40 of the Cl block (Figure 6-3). (If BGM source is to be used as a source of MOH also, leave approximately four inches of wire [i.e., do not punch wire down at wire end]. Punch wire down approximately four inches from the end.)
- (2) If BGM is also used as a source for MOH, proceed with the following. If not, proceed to step 3. Punch down from wire connected at clip 39 to clip 37. Punch down from wire connected at clip 40 to clip 38.
- (3) The level of BGM is adjusted by VR2 located on the C-CP4SU-A board.
- (4) Program necessary information Program 26.

UMT-32/64 Installation

Specifications:

Input Impedance: 600 OHMs

Input Level: Nominal 250 mV (-10dBm)

Maximum Input: 1 Volt RMS

- (1) Inputs from an external BGM source are connected to clips 35, 36 of the Cl block (Figure 6-3). (If BGM source is to be used as a source of MOH also, leave approximately four inches of wire [i.e., do not punch wire down at wire end]. Punch wire down approximately four inches from the end.)
- (2) If BGM is also used as a source for MOH, proceed with the following. If not, proceed to step 3. Punch down loop from wire connected at clip 35 to clip 25. Punch down loop from wire connected at clip 36 to clip 26.
- (3) The level of BGM is adjusted by VR2 located on the C-TSU-A board.
- (4) Program necessary information Program 26.

MUSIC ON HOLD (MOH)

Description

Internally-synthesized Music On Hold is available with the system. An external source, however, can be used as a substitute.

UMT-8/16 Installation

Specifications:

Input Impedance: 600 OHMs

Input Level: Nominal 250 mV (-10 dBm)

Maximum Level: 1 Volt RMS

- (1) Inputs from an external MOH source are connected to clips 37 and 38 on the Cl block (Figure 6-3). If internal MOH is desired, no connections are required.
- (2) The J3 strap on the C-CP4SU-A board is used to select either internal MOH or external MOH. If internal MOH is desired, leave the straps in the 1, 2 position. If external MOH is required, bridge the straps in the 2, 3 position.
- 3) VRO is used to adjust the level of MOH. It is located on the C-CP4SU-A board.

UMT-32/64 Installation

Specifications:

Input Impedance: 600 OHMs

Input Level: Nominal 250 mV (-10 dBm)

Maximum Level: 1 Volt RMS

- (1) Inputs from an external MOH source are connected to clips 25 and 26 on the C1 block (Figure 6-3). If internal MOH is desired, no connections are required.
- (2) SW1 on the C-TSU-A board is used to select either internal MOH or external MOH. If internal MOH is desired, move SW1 to the position marked 1. Move it to the opposite position for external MOH.
- (3) VR1 is used to adjust the level of MOH. It is located on the C-TSU-A board.

EXTERNAL PAGING OUTPUT

Description

External Speakers can receive CO audible, BGM, Alarm Tones and Paging Announcements.

UMT-8/16 Installation

Specifications:

Output Impedance: 600 OHMs

Output Level: Nominal 250 mV (-10 dBm)

Maximum Output: 400mV RMS

- (1) Connect wires from clips 25 and 26 (audio) on the C1 block to an amplifier for External Zone 1. The amplifier inputs must match specifications above. Speaker attachment can now be made (Figure 6-3).
- (2) Program necessary information—Program 2, 18, 26 and 28.
- (3) VR1 is used to adjust the level of External Pages. It is located on the C-CP4SU-A PCB.

UMT-32/64 Installation

Specifications:

Output Impedance: 600 OHMs

Output Level: Nominal 250 mV (-10 dBm)

Maximum Output: 400mV RMS

- (1) Connect wires from clips 27 and 28 (audio) on the C1 block to an amplifier for External Zone 1. The amplifier inputs must match specifications above. Speaker attachment can now be made (Figure 6-3).
- (2) Connect wires from clips 31 and 32 (audio) on the C1 block to an amplifier for External Zone 2. The amplifier inputs must match specifications above. Speaker attachment can now be made (Figure 6-3).
- (3) Program necessary information—Program 2, 18, 26 and 28.



EXTERNAL PAGE CONTACTS

Description

Provided are contacts which are normally open. When the Paging zone is activated, the contacts close. When BGM is sent to External Speakers, the contacts are continually closed. The relays for each zone are energized when the Paging amplifiers are in use, including CO audible and BGM, if programmed. The relays are located on the C-GCU-A board.

UMT-8/16 Installation

Specifications:

Current Rating: 1.25A for 24V DC resistive loads

(1) Connect wires to clips 27 and 28 on the CI block for the set of External Speaker Contacts. Connect the other ends to appropriate device.

NOTE: If BGM is sent to External Speaker(s), then the External Speaker Contact will always be closed.

UMT-32/64 Installation

Specifications:

Current Rating: 1.25A for 24V DC resistive loads

- Connect wires to clips 29 and 30 on the Cl block for the first set of External Speaker Contacts. Connect the other ends to appropriate device.
- (2) Connect wires to clips 33 and 34 on the Cl block for the second set of External Speaker Contacts. Connect the other ends to appropriate device.

NOTE: If BGM is sent to External Speaker(s), then the External Speaker Contact will always be closed.

EXTERNAL ALARM

Description

A maximum of two external alarms can be connected to the system providing alarm tone signals.

UMT-8/16 Installation

Specifications:

Loop Resistance: 1000 OHMS MAX.

- (1) Connect wires from an incoming alarm system to the following terminals: 41-42 (Alarm 1) and 43-44 (Alarm 2).
- (2) Program necessary information Programs 18, 28 and 53.

UMT-32/64 Installation

Specifications:

Loop Resistance: 1000 OHMS MAX.

- (1) Connect wires from an incoming alarm system to the following terminals: 37-38 (Alarm 1) and 39-40 (Alarm 2)
- (2) Program necessary information Programs 18, 28 and 53.

SPEAKERPHONE (C-SPDU-A) PCB

Description

System

Speakerphones permit a two-way conversation without the use of handsets. UMT-8/16/32/64 Standard telephones are not equipped with speakerphones. Speakerphones can be installed on these telephones (Figure 6-4). Executive Display telephones have a speakerphone as a standard item. The maximum number of Speakerphones which are permitted per system is as follows:

Max.

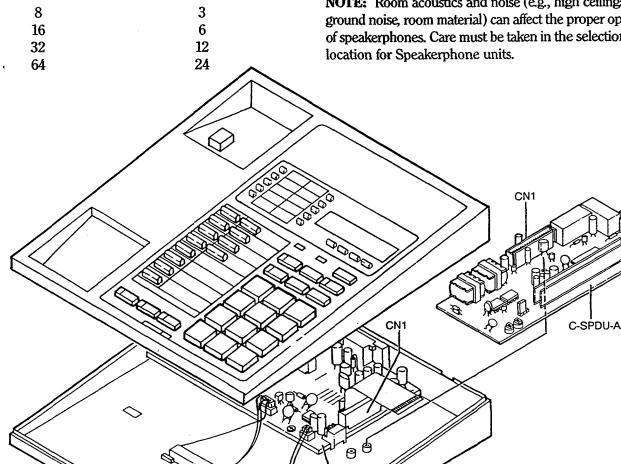


Figure 6-4 SPEAKERPHONE (C-SPDU-A) PCB INSTALLATION

C-ANU-A

Installation

- (1) Remove the two screws on the bottom of the telephone.
- (2) Insert C-SPDU-A board and replace retaining screw.
- (3) Remove the C-ANU-S jumper board from the CN1 connector on the C-ANU-A PCB. Tape and store the jumper board inside the telephone.
- (4) Insert ribbon cable into connector CN1 on C-SPDU-A board (supplied with the C-SPDU-A PCB).
- (5) Insert the other end of the ribbon cable into the now empty CNT connector on the C-ANU-A PCB.
- (6) Replace top of telephone and screws on bottom.

NOTE: Room acoustics and noise (e.g., high ceilings, background noise, room material) can affect the proper operation of speakerphones. Care must be taken in the selection of the

WALL-MOUNTING KIT

Description

UMT-8/16/32/64 telephones can be wall mounted by the use of this kit.

Installation

- (a) Wall mounting (without AT&T Wall Plate):
 - (1) The wall-mounting housing has four pilot holes through which wood screws (supplied) are inserted to mount the housing to the wall (Figure 6-5).
 - (2) The housing is installed onto the base of the telephone. Four snap connectors are used for this (Figure 6-5).
 - (3) A six-wire line cord, which is supplied, is connected to the telephone on one end and the wall receptacle on the other.
 - (4) A handset hook, which is supplied, is installed as shown in Figure 6-5.

- (b) Wall mounting (to AT&T Wall Plate):
 - (1) The metal wall-mounting bracket is installed as shown in Figure 6-5. Four machine screws (supplied) are used to anchor the bracket to the housing.
 - (2) The housing is installed onto the base of the telephone. Four snap connectors are used for this (Figure 6-5).
 - (3) A line cord, which is supplied, is connected to the telephone at one end and the wall receptacle at the other.
 - (4) Align telephone housing with two mounting pins on the wall plate.
 - (5) Pull down slightly on telephone to secure on pins.

NOTE: The AT&T Wall Plate must be wired to the specifications for these telephones. Standard telephone company wiring *will not work*.

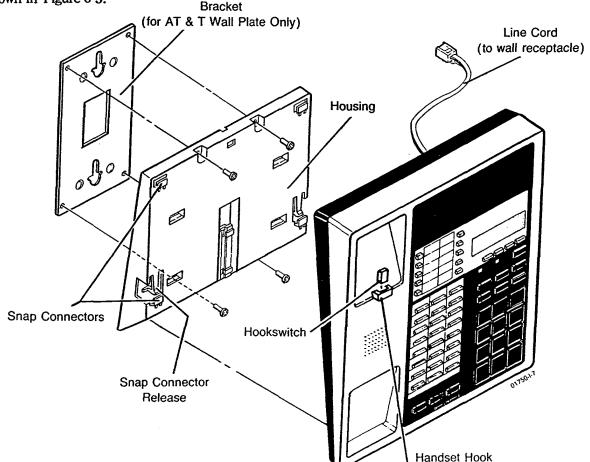


Figure 6-5 WALL-MOUNTING INSTALLATION

DSS CONSOLE (UMT-32/64 SYSTEMS ONLY)

Description

This section provides information for installing DSS Consoles per hook-up position on the C1 block. The UMT-32/64 systems can accommodate two consoles. Console hardware connections are dedicated, but consoles can be assigned to any station through software. The strapping options on the Console's internal PCB allow the Console to be used as an externally powered BLF unit, a DSS Console, or as an internally powered BLF unit.

A Console hook-up position on the C1 block (i.e., clips 17 & 18 or clips 19 & 20) can accommodate one, two or three Consoles in the following combination:

- One DSS Console
- One BLF unit, which can operate by using internal (KSU) power
- One DSS Console and two BLF units

The first BLF can use internal power. The second BLF must be externally powered. The customer must provide the external power source which supplies 18 VDC @ 200mA. The Nitsuko 18-volt adaptor (P/N 30869 or 85169) can be odified for use as the local external power source.

Installation

(1) Connect three-pair twisted cable wires (only the WHT-BLU BLU-WHT wires) to the C1 block at clips 17, 18 for DSS Console 1. Connect three-pair twisted cable wires (only the WHT-BLU and BLU-WHT wires) to the C1 block at clips 19 and 20 for DSS Console 2 (Figure 6-3). Connect the other ends of the wires to the appropriate terminals in the modular jack as in the chart below. Connect the RED-BRN or RED-SLT wire to the terminal marked RED. Connect the BRN-RED or SLT-RED wire to the terminal marked GREEN.

NOTE: Non-Standard Wiring

66M1-50 Connector	C1 Block	Station Cable	625-Type Jack
RED-BRN	DSS1 (9T)	WHT-BLU	RED
BRN-RED	DSS1 (9R)	BLU-WHT	GRN
RED-SLT	DSS2 (10T)	WHT-BLU	RED
SLT-RED	DSS2 (10R)	BLU-WHT	GRN

- (2) Plug one end of a line cord into a DSS Console and the other into the appropriate modular jack (Figure 6-6).
- (3) Program necessary information—Programs 13 and 39.

CONSOLE STRAPPING OPTIONS

The Console contains a strapping option on its internal PCB (C-DSU-A). How the Console is to be used determines the setting of Straps TB1, TB2 and TB3. Any of the following installations requires that the system be equipped with a C-DDU-A PCB:

DSS Console

- Set all straps to 1-2. When the Consoles are shipped from the factory, they are already strapped for DSS Console operation.
- 2. Install a DSS Console as described.
- 3. Make entries in Programs 13 and 39.

Internally Powered BLF

- Set the straps depending on whether the BLF unit is accompanied by a DSS Console on the hook-up position:
 - If the BLF unit is accompanied by a DSS Console: a. Set TB1 to 2-3
 - b. Set both TB2 and TB3 to 1-2.
 - If the BLF unit is the only device on the hook-up position, set all straps to 1-2.
- 2. Cable this BLF unit as described.
- 3. Do not make entries in Programs 13 and 39 for BLF only.

Externally Powered BLF

- 1. Set all straps to 2-3.
- 2. Cable this BLF unit as described.
- 3. Connect the external power supply to the BLF modular jack as follows: + 18 VDC to YELLOW terminal; Ground to BLACK terminal.

IMPORTANT: When installing more than one Console per hook-up position, do not double punch the connections on the C1 block. Instead:

- 1. Remove the bridging clips.
- 2. Punch down the wires on the center terminals.
- 3. Replace the bridging clips.

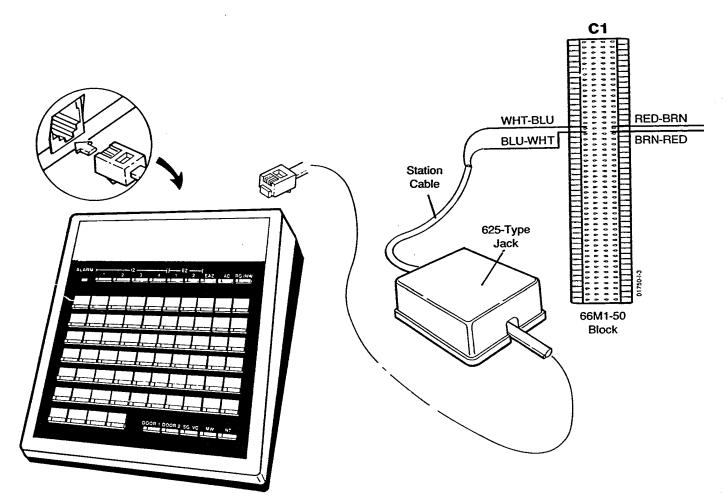


Figure 6-6 DSS CONSOLE INSTALLATION

ULTRACOM AT

MODULAR ADAPTOR (UMT-8/16 ONLY)

Description

This section provides information for installing a Modular Adaptor. The adaptor facilitates the installation of stations by eliminating the need for wiring the telephones to a station block — they can be plugged directly from their modular jacks, into the Modular Adaptor on the KSU. Two Modular Adaptors are recommended.

Installation

(1) Figure 6-7 illustrates the installation of a Modular Adaptor. The adaptor has a female connector on the

- back which is connected to either B1 or B2 on the side of the KSU. The screws on the adaptor are inserted into predrilled holes on the KSU.
- (2) If an adaptor is used, the wall-mounting brackets on the KSU must be mounted so as to offset the KSU from the wall (Figure 6-7).
- (3) The numbers on the block correspond to the column marked "Modular Adaptor Number" on the cut down block illustrations for the system (Table 5-1).

NOTE: The connector labeled "9" on each Modular Adaptor *is not* used. Do not plug any telephone into the ninth connector.

FAX LINE INTERFACE OPTION

Description

The system allows for up to two "FAX lines" which are connected to a device (i.e., a FAX machine, modem, etc.). This device is also connected to a CO line input to the phone system. When in use, the FAX device must provide a contact closure to one of the system ALARM INPUTS. When the ALARM INPUT receives the closure, it provides Exclusion to telephone system users for that line.

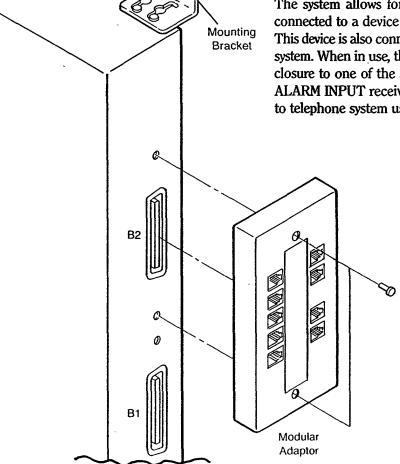


Figure 6-7 MODULAR ADAPTOR INSTALLATION

7

ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 7, PROGRAM ENTRY

	CONTENTS	PAGE
1.	INTRODUCTION	7-1
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. INTRODUCTION

1.01 The PROGRAMMING SECTION provides the information necessary to program the system. The Program Record Form (PRF) provided in Appendix A is a convenient record, which should be used for data entry along with this section.

1.02 Verify that all the required PCBs are properly installed.

2. LOCATING THE PROGRAMMING TELEPHONE

2.01 All system initialization and programming must be done from the display telephone assigned to port 10 (if a system being installed has no display telephones, one should be brought to the site to assist in programming).

2.02 In UMT-32/64 systems, programming may be completed at the location of the port 10 telephone or that telephone may be removed from its location and plugged into the modular connector on the backplane of the UMT-32/64 KSU (Figure 7-1).

CAUTION: THE MODULAR CONNECTOR IS PERMANENTLY WIRED TO THE PORT 10 POSITION. ANY TELEPHONE INSTALLED IN THE SYSTEM MUST BE DISCONNECTED FROM ITS STATION JACK BEFORE CONNECTING A PHONE TO A MODULAR CONNECTOR.

3. SYSTEM INITIALIZATION

- **3.01** There are two methods of system initialization:
- (1) Complete initialization of all memory (including Speed Dial) this method should be used on new installations or the reprogramming of existing systems.
- (2) Reinitialization of the System Program memory (not Speed Dial memory) — this method should be used to reprogram without affecting stored Speed Dial numbers.

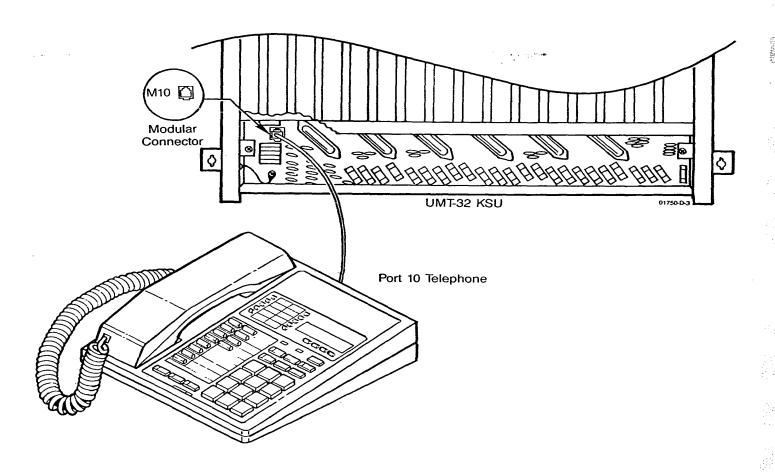


Figure 7-1 MODULAR CONNECTOR, UMT-32 KSU

NOTE: SYSTEM PROGRAMMING MUST BE DONE AT PORT 10 WITH A DISPLAY TELEPHONE.

- **3.02** Follow the steps below for complete system initialization (method 1):
- (1) Disconnect the Lithium battery located on the CPU PCB (Figure 7-2).
- (2) Place the WR switch (in the UMT-32/64 systems) or SW1 switch (in the 8/16 systems) in the *up* position (i.e., initialization position) (Figure 7-2).
- (3) Plug the power supply in and turn it on.
- (4) Wait approximately 10 seconds, then move the switch to the *down* position (i.e., normal).
- (5) Plug in the Lithium battery (data is protected against power failure).
- (6) At the port 10 telephone, push the programming button (Figure 7-2).
- (7) Run Program 91. (This program initializes the Speed Dial Number bins, resets the alarm settings and loads default values under the telephone DSS keys.)
- (8) Press the programming button again.

CAUTION: DO NOT RUN PROGRAM 91 AFTER PROGRAMMING IS COMPLETE UNLESS A WRITTEN RECORD OF SPEED DIAL NUMBERS IS AVAILABLE. THIS PROGRAM NOT ONLY INITIALIZES THE SPEED DIAL NUMBER BINS BUT ALSO ERASES ALL SYSTEM SPEED DIAL NUMBERS.

CAUTION: IN SUBSEQUENT PROGRAMMING, DO NOT PERFORM STEPS 1-6 UNLESS SYSTEM REINITIALIZATION IS REQUIRED.

- **3.03** Follow the steps below for reinitialization of System Program memory (method 2):
- Make sure that the system's power supply is turned off.
 Do not disconnect the Lithium battery from the CPU PCB.
- (2) Place the WR switch (in the UMT-32/64 systems) or the SW1 switch (in the 8/16 systems) in the *up* position (i.e., the initialization position) (Figure 7-2).
- (3) Plug the power supply in, and turn it on.
- (4) Wait approximately 10 seconds, then move the switch to the *down* position (i.e., normal).
- (5) Do not run Program 91.
- (6) Reprogram the system as required.

NOTE 1: If this reinitialization does not clear all programming, complete system reinitialization may be required (method 1). If this is required, make sure to keep a written record of all Speed Dial numbers..

NOTE 2: If this system is installed behind a PBX, a pause will *not* be inserted into PBX calls during Speed Dial until the PBX lines and access codes are programmed. It is suggested that these features be entered into the system memory first so that Speed Dialing capabilities can be utilized.

NOTE 3: When either method 1 or 2 for initialization is employed, Last Number Dialed is erased from memory.

4. DATA ENTRY

4.01 To prepare the system for data entry, press the programming button. Figure 7-3 illustrates the location of the key. Remove the programming button access door and use a thin object (*not* a pointed object) to press the button. Press the button gently. When the date/time display extinguishes and a "00" appears on the display, the system is ready to be programmed.

NOTE: The system is functional during programming.

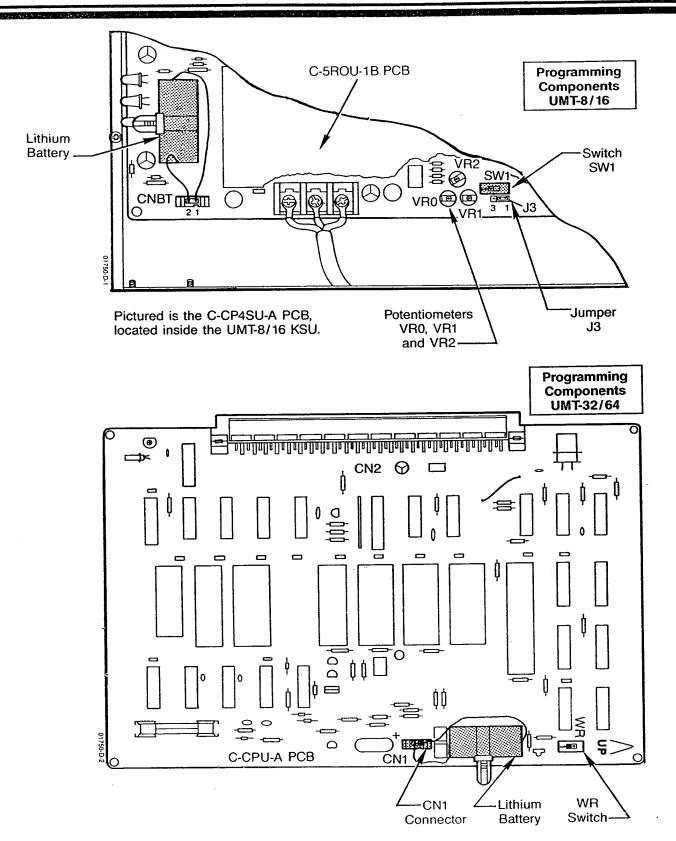


Figure 7-2 TYPICAL PROGRAMMING COMPONENT LOCATION

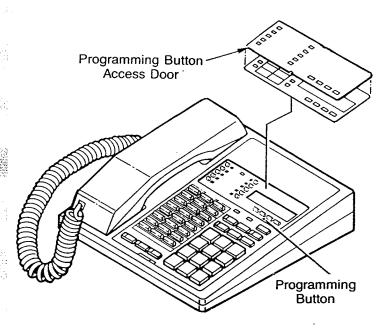


Figure 7-3 ENTERING THE PROGRAMMING MODE

4.02 If at any time during programming the "*" button is pressed and subsequent data entry is denied, software limits have probably been exceeded. The dash between character locations will flash fast and further program entry steps will be halted until the error is corrected. For instance, if station number 95 is entered, subsequent data for that station is denied. Station number 95 exceeds the maximum allowable limits of station number designations, 10-79.

4.03 When data entry is complete but programming exit is denied, an E on the display indicates that a programming error was made. The use of Program 90 can help to locate the program which contains the error.

NOTE: The following are used throughout the programming section and are defined in the following manner:

b—blank space X—a digit.

4.04 When all programming is complete, press the button again. Exit from the programming mode is indicated when the date/time display again appears. Replace the cover.

5. PROGRAM CANCELATION

5.01 During programming, all data entered for *all programs* can be erased at any time. Entries for each program return to the values assigned before the programming procedure was begun. If the data must be erased, run this program *before* programming is exited.

5.02 The Cancelation Program *does not* alter data that has been entered into the system memory — only the buffered data is erased. Once the programming mode is properly exited, any new buffered data is transferred to system memory.

5.03 To cancel all data while programming:

- 1. From the Port 10 telephone, exit the program for which data currently is being entered.
- 2. Enter program access code 99.
- 3. Press *. The display should read " C".
- Press * again. The display should read "00". All data entered during the programming sequence is erased. Any program can now be accessed.

NOTE: If while running Program 99, it is decided that the program *should not* be run (i.e., some data should be retained), press # instead of * for step 4.

CAUTION: THIS PROGRAM SHOULD NOT BE RUN UNLESS THE BUFFER IS TO BE EMPTIED.

PROGRAM 1: LINE TYPE, DIAL MODE, CO QUEUING GROUP

- (1) Enter program access code 01.
- (2) Press *.
- (3) Display: 01-00.
- (4) Enter CO line number from A/B boxes.
- (5) Press *.
- (6) Display: 01-XX-XXXXX.
- (7) Enter data from C/D/E/F/G boxes.
- (8) Press *.
- (9) Display: 01-XX-XXXXX.
- (10) To enter data for next CO line, repeat steps 7 and 8.
- (11) Press # to exit program.

PROGRAM 2: CO LINE GROUP ASSIGNMENTS

- (1) Enter program access code 02.
- (2) Press *.
- (3) Display: 02-00.
- (4) Enter CO group number from A/B boxes.
- (5) Press *.
- (6) Display: 02-XX-XX XX.
- (7) Enter CO line number from C/D boxes.
- (8) Press *.
- (9) Display: 02-XX-XX-XX.
- (10) Enter CO line number from E/F boxes.
- (11) Press *.
- (12) Display: 02-XX-XX-XX.
- (13) Press *.
- (14) To enter data for next CO line group, repeat steps 7 through 11.
- (15) Press # to exit program.

PROGRAM 3: DISA LINE, FAX LINE, COMMON USE LINE

- (1) Enter program access code 03.
- (2) Press *.
- (3) Display: 03-00.
- (4) Enter CO line number from A/B boxes.
- (5) Press *.
- (6) Display: 03-XX-XXX.
- (7) Enter data from C/D/E boxes.
- (8) Press *.
- (9) Display: 03-XX-XXX.
- (10) To add additional line data, repeat steps 7 through 8.
- (11) Press # to exit program.

PROGRAM 4: EXECUTIVE OVERRIDE (BARGE IN)

- (1) Enter program access code 04.
- (2) Press *.
- (3) Display: 04-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 04-XX-X.
- (7) Enter data from C box.
- (8) Press *.
- (9) To enter data for next port, repeat steps 7 and 8.
- (10) Press # to exit program.

PROGRAM 5: UNSUPERVISED CONFERENCE

- (1) Enter program access code 05.
- (2) Press *.
- (3) Display: 05-X.
- (4) Enter the data from box A.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 6: CO LINE OUTWARD ACCESS ASSIGNMENT

- (1) Enter program access code 06.
- (2) Press *.
- (3) Display: 06-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 06-XX-XX XX.
- (7) Enter CO group number from C/D boxes.
- (8) Press *.
- (9) Display: 06-XX-XX-XX.
- (10) Enter CO group number from E/F boxes.
- (11) Press *.
- (12) To enter data for next port, repeat steps 7 through 11.
- (13) Press # to exit program.

PROGRAM 7: CO LINE INCOMING/AUDIBLE ASSIGNMENT

- (1) Enter program access code 07.
- (2) Press *.
- (3) Display: 07-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 07-XX-1-XXX.
- (7) Enter primary group number from C/D boxes.
- (8) Enter primary group audible data from E box.
- (9) Press *.
- (10) Display: 07-XX-2-XXX.
- (11) Enter secondary group number from F/G boxes.
- (12) Enter secondary group audible data from H box.
- (13) Press *.
- (14) To enter data for next port, repeat steps 7 through 13.
- (15) Press # to exit program.

- (1) Enter program access code 08.
- (2) Press *.
- (3) Display: 08-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 08-XX-XXXXX.
- (7) Enter data from the C/D/E/F/G boxes.
- (8) Press *.
- (9) Display: 08-XX-XXXXX
- (10) To enter data for next port, repeat steps 7 and 8.
- (11) Press # to exit program.

PROGRAM 9: EXECUTIVE CALL FORWARD

- (1) Enter program access code 09.
- (2) Press *.
- (3) Display: 09-1-XX XX.
- (4) Enter port number from A/B boxes.
- 5) Press *.
- (6) Display: 09-2-XX-XX.
- (7) Enter port number from C/D boxes.
- (8) Press *.
- (9) To enter data for additional pairs, repeat steps 4 through 8.
- (10) Press # to exit program.

PROGRAM 10: DUAL HANDSFREE HOTLINE

- (1) Enter program access code 10.
- (2) Press *.
- (3) Display: 10-XX XX XX.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 10-XX-XX XX.
- (7) Enter port number from C/D boxes.
- (8) Press *.
- (9) Display: 10-XX-XX-XX.
- (10) Enter port number from E/F boxes.

- (11) Press *.
- (12) Display: 10-XX XX XX.
- (13) To enter data for additional pairs, repeat steps 4 through 11.
- (14) Press # to exit program.

PROGRAM 11: GROUP HUNT

- (1) Enter program access code 11.
- (2) Press *.
- (3) Display: 11-0.
- (4) Enter hunting group number from A box.
- (5) Press *.
- (6) Display: 11-X 1-XX.
- (7) Enter port number from B/C boxes.
- (8) Press *.
- (9) To enter data for additional ports, repeat steps 7 and 8.
- (10) To enter data for additional hunting groups, repeat steps 7 and 8.[†]
- (11) Press # to exit program.

[†]If fewer than eight stations are entered into the previous group, press * until the next group number appears on the display. Now repeat steps 7 and 8.

PROGRAM 12: DOOR CHIME BOX

- (1) Enter program access code 12.
- (2) Press *.
- (3) Display: 12 01-XX.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 12 02-XX.
- (7) To enter additional ports, repeat steps 4 and 5.
- (8) Press # to exit program.



PROGRAM 13: DSS CONSOLE PORT ASSIGNMENT (UMT-32/64 ONLY)

- (1) Enter program access code 13.
- (2) Press *.
- (3) Display: 13 01-XX.
- (4) Enter first DSS port number from A/B (bin 1) boxes.
- (5) Press *.
- (6) Display: 13 02-XX.
- (7) Enter second DSS port number from A/B (bin 2) boxes.
- (8) Press # to exit program.

PROGRAM 14: FLEXIBLE STATION NUMBER ASSIGNMENT[†]

- (1) Enter program access code 14.
- (2) Press *.
- (3) Display: 14-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 14-XX-XX.
- (7) Enter station number from C/D boxes.
- (8) Press *.
- (9) Display: 14-XX-XX.
- (10) To enter data for next port, repeat steps 7 and 8.
- (11) Press # to exit program.

[†]It is recommended that this program be entered last to avoid confusion.

PROGRAM 15: FLEXIBLE LINE APPEARANCE

- (1) Enter program access code 15.
- (2) Press *.
- (3) Display: 15-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 16: CO OFF-HOOK SIGNALING

- (1) Enter program access code 16.
- (2) Press *.
- (3) Display: 16-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 16-XX-X.
- (7) Enter data from C box.
- (8) Press *.
- (9) To enter data for next port, repeat steps 7 and 8.
- (10) Press # to exit program.

PROGRAM 17: NIGHT AUDIBLE

- (1) Enter program access code 17.
- (2) Press *.
- (3) Display: 17-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 18: EXTERNAL PAGING FEATURES

- (1) Enter program access code 18.
- (2) Press *.
- (3) Display: 18-0.
- (4) Enter zone data from A box.
- (5) Press *.
- (6) Display: 18-X-XX XXX.
- (7) Enter CO group number from B/C boxes.
- (8) Press *.
- (9) Display: 18-X-XX-XXX.
- (10) Enter data from D/E/F boxes.
- (11) Press *.
- (12) To enter data for next zone, repeat steps 7 through 11.
- (13) Press # to exit program.

(2) Press *.

(3) Display: 19-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 20: RINGING LINE PREFERENCE

(1) Enter program access code 20.

(2) Press *.

(3) Display: 20-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 21: AUTOMATIC LINE ACCESS

(1) Enter program access code 21.

(2) Press *.

(3) Display: 21-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 22: EXCLUSIVE HOLD

(1) Enter program access code 22.

(2) Press *.

(3) Display: 22-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 23: INTERCOM OFF-HOOK SIGNALING WITH HANDSFREE REPLY

(1) Enter program access code 23.

(2) Press *.

(3) Display: 23-00

(4) Enter port number from A/B boxes.

(5) Press *.

(6) Display: 23-XX-X.

(7) Enter data from C box.

(8) Press *.

(9) To enter data for next port, repeat steps 7 and 8.

(10) Press # to exit program.

PROGRAM 24: VOICE-ANNOUNCED/TONE-SIGNALED CALLING

(1) Enter program access code 24.

(2) Press *.

(3) Display: 24-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 25: MICROPHONE ON/OFF

(1) Enter program access code 25.

(2) Press *.

(3) Display: 25-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 26: BACKGROUND MUSIC (BGM)

(1) Enter program access code 26.

(2) Press *.

(3) Display: 26-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

PROGRAM 27: ROOM MONITORING

(1) Enter program access code 27.

(2) Press *.

(3) Display: 27-X.

(4) Enter data from A box.

(5) Press *.

(6) Press # to exit program.

Z



PROGRAM 28: ALARM SENSOR

- (1) Enter program access code 28.
- (2) Press *.
- (3) Display: 28-0.
- (4) Enter alarm number from A box.
- (5) Press *.
- (6) Display: 28-X-X X.
- (7) Enter data from B box.
- (8) Press *.
- (9) Display: 28-X-X-X.
- (10) Enter data from C box.
- (11) Press *.
- (12) Display: 28-X-X X.
- (13) To enter data for next alarm sensor, repeat steps 7 through 11.
- (14) Press # to exit program.

PROGRAM 30: MULTI-LINE CONFERENCE

- (1) Enter program access code 30.
- (2) Press *.
- (3) Display: 30-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 31: THREE MINUTE WARNING TONE

- (1) Enter program access code 31.
- (2) Press *.
- (3) Display: 31-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 32: DOOR CHIME BOX SIGNAL

- (1) Enter program access code 32.
- (2) Press *.
- (3) Display: 32-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 33: SINGLE STEP ACCESS

- (1) Enter program access code 33.
- (2) Press *.
- (3) Display: 33-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 35: EXCLUSIVE HOLD RECALL

- (1) Enter program access code 35.
- (2) Press *.
- (3) Display: 35-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 36: EXCLUSIVE HOLD RECALL DURATION

- (1) Enter program access code 36.
- (2) Press *.
- (3) Display: 36-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 37: SYSTEM HOLD RECALL

- (1) Enter program access code 37.
- (2) Press *.
- (3) Display: 37-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 38: CALL TRANSFER TIMER

- (1) Enter program access code 38.
- (2) Press *.
- (3) Display: 38-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 39: DSS TRANSFER TIMER (UMT-32/64 ONLY)

- (1) Enter program access code 39.
- (2) Press *.
- (3) Display: 39-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 40: CLASS OF SERVICE

- 1) Enter program access code 40.
- (2) Preśs *.
- (3) Display: 40-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 40-XX-X.
- (7) Enter Class of Service data from C box.
- (8) Press *.
- (9) Display: 40-XX-X.
- (10) To enter data for next port, repeat steps 7 and 8.
- (11) Press # to exit program.

PROGRAM 41: PERMITTED CODES[†]

- (1) Enter program access code 41.
- (2) Press *.
- (3) Display: 41-00.
- (4) Enter data from A/B boxes.
- (5) Press *.
- (6) Display: bbbb.^{††}
- (7) Enter permitted code data from C/D/E/F/G/H/I/J/K/ L/M/N boxes.

- (8) Display: XXXXXXXX.^{†††}
- (9) Press *.
- (10) Display: 41-XX.
- (11) To enter additional codes, repeat steps 4 through 7.
- (12) Press # to exit program.

[†]The OPAC/CONF key can be used to erase a Permitted Code during its programming.

^{††}If data has been previously entered, it appears instead of blanks.

†††The display cannot exceed 8 digits. As more digits are added, the first entered are removed from display. To check a Permitted Code which exceeds 8 digits, enter the access code, press * followed by the code designation, e.g., 01 is the first code. The first 8 digits are displayed. Press * again. The remaining digits are displayed.

PROGRAM 42: PERMITTED CODE DIGITS

- (1) Enter program access code 42.
- (2) Press *.
- (3) Display: 42-XX.
- (4) Enter Permitted Code Digits data from A/B boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 43: PBX ACCESS CODES[†]

- (1) Enter program access code 43.
- (2) Press *.
- (3) Display: 43-0.
- (4) Enter Code Number from A box.
- (5) Press *.
- (6) Display: 43-X-b.^{††}
- (7) Enter Access Code data from B/C boxes.
- (8) Press *.
- (9) To enter next code, repeat steps 7 and 8.
- (10) Press # to exit program.

[†]The OPAC/CONF key can be used to erase a PBX access code during its programming.

^{††}If a PBX Access Code is already in software, display will read: 43-X-XX.

PROGRAM 44: COMMON UNRESTRICTED CODES[†]

- (1) Enter program access code 44.
- (2) Press *.
- (3) Display: 44-0.
- (4) Enter Code Number from A box.
- (5) Press *
- (6) Display: 44-X-b.^{††}
- (7) Enter Common Unrestricted Code from B/C/D/E boxes.
- (8) Press *.
- (9) To enter next code, repeat steps 7 and 8.
- (10) Press # to exit program.

[†]The OPAC/CONF key can be used to erase a Common Unrestricted Code during its programming.

^{††}If a Common Unrestricted Code is already in software, display will read: 44-X-X....

PROGRAM 45: DIGIT ABSORBING[†]

- (1) Enter program access code 45.
- (2) Press *.
- (3) Display: 45-0.
- (4) Enter Digit Absorbing Number from A box.
- (5) Press *.
- (6) Display: 45-X-b.^{††}
- (7) Enter data from B box.
- (8) Press *.
- (9) Display: 45-X-b.[†]
- (10) To enter next digit, repeat steps 7 and 8.
- (11) Press # to exit program.

[†]The OPAC/CONF key can be used to erase a Digit Absorbing entry during its programming.

^{††}If a digit number is already in software, display will read: 45-X-X.

PROGRAM 46: SECOND DIGIT RESTRICTION

- (1) Enter program access code 46.
- (2) Press *.
- (3) Display: 46-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 47: RECALL LINE PREFERENCE

- (1) Enter program access code 47.
- (2) Press *.
- (3) Display: 47-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 48: NIGHT CLASS OF SERVICE SELECTION

- (1) Enter program access code 48.
- (2) Press *.
- (3) Display: 48-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 49: EXCLUDED/ALLOWED SYSTEM FEATURES

- (1) Enter program access code 49.
- (2) Press *.
- (3) Display: 49-0.
- (4) Enter Function Group Number from A box.
- (5) Press *.
- (6) Display: 49-X-X.
- (7) Enter data from B box.
- (8) Press *.
- (9) Display: 49-X-X.
- (10) To enter data for the next Function Group Number, repeat steps 7 and 8.
- (11) Press # to exit program.

PROGRAM 50: CALL DURATION TIMER

- (1) Enter program access code 50.
- (2) Press *.
- (3) Display: 50-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 51: CALL DURATION START TIMER

- (1) Enter program access code 51.
- (2) Press *.
- (3) Display: 51-XXX.
- (4) Enter data from A/B/C boxes.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 52: PAGING SPLASH TONE

- (1) Enter program access code 52.
- ') Press *.
- (3) Display: 52-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 53: ALARM SIGNAL TONE

- (1) Enter program access code 53.
- (2) Press *.
- (3) Display: 53-00.
- (4) Enter port number from A/B boxes.
- (5) Press *.
- (6) Display: 53-XX-X.
- (7) Enter data from C box.
- (8) Press *
- (9) To enter data for next port, repeat steps 7 and 8.
- (10) Press # to exit program.

PROGRAM 54: RELEASE OF ABANDONED CALLS ON HOLD/LINE SUPERVISION

- (1) Enter program access code 54.
- (2) Press *.
- (3) Display: 54-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 55: DO NOT DISTURB (DND) OVERRIDE BY DSS CONSOLE (UMT-32/64 ONLY)

- (1) Enter program access code 55.
- (2) Press *.
- (3) Display: 55-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 56: FLASH TYPE/TIMING

- (1) Enter program access code 56.
- (2) Press *.
- (3) Display: 56.
- (4) Enter data from A box.
- (5) Press *.
- (6) Display: 56-X-XXX.
- (7) Enter data from B/C/D boxes.
- (8) Press *.
- (9) To enter additional data, repeat steps 7 and 8.
- (10) Press # to exit program.



PROGRAM 57: DIAL PULSE SENDER SPEED

- (1) Enter program access code 57.
- (2) Press *.
- (3) Display: 57-00.
- (4) Enter CO Line number from A/B boxes.
- (5) Press *.
- (6) Display: 57-XX-X.
- (7) Enter data from C box.
- (8) Press *.
- (9) To enter data for next CO line, repeat steps 7 and 8.
- (10) Press # to exit program.

PROGRAM 58: MAKE/BREAK RATIO

- (1) Enter program access code 58.
- (2) Press *.
- (3) Display: 58-X.
- (4) Enter data from A box.
- (5) Press *.
- (6) Press # to exit program.

PROGRAM 90: ERROR CHECK

- (1) Enter program access code 90.
- (2) Press *.
- (3) Display: E—(error)

EO-(no error)

- (4) Press *.
- (5) Display: (if error) 90 XX[†]

(if no error) E0

- (6) Press # to exit program.
- (7) If error, enter access code of program in error. Re-enter correct data for that program according to program instructions.

[†]XX represents the number of the program which contains an error. Error here refers to an entry which exceeds the scope of software parameters.

PROGRAM 91: SPEED DIAL NUMBER INITIALIZATION

- (1) Enter program access code 91.
- (2) Press *.
- (3) Display: 91 A.
- (4) Press *.
- (5) Press # to exit program.

PROGRAM 99: PROGRAMMING CANCELATION

- (1) Enter program access code 99.
- (2) Press *.
- (3) Display: 99 C.
- (4) Press * to exit programming mode.

ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS SECTION 8, MAINTENANCE

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1.	INTRODUCTION	Phone	will n
		Talk b	attery
1.0	1 The MAINTENANCE Section deals with trouble-	Phone	funct

shooting. It should be used in conjunction with the

2. DESCRIPTION

Installation Section.

2.01 The first part of this section deals with telephone troubleshooting while the second part deals with power supply troubleshooting. The third part of this section provides suggestions to avoid system failures and to extend the time between service calls.

3. TELEPHONE TROUBLESHOOTING (without a meter)

3.01 The following is a troubleshooting guide for system installations.

Possible Cause

Cymptomo	1 0001010 00000
No LEDs light on phone Phone will not function Talk battery in handset	Pairs reversed BLK and YEL leads reversed
Phone functions Cannot be called handsfree Handset mode works fine	WHT and BLU leads open
No sidetone or audio in handset or speaker All keys and LEDs functional	GRN and RED leads open



4. FUSES (POWER SUPPLY)

WARNING: FOR PROTECTION AGAINST RISK OF FIRE, REPLACE FUSES ONLY WITH FUSES OF THE SAME TYPE AND RATING. **4.01** Table 8-1 details the fuses in the UMT-32/64 Power Supply, their functions and their corresponding indications.

Table 8-1 UMT-8/16/32/64 POWER SUPPLY FUSES

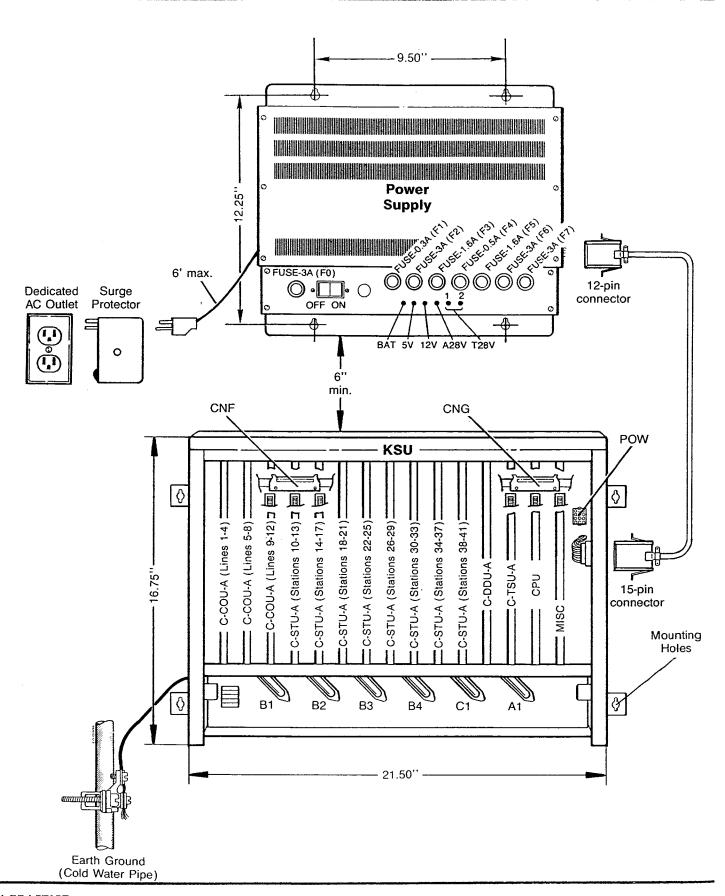
Fuse	Function	Indication of Failure						
UMT-8/16 (V4S) POWER SUPPLY								
4.0A	Line Fuse	Equipment does not work						
	UMT-32 (V4M) POWE	R SUPPLY						
3.0A (F0)	Power Supply Protection	Green Neon Lamp and all Power Supply LEDs extinguished						
0.3A (F1)	Transformer Thermal Fuse Protection (located in Control Circuit)	All Power Supply LEDs extinguished						
3.0A (F2)	Battery Protection	BAT LED extinguished						
1.6A (F3)	5-Volt Supply Protection	5V LED extinguished						
0.5A (F4)	12-Volt Supply Protection	12V LED extinguished						
1.6A (F5)	28-Volt Supply Protection for Audio	A28V LED extinguished						
3.0A (F6)	28-Volt Supply Protection for Telephones	1-T28V LED extinguished						
3.0A (F7)	28-Volt Supply Protection for Telephones	2-T28V LED extinguished						
	UMT-64 (V4L) POWE	R SUPPLY						
6.0A (F0)	Power Supply Protection	Green Neon Lamp and all Power Supply LEDs extinguished						
1.0A (F1)	Transformer Thermal Fuse Protection (located in Control Circuit)	All Power Supply						
3.0A (F2)	Battery Protection	BAT LED extinguished						
1.6A (F3)	5-Volt Supply Protection	5V LED extinguished						
0.5A (F4)	12-Volt Supply Protection	12 V LED extinguished						
3.0A (F5)	28-Volt Supply Protection for Audio	A28V LED extinguished						
3.0A (F6)	28-Volt Supply Protection for Telephones	1-T28V LED extinguished						
3.0A (F7)	28-Volt Supply Protection for Telephones	2-T28V LED extinguished						
3.0A (F8)	28-Volt Supply Protection for Telephones	3-T28V LED extinguished						
3.0A (F9)	28-Volt Supply Protection for Telephones	4-T28V LED extinguished						

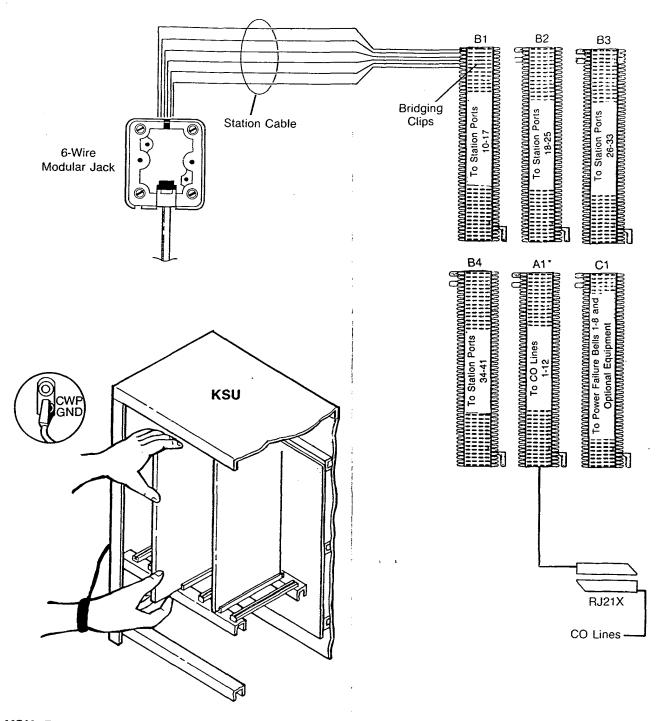
PREVENTIVE MAINTENANCE

to support all system memory. This battery should be replaced after three years of service or if system memory comes altered without cause.

WARNING: DO NOT ATTEMPT TO RECHARGE THIS BATTERY. PERSONAL INJURY MAY RESULT.

- that do not require regular or scheduled maintenance or cleaning. However, installing the system in an environment that promotes accumulation of dust, carbon retal particles, harmful vapors or contaminants may morten the life of these components.
- .03 PCBs equipped with replaceable fuses should never have their fuses replaced with those of a higher power rating than that of the original equipment. If fuse fillure persists after replacement fuses are installed, replace ither the PCB on which the fuse is installed or related PCBs.



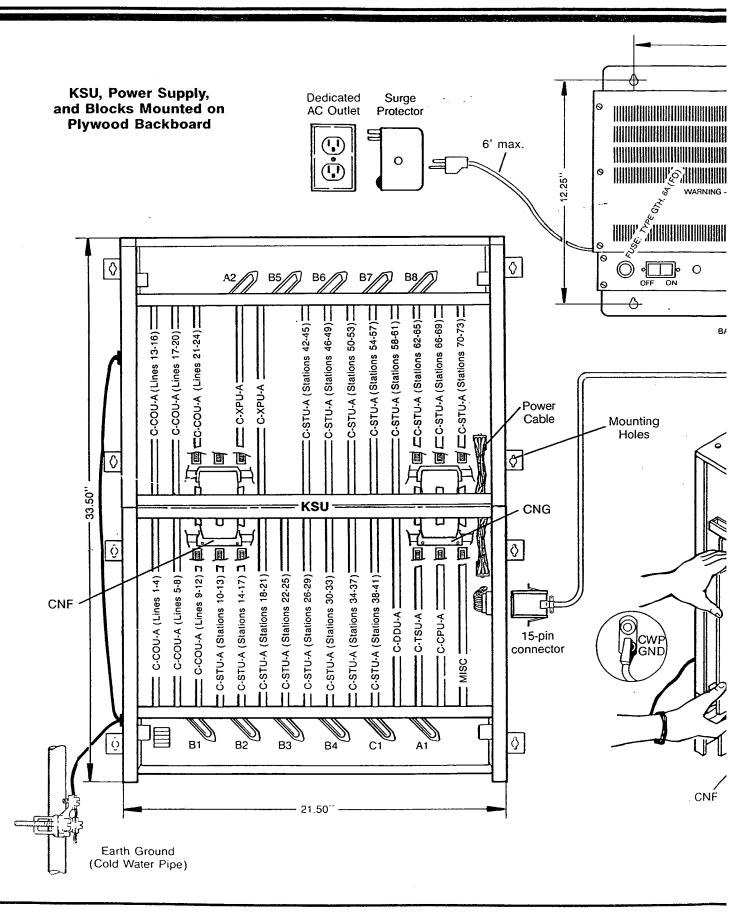


KSU, Power Supply, and Blocks Mounted on Plywood Backboard

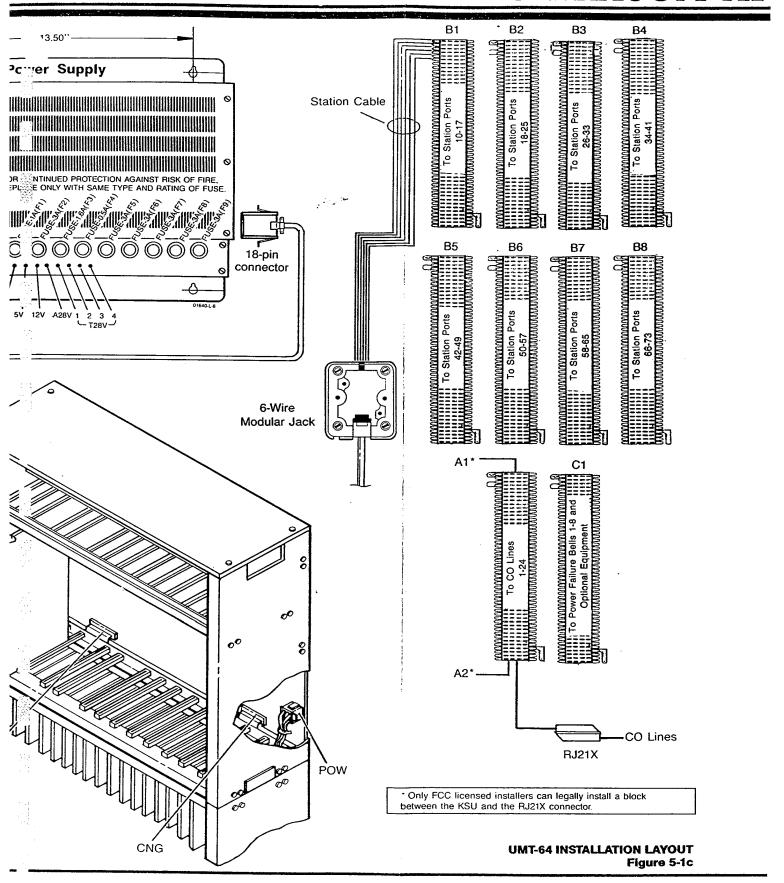
Only FCC licensed installers can legally install a block between the KSU and the RJ21X connector.

UMT-32 INSTALLATION LAYOUT Figure 5-1b





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* 15.00%

760IM 5-2

NOTE: All shaded areas pertain to the UMT-64 system only.

ULTRACOM AT ELECTRONIC KEY TELEPHONE SYSTEMS APPENDIX A, PROGRAM RECORD FORM

Note: Port assignments 26-73 are available for the UMT-32/64 systems only. Lines 07-24 are available for the UMT-32/64 systems only.

PROGRAM RECORD FORM

* A number outside and adjacent to box is a bin number. Programs 7, 9, 11 and 12 have such bin numbers.

PROGRAM 1: LINE TYPE, DIAL MODE, CO QUEUING GROUP

_A	В	_	С	D	E	F	G
	1	1	Γ	Γ		Π	П
\cdot	2	1	Г	Г	Г	Г	П
0		1		Г	Г	Г	П
0	4	1		Γ	Г	Γ	П
0	5	1	Γ	Г	П	Γ	П
0	6	1	Γ		П		П
0	7	1	Γ		Г	Г	П
0	8	1	Г			T-	П
0	9		Γ	П		Г	П
T	0		Г				П
T	1	1					П
1	2						П
1	3						П
1	4						П
1	5	ì					
1	6						7.7
1	7						
1	8						
1	9						
2	0						
2	1						\sqcap
2	2						\Box
0 0 0 0 0 1 1 1 1 1 1 1 1 2 2 2 2	3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4					П	П
2	4						

Initialized Values:

C: Line Type - CO Line (1)

D: Dial Mode - DTMF (1)

E: CO Queueing Group - All lines in group (1)

F: Not used - 0

G: Not used - 0

PROGRAM 2: CO LINE GROUP ASSIGNMENTS

Note: Line Groups 09-30 are available for the UMT-32/64 systems only.

Α	В	_	С	D	E	F
0	1			Γ		
0	2			П		
0	3		Г	Γ		
0	4		Г	Г		
0	5					
0	6					
0	7	ĺ				
0	8					
0	9					
1	0					
1	1					
1	2					
1	3					
1	4					
1	5					
1	6					
1	7					
1	8					
1	9					
2	0					
2	1					_]
2	2					
2	3					
2	4					
2	5					
2	6					
2	7					
2	2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8					
	9					
3	0					

Initialized Values:

All lines in group 1

C-D: Lowest-numbered line in group 01

group or

E-F: Highest numbered line in group 3[†]

This value will be 6 if a 6-line system is installed; 12 if a 12-line system is installed, and 24 if a 24-line system is installed.



PROGRAM 3: DISA LINE, FAX LINE, AND COMMON USE LINE	PROGRAM 4: EXECUTIVE OVERRIDE
A B C D E 0 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 1 0 1 1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 2 0 2 1 2 1 2 2 3 2 4	A B C A B C Initialized Values: C: Executive Override - Disabled (0) 1 1 2
	PROGRAM 5: UNSUPERVISED CONFERENCE A Initialized Values: A: Unsupervised Conference - Disabled (0)

PROGRAM 6: CO LINE OUTWARD ACCESS ASSIGNMENT

Initialized Values:

Line group 1 assigned to all station ports

C-D: Number of first CO Line Group - CO Line Group 1 (01)

E-F: Number of second CO Line Group - Not programmed (00)

E F

1 0 4 2 1 1 4 3 1 2 4 4 1 3 4 5 1 4 4 6 1 5 4 7 1 6 4 9 1 7 4 9 1 8 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 8 2 7 5 9 6 0 6 1 3 0 6 3 3 1 6 3 3 2 6 4 3 3 3 6 5 3 6 6 6 7 3 6 8 6 9 3 8 7 0 3 9 7 1 4 0 7 2 4 1 7 3	A E	3 C	D E	F	_	Α	В	_	С	D
1 2 4 4 1 3 4 6 1 4 4 7 1 6 4 9 1 8 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 7 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	1 0			1		4	2			
1 3 4 5 1 4 4 6 1 5 4 8 1 7 4 9 1 8 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 1 5 3 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 3 6 4 3 3 3 6 5 3 4 6 6 6 7 3 6 7 6 9 3 8 7 6 9 3 8 7 7 0 3 9 7 1 7 0 4 0 7 4 9 5 1 5 2 2 5 3 5 5 5 6 6 5 7 5 8 9 6 1 6 9 9 6 1 7 0 7 1 4 0 7 7 2	111	7 [Т		4	3			
1 5 4 7 1 6 4 8 1 7 4 8 1 9 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 6 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 3 3 4 6 6 3 6 6 6 3 7 0 7 3 8 7 0 3 9 7 1 4 0 7 1 7 0 7 1 7 <	1 2	7	П	Τ		4	4			
1 5 4 7 1 6 4 8 1 7 4 8 1 9 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 6 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 3 3 4 6 6 3 6 6 6 3 7 0 7 3 8 7 0 3 9 7 1 4 0 7 1 7 0 7 1 7 <			П	Τ	1		5			
1 5 4 7 1 6 4 8 1 7 4 8 1 9 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 6 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 3 3 4 6 6 3 6 6 6 3 7 0 7 3 8 7 0 3 9 7 1 4 0 7 1 7 0 7 1 7 <	1 4			T	1	4		1		
1 6 4 8 1 7 5 0 1 8 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 8 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 3 6 5 3 4 6 5 6 7 3 6 6 6 6 6 6 7 3 8 7 7 7 0 7 0 3 8 7 0 7 0 3 9 7 1 7 1 4 0 7 2 7 1			П	T	1	4	7	Ī		
1 7 4 9 1 8 5 0 1 9 5 0 5 0 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 6 2 5 5 6 2 5 7 5 3 6 0 6 2 9 6 1 3 0 6 2 3 1 6 2 3 1 6 3 3 4 6 6 3 5 6 6 3 6 6 6 3 7 0 7 3 8 7 0 3 9 7 1 4 0 7 1 7 0 7 1 7 <				Τ	1			Ī		
1 8 5 0 1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 5 2 5 5 7 2 6 5 7 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 7 3 6 6 9 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2				T		4	9	ı		
1 9 5 1 2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 9 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 3 6 4 3 6 6 6 7 3 6 7 6 9 3 8 7 7 0 3 9 7 1 7 1 4 0 7 2 7 2	1 8			Т		5				
2 0 5 2 2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 3 6 3 6 4 3 3 6 6 6 6 6 6 6 7 3 6 7 7 6 8 6 9 3 8 7 7 7 7 0 7 1 3 9 7 1 7 2 7 2	1 9			T	1	5				
2 1 5 3 2 2 5 4 2 3 5 5 2 4 5 5 2 5 5 7 2 6 5 8 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 1 3 1 6 3 3 2 6 4 3 3 3 6 5 3 4 6 5 6 6 3 5 6 6 6 6 7 6 8 3 7 7 7 7 7 0 7 0 3 8 3 9 7 1 1 7 1 1 4 0 7 2 7 1	20	7	П	Τ	1	5	2			Г
2 2 5 4 2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 8 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 3 6 5 3 4 6 5 6 6 3 5 6 6 6 6 6 7 3 6 8 6 9 7 0 3 8 7 0 7 0 3 9 7 1 7 1 4 0 7 2 7 2	2 1		П		1 '	5		Ì		
2 3 5 5 2 4 5 6 2 5 5 7 2 6 5 9 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 7 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	2 2		П	Т	1	5				
2 4 5 6 2 5 5 7 2 6 5 9 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 7 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	2 3			Т	1	5				Г
2 5 5 7 2 6 5 8 2 7 5 9 2 8 6 0 2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 3 6 5 3 4 6 5 6 7 3 6 6 6 6 6 6 7 3 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	2 4	7	П	1	1	5		Ī		
2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 6 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	2 5		П		1	5		Ī		
2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 6 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	3 6	i		Т		5				Г
2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 6 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	.2 7	7	\sqcap	Т	1					Г
2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6 3 5 6 6 3 6 6 8 3 7 6 9 3 8 7 0 3 9 7 1 4 0 7 2	2 8		П		1	6		Ī		
3 3 3 4 3 5 3 6 3 7 3 6 3 7 3 8 3 9 4 0 0 7 1 7 2	2 9		П	T	1	6	1			
3 3 3 4 3 5 3 6 3 7 3 6 3 7 3 8 3 9 4 0 0 7 1 7 2	3 0	7	П	1	1	6				
3 3 3 4 3 5 3 6 3 7 3 6 3 7 3 8 3 9 4 0 0 7 1 7 2	3 1		\sqcap	Т	1	6	3	ſ		
3 3 3 4 3 5 3 6 3 7 3 6 3 7 3 8 3 9 4 0 0 7 1 7 2	3 2	7	П	Т		6	4			Г
3 4 3 5 3 6 3 7 3 8 3 9 4 0	3 3	7	П	Т	1					Γ
3 5 3 6 3 7 3 8 3 9 4 0	3 4	I I	П	T	1	6				Г
3 7 3 8 3 9 4 0	3 5				1	6				Γ
3 7 3 8 3 9 4 0	3 6			Τ	1	6				
3 8 3 9 4 0 7 0 7 1 7 2	3 7	7		1	1					
3 9 7 1 4 0 7 2				T	1					
4 0 7 2					1		_			Γ
			П	1	1		_			Г
	4 1			\top	1					Γ

PROGRAM 7: CO LINE INCOMING/AUDIBLE ASSIGNMENT

Initialized Values:

Line group 1 assigned to all station ports (01) Only port 10 is granted audible (3)

Port 10

C-D: Primary CO Line Group Number -CO Line Group 1 (01) E: Audible Assigned 3

F-G: Secondary CO Line Group Number - Not programmed (0)

H: No Audible Assigned 0

All Other Ports

C-D: Primary CO Line Group Number -

CO Line Group 1 (01) E: Audible Assigned 0

F-G: Secondary CO Line Group Number - Not programmed (00)

H: No Audible Assigned 0

Α	В	*	С	D	Ε	*	F	G	Н		Α	В	*	С	D	Ε	*	F	G	ı
1	0	1				2				İ	4	2	1				2			ſ
1	1	1				2					4	3	1				2			Ĺ
1	2	1				2	П				4	4	1				2			Γ
1	3	1				2					4	5	1	Г			2			Γ
1	4	1				2					4	6	1				2			Γ
1	5	1				2					4	7	1				2			I
1	6	1				2				ŀ	4	8	1				2			
1	7	1				2					4	9	1				2			
1	8	1				2					5	0	1				2			
1	9	1				2					5	1	1				2			
2	0	1				2					5	2	1				2			
2	1	1				2					5	3	1				2			
2	2	1				2					5	4	1				2			
2	3	1				2					5	5	1				2			
2	4	1				2					5	6	1				2			
2	5	1				2					5	7	1				2			L
2	6	1				2					5	8	1				2			
2	7	1				2					5	9	1				2			
2	8	1				2			[_		6	0	1				2			
2	9	1				2			I_{-}		6	1	1				2			
3	0	1			Γ	2	Г	Γ	Π		6	2	1	Г			2			Γ
3	1	1				2					6	3	1				2			
3	2	1				2					6	4	1				2			
3	3	1				2					6	5	1				2			
3	4	1				2	Г				6	6	1	П			2			
3	5	1				2	Г				6	7	1				2			
3	6	1	Г			2					6	8	1	Г			2			
3	7	1	Г	Г	П	2			Γ]	6	9	1	Г			2	[_		
3	8	1	Γ			2					7	0	1				2			ſ
3	9	1	Γ		Γ	2	Γ		Γ		7	1	1	Г			2			ſ
4	0	1	Γ			2					7	2	1				2			I
4	1	1				2					7	3	1				2			ĺ



PROGRAM 8: NIGHT CLASS OF SERVICE, HEADSET, INSTRUMENT TYPE, DO NOT DISTURB, PAGING GROUPS

Initialized Values:

- C: Night Class of Service Disabled (0)
- D: Headset Not installed (0)
- E: Instrument Type Key Telephone (0)
- F: Do Not Disturb Not required (0)
- G: Paging Groups Paging Group 1 (1)

ΑВ	CDEFG	A B	CDEFG
10		4 2	
111		4 3	
1 2		4 4	
1 3		4 5	
1 4		4 6	
1 5		47	
1 6		48	
1 7		4 9	
1 8		5 0 5 1	
1 9		5 1	
20		5 2	
2 1		5 3	
22		5 4	
		5 5	
24		5 6	
2 5		5 7	
2 3 2 4 2 5 2 6 2 7		5 8	
27		5 9	
2829		6 0	
		6 1	
3 0		6 2	
3 1		6 3 6 4	
3 2			
3 3		6 5	
3 4		6 6	
3 5 3 6		6 7	
3 6		6 8	
3 2 3 3 4 3 5 3 6 3 7 3 8		6 9	
3 8		70	
3 9 4 0		7 1	
		7 2	
4 1		7 3	

PROGRAM 9: EXECUTIVE CALL FORWARD

*	Α	В		С	D
1					
2					
1 2 3 4 5 6			-		
4					
5					Ш
6					Ш
7 8					
8					

Initialized Values:

Executive Call Forward - Not programmed

A-B: Executive Station Number -

Not programmed (00)

C-D: Secretary Station Number -

Not programmed (00)

PROGRAM 10: DUAL HANDSFREE HOTLINE

A B	CD	EF

Initialized Values:

Dual Handsfree Hotline - Not programmed

A-B: Secretary Station Number - Not programmed (00)

C-D: Executive Station Number -

Not programmed (00)

E-F: Executive Station Number - Not

programmed (00)

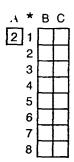
PROGRAM 11: GROUP HUNT

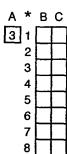
Α	*	В	C
0	1		
	2		
	3		
	4		
	5		
	1 2 3 4 5 6 7 8		
	7		
	8		

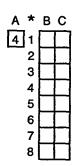
Initialized Values:

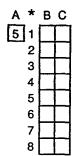
Group Hunt - Not programmed (00) B-C: Ports in Hunting Group 00

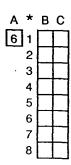
Α	*	В	С
1	1		
	1 2 3 4 5 6 7		
	3		
	4	L	L
	5	L	L
	6		L
	7		
	0	F	Γ.



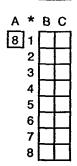


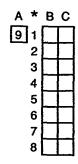




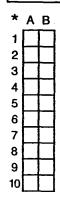


A *	В	С
7 1		
7 1 2 3 4 5 6 7		
3		
4		
5		
6		
7		
8		





PROGRAM 12: DOOR CHIME BOX



Initialized Values: A-B: Door Chime Box - No ports assigned (00)

PROGRAM 13: DSS CONSOLE PORT ASSIGNMENT (UMT-32/64 ONLY)

* A B

1 2

Initialized Values:

A-B: No Ports Assigned (00)



PROGRAM 16: CO OFF-HOOK SIGNALING PROGRAM 14: FLEXIBLE STATION NUMBER ASSIGNMENT Initialized Values: C: CO Off-Hook Signaling - All stations programmed (1) Initialized Values: C-D: Station numbers same as port numbers А В C A B C CD А В CD 6 7 6 0 6 1 6 2 6 3 6 5 6 9 PROGRAM 17: NIGHT AUDIBLE PROGRAM 15: FLEXIBLE LINE APPEARANCE Initialized Values: Initialized Values: A: Night Audible - Exclusive A: Flexible Line Appearance -Initiation enabled (0) Disabled (0)

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PROGRAM 18: EXTERNAL PAGING FEATURES A B C D E F 1	PROGRAM 23: INTERCOM OFF-HOOK SIGNALING WITH HANDSFREE REPLY
PROGRAM 21: AUTOMATIC LINE ACCESS Initialized Values: A: Automatic Line Access -Disabled (0)	3 3 6 5 3 4 6 6 3 5 6 6 3 6 6 8 3 7 6 8 3 7 0 7 3 9 7 1 4 0 7 2 4 1 7 3
PROGRAM 22: EXCLUSIVE HOLD A Initialized Values: A: Exclusive Hold - Enabled (1)	PROGRAM 24: VOICE-ANNOUNCED/ TONE-SIGNALED CALLING Initialized Values: A: Voice-Announced/Tone-Signaled Calling: Voice-Announced Calling Enabled (0)



	PROGRAM 25: MICROPHONE ON/OFF	PROGRAM 31: THREE MINUTE WARNING TONE
A	Initialized Values: A: Microphone On/Off -Microphone on, LED off (0)	A Initialized Values: A: Three Minute Warning Tone - Disabled (0)
	PROGRAM 26: BACKGROUND MUSIC (BGM)	PROGRAM 32: DOOR CHIME BOX SIGNAL
Â	Initialized Values: A: Background Music - Disabled (0)	A Initialized Values: A: Door Chime Box Signal - Four second Door Chime Box Signal - (0)
	PROGRAM 27: ROOM MONITORING	
â	Initialized Values: A: Room Monitoring - Enabled (1) .	PROGRAM 33: SINGLE STEP ACCESS A Initialized Values: A: Single Step Access - Enabled (1)
Γ	PROGRAM 28: ALARM SENSOR	
A 1 2	B C Initialized Values: B: Alarm; No Sensor - Enabled (0) C: Normally open contact (0)	PROGRAM 35: EXCLUSIVE HOLD RECALL A B C Initialized Values: A-C: Exclusive Hold Recall - 60 seconds (006)
	PROGRAM 30: MULTI-LINE CONFERENCE	
Â	Initialized Values: A: Multi-Line Conference - Enabled (1)	

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PROGRAM 36: EXCLUSIVE HOLD RECALL	PROGRAM 40: CLASS OF SERVICE
DURATION A B C	Initialized Values:
Initialized Values: A-C: Exclusive Hold Recall Duration - 30 seconds (003)	C: Class of Service - Class of Service 0 for all stations (0) A B C A B C
PROGRAM 37: SYSTEM HOLD RECALL	15 47 16 48
A B C Initialized Values: A-C: System Hold Recall - 60 seconds (006)	1 7 1 8 1 9 5 0 5 1 2 0 2 1 2 2 3 2 4 9 5 1 5 2 2 1 2 2 3 4 2 3 5 5
PROGRAM 38: CALL TRANSFER TIMER A B C Initialized Values: A-C: Call Transfer Timer - 30 seconds (003)	2 5 1 2 6 1 1 1 1 1 1 1 1 1
PROGRAM 39: DSS TRANSFER TIMER (UMT-32/64 ONLY) A B C Initialized Values: A-C: DSS Transfer Timer - 60 seconds (006)	3 5 3 6 3 7 3 8 3 9 4 0 4 1 7 2 7 3



PROGRAM 41: PERMITTED CODES	PROGRAM 43: PRIVATE BRANCH EXCHANGE (PBX) ACCESS CODES
Initialized Values: C-N: Permitted codes - All blanks	A B C
A B C D E F G H 1 J K L M N 0 1 0 2 0 3 0 4 0 5	Initialized Values: B-C: PBX Access Codes - All blanks 4
0 6 0 7 0 8	PROGRAM 44: COMMON UNRESTRICTED CODES
0 9 1 0 1 1 1 2 1 3 1 4 1 5	A B C D E Initialized Values: B-E: Common Unrestricted Codes - All blanks
1 6 1 7 1 8	PROGRAM 45: DIGIT ABSORBING
2 0 2 1 2 2 2 3 2 4 2 5 2 6 2 7	A B Initialized Values: B: Digit Absorbing - Blank
2 7 2 8 2 9 3 0	PROGRAM 46: SECOND DIGIT RESTRICTION
PROGRAM 42: PERMITTED CODE DIGITS	A Initialized Values: A: Second Digit Restriction - Enabled (0)
АВ	
Initialized Values: A-B: Permitted Code Digits - Not programmed (00)	PROGRAM 47: RECALL LINE PREFERENCE
	A Initialized Values: A: Recall Line Preference - Enabled (1)

PROGRAM 48: NIGHT CLASS OF	PROGRAM 53: ALARM SIGNAL TONE
SERVICE SELECTION	Initialized Values:
A Initialized Values: A: Night Class of Service Selection - COS 7 (7)	C: Alarm Signal Tone - Disabled (0) A B C A B C 1 0 4 2
PROGRAM 49: EXCLUDED/ ALLOWED SYSTEM FEATURES	1 3 1 4 5 4 1 5 1 6 4 7 4 8
A B Initialized Values: B: Excluded/Allowed System Features - Disabled for all groups (0)	1 7 1 8 1 9 1 9 5 1 2 0 2 1 5 2 2 1 5 3 5 4 2 3 2 4 2 5 2 5 2 6 2 7 2 8
PROGRAM 50: CALL DURATION TIMER A Initialized Values: A: Call Duration Timer - Disabled (0)	2 9 6 1 3 0 6 2 3 1 6 3 3 2 6 4 3 3 6 5 3 4 6 6
PROGRAM 51: CALL DURATION START TIMER A B C Initialized Values: A-C: Call Duration Start Timer - 20 seconds (020)	3 5 3 6 3 7 3 8 3 9 4 0 4 1 7 2 7 3
PROGRAM 52: PAGING SPLASH TONE A Initialized Values: A: Paging Splash Tone - Enabled (1)	

PROGRAM 54: RELEASE OF ABANDONED CALLS ON HOLD/LINE SUPERVISION	PROGRAM 57: DIAL PULSE SENDER SPEED
A Initialized Values: A: Release of Abandoned Calls On Hold/Line Supervision - Ignores "opens" less than 400 msec., and releases at 600 msec (2)	A B C 0 1
PROGRAM 55: DO NOT DISTURB (DND) OVERRIDE BY DSS CONSOLE (UMT-32/64 ONLY)	1 0 1 1 1 2 1 3
A Initialized Values: A: Do Not Disturb (DND) Override By DSS Console - Disabled (0)	1 4 1 5 1 6 1 7 1 8 1 9 2 0
PROGRAM 56: FLASH TYPE/TIMING	22
A B C D Initialized Values: B-D: CO line - 1.5 seconds (015) B-D: PBX line7 seconds	2 3 2 4
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AUTOMATIC INTERCOM ANSWER (Permanent)

This feature permits the single-step answer of an Intercom call.

To initiate Automatic Intercom Answer:

- (Incoming Intercom call.)
- Lift handset or press SPK key.

AUTOMATIC LINE ACCESS (Programmable)

Automatic Line Access allows a key phone user to access an outgoing line by dialing a one-digit code.

To access the first available outgoing line:

- Method 1
- Without lifting handset, press SPK.
- Dial 0. A line is seized, and dial tone comes over speaker.
- Method 2
- Without lifting handset, dial 0. SPK lights, a line is seized, and dial tone comes over the speaker.

To access the first available line in a Queue Group:

- 1. Without lifting handset, press SPK.
- 2. Dial Queue Group number (1-4).
 Dial Queue Group number (1-6 only if the system is equipped with a C-CPU-C PCB).

BACKGROUND MUSIC (BGM) (Optional/Programmable)

Background Music is an optional feature which, when programmed, can be broadcast over station and/or External Speakers (if provided). BGM can also serve as a source for Music On Hold. Background Music is disabled at a given station when Room Monitor is in use at that station.

To initiate BGM:

Press #. BGM heard at speaker.

To cancel BGM:

Press #.

CALL FORWARD WITH FOLLOW-ME (Programmable)

Intercom calls are transferred automatically to a second station (Call Forward) by the use of this feature. The destination of the forwarded call can be changed to yet a third station, and so on (Follow-Me).

To initiate Call Forward:

- Press FW ME/RG TR key.
- Dial originating station number.
- Dial destination station number.
- Press FW ME/RG TR key. The FW ME/RG TR LED flashes intermittently. Single splash tone is heard at originating station. FW ME/RG TR key flashes at destination station.

To initiate or change Follow-Me:

- Press FW ME/RG TR key.
- Dial originating station number (station from which calls were originally forwarded).
- Dial new destination station number.
- Press FW ME/RG TR key. The FW ME/RG TR key LED extinguishes at old destination station and flashes at new destination station.

NOTE: Calls cannot be forwarded to a station in Do Not Disturb.

To cancel Call Forward:

- Press FW ME/RG TR key.
- Dial originating station number.
- Press FW ME/RG TR key. FW ME/RG TR LEDs at both stations extinguish.

NOTE: The originating station *or* the destination station can change the destination of the Follow-Me. Cancelation of Call Forward is possible by the originating station only.

CALL MONITOR (Permanent)

This feature permits on-hook dialing of an Intercom or CO line telephone number.

To initiate Call Monitor:

- Press the SPK key. LED lights.[†]
- Press idle CO line key. LED illuminates. Dial tone audible.
- Establish CO call.
- Lift handset.^{††}
- Conversation possible.

[†]If Single Step Access is programmed, the user need only press an idle line key.

^{††}Stations with speakerphones need not lift the handset to establish two-way conversation.

CALL PICKUP (Programmable)

Call Pickup permits any station to intercept an Intercom call intended for another station.[†]

'o initiate Call Pickup:

- (Intercom call to another station.)
- Lift handset.
- Dial # if in same Page group or dial the called station number.

[†]If there is more than one incoming Intercom call, the use of # selects the first incoming call.

CALL TRANSFER, ANNOUNCED (Voice-Announced/ Tone-Signaled Call and Timer — Programmable)

This feature permits the user enabled transfer of an established CO call with ringing to a second station with the option of a voice announcement prior to the transfer. If the call is not answered within a programmed period of time, it reverts back to the transferring station.

To initiate Announced Call Transfer (without DSS Console):

- Establish CO call.
- Press ICM key and dial station number. Announcement possible.
- Press RG INW key. Ringing at called station.
- Hang up.

To initiate Announced Call Transfer (with DSS Console):

- Establish CO call.
- Press DSS key. CO call put on Hold. Announcement possible.
- Press RG INW key on DSS Console.
- Hang up.

CALL TRANSFER, UNANNOUNCED (Timer — Programmable)

This feature permits the transfer of an established CO call, with ringing, to a second station. If the station is busy, the Call Transfer Unannounced does not proceed. If the transferred call is not answered within a programmed period of time, the call reverts back to the transferring station and rings briefly.

To initiate Call Transfer Unannounced (without DSS Console):

- Establish CO call.
- Press ICM key. CO line key flashes.
- Dial desired station number.
- Press RG INW key. CO line LED lights steadily.
- Hang up. Called station receives tone and CO line key flashes.

To initiate Call Transfer Unannounced (with DSS Console):

- Establish CO call.
- Press DSS key.
- Press RG INW key on console.
- Hang up.

CALLBACK (Permanent)[†]

If a user calls a busy station, a Callback can be initiated. Callback provides a signal tone to the calling station when the busy station resumes an idle condition. If the caller then seizes the Intercom link, the idle station is called. The user at the calling station must seize the Intercom link within 20 seconds or the Callback is canceled. †

To initiate Callback: ††

- Dial station number (busy).
- Press *. Splash tone heard at initiating station through speaker.
- Hang up. Signal tone heard when station becomes idle.^{†††}
- Lift handset. Idle station issued signal tone.

[†]Camp-On requests take priority over Callback requests.

^{††}Do not use console to establish call.

†††Callback is nonfunctional when Call Waiting is programmed for the automatic mode.

To cancel Callback:

- Lift handset or press SPK key.
- Press *.
- Press 1.
- Hang up or press SPK key.

CAMP-ON (Programmable)

If a busy station is called, a user can wait off-hook until the busy station resumes an idle condition. The station is automatically called when the idle condition is resumed.[†]

To initiate Camp-On: ††

- Call station (busy).
- Press 2. The busy signal stops.
- Do not hang up.
- Called station is automatically dialed when it resumes an idle condition. You hear ringing.

[†]Camp-On requests take priority over Callback requests. Camp-On cannot be used if the automatic mode of Call Waiting (Intercom) is programmed.

^{††}Do not use a DSS Console to establish call.

CLOCK FEATURES

The Display telephones are equipped with Liquid Crystal Display (LCD), Alarm feature, a Stopwatch and Call Duration Timer. The latter feature times the length of a CO call. All clock features programming must be done at Port 10, except for Alarm Settings.

(a) Alarm Setting (Programmable)

- Lift handset or press SPK key.
- Press ALARM key.
- Dial 1 or 2[†].
- Dial time in terms of 24-hour clock (e.g., 15:45 for 3:45 PM).
- Press *.
- Hang up or press SPK key.

[†]Two Alarm settings are available.

Alarm Stop

Press ALARM key.

Alarm Display

- Lift handset or press SPK key.
- Press ALARM key.
- Dial 1 or 2 (Alarm displayed).
- Hang up or press SPK key.

Alarm Clear

- Lift handset or press SPK key.
- Press ALARM key.
- Dial 1 or 2.
- Press *.
- Hang up or press SPK key.

(b) Call Duration Timer (Programmable)

- Lift handset or press SPK key.
- Establish CO line call (Timer starts after programmed delay).
- Hang up or press SPK key (Timer stops).
- Press CLOCK key to clear display (Date/time displayed).

NOTE: The Timer can be started manually by pressing the Timer key.

(c) Stopwatch (Permanent)[†]

- Press TIMER key (Timer starts).
- Press TIMER key (Timer stops).
- Press CLOCK key (Timer display cleared and date/time displayed).
- Lift handset or press SPK key.

[†]The Stopwatch feature has a total possible lapse time of 23 hours, 59 minutes, 59 seconds. Programming must be done at Port 10.

(d) Date/Time Setting (At System-Programming Station Only) (Programmable)

- Lift handset or press SPK key.
- Press OPAC/CONF key
- Press CLOCK key.
- Enter year (e.g., 1986).
- Press *
- Enter month and date (e.g., 0120 for January 20).
- Press *.
- Enter number for day of week:
 - 0-Sunday
 - 1—Monday
 - 2—Tuesday
 - 3-Wednesday
 - 4-Thursday
 - 5—Friday
 - 6—Saturday
- Press *.
- Enter time in terms of 24-hour clock (e.g., 1305 for 1:05 PM).
- Press *.
- Hang up or press SPK key.

CO LINE GROUPS (Programmable)

This feature permits the formation of 30 CO Line Groups. A line is permitted assignment to more than one CO Line Group. CO Line Groups provide a means of inward and outward access.

Incoming and/or outgoing access is programmable on a perstation basis. Incoming audible, (either day, night or day/ night), is also programmable on a per-station basis. Stations having access to incoming CO Line Groups and day audible receive ringing when Night Transfer is deactivated. Those having access to incoming CO Line Groups and night audible receive ringing when Night Transfer is activated. Two CO Line Groups can be assignable to each station for incoming access and two CO Line Groups for outgoing access.

COMMON USE LINE (Programmable)

A Common Use Line provides an additional CO Line Group for outgoing and incoming calls. Access is permitted to any station in the system regardless of that station's Class of Service.

COMPONENT COMMONALITY (Permanent)

The integration of different system components is permitted allowing the formation of a single system. For example, UMT-32/64 Twelve Line telephones can be used in an UMT-32/64 Twenty-four Line configuration. An UMT-32/64 Twelve or Twenty-four Line telephone can be used in an UMT-8/16.

CONFERENCE

The system provides four types of Conference:

Add-On Conference (Permanent)

This feature permits six internal parties to Conference with each other.

To initiate Add-On Conference[†] (internal parties only):

- Establish first Intercom call.
- Press OPAC/CONF key once.

To include more stations:

- Establish Intercom call.
- Press OPAC/CONF twice.

[†]Do not use a DSS Console to establish call.

Meet-Me Conference (Programmable)†

This feature permits five internal parties to Conference with a Paging party after an All Call or Internal Zone Page has been initiated.^{††}

To initiate Meet-Me Conference:

- Initiate page.^{†††}
- Press OPAC/CONF key.
- Paged stations go off-hook and press OPAC/CONF key.
 Meet-Me Conference is established.

[†]Stations must have zone access in order to join in Conference. Stations must join the conference within 30 seconds.

††Do not use a DSS Console to establish call.

†††If all Conferencing stations are not in the save Paging zone, an All Call Page must be used.

Multi-Line Conference (Programmable)

This feature permits two external parties to conference with a maximum of six internal parties.

To initiate Multi-Line Conference:

- Establish CO call.
- Press OPAC/CONF key. CO line key LED flashes intermittently.
- Establish second CO call.
- Press OPAC/CONF key. Three-party Conference established.

To add internal parties:

- Press OPAC/CONF key.
- Establish call with internal party.
- Press OPAC/CONF key.

Unsupervised Conference (Programmable)†

This feature permits an internal party to establish a conference between two external parties. The conference is maintained after the initiator hangs up. The initiating station can reenter the conference. Conference lines use disconnect supervision.

To initiate Unsupervised Conference:

- Establish CO call.
- Press OPAC/CONF key. Line key flashes intermittently (MOH, if programmed, heard at held station).
- Establish second CO call.
- Press OPAC/CONF key. (Three-way Conference enabled.)
- Press OPAC/CONF key.
- Hang up. Unsupervised Conference established.^{††}

To reenter the Unsupervised Conference:

- Lift handset or press SPK key.
- Press either line key.

To leave again:

- Press OPAC/CONF key.
- Hang up.

[†]Both Multi-Line Conference and Release of Abandoned Calls on Hold must be programmed in order for this feature to work.

^{††}Unsupervised Conference is established only after the Conference initiator hangs up.

DIAL PULSE (DP)-TO-TONE (DTMF) CONVERSION (Permanent)

Outward dialing is permitted on a line programmed for Dial Pulse (DP) signaling using both Dial Pulse and Tone (DTMF) signaling.

To initiate DP-to-DTMF conversion:

- Send Dial Pulse signals.
- Press #.
- Dial numbers. DTMF signals sent.

DIRECT STATION SELECTION (DSS) CONSOLE (Optional/Programmable) (UMT-32/64 ONLY)

This feature permits console access to the following features:

- (a) Call Transfer, Announced
- (b) Call Transfer, Unannounced
- (c) Direct Station Selection (DSS)
- (d) Do Not Disturb (DND) Override by DSS Console
- (e) Door Chime Box
- (f) External Alarm Repeating (LED)
- (g) Hold, System
- (h) Message Waiting
- (i) Night Audible
- (j) Paging, All Call
- (k) Paging, External Zone
- (1) Paging, Internal Zone

DSS Console access to these features is discussed under each individual feature description.

DIRECT STATION SELECTION (DSS) (Permanent)

Each *telephone* has 10 function (DSS) keys. Each key can erve as a storage bin for a station number. When an Intercom link is seized and a function key is pressed, the stored number is dialed. A DSS Console (in UMT-32/64 systems) has keys which can be used to quickly access stations. DSS Console keys cannot act as storage bins for user programmable data.

To store station numbers:

- Lift handset or press SPK key.
- Press DC key.
- Dial #.
- Press function key.
- Dial station number.
- To store another station number, do not hang up. Repeat all above steps except first.
- Hang up or press SPK key when finished.

To initiate an Intercom call using a telephone's DSS key:

- Lift handset or press SPK key.
- Press function key.

DISPLAY TELEPHONE FEATURES (Permanent)

Various feature checks are available at Display telephones: (a) Sustem Speed Dial Number Check

- Press CHECK key.
- Press DC key.
- Dial System Speed Dial number. System Speed Dial number displayed.

NOTE: If the number is greater than 12 digits, press * to display the remaining numbers.

- (b) DSS Station Number Check
- Press CHECK key.
- Press ICM key.
- Press function key. Station number displayed.
- Press CLOCK key. Display cleared.
- (c) Intercom Call Station Number Check
- (Before answering an incoming ICM call.)
- Press CHECK key. Calling station number displayed.
- (d) Message Waiting Originator Station Check
- Press CHECK keu.
- Press *. Station number displayed.
- (e) Station Speed Dial Number Check
- Press CHECK key.
- Press DC key.
- Press function key. Station Speed Dial number displayed.
- Press CLOCK key. Display cleared.

DO NOT DISTURB (DND) (Programmable)

Incoming CO and/or Intercom audible are blocked at a given station when Do Not Disturb is activated at that station. Three levels of DND are programmable:

- (a) Incoming CO audible is blocked with one key depression. LED flashes (level 1).
- (b) Incoming CO/ICM audible are blocked with one key depression. LED lights steadily (level 2).
- (c) 1. Incoming CO/ICM audible are blocked with one key depression. LED lights steadily (level 3).
 - 2. Incoming CO audible is blocked with a second key depression. LED flashes (level 3).

To initiate DND: (level 1)

 Press DND key once. LED flashes. Incoming CO audible blocked.

To cancel DND: (level 1)

 Press DND key once. LED extinguishes. Normal mode resumed.

To initiate DND: (level 2)

• Press DND key once. LED lights steadily. Incoming CO/ICM audible blocked.

To cancel DND: (level 2)

 Press DND key once. LED extinguishes. Normal mode resumed.

To initiate DND: (level 3)

- Press DND key once. DND LED lights steadily. CO/ICM incoming audible blocked.
- Press DND key again. DND LED flashes. CO audible blocked.

To cancel DND: (level 3)

 Press DND key until DND LED extinguishes. Normal mode resumed.

If a station is receiving transferred ringing from another station, that station cannot invoke DND. Likewise, ringing cannot be transferred to a station where DND has been invoked.

DO NOT DISTURB (DND) OVERRIDE BY DSS CONSOLE (Programmable) (UMT-32/64 ONLY)

A Do Not Disturb condition can be overridden by a DSS Console (except at an Executive station of an Executive Call Forward pair when Executive Call Forward is activated).

To initiate DND Override at a DSS Console:

- Lift handset or press SPK key.
- Press DSS key of appropriate station in DND condition.
 DND overridden.

DOOR CHIME BOX (Optional/Programmable)

A Door Chime Box acts as a doorbell and intercom. Ten stations, if programmed, receive chime tones when the Door Chime Box button is pushed. If the Door Chime Box is answered, a two-way conversation is made possible. Two Door Chime Boxes are permitted.[†] This feature, when in use, utilizes one Intercom link.

To initiate a chime tone and conversation:

- Press the chime tone button on the Door Chime Box. Programmed stations receive chime tones.
- Station user lifts handset or presses SPK key. Chime tones cease. Conversation possible.^{††}

To initiate a call to the Door Chime Box (without DSS Console):

- Lift handset or press SPK key.^{††}
- Press ICM key.
- Dial 88 for box 1 or 89 for box 2. Conversation possible.

To initiate a call to the Door Chime Box (with DSS Console):

- Lift handset or press SPK key.^{††}
- Press Door key on console. ICM key lights. Conversation possible.

[†]The number of chime tones is programmable. The first Door Chime Box, (88), issues a single tone when the Door Chime Box button is pressed. The second Door Chime Box, (89), issues a double chime tone when the Door Chime Box button is pressed.

^{††}Only stations with speakerphones can engage in a two-way conversation without lifting the handset.

DUAL COLOR LED FUNCTION (Permanent)[†]

CO line key LEDs have a dual color function:

- (a) When a CO line is seized, the green LED at the initiating station illuminates. The red LEDs at all other stations illuminate.
- (b) When a CO call is placed on either System Hold or Exclusive Hold, the green LED at the Hold initiating station flashes. The red LEDs at all other stations illuminate.
- (c) When a CO call is transferred to another station, the green LED at that station illuminates. Red LEDs at all other stations illuminate.

[†]Only Display telephones have Dual Color LED Function.

DUAL HANDSFREE HOTLINE (Programmable)

A Secretary station can call two Executive stations simultaneously, provided that both Executive stations are idle. Four Executive/Secretary pairs are permitted.[†]

To initiate Dual Handsfree Hotline:

- Seize Intercom line at Secretary station.
- Dial either Executive station number. Both stations are called. Handsfree Reply on Intercom available at both Executive Stations.

NOTE: When one station answers by lifting the handset or pressing the SPK key, the other station call is terminated.

[†]Dual Handsfree Hotline is available only if both Executive stations are idle.

A call cannot be transferred from a Secretary station to an Executive station using the RG INW key on a DSS console (if installed).

EXCLUDED/ALLOWED SYSTEM FEATURES (Programmable)

Certain features which are *enabled* upon initialization are *disabled* by this program. These are, by group:

- (1) Meet-Me Paging, Meet-Me Conference, Call Pickup.
- (2) Call Forward with Follow-Me, Night Audible.
- (3) Call Transfer Unannounced, Announced Call Transfer.

- (4) Add-On Conference.
- (5) Step Call, Camp-On, Message Waiting.
- (6) Music On Hold (selectability).
- (7) Class of Service Restriction Override for System Speed Dial Numbers.

EXECUTIVE CALL FORWARD (Programmable)

This feature permits the transfer of incoming Intercom and CO calls, with ringing, from a station designated the Executive, to a second, designated the Secretary. Eight Executive/Secretary pairs are allowed. All Executive stations are permitted assignment to the same Secretary station.[†]

To initiate Executive Call Forward:

 Press DND key. LED lights steadily at Executive station and flashes at Secretary station. Incoming CO and Intercom calls transferred.

To cancel Executive Call Forward:

Press DND key. LED extinguishes.

[†]The Executive station must be programmed for DND (level 2) in order for this feature to operate properly. The Secretary station should not be programmed for DND. Executive Call Forward will override DND at a Secretary's station (if programmed).

If a station is programmed for level 3 DND, Executive Call Forward can only be invoked if the first option in level 3 DND has been invoked.

EXECUTIVE OVERRIDE [Barge In] (Programmable)

This feature permits any programmed station to intrude on a CO line conversation. No warning tone is issued.

To initiate Executive Override:

- Lift handset or press SPK key.
- Press CO line key in use.

EXTERNAL ALARM, REPEATING (Programmable)

The system provides two alarm inputs for the connection of an external alarm system. Both station and External Speakers can receive alarm tones. A DSS Console, (if available) has an ALARM (LED) indicating Alarm status.



FLASH (Programmable)

The feature permits a station user to acquire another dial tone without losing the line in use. It also permits the access of PBX features including transfer.

To initiate Flash:

 (While using a line) press FLSH key. New dial tone available.

FLEXIBLE LINE APPEARANCE (Programmable)

In systems utilizing Component Commonality, it is sometimes useful to allow CO line calls to appear on different numbered line keys. For example, an UMT-64 has 24 CO lines but an UMT-32 telephone has only 12 CO line keys. Programming allows the extra CO-lines, i.e., lines 13-24, to appear at different numbered keys on a 12 line telephone. Line 14 can be programmed to appear on line key 12, for instance.

FLEXIBLE STATION NUMBER ASSIGNMENT (Programmable)[†]

The software permits the reassignment of station numbers, e.g., station 10 reassigned as station 12. Each number must, however, be dedicated to only one station. For instance, two stations cannot share the same number; there cannot be two station 12s.

[†]It is strongly recommended that this feature be programmed last in order to avoid confusion when programming other features.

GROUP HUNT (Programmable)†

Stations can be grouped under a Hunting Group Number. When this number is dialed, an idle station in the Hunt Group is sought out sequentially. The Hunting Group Numbers are:

Hunting Group Numbers 0 to 9

To initiate Idle Station Hunting:

- Lift handset or press SPK key.
- Press ICM key.
- Press #.
- Dial hunting group number. Idle station contacted.

[†]Step Calling can be used to step through stations programmed in a Hunt Group.

NOTE: If two Executive stations in a Hunt Group are also paired to a Secretary station via Dual Handsfree Hotline, and Idle Station Hunting is initiated from the Secretary station, both Executive stations are called at once.

GROUP HUNT TRANSFER (Programmable)

This feature permits the transfer of an established CO call with or without ringing (announced or unannounced) to an idle station in a Hunt Group. Hunt Groups have designated Hunt Group Numbers. When a Hunt Group Number is dialed, an idle station within the Hunt Group is sought out. The search is sequential starting from the first station entered during programming.

To initiate Group Hunt Transfer (announced):

- Establish CO call.
- Press ICM key.
- Press #.
- Dial hunting group number. Idle station contacted.[†]
- Announce call.
- Hang up.^{††}

To initiate Group Hunt Transfer (unannounced):

- Establish CO call.
- Press ICM key.
- Press #.
- Dial hunting group number. Idle station contacted.[†]
- Press RG INW key. Ringing at called station.
- Hang up.^{††}

[†]If all stations are busy, the Unannounced Transfer does not proceed.

^{††}If the transferred call is not answered within a programmed period of time, the call reverts back to the transferring party.

HANDSFREE REPLY ON INTERCOM (Permanent)

Stations can engage in internal conversations without the use of the handset.

HOLD

The system provides two types of Hold:

Exclusively held CO calls are retrievable at the Hold initiating station only. If an exclusively held call is not answered within a programmed period of time, a reminder signal is issued to the Hold initiating station. If the call remains unanswered for the duration of the recall period, Exclusive Hold is automatically canceled and the call is placed on System Hold.

System Hold can be initiated at any station. CO calls on System Hold are retrievable at any station. If a call on System Hold is not answered within a programmed period of time, a reminder signal is issued at the initiating station.[†]

[†]The recall can be disabled through programming.

Exclusive Hold (Programmable)

To initiate Exclusive Hold:

- Establish CO call.
- Press HOLD key twice. MOH, if available, is heard by the external party. CO line key flashes intermittently at initiating station and is steady at other stations.

To retrieve a call on Exclusive Hold:

- Lift handset or press SPK key.
- Press flashing line key.

System Hold (Permanent)

To initiate System Hold (without DSS):

- Establish CO call.
- Press HOLD key. CO line key LED flashes quickly at initiating station and slowly at other stations. MOH, if available, is heard by the external party.

To initiate System Hold (with DSS):

- Establish CO call.
- Press DSS, AC or DOOR key. CO line key flashes.

To retrieve a call on System Hold (without DSS):

- Lift handset or press SPK key.
- Press flashing CO line key.

To cancel System Hold (with DSS):

- Lift handset or press SPK key.
- Press flashing CO line key.

INTERCOM CALLS (Voice-Announced/Tone-Signaled—Programmable)

Station-to-Station (Intercom) calls are permitted. Voiceannounced or tone-signaled calling is available.

To initiate an Intercom call (Tone-Signaled Calling Programmed):

- Lift handset or press SPK key.
- Press ICM key.
- Dial extension number. Tone signal issued to called station.

OR

- Lift handset or press SPK key.
- Press ICM key.
- Dial extension number followed by 1. Voice call enabled at called station.

To initiate an Intercom call (Voice-Announced Calling Programmed):

- Lift handset or press SPK key.
- Press ICM key.
- Dial extension number. Splash tone issued to called station. Voice call enabled at station.

OR

- Lift handset or press SPK key.
- Press ICM key.
- Dial extension number followed by 1. Tone signal issued to called station.

LAST NUMBER DIALED (Permanent)[†]

A telephone number, when dialed, is stored under function key 10 and erases any previously stored data. The last number dialed can be redialed by a two-step or three-step operation. The last function key on telephones is reserved as a Last Number Redial key by Program 91. If a Save or Speed Dial number is stored under the last function key, Last Number Dialed capability is lost (using the function key) unless the bin is cleared.

To initiate Last Number Dialed:

- Seize idle CO line.
- Press DC key.
- Press *. Dial tone dropped. Last dialed number is redialed.

OR

- Seize idle CO line.
- Press last function key. Number dialed.

[†]Last Number Dialed is erased when Line Queuing is used.

^{††}Only Last Number Dialed numbers are erased. If a Save or Speed Dial number is stored under key 10, it must be erased by a separate procedure as follows (this reinitializes the function key as a Last Number Dialed bin):

- Lift handset or press SPK key.
- Press DC key.
- Press *.
- Press function key 10.
- Press DND key.
- Press *.
- Hang up.

LINE QUEUING (Queue Groups—Programmable)[†]

A station can "wait in line" in a CO Line Group for an available CO line. When a line becomes available, the CO line key LED flashes and initiates a recall tone to the queueing station. If the line is not seized within 20 seconds, the queue is dropped.

To queue for a CO line:

- Attempt to seize the desired CO line (CO line not available).
- Lift handset or press SPK key.

- Press HOLD key (Dial tone audible).
- Dial CO line group number (1-4). The HOLD key LED flashes intermittently.
- Hang up or press SPK key.
- When the line becomes available, a recall tone is initiated and the CO line key LED and the HOLD key LED flash intermittently.
- Seize the line. Dial tone audible.^{††}

NOTE: If more than eight stations are attempting to queue for one CO line, a reorder signal is initiated. If a user attempts to queue for a CO line which is not included in a queue group, a reorder signal is initiated.

[†]Use of this feature erases Last Number Dialed.

^{††}Telephones having Speakerphones can seize the line by pressing the SPK key.

MESSAGE WAITING (Programmable)[†]

A station or DSS Console (in UMT-32/64 systems) can leave a Message Waiting indication (flashing MW lamp) at another station. The Message Waiting indication can be left at a busy station as well as an unanswered one.

[†]Message Waitings can be left at several stations by a single station, but if the initiator cancels the Message Waiting, all are canceled simultaneously.

To initiate Message Waiting (without DSS Console):

- Dial Intercom number (busy or unanswered).
- Press 0. MW LED flashes intermittently.
- MW LED flashes at called station.
- Hang up.
- Called station user lifts handset or presses SPK key and presses ICM key followed by *. Originating station is called.
- MW LED extinguishes when originating station answers.

To cancel Message Waiting (without DSS Console):

- Lift handset or press SPK key.
- Press *.
- Press 0.
- Hang up or press SPK key. MW LED extinguishes.

ULTRACOM AT

o initiate Message Waiting (with DSS Console):

- Lift handset or press SPK key.
- Press DSS key.
- Press MW key.
- Hang up.

To cancel Message Waiting (with DSS Console):

- Press MW key.
- Press DSS key.

To reverse or cancel Message Waiting at destination station:

- Lift handset or press SPK key.
- Press ICM key.
- Press *. (Busy signal or no answer at Message Waiting initiating station).
- Press 0. (Reverses Message Waiting LED indications).

MICROPHONE ON/OFF (Permanent)

The MIC key on the telephone is used to enable or disable the microphone. When the microphone is disabled, the MIC key's LED is illuminated.

- o disable the Microphone:
- Press MIC key. LED illuminates. Microphone disabled.

To enable the Microphone:

Press MIC key. LED extinguishes. Microphone enabled.

MUSIC ON HOLD (MOH) (Programmable)

When a CO call is placed on Hold, MOH (if available) is heard by the external party. The available selections are:

- (1) "Home on the Range"
- (2) "Greensleeves"
- (3) External source (not user programmable)

The choice of music is selected during programming.

To select the MOH tune if internal MOH is used:

- At system programming station, lift handset or press SPK key.
- Press OPAC/CONF key.
- Press HOLD key.
- Dial 1 for "Home on the Range" or 2 for "Greensleeves."
- Hang up or press SPK key.

NIGHT CLASS OF SERVICE (Programmable)

Stations programmed for Night Class of Service assume a programmed Class of Service when Night Audible is activated. This Class of Service overrides the normal Class of Service. This feature can be used to prohibit or limit a station's outward access.

NIGHT AUDIBLE (Programmable)†

Incoming CO audible is permitted at stations programmed for night audible when Night Audible is activated. Each station receives incoming audible only if programmed for Night Audible.^{††}

To initiate Night Audible (without DSS):

- Lift handset or press SPK key.
- Press FW ME/RG TR key.
- Press #. FW ME/RG TR LED lights.
- Hang up or press SPK key.

To cancel Night Audible (without DSS):

- Lift handset or press SPK key.
- Press FW ME/RG TR key twice. FW ME/RG TR LED extinguishes.
- Hang up or press SPK key.

To initiate Night Audible (with DSS):

Press NT key on DSS console. NT key LED illuminates.

To cancel Night Audible (with DSS):

Press NT key. NT key LED extinguishes.

[†]Night Class of Service is activated, for programmed stations, when Night Audible is activated.

^{††}Programming allows two options of initiation:

- (a) Only the system programming station can activate or deactivate Night Audible.
- (b) Any station can initiate Night Audible for its particular CO audible group except for the system programming station which initiates for the whole system.

OFF-HOOK SIGNALING WITH HANDSFREE REPLY (Programmable)

While on a call initiated from a station (other than a monitored or Handsfree Answerback call), a user may be signaled over the station's speaker, indicating that another call (either ICM or CO) is attempting to reach that station.

If on a Handsfree call, a tone (or tones) will be broadcast over a station's speaker, temporarily interrupting the call. A single tone indicates that another station user is attempting to reach that station. Two tones indicate that the attendant is attempting to reach that station. There is no tone indication for an incoming CO call.

To answer the waiting caller while on a Handsfree call:

 Press ICM to answer a waiting Intercom call (an outside call is automatically put on Hold; an Intercom call is dropped); speak towards the phone.

OR

Press HOLD to place an outside call on Hold, then press
the flashing line key. If you have a phone equipped with
the Handsfree feature, you can just speak towards the
phone (the SPK LED will be illuminated); otherwise, you
must lift the handset to talk.

When on a handset call, you may hear someone's voice come over the speaker of your phone or a burst of tones or ringing. If you hear a person's voice, you can reply Handsfree, while maintaining the call on your handset. If you hear a tone (or tones) accompanied by a flashing ICM key, another station user is trying to reach you. If you hear ringing accompanied by a flashing line key, an outside call is waiting to be answered.

To answer the waiting caller while on a handset call:

 Press ICM to answer a waiting Intercom call (an outside call is automatically put on Hold; an Intercom call is dropped); speak towards the phone.

OR

 Press HOLD to place an outside call on Hold, then press the flashing line key. If you have a phone equipped with the Handsfree feature, you can press the SPK key, hang up the handset, and speak towards the phone.

To signal someone who is busy on a call (off-hook) at another station:

 Dial desired extension or press DSS key (if a DSS Console is installed).

- If you hear:
 - A single beep: Speak to the other party.
 - Tone (or tones): Hang up or wait for a reply or dial 1[†], hear a beep and speak to the other party. If, after dialing 1, you continue to hear tones, you must either hang up and try again, or wait for the other party to reply.
 - A busy tone: ** Dial 1. If you hear:
 - A beep: Speak to the other party.
 - A tone: Hang up or wait for a reply, or dial 1 again, hear a beep, and speak to the other party.
 - Continued busy tone: Hang up and try again later.

[†]If you are using the DSS Console, press SG/VC instead of dialing 1.

^{††}If you hear a busy tone when using a DSS Console, there is no other way to reach the station you are attempting to call.

NOTE: If the called station user presses the CHECK key (on a display telephone), the number of the calling station is displayed. Press CLOCK key to return to the time/date display.

OUTSIDE CALLS (Permanent)

When an outside call rings your phone, a Line key flashes red. The Line key turns green whenever you answer your phone or place a call.

To answer an outside call:

- Lift handset.
- Press flashing Line key.

To place an outside call:

- Lift handset.
- Press Line key.
- Dial telephone number.

PAGING, ALL CALL (Paging Groups—Programmable)

All Call Paging, if programmed, is broadcast to *all* page zones. An All Call Paging can be issued from a station or DSS Console (in UMT-32/64 systems *only*).

o initiate All Call Paging (without DSS):

- Lift handset or press SPK key.
- Press ICM key.
- Dial 80. Double splash tone heard.[†]
- Paging available.

To initiate All Call Paging (with DSS):

- Lift handset or press SPK key.
- Press AC key on DSS Console. Double splash tone heard.[†]
- Paging now available.

[†]A double splash tone is programmable.

NOTE: Program 91 reserves the last function key (key 10) as an All Call Paging key.

PAGING, ALL EXTERNAL ZONE (Optional/Programmable)

The external page zones can receive All Call Paging. An All External Zone Page can be issued from a station or DSS Console (in UMT-32/64 only).

.o initiate All External Zone Paging (without DSS):

- Lift handset or press SPK key.
- Dial 85. Double splash tone heard.[†]
- Paging available.

To initiate All External Zone Paging (with DSS):

- Lift handset or press SPK key.
- Press EAZ key on DSS Console. Double splash tone heard.[†]
- Paging available.

[†]A double splash tone is programmable.

PAGING, EXTERNAL ZONE (Optional/Permanent)

The external page zones can be paged individually. Two external page zones are available. External Zone Paging can be issued from a station or DSS Console (in UMT-32/64 only).

To initiate External Zone Paging (without DSS Console):

- Seize Intercom line.
- Dial 86 for Zone 1 or 87 for Zone 2. Double splash tone is heard.[†]

To initiate External Zone Paging (with DSS Console):

- Lift handset or press SPK key.
- Press EZ1 key for Zone 1 or EZ2 key for Zone 2 on DSS console. Double splash tone heard.[†]

[†]A double splash tone is programmable.

PAGING, INTERNAL ZONE (Paging Groups — Programmable)

Stations programmed for access to a page group can receive an Internal Zone Page.

To initiate Internal Zone Paging (without DSS Console):

- Lift handset or press SPK key.
- Press ICM key.
- Dial zone number.

Zone 1 2 3 4 Number 81 82 83 84

Make page announcement.

To initiate Internal Zone Paging (with DSS Console):

- Lift handset or press SPK key.
- Press IZ 1, 2, 3, 4 for Zones 1, 2, 3, 4, respectively.
 Double splash tone heard.[†]

[†]A double splash tone is programmable.

PAGING, MEET-ME (Programmable)

After the initiation of All Call or Internal Zone Paging, a paged party can use a station to reply to the page and engage in a private conversation with the page initiator.

To initiate Meet-Me Paging: ††

- Initiate a Page.
- Press #.

To respond from a station:

- Lift handset.
- Press #.
- Conversation possible.

[†]The paged station must be programmed access to a page group in order to receive or respond to the page. If an internal zone is paged, the paged party can only respond from a station granted access to the zone that was paged.

^{††}Do not use a DSS Console to initiate Paging.



PRESELECTION (Permanent)

To preselect a line key, press the desired line key, lift the handset or press the SPK key within three seconds. A line key cannot be preselected if a station is programmed for Single Step Access. Line key preselection supercedes Ringing Line Preference or Recall Line Preference.

PRIVATE LINE (Programmable)

A line can be dedicated to a specific station for exclusive use by that station.[†] Both incoming and outgoing access is granted through programming.

[†]Executive Override permits a second station to intrude on a Private Line conversation.

RECALL LINE PREFERENCE (Programmable)

This feature permits single step seizure of a recall. To initiate Recall Line Preference:

• Lift handset or press SPK key.

RELEASE OF ABANDONED CALLS ON HOLD (Programmable)

If an outside party is placed on Hold and that party hangs up, this feature permits the release of the held line. The CO must provide disconnect supervision.

RING TRANSFER (Permanent)

This feature permits the transfer of incoming CO calls with ringing from one station, which has incoming access and audible, to a second station (destination station).

To initiate Ring Transfer:

- Lift handset or press SPK key.
- Press FW ME/RG TR key.
- Dial the extension of the destination station.
- Press *. Splash tone heard at originating station. The FW ME/RG TR LED flashes slowly at originating station and fast at transferred station.
- Hang up or press SPK key.

To cancel Ring Transfer:

- Lift handset or press SPK key.
- Press FW ME/RG TR key twice. The FW ME/RG TR LED extinguishes.
- Hang up or press SPK key.

RINGING LINE PREFERENCE (Programmable)

Single-step seizure of an incoming CO call is available through programming. Selective use of this feature permits only those stations with either incoming access and audible or just incoming access to utilize Ringing Line Preference.

To initiate Ringing Line Preference:

- (Incoming call or recalled idle line.)
- Lift handset or press SPK key. CO call is seized.

ROOM MONITOR (Programmable)[†]

Stations can monitor the environmental sounds of other stations. ††

To initiate Room Monitor (at the monitored station):

- Lift handset or press SPK key at monitored station.
- Press OPAC/CONF key.
- Press FLSH key. MON lamp flashes.
- Hang up or press SPK key.

To initiate Room Monitor (from the monitoring station):

- Press OPAC/CONF key at monitoring station.
- Press FLSH key. MON lamp flashes intermittently.

To cancel Room Monitor (at the monitored station):

- Lift handset or press SPK key.
- Press OPAC/CONF key.
- Press FLSH key. MON lamp extinguishes.
- Hang up or press SPK key.

To cancel Room Monitor (from the monitoring station):

- Press OPAC/CONF key.
- Press FLSH key. MON lamp extinguishes.

[†]Room Monitor is unavailable to monitoring stations if the monitored station:

- (a) Seizes a CO line or Intercom link.
- (b) Lifts the handset or presses the SPK key (LED illuminates).

he monitor condition returns when the above, a and/or b, are canceled. Room Monitor is unavailable to a monitoring station if it performs any of the above a and/or b. The monitor condition returns following their cancelation.

^{††}Room Monitor, when activated, utilizes an Intercom link.

SAVE (Permanent)[†]

A telephone number is permitted storage in system memory and is retrievable for later use by that station. The stored number remains in memory until replaced by a new one.

To Save a number:

- Seize CO line.
- Dial number to be stored.
- Press DC key twice.
- Hang up. Number is stored.

If a number other than a Save, (e.g., Speed Dial number is stored under Save), the Save does not operate unless the Save function is restored by the following procedure:

- Lift handset or press SPK key.
- Press DC key. Dial tone audible.
- Press *. Dial tone ceases.
 Press function key.
- Press DND key.
- Press #.
- Hang up.

To dial a Saved number:

- Lift handset.
- Presss line key.
- Press DC key.
- Press #.

OR

- Seize idle CO line.
- · Press appropriate function key. Number dialed.

[†]Function key 9 is reserved by program 91 as a Save storage bin. If another key is used, the Save is stored under the selected key and key 9.

SINGLE STEP ACCESS (Programmable)

An idle CO/Intercom line can be seized while the handset is on-hook by the use of this feature.

To initiate Single Step Access:

Press idle line key. CO line seized.

SPEED DIAL (Permanent)

Two types of Speed Dial are available:

- (a) System Speed Dial
- (b) Station Speed Dial

System Speed Dial numbers are stored under a two-digit code by the system programming station and can be retrieved for use by any station in the system. Station Speed Dial numbers can be stored by any station and retrieved for use only by the station(s) which store them. Numbers can be chained. This is useful if a number exceeds the maximum allowed length. A Flash, stop, pause or DP to Tone (DTMF) Conversion can be stored as part of a Speed Dial number but each reduces the maximum number of digits allowed by one. Function keys 9 and 10 are reserved as Save and Last Number Redial, respectively by Program 91. Speed Dial Numbers can be checked on Display telephones.

System Speed Dial

To store a System Speed Dial number:

- (At system programming station) lift handset or press SPK key.
- Press DC key. Dial tone audible.
- Press *. Dial tone ceases.
- Enter two-digit code (00-99).
- Dial number.
- To insert a Flash, press FLSH key.
- To insert a Stop, press OPAC/CONF key.
- To insert a three-second Pause, press RG INW key.
- To insert a DP to Tone (DTMF) Conversion, press #.
- Hang up or press SPK key.

To retrieve a System Speed Dial number:

- Lift handset or press SPK key at any station.
- Seize idle CO line.
- Press DC key. Dial tone audible.
- Enter two-digit code. Number dialed out.[†]

[†]If a Flash, Stop or DP to Tone (DTMF) conversion is programmed, press * to continue dialing when dialing initially ceases.

Station Speed Dial

To store a Station Speed Dial number:

- Lift handset or press SPK key.
- Press DC key. Dial tone audible.
- Press *. Dial tone ceases.
- Press function key.
- Dial number (maximum of 18 digits). ††
- Hang up.

††NOTE:

- To insert a Flash, press FLSH key.
- To insert a Stop, press OPAC/CONF key.
- To insert a three-second Pause, press RG INW key.
- To insert a DP to Tone (DTMF) Conversion, press #.

To retrieve a Station Speed Dial number:

- Lift handset or press SPK key.
- Seize idle CO line.
- Press function key. †††Number dialed out. ††††

†††If a Flash, Stop or DP to Tone (DTMF) conversion is programmed, press * to continue dialing when dialing initially ceases.

††††If chained numbers are involved, press the next function key after the previous one has dialed out.

STEP CALLING (Permanent)

If a called station is busy, an idle one is sought by the use of this feature. The next station called is chosen sequentially from lowest to highest (e.g., if station 11 is busy, then station 12 is called and so on)[†].

To initiate Step Calling:

- Call Intercom station (busy).
- Press #. Next idle station automatically receives ringing.

[†]If at any time during the Step Calling the user's station or an unoccupied port is called, a reorder tone is issued and the procedure is halted.

THREE MINUTE WARNING TONE (Programmable)

This feature initiates three quick splash tones through a station speaker during an outgoing call after every three minute period.

TOLL RESTRICTION (Programmable)

This feature restricts the dialing capabilities of selected stations. A station is assigned a Class of Service and is permitted dialing access to those categories of numbers granted by that class.

TRANSFER RECALL DISPLAY (Permanent for UMT-32/64 only)

This feature allows an Attendant Display telephone to transfer a call by using a DSS Console to display the line number and number of the extension to which the call was transferred, should the transferred call recall.

To initiate Transfer Recall Display:

- Press OPAC/CONF at display telephone.
- Press RG INW on DSS console. The HOLD key LED is steadily lit.

To cancel Transfer Recall Display:

- Press OPAC/CONF at display telephone.
- Press RG INW on DSS console. The HOLD key LED extinguishes.

APPENDIX C ULTRACOM AT SMDR PCB

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1. INTRODUCTION

1.01 The SMDR (C-SMDR-SA and C-SMDR-LA) PCBs provide Station Message Detail Recording data (SMDR), such as class of call, date and time made, duration, and telephone number dialed, including Account Codes. Each is an optional piece of equipment that enables a customer to manage the operation of an ULTRACOM AT key telephone system more efficiently and economically.

- 1.02 The SMDR (C-SMDR-SA and C-SMDR-LA) PCBs contain the circuitry for controlling printing options and formatting transmission data. These units contain a buffer for storing station message data for a maximum of eight calls per CO line when the printer is busy.
- 1.03 The C-SMDR-SA PCB is used in UMT-8/16 Systems.
- 1.04 The C-SMDR-LA PCB is used in UMT-32/64 Systems.
- 1.05 The UMT-32/64 system must be equipped with a C-CPU-B Central Processor Unit PCB to ensure operation of the SMDR PCB. The UMT-8/16 system must be equipped with a C-5ROU-1B PCB.
- 1.06 An RS-232-C compatible cable and recording device must be supplied to provide an SMDR printout.

2. COMPONENTS

2.01 The SMDR (C-SMDR-SA and C-SMDR-LA) PCBs have two Dual-In-Line Package (DIP) switch assemblies (SW1, SW2) containing eight switches, and one eight-position slide switch (SW3). These three switches are used to determine the SMDR output and baud rate of the SMDR PCB. An additional switch, SW4, is an externally-mounted rocker switch that is used for in/out service.



3. FEATURES

ACCOUNT CODE ENTRY

3.01 An ACCOUNT CODE ENTRY is provided as a part of the station message detail. This code (eight digits maximum) is entered by the station user in the following sequence: *, code digits, *. Other parties on the line are unable to detect the Account Code Entry.

NOTE: Restricted stations are unable to enter Account Codes.

BUFFER MEMORY

3.02 The SMDR BUFFER MEMORY stores SMDR data for a maximum of eight calls per CO line. This allows sufficient time to change paper on the recording device. Data is stored in the buffer when the printer status switch is placed in the OUT OF SERVICE position. When the recorder is returned to service by placing the printer status switch in the IN SERVICE position, the SMDR automatically transmits a new heading line followed by the SMDR data stored in the buffer.

3.03 If the printer uses the Data Terminal Ready Lead (DTR), then the data stored in the buffer will be printed without a new heading line.

BUFFER OVERFLOW INDICATION

3.04 If eight or more calls are made on a CO line when the printer is out-of-service, the BUFFER OVER-FLOW INDICATION (BFL) is printed on the hour after the printer is returned to service. This indication includes the date, time, and number of calls missed.

ALL TRUNKS BUSY

3.05 An ALL TRUNKS BUSY (ATB) printout indicates that all lines in a Queue Group have been busy for more than one minute. When one or more of the lines in the Queue Group return to an idle state for more than one minute, the ATB data is transmitted to the printer/recorder.

STATION USER IDENTIFICATION

3.06 The SMDR printout provides information indicating the station is involved in an outside call. The SMDR also provides information regarding the extension that answered an incoming call and the extension that placed an outgoing call.

NOTE: The last extension to control the call is listed on the printout for that particular call.

OPTIONAL FEATURES (Figures C-1 and C-2)

Option Switch (SW1)

3.07 Option Switch SW1 is used to select optional features. SW1 is a DIP switch assembly containing eight Single Pole, Single Throw (SPST) switches. The SPST switches are numbered SW1-1 to SW1-8. The optional features and switch controls are shown in the following table.

NOTE: Switch SWI-8 is not presently used and must be set to the OFF position.

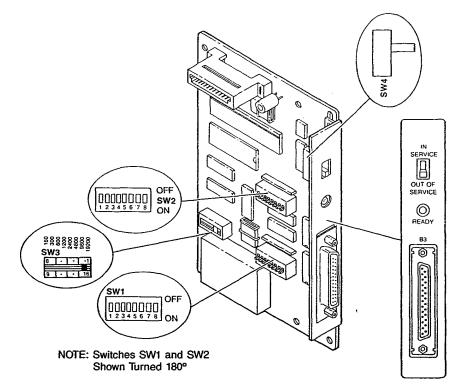


Figure C-1 C-SMDR-SA PCB ASSEMBLY FOR UMT-8/16 INSTALLATION

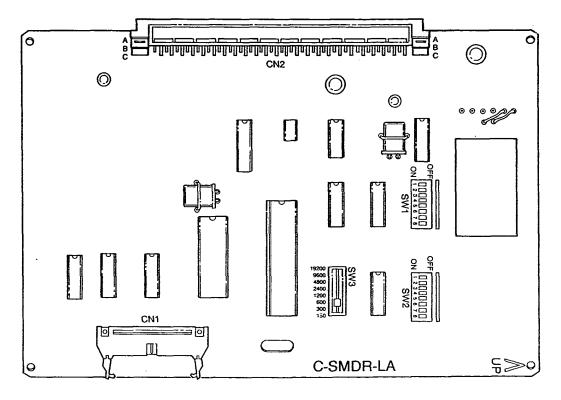


Figure C-2 C-SMDR-LA PCB ASSEMBLY FOR UMT-32/64 INSTALLATION

SW1-1	Dial Digits Option OFF: Does not print if number is 7 digits or less in length. ON: Prints regardless of number length.
SW1-2	Call Duration Option • OFF: Does not print if call duration is less than 1 minute. ON: Prints regardless of duration of call.
SW1-3	Counter Start Option *OFF: Starts after 1 second. ON: Starts after 5 seconds.
SW1-4	Account Code Option OFF: An Account Code <i>must</i> be entered before dialing. ON: An Account Code <i>can</i> be entered.
SW1-5	Incoming Call Option OFF: Prints only when an Account Code is entered. ON: Always prints.
SW1-6	Barred Outgoing Option OFF: Prints attempted restricted calls. ON: Does not print attempted restricted calls.
SW1-7	OPX Account Code Option OFF: OPX users <i>can</i> enter Account Codes. ON: OPX users <i>cannot</i> enter Account Codes.
SW1-8	Not Used OFF: Switch must be set in this position.

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Option Switch (SW2)

3.08 Option Switch SW2 contains eight SPST switches (SW2-1 to SW2-8) that are not used. These switches must be in the OFF position.

Variable Baud Rate Switch (SW3)

3.09 Option Switch SW3 provides a Variable Baud Rate for transmitting SMDR data to a recording device. The settings for this switch, from left to right are:

POSITION	BAUD RATE
1	150
2	300
3	600
4	1200
5	2400
*6	4800
*7	9600
*8	19200

*NOTE: A Baud Rate of 2400 or less is recommended.

OUTPUT DATA FORMAT

- 3.10 The SMDR port is RS-232-C compatible. The output is asynchronous ASCII code formatted as 7) data bits, no parity, one start bit and one stop bit. The baud rate is adjustable from 150 to 9600 baud. Selecting higher baud rates may not substantially increase data transfer rates because of the processing which occurs between character transmissions.
- 3.11 The SMDR automatically provides the line feed operation. The field for outgoing calls can accommodate up to 24 digits extending into the ring field. The ring field is not used for outgoing calls.

^{*}Must be set in OFF position if the C-CPU-C PCB is installed. In this case, the option is programmed by using Program 67. (See 01751 SWU 01.)

4. SMDR PCB INSTALLATION (Figures C-1, C-2, C-3, C-4)

CAUTION: WHEN INSERTING OR REMOVING PCBS, POWER TO THE UNIT SHOULD BE TURNED OFF AND THE UNIT DISCONNECTED. ALSO, USE A GROUNDED WRIST STRAP WHEN HANDLING PCBS.

INSTALLATION, UMT-8/16

- **4.01** Remove the cover from the UMT-16 and the rectangular piece of black metal located below the ground lug (G) on the left side of the KSU.
- 4.02 Select the baud rate (switch SW3) and desired options on the Option Switch (SW1) located on the C-SMDR-SA PCB.
- **4.03** With the components of the SMDR (C-SMDR-SA) PCB facing *inward*:
 - Insert the PCB into the KSU (Figures C-1 and C-3), making sure that the male connector (CND) on the SMDR PCB fits snugly into the female connector (CND) on the C-CP4SU-A PCB. The RS-232-C connector on the SMDR (C-SMDR-SA) PCB should protrude through the opening on the left side of the KSU.
- 2. Secure the PCB in place with the two screws included.
- Plug the desired SMDR recording device into the RS-232-C connector (B3) on the SMDR (C-SMDR-SA) PCB.
- 4. Verify that a C-5ROU-1B PCB is installed.
- 5. Replace the cover on the KSU.

INSTALLATION, UMT-32/64

- **4.04** To install the C-SMDR-LA PCB (Figures C-2 and C-4), complete the following steps:
- 1. Turn off the power to the KSU.
- Remove the black panel from the right side of the UMT-32 KSU, and install the SMDR Interface Panel and ribbon cable assembly into the empty slot. Secure the Panel and assembly using the mounting screws from the black panel.

- Select the baud rate (Switch SW3) and desired options on the Option Switch (SW1) located on the C-SMDR-LA PCB. If the C-CPU-C PCB is to be installed in this system, set SW1-2 and SW1-3 to OFF.
- 4. Insert the C-SMDR-LA PCB into the slot labeled MISC. on the UMT-32 KSU.
- Plug the ribbon cable connector into the jack labeled CN-1 on the lower front edge of the C-SMDR-LA PCB. Make sure that the red conductor on the ribbon cable is facing up.
- 6. Verify that a C-CPU-B or a C-CPU-C PCB has been installed.

5. POWER-UP

- 5.01 Put the printer status switch in the OUT OF SERV-ICE position and connect the RS-232-C recorder input cable to the RS-232-C jack on the side of the unit.
- 5.02 Place the WR switch, located on the C-CPU- PCB in the UP position and turn on the system power. Wait approximately ten seconds, then move the WR switch to the DOWN Position. This procedure initializes the system.
- **5.03** Place the printer status switch on the panel to IN SERVICE. The heading line should print. If the heading line is properly printed, then proceed.
- **5.04** If the heading line is not printed, or if it is printed incorrectly, the following items should be checked:
- 1. System power ON.
- 2. Recorder power switch ON.
- 3. Interface cable connected.
- 4. RS-232-C cable connected.
- 5. RS-232-C cable wiring (pin 20).
- 6. Baud rate compatibility.
- 7. Correct C-CPU- PCB software installed.
- 8. Instructions for printer.
- 5.05 Program the system using the ULTRACOM AT System Manual (P/N 01750 IMG) or the ULTRACOM AT (P/N 01751 SWU 01).

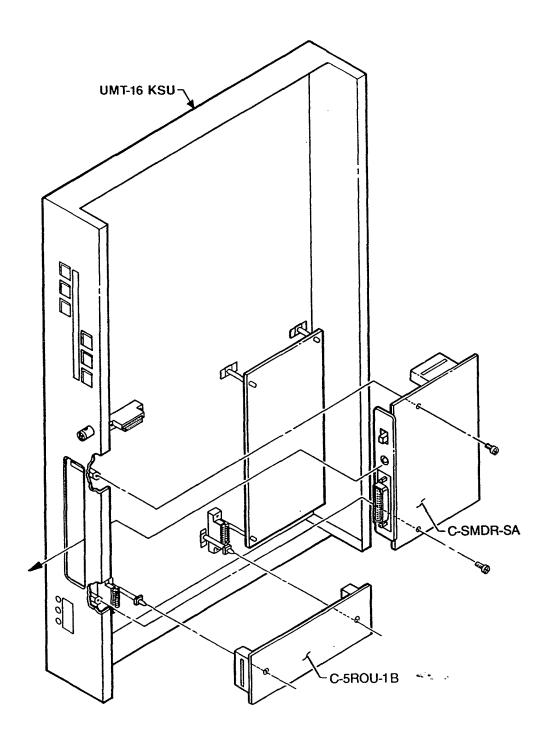


Figure C-3 C-SMDR-SA INSTALLATION FOR UMT-8/16 SYSTEMS

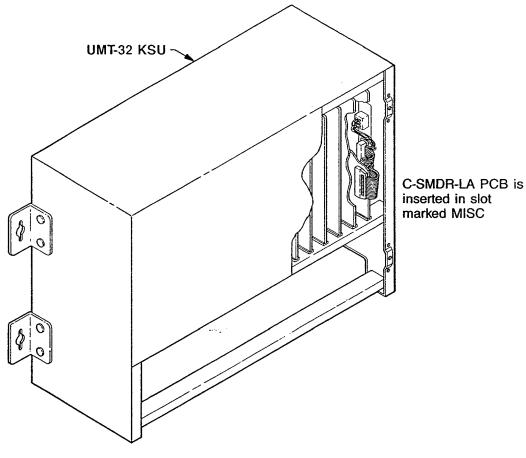


Figure C-4 C-SMDR-LA INSTALLATION FOR UMT-32/64 SYSTEMS

6. OPERATIONAL SPECIFICATIONS

- 6.01 SMDR feature operation is automatic and transparent to users of the key system, except as noted below. When an outside call is completed, SMDR data is printed automatically unless the system options limit the SMDR information to be printed.
- **6.02** Certain SMDR data prints out upon certain system or SMDR status conditions (i.e., All Trunks Busy, Buffer Overflow, etc.).

- **6.03** SMDR provides no information for internal (intercom) calls.
- 6.04 The RS-232-C interface at the SMDR assembly is used exclusively for SMDR data output and has no bearing on system option programming or system features. It cannot be used to address system memory.



FEATURE OPERATION

ACCOUNT CODE ENTRY

6.05 ACCOUNT CODE ENTRY is optional (not required) or can be forced (required), depending on the setting of SW1-4. The following operations apply to key telephones:

Optional Account Code Entry:

- (1) Place an outgoing call or receive an incoming call.
- (2) Dial *.
- (3) Dial Account Code (1-8 digits).
- (4) Dial * again.

NOTE: No signaling is sent to the outside line for steps 2, 3 and 4 above.

NOTE: If the outside call requires the use of the *key, the Account Code Entry procedure must be used. This means that the third depression of the *key sends DTMF signals to the external line.

Forced Account Code Entry:

- (1) Select an outgoing line for an outgoing call.
- (2) Dial *.
- (3) Enter Account Code (1-8 digits).
- (4) Dial * again.
- (5) Dial outgoing call, either manually or using Speed Dial.

NOTE: Forced Account Code Entry does not apply to incoming calls.

6.06 OPX Account Code Entry depends on the settings of switches SW1-4 and SW1-7. The procedure for entering an Account Code from an OPX is as follows:

Optional OPX Account Code Entry:

- (1) Lift handset and answer incoming call or select outgoing line.
- (2) Hookflash and dial 9.
- (3) Enter Account Code (1-8 digits).
- (4) Hookflash. For incoming calls, outside party is reconnected. For outgoing calls, dial outside number and establish call.

DATA OUTPUT (Figure C-5)

6.07 The following describes SMDR data output:

CLS (CLASS):

INC (Incoming): Prints for incoming calls. OTG (Outgoing): Prints for outgoing calls.

BRD (Barred): Prints for outgoing calls attempted from a restricted station.

BFL (Buffer Overflow): If more than eight calls on a CO line are made while the printer is not in service, the Buffer Overflow indication is printed on the hour after the printer is returned to service. This indication includes the date, time, and number of calls missed.

ATB (All Trunks Busy): An All Trunks Busy (ATB) printout indicates that all lines in a Queue Group have been busy for more than one minute. When one or more of the lines in the Queue Group return to an idle state for more than one minute, the ATB data is transmitted to the printer/recorder.

NOTE: The data transmitted indicates the Queue Group involved under the line field.

DATE Month, Day, Year

TIME HH:MM:SS call placed in a 24-hour format.

LINE Line that call is placed on.

DURATION HH:MM:SS length of call.

ST# ICM number of station that received/placed

call.

DIALED# Prints number dialed by station user up to

24 digits.

RING Duration that incoming call rings before

being answered.

ACCT. NO. Optional Account Code of up to eight digits.

PAGE XXX Indicates page currently printed.

CLS	DATE	тіме	LINE	DURATION	ST#	DIALED#	RING	PAGE XXX ACCT.#
OTG	03/10/86	12:03:06	04	00:00:14	10	8880960		
OTG	03/10/86	12:03:22	04	00:00:15	10	8880960		
BFL	03/10/86	13:00:00	02					
OTG	03/10/86	13:00:48	04	00:01:57	10	2415		11188
INC	03/10/86	13:00:49	05	00:01:30	11		00:25	
BRD	03/10/86	13:03:31	05	00:00:01	10	1		
ATB	03/10/86	13:02:11	04	00:07:59				
INC	03/10/86	12:00:46	04	00:00:32	23		00:00	
INC	03/10/86	12:01:12	05	00:00:14	10		00:22	
INC	03/10/86	12:02:19	04	00:00:55	10		00:12	
OTG	03/10/86	13:01:41	04	00:00:18	13	12125551212		
OLC	03/10/86	13:02:48	04	00:00:10	15	1234567890123456789	01234	

Figure C-5 SMDR OUTPUT FORMAT FOR UMT-8/16/32/64 SYSTEMS

7. OPTION TESTS AND FAULT LOCATIONS

7.01 The following procedures should be used for testing an ULTRACOM AT system equipped with an SMDR PCB, and for locating faults, should any arise. The tests are divided into two categories (SMDR/Recorder Interface test and Option tests) and should be performed in the order presented.

SMDR/RECORDER INTERFACE TEST

7.02 On the small panel containing the RS-232-C connector from the SMDR PCB, flip the Printer Status Switch from the OUT OF SERVICE position to the IN SERVICE position. A header line should appear. If the

header line does not appear, do the following:

- (1) Turn off system power.
- (2) Remove SMDR PCB.
- (3) Check switch settings.
- (4) Reinstall PCB.
- (5) Turn on system power.

OPTION TESTS

7.03 The following tests should be performed to determine if the C-SMDR-SA or C-SMDR-LA PCB, and the printer are operating properly.

NOTE: Consideration of other switch settings is required when performing each of the option tests, as these options interact.



SWITCH SW1-1 DIAL DIGITS OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From a key telephone: (1) Place a seven-digit call (including PBX Access Codes, if necessary). (2) After one minute, hang up.	The call is completed. The Line key LED extinguishes and the SMDR prints.
OFF	From a key telephone: (1) Place a seven-digit call (including PBX Access Codes, if necessary). (2) After one minute, hang up. (3) Place a call with more than seven digits. (4) After one minute, hang up.	The call is completed. The Line key LED extinguishes, but no SMDR prints. The call is completed. The Line key LED extinguishes and the SMDR prints.

C1750IM.1-1

SWITCH SW1-2 CALL DURATION OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From a key telephone: (1) Place a call. (2) After one minute, hang up. (3) Place a call, but complete it in less than one minute.	Obtain an SMDR printout. Obtain an SMDR printout.
OFF	(1) Place call.(2) After one minute, hang up.(3) Place and complete a call within one minute.	Obtain an SMDR printout. No SMDR printout.

T1750IM.1-2

SWITCH SW1-3 COUNTER START OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From a key telephone: (1) Place a call; hang up before five seconds. (2) Place a call longer than five seconds.	No SMDR printout. Obtain SMDR printout.
OFF	(1) Place a call longer than 1 second; hang up before five seconds.	Obtain SMDR printout.

T1750IM.1-3

SWITCH SW1-4 ACCOUNT CODE OPTION

SWITCH SETTING	TEST	VERIFICATION
ON From a key telephone: (1) Lift handset. (2) Press a Line key. (3) Dial a known number. (4) Hang up.		Dial tone is heard and corresponding Line key is illuminated at all telephones. Call is completed. Line key LED extinguishes.
OFF	 (1) Lift handset. (2) Press a Line key. (3) Dial a known number. (4) Dial * Account Code *, followed by a known number. (5) Hang up. 	Dial tone is heard and corresponding Line key is illuminated at all telephones. Call is not completed. Call is now completed. Line key LED extinguishes.

T1750IM.1-4

SWITCH SW1-5 INCOMING CALL OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From a key telephone: (1) Place a call to another CO line in the system. (2) Answer the incoming call.	Incoming call rings in. Call is completed.
	(3) Hang up at both telephones.	Both incoming and outgoing calls are printed.
OFF	(1) Place a call to another CO line in the system.	Incoming call rings in.
1	(2) Answer the incoming call. (3) At the answering station, dial * Account Code *.	Call is completed.
	(4) Hang up at both telephones.	Both incoming and outgoing calls are printed.

T1750IM.1-5



SWITCH SW1-6 BARRED OUTGOING OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From a key telephone: (1) Attempt to place a restricted call from a restricted phone.	A fast busy tone is received. SMDR is not printed.
OFF	(1) Attempt to place a restricted call from a restricted phone.	A fast busy tone is received. SMDR is printed.

T1750IM.1-6

SWITCH SW1-7 OPX ACCOUNT CODE OPTION

SWITCH SETTING	TEST	VERIFICATION
ON	From an OPX: (1) Place a call to another CO line in the system, and answer it. (2) At the OPX, press the hookflash, dial 9, the Account Code, then the hookflash once more. (3) Hang up.	Call rings in. Return to call. Account Code <i>does not</i> print.
OFF	 Place a call to another CO line in the system, and answer it. At the OPX, press the hookflash, dial 9, the Account Code, then the hookflash once more. Hang up. 	Call rings in. Return to call. Account Code prints.

T1750IM.1-7

ULTRACOM AT

SMDR DATA FORMAT

Each page of the SMDR output is in the following vertical format:

Line	1	carriage return/line feed
Line	2	Page number (three-digit) in columns 68-76
Lines	3 to 4	carriage return/line feed
Line	5	Heading Line (as described in II)
Line	6	carriage return/line feed
Lines	7 to 61	55 lines of call data, one call per line
		(Format for data described in III)
Lines	62 to 66	carriage return/line feed

The Heading Line contains the data fields. The data fields occupy the following columns:

following columns:	
Columns 1 to 3	CLS (class [type] of call)
Columns 4 to 7	blank
Columns 8 to 11	DATE
Columns 12 to 17	blank
Columns 18 to 21	TIME
Columns 22 to 24	blank
Columns 25 to 28	LINE (line number)
Column 29	blank
Columns 30 to 37	DURATION
Jolumns 38 to 39	blank
Columns 40 to 42	ST# (station number)
Columns 43 to 48	blank
Columns 49 to 55	DIALED #
Columns 56 to 63	blank
Columns 64 to 67	RING (time to answer incoming call)
Columns 68 to 70	blank
Columns 71 to 78	ACCT NO. (account code)

The data for each recorded call occupies the following columns:

Columns 1 to 3	Three-character class of call:			
	OTG (outgoing call)			
	INC (incoming call)			
	BRD (a barred call)			
	ATB (all trunks busy report)			
	BFL (buffer overflow report)			
Columns 4 to 5	blank			
Columns 6 to 13	Date (MM/DD/YY)			
Columns 14 to 15	blank			
Columns 16 to 23	Start time of call (HH:MM:SS)			
Columns 24 to 25	blank			
Columns 26 to 27	Two-digit line number			
Columns 28 to 29	blank			
Columns 30 to 37	Call duration (HH:MM:SS)			
Columns 38 to 39	blank			
Columns 40 to 41	Two-digit station (extension) number			
Columns 42 to 44	blank			
FOR OUTGOING CALLS				
Columns 45 to 68	Dialed number (up to 24 digits)			
FOR INCOMING CA	LLS			
Columns 45 to 63	blank			
Columns 64 to 68	Ringing time for incoming call (MM:SS)			
Columns 69 to 70	blank			
Columns 71 to 78	Account code (up to eight digits)			

Constitution of

C-STU-D PCB OFF-PREMISES EXTENSION, PCB

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Placing ICM Calls	D-4
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INTRODUCTION

The C-STU-D Printed Circuit Board (PCB), P/N 10836 of Series 6, is a single line telephone interface for the ULTRACOM AT Key Telephone System. It is used for connecting 500/2500 type telephones to the system and for Direct Inward System Access (DISA). The single line telephones can be on or off-premises extensions. Only DTMF lines can be used for DISA.

Each C-STU-D PCB provides an interface for four single line 500/2500 extensions. Each 2500 type telephone requires a DTMF Receiver PCB (C-MFRU-B). Up to four of these PCBs can be mounted on a C-STU-D PCB. Specifications for the C-STU-D PCB are provided in Table D-1.

Issue 4-0 D-1

TABLE D-1

SPECIFICATIONS

► SYSTEM CPU REQUIREMENTS:

- C-CPU-A PCB, Series 6 or higher
- C-CPU-B PCB, Series 4 or higher
- C-CPU-C PCB, Series 1

► CAPACITY (maximum):

SYSTEM	Number of C-STU-Ds	Number of 500/2500 Telephones
UMT-32	4	16
UMT-64	8	32

► ELECTRICAL:

Dial Pulse Rate: 10 or 20 Pulses Per Second ±3PPS

Make/Break Ratio: 33/67 ±10%

► CABLE REQUIREMENTS:

On Premises Single Line Telephone, Internal Battery: Loop Limit (max.) 300 ohms: 22 AWG, 8000 feet (2.4 km) 24 AWG, 5000 feet (1.5 km)

► TELCO REQUIREMENTS:

OL13B Interface, 24-Volt Battery OL13C Interface, 48-Volt Battery

► TELCO SERVICE CODE:

9.0F

An external ring generator is required to send ringing to the single line telephones installed with the C-STU-D PCB. The ring generator must provide a 90 V, 20 Hz non-interrupted output that can be used for two C-STU-D PCBs. The TIE Ring Generator (P/N 12185) is the recommended device to be used with C-STU-D PCBs. This ring generator uses the 28 volts from the KSU for power. Other ring generators cannot use the 28 volts from the KSU as a power source.

The C-STU-D PCB converts off hook and dialing information from the 2500/500 type telephone to digital data used by the Central Processing Unit (CPU) and converts digital data from the CPU to signals used by single line telephones.

FCC REGISTRATION

The C-STU-D PCB carries the FCC Registration Service Code 9.0F in accordance with the Federal Communications Commission (FCC) Rules and Regulations Part 68 (Connection of Terminal Equipment to the Telephone Network) and the Facility Interface Code OL13B with 24 V internal battery and OL13C with external 48 V battery in accordance with Bell System Communications Technical Reference, PUB43209 (Registered Off Premises Extension Facility Interface Codes OL13A/B/C). This PCB is used in fully protected systems and is included in the system FCC Registration Number.

OPERATION

The following paragraphs provide operating instructions for a 500/2500 type telephone. Refer to the FEATURES section for a description of the feature. Single line telephones should be marked on the DSS Console since Call Announcing and Executive Override are not possible on these telephones.

ANSWERING CALLS

To answer an external call:

1. Lift handset.

PLACING CO CALLS

To place an external call when the system is equipped with a C-CPU-A/B PCB:

- 1. Lift handset. Listen for dial tone.
- 2. Dial queue group number (1 to 4). Listen for CO dial tone.

OR

Dial 5 and line number (01 to 24). Listen for CO dial tone.

OR

Dial 6 for first available line. Listen for CO dial tone.

3. Dial desired number.

NOTE: Dialing 5 plus the line number can result in accessing a CO line that is ringing in or on hold.

(continued)

PLACING CO CALLS

(continued)

To place an external call when the system is equipped with a C-CPU-C PCB:

- 1. Lift handset.
- 2. Dial Queue Group number (1 to 6).

OR

Dial 9 plus line number (01-24).

- 3. Listen for CO dial tone.
- 4. Dial desired telephone number.

LINE QUEUING

When a call is placed by dialing the Queue Group number and busy tone is heard instead of CO dial tone, all lines in that group are busy. To queue for the busy line group:

- 1. Dial the queue group number again. Intercom dial tone indicates queue accepted.
- 2. Hang up.

The phone rings when a line is available. When you answer, you hear CO dial tone.

PLACING ICM CALLS

To place an Intercom Call that can be answered handsfree at a key phone:

- 1. Lift handset. Listen for dial tone.
- 2. Dial 7 (Intercom access code). Listen for Intercom dial tone.
- 3. Dial desired extension number.

NOTE: Dial 1 after the extension number to have the Intercom Call ring at a key phone. Intercom Calls to other OPX extensions always ring; it is not necessary to dial 1.

TRANSFER

To transfer a call:

- 1. Press and release hookswitch. Listen for Intercom dial tone.
- 2. Dial desired extension number.
- 3. For an Unannounced Transfer:
 - Hang up.

For an Announced Transfer:

- Wait for party to answer.
- Announce call.
- Hang up.

If no answer, press and release hookswitch to retrieve the external call.

PAGING

To All Call Page:

- 1. Lift handset.
- 2. Dial 7; listen for dial tone.
- 3. Dial 80.
- 4. Make announcement.

To Zone Page:	Page Zones:	
1. Lift handset.	Internal	External
2. Dial 7; listen for dial tone.	Zone 1 - Dial 81	Zone 1 - Dial 86
3. Dial the desired zone.	Zone 2 - Dial 82	Zone 2 - Dial 87
	Zone 3 - Dial 83	Zones 1 & 2 - Dial 85
4. Make announcement.	Zone 4 - Dial 84	

PICKUP

To Pickup a CO call ringing in or on Hold for systems equipped with a C-CPU-A/B PCB:

- 1. Lift handset.
- 2. Dial 5.
- 3. Dial line number (01 to 24) of held or ringing CO line.

To Pickup a CO call on System Hold for systems equipped with a C-CPU-C PCB:

- 1. Lift handset.
- 2. Dial 99.
- 3. Dial number of extension that placed call on System Hold.

INSTALLATION

The following paragraphs provide instructions for installing a C-STU-D PCB, which requires a C-CPU-B PCB of Series 2 or later. DISA ports and DTMF OPX ports must have a C-MFRU-B installed. The UAT-32/64 system uses the C-STU-D PCB of Series 6.

Figure D-1 shows the C-STU-D PCB with the locations for the C-MFRU-B PCBs and the straps S1 and S2. Figure D-2 shows the physical connections of a typical B Block for two C-STU-D PCBs and eight extensions. Tables D-2 and D-3 show specific B Block connections for Blocks B1 to B8.

C-STU-D PCB

Mount one C-MFRU-B PCB into each CN connector (CN1 to CN4) on the C-STU-D PCB that is an interface for a DTMF extension.

► Strap S1 and S2 as follows:

On premises single line telephones with internal battery:

- Strap S1 to positions 1 and 2.
- Strap S2 to positions 1 and 2.

Each of the four circuits on the C-STU-D PCB can be strapped for either OPX operation or DISA operation. The PCB is factory-strapped for OPX operation using internal (KSU) power. The chart shows the positions of the ten straps (S1-S10) on the PCB:

(continued)

C-STU-D PCB (continued)

A. POWER STRAPS

Internal (KSU) Power for all circuits:

• Strap S1 and S2 to Position 1-2.

External Power (48 V) for one or more circuits:

• Strap S1 and S2 to Position 2-3.

B. OPTION STRAPS

Circuit	Straps	OPX Position	DISA Position
1	S3 and S7	1-2	2-3
2	S4 and S8	1-2	2-3
3	S5 and S9	1-2	2-3
4	S6 and S10	1-2	2-3

Note: Strap Position 2, which is unmarked on the PCB, is located between Positions 1 and 3.

► Insert the C-STU-D PCB into the appropriate slot in the KSU.

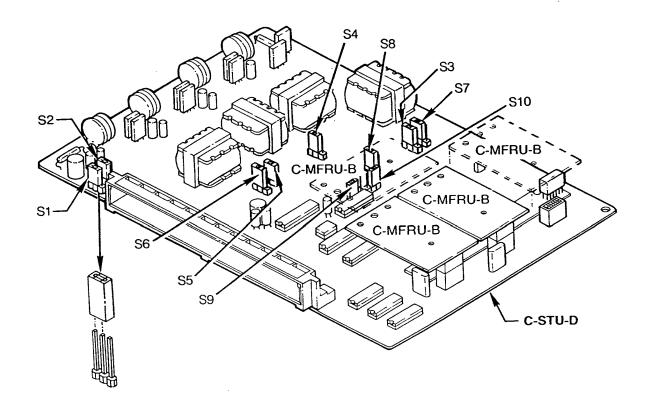


Figure D-1 C-STU-D PRINTED CIRCUIT BOARD

EXTENSIONS

Connect each OPX extension to the B Blocks on the Main Distribution Frame (MDF). Refer to Figure D-2, Tables D-2 and D-3.

- 1. Connect each extension wire pair to the corresponding AT/AR D-clips.
- 2. Install bridging clips.

RING GENERATOR

This procedure is for installing the TIE Ring Generator. Other ring generators may have different requirements. One TIE Ring Generator is required for every two C-STU-D PCBs.

- 1. Connect the Ring Generator output terminals (RG) to the BT/BR D-clips of the first circuit.
- 2. Connect the +28 RG input terminal to the BT D-clip of the second circuit.
- 3. Connect the G RG input terminal to the BR D-clip of the second circuit.
- 4. Install bridging clips for all connections.

BATTERY

An external battery is required for single line telephone operation.

- 1. Connect the (-) terminal to the BT D-clip of the third circuit.
- 2. Connect the (+) terminal to the BR D-clip of the third circuit.
- 3. Install bridging clips.

CAUTION: DO NOT GROUND EITHER BATTERY TERMINAL.

GROUND

An earth ground is required when using a telco OL13B or OL13C facility.

- 1. Connect the Earth Ground wire to the BT/BR D-clips of the fourth circuit.
- 2. Install bridging clips.
- BT is a reference ground for OPXs (R GND)
- BR is a MOV protection ground (P GND)

PROGRAMMING

The single line extensions may require programming as provided in the System Manual. You should check the following:

- Queue Groups for CO line dial access
- Toll Restriction
- DTMF/Dial Pulse selection

Program 8: the E Box now includes the following OPX entries.

- 2 for Dial Pulse operation
- 3 for DTMF operation

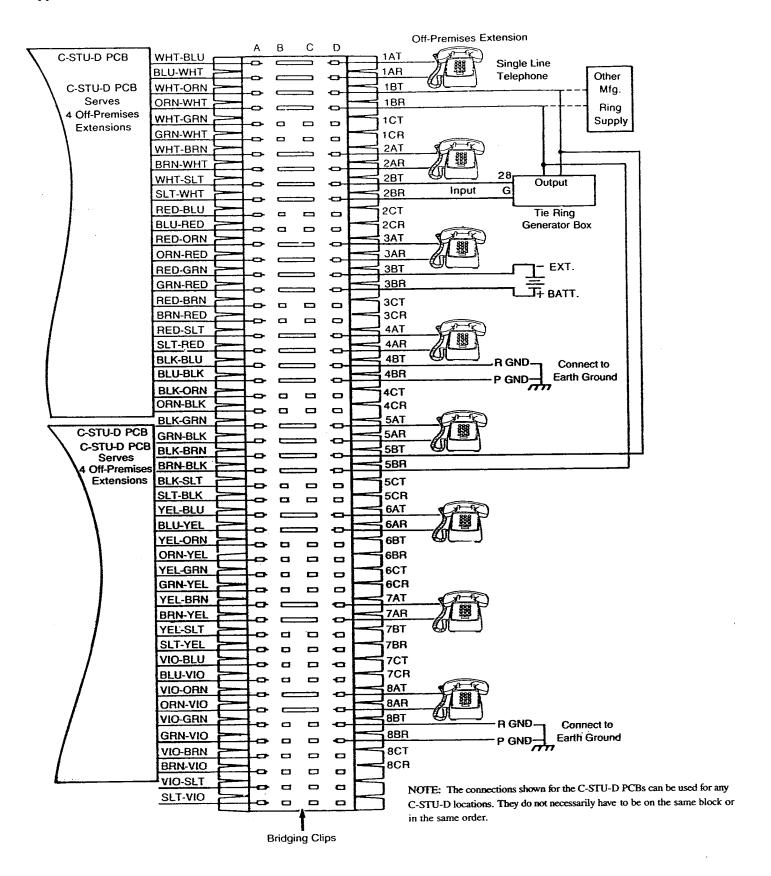


Figure D-2 OFF-PREMISES EXTENSION CONNECTIONS

BLOCK CONNECTIONS

25-	Pair Cable	66M1-50					STA.
Conn.	Color	Block	B1	B2	B3	B4	LEAD
Pin	Code	Term.	Block	Block	Block	Block	DESIG.
26	WHT-BLU	1	AT STA 10	AT STA 18	AT STA 26	AT STA 34	GRN
1	BLU-WHT	2	AR	AR	AR	AR	RED
27	WHT-ORN	3	BT RG1	BT RG2	BT RG3	BT RG4	BLK
2	ORN-WHT	4	BR RG1	BR RG2	BR RG3	BR RG4	YEL
28	WHT-GRN	5	СТ	СТ	СТ	СТ	WHT
3	GRN-WHT	6	CR	CR	CR	CR	BLU
29	WHT-BRN	7	AT STA 11	AT STA 19	AT STA 27	AT STA 35	GRN
4	BRN-WHT	8	AR	AR	AR	AR	RED
30	WHT-SLT	9	BT +28 RG	BT +28 RG	BT +28 RG	BT +28 RG	BLK
5	SLT-WHT	10	BR GRG	BR GRG	BR GRG	BR GRG	YEL
31	RED-BLU	11	CT	СТ	ст	СТ	WHT
6_	BLU-RED	12	CR	CR	CR	CR	BLU
32	RED-ORN	13	AT STA 12	AT STA 20	AT STA 28	AT STA 36	GRN
7	ORN-RED	14	AR	AR	AR	AR	RED
33	RED-GRN	15	BT -BATT	BT -BATT	BT -BATT	BT -BATT	BLK
8	GRN-RED	16	BR +BATT	BR +BATT	BR +BATT	BR +BATT	YEL
34	RED-BRN	17	СТ	СТ	СТ	СТ	WHT
9_	BRN-RED	18	CR	CR	CR	CR	BLU
35	RED-SLT	19	AT STA 13	AT STA 21	AT STA 29	AT STA 37	GRN
10	SLT-RED	20	AR	AR	AR	AR	RED
36	BLK-BLU	21	BT R GND	BT R GND	BT R GND	BT R GND	BLK
11	BLU-BLK	22	BR PGND	BR PGND	BR PGND	BR PGND	YEL
37	BLK-ORN	23	CT	СТ	СТ	СТ	WHT
12	ORN-BLK	24	CR	CR	CR	CR	BLU
38	BLK-GRN	25	AT STA 14	AT STA 22	AT STA 30	AT STA 38	GRN
13	GRN-BLK	26	AR	AR	AR	AR	RED
39	BLK-BRN	27	BT RG1	BT RG2	BT RG3	BT RG4	BLK
14	BRN-BLK	28	BR RG1	BR RG2	BR RG3	BR RG4	YEL
40	BLK-SLT	29	CT	СТ	СТ	СТ	WHT
15	SLT-BLK	30	CR	CR	CR	CR	BLU
41	YEL-BLU	31	AT STA 15	AT STA 23	AT STA 31	AT STA 39	GRN
16	BLU-YEL	32	AR	AR	AR	AR	RED
42	YEL-ORN	33	BT	BT	BT	BT	BLK
17	ORN-YEL	34	BR	BR	BR	BR	YEL
43	YEL-GRN	35	СТ	СТ	СТ	СТ	WHT
18	GRN-YEL	36	CR	CR	CR	CR	BLU
44	YEL-BRN	37	AT STA 16	AT STA 24	AT STA 32	AT STA 40	GRN
19	BRN-YEL	38	AR	AR	AR	AR	RED
45	YEL-SLT	39	BT	BT	BT	BT	BLK
20	SLT-YEL	40	BR	BR	BR	BR	YEL
46	VIO-BLU	41	СТ	СТ	СТ	СТ	WHT
21	BLU-VIO	42	CR	CR	CR	CR	BLU
47	VIO-ORN	43	AT STA 17	AT STA 25	AT STA 33	AT STA 41	GRN
22	ORN-VIO	44	AR	AR	AR	AR	RED
48	VIO-GRN	45	BT R GND	BT R GND	BT R GND	BT R GND	BLK
23	GRN-VIO	46	BR PGND	BR PGND	BR PGND	BR P GND	YEL
49	VIO-BRN	47	CT	СТ	СТ	СТ	WHT
24	BRN-VIO	48	CR	CR	CR	CR	BLU
50	VIO-SLT	49					
25	SLT-VIO	50					

NOTE: The connections shown for the C-STU-D PCBs can be used for any C-STU-D locations. They do not necessarily have to be on the same block or in the same order.

TABLE D-3

BLOCK CONNECTIONS (EXPANSION CABINET)

25-1	Pair Cable	66M1-50					STA.
Conn.	Color	Block	B 5	B6	87	B8	LEAD
Pin	Code	Term.	Block	Block	Block	Block	DESIG.
26	WHT-BLU	1	AT STA 42	AT STA 50	AT STA 58	AT STA 66	GRN
1	BLU-WHT	2	AR	AR	AR	AR	RED
27	WHT-ORN	3	BT RG5	BT RG6	BT RG7	BT RG8	BLK
2	ORN-WHT	4	BR RG5	BR RG6	BR RG7	BR RG8	YEL
28	WHT-GRN	5	CT	CT	CT	CT	WHT
3	GRN-WHT	6	CR	CR	CR	CR	BLU
29	WHT-BRN	7	AT STA 43	AT STA 51	AT STA 59	AT STA 67	GRN
4	BRN-WHT	8	AR	AR	AR	AR	RED
30	WHT-SLT	9	BT +28 RG	BT +28 RG	BT + 28 RG	BT +28 RG	BLK
5	SLT-WHT	10	BR GRG	BR GRG	BR GRG	BR GRG	YEL
31	RED-BLU	11	CT	CT	CT	CT	WHT
6	BLU-RED	12	CR	CR	CR	CR	BLU
32	RED-ORN	13	AT STA 44	AT STA 52	AT STA 60	AT STA 68	GRN
7	ORN-RED	14	AR	AR	AR	AR	RED
33	RED-GRN	15	BT -BATT	BT -BATT	BT -BATT	BT -BATT	BLK
8	GRN-RED	16	BR +BATT	BR +BATT	BR +BATT	BR +BATT	YEL
34	RED-BRN	17	CT	СТ	CT	CT	WHT
9	BRN-RED	18	CR	CR	CR	CR	BLU
35	RED-SLT	19	AT STA 45	TAT STA 53	AT STA 61	AT STA 69	GRN
10	SLT-RED	20	AR	AR	AR	AR	RED
36	BLK-BLU	21	BT R GND	BT R GND	BT R GND	BT R GND	BLK YEL
111	BLU-BLK	22	BR P GND	BR P GND	BR P GND	BR P GND	WHT
37	BLK-ORN	23	CT	CT	CT	CT CR	BLU
12	ORN-BLK	24	CR	CR	CR .		
38	BLK-GRN	25	AT STA 46	AT STA 54	AT STA 62	AT STA 70	GRN RED
13	GRN-BLK	26	AR	AR	AR	AR Pr PCe	BLK
39	BLK-BRN	27	BT RG5	BT RG6	BT RG7	BT RG8 BR RG8	YEL
14	BRN-BLK	28	BR RG5	BR RG6	BR RG7	CT NG0	WHT
40	BLK-SLT	29 30	CT CR	CR	CR	CR	BLU
15	SLT-BLK				AT STA 63	AT STA 71	GRN
41	YEL-BLU	31	AT STA 47	AT STA 55	AR	AR	RED
16	BLU-YEL	32	AR BT	BT	BT	BT	BLK
42	YEL-ORN	33	BR	BR	BR	BR	YEL
17 43	ORN-YEL	34 35	CT	CT	CT	СТ	WHT
18	YEL-GRN	36	CR	CR	CR	CR	BLU
	GRN-YEL	1 — —			AT STA 64	AT STA 72	GRN
19	YEL-BRN BRN-YEL	37 38	AT STA 48 AR	AT STA 56 AR	AR SIA 64	AR SIA /2	RED
		1	BT	BT	BT	BT	BLK
45	YEL-SLT SLT-YEL	39 40	BR	BR	BR	BR	YEL
20 46	VIO-BLU	40	CT	CT	CT	CT	WHT
	BLU-VIO	41	CR	CR	CR	CR	BLU
21					 	AT STA 73	GRN
47	VIO-ORN	43	AT STA 49	AT STA 57	AT STA 65 AR	AR SIA /3	RED
22	ORN-VIO	44	AR BT B CND	AR BT B GND	1	BT R GND	BLK
48	VIO-GRN	45	BT R GND	BT R GND	BT R GND	BR PGND	YEL
23	GRN-VIO	46	BR P GND	BR P GND	BR P GND	CT CT	WHT
49 24	VIO-BRN BRN-VIO	47 48	CT	CR	CR	CR	BLU
				- Un	Un		5-0
50	VIO-SLT	49	}	1		1	
25	SLT-VIO	50	<u> </u>	<u> </u>	<u> </u>		

NOTE: The connections shown for the C-STU-D PCBs can be used for any C-STU-D locations. They do not necessarily have to be on the same block or in the same order.

C-22SU-A PCB OFF-PREMISES EXTENSION PCB

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INTRODUCTION

The C-22SU-A Printed Circuit Board (PCB), Part Number 10826, is an OPX interface for the ULTRACOM AT (UMT 16) Key Telephone System. It is used for connecting 500/2500 type telephones to the system and for Direct Inward System Access (DISA). The single line telephones can be on-premises or off-premises extensions (OPXs).

Each C-22SU-A PCB provides an interface for two single line 500/2500 type extensions. It also provides two interface circuits for the two key telephones. Each 2500 type telephone requires a DTMF Receiver PCB (C-MFRU-B). Up to two of these PCBs can be mounted on a C-22SU-A PCB. Specifications for the C-22SU-A PCB are provided in Table E-1.

TABLE E-1

SPECIFICATIONS

SYSTEM SOFTWARE REQUIREMENT:

C-5ROU-1A Series 4 or higher C-5ROU-1B Series 3 or higher

► CAPACITY (maximum):

SYSTEM	Number of C-22SU-As	Number of 500/2500 Type Telephones	Number of Key Telephones
UMT-16	2	4	12
(P/N 10820 or 10823)	1	2	14

► ELECTRICAL:

Dial Pulse Rate: 10 or 20 Pulses Per Second ±2PPS

Make/Break Ratio: 33/67 ±10%

► CABLE REQUIREMENTS:

On-Premises Single Line Telephone, Internal Battery: Loop Limit (max.) 300 ohms: 22 AWG, 8,000 feet (2.4 km) 24 AWG, 5,000 feet (1.5 km)

► TELCO REQUIREMENTS:

OL13B Interface, 24-Volt Battery OL13C Interface, 48-Volt Battery

► TELCO SERVICE CODE:

9.0F

An external ring generator is required to send ringing to the single line telephones installed with the C-22SU-A PCB. The ring generator must provide a nominal 90 V, 20 Hz non-interrupted output that can be used for two C-22SU-A PCBs. The TIE Ring Generator (Part Number 12185) is the recommended device to be used with C-22SU-A PCBs. This ring generator uses the 28 volts from the KSU for power. Other ring generators cannot use the 28 volts from the KSU as a power source.

The C-22SU-A PCB converts off hook and dialing information from the 500/2500 type telephone to digital data used by the Central Processing Unit (CPU). It also converts digital data from the CPU to signals used by single line telephones.

FCC REGISTRATION

The C-22SU-A PCB carries the FCC Registration Service Code 9.0F in accordance with the Federal Communications Commission (FCC) Rules and Regulations Part 68 (Connection of Terminal Equipment to the Telephone Network), and the Facility Interface Code OL13B with 24 V external battery and OL13C with external 48 V battery in accordance with Bell System Communications Technical Reference, PUB43209 (Registered Off Premises Extension Facility Interface Codes OL13A/B/C). This PCB is used in fully protected systems and is included in the system FCC Registration Number.

OPERATION

The following paragraphs provide operating instructions for a 500/2500 type telephone. Refer to the FEATURES section for a description of the feature. Single line telephones should be marked on the DSS console since Call Announcing and Executive Override are not possible on these telephones.

ANSWERING CALLS

1. Lift the handset.

PLACING CO CALLS

To place an external call:

- 1. Lift handset. Listen for dial tone.
- 2. Dial queue group number (1 to 4).

OR

Dial 5 and line number (01 to 06).

OR

Dial 6 for first available line.

- 3. Listen for CO dial tone.
- 4. Dial desired number.

NOTE: Dialing 5 plus the line number can result in accessing a CO Line that is ringing in or on Hold.

LINE QUEUING

Line Queuing is a system programmable feature. When a call is placed by dialing the Queue Group number and a busy tone is heard instead of CO dial tone, all lines in that group are busy. If you queue for a line, the system will signal you when a line is available. To queue for an outside line:

- 1. Dial the queue group number again. Intercom dial tone indicates queue is accepted.
- 2. Hang up.

The phone rings when a line is available; CO dial tone is heard when you answer.

PLACING ICM CALLS

To place an Intercom Call that can be answered handsfree at a key phone:

- 1. Lift handset. Listen for dial tone.
- 2. Dial 7 (Intercom access code). Listen for Intercom dial tone.
- 3. Dial desired extension number.

NOTE: Dial 1 after the extension number to have the Intercom Call ring at a key phone. Intercom Calls to other OPX extensions always ring; it is not necessary to dial 1.

TRANSFER

To transfer a call:

- 1. Press and release hookswitch. Listen for Intercom dial tone.
- 2. Dial desired extension number.
- 3. When the called party responds by using the handset, hang up.

If no answer, press and release hookswitch to retrieve the external call.

PAGING

To All Call Page:

- 1. Lift handset.
- 2. Dial 7. Listen for dial tone.
- 3. Dial 80.
- 4. Make announcement.

To Zone Page:

Page Zones:

1. Lift handset.

Internal

External

2. Dial 7. Listen for dial tone.

Zone 1 - Dial 81 Zone 2 - Dial 82 Zone 1 - Dial 85

- 3. Dial the desired zone.
- 3. Diai the desired zone.
- 4. Make announcement.

PICKUP

To Pickup a CO call ringing in or on Hold:

- 1. Lift handset.
- 2. Dial 5. Listen for dial tone.
- 3. Dial line number (01 to 06) of held or ringing CO Line.

INSTALLATION

A UMT-8/16 system uses the C-22SU-A PCB of Series 6. This section provides instructions for installing a C-22SU-A PCB. Figure E-1 shows this PCB with locations for the C-MFRU-B PCBs and option straps.

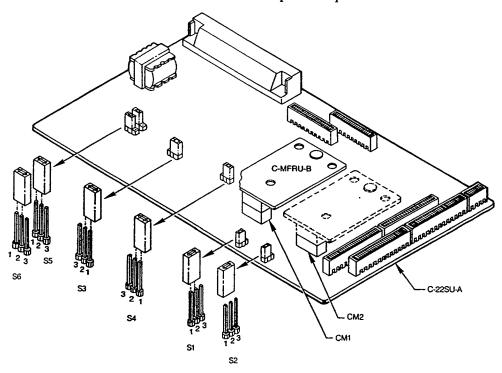


Figure E-1 C-22SU-A PCB INSTALLATION

C-22SU-A PCB

Mount one C-MFRU-B PCB into each CM connector (CM1 or CM2) on the C-22SU-A PCB that is an interface for a single line DTMF extension (2500 type phone).

► Strap S1 and S2 as follows:

On-premises single line telephones with internal battery:

• Strap S1 and S2 to Position 1-2.

Off-premises telephones using telco OPX lines and an external talk battery:

• Strap S1 and S2 to Position 2-3.

Each OPX port may be used to serve a single-line telephone (OPX usage) or as a DISA port. Each port must be strapped as follows:

C-22SU-A Straps	Both Straps 1-2	Both Straps 2-3
S3 and S6	3rd Port, OPX	3rd Port, DISA Operation
S4 and S5	4th Port, OPX	4th Port, DISA Operation

Mount the C-22SU-A PCB in the KSU as shown in Figure E-2:

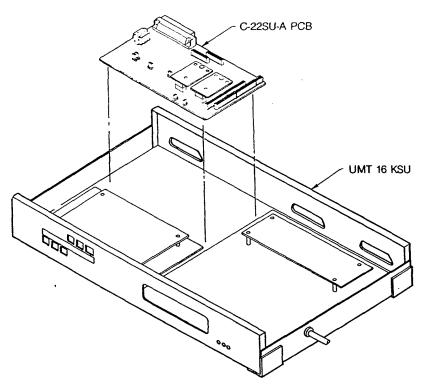


Figure E-2 LOCATION OF THE C-22SU-A PCB IN THE UMT-16 KSU

TYPES OF MOUNTING

Three types of installation (mounting) for the C-22SU-A PCB are shown in Figures E-3, E-4 and E-5 on the following six pages. The connections plus the relative positions of the C-4STU-A/B PCBs and the C-22SU-A PCBs for each figure are shown on the page opposite the figure.

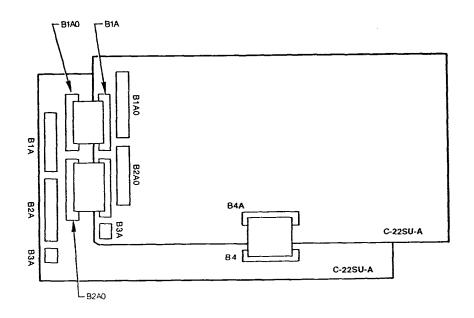


Figure E-3 MOUNTING TWO C-22SU-A PCBs

The figure below shows the physical connections of a typical B Block for the C-22SU-A PCB. It corresponds to the mounting option shown in Figure E-3.

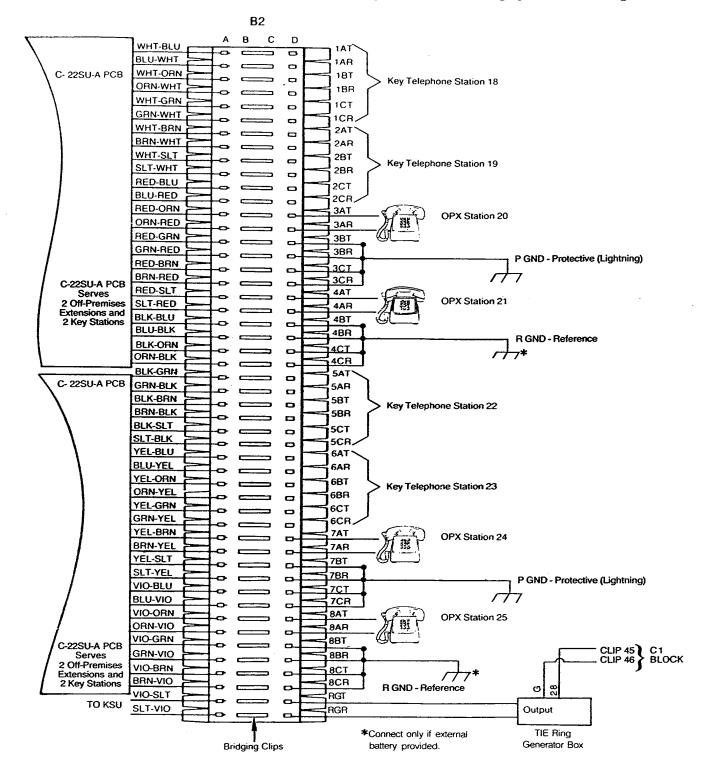


Figure E-4 CONNECTIONS USING TWO C-22SU-A PCBs

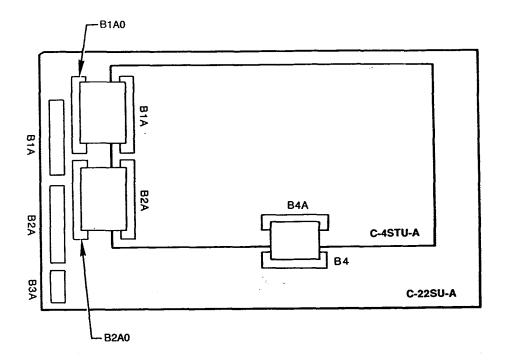


Figure E-5 MOUNTING A C-4STU-B ON A C-22SU-A PCB

The figure below shows the physical connections of a typical B Block for a C-4STU-B on a C-22SU-A PCB. It corresponds to the mounting option shown in Figure E-5.

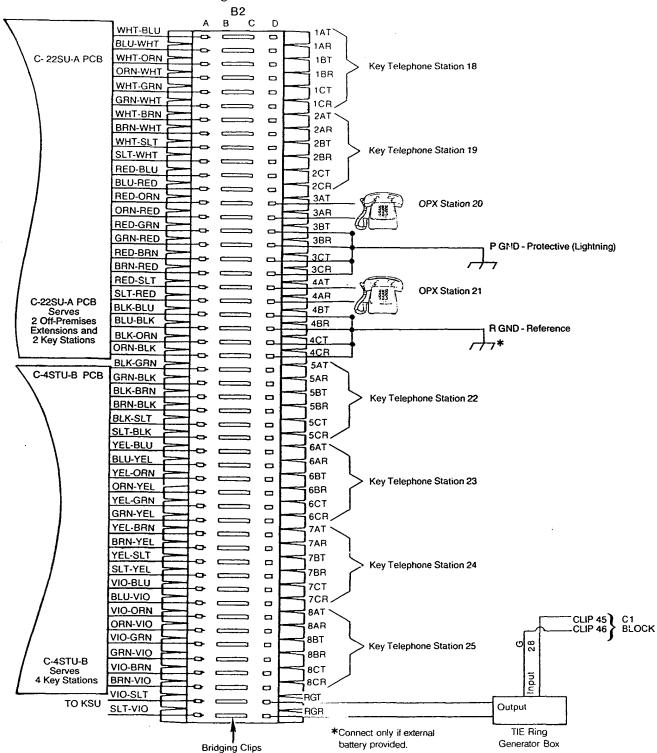


Figure E-6 CONNECTIONS USING A C-4STU-B ON A C-22SU-A PCB

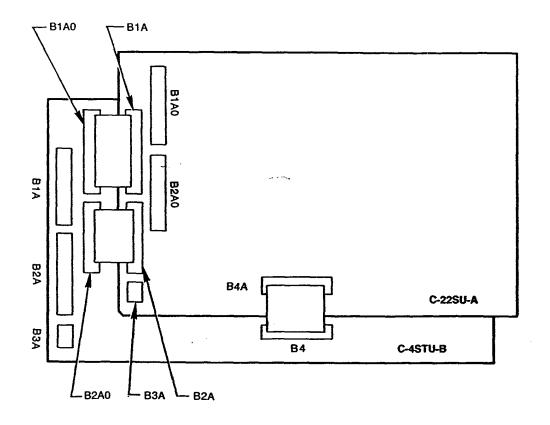


Figure E-7 MOUNTING A C-22SU-A ON A C-4STU-B PCB

The figure below shows the physical connections of a typical B Block for a C-22SU-A on a C-4STU-B PCB. It corresponds to the mounting option shown in Figure E-7.

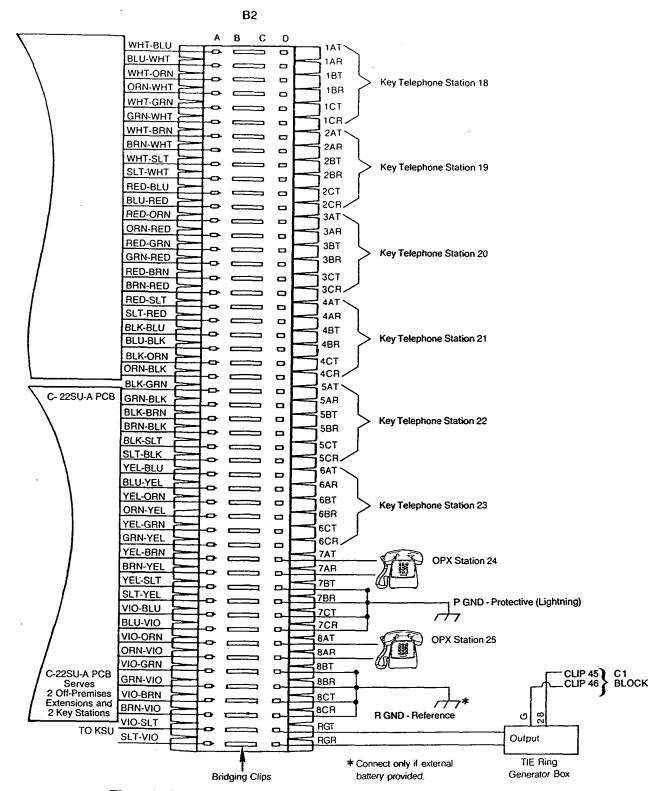


Figure E-8 CONNECTIONS USING A C-22SU-A ON A C-4STU-B PCB

Figure E-9 shows the required strapping positions on the C-CP4SU-A (CI Block) for the C-22SU-A PCB in the mountings shown in Figures E-3, E-5 and E-7.

	[J0]	[J1]
For the mounting of Figure E-3:	2 - 3	2 - 3
For the mounting of Figure E-5:	2 - 3	1 - 2
For the mounting of Figure E-7:	1 - 2	2 - 3
Without C-22SU-A PCB installation:	1 - 2	1 - 2

For further information about C1 Block connections, see Table E-2.

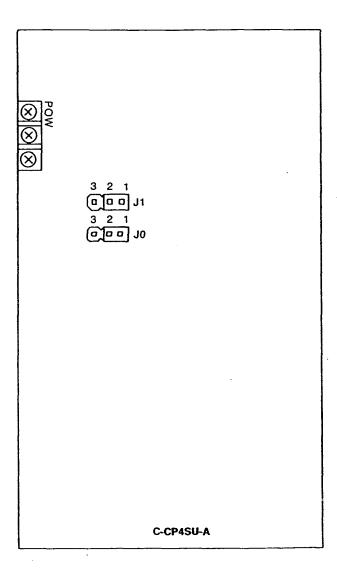


Figure E-9 REQUIRED STRAPPING POSITIONS FOR THE C-22SU-A ON THE C-CP4SU-A PCB

TABLE E-2

BLOCK CONNECTIONS

Color Pin Code Firm. Bick Bick Bick Bick Bick Bick Bick Bick DeSig, DeSig,	25-P	air Cable	66M1-50	FI	G. E-3	FI	G. E-5	FI	IG. E-7	STA.	BLC	CK C1
Pin										1		
26	Pin	Code		Ε	Block	E			Block		DESIG.	FUNC.
1	26			AT	STA 18			AT	STA 18		PF1T	BELL
27	1				•			5	•			
28	27	WHT-ORN		вт	KEY	ВТ	KEY	вт	KEY			
28		ORN-WHT		BR				1				
3 GRN-WHT 6 CR	28	WHT-GRN	5	СТ		СТ		СТ		1	PF2T	BELL
29		1						ı		1		
A					STA 19		STA 19		STA 19			
STATE STAT	ı	i							•		'	
St.T.WHIT 10 BR RED-BLU 11 CT CT CT CT WHIT CT CR CR CR CR BLU CR CR CR CR CR BLU CR CR CR CR CR BLU CR CR CR CR CR CR CR C	1	i .			KEY	ı	KEY		KEY	•	PF3T	BELL
SED-BLU		1			•	1		:				
SELU-RED		i						•				
32	1	1	1			I -				•		
7					STA 20		STA 20		STA 20		PF4T	BELL
STATE		i						ł	0			
S	1	t	1			i .		Į.	KEY		1 1 111	
34					GND	1	GND					
9 BRN-RED 18 CR		1		į .				1		5	PF5T	BFII
35		i										
10					CTA 21		STA 21		STA 21		1.0	
Second S		i	1			ŧ		i	31A 21	1		
11	1		\$		O.		Or .	•	KEA	ł	DEST	BELL
37		•			CND*		CND*		KEI			
12		1			GND		GIAD	1		1	Fron	
SER						1		1		1		
13 GRN-BLK 26 AR					CTA 22		CTA 00	_	CTA 22		EAT	EVT
39					51A 22	i	51A 22	1	31A ZZ			
14 BRN-BLK 28 BR					VEV	ı	vev		VEV	l .		
40					KET	l .	NE I	1	KET	1		•
15	1	ŧ	1			1						
YEL-BLU 31	_			ı		t		1		1 .		
16					OT4 00		OTA 00		OTA 00		1	1
42	1	1	1.		SIA 23	•	5 IA 23	i	SIA 23	1	DNC	HLY
17	•	ł .			14534		14534	1	14834		224	noon
43			B		KET		KET	ł	KET	B.		
18	1	\$	1	i				1				
44 YEL-BRN 37 AT STA 24 AT OP RED MOHT EXT 45 YEL-SLT 39 BT BT BT BLK BGMT BGM BGM SRCE 46 VIO-BLU 41 CT CT CT CT CT WHT 1ALT ALM1 ALM1 CONT ALM1 CONT ALM2 CONT ALM2 CONT ALM2 CONT ALM2 CONT ALM2 ALM2 CONT ALM2	1	ş						!		L		
19					OTA OC		074.00		OTA OC			
45 YEL-SLT 39		ı		ł		4	SIA 24	1		i	1	
20 SLTYEL 40 BR GND BR BR GND YEL BGMR SRCE 46	1		1		OP	1	14534		OP			
46 VIO-BLU 41 CT CT CT CT WHT 1ALT ALM1 21 BLU-VIO 42 CR CR CR BLU 1ALT ALM1 47 VIO-ORN 43 AT STA 25 AT STA 25 GRN 2ALT ALM2 22 ORN-VIO 44 AR OP AR AR OP RED 2ALR CONT 48 VIO-GRN 45 BT BT KEY BT BLK +24V 24 VDC output for TIE RG Box 49 VIO-BRN 47 CT CT CT CT +WHT (-) 48 VDC Input for OPX 49 BRN-VIO 48 CR CR CR -BLU -BLU (-) 48 kbattery 50 VIO-SLT 49 RG1 RG1 RG1 RG1 IN RG1 IN					ONE		KEY		ONE	•		
21 BLU-VIO 42 CR CR CR CR BLU 1ALR CONT	1				GND	i		ł	GND	1		
47 VIO-ORN 43 AT STA 25 AT STA 25 AT STA 25 GRN 2ALT ALM2 22 ORN-VIO 44 AR OP AR AR OP RED 2ALR CONT 48 VIO-GRN 45 BT BT KEY BT BLK +24V 24 VDC output for TIE RG Box 23 GRN-VIO 46 BR GND* BR GRND* YEL +48V 48 VDC Input for OPX 49 VIO-BRN 47 CT CT CT CR -BLU -BLU -BLU -BLU -BLU 50 VIO-SLT 49 RG1 RG2 RC2 RC2 RC2 RC3 RC3 RG2 <td< td=""><td>1</td><td>•</td><td>1</td><td>•</td><td></td><td>1</td><td></td><td>1</td><td></td><td>1</td><td></td><td></td></td<>	1	•	1	•		1		1		1		
22 ORN-VIO 44 AR OP AR AR OP BLK +24V 24 VDC output for TIE RG Box												
48 VIO-GRN 45 BT BT KEY BT BLK +24V (-) 24 VDC output for TIE RG Box 23 GRN-VIO 46 BR GND* BR BR GND* YEL +48V (-) 48 VDC Input for OPX 49 VIO-BRN 47 CT CT CT -BLU (-) +48V (-) 48 VDC Input for OPX 24 BRN-VIO 48 CR CR CR -BLU -BLU -BLU 50 VIO-SLT 49 RG1 RG1 RG1 RG1 IN RG1 IN		,	1				STA 25	1		i :		
C C For TIE RG Box C C For TIE RG Box	1	}	1		OP			!	OP	1		
23 GRN-VIO 46 BR GND* BR GND* YEL +48V 48 VDC Input for OPX 24 BRN-VIO 48 CR CR CR -BLU 50 VIO-SLT 49 RG1 RG1 RG1 RG1 RG1 IN	48	VIO-GRN	45	вт		вт	KEY	ВТ		BLK		for TIE
49 VIO-BRN 47 CT CT CT +WHT (-) for OPX talk battery 24 BRN-VIO 48 CR CR CR -BLU -BLU 50 VIO-SLT 49 RG1 RG1 RG1 RG1 IN	23	GRN-VIO	46	BR	GND*	BR		BR	GND*	YEL	+48V	
24 BRN-VIO 48 CR CR CR CR -BLU talk battery 50 VIO-SLT 49 RG1 RG1 RG1 RG1 IN RG1 IN		1	9	1		1		•		1	1	for OPX
50 VIO-SLT 49 RG1 RG1 RG1 RG1 IN	1	1	2								` '.	talk battery
					RG1		RG1		RG1			
		t .										

^{*}Connect only if external battery (power source) is provided for off-premises lines.

EXTENSIONS

Connect each OPX extension to the B2 Block on the Main Distribution Frame (MDF). Refer to Figures E-3, E-5 and E-7 and to Table E-2.

- 1. Connect each extension wire pair to the corresponding AT/AR D-clips.
- 2. Install bridging clips.

RING GENERATOR

An OPX/telephone must have an External Ring Generator source. This procedure is for installing the recommended TIE Ring Generator. Other ring generators may have different requirements.

- 1. Connect the Ring Generator output terminals (RG) to Clip 49-D (VIO/SLT) and Clip 50-D (SLT/VIO) on the B2 Block.
- 2. Connect the +24 RG input terminal to Clip 45-D (VIO/GRN) on the C1 Block.
- 3. Connect the G RG input terminal to Clip 46-D (GRN/VIO) on the Cl Block.
- 4. Install bridging clips for all connections.

BATTERY

An external talk battery is required for off-premises telephones.

- 1. Connect the (+) terminal to Clip 47-D (VIO/BRN) on the C1 Block.
- 2. Connect the (-) terminal to Clip 48-D (BRN/VIO) on the C1 Block.
- 3. Install bridging clips.

CAUTION: DO NOT GROUND EITHER BATTERY TERMINAL.

GROUND

An earth ground is required when using a telco OL13B or OL13C facility.

- 1. Connect the Earth Ground wire according to Figures E-3, E-5 and E-7.
- 2. Install bridging clips.
- R GND is a reference ground for OPXs.
- P GND is a MOV protection ground.

PROGRAMMING

The single line extensions may require programming as specified in the System Manual. You should check the following:

- Queue Groups for CO Line dial access
- Toll, dial, and access restrictions
- DTMF/Dial Pulse selection

Program 8 — the E Box now includes the following OPX entries:

- 2 for Dial Pulse operation
- 3 for DTMF operation

APPENDIX F

Battery Backup Box

for the UMT-32 System with a 15120H Power Supply or

for the UMT-64 System with a 15320H Power Supply

CONTENTS

	PAGE
INTRODUCTION	F-2
SPECIFICATIONS	F-2
INSTALLATION	F-4
TESTING	F-6

F-1

INTRODUCTION

Model HS 130 Battery Backup Box (P/N 15321H) provides emergency power to an UMT-32/64 system in the event of a commercial power failure.

The ULTRACOM AT system in use at an installation determines the type of power supply required with the Battery Box:

System	Power Supply
UMT-32	15120H
UMT-64	15320H

The metal Battery Box contains a:

- fuse
- safety or pull-up relay
- terminal block
- terminal connecting wire

Every unit is equipped with battery terminal screws and large tie-wraps. Batteries are not included.

SPECIFICATIONS

Physical Size:

24 in. (61.0 cm) long x 8 in. (20.3 cm) wide x 9 in.

(22.9 cm) high

Weight:

Approximately 80 lbs. (36 kg.) with batteries

Batteries:

Two gelled-electrolyte, maintenance-free, rechargeable batteries, rated at 12 volts, 38 amp-hours (or equivalent).

Both must be of the same type:

• Eagle pitcher CFM12V33

Yuasa NP38-12

• Powersonic PS12400

• Technicell EP-123840

Backup Duration: 0-2 hrs. (depending on traffic and battery condition)

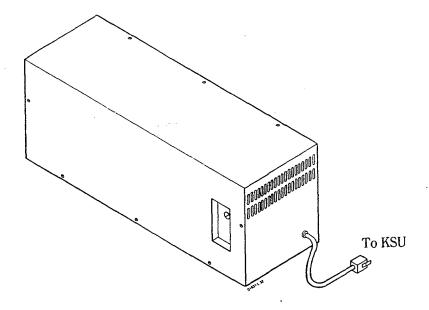


Figure F-1 MODEL HS 130 BATTERY BACKUP BOX

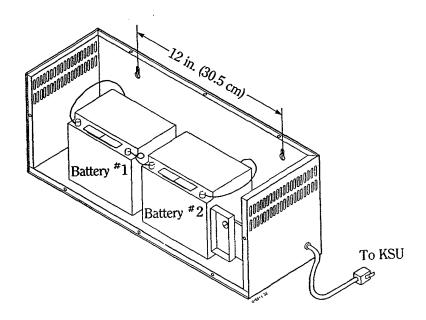


Figure F-2 BATTERY BACKUP BOX (UNCOVERED)

INSTALLATION

WARNING:

- DO NOT SMOKE NEAR BATTERY BOX.
- DO NOT PLACE BOX NEAR FLAME.
- DO NOT PLACE BOX DIRECTLY BENEATH THE POWER SUPPLY OR KSU.
- DO NOT INSTALL IN A TOTALLY CLOSED ENVIRONMENT. REFER TO BATTERY VENDOR'S PRODUCT DOCUMENTATION FOR FURTHER APPLICABLE ENVIRONMENTAL INFORMATION.

The Battery Backup Box may be wall-mounted or floor-mounted. When wall-mounted, it is installed directly on the wall. When "floor-mounted," it is placed on the floor and then secured to the wall.

Follow the steps below for wall-mounting or floor-mounting:

- 1. Position the empty Battery Box where it is to be mounted: on either side of the KSU and within three feet of the KSU Power Supply.
- 2. For wall-mounting, mark the location for the center of each of the four mounting holes. For a floor-mounted box, mark the location of the two upper holes.
- 3. Securely attach box with appropriate fasteners at marked locations.

After Mounting the Box:

- 1. Insert batteries. Batteries should always be installed and replaced in pairs.
- 2. Secure batteries with tie-wraps.
- Using battery terminal screws, connect the wiring to the battery terminals
 per Figure F-3. Use the red wire (labeled in the figure) to connect the
 positive terminal of one battery to the negative terminal of the other
 battery.
- 4. With 4-wire connecting cable, connect Battery Backup Box to KSU Power Supply.

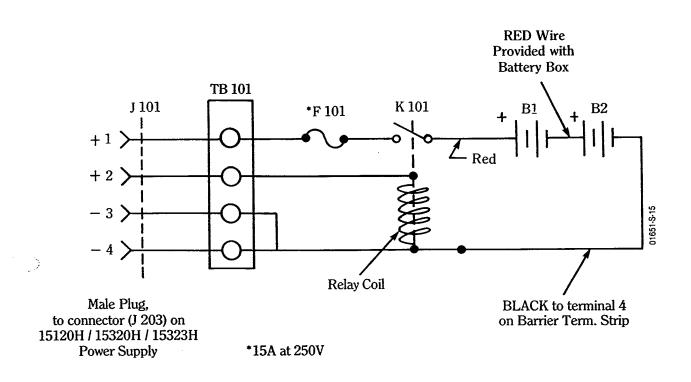


Figure F-3 BATTERY BACKUP BOX SCHEMATIC

Issue 4-0

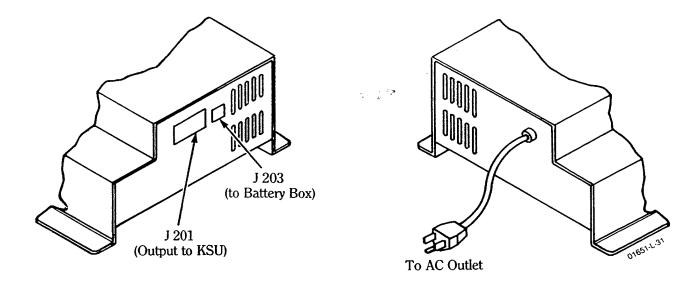


Figure F-4 SIDE VIEW OF KSU POWER SUPPLY

TESTING

To Test Operation of Battery Box:

- 1. Make sure that batteries are fully charged by testing them with a voltmeter.
- 2. Unplug power supply cord shown in Figure F-4.
- 3. Batteries should maintain system operation. If not, let batteries recharge overnight.
- 4. Retest later. If batteries do not maintain system operation, check that you have followed all the steps in the Battery Backup Box Installation Procedure on the previous pages.

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ULTRACOM AT C-CPU-CII/D/E

Software Supplement

Part No. N1753SUP01 Issue 1-0, October 1991 Printed in U.S.A.

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^{* -} program previously available, operation enhanced. ** - program available only with C-CPU-E.

This supplement provides feature descriptions, operation, and program options for Ultracom AT 1232/2464 systems equipped with C-CPU-CII/D/E central processors.

The format follows the Ultracom AT Software Manual.

PERMANENT FEATURES do not require system programming. Each permanent feature provides the following descriptive elements:

Feature Description defines each feature. Features specific to the C-CPU-D or C-CPU-E are called out in the feature title.

> Conditions - identifies feature interactions, hardware/software specifications, or other factors that affect feature application.

Operation indicates the proper "end-user" feature activation from a telephone, modem, personal computer, etc., for each feature.

> **PROGRAMMABLE FEATURES** require program entries to enable, disable, or modify the feature. Each programmable feature

provides the following descriptive elements:

defines each feature. Features specific to the C-CPU-D or **Feature Description** C-CPU-E are called out in the feature title.

> Conditions - identifies feature interactions, hardware/software specifications, or other factors that affect feature application.

Operation indicates the proper "end-user" feature activation from a telephone, modem, personal computer, etc., for each feature.

describes feature.program requirements.

Conditions - identifies program interactions, hardware/software specifications, or other related factors that affect the program.

Additional Programming - lists other programs which require consideration. Some features require entries in several programs.

Instructions provides instructions to fill out the Program Record Form.

> Example - provides a Program Record Form "sample" entry and a brief explanation of expected result.

Default Entry - provides the factory-loaded (initialized) entry.

Program Entry provides instructions to enter data into system memory.

Program Description

The C-CPU-CII supports all C-CPU-A/B/C features and provides the following feature package:

- Integrated Voice Mail
- Data Telephone (modem)
- Permitted/Deny Codes
- Night Audible to External Page Zones
- Remote Access (System Programming, System Status, SMDR)
- Executive Override (Station Observation)

The C-CPU-D supports all C-CPU-CII features and provides the following feature package:

- Automated Attendant/Integrated Voice Mail
- Delayed Ring/Call Forward
- Directory Dialing
- Display Messaging (for Message Display Phones)
- DISA Line Access (enhanced)
- Message Display Phones
- Remote Access/Message Edit (Upload/Download)
- Simultaneous Ring
- Single Line Telephone (OPX) CO Hold Access
- Universal Answer

The C-CPU-E supports all C-CPU-D features and provides the following feature package:

- Attendant Revert of Calls on Hold
- Call Forward (enhanced)
- Call Pickup (Directed, Hunt Group, CO Hold)
- Display Messaging (enhanced)
 - Camp-on Messages
 - "Real Time" Messages User-created
 - Reverse Messages
 - "Send Later" Messages
 - Voice Message Count
- Display Messaging from non-Message Display Phones
- Flexible Line Appearance (enhanced)
- Individual Timing of SMDR calls
- LCD/Message Display Phone (enhanced)
 - Message Wait Callback/Cancel
 - Message Wait Destination Check/Cancel
- Low Cost Automated Attendant
- Program prompts for Port 10 Message Display Phone
- Remote Access/Message Edit (Direct Modem Access)
- Station Hunting (enhanced) *
- Tenant Service
- Transfer CO Call to Modem
- * C-CPU-E series 2 (or higher)

INTRODUCTION

This manual must be used in conjunction with the following:

Refer to the ULTRACOM AT Remote Access/Message Edit Manual for specific information for Remote Access/Message Edit, Remote System Status, Upload/Download, and Direct Modern Access.

Feature Description

Call Pickup provides access to Intercom, DISA Intercom calls, and *transferred* CO calls in the following modes:

- Directed Call Pickup- Intercom/transferred CO calls ringing at another station.
- Hunt Group Pickup Intercom/CO calls transferred to a hunt group.
- CO Hold Pickup CO calls placed on Hold.

> Conditions

- a. The system places priority using Call Pickup as follows:
 - 1. Intercom calls.
 - 2. Transferred CO/DISA Intercom calls.
 - 3. Calls CO/ICM Call Forwarded.
- b. To access a transferred CO call, the call must be transferred using the Ring Inward (RG INW) key.
- c. Intercom calls are picked up whether voice announced or ringing.
- d. When two CO calls have been transferred to the same station, the lowest numbered line is picked up.
- e. The station number, Hunt Group number, or CO line number must be known to pick up a transferred CO call ringing another station.
- f. To pick up a CO call transferred to a Hunt Group, a station must be in the same Hunt Group as the ringing station. (Stations must be placed in one Hunt Group only).

Operation

Directed Call Pickup

To access a transferred CO call, DISA Intercom, or Intercom call ringing another station:

- from a key telephone
- Off hook.
- 1. Dial station number (10-79).
- from a single line telephone
- Off hook.
- 1. Dial 98 + station number (10-79).

Hunt Group Pickup

To access a transferred CO call, DISA Intercom, or Intercom call ringing to a station in the same Hunt Group:

- from a key or single line telephone
- Off hook.

Operation (Cont'd)

CO Hold Pickup

To retrieve a call placed on Hold by another station:

- from a key telephone

Off hook.

- 1. Press flashing line key.
 - ... or ...
- 1. Press ICM.
- 2. Dial 99.
- 3. Dial station number (10-79) that placed call on Hold.
- from a single line telephone Off hook.
- 1. Dial 99.
- 2. Dial station number (10-79) that placed call on Hold.

CO/ICM Call Forward allows Intercom calls and transferred CO calls to be forwarded from one station to another station or to a Voice Mailbox. The originating station selects one of the following modes for transferring CO/ICM calls:

- immediate transfer
- transfer when busy
- transfer for calls not answered (15 seconds by default)
- transfer when busy or not answered

➤ Conditions

- a. CO/ICM Call Forward is available to key stations only. Single line sets can receive transfers but cannot originate transfers.
- b. A station with its calls forwarded to another station cannot be the destination of another station activating CO/ICM Call Forward.
- c. The destination station receives all CO calls from the originating station regardless of incoming line access/audible programming (Program 7).
- d. To answer a line at a phone without a line key appearance, the destination station must be programmed for Ringing Line Preference (Program 20).
- e. Program 83 sets the interval time for calls not answered.
- f. CO/ICM Call Forward cannot forward calls to a destination station in Do Not Disturb.
- g. A destination station can accept CO/ICM Call Forward from three different stations.
- h. CO/ICM Call Forward is in effect regardless of whether the system is in Day, Night, or Day/Night mode.

Operation

To activate CO/ICM Call Forward (C-CPU-E only):

Off hook.

- 1. Press RG TR.
- 2. Dial (10-79) destination station or 93 (for Voice Mail).
- 3. Dial: 0 = immediate transfer
 - 1 = transfer when busy
 - 2 = transfer for calls not answered
 - 3 = transfer when busy or not answered

The RG TR key flashes slowly at the originating station. The RG TR key flashes fast at the destination station.

When a long beep occurs when activating CO/ICM Call Forward, the forward is denied. The destination station is:

- not installed
- has forwarded its calls
- is in the DND mode has accepted three Call Forwards.

Note:

When a code (0-3) is not dialed, immediate transfer (0) is in effect.

To cancel CO/ICM Call Forward:

Off hook.

1. Press RG TR twice.

CO TRANSFER TO MODEM (C-CPU-E)

Feature Description

CO Transfer to Modem allows an incoming CO call to be transferred by any station in the system to the C-MDU Modem PCB for Remote Access/Message Edit features (system programming, system status, SMDR).

> Conditions

- a. A C-MDU must be installed for Remote Access/Message Edit features.
- b. The PC must be an IBM AT or XT compatible and must have the ULTRACOM AT Remote Access/Message Edit Software Diskette (P/N 10933) version 4.1+.
- c. The remote modern must be a Hayes-compatible 300/1200 bps modern.

Operation

To transfer a call to the modem:

- from a key telephone
- Off hook.
- 1. Answer the CO call.
- 2. Press ICM.
- 3. Dial 94.
- 4. Press RG INW.
- 5. Hang up.
- from a single line telephone
- Off Hook.
- 1. Answer the CO call.
- 2. Press hookswitch/tap button.
- 3. Dial 94.
- 4. Hang up.

Directory Dialing allows Message Display Phones to make Intercom and System Speed Dial calls using a directory (name list). From a Message Display Phone, select a station/System Speed Dial name from the directory and press ICM or a line key; the station/System Speed Dial number is dialed automatically.

Conditions

- a. A Message Display Phone at Port 10 or a PC with the ULTRACOM AT Remote Access/Message Edit Software Disk can enter directory names.
- b. Station Class of Service toll restriction parameters (entered in Program 40) may/may not apply to System Speed Dialing according to program entry in Program 49.
- c. A maximum eight characters are available per Directory Dial name.

Operation

To use Directory Dialing to call a station or System Speed Dial number:

On hook.

- 1. Press DC.
- 2. Press: - 4 for station names.

- 6 for System Speed Dial names.

3. Use a Function key + the dial pad to enter the first letter of the name. Refer to Message Edit mode to enter more names.

Dial * or # to display a numerical listing.

Dial * scrolls from high to low numbers or names.

Dial # scrolls from low to high numbers or names.

- ICM for an Intercom call. 4. Press:
 - A CO line key for System Speed Dial call.

To store a name for a station or System Speed Dial number (Port 10 only):

On hook.

- 1. Press DC twice.
- 2. Press: ICM for stations.

- Hold for System Speed Dial.

- 3. Dial: 10-79 for stations.
 - 00-99 for System Speed Dial numbers.
- 4. Dial *.
- 5. Use the Function keys + dial pad to enter a name. Refer to Message Edit mode to enter more names.
- 6. Press HOLD or ICM.
- 7. Press CLOCK.

Display Messaging provides capability to send/receive a visual message (16 characters maximum) to/from Message Display Phones. Messages can also be left at a station that are displayed to calling stations. The messages indicate, for example:

- Back at 11:15

- In Conf Rm #3

- At lunch

- In NY until 9/24

Note:

Refer to "Camp-on", "Real Time", "Reverse", and "Send Later" Display Messaging.

The system provides capability for 50 system messages, including 23 "default" messages. Messages may be changed using a Message Display Phone at Port 10 or by using a PC with the Remote Access/Message Edit program.

➤ Conditions

- a. A Message Display Phone can store display messages created by the end user under the F1/2 keys.
- b. The Reverse Message feature uses system Display Messages 47, 48, 49.

Operation

To store System Display Messages:

- from a Message Display Phone at port 10 On hook.
- 1. Press CHECK.
- 2. Press OPAC.
- 3. Dial (00-49).
- 4. Dial *.
- 5. Use the Function keys + dial pad to enter message. Refer to the Message Edit mode.
- 6. Press CHECK.
- 7. Dial *.
- 8. Press CLOCK.

To store a message under a Function key (F1/2):

- from a Message Display Phone

On hook.

- 1. Press CHECK.
- 2. Press OPAC.
- 3. Press F1 or F2.
- 4. Dial *.
- 5. Use the Function keys + dial pad to enter message. Refer to the Message Edit mode.
- 6. Press CHECK.
- 7. Dial *.
- 8. Press CLOCK.

Operation (Cont'd)

To send a display message to another Message Display Phone:

- from a Message Display Phone

Off hook.

- 1. Press ICM.
- 2. Dial (10-79) station number.
 - when the call is unanswered

... or ...

- a fast busy signal is heard (DND)
- 3. Dial 0. The display shows: LEAVE MESSAGE?
- 5. Dial message code (00-49) or press F1/2.
- 6. Dial *.

Note:

Dial numbers for system messages requiring numerical entries (00-01-02-12-13 by default).

To cancel a message sent to another Message Display Phone:

- from a Message Display Phone

Off hook.

- 1. Dial *.
- 2. Dial 0 to cancel all messages. (10-79) - to cancel a particular station's message.
- 3. Dial *.

To leave a display message at your phone (C-CPU-D):

- from a Message Display Phone only

On hook.

- 1. Press CHECK.
- Press OPAC.
- 3. Dial code (00-49) or F1/F2.
- 4. Dial *.
- 5. Press DND (to activate Do Not Disturb and Display Messaging).

To leave a display message at your phone (C-CPU-E):

- from a Message Display or standard key telephone On hook.

- 1. Press RG INW.
- 2. Dial display code (00-49) or F1/F2.
- 3. Dial *. The DND key flashes.

To answer/cancel display messages left at a Message Display Phone (C-CPU-E):

- from a Message Display Phone On hook.
- 1. Press CHECK.
- 2. Dial *.
- 3. Dial * to scroll downward. Dial # to scroll upward.

Press ICM to answer a Message Waiting.

Press HOLD to cancel Message Waiting.

To cancel a Display Message which appears at your telephone (C-CPU-D/E):

- from a Message Display or standard key telephone On hook.
- 1. Press CLOCK.

Default Messages

The system provides memory for fifty System Display Messages. Twenty-three messages contain default entries stored in bins 00-19, 47-49. The default messages can be changed by a Message Display Phone at Port 10 or using a PC with Ultracom AT Remote Access /Message Edit program.

Bin#	Default Message
00 *	CALL
01 *	CALL AFTER:
02 *	CALL EXT.
03	CALL ME ASAP
04	DO NOT DISTURB
05	IN CONFERENCE
06	IN MEETING
07	LEFT FOR THE DAY
08	ON BREAK
09	ON VACATION
10	OUT OF OFFICE
11	OUT TO LUNCH
12 *	OUT UNTIL:_
13 *	OUT UNTIL/
14	PAGE ME
15	PLEASE SEE ME
16	SEE ME ASAP
17	WITH A CLIENT
18	WITH A PATIENT
19	WITH A VISITOR
47 **	TAKE MESSAGE
48 **	PLEASE HOLD
49 **	CALL BACK LATER

^{* -} require numerical entries.

^{** -} used for Reverse Messaging.

Message Edit Mode

Each digit 1-0 on the dial pad contains three characters. Use the dial pad digits to enter a corresponding character when in the Message Edit mode. Refer to the chart below.

To choose a specific character when in the Message Edit mode, press:

Function key 1 to select the first character on the dial pad digit Function key 2 to select the second character on the dial pad digit Function key 3 to select the third character on the dial pad digit

Function key 4 to insert a space

Function key 5 to delete a character

Function key 6 to delete the message

to move the cursor right

* to move the cursor left

To enter numbers, press the digit required on the dial pad without pressing a function key.

F1	F2	F3	Dial pad digit
Q	-	Z	1
A	В	С	2
* D	E	F	3
G	Н	I	4
· J	K	L	5
М	N	0	6
P	R	S	7
Т	U	V	8
w	х	Y	9
:	1	-	0

DISPLAY MESSAGING - "CAMP-ON" (C-CPU-E)

Feature Description

Camp-on Messages allows a Message Display Phone to send a Display Message to a busy Message Display Phone.

Conditions

- a. When the called station is not a Message Display Phone, the display SEND MG? does not appear.
- b. Numbers must be added to System Messages which have blanks automatically inserted (CALL AFTER ___: ___).

Operation

To send a display message to a "busy" Message Display Phone:
- from a Message Display Phone

- Off hook.

 1. Press ICM.
- 2. Dial station number. Hear busy tone.
- 3. Dial 1. Display: SEND MG? xx (xx = called station number)
- 4. Press *.
- Dial message code (00-49) or F1/2 function key. ...or...
 Press FLSH to enter/exit the Message Edit mode.
- 6. Dial *.

Note:

The standard Camp-on feature may also be used when Display Messaging is not required.

Message Count Display provides a numerical total of Integrated Voice Messaging Voice Messages left at Message Display and LCD Display telephones.

Conditions

a. Message Count affects LCD and Message Display Phones only.

Operation

To check for the number of messages:

On hook.

1. Press CHECK.

2. Dial *.

Message Display set displays: VMSG 05 LCD Display set shows: 93 12

05 and 12 = the number of Voice Messages

Real Time Display Messaging allows Message Display Phones to create a display message to another Message Display Phone which is not one of the 50 system messages or stored under Function keys F1/2.

> Conditions

a. Display Messages cannot be changed from non-Message Display Phones.

Operation

To create a new display message:

- from a Message Display Phone

Off hook.

- 1. Press ICM.
- 2. Dial station number.
- 3. Dial 0 (to leave a standard MW).
- 4. Dial 0 (to leave a display message).
- 5. Press FLSH. The telephone is in the Message Edit mode. Refer to Message Edit Mode to create a message.
- 6. Press FLSH. The telephone is out of the Message Edit mode.
- 7. Dial *.

Reverse Display Messages allows a station (standard key or Message Display) on a ICM/CO call to send a display message back to a Message Display caller after receiving a Call Waiting signal. One of three system messages (programmable) is sent in reply to the caller.

By default:

- Reverse Message 1 = TAKE MESSAGE (system message 47)
 Reverse Message 2 = PLEASE HOLD (system message 48)
 Reverse Message 3 = CALL BACK LATER (system message 49)
- Conditions
 - a. System Display Messages 47-49 used for Reverse Messages can be changed by a Message Display Phone at Port 10 or using a PC with the Remote Access/Message Edit program disk.

Operation

To send a reverse message while on a ICM/CO call when an Intercom Call Wait signal is received:

- from a standard or Message Display key telephone Off hook (hear Call Wait tone).
- 1. Press RG TR.
- 2. Dial code 1, 2, 3.
 - 1 = TAKE MESSAGE system message 47
 2 = PLEASE HOLD system message 48
 - 3 = CALL BACK LATER system message 49
- 3. Receive beep. No tone is heard when the calling station is not a Message Display Phone.

To change or cancel code:

On hook.

1. Press CLOCK.

"Send Later" Display Messages allows Message Display Phones to send a display message to one or any number of other Message Display Phones at a designated time. An alarm tone signals receiving stations for ten seconds. The display appears at the receiving station(s) until cleared.

➤ Conditions

- a. "Send Later" Messages cannot be sent to non-Message Display Phones. A loud beep is heard by the sending station.
- b. Individual "Send Later Messages" cannot be canceled.

Operation

To send a display message at a designated time:

- from a Message Display Phone On hook.
- 1. Press CHECK.
- 2. Press OPAC.
- 3. Dial code (00-49) or F1/2 key.
- 4. Dial *. (Message displays. Use the Message Edit mode to change the message if required.)
- 5. Press ICM. Display: "ÉNTER STA#" or 0 + Hunt Group number. Press ICM to add another station.
- 6. Dial *. Display: "ENTER TIME".
- 7. Enter time enter using a 24 hour clock format.
- 8. Dial *. (Hear beep).

To cancel all Send Later Messages (from the sending station):

- from a Message Display Phone

On hook.

- 1. Press CHECK.
- 2. Press RG INW.

To clear the display (at a receiving station):

On hook.

1. Press CLOCK.

DISPLAY MESSAGING - "USER DETERMINATION OF MESSAGE WAIT CALLBACK" (C-CPU-E)

Feature Description

User Determination of Message Wait Callback allows an LCD Display or Message Display Phone to scroll through Message Wait indications, select a particular message, and press the ICM key to automatically call the station.

Conditions

- a. The display lists stations that left a Message Waiting on a First-in, First-out basis.
- b. Message Wait Callback is available to LCD Display and Message Display telephones only.

Operation

To call a particular station that left a message waiting: On hook.

- 1. Press CHECK.
- 2. Dial *.
- 3. Dial * to scroll downward.
 Dial # to scroll upward.
 Select a particular station.
- 4. Press ICM. Station is called automatically.

To cancel a message waiting:

On hook.

- 1. Press CHECK.
- 2. Dial *.
- 3. Dial * to scroll downward.
 Dial * to scroll upward.
 Select a particular station.
- 4. Press HOLD. Message Waiting LED's canceled at both stations.

DISPLAY MESSAGES FROM NON-MESSAGE DISPLAY PHONES (C-CPU-E)

Feature Description

Standard key and LCD display telephones can leave any of fifty system messages. When called, the message is displayed to the calling Message Display Phone.

> Conditions

- a. Standard key and LCD Display telephones cannot create messages.
- b. Function keys F1/2 are available to Message Display Phones only.

Operation

To leave a display message:

- from a standard key telephone

On hook.

- 1. Press RG INW.
- 2. Dial display code 00-49 (or F1/F2 for Message Display Phones).
- 3. Dial numbers for system messages requiring numerical entries (00-01-02-12-13 by default).
- 4. Dial *. The DND key flashes.

To cancel a display message:

- from a Message Display or standard key telephone On hook.
- 1. Press RG INW.
- 2. Dial *. The DND key goes dark.

To reactivate the same message:

- from a Message Display or standard key telephone On hook.
- 1. Press RG INW.
- 2. Dial *.

Door Chime Box operation is enhanced to allow any station to respond to Door Chime Box signals by dialing an access code.

> **Conditions**

a. A C-DDU PCB must be installed. The C-DDU PCB provides two Door Chime Box circuits.

Operation

To answer a Door Chime Box signal:

- from a key telephone Off hook.

1. Dial 9.

- from a single line telephone Off hook.

1. Dial 7 + 88/89.

88 = Door Chime Box #1.

89 = Door Chime Box #2.

Individual Timing of SMDR Calls provide two new categories for SMDR reports which indicate calls that have been placed/received at one station and transferred to another station.

> Conditions

- a. The system must be equipped with a C-SMDR or a C-MDU PCB.
- b. The C-SMDR switch SW1 dip switch 2 must be placed in the ON position.
- c. The C-MDU switch SW1 dip switch 2 must be placed in the ON position.
- d. When the C-SMDR-LA or C-MDU SW1 dip switch 2 is set to the OFF position, transferred calls list the last station on the line for SMDR purposes.

A sample SMDR printout is provided below when the C-SMDR or C-MDU are strapped to indicate transferred calls.

CLS	DATE	TIME LIN	E DURATION	ST#	DIALED#	RING	ACCT.#
OTG	10/25/89	12:05:00 06	00:09:35	26	9263397	_	1019
OTR	10/25/89	12:14:25 06	00:04:42	19			
BFL	10/27/89	13:15:00 03					
BRD	10/29/89	09:41:32 15	00:00:00	32			
INC	12/23/89	14:42:10 12	00:07:39	33		00:11	
ITR	12/23/89	14:49:49 12	00:13:17	16			

ITR = Incoming call transferred OTR = Outgoing call transferred

Operation

Automatic.

An enhancement to the Meet-Me-Page feature allows any key telephone to respond to a Meet-Me-Page by dialing an access code.

Conditions

a. Single line telephones cannot respond to a Meet-Me-Page.

Operation

To initiate a Meet-Me-Page:

- from a key telephone

Off hook.

1. Press ICM.

2. Dial: 80 (All-Call)

> (internal page zone) 81-84 85-87 (external page zone)

3. Make announcement.

(For example, "Mr. Jones, please dial 82").

4. Press #. Wait for reply.

To respond to a Meet-Me-Page:

- from a key telephone

Off hook.

1. Dial 88.

... or ...

Dial the number of the page zone (80-87) used to make page, when announced. (For example, 82).

20

The C-CPU-E provides separate "cancel" codes for the Night Transfer feature and the CO/ICM Call Forward feature.

The Night Transfer feature provides an alternate CO Audible ring pattern for each station, Voice Mail lines, DISA access, and External Page Zones. In addition, Night Class of Service toll restriction may be affected when the system is placed in Night Transfer mode.

Conditions

- a. Program 17 determines whether Night Transfer affects stations with the same incoming access group or affects all stations in the system. Night Transfer is in effect for:
 - the entire system (17-0).

...or...

- stations in the same Incoming Access/Audible (Program 7) as the activating station (17-1).
- b. The C-CPU-A/B/C/CII/D "cancel NT" code is identical to the Ring Transfer cancel code.

Operation

To activate Night Transfer (all C-CPU's):

- from a key telephone

Off hook.

- 1. Press RG TR.
- 2. Dial #.

C-CPU-A/B/C/CII/D cancel Night Transfer (the system returns to Day mode):

- from a key telephone

Off hook.

1. Press RG TR twice.

C-CPU-E cancel Night Transfer (the system returns to Day mode):

- from a key telephone

Off hook.

- 1. Press RG TR.
- 2. Dial #.

Programming Prompts are enhanced to provide a programming prompt for each program to a port 10 Message Display Phone.

➤ Conditions

a. Prompts have no effect on an LCD Display set installed at Port 10.

Operation

To view programming prompts:

- At port 10 using a Message Display Phone

1. Press the programming button.
Display: PROGRAMMING
00

2. Dial any program number (01-99) to view prompts.

3. Press the programming button to exit the Program mode.

Note:

When the WR switch is not set to the N position on the C-CPU-E PCB, the system prompts the following when exiting the program mode:

CHECK SW SETTING

Message Display and LCD Display telephones can receive a station/line display of an unanswered transferred call when recalling the original station.

➤ Conditions

- a. The line recalls the transferring station according to the following:
 - Program 38 Unannounced Transfer Recall for calls transferred using the RG INW key.
 - Program 39 Announced Transfer Recall for calls transferred not using the RG INW key.
- b. Transfer Recall Display is available to attendant stations only with C-CPU-A/B/C/CII/D software.

Operation

C-CPU-A/B/C/CII/D

To activate Transfer Recall Display (Attendant only): On hook.

- 1. Press OPAC.
- 2. Press RG INW on the DSS console. The HOLD key lights steadily.

To cancel Transfer Recall Display (Attendant only): On hook.

- 1. Press OPAC.
- 2. Press RG INW on the DSS console. The HOLD key goes dark.

C-CPU-E

To activate the Transfer Recall Display mode:

- from an LCD or Message Display Phone Off hook.
- 1. Press OPAC.
- 2. Press CHECK. The HOLD key lights.

To cancel the Transfer Recall Display mode:

- from an LCD or Message Display Phone Off hook.
- 1. Press OPAC.
- 2. Press CHECK. The HOLD key goes dark.

Universal Answer allows access to an incoming CO line ringing at another station or over the External Page Zone by dialing an access code.

Conditions

- a. Universal Answer cannot access transferred CO or DISA calls.
- b. A station must be programmed for incoming access to the line (in Program 7) or the line must be programmed as a Common Use Line to access the call.
- c. Universal Answer provides access to calls whether or not the system is in Night Transfer.

Operation

To access an incoming call ringing at another telephone or through the External Page Zone:

- from a key telephone
- Off hook.
- 1. Press ICM.
- 2. Dial 96.
- from a single line telephone Off hook.
- 1. Dial 96.

The ULTRACOM AT requires programming to allow ULTRACOM AT system hardware or ancillary devices to become operational. The following hardware requires ULTRACOM AT default option codes to be changed to become functional:

Alarms

Background Music

Data Telephones (modem)

Direct Inward System Access (DISA) ports

DISA lines

Door Chime Boxes

DSS consoles

FAX (facsimile) lines

Headsets

Message Display Phones

Music On Hold

Remote Access/Message Edit features

Single line telephones

Unsupervised Conference

Voice Mail/Automated Attendant lines

Before programming the system, identify the C-CPU processor installed, then refer to the appropriate ULTRACOM AT manual for software configuration and program entry instructions.

- C-CPU-A/B Software Manual	N1750IMG
	N1751SWU01

Program numbers not used are listed below.

C-CPU-CII	C-CPU-D	C-CPU-E	
18	18	18	
36	36	36	
50	50	50	
61	. 61	61	
77	86		
78	87		
82	88		
83	89		
84	92		1
85	93		
86	94		
87	95		
88		-	
89			
92			
93			
94			
95			

Executive Override is enhanced to provide a station with two ways to barge-in into CO calls. A station programmed for Executive Override has both Privacy Override and Station Observation capability.

Privacy Override on CO Lines

Executive Override allows a station to barge-in on a CO call by pressing a CO line key (01-24). Privacy Override is programmed on a per station basis to occur with or without warning tones. A station can barge-in only on lines which have a line key appearance.

Station Observation

Executive Override allows a station to barge-in to another station's CO call by dialing the station number (10-79).

Caution:

Station Observation intrudes without issuing warning tones.

> Conditions

- a. Intercom calls cannot be intruded upon.
- b. Privacy Override cannot barge-in on the following:
 - Unsupervised Conference calls
 - Exclusive Hold calls
 - DISA (Direct Inward System Access) calls
 - CO calls transferred to the C-MDU modem
- c. Privacy Override cannot be used to barge-in to Data Telephone CO calls.
- d. Executive Override is not available to single line telephones.
- e. Five stations maximum can activate Privacy Override on a CO call.

Operation

Privacy Override:

Off hook.

1. Press line key (LED lit steadily).

Station Observation:

Off hook.

- 1. Press RG INW.
- 2. Dial 10-79 (station number).

Program Description

Program 4 enables/disables Executive Override for each station.

> Conditions

- a. A station programmed for Executive Override has capability for both Privacy Override and Station Observation.
- b. Each Executive Override station can be programmed to activate Privacy Override with or without warning tones.
- c. Executive Override is not available to single line telephones.

> Additional Programming

None

Instructions

AB: Program number 4.

CD: 10-73 (port number). E: 0 - Executive Overrio

0 - Executive Override is not allowed.

1 - Executive Override is allowed Privacy Override occurs with warning tones.

2 - Executive Override is allowed

Privacy Override occurs without warning tones.

-Example

Station 24 has Executive Override. When station 24 uses the Privacy Override feature, barge-in occurs with warning tones.

Α	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P
0	4	2	4	1	-	-	-	-	-	-	-	-	1	1	-

➤ Default Entry

E: 0 - (ports 10-73) Executive Override disabled for all stations.

Program Entry

- 1. Enter program number 4.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press *.
- 7. Press # to exit the program.

The system can search for an idle station for Intercom and transferred CO calls. The caller dials a hunt group number, which initiates the search among all stations in the hunt group for an idle station.

The hunt is a terminal hunt, always beginning with the first station in a hunt group and sequentially hunting in order through the rest of the hunt group for the first idle station.

➤ Conditions

- a. When the system is equipped with a C-CPU-A/B/C/CII/D/E (series 1) PCB, ten hunt groups (0-9) are provided. Each hunt group provides capability for eight stations.
- b. When the system is equipped with a C-CPU-E series 2 (or higher), five hunt groups (0-4) with 16 stations in the group are provided.
- c. When all extensions in a hunt group are busy, a caller receives a busy tone. When all stations in a hunt group are busy, a Camp-on or Callback connects the call to the first station in the hunt group when that station returns to the idle state.
- d. Each station can be programmed into one hunt group only.

Operation

To activate group hunting:

- from a key telephone

Off hook.

- 1. Press ICM.
- 2. Dial #.
- 3. Dial hunt group number (0-4 or 0-9).

 The first idle station in the hunt group is called.

- from a single line telephone

Off hook.

- 1. Dial 7.
- 2. Dial #.
- 3. Dial hunt group number (0-4 or 0-9). The first idle station in the hunt group is called.

To transfer a call to a hunt group:

- from a key telephone

Off hook. Establish outside call.

- 1. Press ICM.
- 2. Dial #.
- 3. Dial hunt group number (0-4 or 0-9). The first idle station in the hunt group is called.
- 4. Press RG INW.

- from a single line telephone

Off hook.

- 1. Press hookswitch (while on a CO call).
- 2. Dial #.
- 3. Dial hunt group number (0-4 or 0-9). The first idle station in the hunt group is called.

Program Description

Program 11 determines the stations and hunting order of each hunt group.

> Conditions

- a. A station must be placed in one hunt group.
- b. When the system is equipped with a Č-CPU-A/B/C/CII/D or C-CPU-E series 1 PCB, ten hunt groups are provided. Each hunt group provides capability for eight stations.
- c. The C-CPU-E series 2 (or higher) provides five hunt groups. Each hunt group allows 16 stations maximum.

> Additional Programming

None

Instructions

AB: Program number 11.

C: Hunt group number:

(0-9) C-CPU-A/B/C/D or C-CPU-E (series 1).

(0-4) C-CPU-E (series 2 or higher).

D: Bin number:

(0-8) C-CPU-A/B/C/D or C-CPU-E (series 1).

(1-16). C-CPU-E (series 2 or higher).

EF: (10-73) port number.

➤ Example

Station 23 is in Hunt Group 4 in the 9th bin.

Α	\mathbf{B}	C	D	E	F	G	H	<u> </u>	_ <u>J</u> _	K	L	M	N	0	<u>P</u>
1	1	4	9	2	3	-	-	-	-	•	•	-	-	-	-

➤ Default Entry

C:

(0-9/0-4) hunt group.

D:

(1-8/1-16) bin location.

EF:

00 - no station assigned.

Program Entry

- 1. Enter program number 11.
- 2. Press *.
- 3. Enter C data. Bin number (D data) displays.
- 4. Press *.
- 5. Enter EF data,
- 6. Press *.
- 7. Press # to exit the program.

Flexible Line Appearance is enhanced to provide "lamp shift" for two line groups for each key station for incoming/outgoing access. The "lamp shift" rearranges CO lines in consecutive order at each key telephone according to each station's line group assignments in Program 7.

The lamp shift places the lowest line assigned to the station on line key 1. The next consecutive line is placed on line key 2, etc. The second line group "lamp shifted" is placed on the first vacant line key not assigned to the first group.

For example: Flexible Line Appearance is enabled. Station 33 is assigned Incoming Access for line groups 4 and 23 in Program 7.

```
Program 2 Group 04 - 09-12
Program 2 Group 23 - 19-20
```

Program 7 Station 33-1-04x (x = audible assignment) Program 7 Station 33-2-23x (x = audible assignment)

The following "lamp shift" occurs automatically:

Station 33 CO line key assignments:

- Line key 1 = CO line circuit 9
- Line key 2 = CO line circuit 10
- Line key 3 = CO line circuit 11
- Line key 4 = CO line circuit 12
- Line key 5 = CO line circuit 19
- Line key 6 = CO line circuit 20

> Conditions

- a. Flexible Line Appearance affects all key stations in the system.
- b. C-CPU-A/B/C/CII/D Flexible Line Appearance allows "lamp shift" for one line group for incoming/outgoing access.
- c. Lines in each line group "lamp shifted" must be consecutive. Lines are placed in line groups in Program 2 Line Groups.

Operation

Automatic.

Program Description

Program 15 enables Flexible Line Appearance.

- > Conditions
 - a. Flexible Line Appearance affects all key stations in the system.
 - b. Program 6 Outgoing Line Access programming is erased when Flexible Line Appearance is enabled.
 - c. Entries Program 6 must be re-entered when Flexible Line Appearance is enabled, then disabled.
- > Additional Programming

Program 2 Line Groups

Program 7 Incoming Line Access/Audible

Instructions

AB:

Program number 15.

C:

0 - disable Flexible Line Appearance.1 - enable Flexible Line Appearance.

> Example

Flexible Line Appearance enabled. "Lamp shift" is in effect for all key telephones according to Program 2 and Program 7 entries.

A	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P
1	5	1	-	-	-	-	-	-	-	-	-	-	-	,	-

➤ Default Entry

C: 0 - Flexible Line Appearance disabled.

- Program Entry
 1. Enter program number 15.
 2. Press *.
 - 3. Enter C data.
 - 4. Press *.
 - 5. Press # to exit the program.

Privacy Release is a programmable feature that allows a station to conference up to five other stations on a CO call. A maximum of six stations can conference on a CO line. Privacy Release is activated on a per call basis.

➤ Conditions

- a. When a station allows Privacy Release, other stations gain temporary access to the line regardless of Program 7 options. When the original station returns to the call, access to the line is denied to other stations.
- b. A station must have the CO line appear on a key to join into the call.
- c. Single line telephones cannot activate Privacy Release. Single line telephones cannot join a conference using Privacy Release.
- d. Add-on Conference is not affected by Program 29.

Operation

To activate Privacy Release on a CO call: Off hook.

- 1. Place/answer a CO call.
- 2. Press CONF.
- 3. Press ICM.
- 4. Dial station number or internal page (80-84).
- 5. Announce CO line number.
 allow stations enough time to access announced line.
- 6. Press CONF to return to the call. (Privacy is re-enabled on the line.)

To join a call when Privacy Released has been activated: Off hook.

1. Press announced line key.

Program Description

Program 29 determines whether the system allows Privacy Release on CO calls.

- > Conditions
 - a. Privacy Release affects key telephones only.
- > Additional Programming

None

Instructions

AB: Pr

Program number 29.

C: 0 - The s

0 - The system does not have Privacy Release.

1 - The system has Privacy Release.

> Example

Privacy Release is enabled.

Α	\mathbf{B}	C	D	E	F	G	H	I	J	K	L	M	N	0	P
2	9	1	-	-	-	-	-	-	-	-	,	-	1	-	-

➤ Default Entry

C:

0 - Privacy Release is disabled.

Program Entry

- 1. Enter program number 29.
- 2. Press 🗱.
- 3. Enter C data.
- 4. Press *.
- 5. Press #.

Permitted Codes are telephone numbers that a station programmed with a Class of Service (COS) 2-4 can dial which would otherwise be restricted, overriding standard COS restrictions.

For example, a station programmed for COS 3 toll restriction (in Program 40) denies any long distance (1 + 10 digit dialing). To allow the COS 3 station to dial a long distance (1 + 10 digit) number in another area code, enter the telephone number as a Permitted Code.

Deny Codes are telephone numbers that a station programmed with a Class of Service (COS) 1-7 cannot dial which would otherwise be allowed, overriding standard COS dialing capability.

Permitted/Deny codes may include any combination of seven digit, 1 + seven digit, and 1 + 10 digit numbers, up to a maximum of 12 digits. Permitted Codes must be dialed in correct sequential order.

Thirty Permitted/Deny codes are available. Any combination of Permitted/Deny Codes is allowed. The length of Permitted/Deny Codes is programmable in Program 41.

The system "scans" numbers for correct sequence for 12 digits. For numbers longer than 12 digits, the system counts digits and can restrict numbers up to thirty digits in length.

Permitted/Deny Codes allow "wild card" (DC) entries. The DC key represents any dial pad digit: *, #, or 0-9. DC entries can be made in any location in a Permitted/Deny Code except bin 01.

"Wild card" DC entries allow a means of using one code to allow any number of telephone numbers to dialed from one code. For example, using DC entries in a Permitted Code (1-DC-DC-DC-555-1212) allows directory assistance calls to any area code.

Note:

When using C-CPU-CII/D/E central processor PCBs, all stations default to COS 1 in Program 40.

Conditions

- a. When the Permitted Code is not dialed in correct sequence, the caller is disconnected from the line.
- b. Stations with COS 0/1 can dial all Permitted Codes.
- c. Stations with COS 1-8 cannot dial Deny Codes.
- d. When using C-CPU-A/B/C central processor PCB's, all stations default to COS 0 in Program 40.

Operation

Automatic.

Program Description

Program 41 determines Permitted Codes which can be dialed by stations with Class of Service 2-4. Program 41 also determines Deny Codes which cannot be dialed by any station with a Class of Service 1-8. A Permitted/Deny Code contains up to the first 12 digits of the desired telephone number.

Program 79 determines the number of Permitted/Deny Codes. When 18 is entered, consecutive bins 01-18 are designated as Permitted Codes. The remaining 12 codes (consecutive bins 19-30) are designated as Deny Codes.

Permitted Codes

To allow directory assistance for any area code only,

enter: 1DCDCDC5551212

Deny Codes

To deny any 1-900 calls,

enter: 1900

To deny 976 calls,

enter: 976DCDCDCDC

> Conditions

- a. Program 42 determines the length of Permitted/Deny Codes.
- b. Do not enter "0" or "DC" as the first digit of a Permitted Code.
- Do not enter PBX access or OCC dialup codes in a Permitted Code.

> Additional Programming

Program 40 Class of Service

Program 42 Permitted Code Digit Limit

Program 64 Local Permitted Codes

Program 79 # of Permitted Codes

Instructions

AB: Program number 41.

CD: (01-30) Permitted/Deny Code bin number.

E-P: Permitted/Deny Code.

> Example

The number 1-976-1237 is in bin number 25. (Program 79 determines whether bin 25 is a Permitted or a Deny Code).

 <u>A</u>	В	C	D	E	F	G	H	I	J.	K	L	M	N	O	P
4	1	2	5	1	9	7	6	1	2	3	7	-	-	-	-

➤ Default Entry

None

Program Entry

- 1. Enter program number 41.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *. Display clears.
- 5. Enter E-P data (max. 8 digits displayed. Press OPAC to erase).
- 6. Press *. Repeat steps 3-6 to enter additional codes.
- 7. Press # to exit the program.

The Remote Access/Message Edit program provides ULTRACOM AT Remote Access/Message Edit features: System Programming, System Diagnostics, SMDR, Upload/Download, and Direct Modem Access.

When the KSU is equipped with a C-MDU PCB and connected to an IBM compatible PC with the Remote Access/Message Edit program disk, the following functions are allowed:

C-CPU-CII	C-CPU-D	C-CPU-E
System Programming	System Programming	System Programming
System Status	System Status	System Status
SMDR	SMDR	SMDR
-	Upload/Download	Upload/Download
:	Message Edit	Message Edit Direct Modem Access

Conditions

- a. The PC must an IBM AT and XT compatible and equipped with a Hayes-compatible modem.
- b. A CO line can be programmed for DISA to access the C-MDU modem. A DISA line is programmed to automatically answer a call in Day, Night, or Day/Night mode in Program 68.
- c. A security code must be assigned to the DISA code in Program 70.
- d. Class of Service 9 must be assigned to the DISA security code in Program 72.
- e. A C-STU-D single line circuit must be installed, equipped with a C-MFRU DTMF receiver PCB, and programmed as a DISA port in Program 8.
- f. A key station circuit must be dedicated in Program 69 when Remote Access/Message Edit is used for System Programming, Upload/Download, or Direct Modem Access.

Operation

To access the C-MDU Modem:

Access to the C-MDU modem for an on-site or remote PC is completed using the following methods:

C-CPU-CII/D/E

- DISA line access to the modem - Call in to the system on a DISA line and enter a DISA security code.

C-CPU-E

- CO Transfer Call in to the system on any CO line, and when answered by any station, be transferred to the C-MDU modem.
- Dedicated line access (for an on-site PC only) press the C-COU line circuit dedicated to access the C-MDU modem PCB.

Refer to the Remote Access/Message Edit Manual for specific Remote Access/Message Edit instructions (P/N N1654RAM01).

Program Description

Program 47 indicates whether a C-MDU PCB is installed.

> Conditions

- a. The system cannot be equipped with a C-SMDR-LA PCB when Remote Access/Message Edit features are required.
- A C-STU-D single line circuit dedicated as a DISA port must be installed and programmed when DISA is required to access the modem.
- c. A line must be programmed for Day, Night, Day/Night DISA operation when DISA is required to access the modem.

> Additional Programming

Program 3 DISA, FAX, Common Use Lines

Program 8 Night COS, Headset, *Instrument Type*, Do Not Disturb, Internal Page Zone

Program 68 DISA Line Access

Program 69 Remote Programming Port

Program 70 DISA Security Codes

Program 72 DISA Class of Service

Instructions

AB:

Program number 47.

C:

- 0 No PCB installed in the MISC slot in the KSU.
 - C-SMDR-LA installed in the MISC slot in the KSU.
 - C-MDU not installed in the MISC slot of the KSU.
- 1 C-MDU installed in the MISC slot of the KSU.

➤ Example

The system has a C-MDU installed.

_				E												
4	7	1	-	-	-	-	-	-	-	-	-	-	-	-	-	

➤ Default Entry

C:

0 - C-MDU not installed.

Program Entry

- 1. Enter program number 47.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Press # to exit the program..

Modem Auto Answer allows a Data Telephone to automatically answer an Intercom/CO call after a programmed number of rings in Day, Night, or Day/Night mode. When the Modem Auto Answer timer (Program 63) expires, the line is seized at the Data Telephone.

Conditions

- a. A Data Telephone can override Auto Answer by answering the call before the Auto Modem Answer Timer elapses.
- b. To activate Modem Auto Answer for ICM calls, program each Data Telephone that requires Modem Auto Answer for Headset operation (Program 59). Headset operation forces all Intercom calls to ring the station.
- c. Program Day, Night, or Day/Night Audible for each Data Telephone to allow Modem Auto Answer to access outside calls automatically.

Operation

To activate Modem Auto Answer:

On hook.

- 1. Prepare PC communications software to receive data.
- 2. Press Function key 9. MON lamp flashes.

When the modem answers a data call, the SPK key lights. Transmission tones are heard over the speaker.

To cancel Modem Auto Answer:

On hook.

1. Press Function key 9. MON lamp goes dark.

Program 63 selects the number of times a call rings before a Data Telephone automatically answers both CO and Intercom calls. Auto Answer allows a Data Telephone to answer while unattended. For example:

Value	Rings before CO answered	Rings before ICM answered	
001	2	2	
002	3	3	
003	4	4	
004	5	6	
005	5	Ž	
006	6	9	
007	7	10	
008	8	11	
009	9	14	
010	10	15	

Conditions

- a. The Modem Auto Answer timer affects all Data Telephones in the
- b. Program each Data Telephone which requires Modem Auto Answer for Headset operation in Program 59.

Additional Programming

Program 59 Headset Operation

Program 73 Modem (Data) Telephone Port Assignment

Instructions

AB:

Program number 63.

CDE:

001-127.

Example

A CO call rings 5 times and an ICM call 7 times before being automatically answered by a Data Telephone.

<u>A</u>	В	<u>C</u>	D	E	F	G	H	I	J	K	L	M	N	0	P
6	3	0	0	5	-	-	-	-	-	-	-	-	-	-	-

Default Entry 000

CDE:

- 1. Enter program number 63.
- 2. Press *.
- 3. Enter CDE data.
- 4. Press *.
- 5. Press # to exit the program.

Each DISA line can be designated to automatically answer CO calls in Day, Night, or Day/Night mode. When DISA auto answer is enabled on a CO line, DISA callers are also allowed access to ULTRACOM AT stations through Intercom (ICM) calls.

Note:

To ensure proper DISA Day, Night, or Day/Night operation, the system should be programmed to allow only the DSS consoles or the port 10 telephone to activate the Night mode (Program 17 = 0).

➤ Conditions

- a. Each DISA line must be identified in Program 3.
- b. To allow DISA to access CO lines for outgoing calls, the DISA port must be programmed to access a line group in Program 6.
- c. Program 70 assigns DISA security codes which must be entered to allow a DISA caller to access a CO line for outgoing purposes. Each DISA security code can be assigned a Class of Service (0-8) to restrict dialing capability.
- d. Program 17 Night Transfer determines whether the entire system is in Night mode or whether stations with the same incoming audible /access group are placed in Night mode.
- e. When the system allows Night mode activation by any station (Program 17 = 1), DISA lines function only when a station with incoming access on CO line group 1 activates the Night mode.

Operation

Refer to Direct Inward System Access (DISA) for CO line access, Intercom (ICM) calls, or Group Hunting.

Refer to Night Transfer for placing the system in Day or Night mode.

To allow a DISA caller to access the Auto Attendant/Voice Mail:

- from a remote 2500-type telephone
- 1. Call in on the DISA line.
 - When DISA port answers, internal dial tone is heard.
- 2. Dial 93 (or the Voice Mail port number).

Program 68 determines the mode (Day, Night, Day/Night) the system must be in to automatically answer a call on a DISA line.

> Conditions

- a. A CO line must be identified as a DISA line in Program 3.
- b. Program 17 Night Transfer determines the station(s) that can place the system in the Night mode.
- c. A DISA security code must be entered to allow a DISA caller to gain access to a (system) CO line for outgoing purposes.
- d. A DISA Class of Service can be assigned to each DISA security code to restrict DISA outgoing dialing access.

> Additional Programming

- Program 3 DISA Line, FAX Line, Common Use Line
- Program 6 Outgoing Line Access
- Program 17 Night Transfer
- Program 70 DISA Security Codes
- Program 72 DISA Class of Service

Instructions

AB: Program number 68.

CD: (01-24) DISA line number.

E: 0 - disables DISA answer.

- 1 DISA answer Day mode. Allow DISA ICM calls.2 DISA answer Night mode. Allow DISA ICM calls.
- 3 DISA answer Day/Night mode. Allow DISA ICM calls.

> Example

DISA line 23 answers Night mode only. DISA ICM calls allowed.

Α	В	C	D	E	F	G	H	_I	_J_	K	L	M	N	0	<u>P</u>
6	8	2	3	2	-	-	-	-	-	-	•	-	•	-	-

➤ Default Entry

CD: (01-24) all lines.

E: 0 - DISA disabled. DISA ICM calls denied.

- 1. Enter program number 68.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press **∗**.
- 7. Press #.

PC Programming allows system programming from a central service location or on-site using an IBM compatible PC. The PC must be equipped with a Hayes-compatible modem and the ULTRACOM AT Remote Access/Message Edit program disk.

The following lists methods available to access the C-MDU modem:

C-CPU-CII/D

- DISA line access to the modem - Call in to the system on a DISA line and enter a DISA security code.

C-CPU-E

- CO Transfer Call in to the system on any CO line, and when answered by any station, be transferred to the C-MDU modem.
- Dedicated line access (for an on-site PC only) Press the C-COU line circuit dedicated to access the C-MDU modem PCB.
- DISA line access to the modem Call in to the system on a DISA line and enter a DISA security code.

> Conditions

- a. A C-MDU Modem PCB must be installed for Remote Access/ Message Edit features.
- b. The PC modem must be Hayes-compatible.
- c. The ULTRACOM AT Remote Access/Message Edit program disk (P/N 10933) is required.
- d. An installed key station circuit must be identified as a Remote Programming Port in Program 69. The circuit must be idle to use Remote Access/Message Edit features.
- e. Remote system programming with C-CPU-CII/D PCBs requires a DISA line, a single line circuit equipped with a C-MFRU-B PCB, and programmed as a DISA port. DISA can also be used with C-CPU-E PCBs.
- f. Direct Modem Access (C-CPU-E only) requires a dedicated C-COU line circuit to access the C-MDU modem.

Operation

To access the C-MDU modem for an on-site or remote PC, use one of the following methods:

- DISA (C-CPU-CII/D/E)
- CO Transfer (C-CPU-E only)
- Direct Modem Access (C-CPU-E only)

Refer to the ULTRACOM AT Remote Access/Message Edit Manual (P/N N1654RAM01) for specific Remote Access/Message Edit instructions.

Program 69 determines the key station circuit required for PC Programming.

> Conditions

- a. A key station circuit must be dedicated for the Remote Programming port. A key telephone may be installed, but is not required to be installed at the remote programming port.
- b. While the system is being programmed from a PC, the remote programming port, when equipped with a Message Display or LCD Display telephone, displays the programming data.
- c. A key telephone installed at the Remote Programming Port cannot be used for outgoing access while remote programming is in progress.
- d. When using a Data Telephone for Direct Modem Access, the Data Telephone cannot be used as the Remote Programming Port.

> Additional Programming

- Program 3 DISA, FAX, Common Use Lines
- Program 8 Night COS, Headset, Instrument Type, Do Not Disturb, Internal Page Zone
- Program 47 Remote Maintenance
- Program 68 DISA Line Access
- Program 70 DISA Security Codes
- Program 72 DISA Class of Service
- Program 86 On-Site Assignment

Instructions

- AB: Program number 69.
- CD: (10-73) remote programming port.

> Example

Key station circuit 36 is the remote programming port.

<u>A</u>	В	<u>C</u>	<u>D</u>	E	F	G	H	<u>I</u>	J	K	L	M	N	0	·P
6	9	3	6	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

CD: 10 - Key station circuit 10 is the remote programming port.

- 1. Enter program number 69.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Press # to exit the program.

The ULTRACOM AT Data Telephone provides an interface to support a data communication network between computers, terminals, printers or other on-site Data Terminal Equipment (DTE) devices. The Data Telephone provides a 300/1200 modem and a DB-9 connector to interface a DTE device.

Conditions >

- a. Eight Data Telephones can be installed.
- b. The communications package for the data terminal equipment (computers, etc.) must be Hayes-compatible.
- c. Numbers dialed from the terminal require a DTMF CO line. Using a telephone, manually dialed telephone numbers can be dialed on either DTMF or Dial Pulse lines.
- d. To allow Auto Answer, each Data Telephone must be programmed for Day, Night, or Day/Night Audible.
- e. Stations programmed for Executive Override cannot barge-in to Data Telephone calls.
- f. Standard key, LCD Display, or Message Display Phones cannot be equipped for modem capability.
- g. Switch SW1 inside the Data Telephone determines whether Data Terminal Ready (DTR) and/or local echo are supported.

Operation

To activate Auto Answer:

- from a Data Telephone

On hook.

- 1. Prepare PC communications software to receive data.
- 2. Press F/9 key. MON lamp flashes slowly. (Auto Answer mode).

To cancel Auto Answer:

- from a Data Telephone

On hook.

1. Press Function key 9. MON Lamp goes dark. Idle state.

To send/receive data after establishing a call:

- from a Data Telephone

Off hook.

Prepare PC communications software to send/receive data.

- 1. Establish call.
- 2. Press Function key 10.
- 3. Hang up. MON lamp flashes fast.

To send data:

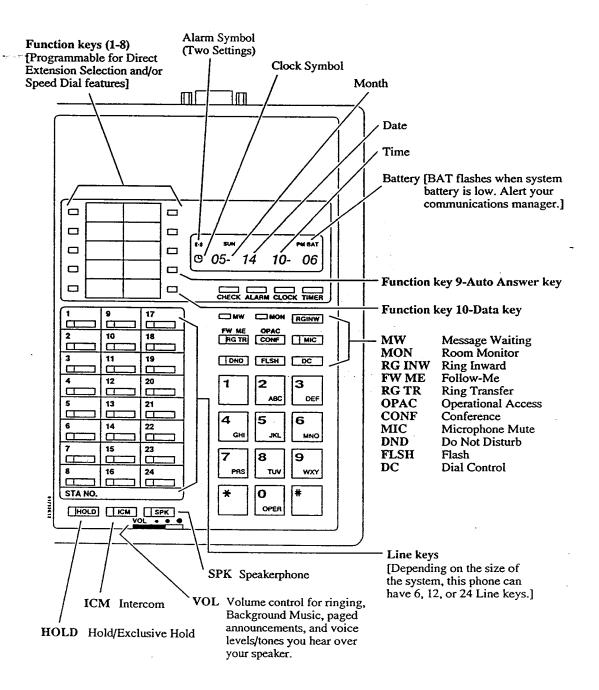
- 1. Type: ATDT.
- 2. Press: Enter key/<return>.

...or...

To receive data:

- 1. Type: ATA.
- Press: Enter key/<return>.

Refer to the following pages.



DATA PHONE

Operation (Cont'd)

To place an outside data call with DTMF signaling:

The distant modem must be in the answer (receive) mode. Prepare the PC communication's software to dial a call.

1. Type: ATDT + phone number.

2. Press Function key 10. MON lamp flashes.

3. Press a CO line key.

4. Press: Enter key/<return>.

To place an outside data call with Dial Pulse (DP) signaling:

The distant modem must be in the answer (receive) mode.

Prepare the PC communication software to dial a call.

1. Type: ATD + phone number.

2. Press Function key 10. MON lamp flashes.

3. Press a CO line key.

4. Press: Enter key/<return>.

To place an Intercom data call:

Off hook.

Prepare the PC communication software to send data.

1. Press ICM.

2. Dial station number.

3. Press Function key 10. MON lamp flashes. Hang up.

4. Type: ATD.

5. Press: Enter key/<return>.

"CONNECT" or. "CONNECT 1200" messages confirm data transmission.

To terminate a data call:

1. Press Function key 10.

Refer to the following pages for modem commands.

The modem powers up in the command state to allow commands to be issued to the modem, or to change various modem parameters, (e.g., by changing memory in S registers). Enter commands to leave the command state and go on-line with a remote terminal.

NOTE: Enter all commands in UPPERCASE.

The following are modem commands.

AT - - Attention

Begin command input lines by dialing AT.

To dial a number:

1. Type: AT followed by D and the number.

Press: Enter key/<return>.

Operation (Cont'd) Command State Commands

A/ - - Repeat.

When a command is entered, the system stores it in a command buffer.

To repeat the command without reentering it:

1. Type: A/.

The system overwrites the existing command in the buffer when a new command is entered, or enters the AT command only.

, (Comma) - - Pause (default = 2 seconds).

A comma causes the modem to pause. The length of the pause is programmable (register S8, see the S command and Table 3). Multiple commas are permissible.

D # - - Dial -----> # = telephone number.

To dial a number, precede the number with a D. (There are other parameters that can be entered when dialing a number. For instance, to dial a number using Dial Pulse when the normal modern dialing is Tone, dial P after D, e.g., AT DP1234. Refer to T, P, R, commands for further information).

En -- Echo (default n = 1) ----> n = 0, 1.

This command controls the echo ability of the Data Telephone during the command state.

To echo the characters being transmitted to the modem:

1. Type: AT E1.

2. Press: Enter key/<return>.

To suppress the echo:

1. Type: AT E0.

2. Press: Enter key/<return>.

Mn -- Speaker (default n = 1) ----> n = 0, 1, 3.

This command allows dial tone, busy tone and carrier to be heard over the Data Telephone speaker.

To deactivate monitoring:

1. Type: AT MO.

2. Press: Enter key/<return>.

Command State Commands (Cont'd)

To activate the monitoring until the modem detects a carrier:

- 1. Type: AT M1.
- Press: Enter key/<return>.

Enter AT M2 to activate continual monitoring.

O - - On-line.

The O command returns the modem to the on-line state. For example, when the modem is in on-line state and a command must be executed:

- 1. Use the Escape command.
- 2. Execute command.
- 3. Type: AT O.
- 4. Press: Enter key/<return> to return to the on-line state.

Qn -- Code reporting (default n = 0) ----> n = 0, 1.

The modem can generate result codes, e.g., NO CARRIER.

To generate code transmission:

- 1. Type: AT QO.
- 2. Press: <CR>.

To suppress code transmission:

- 1. Type AT Q1.
- 2. Press Enter key/<return>.

R - - Reversal.

The R command toggles the state of the modem from originate to

To change from the originate to the answer state after dialing a number:

1. Type: R after the number, e.g., AT D1235434R.

When dialing is complete, the modem switches to the answer state. This command is useful when calling an originate-only modem.

n = 0-16. Sn? - - Read Range

The Sn? command reads the content of an S register. The content appears on the terminal display as a decimal number (0-255). The "n" after the S specifies the register number (0-16).

To read the contents of register 5:

- 1. Type: AT S5?.
- 2. Press: Enter key/<return>.

For more information on registers, refer to Table 3.

Command State Commands (Cont'd)

S n = v - Assign Register Data - - - >
$$n = 0-16$$
, $v = 0-255$.

The S n = v command sets the value of the register specified by n (range = 0-16). The "v" specifies the value to assign the register (range=0-255).

To assign register 6 a value of 3:

- 1. Type: AT S6 = 3.
- 2. Press: Enter key/<return>.

For more information on registers, refer to Table 3.

; - - Return to Command State

The modem enters the on-line state after dialing a number. Use the; command at the end of a dialing command to reenter the command state after the dialing.

Vn -- Result Codes (default
$$n = 1$$
) ----> $n - 0, 1$.

The Vn command determines if the result code is literal, "NO CARRIER", or numerical, "3". Refer to Table 2.

To select numerical result codes:

- 1. Type: AT V0.
- 2. Press: Enter key/<return>.

To select literal result codes:

- 1. Type: AT V1.
- 2. Press: Enter key/<return>.

Table 2 Result Codes and Translations

Numerical	Literal	Code
Code	Code	Translation
0	ОК	Command executed without errors
1	CONNECT	Carrier detected at 300 bps
2	RING	Ring signal detected
3	NO CARRIER	Carrier lost or never present
4	ERROR	Command line error
		Invalid command
		Command line greater than 32 characters
		Invalid character format a 1200 bps
5	CONNECT 1200	Carrier detected at 1200 bps

Commands State Commands (Cont'd)

Z - - Initialization.

The Z command initializes the modem, resets the command buffer, loads default values, and clears the command buffer.

To initialize the modem:

- 1. Type: AT Z.
- 2. Press: Enter key/<return>.
- + - Escape character (default = 1 second).

The escape sequence returns the modem to the command state. The Escape sequence consists of the Escape character repeated three times, e.g., +++, and a (fixed value) guard time (the interval between the last character and the Escape sequence).

To change the Escape character, from + to another character, enter the ASCII value of the new character into register S2.

To use the Escape sequence:

- 1. Wait the length of the guard time.
- 2. Type: the Escape character three times.
- 3. Wait the length of the guard time before transmitting another character. The modem enters the command state.

Table 3 S Registers

Register	Range	Unit	Default	Function
S0	0-255	Rings	1	Rings after which modem answers
S1	0-255	Rings	0	Counts number of rings
S2	0-127	ASCII	43	Escape code character
S 3	0-127	ASCII	13	Value for carriage return
S4	0-127	ASCII	10	Value for line feed
S5 ·	0-32			
	or	ASCII	8	Value for backspace character
	127			
S 6	2-255	Seconds	2	Delay before dialing
S 7	1-255	Seconds	30	Delay for remote carrier detection
S8	0-255	Seconds	2	Pause time for comma command
S9	fixed	Seconds	0.6	Sets carrier detect response time
S10	fixed	Seconds	0.7	Delay between carrier loss and hang up
S11	fixed	Seconds	0.1	Duration/spacing of touch tones
S12	fixed	Seconds	1	Escape code guard time

Program 73 identifies key station circuits which have a Data Telephone (modem) installed.

➤ Conditions

- a. Maximum eight Data telephones can be installed per system.
- b. Any C-STU-A key circuit can interface a Data Telephone.
- c. To facilitate Auto Answer for Data Telephones, program each Data Telephone for Incoming Call/Recall Preference (Program 20) and Headset Operation (Program 59).
- d. When a Data Telephone is used for Direct Modem Access, a line circuit must be dedicated to the C-MDU modem in Program 86.
- e. When using a Data Telephone and Direct Modem Access for Remote Access/Message Edit purposes, the Data telephone cannot be used as the Remote Programming Port. Any other key station circuit must be used for the Remote Programming Port.

➤ Additional Programming

- Program 6 Outgoing Line Access
- Program 7 Incoming Line Access/Audible
- Program 8 Night COS, Headset, *Instrument Type*, Do Not Disturb, Internal Page Zone
- Program 20 Ringing/Recall Line Preference
- Program 47 Remote Maintenance
- Program 59 Headset Operation
- Program 63 Modem Auto Answer
- Program 69 Remote Programming Port
- Program 86 On-Site Assignment

Instructions

- AB: Program number 73.
- CD: Port number.
- E: 0 Non-Data Telephone.
 - 1 Data Telephone.

> Example

Port 45 is a Data Telephone.

A	B	C	D	E	F	G	Н	I	J	K	L	M	N	0	P_{-}
7	3	4	5	1	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

E: 0 ports 10-73.

- 1. Enter program number 73.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press *.
- 7. Press # to exit the program.

AUTOMATED ATTENDANT/INTEGRATED VOICE MAIL (C-CPU-D/E)

Feature Description

Incoming CO calls can be immediately directed to the Voice Mal Automated Attendant in Day, Night, or Day/Night mode, or can be directed to the Automated Attendant after a programmable Delayed Ring Timer has elapsed. The Automated Attendant automatically answers the call and provides the caller with a recorded greeting and available options.

The C-CPU-D/E PCBs provide Integrated Voice Mail and Automated Attendant capability. The C-CPU-D/E supports Automated Attendant operation in Day, Night, or Day/Night mode.

For more information on Integrated Voice Messaging, refer to your Voice Mail manuals.

Conditions

- Each Voice Mail Auto Attendant/Voice Mail port requires one C-STU-D single line (2500-type) circuit and one C-COU line circuit.
- b. When all ports in the Voice Mail are busy, the call waits in a queue. The line rings all stations programmed for audible (in Program 7) when the Voice Mail Queue Timer (Program 78) expires before the Voice Mail answers the call.
- c. A call rings at a station one to nine times before the Auto Attendant answers. The number of rings is a function of Voice Mail programming.
- d. Automated Attendant cannot be installed when Low Cost Automated Attendant is enabled (Program 87-1).
- e. Voice Mail Queue Timer is available in C-CPU-D/E only.

Operation

Refer to the Voice Mail system User Guide.

Voice Mail provides a mailbox for each ULTRACOM AT station. A caller can leave a voice message in an ULTRACOM AT station. Voice Mail also allows ULTRACOM AT stations to leave voice messages at other ULTRACOM AT stations.

Voice Mail also allows a recorded message to be sent to outside callers. The message may inform callers of various Voice Mail options.

The C-CPU-CII provides Integrated Voice Mail. Integrated Voice Mail can direct a call to the Voice Mail in Day and Night mode. The caller can access a station's mailbox and leave a message, or use various Voice Mail features.

When all Voice Mail ports are busy, incoming CO calls enter a queue. The Voice Mail Queue Timer (C-CPU-D/E only) determines the length of time a call remains in the queue. When the timer elapses before a Voice Mail port becomes available, the call rings at stations programmed for audible on the line.

> Conditions

- Each Voice Mail Auto Attendant/Voice Mail port requires one C-STU-D single line (2500-type) circuit and one C-COU line circuit.
- b. C-CPU-CII/D/E PCBs support Integrated Voice Mail.
- c. An MW lamp flashing slowly at a station indicates a Voice Message in the mail box. An MW lamp flashing rapidly indicates a Message Waiting or a text message (C-CPU-D/E only).
- d. Voice Mail cannot be installed when Low Cost Automated Attendant is enabled (Program 87-1).
- e. Night Transfer must be enabled only by the DSS console or the port 10 telephone for Auto Attendant purposes (Program 17=0).

Operation

Refer to the Voice Mail system documentation for information on operation.

Program 74 designates the CO lines that the Automated Attendant answers automatically.

Conditions

- a. A C-CPU-D\E and Voice Mail are required to support Automated Attendant capability.
- b. Do not assign a DISA line for Auto Attendant Ringing.
- c Auto Attendant/Voice Mail cannot be installed when Low Cost Automated Attendant devices are installed (Program 87-1).
- d. To allow Auto Attendant answer on a line after the Delayed Ring Timer has elapsed, program the line "0" (VM/AA does not
- e. Program 17 Night Transfer must be programmed "17-0" for Auto Attendant purposes.

Additional Programming

Program 17 Night Transfer Voice Mail Trunk Program 75

Voice Mail Extensions Assignment Program 76

Program 78 Voice Mail Queue Timer Program 82 Delayed Ring Assignment

Instructions

AB: · Program number 74.

CD: Line number (01-24).

E: Enter code: C-CPU-CII

0 - VM does not answer.

1 - VM answer Night only.

C-CPU-D

C-CPU-E VM/AA does not answer. 0 - VM/AA does not answer.

1 - VM/AA answers Night only.

VM/AA answers Day only. VM/AA answers Night only.

2 - VM/AA answers Day only. 3 - VM/AA answers Day/Night.

VM/AA answers Day/Night.

Example

The VM/AA answers line 16 Day/Night mode.

	В														
7	4	1	6	3	-	-	-	-	-	-	-	-	-	-	-

Default Entry

CD:

01-24 All lines.

E:

0 - the VM/AA does not automatically answer calls.

- 1. Enter program number 74.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press *.
- 7. Press # to exit the program.

Program 75 dedicates a C-COU line circuit to each Voice Mail port. Each Voice Mail port requires one dedicated C-COU line circuit. Up to six C-COU line circuits can be dedicated to the Voice Mail ports.

> Conditions

- a. Automated Attendant is available with Voice Mail.
- b. Any C-COU line circuit can be dedicated to a Voice Mail port.
- c. Each line circuit dedicated to a Voice Mail port must be placed in Queue Group 6 (in Program 1).
- d. Auto Attendant/Voice Mail cannot be installed when Low Cost Automated Attendant devices are installed (Program 87-1).
- e. Each Voice Mail/LCAA device port "pairs" the line circuit and single line circuit (Program 75 and 76 entries). For example:

	Program /5	Program /o
VM port 01	line 23	OPX circuit 38
VM port 02	line 24	OPX circuit 40

Additional Programming

Program 1 Line Type, Dial Mode, Queue Group

Program 76 Voice Mail Extension Assignment

Program 78 Voice Mail Queue Timer

Program 87 Auto Attendant Type (Low Cost Automated Attendant)

Instructions

AB: Program number 75.

CD: (01-06) Voice Mail/LCAA device number.

EF: (01-24) Line circuit number.

➤ Example

Line circuit 19 is dedicated to the Voice Mail/LCAA device 03.

-	_	_	_	_	_	-	_						M			
7	7	5	0	3	1	9	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

EF:	01-00	04-00
	. 02-00	05-00
	03-00	06-00

- 1. Enter program number 75.
- 2. Press *. 01 appears in the display.
- 3. Enter EF data.
- 4. Press **. 02 appears in the display.
- 5. Enter EF data (when required).
- 6. Press *.
- 7. Press # to exit the program.

Program 76 determines the C-STU-D single line (2500-type) circuit dedicated to a Voice Mail port or Low Cost Automated Attendant (LCAA) device. Each Voice Mail port or LCAA device (voice announcer) requires one dedicated single line (2500-type) circuit. Up to six C-STU-D single line circuits can be dedicated to Voice Mail/LCAA operation.

➤ Conditions

- a. Each single line circuit dedicated to a Voice Mail port/LCAA device must be equipped with a C-MFRU PCB (max. 4 per C-STU-D) and connected to a 90V ring generator.
- b. Program each single line circuit dedicated to a Voice Mail/LCAA device as a 2500-type circuit (in Program 8).
- c. Each Voice Mail/LCAA device port "pairs" the line circuit and single line circuit (Program 75 and 76 entries). For example:

	Program 13	Flogram 70
VM port 01	line 23	OPX circuit 38
VM port 02	line 24	OPX circuit 40

Additional Programming

Program 8 Night COS, Headset, Instrument Type, Do Not Disturb, Internal Page Zone

Program 75 Voice Mail Trunk

Instructions

AB: Program number 76.

CD: (01-06) Voice Mail/LCAA port number.

EF: (14-73) Single line (OPX) circuit.

> Example

Single line circuit 36 is dedicated to the Voice Mail/LCAA device 02.

Α	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P
7	6	0	2	3	6	-	-	-	-	-	-	-	-	-	-

> Default Entry

EF: 01-00 02-00 03-00 04-00 05-00 06-00

- 1. Enter program number 76.
- 2. Press *. 01 appears in the display.
- 3. Enter EF data.
- 4. Press *. 02 appears in the display.
- 5. Enter EF data (when required).
- 6. Press *.
- 7. Press # to exit the program.

The Message Display Phone has a two 16-character row alphanumeric display. The display shows station/line names, Directory Dialing names, and programming prompts (Port 10 only). The Message Display Phone can also send/receive Display Messages to/from other Message Display Phones.

A Message Display Phone (P/N 10869E w/SPDU - 10870E w/o SPDU) can be connected to any key station circuit. A Message Display Phone functions as a standard key telephone for all operations other than display functions.

Message Display Phones can be equipped with one of the following:

- C-HSU Headset PCB
- C-SPDU Speakerphone PCB

All Port 10 features are available to a Message Display Phone installed at Port 10:

- Internal Synthesized Music on Hold determination
- Time/Date determination
- System Speed Dial entry
- Station Name Directory entry
- Line Name Directory entry
- System Display Message entry

Conditions

- a. Message Display Phones are not compatible with C-CPU-A/B/C/CII PCBs.
- b. There is no maximum limit of Message Display Phones that can be installed.
- c. The number of C-SPDU speakerphones is limited by the power supply used. Refer to the ULTRACOM AT Hardware Manual (P/N N1751HWU01).

Note:

The system initializes all stations as standard key telephones.

To identify a Message Display Phone at port 10:

- 1. Press the programming button.
- 2. Press Timer.

The system identifies the telephone as a Message Display Phone in 10 seconds.

This procedure identifies a Message Display Phone at Port 10 only. To identify other ports for Message Display Phones, enter codes in Program 77.

Operation (Cont'd)

When re-installing a standard key telephone at Port 10:

- 1. Press the program button.
- 2. Press CHECK.

The system identifies the telephone as a standard key telephone in 10 seconds.

To store station/system speed dial names (Port 10 only): On hook.

- 1. Press DC twice.
- 2. Press: ICM for station names.

HOLD for System Speed Dial names.

3. Dial: 10-79 Station number (ICM). System Speed Dial bin.

- 4. Press *.
- 5. Enter name using Function keys + dial pad. Refer to the Message Edit mode.
- 6. Press: ICM for station names.

HOLD for System Speed Dial names.

7. Press CLOCK.

To store a name to a CO line (Port 10 only):

On hook.

- 1. Press DC twice.
- 2. Press line key which requires the name.
- 3. Press *.
- 4. Use the Function keys + the dial pad to enter name. Refer to the Message Edit mode.
- 5. Press another line key.
- 6. Press CLOCK.

To store System Display Messages 00-49 - (Port 10 only):

On hook.

- 1. Press CHECK.
- 2. Press OPAC.
- 3. Dial (00-49) system message code.
- 4. Press *.
- 5. Use the Function keys + dial pad to enter name. Refer to the Message Edit mode.
- 6. Press CHECK.
- 7. Press i.
- 8. Press CLOCK.

Operation (Cont'd)

To store a message under a Function Key (F1 or F2):

- 1. Press the CHECK.
- 2. Press OPAC.
- 3. Press a Function Key (F1 or F2).
- Press i.
- 5. Enter or edit the message using the dial pad and F Keys. Refer to the Message Edit mode.
- 6. Press CHECK.
- 7. Press *.
- Press CLOCK.

Message Edit Mode

Each button 1-0 on the dial pad contains three characters. Use the dial pad digits to enter a corresponding character when in the Message Edit mode. Refer to the chart on page 12.

To choose a specific character, press:

Function key 1 to select the first character

Function key 2 to select the second character

Function key 3 to select the third character

Function key 4 = insert a blank space

Function key 5 = delete a character

Function key 6 = delete a message

to move the cursor right * to move the cursor left

To insert a space where a number can be entered at a later time, press Function key 2, dial 1.

To enter numbers, press the digit required on the dial pad without pressing a function key.

For Q, press Function key 1, dial 1.

For _, press Function key 2, dial 1. For Z, press Function key 3, dial 1.

For:, press Function key 1, dial 0.

For /, press Function key 2, dial 0.

For -, press Function key 3, dial 0.

For example:

To select "J":

- 1. Press Function key 1.
- 2. Dial 5.

To select "B":

- 1. Press Function key 2.
- 2. Dial 2.

Table 4 Message Display Phone Displays (Page 1 of 3)

Display	Condition
ALARM 1/2>	set alarm 1/2 using the Alarm Clock feature.
B (flashing)	battery is low.
BUSY (XX or station name)	call a busy station.
CALL FM XX or station name	receive a call or Off-Hook Signal from station XX; pickup a call ringing at station XX; answer Meet-Me Page sent from station XX.
CALL FM 88/89 DOOR 1/2	receive a call from a Door Chime Box 1/2 that is CALL FM (door name) associated with a dial-up code 88/89.
CALL TO XX or station name	call or send Off-Hook Signal to station XX; connect to paged party after initiating Meet-Me Answer Page.
CALL TO XX -> YY	call station XX when ICM calls are forwarded to station YY.
CALLBK XX or station name	activate Callback.
CAMP-ON XX or station name	activate Camp-On.
CLBK FM XX or station name	receive Callback when busy station XX becomes idle.
CLBK FM LINE XX or line name	receive a Callback from CLBK FM (line name/number XX) queued for.
CO DIR	make a directory call to a Speed Dial number.
CONF INT X	set up a Meet-Me Conference to internal page zone (81-84).

Table 4 Message Display Phone Displays (Page 2 of 3)

Display	Condition
DATE>	set date.
DAY>	set day of week.
DND XX or station name	call a station in DND.
ENTER STA #	"send later" text message enter station number or hunt group number.
ENTER TIME	"send later" text message enter time (24 hr. clock).
F/1-10 (number)	store, call or display a station number under F Key 1-10.
ICM DIR	place an ICM directory call to a station.
LEAVE MESSAGE ?	press 0 after calling a station to leave a Message Waiting. The system asks if a display message should be left.
LINE XX or STA YY	receive transfer recall on line /station name XX from station YY.
LINE (XX or line name)	seize an outside line.
LIST END	reach the end of the directory.
LND (number)	use a Last Number Dialed.
MEET-ME CONF	connect with a Meet-Me Conference.
MEET-ME INT X	set up a Meet-Me Answer Page to internal zone (81-84).
MSG XX	store a message under code XX.
MSG FM XX or station name	check messages, displayed when a display message has been sent from station XX.

Table 4 Message Display Phone Displays (Page 3 of 3)

Display	Condition
MW FM XX or ext. name	check messages, a display message has been sent from station XX.
MW TO XX	check messages, a display message has been sent to station XX.
OUT SVC	call an uninstalled station.
PAGING ALL CALL	make an All Call Page (ICM 80).
PAGING ALL EXT	page to all external zones (ICM 85).
PAGING EXT 86-87	page external zone (ICM 86-87).
PAGING INT 81-84	page an internal zone (ICM 81-84).
(00-99) (number)	store, call or display a number using a System Speed Dial Code (00-99).
SAVE (number)	call a number using Save.
SEND MG? XX	to leave a display message
STA # XX	assign a name to a station.
SYS # XX	assign a name to a System Speed Dial.
TIME>	set time.
VMSG XX	the number of Voice Messages stored in mailbox.
xx:xx:xx	use the Call Duration Timer (hrs, mins, secs).
YEAR>	set year.

Note:

When storing a pause, stop, Flash or Pulse to Tone Conversion in a Speed Dial number, the displays shows: P, _ , -, or #, respectively.

All Display Messages (00-49) also appear at Message Display Phones depending upon feature activation.

Program 77 identifies key station circuits that have Message Display Phones installed.

> Conditions

- a. A Message Display Phone can be connected to any key station circuit.
- b. There is no maximum limit for Message Display Phones (depending upon the number of Message Display Phones equipped with C-SPDU speakerphone PCB's).

> Additional Programming

Program 8 Night COS, Headset, Instrument Type, Do Not Disturb, Internal Page Zone

Instructions

AB: Program number 77.

CD: Station port number (10-73).

E: 0 - Standard key telephone.

1 - Message Display Phone.

➤ Example

Port 24 is a Message Display Phone.

Α	\mathbf{B}	C	D	E	F	G	H	I	J	K	L	M	N	0	P
7	7	2	4	1	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

E: 0 - standard key telephone for ports 10-73.

Program Entry

- 1. Enter program number 77.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press *.

Next port number displays. There are three options:

- To enter E data for this port, repeat steps 5-6.
- To advance to the next port, press *.
- To exit this program, press #.

Voice Mail Queue allows a Voice Mail line to remain in queue until a Voice Mail port becomes available. When the Voice Mail Queue Timer elapses, the line rings at stations programmed to ring on the line (in Program 7.)

Conditions

a. When no stations are assigned audible on a line, the Voice Mail Queue Timer is not in effect.

Operation

Automatic.

Program 78 determines the length of time a call remains in queue for an available Voice Mail port. When the time elapses, the line rings at stations programmed for audible on the line (in Program 7).

> Conditions

- a. The Voice Mail Queue Timer is available with C-CPU-D/E PCBs.
- b. A value of 000 disables the Voice Mail Queue Timer. Calls remain in the queue until answered or abandoned.
- ➤ Additional Programming

Program 7 Incoming Line Access/Audible

Program 74 Auto Attendant Ringing

Program 75 Voice Mail Trunk

Program 76 Voice Mail Extension Assignment

Instructions

AB:

Program number 78.

CDE:

Timer value (001-255 seconds).

> Example

The Voice Mail Queue Timer is 180 seconds.

Α	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P
7	8	1	8	0	-	-	-	-	-	-	•	-	-	-	-

Default Entry

CDE: 020 (twenty seconds).

- 1. Enter program number 78.
- 2. Press *.
- 3. Enter CDE data.
- 4. Press *.
- 5. Press # to exit the program.

PERMITTED/DENY CODE ALLOTMENT (C-CPU-CII/D/E)

Feature Description

Permitted Codes and Deny Codes override standard Class of Service dialing restrictions. Permitted Codes allow dialing of specific telephone numbers which otherwise is restricted by Class of Service 2-4 toll restriction. Deny Codes deny dialing of specific telephone numbers normally allowed by Class of Service 1-7 toll restriction.

> Conditions

a. Any combination of thirty Permitted/Deny codes is available.

Operation

Automatic.

Program 79 determines the number of Permitted/Deny Codes in Program 41. The system provides thirty memory locations (bins) for Permitted/Deny codes. Any combination up to thirty Permitted/Deny codes is valid.

In Program 41 Permitted Codes, bins begin from bin 01. Bins are assigned consecutively for Permitted Codes. The remainder are automatically designated as Deny Codes.

Conditions

a. Entries must be made in Program 41 for Program 79 to be meaningful.

Additional Programming

Night COS, Headset, Instrument Type, Program 8 Do Not Disturb, Internal Page Zone

Program 40 Class of Service

Program 41

Permitted/Deny Codes
Permitted/Deny Codes Digit Limit Program 42

Night Class of Service Level Program 48

System Speed Dial Restriction Program 49

Instructions

Program number 79. AB:

Permitted Code allotment (00-30). CD:

Example

The system has 22 Permitted Codes and 8 Deny Codes. Bins 01-22 are dedicated for Permitted Code entries. Bins 23-30 are dedicated for Deny Code entries.

Α	\mathbf{B}	C	D	E	F	G	H	I	J	K	L	M	N	0	<u>P</u>
7	9	2	2	-	-	-	-	-	-	-	-	<u> </u>	-	-	-

Default Entry

30 Permitted Codes - 0 Deny Codes. CD:

- 1. Enter program number 79.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Press # to exit the program.

Two separate external page systems to be connected to the ULTRACOM AT. Each external page "zone" is programmed individually to receive input from the Background Music source and/or input from two Alarm circuits.

➤ Conditions

- a. A C-GCU PCB must be installed on the C-TSU PCB to provide two dedicated circuits for External Page.
- b. A music source (radio, tuner, etc.) must be installed to provide Background Music.
- c. Alarm circuits must be installed to receive Alarm tones through the external page system.
- d. When an Alarm is installed, programmed, and activation has occurred, the Alarm device must be reset in order to negate the system's Alarm tones.
- e. When an external page zone is programmed for CO Audible (Program 81) and Background Music (Program 80), CO Audible interrupts Background Music when CO calls ring into the system. BGM is automatically restored when the line is answered.

Operation

Automatic.

Program 80 allows Background Music (BGM), and/or Alarm signals to External Page Zones. Each External Page Zone is programmed for BGM and Alarm signals individually.

> Conditions

- a. A C-GCU- must be installed for External Page. The C-GCU provides two External Page Zones.
- b. Program 28 determines whether an Alarm is connected to the system and determines whether each Alarm is open or closed activated.
- c. Program 26 identifies whether a Background Music source is installed.

> Additional Programming

Program 26 Background Music

Program 28 Alarm Sensor

Program 53 Alarm

Program 81 External Page Line/Audible Assignment

Instructions

AB: Program number 80.

C: 1/2 - External Page Zone.

D: 0 - disable BGM.

1 - enable BGM.

E: 0 - disable Alarm 1.

1 - enable Alarm 1.

F: 0 - disable Alarm 2.

1 - enable Alarm 2.

> Example

External Page Zone 2 receives Alarm 1 signals only.

_A	В	С	D	E	F	G	H	I	J	K	L	M	N	0	P
8	0	2	0	1	0	-	-	-	-	-	-	-	•	•	-

> Default Entry

DEF:

1 - 000 Background Music, Alarm Signals 1 & 2 disabled for External Page Zone 1.

2 - 000 Background Music, Alarm Signals 1 & 2 disabled for External Page Zone 2.

- 1. Enter program number 80.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Enter DEF data.
- 6. Press *.
- 7. Press # to exit.

EXTERNAL PAGE CO LINE/AUDIBLE ASSIGNMENT (C-CPU-CII/D/E)

Feature Description

External Zone Line/Audible Assignment allows each External Page Zone to be individually programmed to receive CO Audible on one line group in any one of the following modes:

- Day Audible
- Night Audible
- Day/Night Audible

Conditions

- a. A C-GCU-A PCB must be installed for External Paging.
- b. The system must be programmed to allow Night Transfer activation by an attendant only (Program 17-0).
- c. Each External Page Zone can be assigned audible for one line group containing any amount of consecutively-numbered lines.
- d. Incoming CO Audible interrupts BGM when an External Page Zone is programmed to receive both BGM and CO Audible. BGM is automatically restored when the line is answered.
- e. Universal Answer allows any station with Incoming Access (Program 7) to access a call heard through the External Page Zone.
- f. DSS consoles or a key telephone at Port 10 determines whether the system is in the Day or Night mode.

Operation

Automatic.

PROGRAM 81 - EXTERNAL PAGE LINE/AUDIBLE ASSIGNMENT (C-CPU-CII/D/E)

Program Description

Program 81 assigns CO Audible to each External Page Zone.

- > Conditions
 - a. The system must be programmed to allow Night Transfer activation by an attendant only (Program 17 -0).
- > Additional Programming

Program 2 Line Groups

Program 17 Night Transfer

Program 80 External Zone BGM/Alarm Assignment

Instructions

AB: Program number 81.

C: 1/2 External Page Zone number.

DE: (01-30) Line Group.

F: 0 - No Audible.

1 - Day Audible.

2 - Night Audible.

3 - Day/Night Audible.

> Example

External Page Zone 2 receives Group 05 lines Day/Night Audible.

	_	_		_	-	G		_	-		_				
8	1	2	0	5	3	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

DĚF:

1 - 000 - External Page Zone 1 - no audible assigned.

2 - 000 - External Page Zone 2 - no audible assigned.

Program Entry

- 1. Enter program number 81.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Enter DEF data.
- 6. Press *.

Next zone displays. There are two options:

- To enter DEF data, repeat steps 5-6.
- To exit this program, press #.

The ULTRACOM AT may be programmed to direct an incoming CO call not answered by a station to the Automated Attendant after a delay time.

Conditions

- a. Transferred calls and calls Ring Transferred from one station to another are not affected by Delayed Ring.
- b. While the Automated Attendant is ringing, stations programmed for CO Audible on the line continue to ring.

Operation

Automatic.

Program 82 determines whether each CO line is programmed for Delayed Ring.

➤ Conditions

- a. Each station is assigned CO Audible in Program 7.
- b. When the Voice Mail ports are busy, the stations programmed for audible in Program 7 continue to ring.
- c. Do not program a line for Auto Attendant Ringing (in Program 74) when Delayed Ring on a line is required.
- d. Lines programmed to ring to the Automated Attendant (in Program 74) are not subject to the Delayed Ring Timer depending on Day, Night, or Day/Night mode.
- e. A line programmed to ring the Automated Attendant and programmed for Delayed Ring rings directly to the Automated attendant, overriding Delayed Ring programming.

> Additional Programming

Program 2 Line Groups

Program 7 Incoming Audible/Access Assignment

Program 74 Auto Attendant Ringing

Program 83 Delayed Ring/Call Forward Timer

Instructions

AB: Program number 82.

CD: 01-24 line number.

 $E: \qquad 0 - \epsilon$

0 - disable delayed ring.

1 - enable delayed ring.

> Example

Line 13 has delayed ring.

-	-	_	~	_		_	_		_			_		N		
[3	2	1	3	1	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

F.

0 - for lines 01-24

- 1. Enter program number 82.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter E data.
- 6. Press *.
- 7. Press # to exit program.

The Delayed Ring timer determines the amount of time an incoming CO call rings at a station before transferring to the Voice Mail Automated Attendant, allowing the Voice Mail to act as an "overflow" answering position.

The Intercom/CO Call Forward timer (C-CPU-E only) determines the amount of time an ICM/CO call rings at a station before transferring to another station. The Call Forward timer applies to calls which ring stations programmed (in Program 7) and DISA calls to stations which are not answered.

Four modes of Call Forward are available:

- immediate transfer (Call Forward Timer does not apply)
- transfer when busy (Call Forward Timer does not apply)
- transfer for calls not answered (Call Forward Timer in effect)
- transfer when busy/not answered (Call Forward Timer in effect)

➤ Conditions

a. The Delayed Ring timer is in effect for lines coded for Delayed Ring (in Program 82).

Operation

Delayed Ring - Automatic.

CO/ICM Call Forward

To activate CO/ICM Call Forward (C-CPU-E only):

- from a key telephone

Off hook.

- 1. Press RG TR.
- 2. Dial destination station (10-79) or 93 (for Voice Mail).
- 3. Dial: 0 = immediate transfer
 - 1 = transfer when busy
 - 2 = transfer for calls not answered
 - 3 = transfer when busy or not answered

Note:

When a code (0-3) is not dialed, immediate transfer (0) is in effect.

The RG TR key flashes slowly at the originating station. The RG TR key flashes fast at the destination station.

When a long beep occurs when activating CO/ICM Call Forward, the forward is denied. The destination station is:

- not installed,
- has forwarded its calls
- is in the DND mode has accepted three Call Forwards.

To cancel CO/ICM Call Forward:

- from a key telephone

Off hook.

1. Press RG TR twice.

Program 83 determines values for the following two system timers:

Delayed Ring - the amount of time an incoming CO call rings programmed stations before transferring to the Automated Attendant.

Call Forward - the amount of time a calls rings before forwarding to another station. Refer to CO/ICM Call Forward for operation.

> Conditions

- a. The Call Forward Timer is available with the C-CPU-E only.
- b. The Delayed Ring Timer is in effect for lines coded for Delayed Ring (in Program 82).
- c. An entry of 000 disables the Delayed Ring Timer.

> Additional Programming

Program 7 Incoming Access/Audible

Program 74 Auto Attendant Ringing

Program 78 Voice Mail Queue Timer

Program 82 Delayed Ring Line Assignment

Instructions

AB:

Program number 83.

C:

1 - assigns Delayed Ring timer.

2 - assigns Call Forward time duration.

DEF:

001-255 (in seconds).

➤ Example

Delayed Ring Timer = 60 seconds; Call Forward Timer = 25 seconds.

_4	<u>A</u>	В	<u>C</u>	D	E	F	G	H	I	J	K	L	M	N	<u> </u>	<u>P</u>
	8	3	1	0	6	0	-	-	-	-	-	-	-	-	-	-
													М			
	8	3	.2	0	2	5	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

DEF:

1 - 020 (twenty seconds Delayed Ring timer)

2 - 015 (fifteen second Call Forward timer)

- 1. Enter program number 83.
- 2. Enter C data.
- 3. Press *.
- 4. Enter DEF data.
- 5. Press *.
- 6. Press # to exit program.

Simultaneous Ring allows incoming CO calls to ring the Voice Mail Automated Attendant and stations programmed for CO Audible at the same time.

> Conditions

a. When Simultaneous Ring is not enabled, lines programmed for Auto Attendant Ringing (in Program 74) ring directly to the Automated Attendant. Calls on Voice Mail lines do not ring any stations until the Voice Mail Queue Timer has elapsed.

Operation

Automatic.

Program 84 determines whether an incoming CO call sent to the Voice Mail Automated Attendant rings key stations programmed for audible at the same time. Simultaneous Ring affects all Auto Attendant lines in the system.

When Simultaneous Ring is disabled, a Voice Mail line rings the Automated Attendant until the Voice Mail Queue Timer elapses. When the Voice Mail Queue Timer elapses, the line rings stations programmed for CO Audible.

> Conditions

a. Program 7 Incoming Line Access/Audible determines the Day, Night, and Day/Night CO Audible for each station in the system.

➤ Additional Programming

Program 7 Incoming Line Access/Audible

Program 74 Auto Attendant Ringing

Program 75 Voice Mail Trunk

Program 76 Voice Mail Extension Assignment

Program 78 Voice Mail Queue Timer

Instructions

AB:

Program number 84.

C:

0 - disable Simultaneous Ring.

1 - enable Simultaneous Ring.

> Example

Lines programmed to ring the Auto Attendant also ring stations programmed for CO Audible simultaneously until answered or abandoned.

Α	В	C	D	E	F	G	H	I	J_	K	L	M	N	0	P
8	4	1	-	-	-	-	-	-	-	-	•	-	-	-	-

➤ Default Entry

C:

0 - Simultaneous Ring disabled.

- 1. Enter program number 84.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Press # to exit the program.

SINGLE LINE TELEPHONE CO HOLD PICKUP (C-CPU-D/E)

Feature Description

Single Line Telephone CO Hold Line Pickup allows single line telephones to retrieve calls on Hold by dialing an access code.

Conditions

- a. The user must know the line number to gain access to the line.
- b. Single Line Telephone Held Line Pickup has no effect on key telephones.

Operation

To access a line on Hold:

- from a single line telephone
- Off hook.
- 1. Dial 9.
- 2. Dial (01-24) line circuit number.

PROGRAM 85 - SINGLE LINE TELEPHONE HELD LINE PICKUP (C-CPU-D/E)

Program Description

Program 85 determines whether single line telephones (OPX) can access lines on Hold.

- > Conditions
 - a. Single line telephones must be correctly identified for single line operation in Program 8.
 - b. The C-STU-D single line circuit PCB must be properly strapped for single line operation. Refer to the C-STU-D instructions in the ULTRACOM AT Hardware Manual.
- > Additional Programming

Program 8 Night COS, Headset, *Instrument Type*, Do Not Disturb, Internal Page Zone

Instructions

AB: Program number 85. C: 0 - deny OPX access

0 - deny OPX access to lines on Hold.

1 - allow OPX access to lines on Hold.

➤ Example

Single line telephones can access lines on Hold.

Α	В	С	D	E	F	G	H	I	J	K	L_{\perp}	M	N	O	P
8	5	1	-	-	-	-	-	-	-	-	-	-	-	•	-

➤ Default Entry

C: 0 - Single line telephones cannot access lines on Hold.

- 1. Enter program number 85.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Press # to exit the program.

Direct Modem Access allows an on-site IBM compatible Personal Computer (PC) and a Data Telephone or a Hayes-compatible modem to be directly connected to the system to access the C-MDU modem for Remote Access/Message Edit features:

- System Programming

- System Status

- SMDR

- Upload/Download

- Message Edit

A C-CPU-E, a C-MDU, and a dedicated C-COU line circuit are required for Direct Modem Access along with one of the following:

- ULTRACOM AT Data Telephone an ULTRACOM AT display key telephone with a built-in modem and DB-9 connector. A PC modem is not required.
- ULTRACOM AT standard key telephone with an MVS-1 Modem Voice Switch to connect a PC with an internal/ external modem.
- A single line telephone with an MVS-1 Modem Voice Switch to connect a PC with an internal/external modem.

> Conditions

- a. One C-COU line circuit must be dedicated to access the modem. A resistor on the dedicated line circuit must be shorted to access the modem on a C-COU PCB as follows:
 - R16 = first line circuit R48 = third line circuit. R32 = second line circuit R64 = fourth line circuit.
- b. The line circuit dedicated to directly access the modem must be identified in Program 86 On-Site Assignment programming.
- c. A 300/1200 BPS modem is required for Direct Modem Access.
- d. The ULTRACOM AT Remote Access/Message Edit Software diskette (P/N 10933 version 4.1+) must be installed in the PC.

Operation

To access the C-MDU modem:

- from a Data Telephone
- 1. Press SPK.
- 2. Press line key dedicated to the modem.
- 3. Press F-10 modem key.
- 4. On the PC, type: COMESP3.
- 5. Press: Enter key/<return>.
- from a key telephone connected to an MVS-1
- 1. Place MVS-1 rocker switch to "phone".
- 2 Press SPK.
- 3. Press line key dedicated to the modem.
- 4. On the PC, type: COMESP3.
- 5. Place MVS-1 to "modem".
- 6. Press: Enter key/<return>.
- from a single line telephone connected to an MVS-1
- 1. Place MVS-1 rocker switch to "modem".
- 2 On the PC, type: COMESP3.
- 3. At prompt, type: 9 + (01-24) line dedicated to the modem.
- 4. Press Enter key/<return>.

Program 86 determines the C-COU CO line circuit used for Direct Modem Access which allows access to the C-MDU modem for Remote Access/Message Edit features.

Conditions

a. The line circuit used to access the modem must be shorted on a C-COU PCB to access the modern for Direct Modern Access. Refer to the ULTRACOM AT Remote Access/Message Edit Manual for instructions:

Resistor R16 = first line circuit on C-COU PCB. Resistor R32 = second line circuit on C-COU PCB. Resistor R48 = third line circuit on C-COU PCB. Resistor R64 = fourth line circuit on C-COU PCB.

Additional Programming

Program 47 Remote Maintenance

Program 73 Modem Data Telephone Port (Data sets only)

Instructions

AB: Program number 86.

CD: 01 memory location #1.

(01-24) line circuit used for Direct Modem Access. EF:

Example

Line circuit 12 is dedicated to directly access the C-MDU modem. (Resistor R64 on the third C-COU must be shorted.)

Default Entry

EF: 00 - No line circuit assigned.

Α	В	C	\mathbf{D}_{-}	E	F	G	H	I	J	K	L	M	N	0	P
8	6	0	1	1	2	-	-	-	-	-	•	-	-	-	-

- 1. Enter program number 86.
- 2. Press *.
- 3. CD data 01 appears in the display.
- 4. Enter EF data.
- 5. Press *.
- 6. Press # to exit Program 86.

AUTO ATTENDANT TYPE (C-CPU-E)

Feature Description

Low Cost Auto Attendant (LCAA) provides auto attendant capability for the Ultracom AT using DISA and a digitized announcer connected to a C-STU-D single line circuit. When an incoming call on a DISA line is answered by the announcer, the caller hears the announcer greeting, receives internal dial tone, and uses DISA to access system features (Intercom, CO access, etc.).

Six single line circuits can be connected to six Low Cost Auto Attendant devices. One C-STU-D single line circuit equipped with a C-MFRU PCB is required for each Low Cost Auto Attendant device. The single line circuit allocates tip/ring to the LCAA device and must be identified as a 2500-type device in Program 8.

> Conditions

- a. A separate C-STU-D single line circuit is required for DISA operation and must be identified as a DISA port in program 8.
 At least one DISA port must be installed.
- b. Each C-STU-D single line circuit connected to a Low Cost Auto Attendant device requires a 90V ring generator to provide ringing.
- c. A call placed to a "busy" station or a station in Do Not Disturb is diverted to the Auto Attendant Divert Station (designated in Program 88).

Operation

Automatic.

Note:

After an outside caller has received the LCAA greeting and message, the caller uses normal DISA operation to complete any of the following functions: Intercom calls, Station Hunting, CO access, etc. Refer to DISA operation in Program 3.

Program 87 indicates whether Low Cost Automated Attendant devices are connected to the system.

> Conditions

- a. A maximum of six single line C-STU-D circuits can be dedicated to Low Cost Auto Attendant devices. A single line circuit dedicated to an LCAA device are designated in Program 76.
- b. Single line circuits connected to an LCAA device or used as a DISA port must be identified as 2500-type devices in Program 8.
- c. A single line circuit used for a Low Cost Auto Attendant device cannot be used for a Voice Mail port.
- d. DISA operation must be installed for Low Cost Auto Attendant operation. A DISA line must be programmed for: Day, Night, Day/Night Audible, Class of Service, and Security Codes when full DISA functions are required. Refer to Program 3.

> Additional Programming

- Program 3 DISA Line
- Program 8 Night COS, Headset, *Instrument Type*, Do Not Disturb, Internal Page Zone
- Program 68 DISA Line Access
- Program 70 DISA Security Codes
- Program 71 DISA Security Code Station
- Program 72 DISA Class of Service
- Program 76 Voice Mail Extension Assignment
- Program 78 Voice Mail Queue Timer
- Program 88 Auto Attendant Divert Station

Instructions

- AB: Program number 87.
 - 0 Voice Mail installed or no devices installed.
 - 1 Low Cost Automated Attendant devices installed.

> Example

C:

The system has Low Cost Automated Attendant device(s) connected.

A	В	<u>C</u>	D	E	F	G	H	I	J	K	L	M	N	0	<u>P</u>
8	7	1	-	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

C: 0 - No LCAA devices installed.

- 1. Enter program number 87.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Press # to exit the program.

Auto Attendant Divert allows an incoming call to an Automated Attendant or an LCAA device, answered and followed by a DISA function, to be transferred to an Attendant Divert station after 30 seconds for the following:

- DISA Intercom call to a "busy" station.
- DISA Intercom Call to a station in Do Not Disturb.
- DISA call answered by an LCAA device and transferred to a busy/DND station.
- DISA call not answered (timer fixed at 30 seconds).

> Conditions

- a. A call from a Low Cost Auto Attendant to a busy station is diverted to the Auto Attendant Divert Station after ten seconds.
- b. A call not answered by a Low Cost Auto Attendant is diverted to the Auto Attendant Divert Station after thirty seconds.
- c. A Voice Mail port can be assigned as the Auto Attendant Divert station. When the timer elapses (30 seconds), the DISA call is diverted to the Voice Mail system.

Operation

Automatic.

Program 88 determines the station that receives calls when DISA calls are placed to a station that is busy, in Do Not Disturb, is transferred from an LCAA device, or is not answered.

> Conditions

- a. Any installed station can be used for the Auto Attendant Divert station.
- b. A call from an LCAA device to a busy station is diverted to the Auto Attendant Divert Station after ten seconds.
- c. A call not answered by an LCAA device is diverted to the Auto Attendant Divert Station after thirty seconds.
- d. The Auto Attendant Divert timer is fixed at thirty seconds.
- e. A Voice Mail port can be assigned as the Auto Attendant Divert station. When the timer elapses (30 seconds), the DISA call is diverted to the Voice Mail system.

> Additional Programming

Program 3 DISA Line

Program 8 Night COS, Headset, *Instrument Type*, Do Not Disturb, Internal Page Zone

Program 74 Auto Attendant Ringing

Program 75 Voice Mail Trunk

Program 76 Voice Mail Extension Assignment

Program 87 Auto Attendant Type

Instructions

AB: Program number 88.

CD: (10-79) Auto Attendant Divert station or Voice Mail port number.

➤ Example

Station 26 is the Auto Attendant Divert station.

Α	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P
8	8	2	6	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

CD: 10 - station 10 is the Auto Attendant Divert station.

- 1. Enter program number 88.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Press # to exit the program.

ATTENDANT REVERT (C-CPU-E)

Feature Description

Attendant Revert allows calls on Hold to ring an attendant after a programmable amount of time. A call on Hold can revert to an attendant before or after recalling the station that placed the call on Hold.

The Attendant Revert Timer begins when:

- a call is placed on System Hold.
- a call is placed on Automatic Hold (Attendant line-to-line Hold).
- a call placed on Exclusive Hold reverts to System Hold.

> Conditions

- a. When tenant service is programmed, calls on Hold can be programmed to revert to a "tenant" attendant.
- b. When the Attendant Revert Timer is longer than the System Hold Recall Timer, a call recalls the station that placed the call on Hold, then reverts to a "main" or a "tenant attendant" after the Attendant Revert Timer elapses.
- c. When the Attendant Revert Timer is shorter than the System Hold Recall Timer, a call recalls to a "main" or the "tenant attendant", bypassing the station that placed the call on Hold.
- d. The Attendant Revert feature can be disabled.

Operation

Automatic.

Program 89 determines the duration time before a call on Hold recalls the attendant revert station. The attendant revert station may be any station in the system.

Note:

When Tenant Service attendants are not programmed, calls revert to the "main attendant" designated in Program 13 (13 1-xx). When Tenant Service is enabled, calls revert to "tenant attendants" designated in Program 95.

> Conditions

- a. A call reverts to the "main attendant" or a "tenant attendant", according to Tenant Option programming (Program 93 Option #5).
- b. When the Attendant Revert Timer is longer than the System Hold Recall Timer, a call recalls the station that placed the call on Hold, then reverts to a "main" or a "tenant attendant" after the Attendant Revert Timer elapses.
- c. When the Attendant Revert Timer is shorter than the System Hold Recall Timer, a call recalls to the "main" or the "tenant attendant", bypassing the station that placed the call on Hold.
- d. An entry of 000 disables Attendant Revert.

> Additional Programming -

- Program 22 Exclusive Hold
- Program 34 Automatic Hold
- Program 35 Exclusive Hold Recall/Duration Time
- Program 37 System Hold Recall/Duration Time
- Program 38 Unannounced Transfer Recall
- Program 39 Announced Transfer Recall
- Program 93 Tenant Option
- Program 95 Tenant Attendant Assignment

Instructions

AB: Program number 89.

CDE: Attendant Revert Timer (001-255 in seconds).

> Example

Attendant Revert Timer is set to 120 seconds.

<u>A</u>	<u>B</u>	<u>C</u>	D	<u>E</u>	F	G	H	I	J	<u>K</u>	L_	M	N	0	<u> P</u>
8	9	1	2	0	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

CDE: 000 - disabled.

- 1. Enter program number 89.
- 2. Press *...
- 3. Enter CDE data.
- 4. Press *.
- 5. Press # to exit the program.

Tenant Service allows the system to be partitioned into two, three, or four tenants. Each tenant can be allocated specific stations, CO lines, internal paging zones, system speed dial bins (memory locations), and a "tenant attendant".

Any number of lines, stations, and system speed dial bins can be assigned to each tenant. Each tenant is allowed four internal page zones. Each tenant is allowed one "tenant attendant."

Programs 92-95 determine the following system-wide Tenant Service parameters:

Program 92 - places each station in a tenant group.

Program 93 - determines the following:

- a. Allow/disallow Intercom calls between tenants.
- b. Allow access to specific speed dial bins or to all speed dial bins.
- c. Allow/disallow internal pages (81-84) between tenants.
- d. DSS console provides DSS/BLF operation for all stations or only for stations within the same tenant group.
- e. Recall of calls on Hold revert to "main attendant" or to a specific "tenant attendant".

Program 94 - allocates System Speed Dial bins available to each tenant.

Program 95 - designates the "tenant attendant" for each tenant.

Stations in a tenant group do not have to be consecutively numbered. Lines assigned to a station are grouped consecutively in Program 2. System Speed Dial bins assigned to each Tenant Group must be consecutively numbered.

Conditions

- a. External Page Zone contacts and Door Chime Boxes are common to all tenants.
- b. CO line outgoing access for each station is determined according to data entered in Programs 2 and 6.
- c. CO line incoming access with/without audible for each station is determined according to data entered in Program 2 and Program 7.
- d. Any station in a tenant group can be a "tenant attendant". A "tenant attendant" does not need to be equipped with a DSS console.

Note:

>

To activate Night Transfer for all stations in all tenant groups, program Night Transfer (17-0).

To allow each tenant to activate Night Transfer separately:

- (1) program all stations in a tenant group with the same incoming line access group (Program 7).
- (2) program Night Transfer (17-1).

Operation

Automatic.

Program 92 determines the tenant group assigned to each station.

> Conditions

- a. Each station can be assigned to one tenant group only.
- b. A station is placed in a tenant group according to port number (a fixed location on the cutdown block), not by station Intercom number.
- c. Stations in a tenant group are not required to be in consecutive numerical order.
- d. Stations not assigned to a tenant group do not adhere to tenant service parameters.
- e. System Speed Dial access, BLF status indications, Attendant Recall of Calls on Hold, Intercom calls, and internal page announcements to stations in different tenant groups can be allowed/denied in Program 93.

> Additional Programming

Program 2 Line Groups

Program 6 Outgoing Line Access

Program 7 Incoming Line Access/Audible

Program 8 Night COS, Confirmation Tones, Instrument Type, Do Not Disturb, *Internal Page Zone*

Program 93 Tenant Option Program 94 Tenant Speed Dial

Program 95 Tenant Attendant Assignment

Instructions

AB: Program number 92.

CD: (10-73) port number.

E: (1-4) tenant group number.

F-I: 0000 (not used).

> Example

Port 38 is in Tenant Group 4.

	В														
9	2	3	8	4	0	0	0	0	-	-	-	-	-	-	-

Default Entry

EFGHI: 00000 - No tenant group assigned.

- 1. Enter program number 92.
- 2. Press 🛠.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter EFGHI data.
- 6. Press ¥.
- 7. Press # to exit the program.

PROGRAM 93 - OPTION #1- INTERCOM CALLS BETWEEN TENANTS (C-CPU-E)

Program Description

Program 93 - Option #1 - determines whether Intercom calls between stations in different tenant groups are allowed.

- **Conditions**
 - a. Stations not programmed into a tenant group can place/receive Intercom calls to/from any station in the system.
- Additional Programming Program 92 Tenant Group

Instructions

AB:

Program number 93. 1 - to program Intercom calls between tenants. C:

0 - allow Intercom calls between tenants.

1 - deny Intercom calls between tenants.

Example

D:

Intercom calls between tenants is denied.

Α	В	C	D	E	F	G	H	I	J	K	L	M	N	<u>o</u>	P
9	3	1	1	-	•	-	-	-	-	-	_	-	_	-	-

Default Entry

0 - allows Intercom calls between tenants.

- 1. Enter program number 93.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Enter D data.
- 6. Press *.
- 7. Press # to exit the program.

Program 93 - Option #2 - determines whether each tenant is allocated a specific amount of System Speed Dial bins or access to all System Speed Dial bins.

➤ Conditions

- a. When a programmable amount of System Speed Dial bins is selected, the System Speed Dial bins allocated to each tenant are specified in Program 94.
- b. Stations not programmed into a tenant group (in Program 92) can access any System Speed Dial bin.
- c. Access to System Speed Dial bins may overlap among tenants.
- d. System and station toll restriction parameters apply on System Speed Dial numbers, regardless of Program 93, Option #2 programming.

➤ Additional Programming

Program 8 Night COS, Headset, Instrument Type, Do Not Disturb, Internal Page Zone

Program 40 Class of Service

Program 48 Night Class of Service Level

Program 49 System Speed Dial Restriction

Program 92 Tenant Group

Program 94 Tenant Speed Dial

Instructions

AB: Program number 93.

C: 2 - to program System Speed Dial Access.

D: 0 - allow all tenants to access all System Speed Dial bins.

1 - allocate specific System Speed Dial bins to each tenant.

➤ Example

Specific System Speed Dial bins are allocated to each tenant. (Program 94 determines the number of System Speed Dial bins allocated to each tenant).

<u>A</u>	В	C	\mathbf{D}	E	F	G	H	I	J	K	L	M	N	0	P
9	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

D: 0 - allows each tenant to access all System Speed Dial numbers.

- 1. Enter program number 93.
- Press ★.
- 3. Enter C data.
- 4. Press *.
- 5. Enter D data.
- 6. Press *.
- 7. Press # to exit the program.

Program 93 - Option #3 - determines whether internal pages (81-84) are received only by stations in the same tenant group as the paging station or by all stations in the system.

Conditions

- a. Four internal page zones (81-84) are available to each tenant.
- b. Program 8 determines the internal page received at each station in the system.
- c. A station not programmed into a tenant group receives internal pages from any station (according to Program 8 code).
- d. A station not programmed to receive internal pages (81-84) in Program 8 does not receive All-Call (80) pages.
- e. When paging is allowed only within a tenant group, (93-3-1), pages by different tenants using the same page code (81-84) simultaneously are not allowed.

Additional Programming

Night COS, Headset, Instrument Type, Program 8 Do Not Disturb, Internal Page Zone

Program 92 **Tenant Group**

Instructions

AB: Program number 93.

3 - to program internal paging between tenants. C:

D: 0 - allow internal paging between tenants.

1 - deny internal paging between tenants.

> Example

Internal paging between tenants is denied. (Each tenant has four zones of internal paging).

Α	\mathbf{B}	C	D	E	F	G	H	I	J	K	L	M	N	0	<u>P</u>
9	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-

Default Entry

0 - internal paging allowed between tenants.

- 1. Enter program number 93.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Enter D data.
- 6. Press *.
- 7. Press #.

Program 93 - Option #4 - determines whether DSS consoles provide DSS/BLF operation for all stations or only for stations in the same tenant group.

> Conditions

- a. When DSS consoles provide DSS/BLF operation only for stations in the same tenant group (93-4-1), the DSS console keys function only for stations in the same tenant group as the DSS station. The DSS console keys for stations not in the same tenant group are non-functional.
- > Additional Programming

Program 13 DSS Console Port Assignment

Program 92 Tenant Group

Instructions

AB: Program number 93.

C: 4 - to program DSS Console Busy Lamp Field.

D: 0 - provide DSS/BLF for all stations to DSS consoles.

 provide DSS/BLF for tenant group stations only to DSS consoles.

➤ Example

Provides BLF for all stations to both DSS consoles.

	В														
9	3	4	0	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

o: o - provid

0 - provides BLF for all stations to both DSS consoles.

- 1. Enter program number 93.
- 2. Press *.
- 3. Enter C data.
- 4. Enter ¥.
- 5. Enter D data.
- 6. Press *.
- 7. Press # to exit the program.

PROGRAM 93 - OPTION #5 - TENANT ATTENDANT REVERT (C-CPU-E)

Program Description

Program 93 - Option #5 - determines whether a call on Hold reverts to the "main attendant" or to a "tenant attendant" after a programmed recall time.

Note:

The "main attendant" is designated in Program 13 (13 01-xx). "Tenant attendants" are designated in Program 95.

> Conditions

- a. When calls on Hold are programmed to revert to "tenant attendants," tenant attendants must be designated in Program 95.
- b. When the system is programmed to revert calls on Hold to "tenant attendants", a system-wide Attendant Revert Timer must be entered in Program 89.

> Additional Programming

Program 22 Exclusive Hold

Program 35 Exclusive Hold Recall/Duration Time Program 37 System Hold Recall/Duration Time

Program 38 Unannounced Transfer Recall

Program 39 Announced Transfer Recall

Program 89 Attendant Revert Timer

Program 95 Tenant Attendant Assignment

Instructions

AB: Program number 93.

C: 5 - to program Tenant Attendant Revert.

D: 0 - revert calls on Hold to the main attendant.

1 - revert calls on Hold to tenant attendants.

> Example

Calls on Hold revert to tenant attendants. . .

Α	\mathbf{B}	C	D	E	F	G	H	I	J	K	L	M	N	0	<u>P</u>
9	3	5	1	-	-	-	-	-	-	-	-	-	-	-	-

➤ Default Entry

D: 0 - calls on Hold revert to the main attendant.

- 1. Enter program number 93.
- 2. Press *.
- 3. Enter C data.
- 4. Press *.
- 5. Enter D data.
- 6. Press *.
- 7. Press # to exit the program.

Program 94 determines specific speed dial bins assigned to each tenant when System Speed Dial bins are allocated to tenants in Program 93 (93-2-1).

> Conditions

- a. Program 94 is not meaningful when access to System Speed Dial bins is allowed to all tenants (93-2-0).
- b. A tenant can have any number of consecutive System Speed Dial bins.
- c. System Speed Dial bin allocation may overlap among tenants.
- d. The ability to dial out System Speed Dial bins may be restricted by one of the following: Program 8 Night Class of Service; Program 40 Class of Service; Program 48 Night Class of Service Level; Program 49 System Speed Dial Restriction.

> Additional Programming

Program 8 Night COS, Headset, Instrument Type, Do Not Disturb, *Internal Page Zone*

Program 40 Class of Service

Program 48 Night Class of Service Level Program 49 System Speed Dial Restriction

Program 93 Tenant Option

Instructions

AB: Program number 94.

CD: 01-04 to designate the tenant.

EF: xx (00-9) lowest System Speed Dial bin. GH: xx (00-99) highest System Speed Dial bin.

> Example

Tenant #2 can access System Speed Dial bins 43-65.

Α	\mathbf{B}	C.	D	E	F	G	H	I	J	K	L	M	N	0	P
9	4	0	2	4	3	6	5	-	-	-	1	-	•	-	-

Default Entry

CD: 01 00-99 02 00-99 03 00-99 04 00-99

- 1. Enter program number 94.
- Press ★.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter EF data.
- 6. Press *.
- 7. Enter GH data.
- 8. Press *.
- 9. Press # to exit the program.

Program 95 determines the "tenant attendant" station in a tenant group that receives recalls from calls placed on Hold by other stations in the same tenant group.

Conditions

- a. Tenant Attendant Assignment is not meaningful unless Program 93 Option #5 is programmed to revert calls on Hold to "tenant attendants" (93-5-1).
- b. When the system is programmed to revert Calls on Hold to "tenant attendants", a system-wide Attendant Revert Timer must be entered in Program 89.
- c. Tenant Attendants may differ from the two System Attendants entered in Program 13.
- d. A station programmed as a "tenant attendant" does not require a DSS console.

Additional Programming

Program 22 Exclusive Hold

Exclusive Hold Recall/Duration Time Program 35

System Hold Recall/Duration Time Program 37

Unannounced Transfer Recall Program 38

Program 39 **Announced Transfer Recall**

Attendant Revert Timer Program 89

Program 93 Tenant Option

Instructions

Program number 95. AB:

CD: (01-04)Tenant Group number.

EF: the "tenant attendant" station. (10-73)

Example

Tenant Group #2 "tenant attendant" is station 19.

Α	В	C	D	\mathbf{E}_{-}	F	G	H	I	J	K	L	M	N	0	P	
9	5	0	2	1	9	-	٠	-	-	-	-	-	-	-	-	İ

Default Entry

EF: 01-00

02-00

03-00

04-00

- 1. Enter program number 95.
- 2. Press * . 01 is displayed (Tenant Group #1).
- 3. Enter EF data for first tenant group.
- 4. Press ★. 02 is displayed. Repeat steps 3 & 4 to enter data for Tenant Groups 2, 3, & 4.
- Press *.
- 6. Press # to exit the program.

Any C-COU line circuit in the system may be assigned as a "Private Line" for any station in the system. When Call Forward is used in conjunction with integrated Voice Mail, calls on the "Private Line" are forwarded to the station's Voice Mailbox without being routed to the Automated Attendant.

> Conditions

- a. Any C-COU line circuit can be programmed as a Private Line.
- b. A Private Line can be assigned to one station only.
- c. Incoming Access/Audible for a Private Line is determined by codes entered in Program 7.
- d. Outgoing Access for a Private Line is determined by codes entered in Program 6.
- e. When a station's Private Line is also programmed to ring at other stations, the line rings at other stations until the Call Forward occurs.
- f. Lines not programmed as Private Lines ring directly to the Auto Attendant when a station programmed for CO Audible has Call Forward activated.

Hint

To avoid calls being sent directly to the Auto Attendant when stations activate Call Forward, program each line as a Private Line to a non-existent station port.

Operation

None

Program 96 determines the line circuit dedicated as a Private Line to a designated station in the system.

> Conditions

- a. A C-COU line circuit designated as a Private Line can be assigned only to one station.
- b. To facilitate proper Private Line operation, each Private Line should be placed in its own dedicated line group in Program 2.
- c. Do not assign stations to CO lines programmed as Voice Mail lines in Program 75.
- d. A line programmed for Auto Attendant Ringing in Program 74 follows Auto Attendant operation when the line is also programmed as a Private Line.

> Additional Programming

Program 2 Line Groups

Program 6 Outgoing Line Access

Program 7 Incoming Line Access/Audible Program 83 Delayed Ring/Call Forward Timer

Instructions

AB: Program number 96.

CD: (01-24) line number.

EF: (10-73) port number.

> Example

Line 23 is a private line dedicated to station 56.

_	<u>A</u>	В	C	\mathbf{D}	E	F	G	$_{ m H}$	I	J	K	L	M	N	<u>O</u>	Р.
	9	6	2	3	5	6	-	•	-	-	-	-	-	-	-	-

➤ Default Entry

CD: 01-24 (all lines)

EF 00 (no stations assigned).

- 1. Enter program number 96.
- 2. Press *.
- 3. Enter CD data.
- 4. Press *.
- 5. Enter EF data.
- 6. Press *.
- 7. Press # to exit the program.



Nitsuko America, Telecom Division 4 Forest Parkway Shelton, CT 06484

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