Electra

PROFESSIONAL

LEVEL I

INSTALLATION SERVICE MANUAL

July 1993

Issue 2

PREFACE

THIS MANUAL

This Installation Service Manual provides the information required to install, program, and maintain the Electra Professional Level I system.

This manual is divided into three chapters as follows:

Chapter 1: Hardware Installation

Chapter 1 provides the information required to prepare and install the system, including applicable FCC requirements and UL regulatory information.

Chapter 2: Programming

Chapter 2 provides detailed instructions for performing System Programming.

Chapter 3: System Maintenance

Chapter 3 provides maintenance instructions and flowcharts for the system.

SUPPORTING DOCUMENTS

In addition to the Installation Service Manual, the Electra Professional Level I system is supported by the following technical manuals:

Electra Professional Level I General Description Manual (Stock Number 722000)

Designed and developed to provide a general overview of the Electra Professional Level I system, its features, configuration, service features, specifications, and standards.

Electra Professional Level I Features and Specifications Manual (Stock Number 722001)

Provides an expanded discussion of each feature that is available to the Electra Professional Level I system. In addition, the Features and Specifications Manual provides Station Application, Operating Procedures, and Service Conditions.

Electra Professional Level I Station Operation Manual (Stock Number 722003)

This manual explains in detail the station operations for all station user features. This manual is designed for use by installers and end users.

Electra Professional Level I Job Specifications Manual (Stock Number 722004)

Used in conjunction with the Installation Service Manual, the Job Specifications Manual is designed for the service technicians who are responsible for planning the system installation, maintaining the system, and keeping records of system programming and configuration. (This manual is included with every ESF-C-10 KSU.)

TABLE OF CONTENTS

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LIST OF FIGURES

LIST OF TABLES

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CHAPTER 1

HARDWARE SPECIFICATIONS AND INSTALLATION

CHAPTER 1
HARDWARE SPECIFICATIONS AND INSTALLATION

SECTION 1 SYSTEM SUMMARY

1.1 Introduction

The Electra Professional Level I is a fully digital telephone system serving a maximum of six outside (CO/PBX) lines and 16 stations. The system provides for flexible configuration, allowing the customer to purchase only what is needed. The Basic KSU can accommodate a combined total of four CO lines and eight stations. As a customer's business grows, the system can be expanded to accommodate a combined total of six CO/PBX lines and 16 stations. Additional equipment such as: Single Line Telephones, external speakers, Voice Mail, facsimile machines, *etc.*, can be connected to the system to enhance the capabilities of the system. [Figure 1-1 - Outside View of the Electra Professional Level I KSU and Figure 1-2 - System Configuration Drawing (Example) provide diagrams of the available system configurations.]

This chapter is designed to provide the technician, installing the system, a comprehensive explanation of the Electra Professional Level I specifications, hardware, and installation procedures. The technician should read this chapter in its entirety before installing the system to enable a more efficient installation.

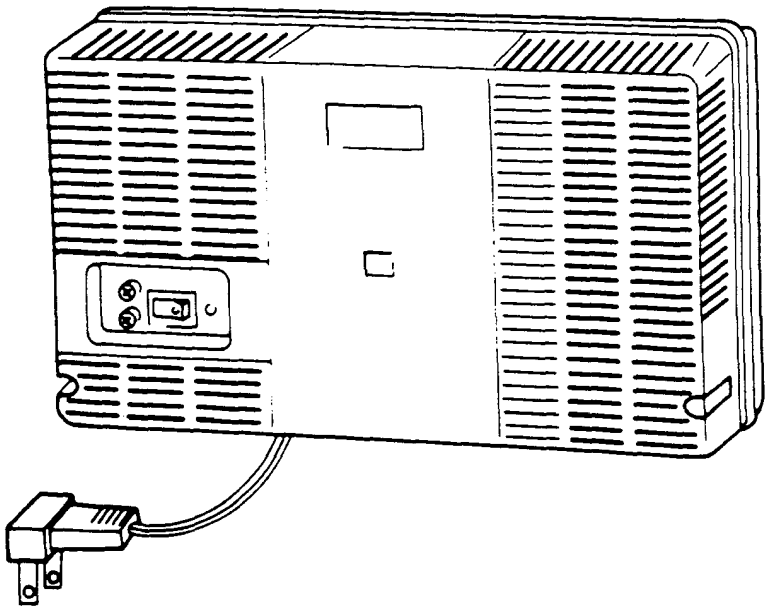


Figure 1-1 Outside View of the Electra Professional Level I KSU

1.2 Regulatory Information

The Federal Communications Commission (FCC) has established rules that permit this telephone system to be directly connected to the telephone network. A jack is provided by the telephone company. Jacks for this type of customer provided equipment will not be provided on party lines or coin lines.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of the Electra Professional Level I, the telephone company is required to give adequate notice of the changes.

1.2.1 Company Notification

Before connecting this telephone system to the telephone network, the following information must be provided to the telephone company:

1. Your telephone number.
2. FCC registration number:
   - If the system is to be installed as a Key System (no dial access to outside lines) use the following number:

     AY5THA-74138-KF-E

   - If the system is to be installed as a Multi-Function System, use the following number:

     AY5THA-74139-MF-E
3. Ringer Equivalence Number: 2.0B
4. USOC jacks required: RJ11C, RJ21X
5. Facility Interface Code: 02LS2

1.2.2 DOC Requirements

The Department of Communications (DOC) has established rules that permit this telephone system to be directly connected to the telephone network. Prior to the connection or disconnection of this telephone system to or from the telephone network, the telephone company must be provided with the following information.

1. Your telephone number.
2. DOC registration number: 140 5053 A
3. The Load Number of the equipment is: 9

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

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

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

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

CAUTION

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

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

This equipment has been listed by the Canadian Standards Association and found to comply with all applicable requirements of the standard for telephone equipment C22.2 No. 225.

This equipment meets DOC requirements CS03.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

and

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de Classe A prescrites dans le reglement sur le brouillage radioelectrique edicte par le Ministere Des Communications Du Canada.

1.2.3 Battery Disposal

The Electra Professional Level I system includes the following batteries. When disposing of these batteries, KSUs and/or KTUs, you must comply with the rules and regulations of your state regarding proper disposal procedures.

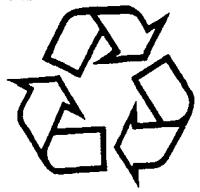
Unit Name	Type of Battery	Quantity
ESF-C-10 KSU	Lead Acid	2
	Lithium	1
VRS-C(1)-11 KTU	NiCad	1
SMDR-C-10 KTU	NiCad	1

IMPORTANT SAFEGUARDS FOR BATTERY DISPOSAL

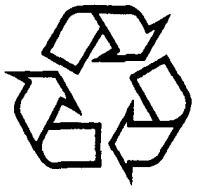
The product that you have purchased contains a rechargeable battery. The battery must be recycled or disposed of properly. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Nickel-Cadium (or sealed lead) batteries must be returned to a federal or state approved Nickel-Cadium (or sealed lead) battery recycler. This may be where the batteries were originally sold or a local seller of automotive batteries. In Minnesota call 1-800-225-PRBA if further disposal information is required, or call 1-800-232-9632 for further information.

BATTERY AND PACKAGE LABELING



CONTAINS NICKEL-CADMIUM BATTERY. MUST BE RECYCLED OR DISPOSED OF PROPERLY. MUST NOT BE DISPOSED OF IN MUNICIPAL WASTE.



CONTAINS SEALED LEAD BATTERY. MUST BE RECYCLED OR DISPOSED OF PROPERLY. MUST NOT BE DISPOSED OF IN MUNICIPAL WASTE.

1.2.4 Incidence of Harm

If the system is malfunctioning, it may also be causing harm to the telephone network. The telephone system should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

1.2.5 Radio Frequency Interference

In compliance with FCC Part 15 rules, the following statement is provided:

IMPORTANT NOTE

"This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the Installation Service Manual, may cause interference to radio communications. This equipment has been tested and approved for compliance with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this telephone system in a residential area is likely to cause interference, in which case, the user, at his or her own expense, will be required to take whatever measures may be required to correct the interference."

1.2.6 Hearing Aid Compatibility

The NEC Multiline Terminals and Single Line Telephones that are provided for this system are hearing aid compatible. The manufacturers of other Single Line Telephones for use with the system must provide notice of hearing aid compatibility to comply with FCC rules. FCC rules prohibit the use of non-hearing aid compatible telephones (after August 16, 1989).

1.2.7 Service Requirements

In the event of equipment malfunction, all repairs should be performed by an authorized agent of NEC America, Inc. or by NEC America, Inc. It is the responsibility of users requiring service to report the need for service to an authorized agent of NEC America, Inc. or to NEC America, Inc.

1.2.8 UL Regulatory Information

This equipment has been listed by Underwriters Laboratories and found to comply with all applicable requirements of the standard for telephone equipment UL 1459 2nd Edition.

1.3 List of Abbreviations

The following abbreviations are used throughout this chapter.

Table 1-1 List of Abbreviations

Abbreviation	Description
CO	Central Office
COI	Central Office Line Interface
CNF	Conference
CPU	Central Processing Unit
CTX	Centrex
ECR	External Control Relay
EPC	External Page Control
ESI	Electronic Station Interface
EXSP	External Speaker
FAX	Facsimile Transceiver
I/O	Input, Output
MLT	Multiline Terminal
MMC	Memory Module Control
PBR	DTMF Signal Receiver Circuit Unit (Push Button Receiver)
PFT	Power Failure Transfer
PRT	Printer with RS-232C Interface
PSU	Power Supply Unit
ROM	Read Only Memory
RAM	Random Access Memory
RTC	Real Time Clock
SLT	Single Line Telephone
SLT ADP	Single Line Telephone Adaptor
SMDR	Station Message Detail Recording
SPKR	Speaker
TDSW	Time Division Switch
TNG	Tone Generator
TP	Test Point
VMU	Voice Mail Unit
VRS	Voice Recording Service Unit

1.4 System Configuration Drawing

Figure 1-2 - System Configuration Drawing (Example) shows an example of a system with standard and optional (some locally provided) functions that are available with the Electra Professional Level I system.

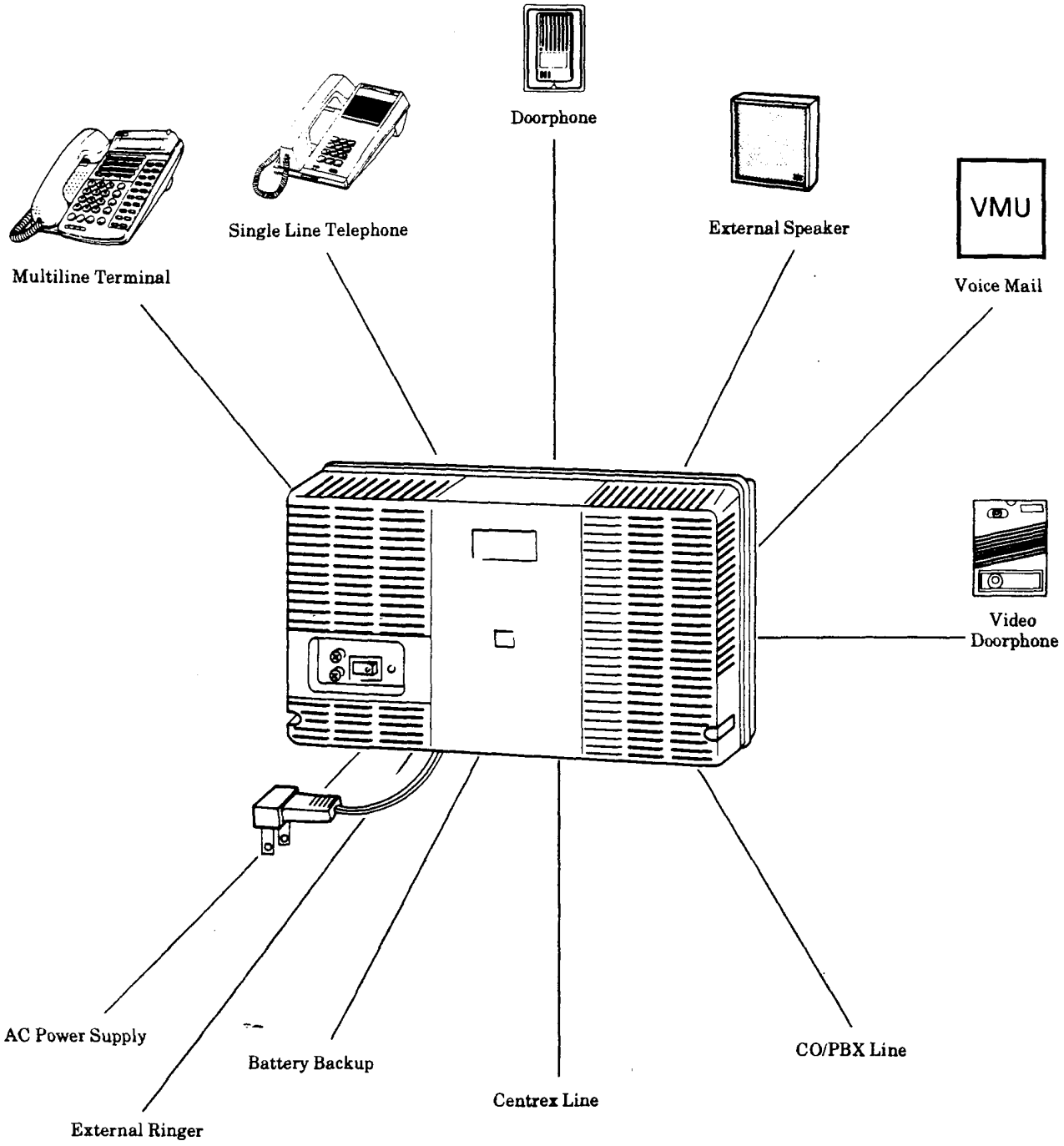


Figure 1-2 System Configuration Drawing (Example)

1.5 Equipment List

The following equipment is available for use in the system. The maximum quantities that can be installed in each system are listed in Tables 1-2 ~ 1-8.

Table 1-2 KSU and PSU

Equipment Designation	Maximum Quantity/System	Description
ESF-C-10 KSU	1	System KSU with PSF-C-10 PSU and batteries. Includes circuitry for: Tone Generator (TNG), Central Processing Unit (CPU), 4-channel Central Office Interface, 8-channel Station Interface, Conference, External Paging, Power Failure Transfer, two Doorphones, MOH/BGM, and four General Purpose Relays.
PSF-C-10 PSU	N/A	PSU (Spare Power Supply)
Battery	2	For system battery backup

Table 1-3 Station Interface KTU

Equipment Designation	Maximum Quantity/System	Description
ESI-C(8)-11 KTU	1	8-channel, 2-wire Electronic Station Interface

Table 1-4 Trunk Interface KTU

Equipment Designation	Maximum Quantity/System	Description
COI-C(2)-10 KTU	1	2-channel, Loop Start Central Office Interface

Table 1-5 Other Optional KTUs

Equipment Designation	Maximum Quantity/System	Description
PBR-C(4)-11 KTU	1	4-channel, DTMF/Push Button Receiver (PBR)
VRS-C(1)-11 KTU	1	1-channel, Voice Recording Service (VRS)
SMDR-C-10 KTU	1	Station Message Detail Recording
FAX-C(1)-11 KTU	1	1-channel, Facsimile Connection

Table 1-6 Electra Professional Level I Terminals

Equipment Designation	Maximum Quantity/System	Description
ETW-8-1 (BK) TEL	15	8-line non-display terminal with built-in speakerphone, ADA interface, and large LED, and eight function keys
ETW-16DC-1 (BK) TEL	16	16-line Display Compact terminal with built-in speakerphone, ADA interface, large LED, and eight function keys
ETW-16DD-1 (BK) TEL	16	16-line Display Deluxe terminal with built-in speakerphone, ADA interface, Large LED, eight function keys, and 20 programmable One-Touch keys with red LEDs
ADA (1)-W (BK) Unit	16	Ancillary Device Adaptor (for connection of headset, recording interface, external speakerphone, *etc.*)
ADA (2)-W (BK) Unit	16	Ancillary Device Adaptor (for connection of cordless telephone, Single Line Telephone, facsimile, modem, answering machine, *etc.*)
WMU-W (BK) Unit	16	Wall Mount Unit

Table 1-7 Single Line Telephone Adaptor

Equipment Designation	Maximum Quantity/System	Description
SLT-F(1G)-10 ADP	4	Single Line Telephone Adaptor

Table 1-8 Doorphone Equipment

Equipment Designation	Maximum Quantity/System	Description
DP-A-1A Unit	2	Doorphone Unit

1.6 Equipment General Information

One *Electra Professional Level I Job Specifications Manual* (Stock No. 722004) is included with each ESF-C-10 KSU. All optional equipment: external amplifiers, Music On Hold source, Background Music source, external speakers, *etc.*, must be locally provided.

1.7 Equipment Description

1.7.1 Key Service Units and Power Supply Units

ESF-C-10 KSU

The Key Service Unit (KSU) provides service for outside CO/PBX, internal lines, and connection of Multiline Terminals. The basic KSU provides for the connection of four CO/PBX lines and eight stations and can be expanded to six CO/PBX lines and 16 stations with expansion modules. A PSF-C-10 PSU Power Supply Unit and internal batteries are included with the KSU.

Fixed slots are intended for COI-C(2)-10, ESI-C(8)-11, PBR-C(4)-11, VRS-C(1)-11, FAX-C(1)-11, and SMDR-C-10 KTUs.

PSF-C-10 PSU
The Power Supply Unit is provided with the KSU. It has a battery interface cable for battery backup, accepts 117 Vac, and outputs +5V and +28V to the system.

1.7.2 Station Interface Key Telephone Unit

ESI-C(8)-11 KTU
The Electronic Station Interface KTU contains eight circuits, each of which can support three types of Multiline Terminals or an SLT Adaptor.

One ESI-C(8)-11 KTU can be installed in the KSU.

1.7.3 Trunk Interface Key Telephone Unit

COI-C(2)-10 KTU
The Central Office Interface KTU complies with UL 1459 2nd Edition requirements. Electrical fuses (posistors) are built into this KTU. The COI-C(2)-10 KTU supports two outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing. The outside lines can be any combination of loop start, DTMF, or dial pulse dialing trunks.

One COI-C(2)10 KTU can be installed in the KSU.

1.7.4 Optional Key Telephone Units

PBR-C(4)-11 KTU
The Push Button Receiver (PBR) 4-Channel KTU detects and translates DTMF tones received by the Automated Attendant and generated by Single Line Telephones, modems, facsimile machines, *etc.*

The interface slots can accommodate one PBR-F(4)-11 KTU for a maximum of four circuits per system.

VRS-C(1)-11 KTU
The Voice Recording Service KTU provides voice recording messages for Automated Attendant, internal stations, manual messages, hold messages and automatic/manual answering of incoming CO/PBX calls by a voice recorded message.

One VRS-C(1)-11 KTU can be installed in the KSU.

SMDR-C-10 KTU
The Station Message Detail Recording KTU stores and generates detailed call records for all outgoing CO/PBX calls.

Information provided by SMDR-C-10 KTU includes:

- Calling party's station number
- CO/PBX line used for the call
- Start time of call
- End time of call
- Number dialed
- Date of call

One SMDR-C-10 KTU can be installed in the KSU. The SMDR-C-10 KTU mounts onto the main printed circuit board of the system.

A serial printer or other peripheral recording device must be locally supplied and terminated to the RS-232C connector from the SMDR-C-10 KTU.

FAX-C(1)-11 KTU
The Fax KTU provides for the direct connection of a locally provided facsimile machine. Additional dedicated CO/PBX lines are not required for the facsimile to operate. The facsimile shares usage of the fourth CO/PBX terminated line. Version 2.0 software or higher is required.

One FAX-C(1)-11 KTU can be installed in the KSU.

1.7.5 Multiline Terminals and Associated Equipment

ETW-8-1 (BK) TEL
This Multiline Terminal is a fully modular instrument with eight Flexible Line keys (each with a two-color LED), eight function keys, built-in speakerphone, ADA interface, and a large LED to indicate incoming calls and messages.

A maximum of 15 ETW-8-1 (BK) TELs can be installed in a system.

ETW-16DC-1 (BK) TEL
This Multiline Terminal is a fully modular instrument with 16 Flexible Line keys (each with a two-color LED), eight function keys, built-in speakerphone, a 16-character Liquid Crystal Display (LCD), ADA compatibility and a large LED to indicate incoming calls and messages.

A maximum of 16 ETW-16DC-1 (BK) TELs can be installed in a system.

ETW-16DD-1 (BK) TEL
This Multiline Terminal is a fully modular instrument with 16 Flexible Line keys (each with a two-color LED), eight function keys, built-in speakerphone, 20 programmable One-Touch keys with LEDs, ADA compatibility, and a large LED to indicate incoming calls and messages.

A maximum of 16 ETW-16DD-1 (BK) TELs can be installed in a system.

ADA (1)-W (BK) Unit
The ADA (1)-W (BK) Unit (Ancillary Device Adaptor) provides the Multiline Terminal with connection for a headset, external speakerphone, or other ancillary devices. An ADA (1)-W (BK) Unit can be installed in any Multiline Terminal.

A maximum of 16 ADA (1)-W (BK) Units can be installed in a system, one per Multiline Terminal.

ADA (2)-W (BK) Unit
The ADA (2)-W (BK) Unit (Ancillary Device Adaptor) provides the Multiline Terminal with connection for single line equipment such as a cordless telephone, Single Line Telephone, modem, facsimile machine, or answering machine. An ADA (2)-W (BK) Unit can be installed in any Multiline Terminal.

A maximum of 16 ADA (2)-W (BK) Units can be installed in a system, one per Multiline Terminal.

WMU-W (BK) Unit
The WMU-W is a universal Wall Mount Unit, which can be used to mount any Multiline Terminal on a wall.

1.7.6 Single Line Telephone Adaptor

SLT-F(1G)-10 ADP
The Single Line Telephone Adaptor provides an interface for a Single Line Telephone, voice mail, or similar device from an ESI-C(8)-11 KTU channel.

1.7.7 Doorphone Equipment

DP-A-1A Unit
This unit is used as a doorphone to originate a tone signal to preassigned Multiline Terminals via a call button. This unit is generally installed at front and rear doors of secured work areas. The DP-A-1A Unit can also be used as a 1-way room monitor to listen to an area.

A maximum of two weather resistant DP-A-1A Units can be installed in a system.

SECTION 2 SYSTEM SPECIFICATIONS

2.1 General Information

The following diagrams and tables show specifications for the system. The technician should review these carefully before attempting to install the system.

2.2 System Block Diagram

The system block diagram shows a conceptual representation of an installed system. (Refer to Figure 1-3 - System Block Diagram. Refer also to Table 1-1 - List of Abbreviations.)

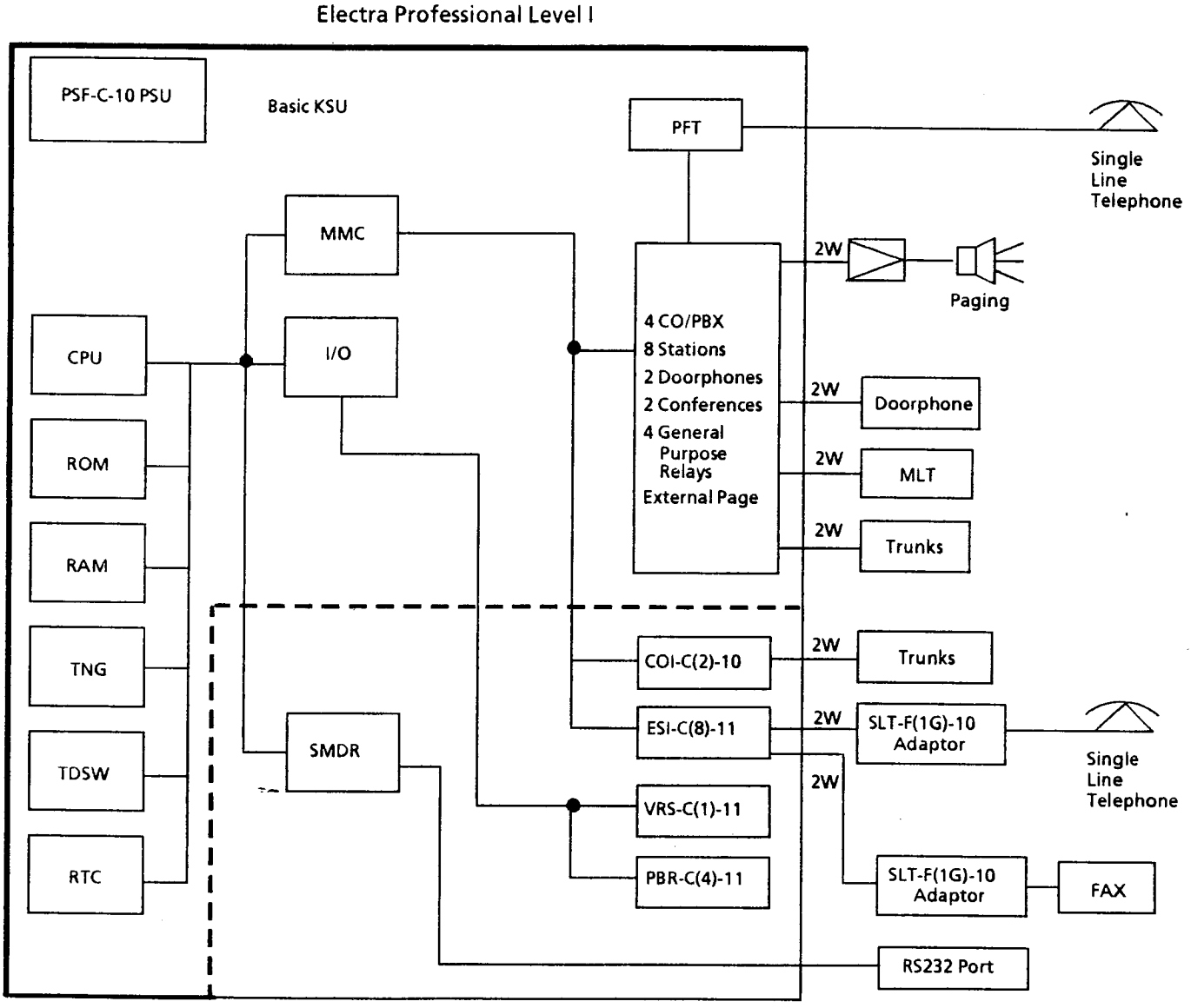


Figure 1-3 System Block Diagram

2.3 System Control Capacities

The control capacities of the system are shown in Table 1-9 - System Control Capacities.

Table 1-9 System Control Capacities

Item	KSU	Basic + Optional KTUs	Unit	No. of Circuits or No. of Telephones to be Connected/Unit
Number of CO/PBX Lines	4	6	KSU COI	*4/2
Number of Internal Lines	Non-Blocking		KSU	N/A
Maximum Number of Stations	8	16	KSU / ESI	*8/8
External Speaker	1	1	KSU	1
DTMF Signal Receiver Circuit	0	4	PBR	4
Voice Recording Services	0	1	VRS	1
SMDR	0	1	SMDR	1
Conference Trunk (4-party)	2	2	KSU	2
Tenant	4	4	KSU	N/A
Trunk Groups	3	3	KSU	N/A
System Speed Dial	80	80	KSU	N/A

* Denotes number of circuits in the KSU/Optional KTUs.

2.4 Cabling Requirements

2.4.1 Cabling Specifications

The KSU is connected with each of the Multiline Terminals and Single Line Telephones by a separate twisted 1-pair cable or 2-pair cable (only for Multiline Terminals). Table 1-10 - Multiline Terminal Loop Resistance and Cable Length and Table 1-11 - Single Line Telephone Connection Cable Length show the cables used for wiring between the KSU and individual terminals or adaptors.

Table 1-10 Multiline Terminal Loop Resistance and Cable Length

Terminal or Adaptor	Maximum Loop Resistance	Maximum Feet by Twisted 1-Pair Cable	Maximum Feet by Twisted 2-Pair Cable
		24AWG	24AWG
ETW-8-1 (BK) TEL	61	600	1500
ETW-16DC-1 (BK) TEL	46	450	1300
ETW-16DD-1 (BK) TEL	37	360	820
SLT-F(1G)-10 ADP	61	600	1200
DP-A-1A Unit	20	410	820

Note 1: The length for the specified SLT Adaptor is the length between the ESI KTU and the SLT Adaptor.

Note 2: When additional length is required between the ESI and the Multiline Terminal or the SLT Adaptor, use twisted 2-pair cable as shown in Figure 1-4 - Connecting the ESI to the Multiline Terminal Using Twisted 2-Pair Cable.

Table 1-11 Single Line Telephone Connection Cable Length

Connected Equipment	Cable	Maximum Feet or Loop Resistance (24 AWG)
SLT-F(1G)-10 ADP	Twisted 1-pair	500 Ω

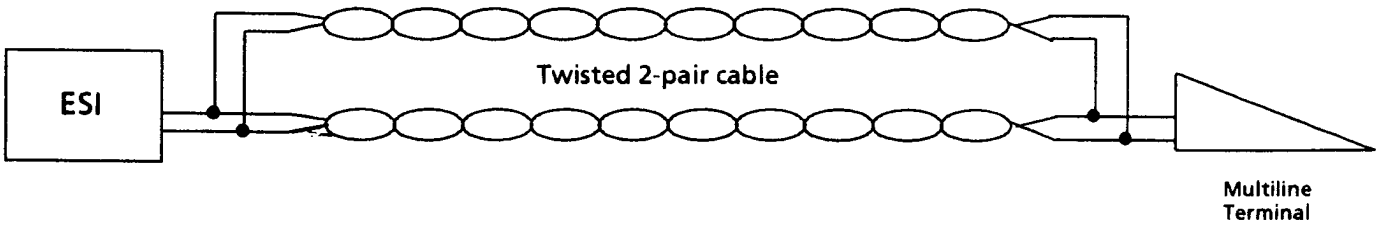


Figure 1-4 Connecting the ESI to the Multiline Terminal Using Twisted 2-Pair Cable

2.4.2 Cabling Precautions

When selecting cables and Main Distribution Frames (MDF), future expansion or assignment changes should be given due consideration. Avoid running cables in the following places:

- A place exposed to wind or rain.
- A place near heat radiating equipment or where the quality of station cable covering could be affected by gases and chemicals.
- An unstable place subject to vibration.

2.5 Power Requirements

2.5.1 Power Supply Inputs

AC Input (PSF-C-10 PSU)

- 120 Vac ± 10%
- 60 Hz ± 10%
- Single Phase
- Maximum Current: 2.3A
- A dedicated outlet, separately fused and grounded, is required.

2.5.2 Power Supply Outputs

Table 1-12 Power Outputs

DC Voltage	Minimum Current*	Maximum Current**
+28V	0.01A	2.3A
+ 5V	0.3A	3.0A

* Basic KSU Only
** Fully Loaded

Multiline Terminal

- Voltage: +11 Vdc ~ + 28 Vdc
- Maximum Current: 200 mA

Single Line Telephone Adaptor [SLT-F(1G)-10 ADP]:

- Standard 2500 Set: 500 type network
- Nominal Current: 30 mA
- Ring Signal: 56 Vac RMS @ 20 Hz

2.5.3 Power Consumption and Dissipation

Basic KSU

- Maximum RMS Current: 0.6A
- Watts Used (Idle): 20W
- Watts Used (Maximum): 50W

Fully Loaded KSU

- Maximum RMS Current: 2.3A
- Watts Used (Idle): 40W
- Watts Used (Maximum): 105W

2.5.4 Fuse Replacement

Table 1-13 Fuse Replacement

Unit	Fuse No.	Specifications	Description	Dimensions
PSF-S-20 PSU	F0	250V, 6.3A	AC Input	1/4" X 1-1/4"
	F1	250V, 6.3A	DC Input	1/4" X 1-1/4"
	F2	125V, 2A	+5V Input and +28V	1/4" X 1-1/4"
	F3	125V, 5A	Battery Input	1/4" X 1-1/4"

Note: F0 and F1 fuses are normal blown glass tube. **Do not use slow blow fuses.**

2.6 Environmental Conditions

Temperature

- Operating: 50°F ~ 104°F (10°C ~ 40°C)
- Recommended Long Term: 50°F ~ 90°F (10°C ~ 32.2°C)

Operating Humidity: 10% ~ 90% noncondensing

2.7 Outside Line Types

- 2-wire, Loop Start Trunks

2.8 Network and Control Specifications

2.8.1 Transmission

- Data Length:
  From Multiline Terminal to Electronic Station Port: 23 bits
  From Electronic Station Port to Multiline Terminal: 23 bits
- Data Transmission Rates:
  Between Electronic Station Port and Multiline Terminal: 512 Kbits/sec.
- Scanning Time for Each Multiline Terminal: 64 ms.

2.8.2 Network

- TDM Switching: PCM (μ Law)
- TDM Clock: 2.048 MHz
- TDM Slot Period: 125 μs./32
- TDM Data Bus: 8 bits
- TDM Timeframe: 125 μs.

2.8.3 Control

- Control: Stored program with distributed processing
- Central Processor: 8-bit microprocessor
- Clock: 8 MHz
- Multiline Terminal: 4-bit, 1 chip microprocessor
- SLT Adaptor: 4-bit, 1 chip microprocessor

2.9 Dialing Specifications

2.9.1 Dial Pulse Address Signaling

- Pulse Rate: 10 ± 0.8 pps/20 ± 1.6 pps
- Make Ratio: 39 ± 3%
- Interdigit Interval: 800 ms.
- Minimum Pause: 600 ms. (10 pps)
  450 ms. (20 pps)

2.9.2 DTMF Address Signaling

- Frequencies: Low Group: 697 Hz, 770 Hz, 852 Hz, 941 Hz
  High Group: 1209 Hz, 1336 Hz, 1477 Hz
- Frequency Deviation: ± 1.5% maximum
- Nominal Level per Frequency: −6 dBM ~ −4 dBM
- Minimum Level per Frequency: Low Group: −10 dBM
  High Group: − 8 dBM
- Rise Time: Within 5 ms.
- Duration: 70 ms. (default), 70 ms. (min.), 900 ms. (max.)
  Interdigit: 60 ms. (default), 60 ms. (min.), 200 ms. (max.)

Nominal Low Group Frequencies (Hz) \ Nominal High Group Frequencies (Hz)	1209	1336	1477
697	1	2	3
770	4	5	6
852	7	8	9
941	*	0	#

2.10 Battery Backup

The system has two battery backup functions: one is for system backup and a second for memory backup.

2.10.1 System Backup

The system is backed up by a rechargeable battery. This battery should backup all of the system functions for approximately 10 minutes in the event of a power failure.

2.10.2 Memory Backup

The backup battery is equipped on the basic KSU [VRS-C(1)-11 KTU] and the SMDR-C-10 KTU. These NiCad batteries, when fully charged, retain the system memory in the event of a power failure. (Refer to Table 1-14 - KTU Battery Backup Time for the approximate back up times for the KTUs.)

Table 1-14 KTU Battery Backup Time

KTUs	Approximate Backup Time
Basic KSU	18 months
VRS-C(1)-11 KTU	2 hours
SMDR-C-10 KTU	1 month

The functions that are supported by the backup batteries are:

- Background Music
- Call Forwarding
- Clock/Calendar
- Do Not Disturb
- Last CO/PBX Redial
- Message Waiting
- Microphone Status
- Night Transfer Status
- Room Monitor
- Save and Repeat
- SMDR Data
- Speed Dial Memories (System and Station)
- Store and Repeat
- System Program
- Timed Alarm
- Volume Control/LCD Contrast
- VRS Data

2.10.3 Battery Backup - Full System Power

Backup Battery Replacement

Two locally provided 12 Vdc, sealed lead acid storage batteries (PE0.7-12R) or equivalent are recommended.

- Weight: 0.77 lbs. (35 g.)
- Contact Type: W2
- Size:
  Length: 3.78 in. (96 mm)
  Width: 0.98 in. (25 mm)
  Height: 2.42 in. (6.15 mm)
  Depth: 2.42 in. (6.15 mm)
- Maximum Discharge Current: 2.1A
- Temperature:
  Operating: 32°F ~ 104°F (0°C ~ 40°C)
  Storage: −40°F ~ 104°F (−20°C ~ 40°C)

CAUTION

Do not short circuit the batteries. The battery could explode and cause damage to personnel and equipment.

2.11 Weights and Dimensions

Table 1-15 Weights and Dimensions

Unit	Shipping Weight *	Height	Width	Depth
ESF-C-10 KSU	Approximately 9 lbs.	13 inches (325 mm)	19 inches (475 mm)	4.16 inches (104 mm)
ETW-8-1 (BK) TEL	2 lbs. (0.9 kg)	3.98 inches (101 mm)	6.89 inches (175 mm)	8.81 inches (223 mm)
ETW-16DC-1 (BK) TEL	2 lbs. 3 oz. (1 kg)	3.98 inches (101 mm)	6.89 inches (175 mm)	8.81 inches (223 mm)
ETW-16DD-1 (BK) TEL	2 lb. 7 oz. (1.1 kg)	3.98 inches (101 mm)	8.07 inches (205 mm)	8.81 inches (223 mm)
ETE-1-2 TEL (SLT)	1 lb. 14 oz. (0.10 kg)	3.15 inches (80 mm)	6.30 inches (160 mm)	9.06 inches (230 mm)
ETE-1HM-2 TEL (SLT)	1 lb. 10 oz. (0.7 kg)	2.36 inches (60 mm)	6.30 inches (160 mm)	9.06 inches (230 mm)

* Shipping weight includes the shipping carton.

2.12 External Equipment Interface

2.12.1 Music On Hold (MOH)/Background Music (BGM)

- Connector: 4-position, quick connector
- Auxiliary Input: 1.0V RMS Signal Level max./min.
- Input Impedance: 600 Ω

2.12.2 Station Message Detail Recording (SMDR)

- Female connector (system output) standard RS-232C (serial output)

2.12.3 External Paging

- Output Level: −15.0 dBm Signal Level, +4 dBm max.
- Output Impedance: 600 Ω

2.12.4 General Purpose Relays

- Contact Rating: 1 A @ 24 Vdc
  150 mA @ 48Vdc

2.13 Visual and Audible Indications

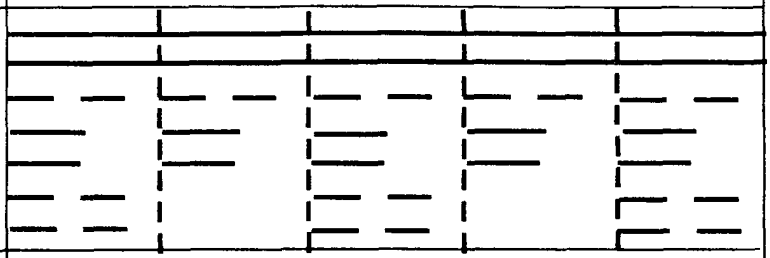
2.13.1 Tone Patterns Table

Table 1-16 Tone Patterns

Tone	Frequency (Hz)	Tone Patterns
Dial Tone	350/440	
Second Dial Tone	350/440	120 IPM
Busy Tone	480/620	60 IPM
Call Waiting Tone	440	60 IPM
Ringback Tone	440/480	1 sec. ON 2 secs. OFF
Reorder Tone	480/620	120 IPM
• Tone Override • Camp-On Tone	440	0.5 sec.
Confirmation	440	1 sec. ON
Recall Tone	1024	60 IPM
CO/PBX Ring Tone	600/700 or 1024/1285	2 sec. ON 4 secs. OFF
ICM Ring Tone	500	1 sec. ON 2 secs. OFF
Voice Page Alert Tone (Tone Burst)	440	0.5 sec.
Howler Tone	2400	16 Hz Modulation
Barge-In Tone	440	1 sec. ON
Voice Over	440	0.5 sec.

2.13.2 Multiline Terminal Flash Patterns Table

Table 1-17 Multiline Terminal LED Flash Patterns

LED	Condition	Color	Flash Patterns
Line Key	I-Use	Green	
	Busy	Red	
	Incoming Call	Red	
	I-Hold	Green	
	Call Hold	Red	
	Hold Recall	Green	
	Transfer Recall	Green	
Microphone	ON	Red	
	Monitored	Red	
ICM	I-Use	Red	
	ICM Incoming Call	Red	
Large LED	Incoming Internal Call	Red	
	Incoming CO Line	Green	
	Voice Mail Message	Red	
	VRS Message	Red	
Speaker	ON	Red	
	System Data Entry	Red	
	Monitor	Red	
Conference	Conference in Progress	Red	
	All Conference Circuits Used	Red	
	Hold Conference Call	Red	
	ICM Call Hold	Red	
	SPD Confirmation	Red	
Answer	Incoming Trunk	Red	
	Voice Over Split	Green	
	Preset	Red	
Function	Callback Set	Red	
	DND, Call FWD	Red	
	Auto Redial Set	Red	
	ON (to Set Function)	Red	
LNR/SPD	CO Line Key Seized	Green	
	Exclusive Hold	Green	
BLF or DSS Key	Use, Hold, ICM Called	Red	
	DND, Call FWD All Set	Red	
	Special Mode (While pressing FNC key or going off-line)	Red	

0 0.5 1.0 1.5 2.0 sec.

2.13.3 DSS/BLF LED Indications Table

Table 1-18 DSS/BLF LED Indications

Function	Color	Status
Idle		OFF
Talking	Red	ON
Hold	Red	ON
FWD All and DND	Red (Flashing)	ON
Other Use (Multiline Terminal is in off-line mode, the station user is programming, Feature Access/One-Touch Key programming, *etc.*)	Red (Flashing)	ON

SECTION 3 HARDWARE REQUIREMENTS

3.1 General Information

Before configuring the system, complete the worksheets provided in the *Electra Professional Level I Job Specifications Manual* (Stock No. 722004). Make sure all types of station equipment, timeouts, and feature options are considered when completing the worksheets. It is necessary to understand System Programming to properly complete these worksheets. (Refer to Chapter 2 - Programming in this manual.)

Note: One *Electra Professional Level I Job Specifications Manual* is included with each ESF-C-10 KSU.

The KSU has five fixed slots for each optional/interface KTU.

When possible, the same type KTUs should be paired together within a cable binder (25-pair cable binders to the MDF should be used). This will simplify MDF wiring.

3.1.1 Programming Stations

A maximum of two programming positions are available in the system. Station equipment, connected to the first two ports of the KSU, are automatically set as programming positions and must be an ETW-16DC-1 (BK) TEL or ETW-16DD-1 (BK) TEL.

The first two programming positions are system Attendants and are fixed in system software.

3.1.2 Attendant Stations

A maximum of two Attendant positions can be installed in a system.

3.2 Determining Required Equipment

3.2.1 Station Equipment

Determine the type and quantity of station equipment being installed. The type of station equipment that is available includes:

- ETW-8-1 (BK) TEL (8-line Multiline Terminal without LCD)
- ETW-16DC-1 (BK) TEL (16-line Multiline Terminal with LCD)
- ETW-16DD-1 (BK) TEL (16-line Multiline Terminal with LCD)
- Single Line Telephone with Message Wait Lamp
- Single Line Telephone without Message Wait Lamp
- SLT-F(1G)-10 ADP
- Doorphones (Doorphone or video doorphones with monitoring station)

3.2.2 Interface KTUs

Interface KTUs can be added to expand the system to full capacity. (Refer to Figure 1-5 - Full Capacity KSU.)

- ESI-C(8)-11 KTU: 8 stations
- COI-C(2)-10 KTU: 4 CO lines

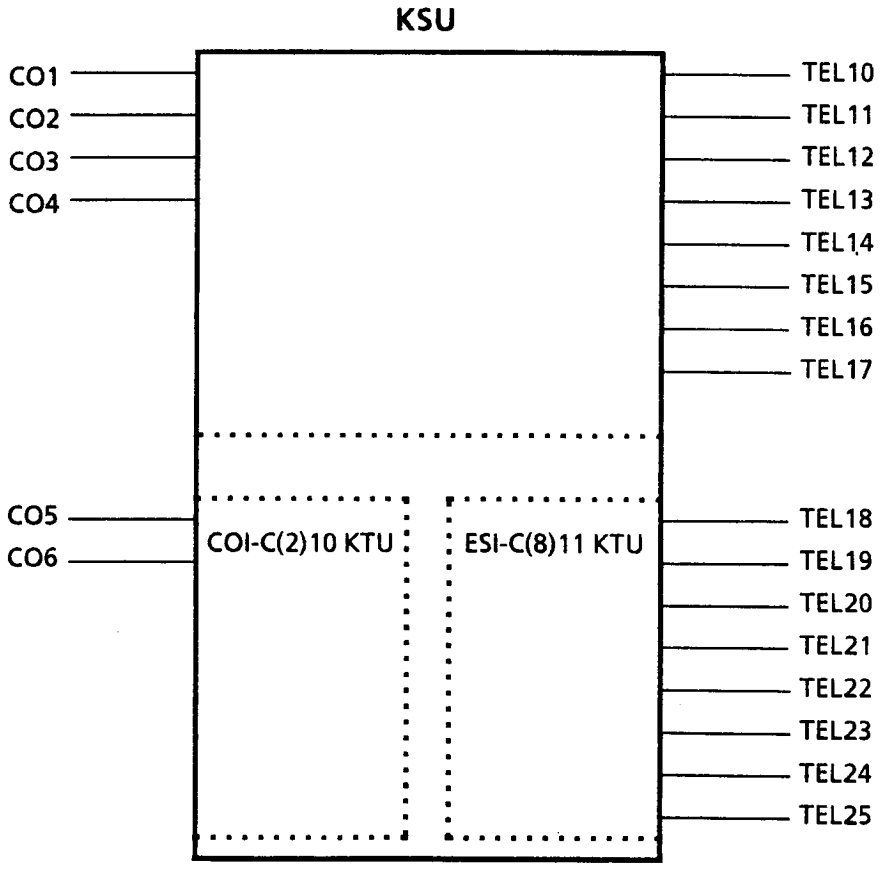


Figure 1-5 Full Capacity KSU

Table 1-19 Number of Required Interface KTUs

KTU	Circuits per KTU	Calculations/Comments	Maximum KTUs per System
COI-C(2)-10 KTU	2	Required if the number of CO/PBX/Centrex lines being used is 5 or 6.	1
ESI-C(8)-11 KTU	8	Required if the number of Multiline Terminals and SLT Adaptors being used is greater than 8.	1
PBR-C(4)-11 KTU	4	PBR Requirements (Refer to section 3.2.3 - PBR Requirements.)	1
VRS-C(1)-11 KTU	1	Required for Automated Attendant, VRS-Auto/Manual Answer, and VRS-Internal.	1
SMDR-C-10 KTU	1	Required for Station Message Detailed Recording.	1
FAX-C(1)-11 KTU	1	Required for facsimile connection.	1

3.2.3 PBR Requirements

The Electra Professional Level I system has four channels of PBR circuits on the PBR-C(4)-11 KTU. The PBR circuit can detect DTMF signals from a Single Line Telephone, facsimile, modem, voice mail, and ADA (2).

3.3 Installation Example

The following example will aid in understanding some of the requirements when configuring an Electra Professional Level I system. (Refer to Table 1-20 - System Configuration Example.) The equipment used in this example includes:

- 5 CO Lines
- 9 Multiline Terminals [ETW-16DD-1 (BK) TEL only]
- Voice Mail Connection (2 ports)
- SMDR
- External Paging

Table 1-20 System Configuration Example

Device Type	Units	Quantity
Key Service Unit	ESF-C-10-KSU	1
CO Line	COI-C(2)-10 KTU	1
Multiline Terminal Interface	ESI-C(8)-11 KTU	1
Multiline Terminal	ETW-16DD-1 (BK) TEL	9
Voice Mail Connection (2 ports)	SLT-F (1G)-10 ADP	2
SMDR	SMDR-C-10 KTU	1
External Paging	N/A	N/A

SECTION 4 KSU INSTALLATION

4.1 General Information

This section provides the requirements for installing the system. The installer should be familiar with this section before installing the system.

4.2 Site Preparation and MDF/IDF Construction

The technician should plan the installation before actual work begins. Advanced planning will minimize time, cost, and disruption of the customer's business activities. Additional benefits include flexibility for changes and expansion, efficient maintenance, and increased customer satisfaction.

4.2.1 Precautionary Information

The following warnings shall be observed during installation:

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

4.2.2 Site Survey

In most cases, a survey of the customer's premises is needed to develop cost estimates of the installation. Preliminary information is used to determine the placement of the Main Distribution Frame (MDF). A second visit to the site may be necessary to obtain the exact dimensions of the area selected for MDF, cable lengths, and possible IDF (Intermediate Distribution Frame) locations.

Collected information about the job site will generally permit the MDF to be partially assembled at the technician's shop, which helps to minimize time spent at the customer's premises.

4.2.3 Site Limitations

Installation of a telephone system is seldom a routine procedure. The uniqueness of each customer's situation requires a **tailored** approach to each job. In selecting a permanent site for the MDF, the technician may encounter problems such as, but not limited to, the following:

- Limited space is available and must be used regardless of its suitability.
- The available space may be adequate but may pose one or more environmental hazards.
- The proposed location has limitations, such as, insufficient lighting or the lack of a suitable ground for grounding the KSUs.

Whatever the nature of the adversities encountered, the technician must make the necessary decisions to arrive at the best possible solution for installing the equipment. It is beyond the scope of this document to cover all possible situations, precautions, and actions.

4.2.4 Site Selection Conditions

KSU Installation Site:

The following conditions should be met at the site selected for the key service unit (KSU).

- The KSUs should be wall mounted to protect against accident or flooding.
- The KSU should not be located directly beneath pipes, due to the possibility of leaks or condensation causing damage to the Electra Professional Level I system equipment.
- The area where the KSU is to be located must be free of corrosive and inflammable gases, excessive chemical or industrial dusts, and other materials that could cause a hazard to personnel or to the proper functioning of the equipment.
- Operating ambient temperature and humidity must be within the limits specified in Section 2.6 - Environmental Conditions, in this chapter,
- The operation of the system is virtually noiseless and allows a wide selection of installation sites. Care should be taken to ensure the KSUs do not present a hazard to office traffic. For purposes of economy, a central location to minimize cabling is often used.
- The KSU must be located at a site where it can be easily connected to an AC power source.
- The basic KSU weighs approximately 9lbs. Select a strong wall for mounting purposes.
- Place the KSU according to the following spacing specifications:
  - Space distance between the KSU and the ceiling: 20 in. or more
  - Space distance on both sides of the KSU: 12 in. or more
  - Space distance on front of KSU: 20 in. or more
- Avoid connection of the KSU to an AC receptacle used in common with any other device (computer, facsimile machine, copier, *etc.*)

Telephone Installation Site:

The following conditions should be met at the site selected for Multiline Terminals.

- Ensure the cable length and line resistance (loop), between the KSU and the telephones, comply with the specifications shown in Table 1-10 - Multiline Terminal Loop Resistance and Cable Length.

4.2.5 MDF Construction

The Main Distribution Frame (MDF) consists of two different types of standard quick-connect terminal blocks that are mounted on a 3/4" plywood backboard. It is recommended that the blocks be mounted on standoffs for ease of access. The recommended blocks are: 66M50 type for termination of the station cables, and RJ11C/X for termination of the CO/PBX cables.

The Intermediate Distribution Frame (IDF) requires the 66M50 type blocks.

Both the MDF and IDF utilize standard bridging clips for each type of terminal block. The bridging clips are used to mate the left half of the terminal block (terminated cable run) to the right half of the terminal block (cross-connection wire) to the terminal block (cross-connection wire). The bridging clips are also useful during trouble shooting to help isolate the cable runs and terminals/telephones from the central equipment and the Central Office Network from the system. (Refer to Figure 1-6 - Typical Full MDF Layout. Also refer to Section 4.3.4 - Wall Mounting the KSU in this chapter.)

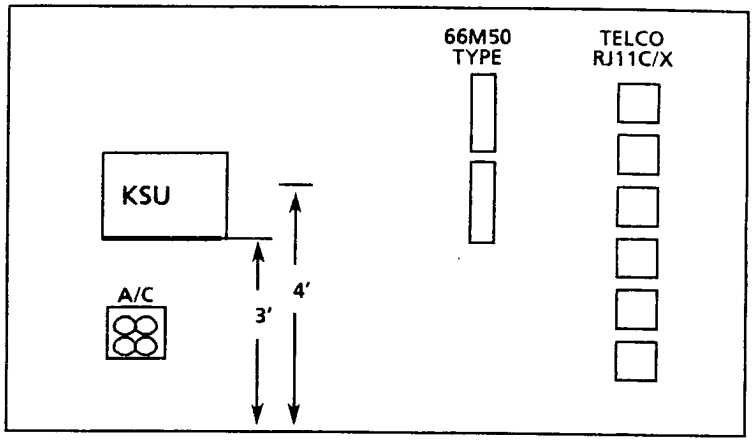


Figure 1-6 Typical Full MDF Layout

4.3 Installing the Key Service Unit (KSU)

4.3.1 Installation Precautions

Before installation and cabling of the KSU, observe these precautions:

- Before starting the work, be sure the KSU power switch is **OFF** and disconnect the power cord from the AC outlet.
- Do not directly touch the soldered surfaces of the KTUs with your hands.

4.3.2 KSU

The ESF-C-10 KSU is the system cabinet that houses a power supply, battery backup, and six fixed slots. The KSU is wall mounted. (Refer to Figure 1-7 - Front View of a Fully Loaded KSU.)

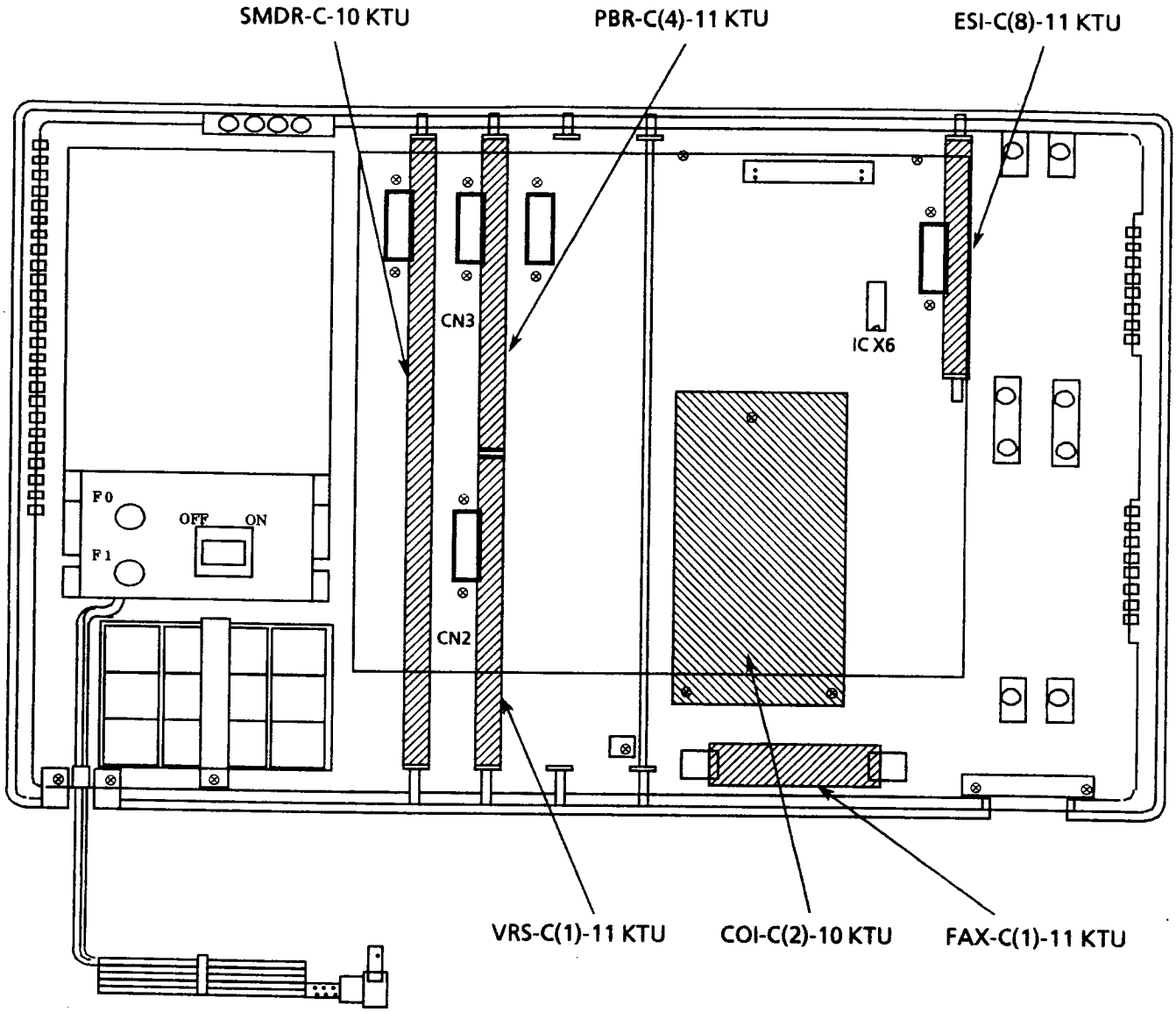


Figure 1-7 Front View of a Fully Loaded KSU

4.3.3 Removing the KSU Cover

Before wall mounting the KSU, the KSU cover must be removed. To remove the cover of the KSU:

1. Loosen the two screws and remove the cover. (Refer to Figure 1-8 - Removing the KSU Cover.)

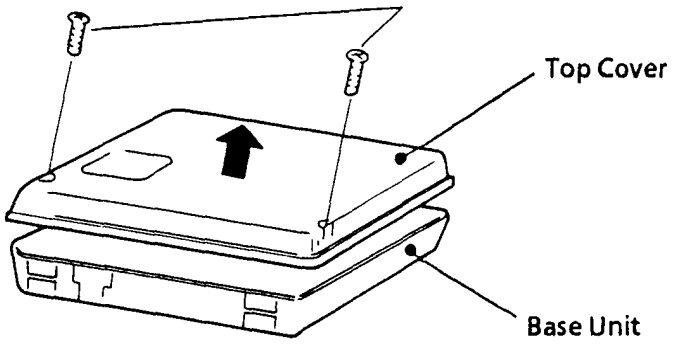


Figure 1-8 Removing the KSU Cover

4.3.4 Wall Mounting the KSU

Before wall mounting the KSU, it is recommended that the wall mounting screws be attached to a piece of plywood (1/2" thick or more) or attached to a sturdy wall.

1. Using two of the four screws (provided with the KSU), attach the wall mount template to the wall. (Refer to Figure 1-9 - Attaching the Wall Mount Bracket for the KSU to the Wall.)

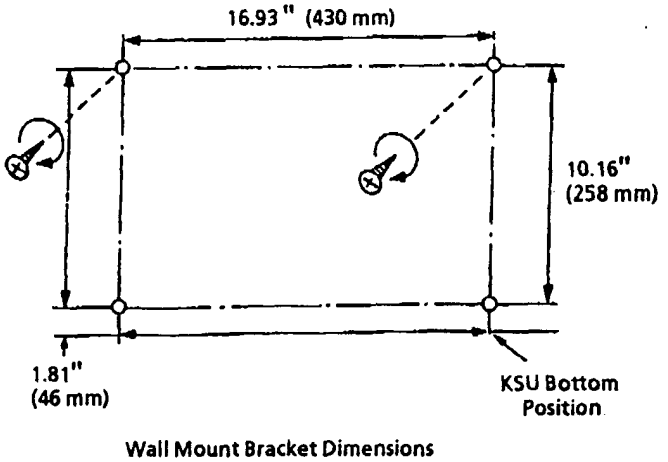


Figure 1-9 Attaching the Wall Mount Bracket for the KSU to the Wall

2. While holding the ESF-C-10 KSU, hang the upper two openings that are located in the KSU base over the wall mount template. (Refer to Figure 1-10 - Attaching the KSU to the Wall Mount Template.)

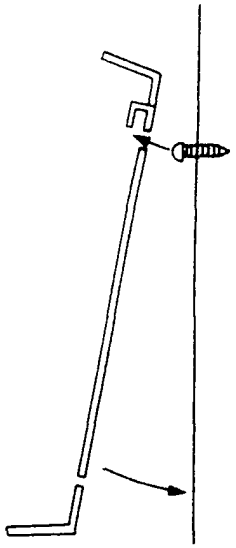


Figure 1-10 Attaching the KSU to the Wall Mount Template

3. Using the other two provided screws, secure the KSU to the wall mount template by screwing the lower two openings located in the KSU base. (Refer to Figure 1-11 - Securing the KSU to the Wall Mount Template.)

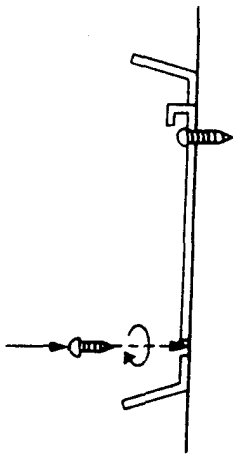


Figure 1-11 Securing the KSU to the Wall Mount Template

4.3.5 Battery Installation

4.3.5.1 Removing the Built-In Batteries

1. Removing the two built-in batteries. (Refer to Figure 1-12 - Removing Batteries.)

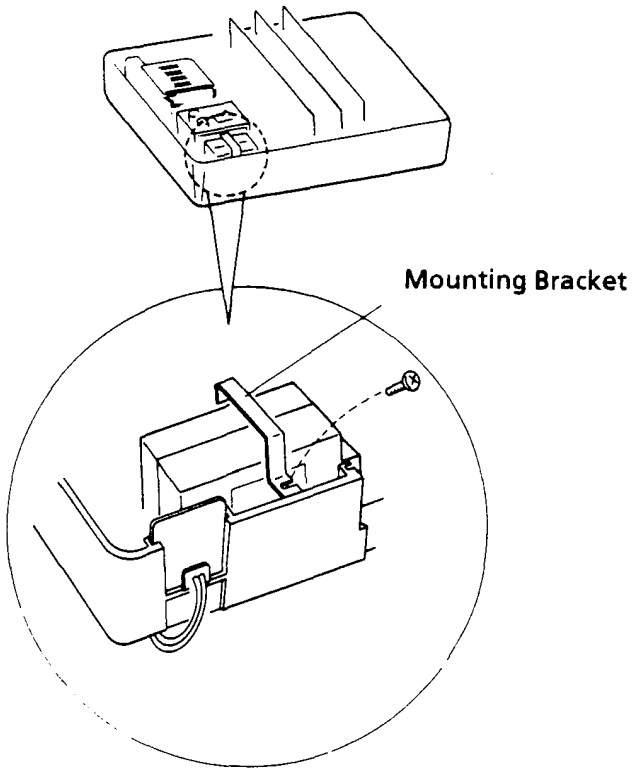


Figure 1-12 Removing Batteries

2. Disconnect CN3 and CN4 from the power supply and unhook the cable from the cable clip. (Refer to Figure 1-13 - Removing the Battery Cables.)

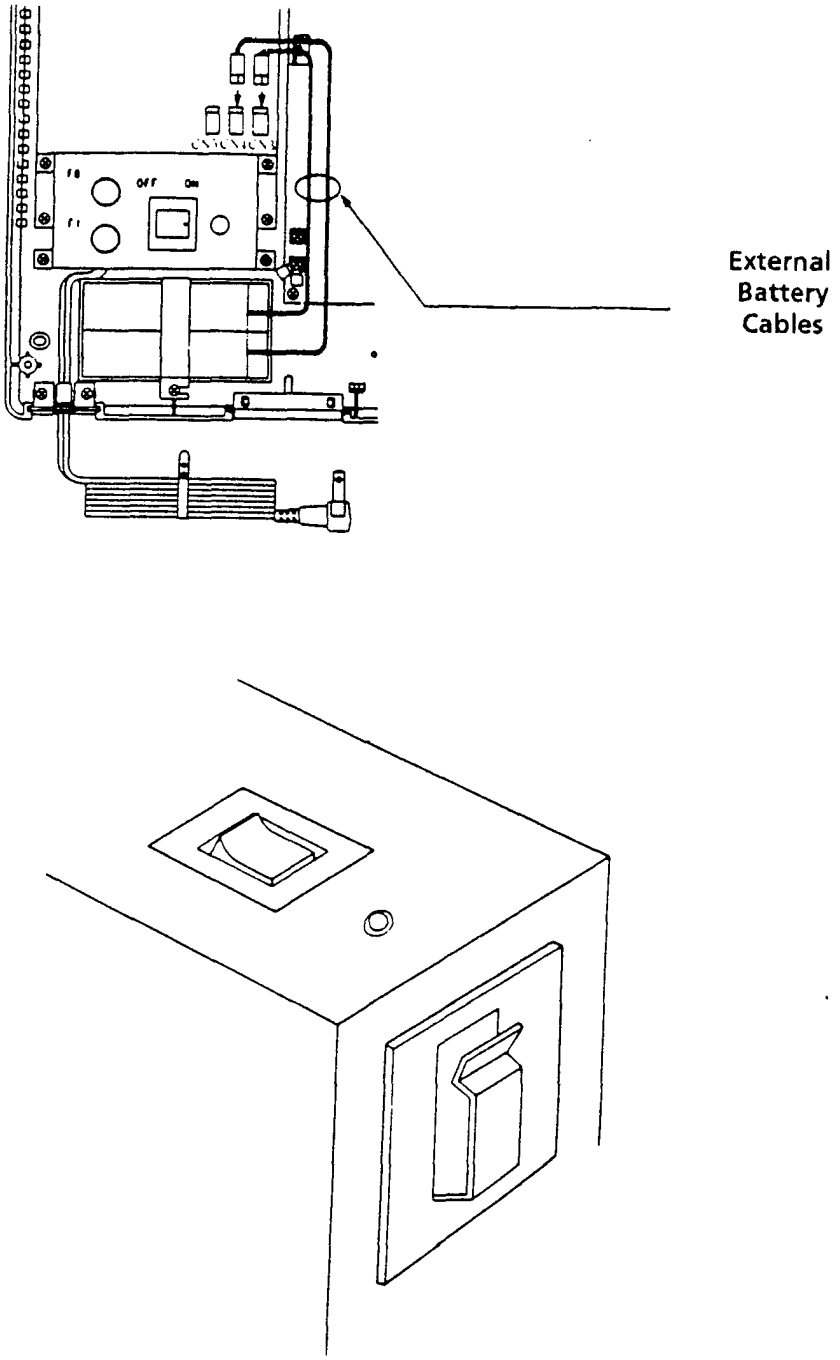


Figure 1-13 Removing the Battery Cables

4.3.5.2 Replacing the Built-In Batteries

1. Place the new batteries in the space provided in the KSU and secure with the metal mounting bracket.

2. Plug in the male cable connectors from the batteries to the CN3 and CN4 connectors on the power supply. Hook the battery cables to the cable clips on the side of the power supply.

3. Turn the KSU to the ON position.

4.3.5.3 Connecting External Batteries

1. Disconnect the built-in batteries from the power supply. (Refer to Figure 1-14 - Disconnecting Built-In Batteries.)

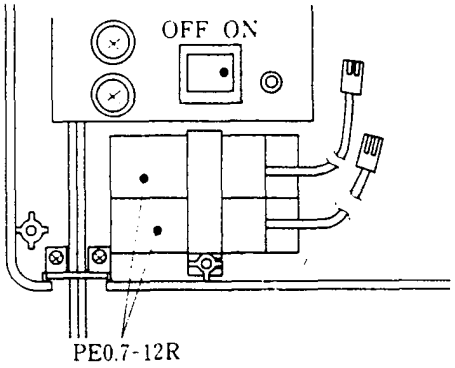


Figure 1-14 Disconnecting Built-In Batteries

2. Mount the external batteries and connect to CN3 and CN4 using the external battery cable assembly. (Refer to Figure 1-15 - Connecting External Batteries.)

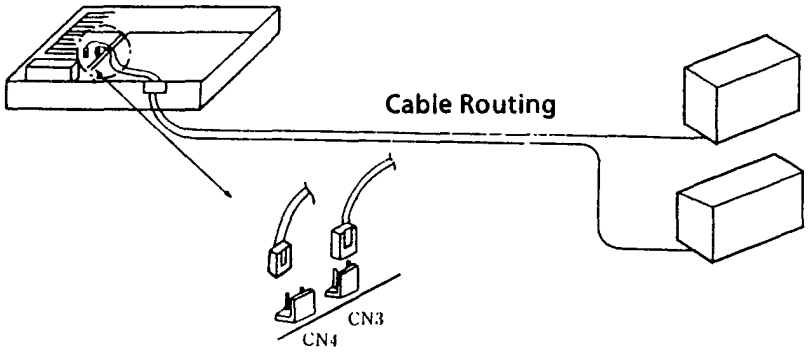


Figure 1-15 Connecting External Batteries

4.3.5.4 Replacing the Battery for System Memory

1. Locate and remove the lithium battery in the upper right-hand corner of the KSU. (Refer to Figure 1-16 - Lithium Battery Location.)

ESF-C-10 KSU

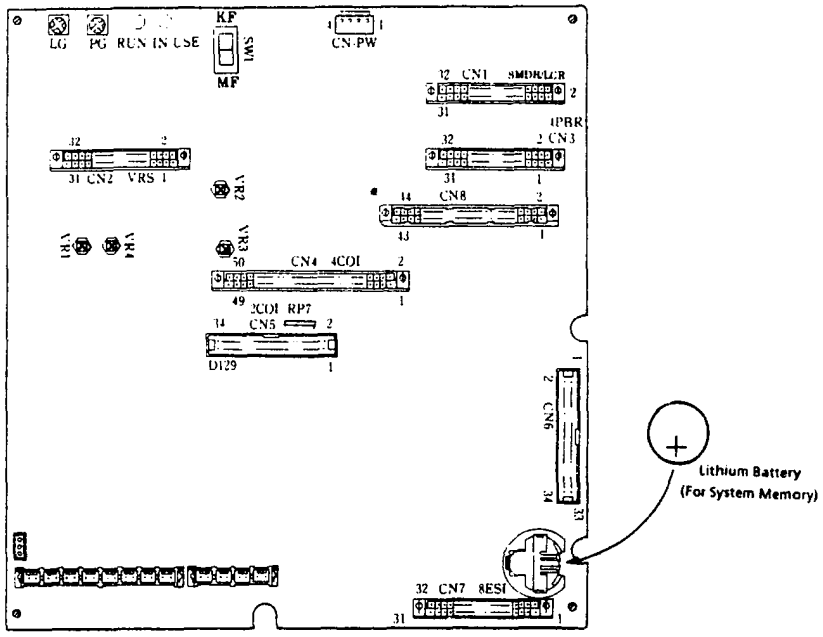


Figure 1-16 Lithium Battery Location

2. Remove the old battery and replace it with the new battery. (Refer to Figure 1-17 - Replacing Lithium Battery.)

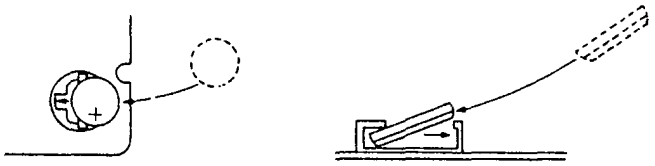


Figure 1-17 Replacing Lithium Battery

4.3.6 Grounding Requirements

The KSU must be properly grounded. If circuit ground is not available at the dedicated AC outlet, the following steps should be taken:

1. Provide a **suitable cold water pipe ground** in accordance with the local operating telephone company procedures.
2. If no water pipe ground is available, a ground rod should be installed in accordance with the local operating telephone company procedures.
3. Where a ground (other than conduit ground) is used, a grounding terminal is provided on the ESF-C-10 KSU. (Refer to Figure 1-18 - KSU Grounding.)

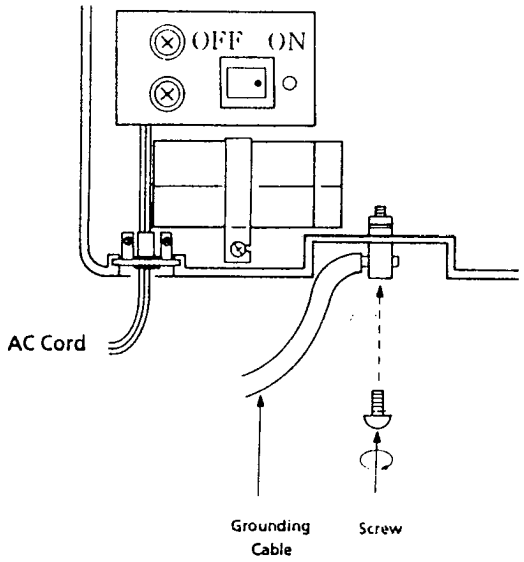


Figure 1-18 KSU Grounding

SECTION 5 INSTALLING A KEY TELEPHONE UNIT (KTU)

5.1 General Information

5.1.1 Installation Precautions

Before installation of the KTUs observe these precautions:

1. To prevent accidental damage to equipment, the power must be **OFF** during installation and maintenance.
2. The KTUs used in this system make extensive use of CMOS technology. CMOS technology is very susceptible to static; therefore, extreme care must be taken to **avoid static discharge** when handling KTUs.

5.1.2 KTU Installation

Make any connections and switch settings on the KTUs before inserting them in the KSU. (Refer to 5.2 - Common Control KTU, 5.3 - Interface KTUs, and 5.4 - Optional KTUs for the switch settings for individual KTUs. Also refer to Figure 1-19 - Installing a Vertically Mounted KTU.)

CAUTION

When a KTU is installed or removed, ensure that the power switch of the KSU is in the OFF position.

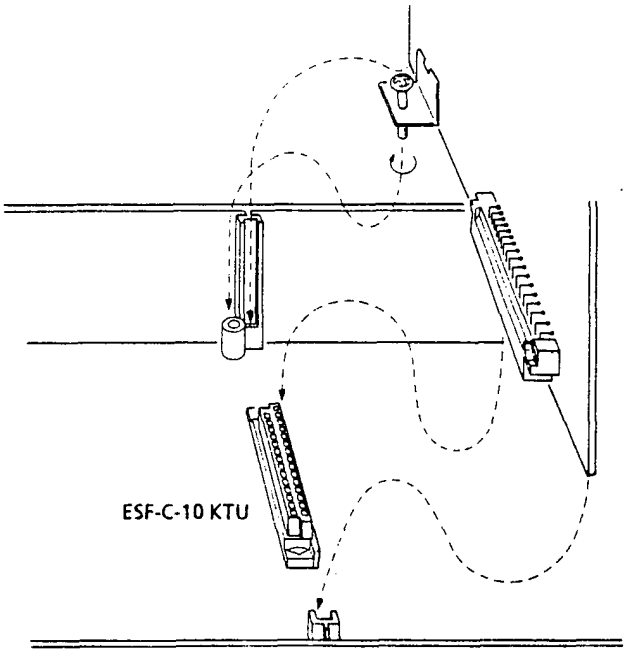


Figure 1-19 Installing a Vertically Mounted KTU

5.1.3 Mounting the KTUs

Be sure to mount the KTU(s) in the correct position inside the KSU. Make any connections and switch settings prior to mounting the KTU.

5.1.4 Installing COI-C(2)-10 KTU

Be sure to mount the KTU in the correct position inside the KSU. Make any corrections and switch settings prior to mounting the KTU. [Refer to Figure 1-20 - Installing COI-C(2)-10 KTU.]

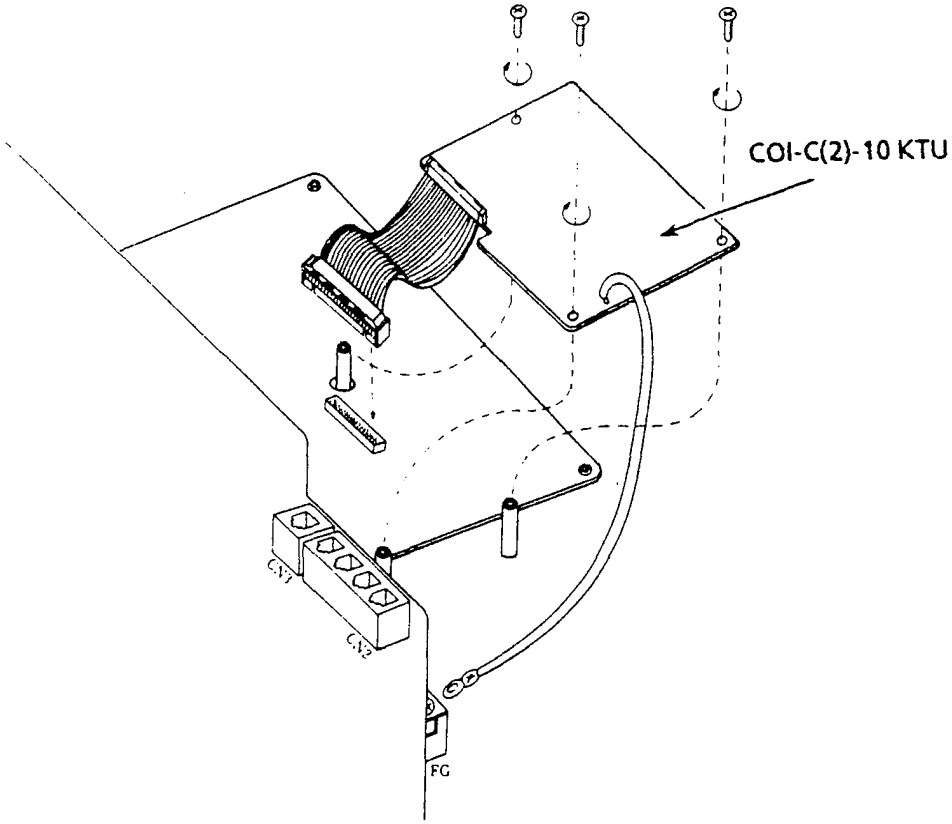


Figure 1-20 Installing COI-C(2)-10 KTU

5.2 Common Control KTU

The CPU is the central processing unit (CPU). An 8-bit microprocessor executes the programs stored on the ROM ICs to control the whole system, while transferring data to and from other KTUs.

The KSU consists of a main control section and a Time Division Switch (TDSW) section. It also has a BGM/MOH interface circuit, four general purpose relay circuits, two 4-party conference circuits, two doorphone circuits, four CO/PBX interface circuits, eight station interface circuits, and one power failure transfer circuit.

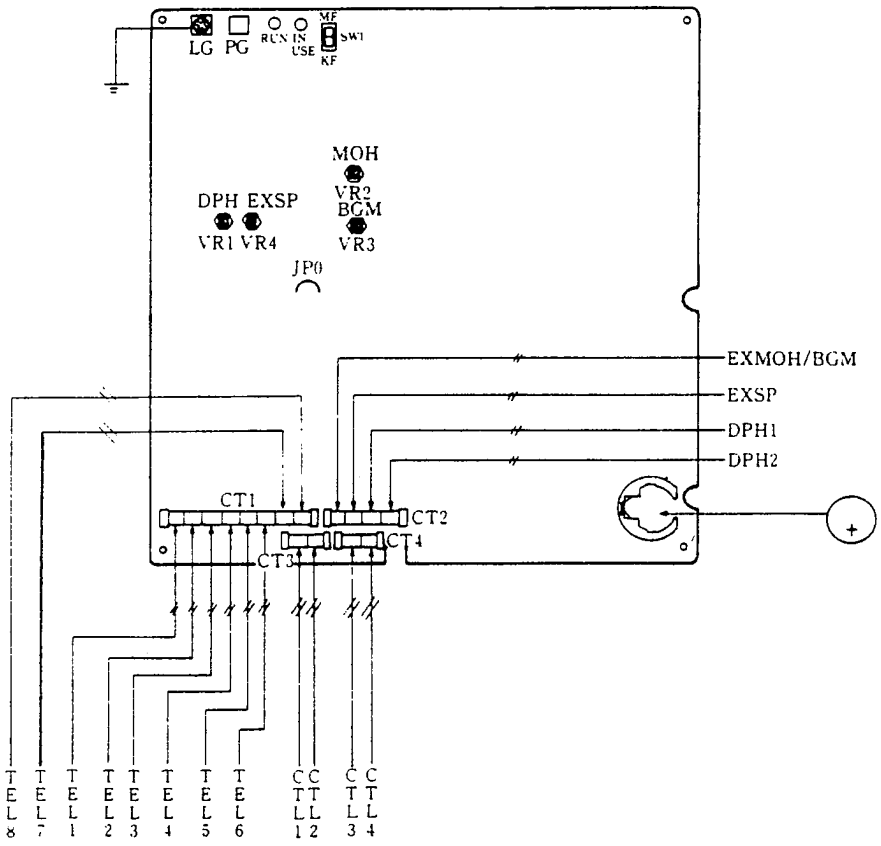
Switch (SW1) is also provided for selecting key function or multi-function operations.

The RAM memory, on the CPU, is backed up with a non-rechargeable battery, which will retain the memory for up to 18 months.

Switch Settings:

Before programming System Data, the non-rechargeable lithium battery must be installed to allow memory content retention in case of a power failure or brownout. Failure to activate the backup battery circuit may result in System Data being reset to the default values, the status of all stations will reset to the default values, and the data programmed on the station may clear if a power failure or brownout occurs. (If programming using a Multiline Terminal, refer to Chapter 2 - Programming in this manual for instructions.)

When the KSU is removed for long term storage, remove the lithium battery. This will prevent the battery from constantly discharging. The battery, when fully charged, will retain memory contents for approximately 18 months. (Refer to Figure 1-21 - KSU Switch Settings and Table 1-21 - KSU Adjustments.)



The operation verification LED (RUN) always flashes when the system is in normal operation, and steadily lights when the system is reset.

Figure 1-21 KSU Switch Settings

Table 1-21 KSU Adjustments

Adjustment Item	Name of Switch	Initial Setting	Adjustment/Description
Memory Backup	N/A	OUT	Install the lithium battery
Volume Controls	VR1	N/A	Doorphone Speaker Volume
	VR2	N/A	Internal MOH Volume Adjustment (Note 1)
	VR3	N/A	BGM/MOH Volume Adjustment (External MOH)
	VR4	N/A	External Page Volume Adjustment
DIP Switch	DIP SW1	ON	"OFF": Multi-Function System "ON": Key Function System (Note 2)
Connectors	CN-PW	DC Input	
	CN1	SMDR	
	CN2	VRS	
	CN3	PBR	
	CN4	COI (4 Ports)	
	CN5	COI (2 Ports)	
	CN6	Not Used	
	CN7	ESI (8 Ports)	
	CN8	Not Used	
TP	TP1	N/A	Ground Test Point
BN	BN 1 ~ 4	OFF	CO/PBX Loop Resistance Adjustment
Jumper	JP0	Strapped	Cut strap if external paging amplifier is less than 3K ohms

Note 1: Internal MOH has two melodies. Select the following melodies in System Programming:

1. Melody Fair
2. Let It Be

Note 2: Refer to Section 1.2.1 - Company Notification in this chapter.

5.3 Interface KTUs

5.3.1 ESI-C(8)-11 KTU

This KTU is an interface for Multiline Terminals and SLT Adaptors. The ESI allows connection of eight Multiline Terminals. [Refer to Figure 1-22 - ESI-C(8)-11 KTU.]

Only one ESI-C(8)-11 KTU can be installed in the system.

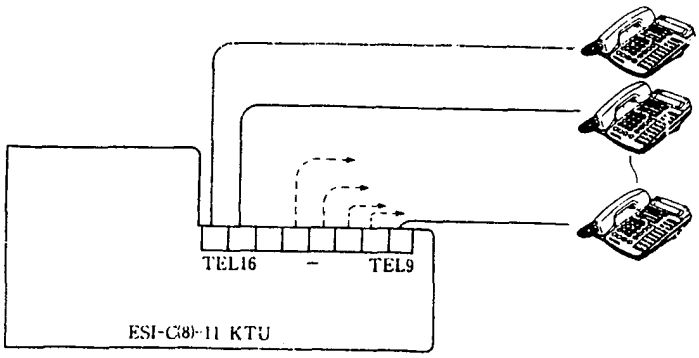


Figure 1- 22 ESI-C(8)-11 KTU

5.3.2 COI-C(2)-10 KTU

The Central Office Interface Unit (COI) contains circuitry for outside ring detection, hold, dialing, and control function.

Each COI-C(2)-10 KTU provides two identical circuits to serve up to two CO/PBX trunks which can be any mix of Loop Start Trunks with DTMF or Dial Pulse dialing. In addition, Tip and Ring electrical fuses (posistors) are provided to comply with UL 1459 2nd Edition requirements.

Note: BN1 and BN2 are used to set the CO/PBX loop resistance. Set to the OFF position for 800 ohms or less and to the ON position for more than 800 ohms of loop resistance.

Only one COI-C(2)-10 KTU can be installed in the KSU. [Refer to Figure 1-23 - COI-C(2)-10 KTU.]

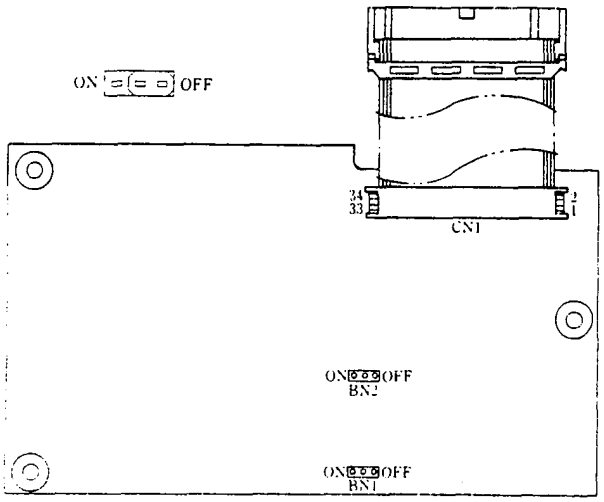


Figure 1- 23 COI-C(2)-10 KTU

5.4 Optional KTUs

5.4.1 VRS-C(1)-11 KTU

The VRS-C(1)-11 KTU serves four functions. The Automated Attendant allows incoming calls to be answered automatically. Callers receive a message and can be forwarded to the appropriate party. A customized message is played to parties placed on hold, parties manually answered, and parties automatically answered; after the message is played the call is disconnected. Internal messaging is also available via the VRS-C(1)-11 KTU.

Each VRS KTU has one circuit. Only one VRS-C(1)-11 KTU can be installed in the system. [Refer to Figure 1-24 - VRS-C(1)-11 KTU.]

To install the VRS-C(1)-11 KTU:

1. Turn the main power **OFF**.
2. Move JP1 on the VRS KTU to the **ON** position.
3. Install the VRS KTU into the appropriate interface slot on the KSU.
4. Turn the main power **ON**.
5. Proceed with programming. (Refer to Chapter 2 - Programming, in this manual, for instructions.)

Note: JP1 is used to turn the battery on or off.

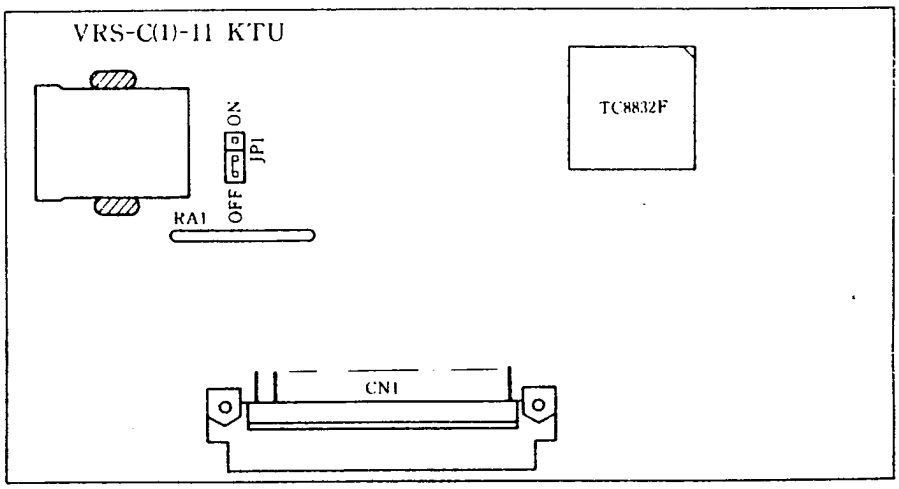


Figure 1-24 VRS-C(1)-11 KTU

5.4.2 PBR-C(4)-11 KTU

The Push Button Receiver (PBR) KTU detects and translates DTMF tones generated by Single Line Telephones, modems, *etc.* The PBR KTU has four circuits.

Only one PBR-C(4)-11 KTU can be installed in the system. [Refer to Figure 1-25 - PBR-C(4)-11 KTU.]

To install the PBR-C(4)-11 KTU:

1. Turn the main power **OFF**.
2. Install the PBR KTU into the appropriate interface slot on the KSU.
3. Turn the main power **ON**.

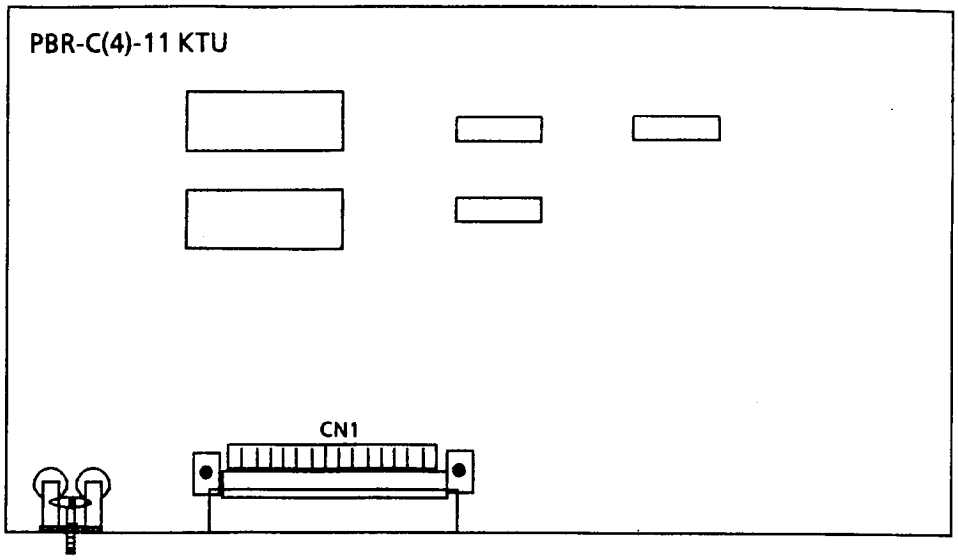


Figure 1- 25 PBR-C(4)-11 KTU

5.4.3 SMDR-C-10 KTU

The SMDR-C-10 KTU provides Station Message Detail Recording (SMDR) to be output via the RS-232 cable to a printer. NEC recommends the use of a custom-made cable. (Refer to Table 1-22 - SMDR and Printer Connections.)

Only one SMDR-C-10 KTU can be installed in the system. (Refer to Figure 1-26 - SMDR-C-10 KTU Cable and Table 1-22 - SMDR and Printer Connections.)

To install the SMDR-C-10 KTU:

1. Turn the main power **OFF**.
2. Move TP1 on the SMDR KTU to the **ON** position.
3. Install the included SMDR printer cable.
4. Install the SMDR KTU into the appropriate interface slot on the KSU.
5. Install the custom-made RS-232 cable between the SMDR KTU and the printer.
6. Turn the main power **ON**.
7. Proceed with programming. (Refer to Chapter 2 - Programming, in this manual, for instructions.)

Note: TP1 is used to turn the battery on or off.

SMDR RS-232C Interface Specifications

- Data Length: 8 bit
- Parity: None
- Stop Bit: 2
- Baud Rate: 600, 1200, 2400, or 4800
- Synchronization: Asynchronous

Note: Set up the printer using the XON/OFF or ETX/ACK protocol.

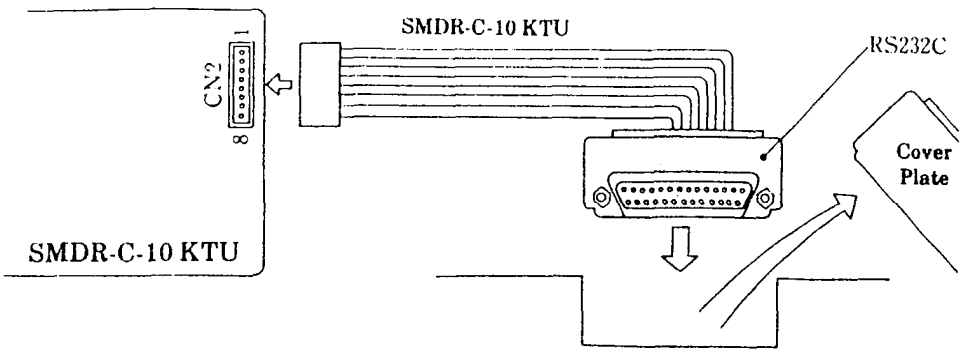


Figure 1- 26 SMDR-C-10 KTU Cable

Table 1-22 SMDR and Printer Connections

RS-232			PRINTER	
TXD	2	→	3	RXD
CTS	5	←	20	DTR
SG	7	↔	7	SG

Switch Settings/LED Indications

When LED1 (red) is flashing, it indicates the SMDR-C-10 KTU is exchanging communications data with the CPU. When LED2 (red) is lit, it indicates that the SMDR-C-10 KTU function is outputting the call record.

SW1 is used to adjust the baud rate to the locally provided printer. TP1 (Test Point) is used to turn the battery on and off. TP2 is for internal use only. Do not adjust this test point. (Refer to Figure 1-27 - SMDR-C-10 KTU Switch Layout.)

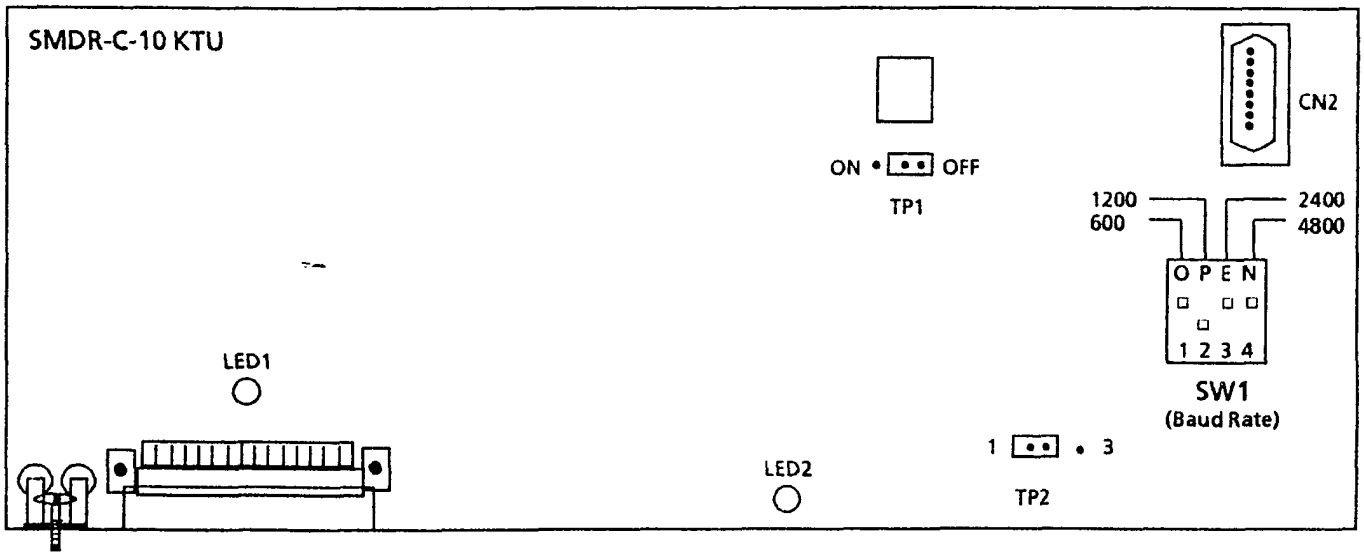


Figure 1- 27 SMDR-C-10 KTU Switch Layout

5.4.4 Installing the FAX-C(1)-11 KTU

The FAX-C(1)-11 KTU is required for the facsimile connection. (Refer to Figure 1-7 - Front View of a Fully Loaded KSU.)

1. Install the stand-offs and the FAX-C(1)-11 KTU into the ESF-C-10 KSU. (Refer to Figure 1-28 - FAX-C(1)-11 KTU Installation.)

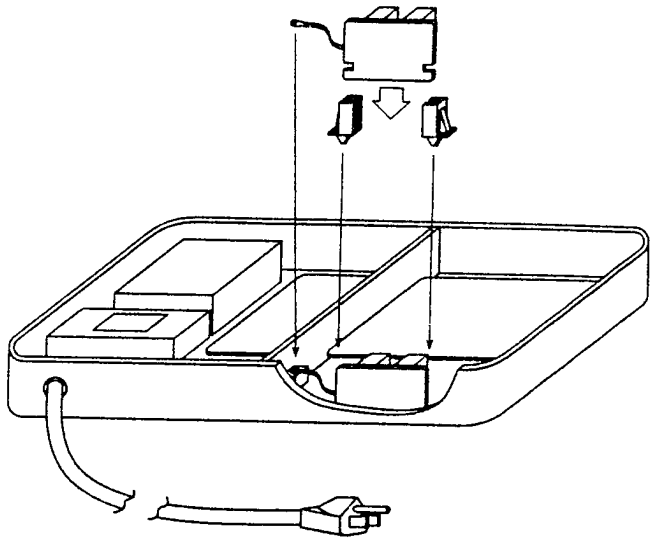


Figure 1-28 FAX-C(1)-11 KTU Installation

2. Connect all six connectors in the FAX-C(1)-11 KTU to the appropriate locations. (Refer to Figure 1-29 - Fax Connection.)

3. Turn the system ON.

4. Proceed with programming. (Refer to Chapter 2 - Programming, in this manual, for detailed instructions.)

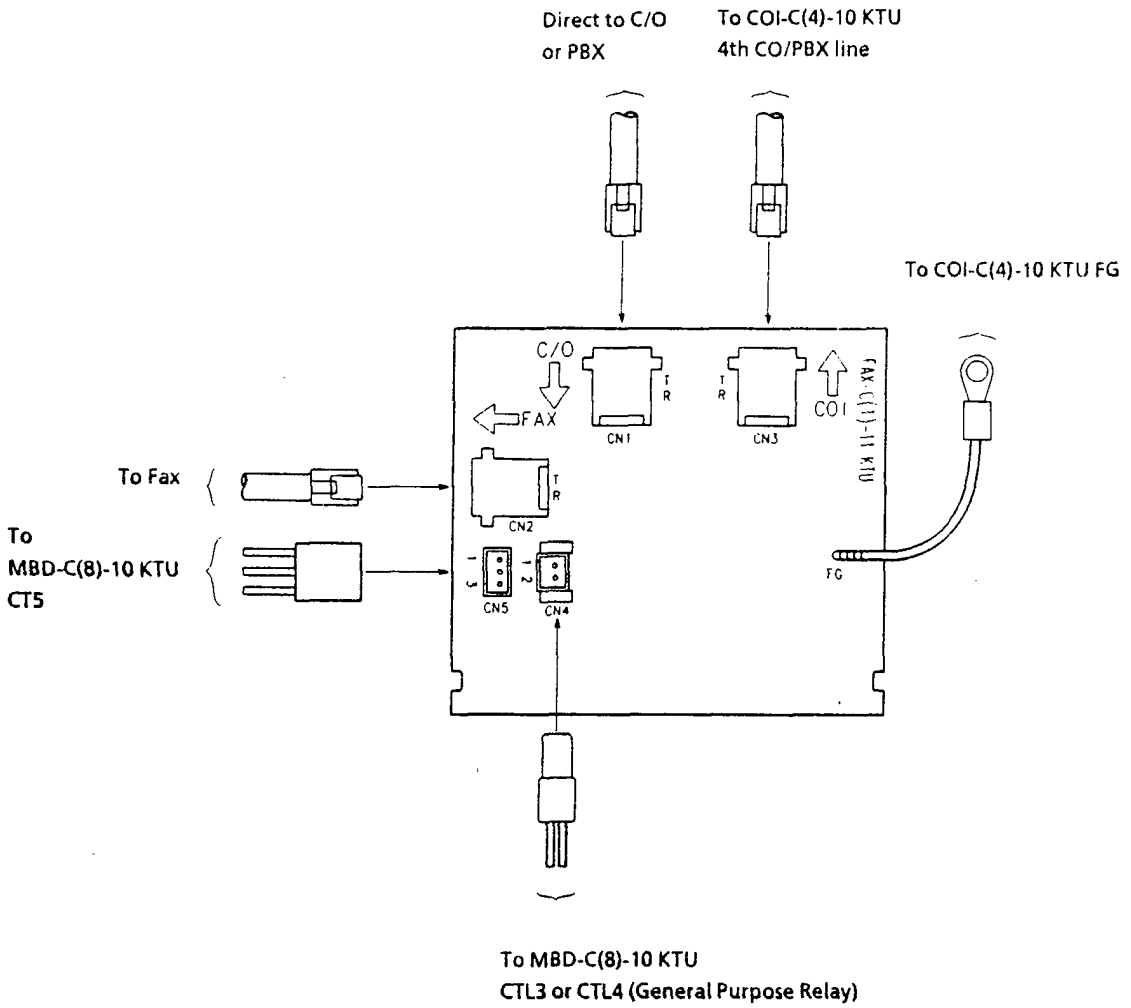
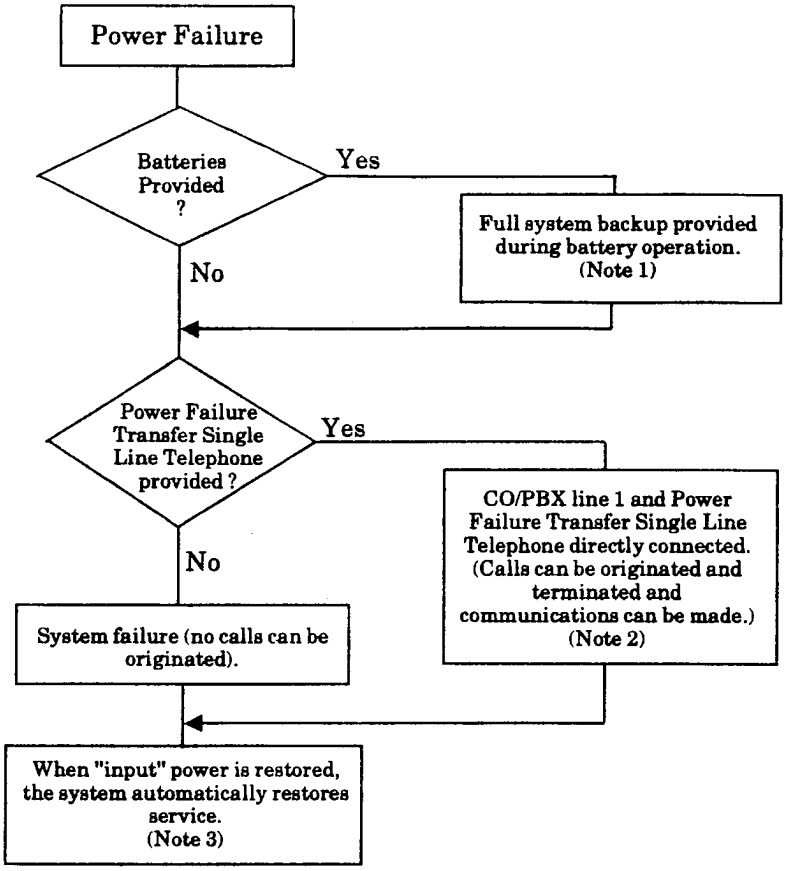


Figure 1-29 Fax Connection

5.5 Power Failure Backup

5.5.1 Operation in the Event of a Power Failure

In the event of a power failure, the built-in batteries or external batteries (locally provided) provide full backup of the service of the system for a period of 10 minutes, or longer if using external batteries (the period is dependent on the system configuration and service conditions). The Power Failure Transfer (PFT) Single Line Telephone Interface Circuit is mounted in the KSU. The KSU connects a Single Line Telephone directly to CO/PBX line 1 to allow origination and termination of calls. (Refer to Figure 1-30 - Power Failure Backup Flowchart.)



Note 1: The backup period for the Electra Professional Level I system is approximately 10 minutes with built-in batteries or longer with external batteries added.

Note 2: All calls in progress are interrupted when switch over is made to connect the Power Failure Transfer Single Line Telephone directly to CO/PBX line 1. This occurs after backup batteries have expired.

Note 3: If the power switch of the KSU is in the OFF position, the system will not automatically restart service.

Figure 1-30 Power Failure Backup Flowchart

5.5.2 Operation When Input Power Failure is Restored

When input power is restored, the system automatically resets and restores service.

5.5.3 Single Line Telephone for Power Failure Transfer

A Single Line Telephone can be used as a Power Failure Transfer telephone.

5.5.3.1 Connections

Connect the SLT to the modular jack, on the COI (4) Unit, designated for PFT. Only one PFT circuit is provided for CO/PBX line 1. (Refer to Figure 1-31 - Connecting a Single Line Telephone for Power Failure Transfer.)

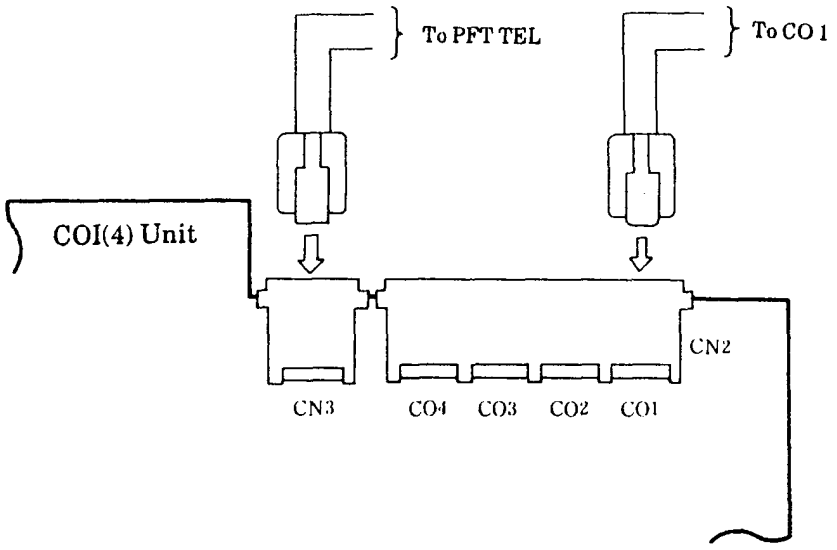


Figure 1-31 Connecting a Single Line Telephone for Power Failure Transfer

5.5.3.2 Procedure

To use the Single Line Telephone for power failure transfer during a power failure, proceed as follows:

- Originating
  1. Lift the handset. (Ensure that dial tone is heard.)
  2. Dial the desired number.
  3. Talk.

- Receiving
  1. Receive ringing tone.
  2. Lift the handset and answer.

Note: The Single Line Telephone, designated for Power Failure Transfer, must match the dialing type of CO line 1 (10 pps, 20 pps, or DTMF) where it is connected.

SECTION 6 CABLE CONNECTIONS

6.1 General Information

6.1.1 Connection Requirements

The KSU is connected with each of the Multiline Terminals, Single Line Telephones, optional equipment, and CO by a separate twisted cable pair through the MDF.

6.1.2 Cabling Precautions

When selecting cables and the MDF, future expansion or assignment changes should be given due consideration. Avoid running cables in the following places:

- A place exposed to wind or rain.
- A place near heat radiating equipment or where the quality of PVC covering could be affected by gases and chemicals.
- An unstable place subject to vibration.

6.2 Wiring Between the KSU and the MDF

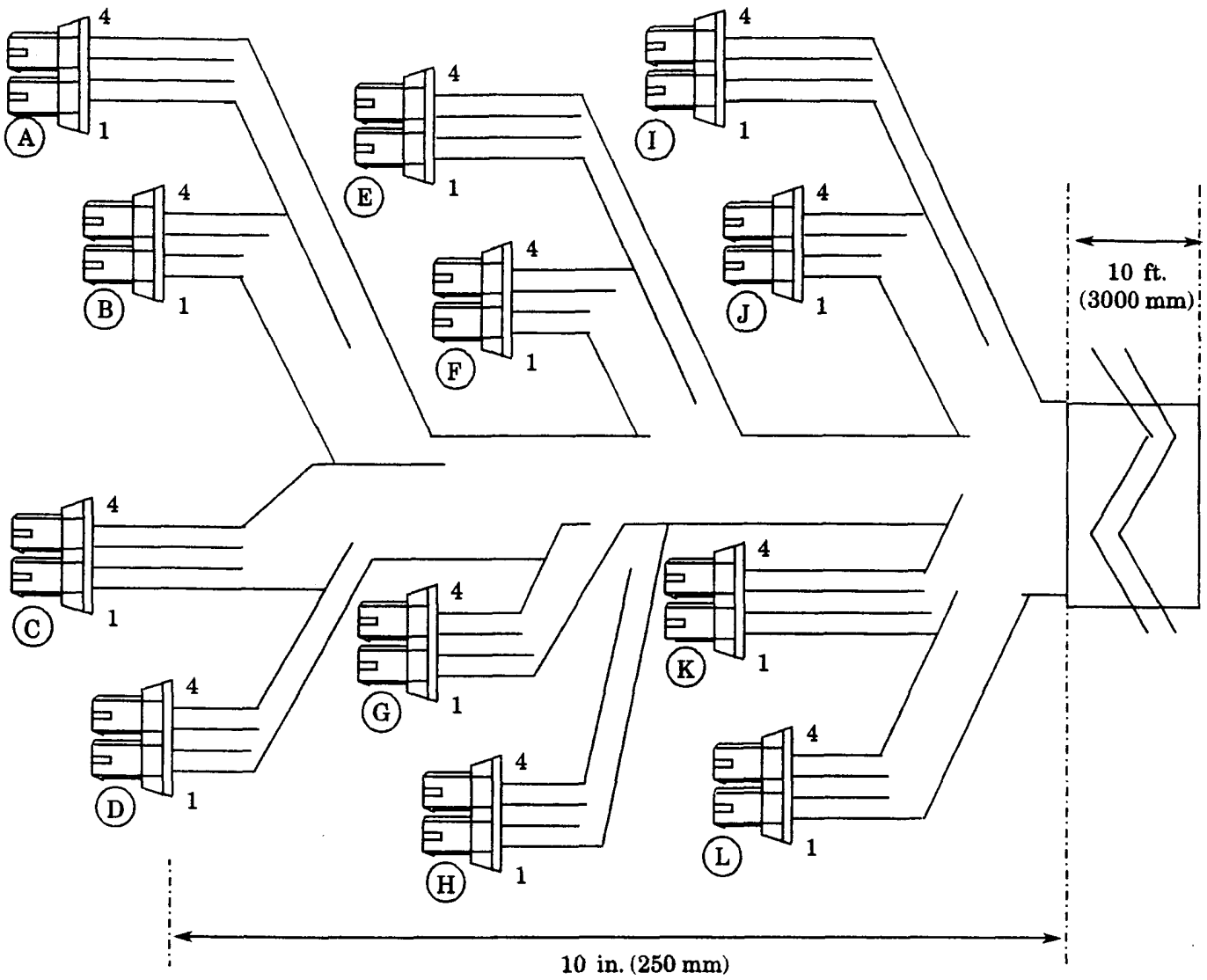
6.2.1 KSU Cables

The KSU is equipped with an MDF Cable Assembly. NEC recommends that the MDF Cable Assembly be used to connect the Multiline Terminals, Single Line Telephones and CO lines. (Refer to Table 1-23 - Connection Information/Connection and Port Relationships and Figure 1-32 - Cable Assembly Diagram.) When installing Single Line Telephones with PFT and other optional equipment, NEC provides the connector; however, the cabling must be locally provided.

Table 1-23 Connection Information/Connection and Port Relationships

	Connectors		MDF Pin No.	Running Cable	Station Cable	Lead Functions: Multiline Terminals
BASIC KSU	A	10	26 1	WH-BL BL-WH	BK YL	DT DR
		11	27 2	WH-OR OR-WH	BK YL	DT DR
	B	12	28 3	WH-GN GN-WH	BK YL	DT DR
		13	29 4	WH-BR BR-WH	BK YL	DT DR
	C	14	30 5	WH-SL SL-WH	BK YL	DT DR
		15	31 6	RD-BL BL-RD	BK YL	DT DR
	D	16	32 7	RD-OR OR-RD	BK YL	DT DR
		17	33 8	RD-GN GN-RD	BK YL	DT DR
ESI-C(8)-11	E	18	34 9	RD-BR BR-RD	BK YL	DT DR
		19	35 10	RD-SL SL-RD	BK YL	DT DR
	F	20	36 11	BK-BL BL-BK	BK YL	DT DR
		21	37 12	BK-OR OR-BK	BK YL	DT DR
	G	22	38 13	BK-GN GN-BK	BK YL	DT DR
		23	39 14	BK-BR BR-BK	BK YL	DT DR
	H	24	40 15	BK-SL SL-BK	BK YL	DT DR
		25	41 16	YL-BL BL-YL	BK YL	DT DR
BASIC KSU	I	BGM/MOH	42 17	YL-OR OR-YL	BK YL	DT DR
		EXSP	43 18	YL-GN GN-YL	BK YL	DT DR
	J	DPH 1	44 19	YL-BR BR-YL	BK YL	DT DR
		DPH 2	45 20	YL-SL SL-YL	BK YL	DT DR
	K	CTL 1	46 21	VI-BL BL-VI	BK YL	DT DR
		CTL 2	47 22	VI-OR OR-VI	BK YL	DT DR
	L	CTL 3	48 23	VI-GN GN-VI	BK YL	DT DR
		CTL 4	49 24	VI-BR BR-VI	BK YL	DT DR
	Not Used		50 25	VI-SL SL-VI	NA	NA

Note: CO Lines are modular and recommended to be directly connected to the RJ11X from the Central Office.



CABLE COLORS						
Pin	A	B	C	D	E	F
1	WH-BL	WH-GN	WH-SL	RD-OR	RD-BR	BK-BL
2	BL-WH	GN-WH	SL-WH	OR-RD	BR-RD	BL-BK
3	WH-OR	WH-BR	RD-BL	RD-GN	RD-SL	BK-OR
4	OR-WH	BR-WH	BL-RD	GN-RD	SL-RD	OR-BK
Pin	G	H	I	J	K	L
1	BK-GN	BK-SL	YL-OR	YL-BR	VI-BL	VI-GN
2	GN-BK	SL-BK	OR-YL	BR-YL	BL-VI	GN-VI
3	BK-BR	YL-BL	YL-GN	YL-SL	VI-OR	VI-BR
4	BR-BK	BL-YL	GN-YL	SL-YL	OR-VI	BR-VI

Figure 1-32 Cable Assembly Diagram

6.2.1.1 Modular Terminal Connections

When connecting Multiline Terminals to the MDF or IDF, individually twisted 1-pair cabling must be used. (Refer to Table 1-23 - Connection Information/Connection and Port Relationships for lead functions.) [Refer to Figure 1-33 - Modular Terminal for Connection of Multiline Terminals and SLT Adaptor for station modular jack (RJ11C/W) connection.]

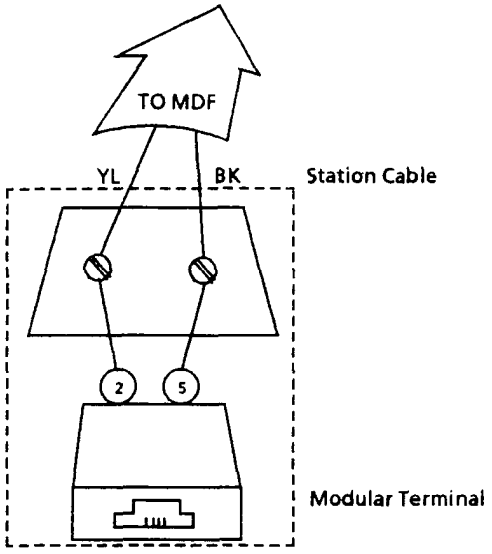


Figure 1-33 Modular Terminal for Connection of Multiline Terminals and SLT Adaptor

6.2.1.2 Single Line Telephone Connection

DTMF or DP dialing and Single Line Telephones can be used to dial within the system. One-pair cabling is required, it is recommended that twisted pair cabling be used. (Refer to Table 1-23 - Connection Information/Connection and Port Relationships for lead functions. Also refer to Figure 1-34 - Simplified Schematic of Single Line Telephone Connection for station termination.)

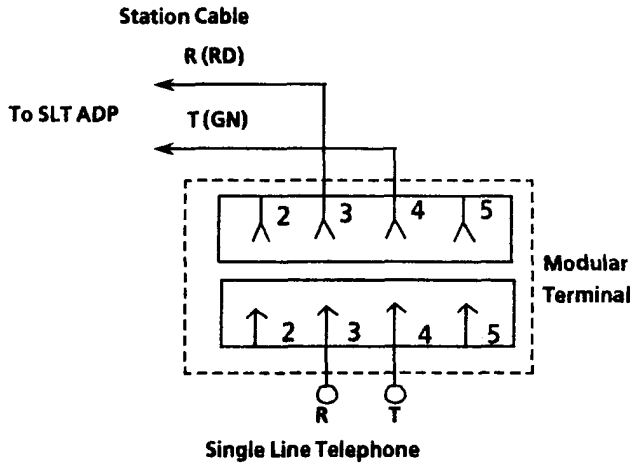


Figure 1-34 Simplified Schematic of Single Line Telephone Connection

6.2.2 KSU Cable Routing

All cabling should exit from the right side of the KSU. The cable routing for the KSU is shown in Figure 1-35 - KSU Cable Routing.

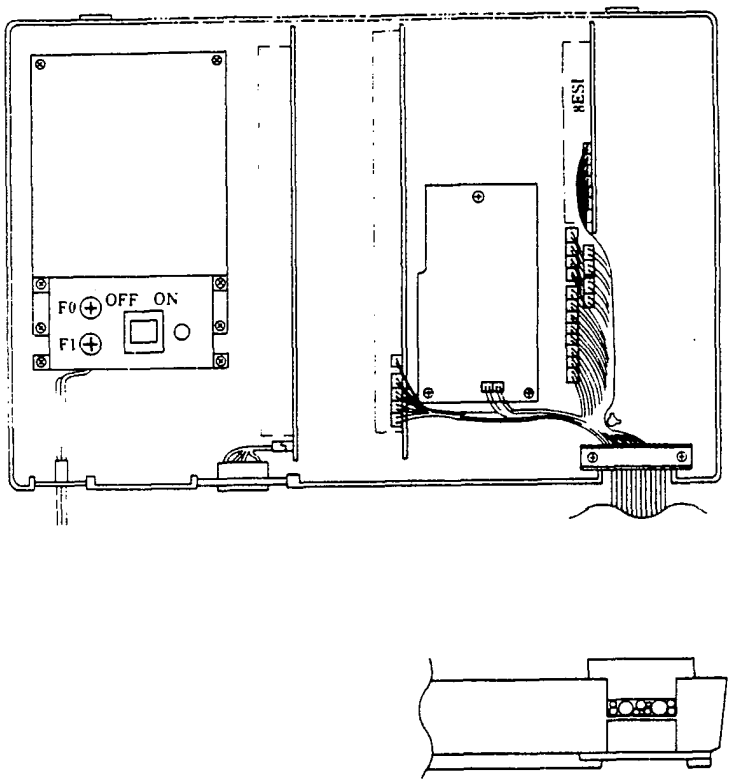


Figure 1-35 KSU Cable Routing

6.2.3 Outside Lines

The FCC authorized connector for the connection of CO lines is an RJ11X. The CO lines are connected in sequence within this termination block. Therefore, the lines must be arranged in the appearance order best suited to the customer's usage.

Loop start lines can be connected to this system. Using only twisted pair wiring to cross-connect the lines from the RJ11 termination block to the system.

Do not use half-tapping or parallel connections on outside lines connected to the system. (Refer to Figure 1-36 - Connecting CO/PBX Lines.)

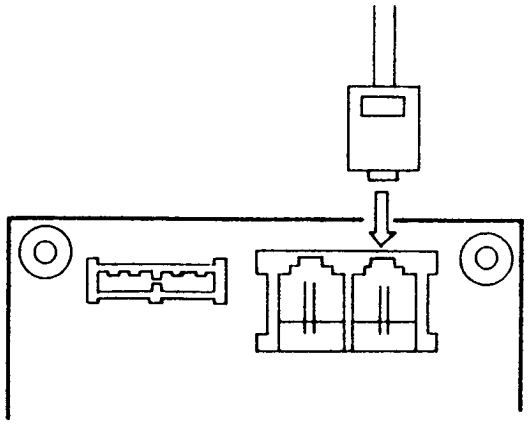


Figure 1-36 Connecting CO/PBX Lines

SECTION 7 TERMINAL INSTALLATIONS

7.1 General Information

The Electra Professional Level I system has three kinds of Multiline Terminals and an SLT Adaptor, which allows connection of Single Line Telephones.

This section provides the instructions for wall mounting a Multiline Terminal, for installing the plastic panels that are provided with the telephones, *etc.*

7.2 Multiline Terminals

7.2.1 ETW-8-1 (BK) TEL

This Multiline Terminal is a fully modular instrument with eight flexible line keys (each with a two-color LED), eight function keys, a built-in speakerphone, an ADA interface, and a large LED to indicate incoming calls and messages. [Refer to Figure 1-37 - ETW-8-1 (BK) TEL Multiline Terminal.]

A maximum of 15 ETW-8-1 (BK) TELs can be installed in a system.

Figure 1-37 ETW-8-1 (BK) TEL Multiline Terminal

7.2.2 ETW-16DC-1 (BK) TEL

This Multiline Terminal is a fully modular instrument with 16 flexible line keys (each with a two-color LED), eight function keys, a 2-line, 16-character Liquid Crystal Display (LCD), and a large LED to indicate incoming calls and messages. [Refer to Figure 1-38 - ETW-16DC-1 (BK) TEL Multiline Terminal.]

A maximum of 16 ETW-16DC-1 (BK) TELs can be installed in a system.

Figure 1-38 ETW-16DC-1 (BK) TEL Multiline Terminal

7.2.3 ETW-16DD-1 (BK) TEL

This Multiline Terminal is a fully modular instrument with 16 flexible line keys (each with a two-color LED), eight function keys, 2-line, 16-character Liquid Crystal Display (LCD), 20 programmable One-Touch keys with BLFs, and a large LED to indicate incoming calls and messages. [Refer to Figure 1-39 - ETW-16DD-1 (BK) TEL Multiline Terminal.]

A maximum of 16 ETW-16DD-1 (BK) TELs can be installed in a system.

Figure 1-39 ETW-16DD-1 (BK) TEL Multiline Terminal

7.2.4 Connecting a Multiline Terminal to the System

1. Plug a telephone cord into the modular jack on the bottom side of the Multiline Terminal. (Refer to Figure 1-40 - Connecting a Multiline Terminal to the System.)
2. Lead the cord out through the cord groove.

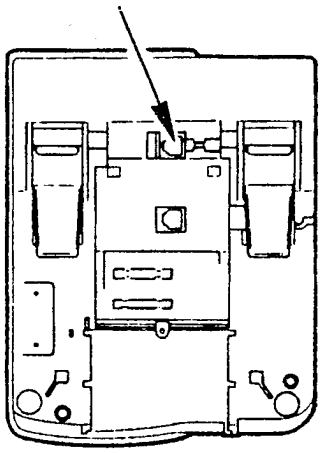


Figure 1-40 Connecting a Multiline Terminal to the System

7.2.5 Installing the Plastic Panel on a Multiline Terminal

1. Place the designation card over the keys on the Multiline Terminal. (Refer to Figure 1-41 - Installing the Designation Card, Plastic Panel, and Labels on a Multiline Terminal.)
2. Insert the top hooks of the clear plastic panel in the appropriate holes on the Multiline Terminal, then place the bottom hooks in the Multiline Terminal. Snap the plastic panel into place to secure it. (Refer to Figure 1-41 - Installing the Designation Card, Plastic Panel, and Labels on a Multiline Terminal.)
3. Remove the station number label and place on the handset hook.
4. Remove the directory card from the sheet and put it on the directory tray. (Refer to Figure 1-41 - Installing the Designation Card, Plastic Panel, and Labels on a Multiline Terminal.)

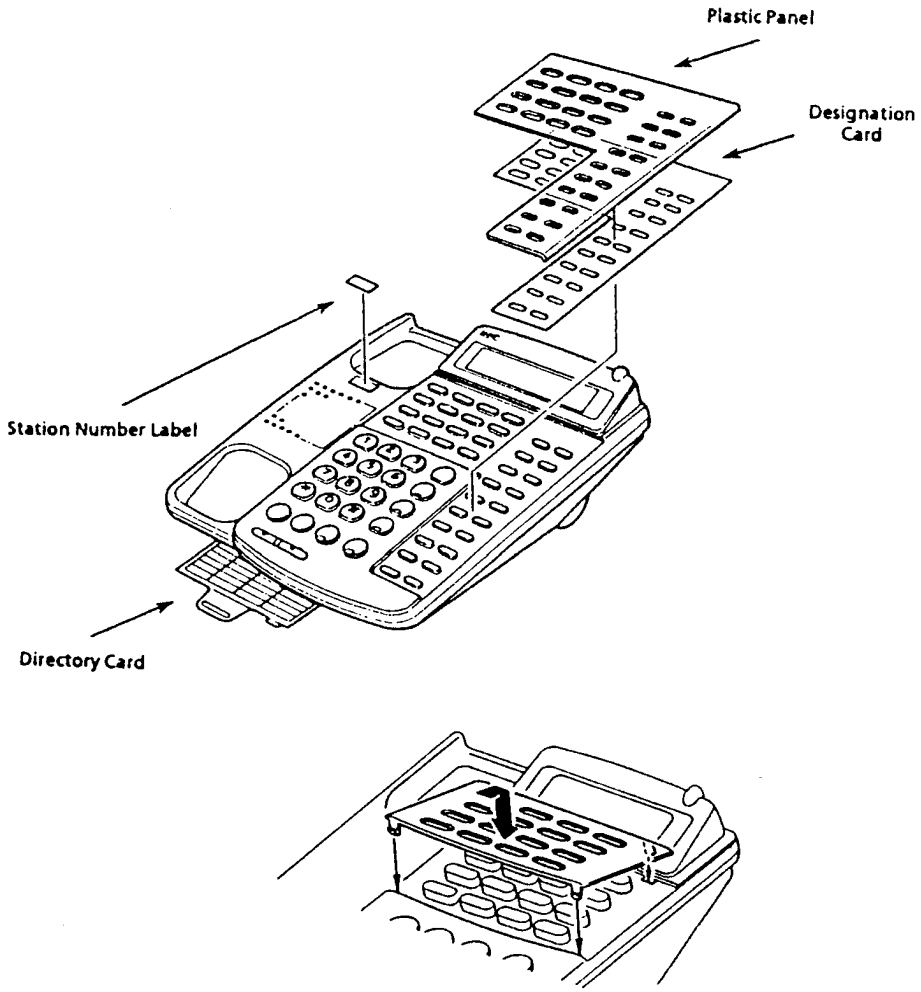


Figure 1-41 Installing the Designation Card, Plastic Panel, and Labels on a Multiline Terminal

7.2.6 Tilt Stand Adjustment

1. To unfold the legs on the tilt stand:
   a. Turn the Multiline Terminal upside down.
   b. Unfold the legs until they lock. (Refer to Figure 1-42 - Unfolding the Legs of the Tilt Stand.)

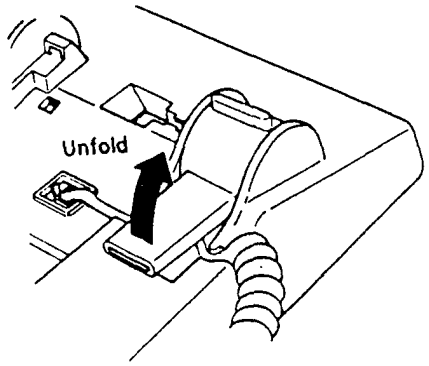


Figure 1-42 Unfolding the Legs of the Tilt Stand

2. To fold the legs on the tilt stand:
   a. Turn the Multiline Terminal upside down.
   b. Press the mold labeled *Push*.
   c. Fold the legs toward the body of the telephone. (Refer to Figure 1-43 - Folding the Legs of the Tilt Stand.)

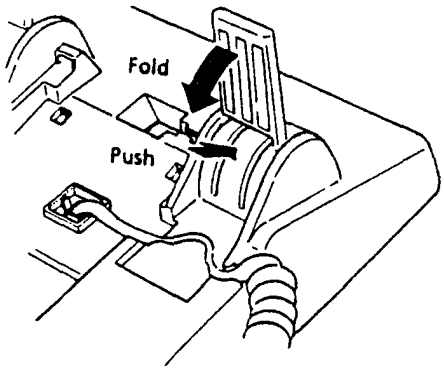


Figure 1-43 Folding the Legs of the Tilt Stand

7.3 SLT-F(1G)-10 ADP

This Single Line Telephone Adaptor provides an interface for a Single Line Telephone or similar device from an electronic station port KTU channel. This adaptor includes a built-in ringing signal (RSG) generator.

7.3.1 Switch Settings

One cable, with RJ11 connections at both ends, is provided with this unit. This cable is used to connect the adaptor to an ESI port. Another cable with RJ11 connectors is required to connect an SLT or similar devices. [Refer to Figure 1-44 - SLT-F(1G)-10 ADP Unit Switch Layout.]

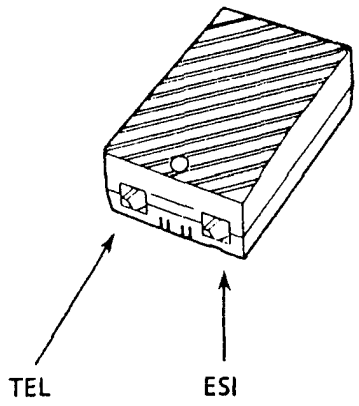
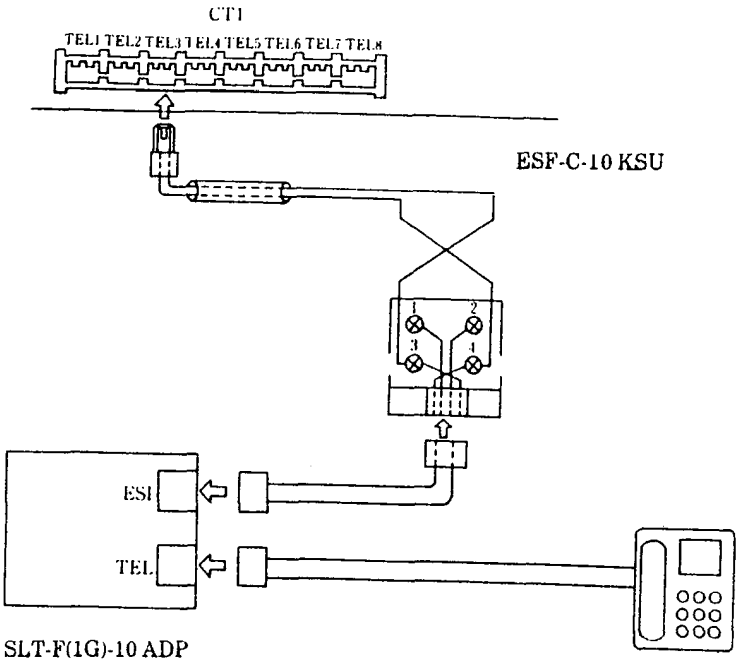


Figure 1-44 SLT-F(1G)-10 ADP Unit Switch Layout

7.3.2 Connection

The following diagram shows the connection from an ESI port to a Single Line Telephone using the SLT-F(1G)-10 ADP. [Refer to Figure 1-45 - Connecting a Single Line Telephone using the SLT-F(1G)-10 ADP.]



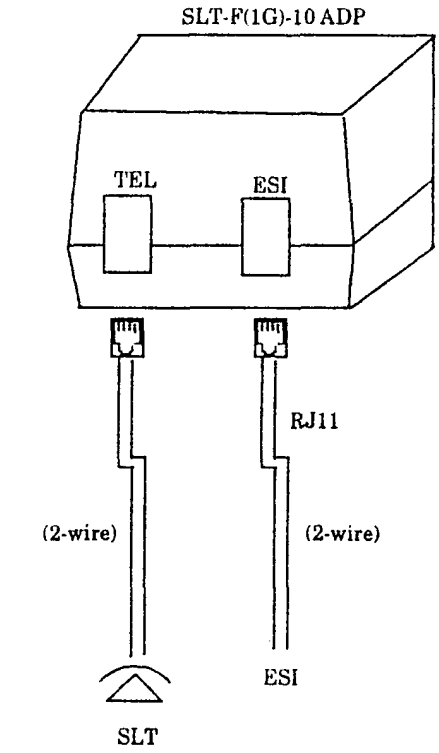


Figure 1-45 Connecting a Single Line Telephone using the SLT-F(1G)-10 ADP

7.3.3 Wall Mounting the SLT-F(1G)-10 ADP

There are two ways to wall mount this adaptor.

1. Use the wall mount location on the rear with one screw.

- OR -

1. Open the unit by removing the two screws from the top of the SLT-F(1G)-10 ADP. [Refer to Figure 1-46 - Removing the Screws from the Cover of the SLT-F(1G)-10 ADP.]

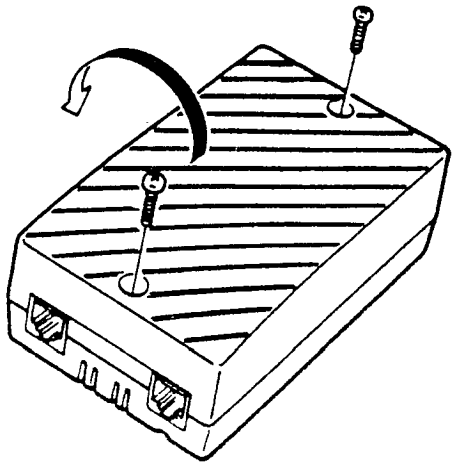


Figure 1-46 Removing the Screws from the Cover of the SLT-F(1G)-10 ADP

2. Using the two provided wood screws, attach the unit to the wall. Close the unit and secure with the two screws previously removed. [Refer to Figure 1-47 - Attaching the SLT-F(1G)-10 ADP to the Wall.]

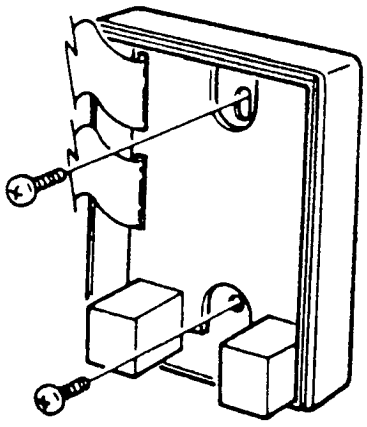


Figure 1-47 Attaching the SLT-F(1G)-10 ADP to the Wall

7.4 Wall Mounting Unit

7.4.1 General Information

The WMU-W (BK) Unit is a universal Wall Mount Unit which can be used to mount any Multiline Terminal.

7.4.2 Installing the Wall Mounting Unit [WMU-W (BK)]

The WMU-W Unit can be connected to any Multiline Terminal in the system.

1. Remove the station number plate and designation strip.
2. Remove the hanger by sliding it out. Remount it back in the original position with the projected side facing upward. (Refer to Figure 1-48 - Wall Mounting Preparation.)

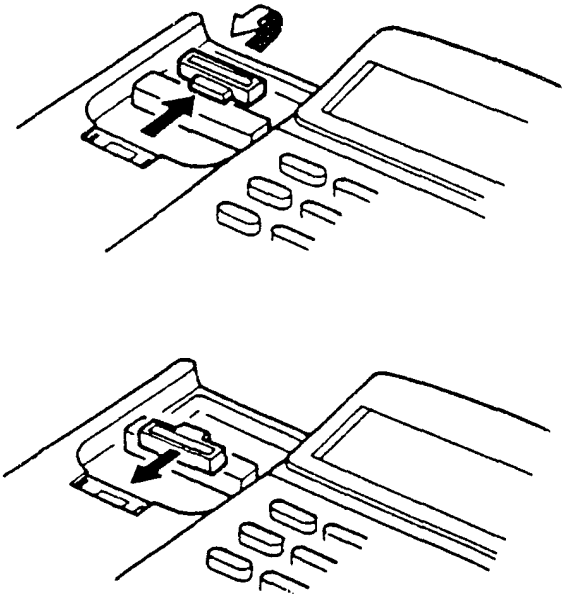


Figure 1-48 Wall Mounting Preparation

3. Reinstall the station number plate and designation strip.
4. Fasten the optional WMU-W (BK) Unit to the wall. [Refer to Figure 1-49 - Mounting the WMU-W (BK) Unit to the Wall.]

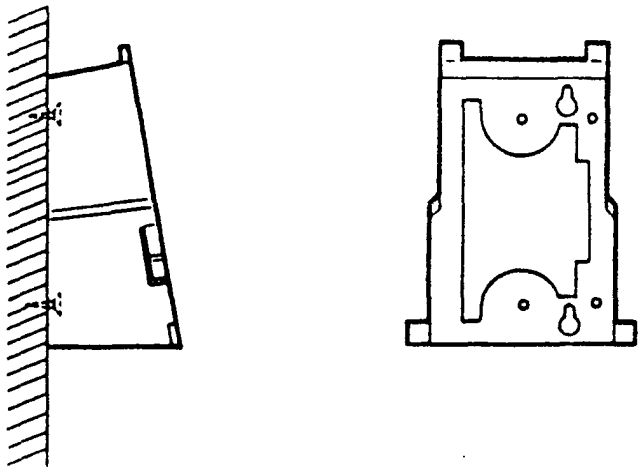


Figure 1-49 Mounting the WMU-W (BK) Unit to the Wall

5. Mount the telephone onto the wall mounting unit by aligning the notches on the bottom of the Multiline Terminal with the rails on the wall mounting unit. [Refer to Figure 1-50 - Mounting the Multiline Terminal to the WMU-W (BK) Unit.]

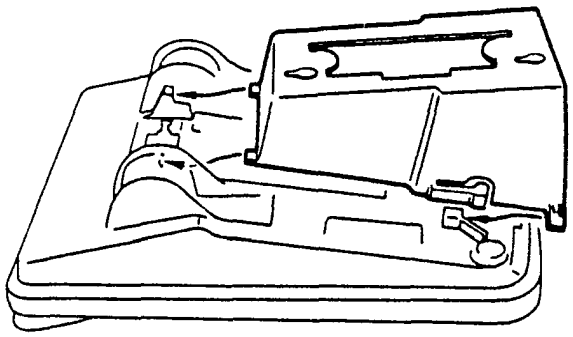


Figure 1-50 Mounting the Multiline Terminal to the WMU-W (BK) Unit

SECTION 8 ANCILLARY DEVICE CONNECTION

8.1 General Information

ADA (1)-W (BK) Unit

This Ancillary Device Adaptor Unit provides the Multiline Terminal with connection for an amplified handset, a headset, external speakerphone, or other ancillary devices. An ADA (1)-W (BK) Unit can be installed in any Multiline Terminal.

A maximum of 16 ADA (1)-W (BK) Units can be installed in a system, one per Multiline Terminal.

ADA (2)-W (BK) Unit

This Ancillary Device Adaptor Unit provides the Multiline Terminal with a Single Line Telephone interface. An ADA (2)-W (BK) Unit can be installed in any Multiline Terminal and allows connection of a Single Line Telephone, cordless telephone, fax, modem, or an answering machine. The maximum distance between the ADA (2)-W (BK) Unit and the equipment is 10 feet, using 24 AWG. An AC/DC adaptor is required for power supply to the ADA (2)-W (BK) Unit. The ADA (2)-W (BK) Unit has a built-in RSG; hookflash detection, Message Wait, and disconnect signal are not supported.

A maximum of 16 ADA (2)-W (BK) Units can be installed in a system, one per Multiline Terminal.

8.2 Installing the Ancillary Device Adaptor Unit [ADA (1)-W (BK) or ADA (2)-W (BK)] in the Multiline Terminal

The ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit can be connected to any Multiline Terminal in the system.

1. Unplug the line and handset cords.
2. Turn the Multiline Terminal upside down and place it on a dry surface.
3. Remove the knockout (second from the top) on the bottom of the Multiline Terminal. [Refer to Figure 1-51 - Removing the Knockouts to Install ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit.]

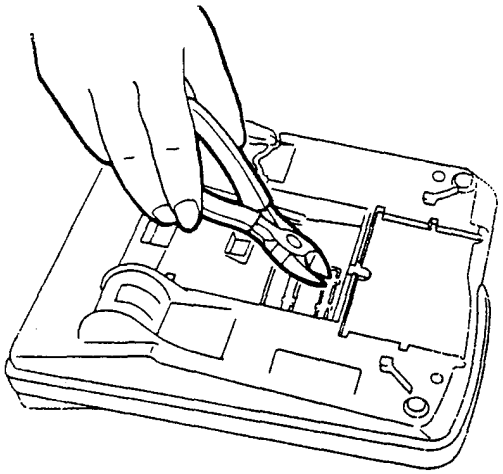


Figure 1-51 Removing the Knockouts to Install ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit

4. Plug the connector labeled **CN1**, from the ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit, into the jack labeled **CN4**, on the Main Board. [Refer to Figure 1-52 - ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit Installation and Table 1-24 - ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit Cable Connection.]

5. Mount the ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit into the Multiline Terminal using the screw provided (component side down). [Refer to Figure 1-52 - ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit Installation.]

6. Connect the external device (external speakerphone, fax, answering machine, *etc.*) using the information provided in the appropriate Engineering Technical Information bulletin (ETI).

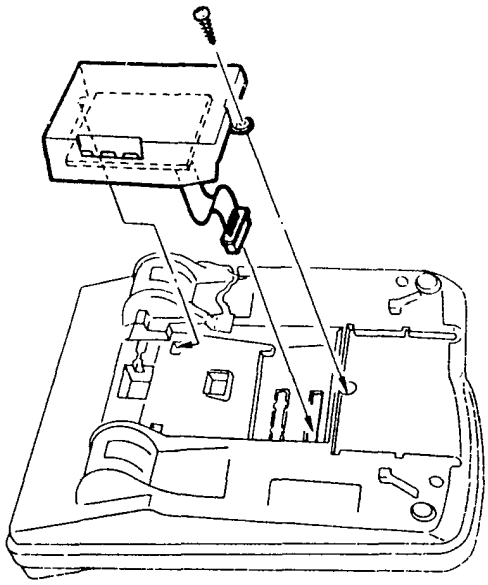


Figure 1-52 ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit Installation

Table 1-24 ADA (1)-W (BK) Unit or ADA (2)-W (BK) Unit Cable Connection

ADA (1)-W (BK) Unit or ADA(2)-W (BK) Unit	
From	**To**
CN1	**CN4**

7a. For ADA (2)-W (BK) Unit only:

Plug the AC/DC adaptor into the jack, located on the side of the ADA (2)-W (BK) Unit.

7b. Plug in the handset and line cords.

8. Test the operation of the Multiline Terminal and then test the operation of the external device.

SECTION 9 OPTIONAL EQUIPMENT CONNECTION

9.1 General Information

The system can support the following:

- External MOH/BGM
- Two Doorphones
- External Ringer
- External Night Chime
- External Paging

9.2 Music On Hold/Background Music

Provision has been made to allow connection of a locally provided external music source to provide Music On Hold for held calls and Background Music for external paging and station BGM.

Music source input is made using the quick connection jack MOH/BGM located on the main board. For music source input level and impedance, refer to section 2.12.1 - Music On Hold (MOH)/Background Music (BGM) in this chapter.

Note: In compliance with FCC Part 15 regulations, the following procedure must be implemented any time a MOH/BGM source is connected to this system.

To install:

1. Connect the Music On Hold source to the YL/OR pair on the MDF Cable assembly.
2. Shielded cabling should be used from the MOH source to the MDF cable. The shield on the MOH cable should also be grounded. (Refer to Figure 1-53 - MOH/BGM Cable Shield Ground Exposed.)

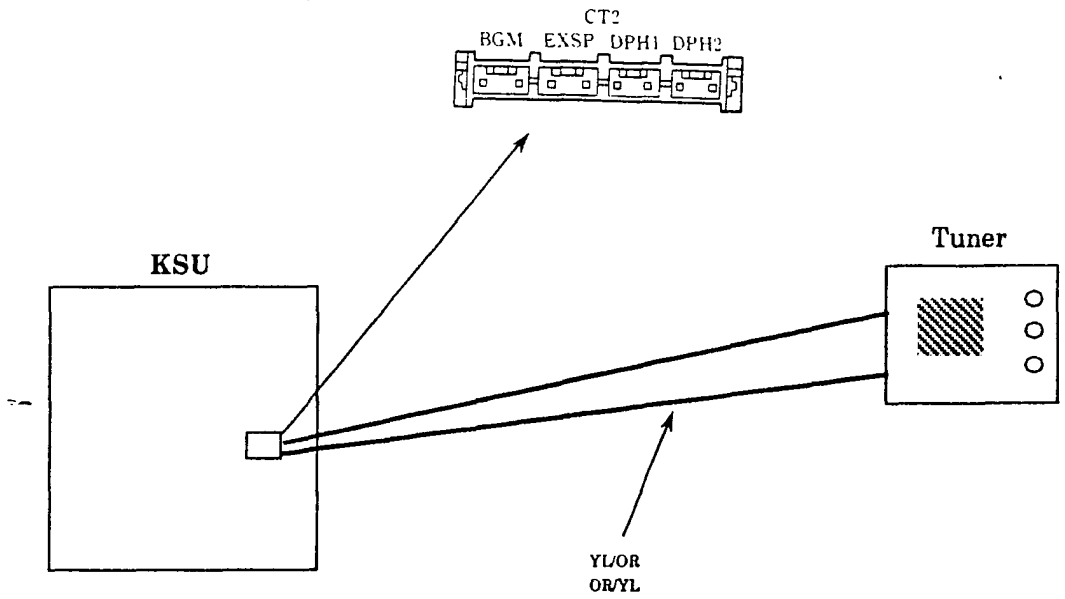


Figure 1-53 MOH/BGM Cable Shield Ground Exposed

9.3 External Paging

Audio output for external paging is a standard feature available at the **EXSP** jack on the KSU main board. Shielded audio cable should be used for external paging audio connections.

The KSU provides one audio output for use in paging with Meet-Me Answer. This output is labeled EXSP. A maximum of one zone of external paging can be installed in a system.

It is necessary for the audio output to be connected to a locally provided amplifier and speaker(s). Only 1-way paging is available. For connection information to a locally provided amplifier, refer to Figure 1-54 - External Amplifier with Control Terminal. For external paging audio output level and impedance, refer to Section 2.12 - External Equipment Interface in this chapter.

With a locally provided amplifier, only one zone of paging and background music can be provided. A control relay may be provided for control of the external switching for applications with background music.

When External Paging is answered by Meet-Me Answer, the external paging audio circuit is released.

The EXSP output should not be connected directly to the output of an external amplifier.

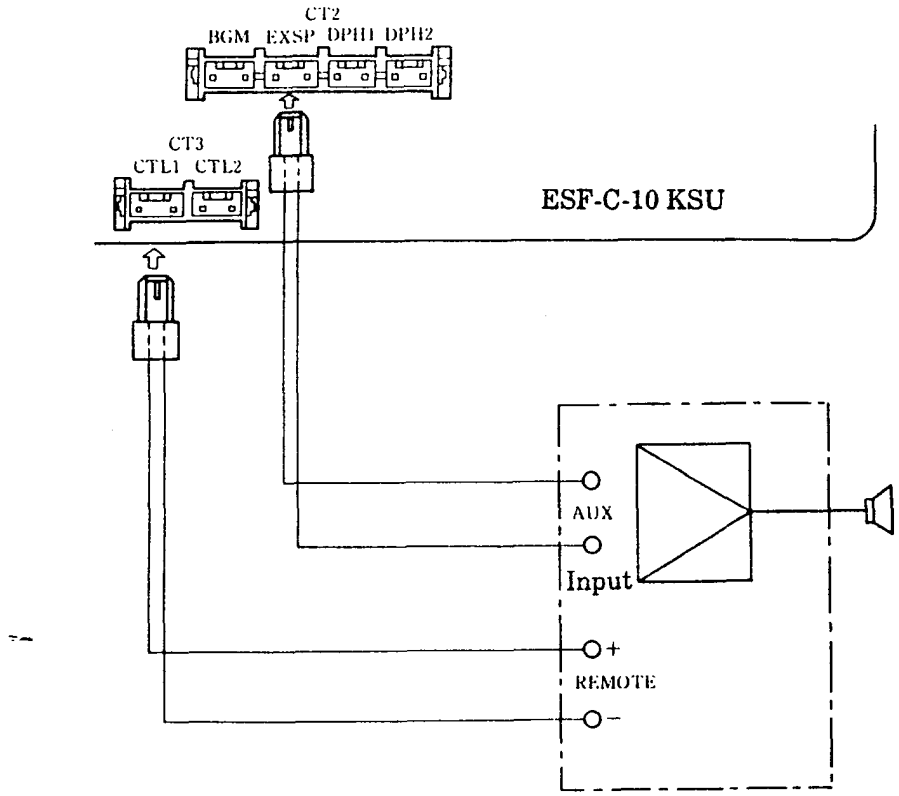


Figure 1-54 External Amplifier with Control Terminal

Note 1: The relay contact connected to one of the General Purpose Relays is actuated when the external speaker is operated. The General Purpose Relays can be selected in System Programming.

Note 2: Use an external relay with a sufficient capacity to allow ON/OFF control of the power supply of the external amplifier. In addition, ensure that the external relay control current does not exceed 1A.

9.4 Installing Peripherals

A 1-way amplifier speaker must be locally provided for external paging. One General Purpose Relay may be used to switch BGM on and off when required. (Refer to Figure 1-55 - External Paging with Background Music.)

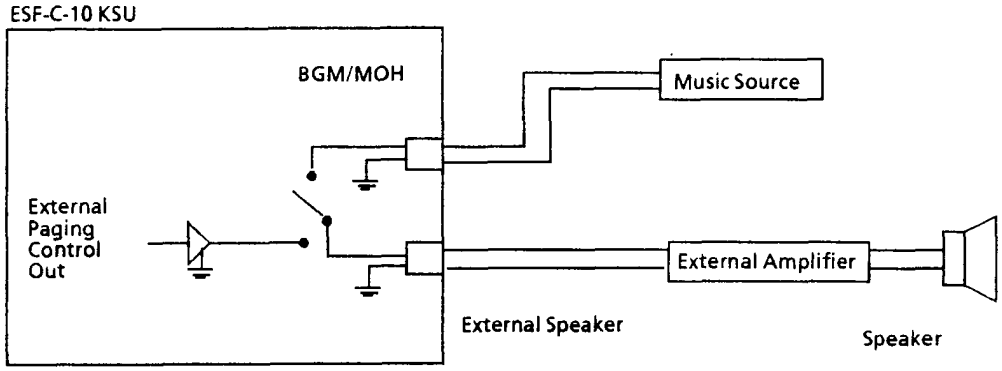


Figure 1-55 External Paging with Background Music

9.5 External Ring Control/Night Chime

An external bell for ringing incoming CO/PBX calls in noisy areas can be connected to the KSU. An interrupted normally open dry contact is provided for this purpose. One General Purpose Relay can be programmed for this purpose.

An external night chime for ringing incoming CO/PBX calls, (during after hours) in noisy areas can be connected to the KSU. A normally open dry contact is provided for this purpose. One General Purpose Relay can be programmed for this purpose. (Refer to Figure 1-56 - External Ring Control/Night Chime.)

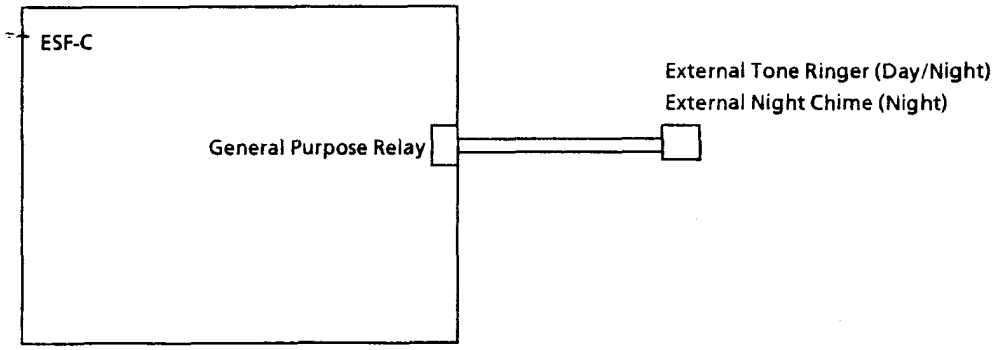


Figure 1-56 External Ring Control/Night Chime

9.6 Doorphones/Door Lock Releases

Two doorphone circuits are built into the KSU. When one doorphone is in use, the other cannot be used. The KSU can also control a door lock release circuit for each doorphone. Two door lock release circuits are also built in the KSU. One or two of the general purpose relays can be used for the door lock release circuits. (Refer to Figure 1-57 - Doorphones with Door Lock Release.)

A ferrite core must be installed with every Doorphone. Wrap the doorphone cable two turns through the ferrite core.

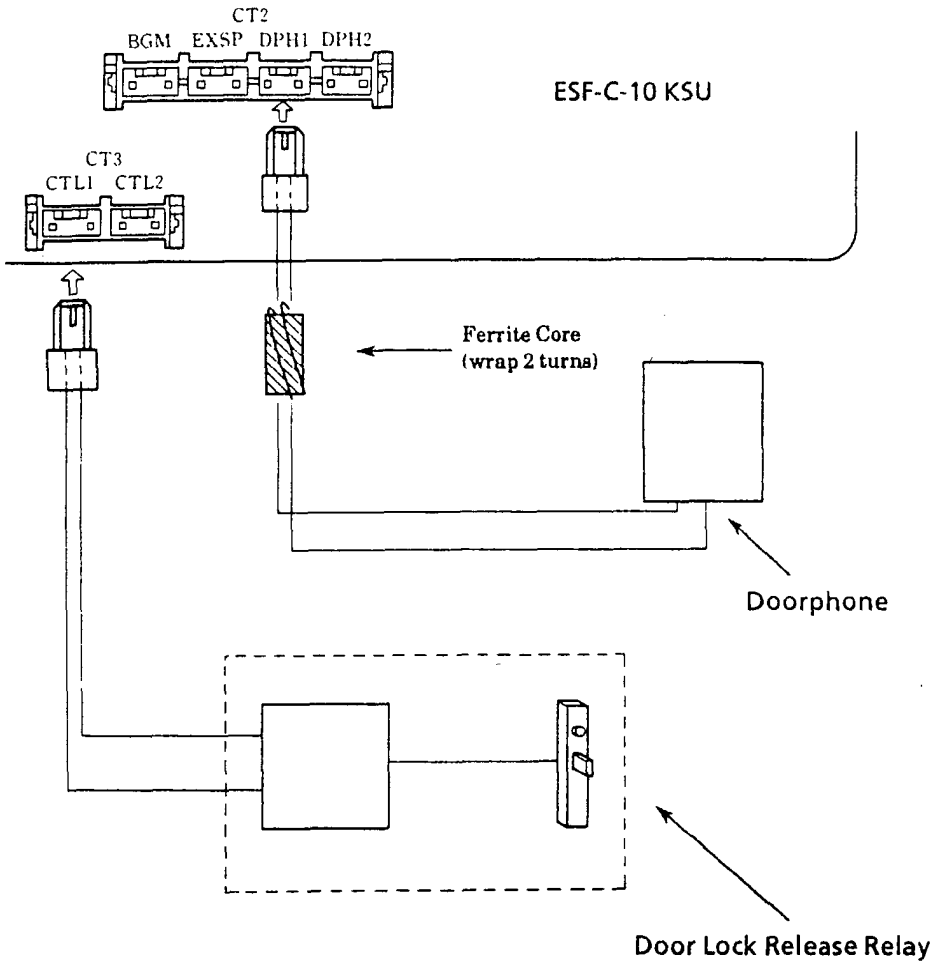


Figure 1-57 Doorphones with Door Lock Release

9.7 Video Doorphone

Locally provided video doorphone equipment can be provided when visual monitoring of an area is required. (Refer to Figure 1-58 - Video Doorphone.)

A ferrite core must be installed with every video doorphone. Wrap the doorphone cable two turns through the ferrite core.

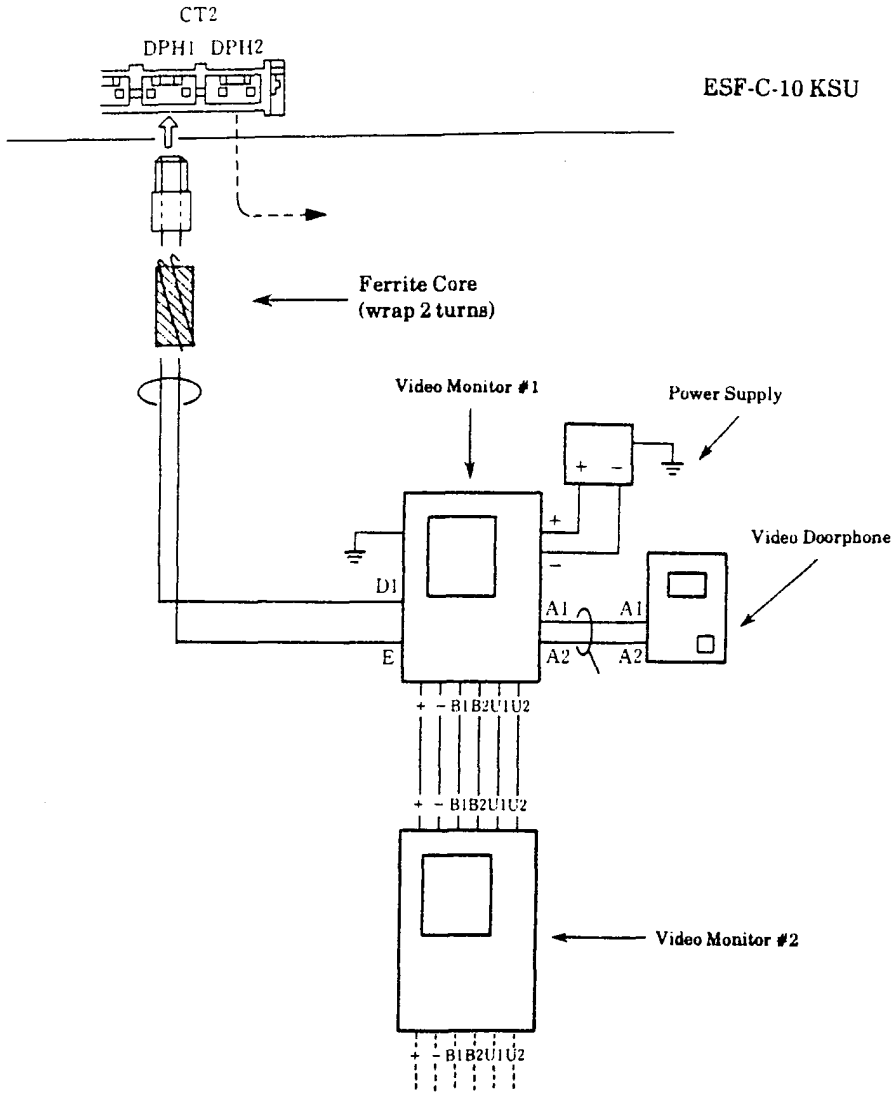


Figure 1-58 Video Doorphone

SECTION 10 LCD INDICATIONS TABLE

The LCD Indications Table shows the LCD displays as they appear on the Multiline Terminal. For ease of use, the information is listed in alphabetical order according to the Display.

Table 1-25 LCD Indications Table

Display	Location	Definition
ADA2 RG ALL SET/CNCL	Originator	Setting/Canceling ADA (2) Ringing Mode (All)
ADA2 RG CMN SET/CNCL	Originator	Setting/Canceling ADA (2) Ringing Mode (Common)
ADA2 RG MODE [X]	Originator	Setting ADA (2) Ringing Mode X = Ring Assignment (0 ~ 2)
ADA2 RG STA SET/CNCL	Originator	Setting/Canceling ADA (2) Ringing Mode (Station)
ALARM X CNCL	Originator	Canceling the Alarm X = Alarm 1 (One Time) Alarm 2 (Daily)
ALARM: X	Originator	Alarm X = Alarm 1 (One Time) Alarm 2 (Daily)
ALARMX 00:00	Originator	Setting Alarm Time X = Alarm 1 (One Time) Alarm 2 (Daily)
ALARMXYY:YY	Originator	Displays Alarm Time X = Alarm 1 (One Time) Alarm 2 (Daily) YY:YY = Time
ALL ALARM CNCL	Originator	Canceling Alarm System-Wide
ALL FWD CNCL	Originator	Canceling Call Forward - All Calls System-Wide
ALL PAGE	Originator	Internal/External All Paging
ALL VRS MSG DEL	Originator	Deleting all Voice Recording Service - Internal Messages
BATTERY LOW	All Stations with LCD	Low Battery
BGM OFF	Originator	Turns off Background Music
BGM ON	Originator	Turns on Background Music
BUSY	Originator	Busy Indication
CALLBACK CNCL	Originator	Canceling Callback Request
CO LINE	Originator	Type of Line Key
CO LINE X	Originator	Incoming Line Key X = CO/PBX Line 1 ~ 6
DATA ENTRY	Originator	Entering Data via System Programming
DND SET	Originator	Setting Do Not Disturb
DND CNCL	Originator	Canceling Do Not Disturb
DOOR X RELEASE	Originator	Doorlock Release X = Doorphone 1 or 2
DOORPHONE X	Originator	Incoming Doorphone Number X = Doorphone 1 or 2
ENTRY ERROR	Originator	No Speed Dial Number Entered
ERROR	Originator	Error Indication

(Continued on next page.)

Display	Location	Definition
FAX RESERVE CNCL	Originator	Canceling Fax Line Reservation
FAX RESERVE SET	Originator	Setting Fax Line Reservation
FNC LAMP OFF	Originator	Turns off the Function Key LED
FNC LAMP CNCL	Originator	Canceling FNC Lamp System-Wide
FWD CNCL	Originator	Canceling Call Forward - All Calls
FWD BNA →[YY]	Originator	Setting Call Forward - Busy/No Answer YY = Destination Station Number
FWD BNA CNCL	Originator	Canceling Call Forward - Busy/No Answer
FWD XX →[YY]	Originator	Setting Call Forward - All Calls XX = Originating Station Number YY = Destination Station Number
GROUP [X]	Originator	Internal Zone Paging X = Zone A ~ C
INT ALL PAGE	Receiving	Receiving Internal All Zone Paging
INT ALL PAGE	Originator	Originating Internal All Zone Paging
LCD CONTROL	Originator	LCD Contrast Control
LINE IDLE	Originator	Trunk Queuing
LNR [*] / SPD [ ]	Originator	Press LNR/SPD Key
MONITOR CNCL	Originator	Resetting Room Monitor
MONITOR SET	Originator	Setting Room Monitor
MONITORED CNCL	Originator	Resetting Monitored Station
MONITORED SET	Originator	Setting Monitored Station
NIGHT MODE CNCL	Originator	Resetting Night Mode
NIGHT MODE SET	Originator	Setting Night Mode
NO ADA2	Originator	Install an ADA (2)-W (BK) Unit
NO SMDR	Originator	Station Message Detail Recording Not Installed
NO PRINTER	Originator	No Printer Connected
NO VRS	Originator	Voice Recording Service Not Installed
OFFHOOK RING CTL	Originator	Off-Hook Ringing Control
OVRD-[XX]	Originator	Barge-In on Station XX = Destination Station Number
OVRD→CO[X]	Originator	Barge-In on CO X = CO/PBX Line 1 ~ 6
PBX LINE	Originator	Type of Line Key
PBX LINE X	Originator	Incoming Line Key X = CO/PBX Line 1 ~ 6
PBX NIGHT CNCL	Originator	Resetting PBX Night Mode
PBX NIGHT SET	Originator	Setting PBX Night Mode
PRINTER TROUBLE	Originator	Printer Problems
PROGRAM MODE	Originator	Programming Mode

(Continued on next page.)

Display	Location	Definition
RECALL:LKX	Originator	Hold Recall X = CO/PBX Line 1 ~ 6
RING CONTROL	Originator	Ring Control
SPKR	Originator	External Paging
SYSTEM REFRESH	Originator	System Refreshes
TEST PRINT	Originator	Test Print
TRUNK QUE CNCL	Originator	Canceling Trunk Queue
TRUNK QUE SET	Originator	Setting Trunk Queue
VOLUME CNTRL [ ]	Originator	Volume Control
[VM]	Receiving	Voice Mail Message Waiting
VRS DELETED [X]	Originator	Deleting a Voice Recording Service Message X = Message 0 ~ 4
VRS DEL	Originator	Voice Recording Service Message Deleted
VRS MSG [XX]	Originator	VRS Message Retrieve XX = Originating Station Number
VRS MSG DEL [XX]	Originator	Deleting a Voice Recording Service - Internal Message XX = Destination Station Number
VRS MSG DELETED	Originator	Deleted a Voice Recording Service - Internal Message
VRS MSG PLAY [XX]	Originator	Playing a Voice Recording Service - Internal Message XX = Destination Station Number
VRS MSG REC [XX]	Originator	Recording a Voice Recording Service - Internal Message XX = Destination Station Number
VRS NIGHT CNCL	Originator	Resetting Voice Recording Service - Night Mode
VRS NIGHT SET	Originator	Setting Voice Recording Service - Night Mode
VRS NO MSG	Originator	No Voice Recording Service Message
VRS PLAY [X]	Originator	Playing a Voice Recording Service Message X = Message 0 ~ 4
VRS REC [X]	Originator	Recording a Voice Recording Service Message X = Message 0 ~ 4
VRS WEEKEND SET	Originator	Resetting Voice Recording Service - Holiday Mode
VRS WEEKEND CNCL	Originator	Setting Voice Recording Service - Holiday Mode
VRS DAYTIME SET	Originator	Automatic Answer/Automated Attendant Set
VRS DAYTIME CNCL	Originator	Automatic Answer/Automated Attendant Cancel
WAITING TRF LKX	Originator	Setting Hold Free Transfer X = CO/PBX Line 1 ~ 6
■ 7:43 PM SUN 2	All Station with LCD	Night Mode On
7:43 PM SUN 2	All Stations with LCD	Clock/Calendar
XX = =[YY]	Originator/Receiving	Intercom Call XX = Originator YY = Destination

(Continued on next page.)

Display	Location	Definition
XX = =[YY]TRANSF	Originator	Automatic Ring Transfer XX = Originator YY = Destination
XX-→[YY] *	Originator	Tone Overriding XX = Originator YY = Destination
XX-→[YY]TRANSF	Originator	Call Forwarding XX = Originator YY = Destination
XX ← -[YY]TRANSF	Receiving	Call Forwarded XX = Originator YY = Destination - OR - Ring Transfer XX = Originator YY = Destination
XX← -[YY] *	Receiving	Tone Overridden XX = Destination YY = Originator
XX- → [YY] #	Originator	Setting Callback Request XX = Originator YY = Destination
XX- → [YY] 0	Receiving	Setting Automatic Callback XX = Destination YY = Originator
XX← -[YY] VCO	Receiving	Voice Over Destination XX = Destination YY = Originator
XX- → [YY] VCO	Originator	Voice Over Source XX = Originator YY = Destination
[XX][YY][ZZ]	Originator	Callback Request XX, YY and ZZ = Callback Station Numbers
"XX" "YY" "ZZ"	Originator	Voice Recording Service - Internal Message XX, YY and ZZ = VRS Setting Station Number
XX =TEL YY	Originator	Telephone Number XX = Station Number YY = Port Number
XX:EMPTY	Originator	Speed Dial Number Confirmation with No Data Entered XX = Buffer Number

(Continued on next page.)

Display	Location	Definition
XX:YYYYYYYYYYYY	Originator	Originating Speed Dial Call XX = Buffer Number YY = Telephone Number - OR - Speed Dial Number Confirmation XX = Buffer Number YY = Telephone Number
XX= =DOORPHONE Y	Originator	Doorphone Call XX = Originator's Station Number Y = Doorphone 1 or 2
<XX>XX	Receiving	Conference Party Placed On Hold XX = Station Number
[XX] LY LY		Two CO/PBX Line Conference XX = Station Number Y = CO/PBX Line Number

SECTION 11 FEATURE ACCESS CODES

This table shows the Access Codes that are used in the system. Some of the codes are set as system defaults and some codes have no default defined but are programmable in System Programming. The table is divided according to the status of the telephone. An explanation of the notes column is listed below, these are referenced throughout the table. (Refer to Table 1-26 - Access Code Tables.)

Explanation of Notes Column:

Installation: Operable only on telephones specified at the time of installation.

Single Line Only: Operable only on Single Line Telephones.

Single Line OK: Operable on Multiline Terminals or Single Line Telephones.

Note 1: The controls in parentheses are not necessary for your own telephone or own tenant.

Note 2: Enter the new values in the Access Code Table.

Note 3: No system default is defined, this code must be assigned in System Programming.

Table 1-26 Access Code Tables

When the telephone is idle (handset is on-hook):

Function	Operation	Notes
Internal Dial Tone	FNC → Dial **0**	
Microphone ON/OFF	FNC → Dial **1**	
Mute	FNC → Dial **2**	
Verifying Station Number	FNC → Dial **4**	
Setting Timed Alarm	FNC → Dial **XXX** → Dial **YY:YY** → FNC XXX = 511 One Time Alarm 521 Daily Alarm YY:YY = Time according to 24-hour clock	
Confirming Timed Alarm	FNC → Dial **XXX** → FNC XXX = 510 One Time Alarm 520 Daily Alarm	
Canceling Timed Alarm	FNC → Dial **XXX** → FNC XXX = 512 One Time Alarm 522 Daily Alarm	
Canceling Timed Alarm System	FNC → Dial **58** → FNC	Installation
Setting/Canceling Do Not Disturb	FNC → Dial **60** → FNC	
Setting Call Forward - All Calls	FNC → Dial **61** → Dial **XX** → FNC **XX** = Station number where call is to be transferred	Installation
Canceling Call Forward - All Calls	FNC → Dial **61** → FNC	Installation
Setting Call Forward - Busy/No Answer	FNC → Dial **62** → Dial **XX** → FNC **XX** = Station Number where call is to be transferred	Installation
Canceling Call Forward - Busy/No Answer	FNC → Dial **62** → FNC	Installation
Cordless Telephone Ringing	FNC → Dial **63X** → FNC **X** = 0 (All Mode) 1 (Station Mode) 2 (Common Mode)	Installation
FAX Reservation	FNC→Dial **694**→FNC	
VRS Message Record	FNC → Dial **70X** → FNC **X** = 0 Hold Message 1 A.A./Auto Answer (Night) 2 A.A./Auto Answer (Day) 3 A.A./Auto Answer (Weekend) 4 Manual Message	Attendant Only

(Continued on next page.)

Function	Operation	Notes
VRS Message Verify	FNC → Dial **71X** → FNC X = 0 Hold Message 1 A.A./Auto Answer (Night) 2 A.A./Auto Answer (Day) 3 A.A./Auto Answer (Weekend) 4 Manual Message	Attendant Only
VRS Message Clear	FNC → Dial **72X** → FNC X = 0 Hold Message 1 A.A./Auto Answer (Night) 2 A.A./Auto Answer (Day) 3 A.A./Auto Answer (Weekend) 4 Manual Message	Attendant Only
Setting/Canceling Night Mode Switch (System)	FNC → Dial **80** → FNC	Installation Attendant Only
Set/Cancel Auto Attendant/Auto Answer	FNC → Dial **8 X** → FNC X = 1 Night 2 Day 3 Weekend	Attendant Only
FNC LED Cancel (System-Wide)	FNC → Dial **88** → FNC	Installation
SMDR Test Print	FNC → Dial **9 *** → FNC	Installation
Canceling FNC LED	FNC → Dial **99** → FNC	
Programming System Speed Dial Buffer Number	FNC → LNR/SPD → Dial **XX** → Dial **YY** → Dial **ZZ ~ Z** → FNC **XX** = Speed Dial Buffer Number (20 ~ 99) **YY** = Access Code (maximum two digits) **ZZ ~ Z** = Telephone Number (maximum 24 digits)	Installation
Programming Station Speed Dial Buffer Number	FNC → LNR/SPD → Dial **XX** → Dial **YY** → Dial **ZZ ~ Z** → FNC **XX** = Speed Dial Buffer Number (00 ~ 19) **YY** = Access Code (maximum two digits) **ZZ ~ Z** = Telephone Number (maximum 24 digits)	
Confirming System Speed Dial Number	CNF → LNR/SPD → Dial **XX** **XX** = Speed Dial Buffer Number (20 ~ 99)	
Confirming Station Speed Dial Number	CNF → LNR/SPD → Dial **XX** **XX** = Speed Dial Buffer Number (00 ~ 19)	
Canceling System Speed Dial Number	FNC → LNR/SPD → Dial **XX** → FNC **XX** = Speed Dial Buffer Number (20 ~ 99)	Installation
Canceling Station Speed Dial Number	FNC → LNR/SPD → Dial **XX** → FNC **XX** = Speed Dial Buffer Number (00 ~ 19)	
Placing a Call - Speed Dial	LNR/SPD → Dial **XX** **XX** = Speed Dial Buffer Number (00 ~ 99)	

(Continued on next page.)

Function	Operation	Notes
Confirming Last Number Dialed Memory	CNF → LNR/SPD → Dial *	
Placing a Call Using Store and Repeat/Save and Repeat	LNR/SPD → Dial #	
Setting/Canceling Answer Preset (Ringing Line Preference)	FNC → ANS	
Last Dialed Number Memory to a Station Speed Dial Buffer Number	FNC → LNR/SPD → Dial **XX** → LNR/SPD → FNC **XX** = Speed Dial Buffer Number (00 ~ 19)	
BGM Station Speaker (On/Off)	FNC → Dial **93** → FNC	
Privacy Release	FNC → Dial **7** → FNC	
Handset Microphone Control	FNC → Dial **2**	
Voice Over (Originate)	FNC → *	
Voice Over (Answer)	Press HOLD Key	
Room Monitor Terminal (Monitored)	FNC → Dial **56** → FNC	
Room Monitor Terminal (Monitor)	FNC → Dial **57** → FNC	
Confirming Feature Access Key/One-Touch Key	FNC → Feature Access Key/One-Touch Key	
Canceling Feature Access Key/One-Touch Key	FNC → LNR/SPD → Feature Access Key/One-Touch Key → FNC	
Placing a Call with Feature Access Key/One-Touch Key	Press the Feature Access Key/One-Touch Key programmed for the desired feature.	
Programming Feature Access Key/One-Touch Key (for DSS/BLF)	FNC → LNR/SPD → Feature Access Key/One-Touch Key → Dial **1** → Dial **YY** → [Dial **1**] → FNC **YY** = Station Number (2 digits) Operations enclosed in [ ] are optional. Dialing **1** in this optional step switches the call from Voice to Tone or from Tone to Voice.	
Programming Feature Access Key/One-Touch Key (for Station/System Speed Dial)	FNC → LNR/SPD → Feature Access Key/One-Touch Key → Dial **0** → Dial **ZZ** → FNC **ZZ** = Station or System Speed Dial Buffer Number	
Programming Feature Access Key/One-Touch Key (for Nesting Dial)	FNC → LNR/SPD → Speed Dial Buffer Number → Dial **Y** → ANS → Dial **ZZ** → [ANS → Dial **ZZ** (repeat up to 3 times)] → FNC **Y** = CO/PBX Trunk Access Code (maximum 2 digits) **ZZ** = System or Station Speed Dial Buffer Number (00 ~ 99) Operations enclosed in [ ] are optional.	
Programming Feature Access Key/One-Touch Key (for Feature Access)	FNC → LNR/SPD → Feature Access Key/One-Touch Key → Dial # → Dial **YY** → FNC **YY** = Feature Access Code (up to seven digits)	

While the station is being seized (handset is lifted or the SPKR key is pressed and ICM LED is lit):
Note: The default settings for the Access Codes are shown in this table.

Function	Operation (Default)	Notes
Off-Hook Ring	Dial **60**	
Door/Monitor (Originate)	Dial **61**: Doorphone 1 Dial **62**: Doorphone 2	
Call Pickup Within Same Tenant	Dial **6 ***	
Call Pickup - All	Dial **6 #**	
Specified CO/PBX Line Seizure	Dial **63 → X** X = CO/PBX Line Number (1 ~ 6)	
Setting Trunk Queuing	Dial **64** → Hang Up **Note:** When busy tone is heard.	Installation
Canceling Trunk Queuing	Dial **65** → Hang Up	Installation
Fax Reservation	Dial **694** → Hang Up	Single Line OK
Internal All Zone Paging	Dial **70**	
Internal Zone A Paging	Dial **71**	
Internal Zone B Paging	Dial **72**	
Internal Zone C Paging	Dial **73**	
Answering a Page with "Meet-Me" (All Internal Zones)	Dial **7***	
External Paging	Dial **75**	
All Internal/External	Dial **77**	
Answering a Page with "Meet-Me" (External Page)	Dial **7#**	
Trunk Group (0 ~ 2)	Dial **XX** XX = 9 (Group 0) 80 (Group 1) 81 (Group 2)	Note 3
Calling Attendant 1	Dial **0**	
Calling Attendant 2	Dial **11**	
Programming Station Speed Dial Buffer Number	Dial **85** → Dial **XX** → Dial **YY** → Dial **ZZ ~ Z** XX = Speed Dial Buffer Number (00 ~ 19) YY = Trunk Access Code (maximum 2 digits) ZZ ~ Z = Telephone Number (maximum 24 digits)	Single Line Only Note 2
Clearing Station Speed Dial Buffer Number	Dial □ □ → Dial **XX** → Hang Up XX = Speed Dial Buffer Number (00 ~ 19)	Single Line Only Note 2

(Continued on next page.)

Function	Operation (Default)	Notes
Placing a Call Using a Speed Dial Buffer Number	Dial # → Dial **XX** # = MF Type **XX** = Speed Dial Buffer Number (00 ~ 99)	Single Line Only
Last Number Dialed	Dial * * = MF Type	Single Line Only
Interrupting a Call on CO/PBX Line (Barge-In with Station Number)	FNC → CNF → Dial **XX** → FNC **XX** = Station Number to be interrupted	Single Line Only Installation
Interrupting a Call on CO/PBX Line (Barge-In with CO/PBX Line Number)	FNC → CNF → Dial * → Dial **X** → FNC **XX** = CO/PBX Line Number (1 ~ 6)	Installation

While calling a station:

Function	Operation	Notes
Tone/Voice Switching	Dial **1**	
Callback Request	Dial #	Installation

While a call is waiting (when calling a station and Call Waiting Tone is heard):

Function	Operation	Notes
Automatic Callback	Dial **0** → Hang Up	Installation
Step Call	Dial **1**	Single Line OK (only for DTMF type telephones)
Tone Override	Dial *	Installation
Callback Request	Dial #	Installation

While seizing a CO/PBX line:

Function	Operation	Note
Microphone ON/OFF	FNC → Dial 1	
Seized Outside Line Number Display	FNC → Dial 3	
Store and Repeat	FNC → Dial * → XXX—XXXX XXX – XXXX = Telephone Number	
Save and Repeat	FNC → Dial 9	
Exclusive Hold	FNC → HOLD	
Unsupervised Conference	Press CNF key during normal conference	
Privacy Release	FNC → CNF	
Automatic Redial	FNC → LNR/SPD	
Drop Key	FNC → 5	

CHAPTER 2

PROGRAMMING

CHAPTER 2
PROGRAMMING
TABLE OF CONTENTS

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SECTION 1 GENERAL

1.1 Introduction

The Electra Professional Level I system is a stored program controlled system. When the system is initially powered up, the CPU scans each of the possible interface KTUs to determine the hardware configuration. The system stores this information as well as the system default values in memory. This area of memory is referred to as the Resident System Program. After the system has been initially powered up, a trained technician can change the Resident System Program to meet the specific needs of the individual customer.

Before attempting to program the Electra Professional Level I system, the Job Specifications Worksheets should be completed. These worksheets help organize the customer's programming needs. Copies of the worksheets should be retained at the job site and on file at the technician's office. (Refer to the *Electra Professional Level I Job Specifications Manual* included with the KSU.)

WARNING

The battery on the KSU Main Board must be on. Failure to ensure the battery is on, before programming begins, may result in the loss of data in the event of a power outage.

1.2 Using This Chapter

This chapter is divided into the following sections:

Section 1 - General

Provides a general overview of System Programming.

Section 2 - System Programming

Presents the terms and structure that the technician should be familiar with before attempting to program the system.

Section 3 - System Data List

Presents a complete list of Data Numbers, Timer and Function Names, Default Values, and Timing Values.

Section 4 - Programming Procedures

Provides detailed instructions and procedures for programming all Memory Blocks.

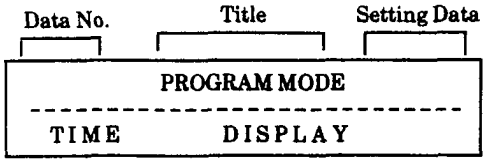
1.3 Entering the Programming Mode

To program information into the Electra Professional Level I system, an ETW-16DC-1 or ETW-16DD-1 Multiline Terminal can be used as programming stations. (Two stations are automatically assigned as programming stations. These stations are assigned to the two lowest interface circuits (Ports 01 and 02) in the system.

When entering any area of programming, the programming station must be in the **OFF-LINE** mode. **To Go Off-Line:**

1. Press the **FNC** key, then the **HOLD** key.
2. Dial #, 0, * in sequence.

After completing the above steps, the LCD on the Multiline Terminal will show:



While the programming terminal is **OFF-LINE** it cannot be signaled by any station in the system.

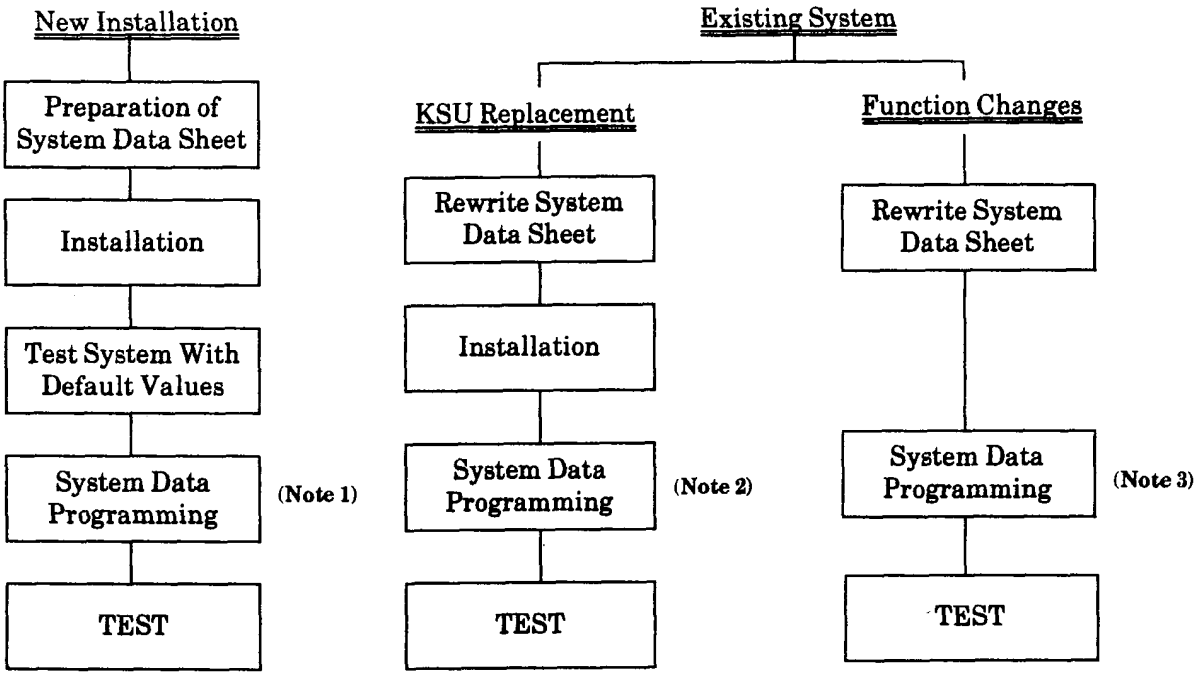
Note: The off-line mode does not time out.

1.4 System Data Programming

System Data Programming may be required for the following reasons:

- When the system is installed for the first time.
- When the KSU is replaced.
- When functions of an existing system are changed.

Refer to Figure 2-1 - Programming Flowchart for more information. There are five types of System Data: System Mode Data, Tenant Mode Data, CO/PBX Line Mode Data, Telephone Mode Data, and Special Mode Data.



Note 1: In new installations, system default values are assigned when the power is turned on. Therefore, program only the System Data to be changed.

Note 2: In KSU replacement, program the relevant System Data.

Note 3: In function changes, program the System Data that is to be revised.

Figure 2-1 Programming Flowchart

SECTION 2 SYSTEM PROGRAMMING

2.1 Features

The system operates from a default program after initial power up. Program only the parameters that need to be changed from the default assignment.

The System Programming characters are displayed on the LCD.

Only the first two Multiline Terminal (Ports 10 and 11) can be used to program the system.

2.2 System Programming

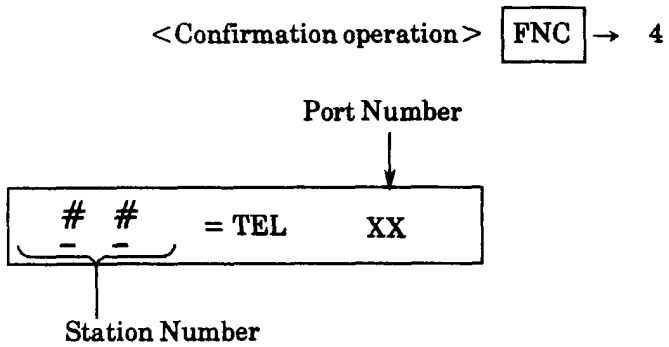
System Programming is divided into five modes.

1 System Mode
2 Tenant Mode
3 CO/PBX Line Mode
4 Telephone Mode
5 Special Mode
- ROM Version Confirmation
- Speed Dial Clear (System)
- Speed Dial Clear (Station)
- Clear System Data

2.3 Preparation Before Programming

1. Check Points:

Confirmation of ROM version	Some features may not be available depending on the ROM version. (Refer to "ROM Version Confirmation" in Section 4 - Programming Procedures.)
Confirmation of Port Number	Port numbers are used for System Programming.



2. Preliminary Points:

Selection of System Programming	Refer to Figure 2-1 - Programming Flowchart in Section 1.4 - System Data Programming to select the data to be programmed.
Prepare System Programming sheet	Refer to Section 4 - Programming Procedures to enter the data.

2.4 Writing System Data

After turning the system power on, program System Data from a Multiline Terminal (Port 01 or 02). The Multiline Terminal must be idle. Although System Programming can be performed while other Multiline Terminals are in use, some of the System Programming is registered (written in memory) immediately after the programming process, while other System Programming is not registered until the stations become idle. In the latter case, an in-use station display will show "DATA ENTRY" after the programming process is completed.

When in-use station(s) become idle, the data is registered and the display shows only the time.

The following System Programming is not registered while certain equipment is in use:

When telephones are in use:

- Memory Block 1-07 DP Interdigit Time Selection
- Memory Block 1-13 Bounce Protect Time Selection
- Memory Block 1-14 Hookflash Start Time Selection
- Memory Block 1-15 Hookflash End Time Selection
- Memory Block 1-19 Disconnect Time Selection
- Memory Block 1-20 Automatic Release Disconnection Signal Detection Time Selection
- Memory Block 3-10 CO Line Selection (Installed, DP/DTMF)
- Memory Block 3-17 DP Dial Make Ratio Selection
- Memory Block 4-01 SLT Connected Yes/No Selection

When VRS is in use:

- Memory Block 1-37 VRS Message Recording Time Selection

When SMDR is in use:

- Memory Block 1-65 Printer Connected (Alarm) Selection
- Memory Block 1-66 SMDR Print Format

2.5 Programming Methods

2.5.1 Initializing the System

Turn the Key Service Unit (KSU) power on. After approximately 10 seconds, the system will operate with system default values.

2.5.2 How To Use the Multiline Terminal For Programming

System Programming is performed using a Multiline Terminal (with LCD) connected to Ports 01 and 02.

Refer to Figure 2-2 - Electra Professional Level I system Multiline Terminal for a description of key operations, LED indications, and the display for System Programming.

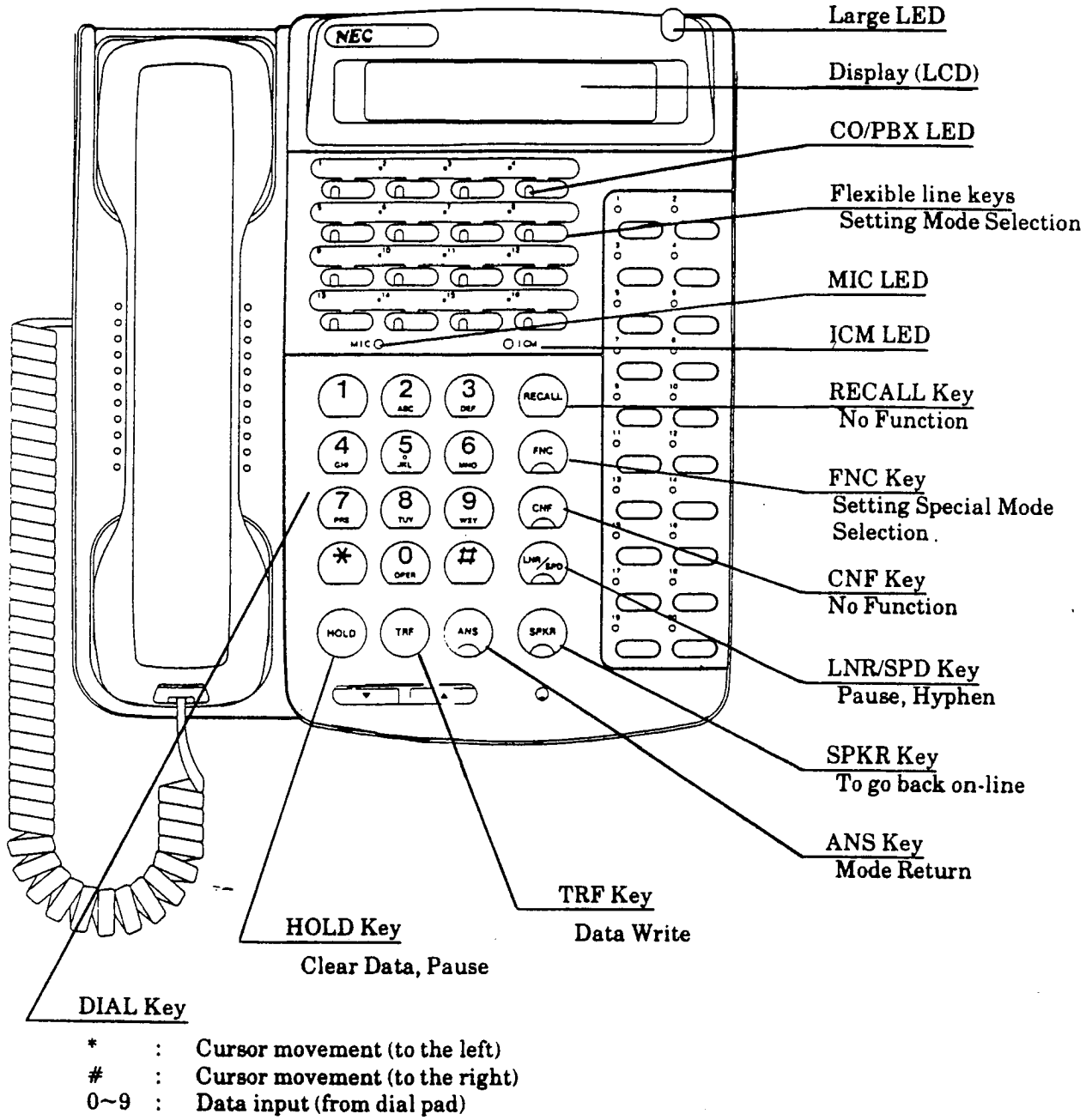


Figure 2-2 Electra Professional Level I System Multiline Terminal

1) Key Functions:

(CO/PBX) ---------- The Flexible Line keys are used to specify a Mode when selecting a Memory Block or to select programming data for input.

(FNC) ---------- The FNC key is used to select Special Mode.

(SPKR) ---------- Used for exiting the programming mode (go back on-line).

(*) ---------- Used for moving the cursor. The cursor moves one character space to the left each time * is pressed.

(#) ---------- Used for moving the cursor. The cursor moves one character space to the right each time # is pressed.

(TRF) ---------- Used for writing data. After entering data, press the TRF key to write the data into memory and advance to the next Memory Block.

(ANS) ---------- Used for selecting another Mode. Press the ANS key to switch Modes as follows:

Returns to PROGRAM MODE.

(HOLD) ---------- The HOLD key is used to enter a pause in Speed Dial Programming Mode or to clear data in System Programming Mode.

(LNR/SPD) --------- The LNR/SPD key is used to enter a pause, hyphen, *etc.*, and for entering * and #.

* : (LNR/SPD) → [*]

: (LNR/SPD) → [#]

(0) ~ (9) -------- Used to enter data from the dial pad and to specify a Memory Block location in each input mode, or to select programming data for input.

2) Off-Line Program Mode:

A. To go off-line: ----- (FNC) → (HOLD) → (#) → (0) → (*)

After entering the off-line mode for programming, the following displays appear:

PROGRAM	MODE
TIME	DISPLAY

B. Selecting Memory Block locations

System Mode (LK 1)

LK = Line Key

01 : FLSH	600 ms
TIME	DISPLAY

Tenant Mode (LK 2)

00 / 01 : TNT - TRK / YS	
TIME	DISPLAY

CO/PBX Line Mode (LK 3)

01 /	
TIME	DISPLAY

Telephone Mode (LK 4)

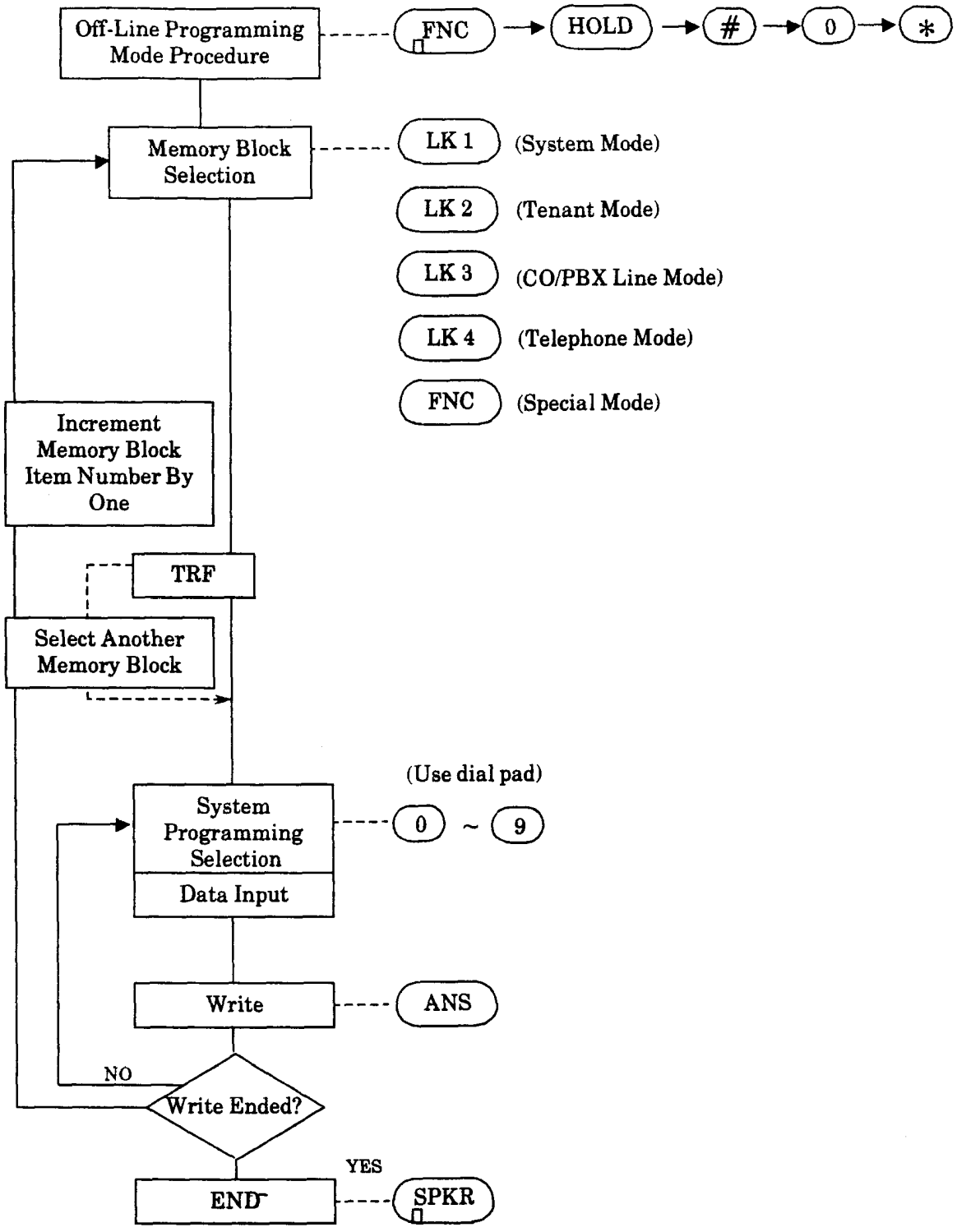
00 / 01 : SLT	
TIME	DISPLAY

Special Mode (FNC)

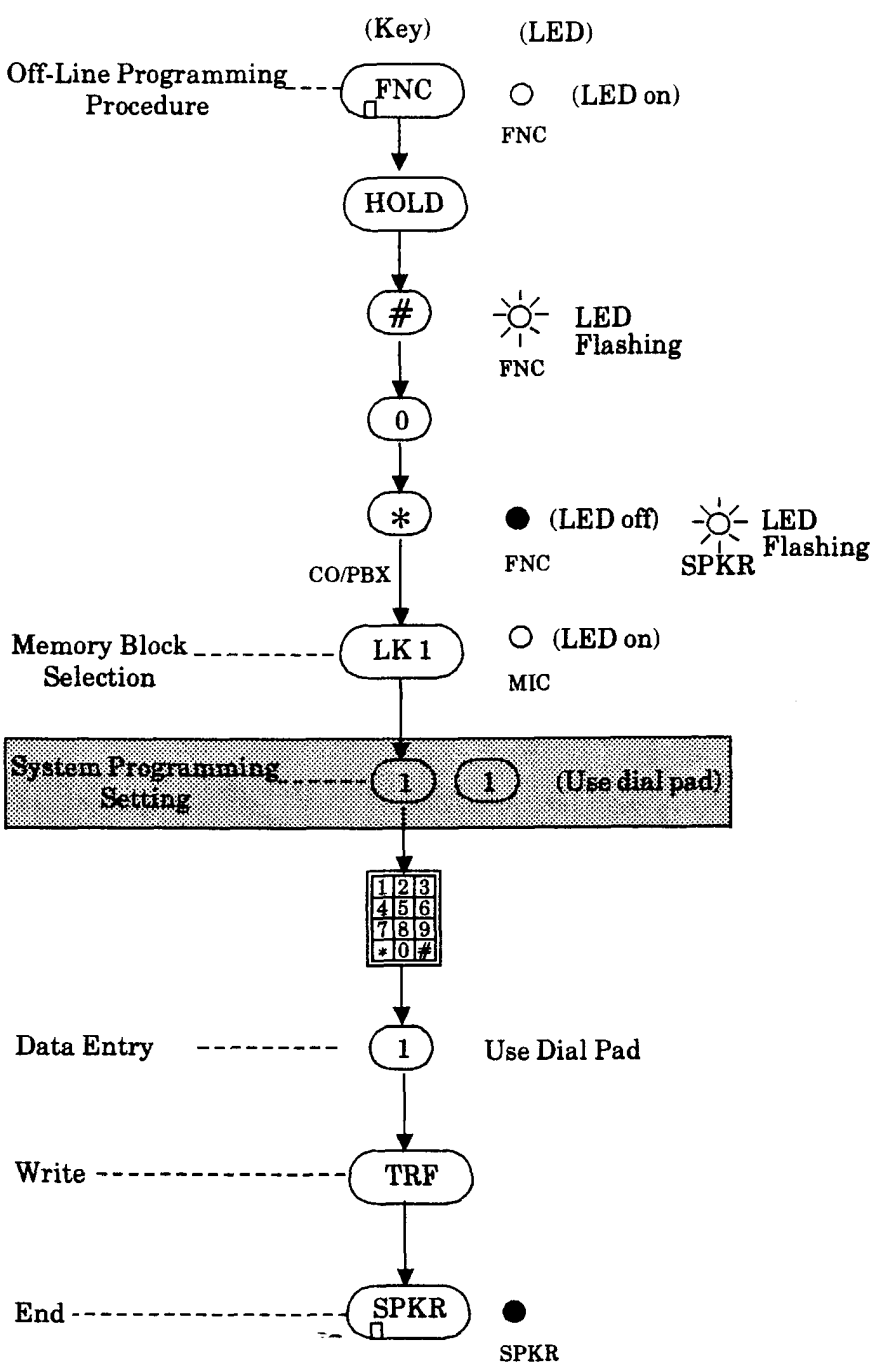
SPECIAL	MODE
TIME	DISPLAY

2.5.3 Data Entry Selection

System Programming is performed by using the keys on Multiline Terminals (Ports 10 or 11). During programming, System Data is shown on the LCD of the off-line terminal.

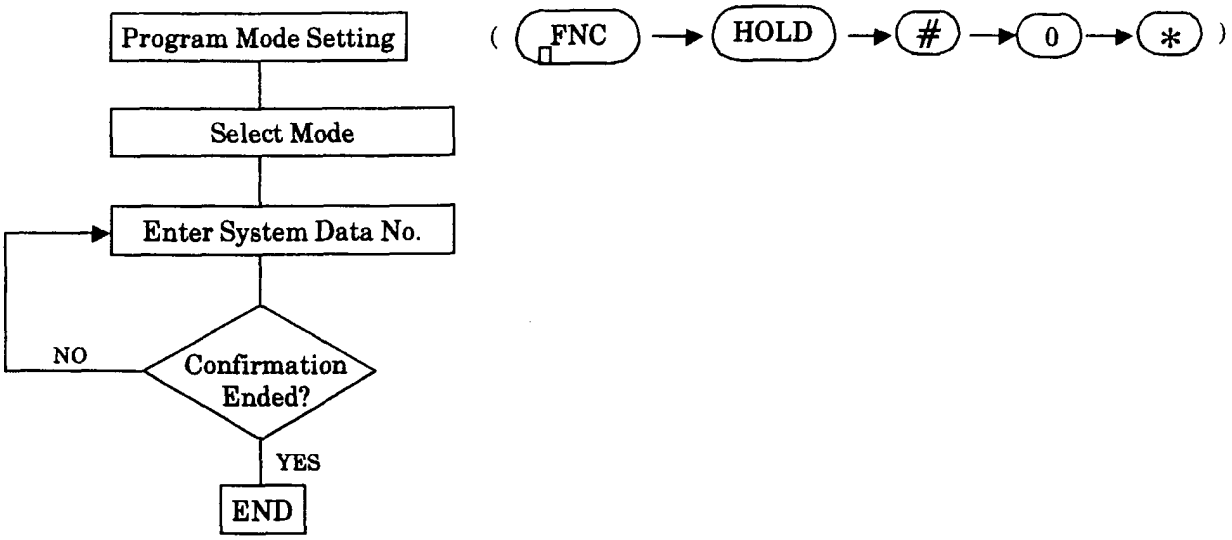

Off-Line Programming Mode Procedure
FNC
HOLD
#
0
*
Memory Block Selection
LK 1
(System Mode)
LK 2
(Tenant Mode)
LK 3
(CO/PBX Line Mode)
LK 4
(Telephone Mode)
FNC
(Special Mode)
Increment Memory Block Item Number By One
TRF
Select Another Memory Block
(Use dial pad)
System Programming Selection
Data Input
0
~
9
Write
ANS
NO
Write Ended?
YES
END
SPKR

Example: Memory Block 1-11 (Automatic Callback Release Time Selection)
(Default) → 60 minutes



2.5.4 Confirmation

To confirm programmed data, select the desired Memory Block after entering the off-line programming mode and enter the Data Number. The data is shown on the display.



2.6 Test

After completion of programming, test the functions of System Programming for proper operation.

SECTION 3 SYSTEM DATA LIST

1. SYSTEM MODE LK1

Data No.	Function Name	Default	Programming Value
01	Hookflash Time Selection (Multiline Terminal)	600 ms.	60 ms., 100 ms., 140 ms., 200 ms., 400 ms., 600 ms., 800 ms., 1 sec., 1.5 sec., 2 sec.
02	Hold Recall Timer Selection (Non-Exclusive)	1 min.	1 min., 2 min., 4 min., No Limit (0m)
03	Exclusive Hold Recall Time Selection	1 min.	1 min., 2 min., 4 min., No Limit (0m)
04	Internal/External Paging Access Time Selection	90 sec.	90 sec., 120 sec., No Limit (0s)
05	Trunk Queuing Recall Time Selection	10 sec.	10 sec., 20 sec., 30 sec., 60 sec.
06	Pause Time Selection	3 sec.	1 sec., 3 sec.
07	DP Interdigit Time Selection	Pattern B	Pattern A, Pattern B
08	Receiver (PBR) Release Timer Selection	10 sec.	5 sec., 10 sec., 20 sec., 30 sec., 50 sec., 60 sec.
09	Doorphone Display Time Selection	10 sec.	10 sec., 30 sec., 60 sec., 90 sec.
10	CO Ring Transfer Recall Time Selection	60 sec.	30 sec., 60 sec., 120 sec., 240 sec.
11	Automatic Callback Time Selection	No Limit	30 min., 60 min., 90 min., No Limit (0m)
12	Automatic Redial Time Selection	Selection = 0 Calling Time 15 sec. Call Waiting Time 60 sec. Call Attempts 5 times	Selection 0 1 2 3 Calling Time 15 15 15 30 Call Waiting Time 60 120 180 120 Call Attempts 5 5 5 5
13	Bounce Protect Time Selection	300 ms.	0 ms., 300 ms., 600 ms., 900 ms.
14	Hookflash Start Time Selection	300 ms.	100 ms., 150 ms., 200 ms., 300 ms., 350 ms., 450 ms., 550 ms., 650 ms., 750 ms., 850 ms.
15	Hookflash End Time Selection	HST + 700 ms. HST = Hookflash Start Time	HST + 0 ms. HST + 100 ms. HST + 200 ms. HST + 400 ms. HST + 500 ms. HST + 700 ms. HST + 900 ms. HST + 1100 ms. HST + 1300 ms. HST + 1500 ms.

System Mode LK1 (continued)

Data No.	Function Name	Default	Programming Value
16	Call Forward Busy/No Answer Timer Selection	10 sec.	10 sec., 15 sec., 20 sec., 25 sec., 30 sec., 60 sec.
17	Trunk-to-Trunk Transfer Automatic Disconnect Time Selection	1 hr.	30 min., 1 hr., 2 hr., 3 hr.
18	Elapsed Call and SMDR Timer Selection	10 sec.	10 sec., 20 sec., 30 sec.
19	Disconnect Time Selection	1.0 sec.	0.3 sec., 0.5 sec., 0.7 sec., 1.0 sec., 1.5 sec., 2.0 sec., 2.5 sec., 3.0 sec., 3.5 sec., 4.0 sec.
20	Automatic Release Disconnection Signal Detection Time Selection	350 ms.	5 sec., 50 ms., 100 ms., 150 ms., 200 ms., 250 ms., 300 ms., 350 ms., 400 ms., 500 ms.
21	Voice/Tone Signal Selection	Voice	Tone, Voice
22	BGM Selection	No	No, Tel, Speaker, Tel & Speaker
23	System Speed Dial Override Selection	No	No, Yes
24	System Speed Dial Display Station Selection	Attendant Position	Attendant Positions All Multiline Terminals
25	Ring Transfer Selection	Yes	No, Yes
26	Time Display (12h/24h) Selection	12 hr.	12 hr., 24 hr.
27	Day/Night Mode Switching Time Assignment	Not Specified	Day Mode Start Time (24 hours) Night Mode Start Time (24 hours)
28	Receiving Volume Selection	Down	Down, Up
29	Barge-In Alert Tone Assignment	Yes	No, Yes
30	External Speaker Connection Selection	Yes	No, Yes
31	PBX/CTX Access Code Assignment	Access Code 1 9 - Access Code 2 Vacant	Up to six digits (three numeric, three pauses)
32	Private Line Assignment	Not Specified	CO/PBX Line Number, Tel. Port No., up to two lines/two stations
33	Doorphone Connection Selection	Yes	No, Yes
34	SLT Hookflash Signal Selection	Hold	Hold, Flash
35	Station Master Hunt Number Selection	No	No, Yes

System Mode LK1 (continued)

Data No.	Function Name	Default	Programming Value
36	CO/PBX Access/Release Selection	No	No, Yes
37	VRS Message Recording Time Selection	15 sec. × 16 messages	15 sec. × 16 messages 30 sec. × 8 messages 60 sec. × 4 messages 120 sec. × 2 messages
38	VRS Automatic Answer (Night) Selection	No	No, Yes
39	VRS Automatic Answer (Day) Selection	No	No, Yes
40	VRS Automatic Answer (Weekend) Selection	No	No, Yes
41	VRS Manual Answer Selection	No	No, Yes
42	VRS Automatic Answer (Night) Time Assignment	Not Specified	00:00 ~ 23:59
43	VRS Automatic Answer (Day) Time Assignment	Not Specified	00:00 ~ 23:59
44	VRS Automatic Answer (Off) Time Assignment	Not Specified	00:00 ~ 23:59
45	Doorphone Preference Selection	Yes	No, Yes
46	Manual Line Seizure Selection	Yes (Manual Line Seizure)	No = No Manual Line Seizure Yes = Manual Line Seizure
47	Hold Free Transfer Selection	No	No, Yes
48	General Purpose Relay Assignment	Non	Non, Doorphone 1, Doorphone 2, External Speaker, MOH/BGM, External Tone Ringer, Fax
49	Synchronous Ringing Selection	Yes	No, Yes
50	Elapsed Time Display Selection	Yes	No, Yes
51	Music On Hold Selection	Let It Be	Let It Be, Melody Fair
52	External MOH Selection	No	No, Yes
53	External Ring Selection	Non	Non, Relay, Speaker, Relay and Speaker
54	Night Chime Selection	Non	Non, Relay, Speaker, Relay and Speaker

System Mode LK1 (continued)

Data No.	Function Name	Default	Programming Value
55	Class of Service Feature Selection	Class 0: Feature No. 00, 03~15 (Yes) Feature No. 01, 02 (No) Class 1: Feature No. 03~15 (Yes) Feature No. 00~02 (No) Class 2~7: All (No)	No, Yes No = Deny Yes = Allow
56	8-Digit Matching Table Assignment	Refer to Memory Block.	Refer to Memory Block.
57	Class Allow/Deny Assignment	Class 0 YS (allow) [fixed] Class 1~4 YS (allow) Class 5~6 NO (deny) Class 7 NO (deny) [fixed]	No, Yes No = Deny Yes = Allow
58	8-Digit Matching Table to Class Assignment	Refer to Memory Block.	0 = Deny, 1 = Allow 2=Deny (OCC calls only) 3=Allow (OCC calls only)
59	8-Digit Matching Table to Trunk Group Assignment	Enable	0 = Disable 1 = Enable
60	OCC Table Assignment	Refer to Memory Block.	Refer to Memory Block.
61	OCC Table to Trunk Group Assignment	Yes (All OCC Tables Assigned)	No = Not Assigned Yes = All OCC Tables Assigned
62	8-Digit Matching Table to OCC Table Assignment	Yes	No = Not Assigned Yes = All OCC Numbers Assigned
63	Internal/External Paging Alert Tone Selection	Yes	No, Yes
64	SLT Transfer Selection	Hook	Hook, Hang up
65	Printer Connected (Alarm) Selection	Yes	No, Yes
66	SMDR Print Format	All	All, Mask
67	Voice Mail Access Code Assignment	Code 01~09 = All Blank Code 10 = 641 Code 11 = 64*	Refer to Memory Block.
68	Voice Mail DTMF Delay Timer Selection	1 sec.	0 sec., 0.1 sec., 0.5 sec., 1.0 sec., 2.0 sec., 4.0 sec., 6.0 sec., 8.0 sec., 10 sec., 14 sec.
69	Voice Mail DTMF Duration/Interdigit Time Selection	600/100 ms.	70/60 ms., 100/50 ms., 100/70 ms., 400/100 ms., 600/100 ms., 900/200 ms.

System Mode LK1 (continued)

Data No.	Function Name	Default	Programming Value
70	System Refresh Timer Selection	4 hr.	0 hr. (No Refresh), 4 hr., 8 hr., 12 hr., 24 hr.
71	VRS Answer Mode Selection	No	No = Automatic Answer Yes = Automated Attendant
72	Automated Attendant Answer Delay Time Assignment	3 sec.	0 sec., 3 sec., 6 sec., 12 sec., 18 sec., 24 sec., 30 sec., 36 sec., 42 sec., 48 sec.
73	Automated Attendant PBR Release Timer Assignment	20 sec.	0 sec., 10 sec., 20 sec., 30 sec., 40 sec., 50 sec., 60 sec.
74	Automated Attendant Delay Ringing Time Selection	∞	10 sec., 20 sec., 30 sec., ∞
75	Automated Attendant No Answer Disconnect Time Selection	2 min.	1 min., 2 min., 3 min., 4 min.
76	Automated Attendant No DTMF Detect Selection	Normal Call	Normal Call Release
77	Automated Attendant Access Code Assignment	Not Specified	Refer to Memory Block.
78	Fax Line Reservation Timer Selection	30 sec.	30 sec., 60 sec., 120 sec., 240 sec.

2. TENANT MODE LK2

Data No.	Function Name	Default	Programming Value
01	Trunk To Tenant Assignment	Tenant 00: CO 01~06 = Yes Tenant 01~03: CO 01~06 = No	No, Yes

3. CO/PBX LINE MODE LK3

Data No.	Function Name	Default	Programming Value
01~06	Telephone Number To Trunk Assignment	Not Specified	A maximum of 13 digits (numbers, hyphens, spaces)
07	CO/PBX DTMF Duration/Interdigit Assignment	DTMF Digit Duration: 70 ms. Interdigit Time: 60 ms.	70/60 ms., 100/70 ms., 400/100 ms., 600/100 ms., 900/200 ms.
08	Trunk Status Selection	Out and In	Out and In, In
09	Trunk Type Selection	CO	CO, PBX
10	CO Line Selection (Installed, DP/DTMF)	MF	Nil, DP 10 pps, DP 20 pps, MF
11	Trunk-to-Trunk Group Assignment	All CO/PBX Line Nos. = Trunk Group 0	Trunk Group Numbers 0~2
12	CO/PBX Line Code Restriction Override Selection	No	No, Yes
14	Trunk-to-Trunk Transfer Yes/No Selection	No	No, Yes
15	VRS Answer Yes/No Selection	No	No, Yes
16	PBX Night Transfer Selection	No	No, Yes
17	DP Dial Make Ratio Selection	39%	33%, 39%
18	VRS - Hold Message Assignment	No	No (deny) Yes (allow)

4. TELEPHONE MODE LK4

Data No.	Function Name	Default	Programming Value
01	SLT Connected Yes/No Selection	No	No, Yes
02	Telephone to Tenant Assignment	All Telephones Tenant 0	Tenant Numbers (0~3)
03	Internal Zone Paging Selection	Group A	No, Group A, Group B, Group C
04	Ringing Line Preference Selection	No	No, Yes
05	DTMF/DP SLT Type Selection	DTMF	DP, DTMF
06	Station Number Assignment	2-digit Port Number 01: Station Number 10 Port Number 16: Station Number 25	Station Numbers (10~59)
07	Voice Mail/SLT Selection	No	No, Yes
08	Distinctive Ringing Tone to Telephone Selection	Low	Low, Medium, High
09	3-Minute Alarm Selection	No	No, Yes
10	HFU Selection	No	No, Yes
11	Headset Connection Selection	No	No, Yes
12	Prime Line Assignment	Non	Non, TK1, TK2, TK3, TK4, TK5, TK6
13	Attendant Group Selection	Attendant 1	Attendant 1 Attendant 2
14	Voice Call Block Selection	No = Voice/Tone Call	No, Yes No = Voice/Tone Call Yes = Tone Only
15	CO/PBX Ring Assignment (Day Mode)	Telephones connected to Port Nos. 01 and 02 ring on all incoming CO/PBX calls. Telephones connected to Port Nos. 03~06 do not ring on any incoming CO/PBX calls.	CO/PBX Trunk No. (1~6)

TELEPHONE MODE LK4 (continued)

Data No.	Function Name	Default	Programming Value
16	CO/PBX Ring Assignment (Night Mode)	Telephones connected to Port Nos. 01 and 02 ring on all incoming CO/PBX calls. Telephones connected to Port Nos. 03~06 do not ring on any incoming CO/PBX calls.	CO/PBX Trunk No. (1~6)
17	Doorphone Chime Assignment (Day Mode)	Telephones connected to Port Nos. 01 and 02 ring on all Doorphone calls. Telephones connected to Port Nos. 03~16 do not ring on any Doorphone calls.	No, Yes No = No Chime Yes = Chime
18	Doorphone Chime Assignment (Night Mode)	Telephones connected to Port Nos. 01 and 02 ring on all Doorphone calls. Telephones connected to Port Nos. 03~16 do not ring on any Doorphone calls.	No, Yes No = No Chime Yes = Chime
19	Station to Class Of Service Feature Assignment (Day Mode)	Port No. 01, 02: Class 0 Port No. 03~16: Class 1	Refer to Memory Block.
20	Station to Class of Service Feature Assignment (Night Mode)	Port No. 01, 02: Class 0 Port No. 03~16: Class 1	Refer to Memory Block.
21	Code Restriction Class Assignment (Day Mode)	All Telephones Class 0	Class (0~7)
22	Code Restriction Class Assignment (Night Mode)	All Telephones Class 0	Class (0~7)
23	Trunk Digit Restriction	00 (No Limit)	00, 01 ~ 99
24	Automated Attendant Delay Ring Assignment	Telephones connected to Port Nos. 01 and 02 ring on all incoming CO/PBX calls. Telephones connected to Port Nos. 03~06 do not ring on any incoming CO/PBX calls.	Refer to Memory Block.

5. SPECIAL MODE

: ROM Version Confirmation
: System Speed Dial Memory Clear
: Station Speed Dial Memory Clear
: System Data Memory Initialize
: Clock/Calendar

SECTION 4 PROGRAMMING PROCEDURES

Section 4 describes each Memory Block function and programming procedures.

EXAMPLE

PAUSE TIME SELECTION ← System Data Name

System	Data No.
1	06

Mode
Data No.

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1] • LK 1
3. Enter: Data No. [0 6] (Dial Pad)

Data No. Title Setting Data

```
0 6 : PAUSE                     3.0s
--------------------------------
      TIME    DISPLAY
```

4. Press the corresponding Dial Pad key to change Setting Data option.
   - To change Pause Time from 3 seconds to 1 second, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
1 sec.	3 sec			
Dial 5	**Dial 6**	**Dial 7**	**Dial 8**	**Dial 9**

Dial Pad key

Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-07 (DP Interdigit Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	19		
System (LK 1)	24		
System (LK 1)	25		
CO/PBX (LK 3)	01		
CO/PBX (LK 3)	91		

NOTES:

The NOTES section is used to alert the Technician of exceptions to programming.

Status indication LEDs
When Line Key 1 (System Mode) is pressed, the Line Key LED lights.

The OPERATIONS are for guiding the Technician through the procedures for programming a specific Memory Block.

Press these Dial Pad keys in this sequence.

Display

Data assigned to associated Dial Pad keys.

In some instances, additional data must be programmed before or after a specific Memory Block can be programmed. This table contains those additional Memory Blocks.

If additional information is needed on this page, some or all of the notes in the NOTES section will continue on the next page.

A brief description of the function(s) of a specific Memory Block.

GENERAL INFORMATION - PAUSE TIME SELECTION

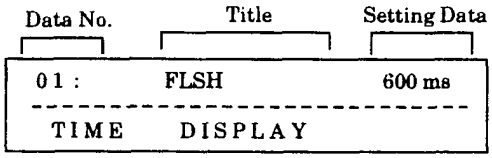
A pause may be inserted between digits dialed on CO/PBX lines. This Memory Block Specifies the length of the pause. A pause is automatically inserted following a "behind a PBX/CTX" Access Code (for example, "9") by programming for PBX line in Memory Block 3-09 (Trunk Type Selection).

HOOKFLASH TIME SELECTION
(Multiline Terminal)

System	Data No.
1	01

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [0] [1] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 600 ms. to 2 sec., press Dial Pad key 9.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
60 ms.	100 ms.	140 ms.	200 ms.	400 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
600 ms.	800 ms.	1 sec.	1.5 sec.	2 sec.

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-02 (Hold Recall Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	34		√

NOTES:

1. On a per Single Line Telephone basis, a hookflash from the SLT can put an existing call on hold or send a hookflash signal on the CO/PBX line.

GENERAL INFORMATION - HOOKFLASH TIME SELECTION
(Multiline Terminal)

This Memory Block specifies the length of break time for a hookflash signal (that breaks the DC loop of a CO/PBX line) sent to the CO or PBX when the RECALL key on a Multiline Terminal is pressed, or an SLT generates a hookflash and system is assigned to send the hookflash.

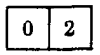
HOLD RECALL TIMER SELECTION (NON-EXCLUSIVE)

System	Data No.
1	02

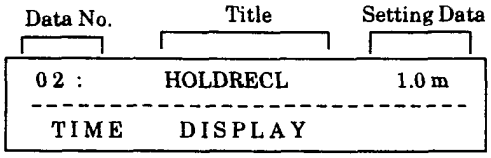
OPERATION:

1. Go off-line.
2. Enter: Mode System

3. Enter: Data No.



(Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 1 min. to 2 min, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
1 min.	2 min.	4 min	No Limit	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-03 (Exclusive Hold Recall Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK2)	03		√

NOTES:

1. Calls put on Exclusive Hold will recall using the data selected in Memory Block 1-03 (Exclusive Hold Recall Timer Selection).

GENERAL INFORMATION - HOLD RECALL TIMER SELECTION (Non-Exclusive)

This Memory Block specifies the time interval of a non exclusively held CO/PBX call until a recall tone is generated. If "No Limit" is selected, no hold alarm tone is generated.

EXCLUSIVE HOLD RECALL TIMER SELECTION

System	Data No.
1	03

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [0] [3] (Dial Pad)

Data No.	Title	Setting Data
03 :	EXHDRECL	1.0 m
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 1 min. to 2 min., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
1 min.	2 min.	4 min	No Limit	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-04 (Internal/External Paging Access Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. Calls put on Non-Exclusive Hold will recall using the data selected in Memory Block 1-02 [Hold Recall Timer Selection (Non-Exclusive)].

GENERAL INFORMATION - EXCLUSIVE HOLD RECALL TIMER SELECTION

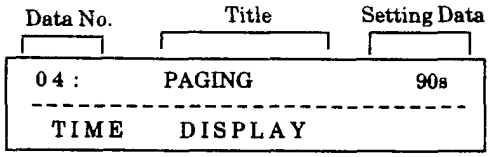
This Memory Block specifies the time interval for Exclusive Hold Recall tone. If "No Limit" is selected, no Exclusive Hold tone is provided.

INTERNAL/EXTERNAL PAGING ACCESS TIME SELECTION

System	Data No.
1	04

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 0 4 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 90 sec. to 120 sec., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
90 sec.	120 sec	No Limit		
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-05 (Trunk Queuing Recall Time Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. There are five types of paging:
   - Internal Zone Paging - 71~73
   - Internal All Zone Paging - 70
   - External Paging - 75
   - All Internal/External Zone Paging - 77
2. There are three selections for length of paging time: 90 sec., 120 sec., and No Limit.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	29		√
System (LK 1)	30		√
Telephone (LK 4)	03		√

GENERAL INFORMATION - INTERNAL/EXTERNAL PAGING ACCESS TIME SELECTION

This Memory Block is used to program the length of time allowed for paging.

TRUNK QUEUING RECALL TIME SELECTION

System	Data No.
1	05

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [0] [5] (Dial Pad)

Data No.	Title	Setting Data
05 :	TRUNK QUE	10s
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 10 sec. to 30 sec., press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
10 sec.	20 sec	30 sec.	60 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-06 (Pause Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. When all trunks in a particular Trunk Group are busy, the station user can dial an Access Code to "queue" onto the busy Trunk Group. When a trunk (within that group) becomes idle, the queued station will be signaled.

GENERAL INFORMATION - TRUNK QUEUING RECALL TIME SELECTION

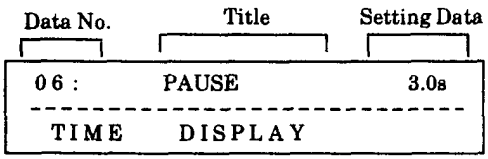
This Memory Block determines the length of time that an outgoing CO/PBX line will ring at the station where the queue was set, before the queue is automatically canceled.

PAUSE TIME SELECTION

System	Data No.
1	06

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 0 6 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 3 sec. to 1 sec., press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
1 sec.	3 sec			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-07 (DP Interdigit Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	31		√
CO/PBX (LK 3)	09		√

NOTES:

1. A pause is automatically inserted following a PBX Access Code (for example, "9") by programming CO/PBX lines as PBX in Memory Block 3-09 (Trunk Type Selection).
2. Pauses can be stored as part of System and Station Speed Dial buffers when needed.

GENERAL INFORMATION - PAUSE TIME SELECTION

A pause may be inserted between digits dialed on CO/PBX lines. This Memory Block Specifies the length of the pause. A pause is automatically inserted following a "behind a PBX/CTX" Access Code (for example, "9") by programming for PBX line in Memory Block 3-09 (Trunk Type Selection).

DP INTERDIGIT TIME SELECTION

System	Data No.
1	07

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 0 7 (Dial Pad)

Data No. Title Setting Data

```
07 :      DP INTER          B
----------------------------
  TIME    DISPLAY
```

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Pattern B to Pattern A, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Pattern A	Pattern B			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

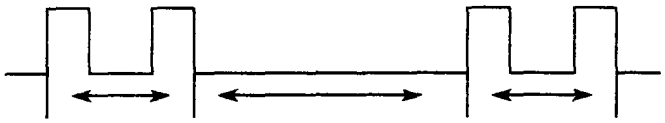
5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-08 [Receiver (PBR) Release Timer Selection].
6. Press the **SPKR** key to go back on-line.

NOTES:

1. This Memory Block is used when CO/PBX lines are assigned to send dial pulse signaling in Memory Block 3-10 (CO Line Selection).

■

Data \ DP Dial	10 pps.	20 pps.
Pattern A	650 ms.	500 ms.
Pattern B	800 ms.	800 ms.



Dial Signal Minimum Pause Time Dial Signal

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
CO/PBX (LK3)	10		√

GENERAL INFORMATION - DP INTERDIGIT TIME SELECTION

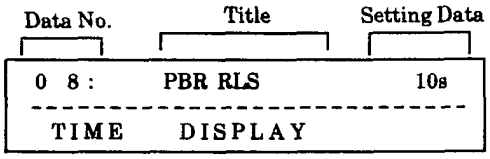
The DP Interdigit Time is the minimum pause time interval between Dial Pulse dialing. Either Pattern A or Pattern B can be selected.

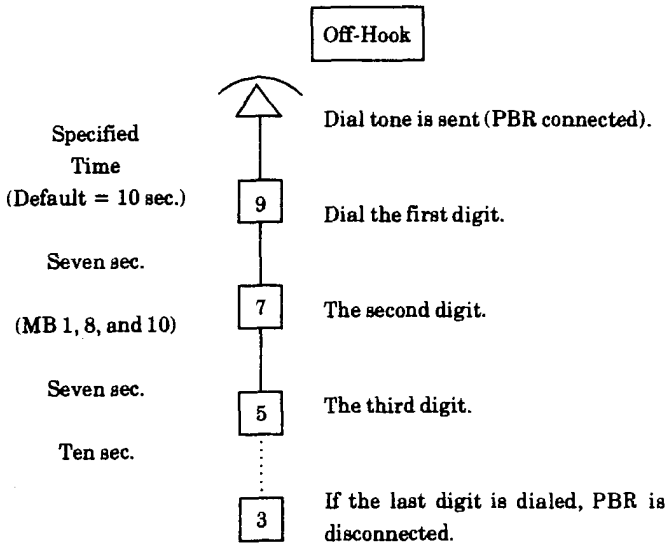
RECEIVER (PBR) RELEASE TIMER SELECTION

System	Data No.
1	08

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 0 8 (Dial Pad)





4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 10 sec. to 20 sec., press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
5 sec.	10 sec.	20 sec.	30 sec.	50 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
60 sec.				

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-09 (Doorphone Display Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	01		√
Telephone (LK 4)	05		√

GENERAL INFORMATION - RECEIVER (PBR) RELEASE TIMER SELECTION

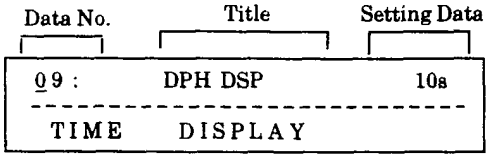
This Memory Block is used to specify the time interval between each digit dialed during which a receiver circuit is connected when a DTMF type Single Line Telephone user goes off-hook and dials digits.

DOORPHONE DISPLAY TIME SELECTION

System	Data No.
1	09

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 0 9 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 10 sec. to 30 sec., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
10 sec.	30 sec	60 sec.	90 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-10 (CO Ring Transfer Recall Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	33	√	
System (LK 1)	45		√
Telephone (LK 4)	17		√
Telephone (LK 4)	18		√

GENERAL INFORMATION - DOORPHONE DISPLAY TIME SELECTION

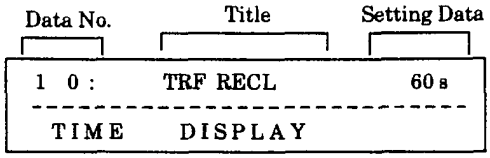
This Memory Block is used to assign the length of time the Multiline Terminal will display an incoming Doorphone call indication.

CO RING TRANSFER RECALL TIMER SELECTION

System	Data No.
1	10

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 0 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 60 sec. to 120 sec., press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
30 sec.	60 sec.	120 sec.	240 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-11 (Automatic Callback Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	25		√
Telephone (LK 4)	15		√
Telephone (LK 4)	16		√

NOTES:

1. Only CO/PBX line calls can be ring transferred.

GENERAL INFORMATION - CO RING TRANSFER RECALL TIMER SELECTION

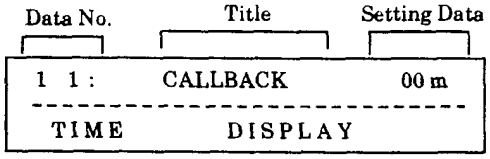
This Memory Block specifies the time interval from CO/PBX line ringing tone transfer until a recall tone is generated to the originating telephone if the call is not answered.

AUTOMATIC CALLBACK TIME SELECTION

System	Data No.
1	11

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [1] [1] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No Limit to 30 min., press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
30 min.	60 min.	90 min.	00 (No Limit)	
Dial 5	**Dial 6**	**Dial 7**	**Dial 8**	**Dial 9**

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-12 (Automatic Redial Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - AUTOMATIC CALLBACK TIME SELECTION

This Memory Block is used to determine the length of time allowed for an automatic callback to occur before the request is automatically canceled.

AUTOMATIC REDIAL TIME SELECTION

System	Data No.
1	12

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 2 (Dial Pad)

Data No.	Title	Setting Data
1 2 :	REDIAL	15/60
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 60 sec./90 sec. to 30 sec./30 sec., press Dial Pad key 3.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
15/60 sec.	15/120 sec	15/180 sec.	30/120 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-13 (Bounce Protect Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. Definitions:
   Calling Time: The length of time that the system will automatically ring the busy CO/PBX number. After the specified time limit, the ringing will stop.

   Call Waiting Time: The length of time the system will wait before redialing the called party's station.

   Call Attempts: The number of times the system will redial the busy CO/PBX number.
2. Setting Data:

Dial No.	Calling Time	Call Waiting Time	Call Attempts
0	15 sec.	60 sec.	5
1	15 sec.	120 sec.	5
2	15 sec.	180 sec.	5
3	30 sec.	120 sec.	5

GENERAL INFORMATION - AUTOMATIC REDIAL TIME SELECTION

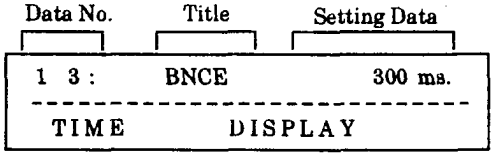
When a called party is busy, the station user dials an Access Code and restores the handset. As programmed in this Memory Block, the system will automatically redial the busy CO/PBX number and wait the specified calling time. After the specified number of call attempts with no answer, the system will stop dialing.

BOUNCE PROTECT TIME SELECTION

System	Data No.
1	13

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 3 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 300 ms. to 900 ms., press Dial Pad key 3.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
0 ms.	300 ms.	600 ms.	900 ms.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-14 (Hookflash Start Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	01		√

GENERAL INFORMATION - BOUNCE PROTECT TIME SELECTION

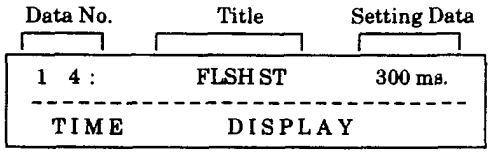
This Memory Block is used to specify the necessary duration of a hookflash before it can be detected as a valid hookflash from a Single Line Telephone or Voice Mail port.

HOOKFLASH START TIME SELECTION

System	Data No.
1	14

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [1] [4] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 300 ms. to 450 ms., press Dial Pad key 5.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
100 ms.	150 ms.	200 ms.	300 ms.	350 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
450 ms.	550 ms.	650 ms.	750 ms.	850 ms.

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-15 (Hookflash End Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	15		✓

NOTES:

1. A hookflash during a CO/PBX call places the line on hold or sends a hookflash to the CO/PBX.
2. When a hookflash is 0.1 seconds or less, or 2.3 seconds or more, it is not considered to be a hookflash.

GENERAL INFORMATION - HOOKFLASH START TIME SELECTION

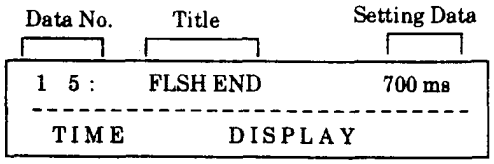
This Memory Block is used to specify the start of a hookflash duration from a Single Line Telephone in order to receive a dial tone. The duration, plus the duration specified in the Hookflash End Time Memory Block, specifies the length of a valid hookflash.

HOOKFLASH END TIME SELECTION

System	Data No.
1	15

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 5 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 700 ms. to 400 ms., press Dial Pad key 3.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
HST + 0	HST + 100 ms.	HST + 200 ms.	HST + 400 ms.	HST + 500 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
HST + 700 ms.	HST + 900 ms.	HST + 1100 ms.	HST + 1300 ms.	HST + 1500 ms.

Dial Pad keys

Default

HST = Hookflash Start Time

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-16 (Call Forward Busy/No Answer Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	14	√	

GENERAL INFORMATION - HOOKFLASH END TIME SELECTION

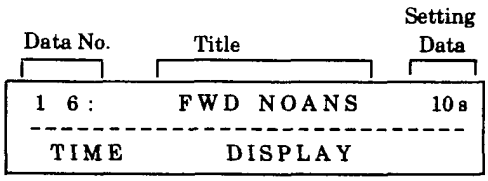
This Memory Block is used to specify a maximum duration from a Single Line Telephone in order to receive a dial tone.

CALL FORWARD BUSY/NO ANSWER TIMER SELECTION

System	Data No.
1	16

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 6 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 10 sec. to 15 sec., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
10 sec.	15 sec	20 sec.	25 sec.	30 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
60 sec.				

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-17 (Trunk-to-Trunk Transfer Automatic Disconnect Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	55		√
Telephone (LK 4)	19		√
Telephone (LK 4)	20		√

NOTES:

1. CO/PBX calls will not follow the Forward unless the station is Forwarded to a Voice Mail port.

GENERAL INFORMATION - CALL FORWARD BUSY/NO ANSWER TIMER SELECTION

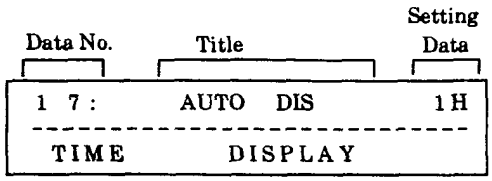
This Memory Block specifies the time before incoming internal calls and CO/PBX transferred calls are forwarded to another station number when the called party does not answer.

TRUNK-TO-TRUNK TRANSFER AUTOMATIC DISCONNECT TIME SELECTION

System	Data No.
1	17

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 7 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 1 hr. to 3 hr., press Dial Pad key 3.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
30 min.	1 hr.	2 hr.	3 hr.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-18 (Elapsed Call and SMDR Start Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	55		√
Telephone (LK 4)	19		√
Telephone (LK 4)	20		√

GENERAL INFORMATION - TRUNK-TO-TRUNK TRANSFER AUTOMATIC DISCONNECT TIME SELECTION

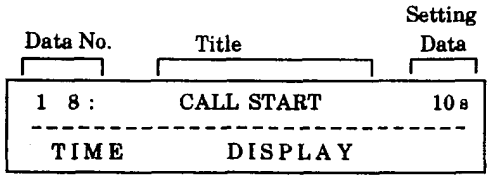
This Memory Block is used to specify the time duration when a Trunk-to-Trunk transfer is automatically disconnected.

ELAPSED CALL AND SMDR START TIMER SELECTION

System	Data No.
1	18

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 8 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 10 sec. to 20 sec., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
10 sec.	20 sec	30 sec.		
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-19 (Disconnect Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - ELAPSED CALL AND SMDR START TIMER SELECTION

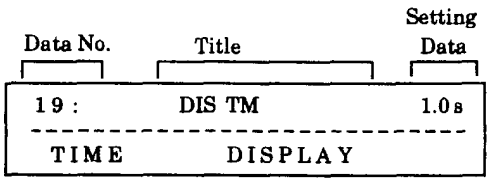
This Memory Block specifies the time interval after dialing before displaying the call duration time on a Multiline Terminal.

DISCONNECT TIME SELECTION

System	Data No.
1	19

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 1 9 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 1.0 sec. to 3.0 sec., press Dial Pad key 7.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
0.3 sec.	0.5 sec.	0.7 sec.	1.0 sec.	1.5 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
2.0 sec.	2.5 sec.	3.0 sec.	3.5 sec.	4.0 sec.

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-20 (Automatic Release Disconnection Signal Detection Time Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. When a call, originating on a CO/PBX line, is interrupted or dropped while in progress and an attempt is made to re-access the line, the seized line must be disconnected and cleared before it can be accessed again.
2. The system must be idle before this data is written into memory.
3. The Drop Key timer is also affected by this Memory Block.

■ Additional Programming

None

GENERAL INFORMATION - DISCONNECT TIME SELECTION

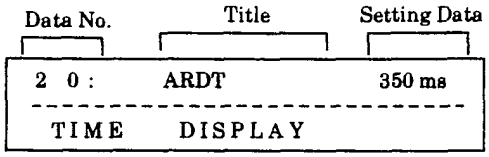
This Memory Block specifies the minimum time before a CO/PBX line that has been disconnected can be accessed again.

AUTOMATIC RELEASE DISCONNECTION SIGNAL DETECTION TIME SELECTION

System	Data No.
1	20

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [2] [0] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 350 ms. to 300 ms., press Dial Pad key 6.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
5 sec.	50 ms.	100 ms.	150 ms.	200 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
250 ms.	300 ms.	350 ms.	400 ms.	500 ms.

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-21 (Voice/Tone Signal Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - AUTOMATIC RELEASE DISCONNECTION SIGNAL DETECTION TIME SELECTION

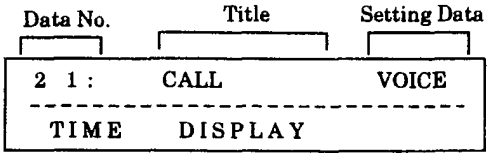
This Memory Block specifies the signal detection time for release of a CO/PBX line when a disconnect signal is received from the distant CO/PBX.

VOICE/TONE SIGNAL SELECTION

System	Data No.
1	21

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 2 1 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Voice to Tone, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Tone	Voice			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-22 (BGM Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	14		√

NOTES:

1. Switching from voice to signal tone or from signal tone to voice can be accomplished by dialing a station number, then dialing the digit 1.
2. If signal tone is programmed in this Memory Block, the called party cannot answer handsfree unless the originator of the call switches to voice by dialing the digit 1.
3. Memory Block 4-14 (Voice Call Block Selection) can be used to restrict voice signaling.
4. Voice Mail ports can only send a tone signal.

GENERAL INFORMATION - VOICE/TONE SIGNAL SELECTION

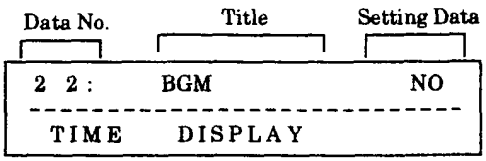
This Memory Block is used to determine if signal tone or voice is used first for an internal call.

BGM SELECTION

System	Data No.
1	22

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 2 2 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Speaker, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Tel	SP	Tel and SP	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

Default

Tel = Multiline Terminal

SP = External Speaker

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-23 (System Speed Dial Override Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	30		√

GENERAL INFORMATION - BGM SELECTION

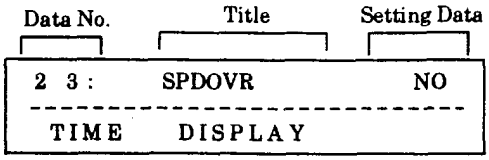
This Memory Block specifies if the tone from an external music source will be provided for background music to station speakers and/or external paging speaker.

SYSTEM SPEED DIAL OVERRIDE SELECTION

System	Data No.
1	23

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 2 3 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

Yes = System Speed Dial buffers 60~99 for feature class 0~6 will override code restrictions.

No = System Speed Dial buffers 60~99 for feature class 0~6 will not override code restrictions.

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-24 (System Speed Dial Display Station Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. System Speed Dial buffers 20~59 cannot be programmed to override Code Restrictions.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	24		√
Telephone (LK 4)	19		√
Telephone (LK 4)	20		√

GENERAL INFORMATION - SYSTEM SPEED DIAL OVERRIDE SELECTION

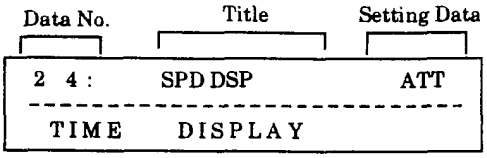
This Memory Block is used to allow or deny the override of Code Restrictions of System Speed Dial 60~99.

System	Data No.
1	24

SYSTEM SPEED DIAL DISPLAY STATION SELECTION

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 2 4 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Attendant Position (ports 01 and 02) to All Multiline Terminals, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Att.	All			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

Att: Attendant Positions (ports 01 and 02)

All: All Multiline Terminals

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-25 (Ring Transfer Selection).
6. Press the **SPKR** key to go back on-line.

■ **Additional Programming**

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	55		√
Telephone (LK 4)	19		√
Telephone (LK 4)	20		√

GENERAL INFORMATION - SYSTEM SPEED DIAL DISPLAY STATION SELECTION

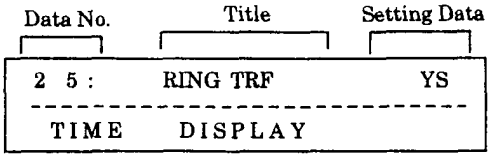
This Memory Block specifies the terminal that can display the telephone number of a System Speed Dial buffer.

RING TRANSFER SELECTION

System	Data No.
1	25

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [2] [5] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-26 [Time Display (12h/24h) Selection].
6. Press the **SPKR** key to go back on-line.

NOTES:

1. All ports are affected by this Memory Block, including Voice Mail ports.

■ Additional Programming

None

GENERAL INFORMATION - RING TRANSFER SELECTION

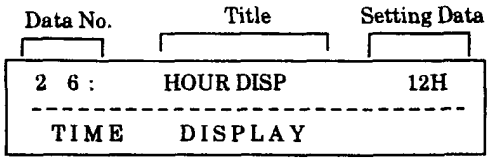
This Memory Block is used to allow or deny the use of the Ring Transfer feature.

TIME DISPLAY (12h/24h) SELECTION

System	Data No.
1	26

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 2 6 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 12 hr. to 24 hr., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
12 hr.	24 hr.			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-27 (Day/Night Mode Switching Time Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - TIME DISPLAY (12h/24h) SELECTION

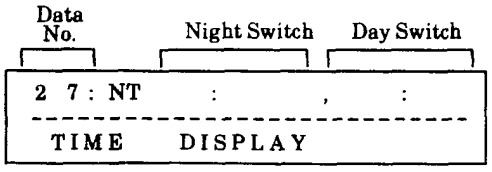
This Memory Block is used to specify either a 12-hour (12:00 AM - 11:59 PM) or 24-hour (00:00 - 23:59) time display.

DAY/NIGHT MODE SWITCHING TIME ASSIGNMENT

System	Data No.
1	27

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [2] [7] (Dial Pad)



4. Enter data by using the Dial Pad.
   - Example: To switch time, enter 08:00 and 20:00.

← [*] , [#] → : To move cursor.

Dial pad [0] ~ [9] : To enter data.

[HOLD] key : To clear all data when cursor is at Data No. position.

Default	Not Specified

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-28 (Receiving Volume Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. The system can be placed into Day or Night Mode at any time from a terminal assigned this feature.
2. The start times of Day Mode and Night Mode can be specified in System Programming to automatically switch modes at the specified times.
3. A start time for Day Mode only or Night Mode only cannot be programmed.
4. Day Mode and Night Mode should not be programmed to have the same start time.
5. The time is entered by the 24-hour time system (00:00 ~ 23:59) only.
6. The first input represents when Night Mode begins. The second input represents the beginning of Day Mode.

■ Additional Programming —

None

GENERAL INFORMATION - DAY/NIGHT MODE SWITCHING TIME ASSIGNMENT

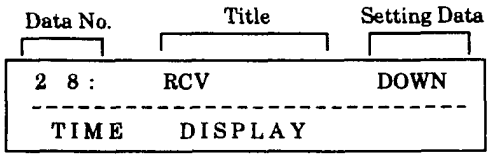
This Memory Block allows automatic switching of the system between Day Mode and Night Mode.

RECEIVING VOLUME SELECTION

System	Data No.
1	28

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [2] [8] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Down to Up, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Down	Up			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

Down = Return to normal
Up = Volume remains up

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-29 (Barge-In Alert Tone Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - RECEIVING VOLUME SELECTION

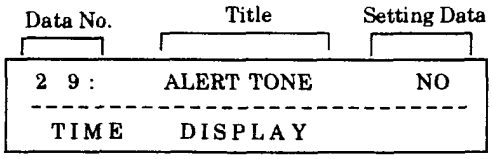
This Memory Block is used to specify whether the receiving volume is returned to normal (down) or remains (up) on a call after the handset is returned to the cradle.

BARGE-IN ALERT TONE ASSIGNMENT

System	Data No.
1	29

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [2] [9] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

No = Alert Tone Deny
Yes = Alert Tone Allow

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-30 (External Speaker Connection Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. Barge-In applies only to CO/PBX line calls.

GENERAL INFORMATION - BARGE-IN ALERT TONE ASSIGNMENT

This Memory Block is used to specify whether the Barge-In Alert Tone is allowed or denied.

EXTERNAL SPEAKER CONNECTION SELECTION

System	Data No.
1	30

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [0] (Dial Pad)

Data No. Title Setting Data

```
3 0 :    ESP CONN          YS
---------------------------
 TIME    DISPLAY
```

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

Yes = External Speaker connected

No = External Speaker not connected

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-31 (PBX Access Code Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - EXTERNAL SPEAKER CONNECTION SELECTION

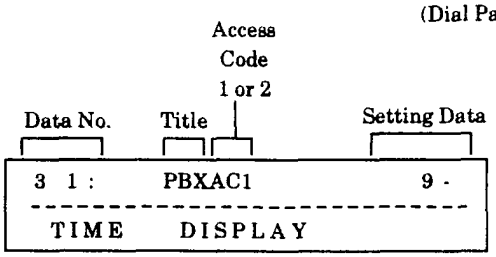
This Memory Block is used to specify whether an external speaker is connected to the system.

PBX/CTX ACCESS CODE ASSIGNMENT

System	Data No.
1	31

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [1] (Dial Pad)



4. Enter the data by using the Dial Pad.
   Example: To program, dial: **9**, **LNR/SPD**, **2**, **2**, **LNR/SPD**.
   (The **LNR/SPD** key is used to insert a pause.)

Default	Access Code 1 = 9 - Access Code 2 = Vacant

[←] [*], [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter data.

[LNR/SPD] key : To insert a pause.

[HOLD] key : To clear all data.

5. Pressing the **TRF** key will write the selected data and advance to the next PBX/CTX line Access Code. Press the **TRF** key to write the data and to advance to Memory Block 1-32 (Private Line Assignment).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. Features such as Code Restriction do not operate properly unless an Access Code indicating "behind a PBX/CTX line" is specified.
2. An automatic pause is not inserted in the number of an outgoing call on a CO line.
3. Up to six characters, three numeric and three pauses, can be specified.
4. A pause cannot be inserted as the first digit.
5. Only PBX-type lines are affected by this Memory Block.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
CO/PBX (LK 3)	09		√

GENERAL INFORMATION - PBX/CTX ACCESS CODE ASSIGNMENT

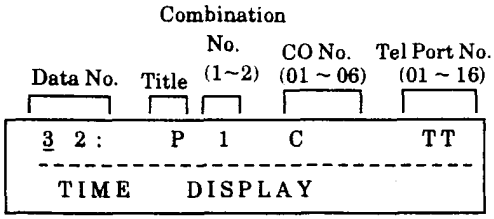
This Memory Block specifies a PBX/CTX line Access Code together with pauses for PBX/CTX line outgoing calls from a station of the system when connected behind a PBX.

PRIVATE LINE ASSIGNMENT

System	Data No.
1	32

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [2] (Dial Pad)



4. Use the Dial Pad key to enter data.
   - Example: CO line 5 is assigned as Private Line for Tel. Port No. 11.

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter CO No.

[HOLD] key : To clear all data when cursor is at CO No.

Default	Not Specified

5. Press the **TRF** key to write the data and advance to the second Private Line Assignment.
6. After entering the desired data, press the **TRF** key to write that data and advance to Memory Block 1-33 (Doorphone Connection Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. A maximum of two Private Lines can be assigned.
2. The two Private Lines can be assigned in any combination (refer to chart below).
3. Private Lines can be assigned to Single Line Telephones.

Combination Chart		
Private Line 1	Tel #	
	Tel #	
Private Line 2	Tel #	
	Tel #	

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Tenant (LK 2)	01		√

GENERAL INFORMATION - PRIVATE LINE ASSIGNMENT

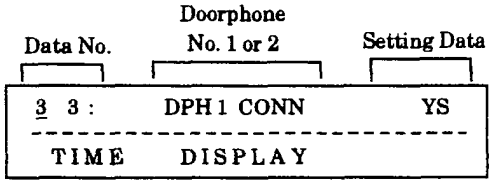
This Memory Block is used to assign an outside line for use as a Private Line. The Private Line cannot be seized by any other telephone, and no LED indication is provided to other terminals.

DOORPHONE CONNECTION SELECTION

System	Data No.
1	33

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 3 3 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key to write the data and advance to the second Doorphone option.
6. After entering the desired data, press the **TRF** key to write that data and advance to Memory Block 1-34 (SLT Hookflash Signal Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	17		√
Telephone (LK 4)	18		√

NOTES:

1. Two Doorphones can be connected.

GENERAL INFORMATION - DOORPHONE CONNECTION SELECTION

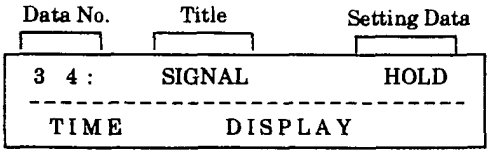
This Memory Block is used to specify whether Doorphones are connected to the system.

SLT HOOKFLASH SIGNAL SELECTION

System	Data No.
1	34

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 3 4 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Hold to Flash, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Hold	Flash			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-35 (Station Master Hunt Number Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	01		√

NOTES:

1. If Hold is specified, the CO/PBX line is put on Exclusive Hold.
2. If FLASH is specified, a timed hookflash signal is sent to the outside line.

GENERAL INFORMATION - SLT HOOKFLASH SIGNAL SELECTION

This Memory Block is used to specify whether a line is held, or if behind a PBX, a hookflash signal is sent to the CO/PBX when a Single Line Telephone user performs a hookflash.

STATION MASTER HUNT NUMBER SELECTION

System	Data No.
1	35

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [5] (Dial Pad)

Pilot No. 10~50

Data No.	Title	Setting Data
3 5 :	PILOT 10	NO
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

Default

5. Pressing the **TRF** key will write the selected data and advance to the next pilot number or to Memory Block 1-36 (CO/PBX Access/Release Selection), after pilot number 50.
6. Press the **SPKR** key to go back on-line.

NOTES:

1. Each Master Hunt Number Selection will only hunt within the specified tens group (example: 10~19, 20~29, etc.).
2. Station numbers assigned in a hunt group will always hunt in sequence from the lowest station in the group to the highest.

Pilot No.	Station No.
10	10~19
20	20~29
30	30~39
40	40~49
50	50~59

■ Additional Programming

None

GENERAL INFORMATION - STATION MASTER HUNT NUMBER SELECTION

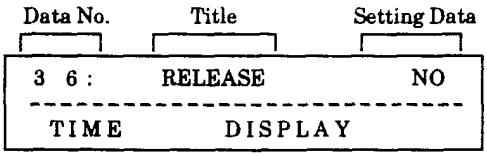
This Memory Block is used to assign a pilot number to a Master Station Hunt Number.

CO/PBX ACCESS/RELEASE SELECTION

System	Data No.
1	36

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 3 6 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-37 (VRS Message Recording Time Selection).
6. Press the **SPKR** key to go back on-line.

■ **Additional Programming**

None

GENERAL INFORMATION - ON-HOOK DIALING/RELEASE SELECTION

This Memory Block is used to determine whether a CO/PBX line disconnects or no response is provided when pressing a CO/PBX line key that is already accessed.

VRS MESSAGE RECORDING TIME SELECTION

System	Data No.
1	37

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [7] (Dial Pad)

Data No. / Title / Setting Data

```
3 7 :      VRS          15s × 16
-------------------------------
 TIME          DISPLAY
```

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change 16 messages to 8 messages, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
(15.0 sec.) *16	(30.0 sec.) *8	(60.0 sec.) *4	(120.0 sec.) *2	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

[shaded] Default

R.T. = Recording Time
* = No. of messages

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-38 [VRS Automatic Answer/Automated Attendant (Night) Selection].
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	38~44		√

NOTES:

1. VRS (Voice Recording Services) has a maximum of 240 seconds for message recording.
   - The number of messages that can be used in the VRS depends on the length of the particular messages (240 sec. ÷ Length of messages = No. of messages).

   Example:

Message length		15 sec.	:	16 messages
"	"	30 sec.	:	8 messages
"	"	60 sec.	:	4 messages
"	"	120 sec.	:	2 messages

GENERAL INFORMATION - VRS MESSAGE RECORDING TIME SELECTION

This Memory Block is used to specify the length and number of messages. (The number of messages is dependent on the length of the messages).

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (NIGHT) SELECTION

System	Data No.
1	38

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [8] (Dial Pad)

Data No.	Title	Setting Data
3 8 :	VRS NT	NO
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NO	YES			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default (shaded): Dial 0 / NO

No = No Automatic Answer/Automated Attendant
Yes = Automatic Answer/Automated Attendant

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-39 [VRS Automatic Answer/Automated Attendant (Day) Selection].
6. Press the **SPKR** key to go back on-line.

- Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (NIGHT) SELECTION

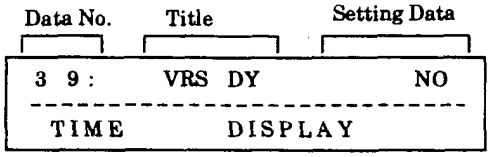
This Memory Block is used to specify whether VRS Automatic Answer/Automated Attendant (Night) is allowed or denied.

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (DAY) SELECTION

System	Data No.
1	39

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [3] [9] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NO	YES			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

No = No Automatic Answer/Automated Attendant
Yes = Automatic Answer/Automated Attendant

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-40 [VRS Automatic Answer/Automated Attendant (Weekend) Selection].
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (DAY) SELECTION

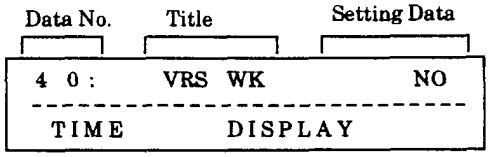
This Memory Block is used to specify whether VRS Automatic Answer/Automated Attendant (Day) is allowed or denied.

System	Data No.
1	40

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (WEEKEND) SELECTION

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 4 0 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NO	YES			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

No = No Automatic Answer/Automated Attendant
Yes = Automatic Answer/Automated Attendant

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-41 (VRS Manual Answer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (WEEKEND) SELECTION

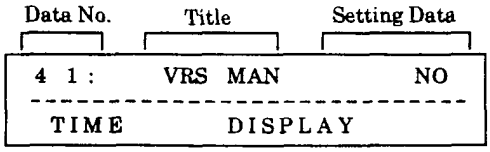
This Memory Block is used to specify whether VRS Automatic Answer/Automated Attendant (Weekend) is allowed or denied.

VRS MANUAL ANSWER SELECTION

System	Data No.
1	41

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [1] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

No = No Manual Answer
Yes = Manual Answer

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-42 [VRS Automatic Answer/Automated Attendant (Night) Time Assignment].
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	37		√

GENERAL INFORMATION - VRS MANUAL ANSWER SELECTION

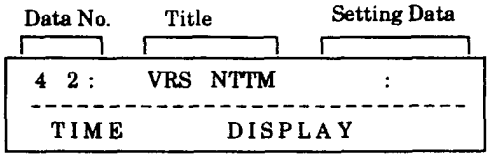
This Memory Block is used to specify whether VRS Manual Answer is allowed or denied.

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (NIGHT) TIME ASSIGNMENT

System	Data No.
1	42

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [2] (Dial Pad)



4. Enter the data by using the Dial Pad.
   - Example: To switch time, enter 20:00

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter Setting Data.

[HOLD] key : To clear all data when cursor is at Data No.

Default	Not Specified

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-43 [VRS Automatic Answer/Automated Attendant (Day) Time Assignment].
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (NIGHT) TIME ASSIGNMENT

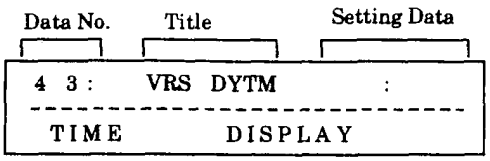
This Memory Block is used to allow automatic switching of the Automatic Answer/Automated Attendant feature into VRS Automatic Answer Night Mode.

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (DAY) TIME ASSIGNMENT

System	Data No.
1	43

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [3] (Dial Pad)



4. Enter the data by using the Dial Pad.
   - Example: To switch time, enter 05:00

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter Setting Data.

[HOLD] key : To clear all data when cursor is at Data No.

Default	Not Specified

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-44 [VRS Automatic Answer/Automated Attendant (Off) Time Assignment].
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (DAY) TIME ASSIGNMENT

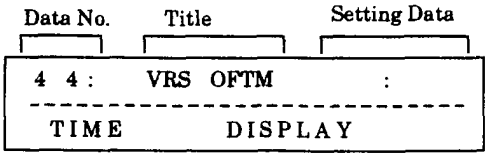
This Memory Block is used to allow automatic switching of the VRS Automatic Answer/Automated Attendant feature into Day Mode.

VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (OFF) TIME ASSIGNMENT

System	Data No.
1	44

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [4] (Dial Pad)



4. Enter the data by using the Dial Pad.
   - Example: To switch time, enter 08:00

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter Setting Data.

[HOLD] key : To clear all data when cursor is at Data No.

Default	Not Specified

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-45 (Doorphone Preference Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER/AUTOMATED ATTENDANT (OFF) TIME ASSIGNMENT

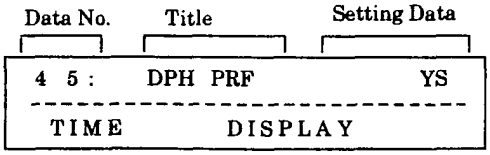
This Memory Block is used to automatically switch off the Automatic Answer/Automated Attendant feature.

DOORPHONE PREFERENCE SELECTION

System	Data No.
1	45

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [5] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-46 (Manual Line Seizure Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	33	√	
Telephone (LK 4)	17		√
Telephone (LK 4)	18		√

GENERAL INFORMATION - DOORPHONE PREFERENCE SELECTION

This Memory Block is used to specify whether each station user is allowed to answer Doorphone calls by lifting the handset.

MANUAL LINE SEIZURE SELECTION

System	Data No.
1	46

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4][6] (Dial Pad)

Data No.	Title	Setting Data
4 6 :	MANUAL	YS
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes (Manual Line Seizure) to No (No Manual Line Seizure), press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default (shaded: Dial 1 / Yes)

No = No manual line seizure
Yes = Manual line seizure

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-47 (Hold Free Transfer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - MANUAL LINE SEIZURE SELECTION

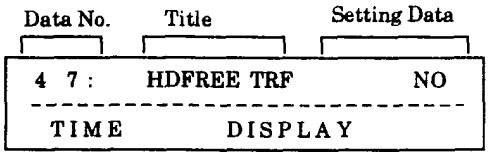
This Memory Block is used to specify whether an outgoing CO/PBX line can be seized by pressing the line key in an on-hook condition.

HOLD FREE TRANSFER SELECTION

System	Data No.
1	47

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 4 7 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

No = Hold Free Transfer Deny
Yes = Hold Free Transfer Allow

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-48 (General Purpose Relay Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. When Hold Free Transfer is assigned, trunk queuing cannot be accessed by pressing a specific CO/PBX line.

GENERAL INFORMATION - HOLD FREE TRANSFER SELECTION

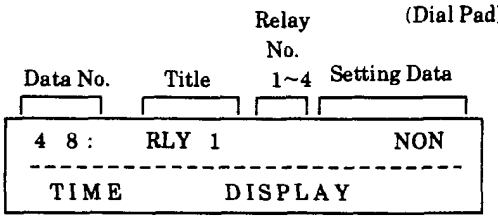
This Memory Block specifies whether Hold Free Transfer is allowed or denied.

GENERAL PURPOSE RELAY ASSIGNMENT

System	Data No.
1	48

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [8] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Non to Doorphone 1, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Non	Door Lock Release 1	Door Lock Release 2	External Speaker	MOH/BGM
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
External Tone Ringer	FAX			

Dial Pad keys Default

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [1] : To change the Setting Data

5. Pressing the **TRF** key will write the selected data and advance to the next relay or to Memory Block 1-49 (Synchronous Ringing Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. The General Purpose Relays are assigned as follows:
   a. Door Lock Release (1 and/or 2)
   b. External Amplifier Control (for External Paging)
   c. External Music On Hold (MOH)/ Background Music (BGM) Control
   d. External Tone Ring/Night Chime Control
   e. Facsimile (Relay 3 or 4 is recommended)
2. The General Purpose Relays cannot be assigned to more than one function at the same time.

■ Additional Programming

None

GENERAL INFORMATION - GENERAL PURPOSE RELAY ASSIGNMENT

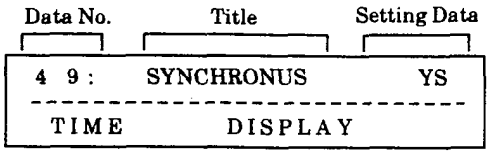
This Memory Block is used to assign a function to each of the General Purpose Relays.

SYNCHRONOUS RINGING SELECTION

System	Data No.
1	49

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [4] [9] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-50 (Elapsed Call Time Display Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. Synchronous Ringing does not apply to Off-Hook Ringing calls.
2. When Synchronous Ringing is off, a 2-second on, 4-second off ring pattern is provided by the system.

■ Additional Programming

None

GENERAL INFORMATION - SYNCHRONOUS RINGING SELECTION

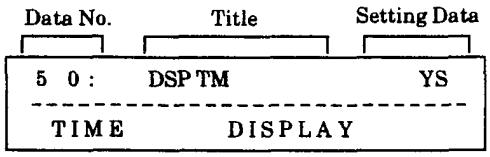
This Memory Block specifies whether incoming CO/PBX calls can be programmed for Synchronous Ringing.

ELAPSED CALL TIME DISPLAY SELECTION

System	Data No.
1	50

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [5] [0] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-51 (Music On Hold Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - ELAPSED CALL TIME DISPLAY SELECTION

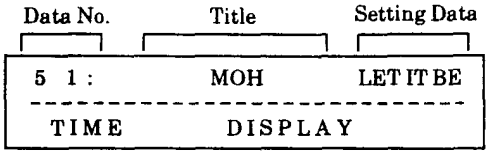
This Memory Block specifies whether elapsed call time display is allowed or denied on a system-wide basis.

MUSIC ON HOLD SELECTION

System	Data No.
1	51

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 5 1 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Let It Be to Melody Fair, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Let It Be	Melody			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-52 (External MOH Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. Music On Hold can be provided to CO/PBX and internal calls that are put on hold.
2. One of two melodies for Music On Hold can be selected in this Memory Block.

   Let It Be = "Let It Be"

   Melody = "Melody Fair"

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	52		√

GENERAL INFORMATION - MUSIC ON HOLD SELECTION

This Memory Block is used to specify the Music On Hold pattern for all CO/PBX lines and internally held calls when External Music On Hold is not selected in Memory Block 1-52 - External MOH Selection.

EXTERNAL MOH SELECTION

System	Data No.
1	52

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [5] [2] (Dial Pad)

Data No.	Title	Setting Data
5 2 :	EXT MOH	NO
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-53 (External Ring Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. When external MOH is set to Yes, the internal music source is turned off.

■ Additional Programming

None

GENERAL INFORMATION - EXTERNAL MOH SELECTION

This Memory Block is used to specify whether External MOH is connected (Yes or No).

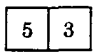
EXTERNAL RING SELECTION

System	Data No.
1	53

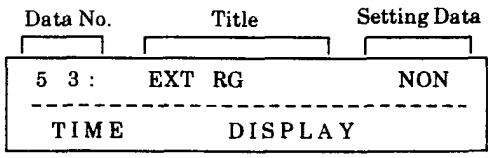
OPERATION:

1. Go off-line.
2. Enter: Mode System

3. Enter: Data No.



(Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Non to Speaker, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NON	RLY	SP	RLY&SP	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

NON = No Assignment
RLY = External Ring Control
SP = External Tone Ringer with External Speaker (Day Mode)

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-54 (Night Chime Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	48	√	

GENERAL INFORMATION - EXTERNAL RING SELECTION

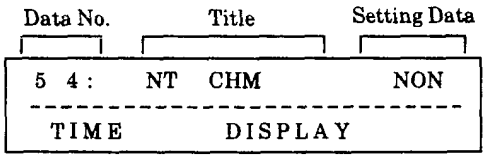
This Memory Block is used to specify whether external ringing activates a General Purpose Relay, an external speaker, both relays and speaker, or no external ringing.

NIGHT CHIME SELECTION

System	Data No.
1	54

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 5 4 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Non to Speaker, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NON	RLY	SP	RLY & SP	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

NON = No Assignment
RLY = Night Chime Control
SP = Night Chime with External Speaker (Night Mode)

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-55 (Class of Service Feature Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	48	√	

GENERAL INFORMATION - NIGHT CHIME SELECTION

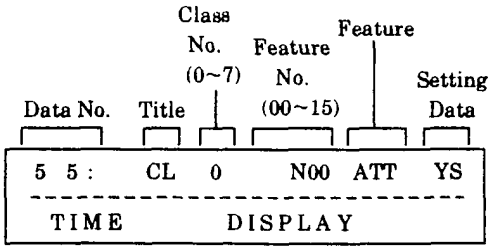
This Memory Block is used to specify whether external ringing activates a General Purpose Relay, an external speaker, both relays and speaker, or no external ringing.

CLASS OF SERVICE FEATURE SELECTION

System	Data No.
1	55

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 5 5 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No (Deny)	Yes (Allow)			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

Default	Class 0 :	No. 00, 03~15 (Yes) No. 01 and 02 (No)
	Class 1 :	No. 00~02 (No) No. 03~15 (Yes)
	Class 2~7 :	All (No)

5. Press the **TRF** key, the entered data will be written and the data for the next Feature No./Class No. will be displayed.
6. After entering the desired data for all the last Feature Nos. and Class Nos., press the **TRF** key to write the data and advance to Memory Block 1-56 (8-Digit Matching Table Assignment).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Eight classes (0~7) of feature restriction patterns allow a station user to activate particular features while restricting the user from other features.

Classes 1~7 programmed in this Memory Block are programmed as feature restriction classes. In Telephone Mode, Memory Blocks 4-19 and 4-20, specify any of the classes for each telephone to specify the features that the user can or cannot activate.

Class 00	Class 01	Feature No.	Feature
Y	N	00	Attendant Type Features
N	N	01	Barge-In Originate
N	N	02	Barge-In Receive
Y	Y	03	Paging Access
Y	Y	04	Off-Hook Ringing
Y	Y	05	Do Not Disturb
Y	Y	06	Call Forward - All Calls
Y	Y	07	Call Forward Busy/No Answer Set
Y	Y	08	Trunk Queuing
Y	Y	09	Automatic Callback
Y	Y	10	Callback Request
Y	Y	11	VRS Voice Message Set/Record/Verify/Cancel
Y	Y	12	Tone Override/Voice Over Busy/Camp-On Originate
Y	Y	13	Tone Override/Camp-On Receiving/Voice Over Busy Receive
Y	Y	14	Room Monitor Originate
Y	Y	15	Room Monitor Receive

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK4)	19		√
Telephone (LK4)	20		√

GENERAL INFORMATION - CLASS OF SERVICE FEATURE SELECTION

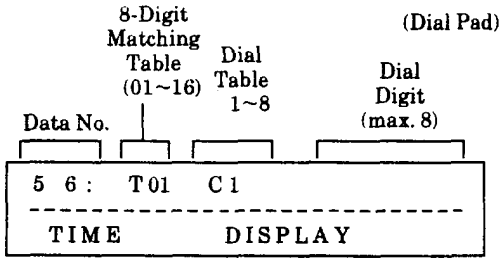
This Memory Block is used to allow or deny a particular Class of Service.

8-DIGIT MATCHING TABLE ASSIGNMENT

System	Data No.
1	56

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 5 6 (Dial Pad)



4. Enter the data by using the Dial Pad.

   Data: Matching Table: 01~16 (8-digit)
   Dial Table: 1~8
   Dial Digit: 0~9, *, #, NANP = X, P, N (Max. eight digits)

   ← [*] , [#] → : To move cursor.

   Dial pad [0] ~ [9] : To enter Setting Data.

   [HOLD] key : Set Data Clear

Operation Data	Dial Number	Operation
X	0~9, *, #	LNR/SPD key + 7
P	0~1	LNR/SPD key + 8
N	2~9	LNR/SPD key + 9
*	*	LNR/SPD key + *
#	#	LNR/SPD key + #

5. Press the **TRF** key, the entered data will be written and the data for the next Dial Table/8-Digit Matching Table will be displayed.
6. After entering the desired data for the last Dial Tables and 8-Digit Matching Tables, press the **TRF** key to write the data and advance to Memory Block 1-57 (Class Allow/Deny Assignment).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. There are 16, 8-Digit Matching Tables. Each 8-Digit Matching Table contains eight Dial Tables. Each Dial Table can be assigned a maximum of eight digits, including *, #, X, P, and N.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	58		√
Telephone (LK 4)	22		√

GENERAL INFORMATION - 8-DIGIT MATCHING TABLE ASSIGNMENT

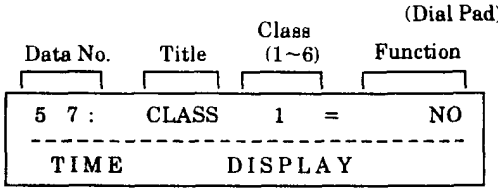
This Memory Block is used to assign the outgoing dial digits for Code Restriction (except OCC Dial Digits). There are two ways to program this assignment: a) If the user dials a digit(s) and there is a match, the system can Allow free dialing or Deny dialing by disconnecting. This is programmed in Memory Block 1-58 (8-Digit Matching Table to Class Assignment). b) If the user dials a digit(s) and there is not a match, the system can allow free dialing or deny dialing by disconnecting. This is programmed in Memory Block 1-57 (Class Allow/Deny Assignment).

CLASS ALLOW/DENY ASSIGNMENT

System	Data No.
1	57

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [5] [7] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

No = Deny
Yes = Allow

Default	Class 0 Yes (allow) [fixed] Class 1~4 Yes (allow) Class 5~6 No (deny) Class 7 No (deny) [fixed]

5. Press the **TRF** key, the entered data will be written and the data for the next Class No. will be displayed.
6. After entering the desired data for the last Class No., press the **TRF** key to write the data and advance to Memory Block 1-58 (8-Digit Matching Table to Class Assignment).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Class 0 is fixed as Yes (allow).
2. Class 7 is fixed as No (deny).
3. Only Classes 1~6 are programmable and can be accessed from this Memory Block.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	56		✓
System (LK1)	58		✓

GENERAL INFORMATION - CLASS ALLOW/DENY ASSIGNMENT

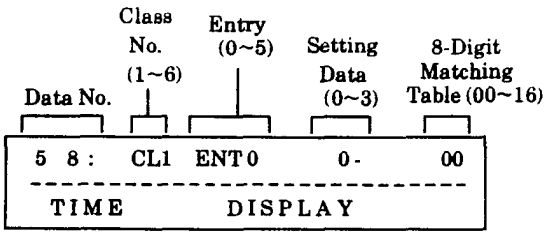
This Memory Block allows the assignment of allow or deny for the Class Assignment tables. This assignment is used when there is no match in the 8-Digit Matching Table or if numbers overlap (duplicate numbers with different Allow/Deny designations within the same Class of Service table) in the 8-Digit Matching Tables.

8-DIGIT MATCHING TABLE TO CLASS ASSIGNMENT

System	Data No.
1	58

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [5] [8] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.

   Class: 1~6 8-Digit Matching Table 01~16 and 00 = Not Assigned

   Entry: 0~5

   Setting Data:

   0 = Deny
   1 = Allow
   2 = Deny (OCC Calls Only)
   3 = Allow (OCC Calls Only)

5. Press the **TRF** key, the entered data will be written and the data for the next Class Assignment Table/Class No. will be displayed.
6. After entering the desired data for the last Class Assignment Tables and Classes, press the **TRF** key to write the data and advance to Memory Block 1-59 (8-Digit Matching Table to Trunk Group Assignment).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Class 0 is fixed as Allow.
2. Class 7 is fixed as Deny.
3. Only Classes 1~6 can be accessed from this Memory Block.
4. Only six 8-Digit Matching Tables can be assigned to each class.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
(0) Deny	(1) Allow			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	56		√
System (LK1)	57		√
System (LK1)	59		√

GENERAL INFORMATION - 8-DIGIT MATCHING TABLE TO CLASS ASSIGNMENT

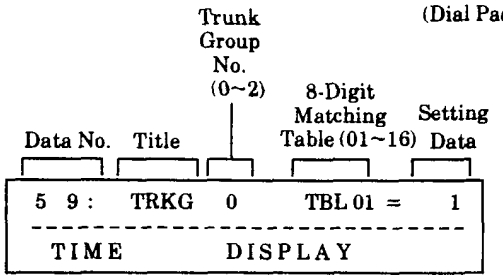
Each 8-Digit Matching Table (maximum of 6) can be programmed as Allow or Deny on a per class basis. Classes 0 and 7 are fixed (cannot be programmed). Classes 1~6 are programmable.

8-DIGIT MATCHING TABLE TO TRUNK GROUP ASSIGNMENT

System	Data No.
1	59

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 5 9 (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.

   Trunk Group No. : 0~2
   8-Digit Matching Table No. : 01~16
   Setting Data : 0 = Disable
   1 = Enable

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Disable	Enable			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key, the entered data will be written and the data for the next 8-Digit Matching Table/Trunk Group No. will be displayed.
6. After entering the desired data for the last 8-Digit Matching Tables and Trunk Groups, press the **TRF** key to write the data and advance to Memory Block 1-60 (OCC Table Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	56		√
System (LK1)	57		√
System (LK1)	58		√
CO/PBX (LK3)	11		√

GENERAL INFORMATION - 8-DIGIT MATCHING TABLE TO TRUNK GROUP ASSIGNMENT

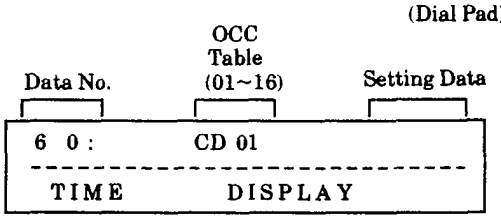
This Memory Block is used to assign each Trunk Group to the 8-Digit Matching Tables.

OCC TABLE ASSIGNMENT

System	Data No.
1	60

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [0] (Dial Pad)



4. Use the Dial Pad keys to change the Setting Data option.

   Data: OCC Table : 01~16 (8-digit)
   Dial Digit : 0~9, *, #, NANP= X, P, N (Max. eight digits)

   [←] [*] , [#] [→] : To move cursor.

   Dial pad [0] ~ [9] : To enter Setting Data.

   [HOLD] key : Set Data Clear

Operation Data	Dial Number	Operation
X	0~9, *, #	LNR/SPD key + 7
P	0*1	LNR/SPD key + 8
N	2~9	LNR/SPD key + 9
*	*	LNR/SPD key + *
#	#	LNR/SPD key + #

5. Press the **TRF** key, the entered data will be written and the data for the next OCC Table will be displayed.
6. After entering the desired data for the last OCC Tables, press the **TRF** key to write the data and advance to Memory Block 1-61 (OCC Table To Trunk Group Assignment).
7. Press the **SPKR** key to go back on-line.

Default	OCC Table 01~ 15 Vacant OCC Table 16 10XXX

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	61		√
System (LK1)	62		√

GENERAL INFORMATION - OCC TABLE ASSIGNMENT

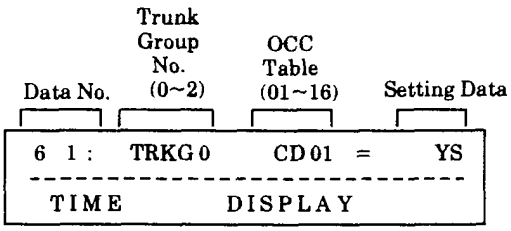
This Memory Block allows an OCC Code (maximum of eight digits) to be assigned in this table. Up to 16 numbers can be assigned in this table.

OCC TABLE TO TRUNK GROUP ASSIGNMENT

System	Data No.
1	61

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [1] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

Trunk Group No. : 0~2
OCC Table No. : 01~16
Setting Data : Yes = Enable
No = Disable

5. Press the **TRF** key, the entered data will be written and the data for the next OCC Table/Trunk Group will be displayed.
6. After entering the desired data for the last OCC Table and Trunk Group, press the **TRF** key to write the data and advance to Memory Block 1-62 (8-Digit Matching Table to OCC Table Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	60		√
System (LK1)	62		√

GENERAL INFORMATION - OCC TABLE TO TRUNK GROUP ASSIGNMENT

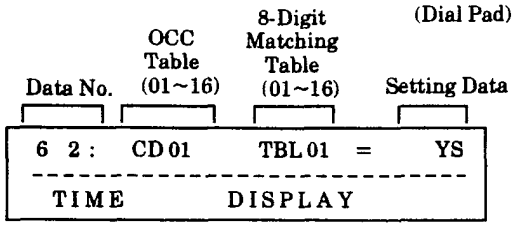
- This Memory Block is used to assign each of the 16 OCC Tables to each Trunk Group.

8-DIGIT MATCHING TABLE TO OCC TABLE ASSIGNMENT

System	Data No.
1	62

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 6 2 (Dial Pad)



4. Use the Dial Pad keys to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

8-Digit Matching : 01~16
OCC Table No. : 01~16
Setting Data : Yes = All OCC Numbers Assigned
No = Not Assigned

Default	No (Not Assigned)

5. Press the **TRF** key, the entered data will be written and the data for the next 8-Digit Matching Table/OCC Table will be displayed.
6. After entering the desired data for all the last 8-Digit Matching Table and OCC Table, press the **TRF** key to write the data and to advance to Memory Block 1-63 (Internal/External Paging Alert Tone Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	56		√
System (LK1)	60		√
System (LK1)	61		√

GENERAL INFORMATION - 8-DIGIT MATCHING TABLE TO OCC TABLE ASSIGNMENT

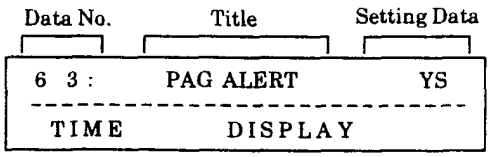
This Memory Block is used to assign each of the 8-Digit Matching Tables to each of the OCC Tables.

INTERNAL/EXTERNAL PAGING ALERT TONE SELECTION

System	Data No.
1	63

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [3] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-64 (SLT Transfer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - INTERNAL/EXTERNAL PAGING ALERT TONE SELECTION

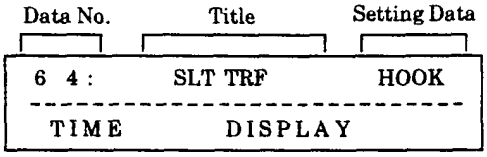
This Memory Block is used to determine whether a Call Alert Tone is provided when Internal/External Paging is used.

SLT TRANSFER SELECTION

System	Data No.
1	64

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [4] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Hook to Hang Up, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Hook	Hang Up			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

Hook = Hooking (Hookflash→ Station Number → Hookflash → Hang up) [SLT]
Hang Up = On-Hook (Hookflash→ Station Number → Hang up) [Voice mail]

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-65 [Printer Connected (Alarm) Selection].
6. Press the **SPKR** key to go back on-line.

NOTE:

1. This Memory Block affects Single Line Telephone/Voice Mail Ports.

■ Additional Programming

None

GENERAL INFORMATION - SLT TRANSFER SELECTION

This Memory Block is used to select the transfer function of a Single Line Telephone Voice Mail Port.

PRINTER CONNECTED (ALARM) SELECTION

System	Data No.
1	65

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6][5] (Dial Pad)

Data No.	Title	Setting Data
6 5 :	PRINTER	YS
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	**Dial 6**	**Dial 7**	**Dial 8**	**Dial 9**

Dial Pad keys — Shaded: Default (Dial 1 / Yes)

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-66 (SMDR Print Format).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. Program for Yes when a printer is connected.
2. SMDR cannot be used if this Memory Block is programmed for No.
3. Programming this Memory Block is required only when the SMDR-C-10 KTU unit is installed.

■ Additional Programming

None

GENERAL INFORMATION - PRINTER CONNECTED (ALARM) SELECTION

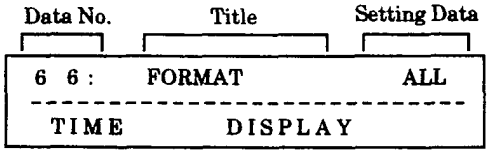
This Memory Block must be programmed for Yes when a printer is connected. If the printer is disconnected from the system, an alarm will sound at stations connected to Ports 01 and 02.

SMDR PRINT FORMAT

System	Data No.
1	66

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [6] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change All to Mask, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
All	Mask			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-67 (Voice Mail Access Code Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	65		√

NOTES:

1. This Memory Block is required only when the SMDR-C-10 KTU unit is installed in the system.

GENERAL INFORMATION - SMDR PRINT FORMAT

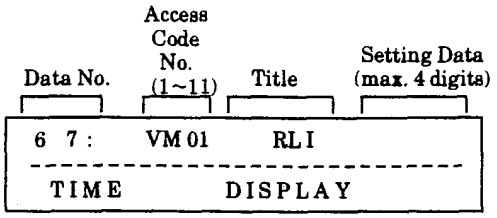
This Memory Block specifies if All digits are to be printed. If Mask is specified, the last four digits will be masked and "XXXX" is printed.

VOICE MAIL ACCESS CODE ASSIGNMENT

System	Data No.
1	67

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [7] (Dial Pad)



4. Enter the data by using the Dial Pad.

[←] [*] , [#] [→] : To move cursor.

Dial pad [0] ~ [9] : To enter Setting Data.

[LNR/SPD] + * = *

[LNR/SPD] + # = #

[HOLD] key : To clear Set Data

Default	Access Code 01~09:	All Blank
	Access Code 10:	641
	Access Code 11:	64*

5. Press the **TRF** key, the entered data will be written and the data for the next Voice Mail Access Code will be displayed.
6. After enetering the desired data for the last Voice Mail Access Code, press the **TRF** key to write the data and advance to Memory Block 1-68 (Voice Mail DTMF Delay Timer Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. A maximum number of four digits can be used as Access Codes.

Access Code No.	Access Feature
01	Remote Logon (Internal)
02	Direct Logon
03	Transfer Message
04	Record Message
05	Forward All Calls
06	Forward Busy
07	Forward No Answer
08	Remote Logon (Trunk)
09	DTMF Disconnect Signal
10	Message Wait Indication (set)
11	Message Wait Indication (cancel)

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	68		√
System (LK1)	69		√

GENERAL INFORMATION - VOICE MAIL ACCESS CODE ASSIGNMENT

This Memory Block is used to specify the Access Codes required for integrating to Voice Mail.

VOICE MAIL DTMF DELAY TIMER SELECTION

System	Data No.
1	68

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [8] (Dial Pad)

Data No. Title Setting Data

```
6 8 :   VM  DLY            1.0s
-------------------------------
  TIME        DISPLAY
```

4. Press the corresponding Dial Pad key to enter the Setting Data option.
   - To change 1.0 sec. to 2.0 sec., press Dial Pad key 4.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
0 sec.	0.1 sec.	0.5 sec.	1.0 sec.	2.0 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
4.0 sec.	6.0 sec.	8.0 sec.	10.0 sec.	14.0 sec.

Dial Pad keys Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-69 (Voice Mail DTMF Duration/Interdigit Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	67	√	
System (LK1)	69		√

GENERAL INFORMATION - VOICE MAIL DTMF DELAY TIMER SELECTION

This Memory Block is used to specify the delay time before DTMF tones are sent to the Voice Mail ports.

VOICE MAIL DTMF DURATION/INTERDIGIT TIME SELECTION

System	Data No.
1	69

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [6] [9] (Dial Pad)

Data No. Title Setting Data

```
6 9 :   VM  DUR          100/70
-------------------------------
  TIME       DISPLAY
```

4. Press the corresponding Dial Pad key to enter the Setting Data option.
   - To change 600/100 ms. to 100/70 ms., press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
70/60 ms.	100/50 ms.	100/70 ms.	400/100 ms.	600/100 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
900/200 ms.				

Dial Pad keys Default

Default	Duration Time:	600 ms.
	Interdigit Time:	100 ms.

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-70 (System Refresh Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - VOICE MAIL DTMF DURATION/INTERDIGIT TIME SELECTION

This Memory Block is used to specify the DTMF duration and Interdigit time for Voice Mail.

SYSTEM REFRESH TIMER SELECTION

System	Data No.
1	70

OPERATION:

1. Go off-line.
2. Enter: Mode System LK 1
3. Enter: Data No. 7 0 (Dial Pad)

Data No.	Title	Setting Data
7 0 :	REFRESH	4H
TIME	DISPLAY	

4. Press the corresponding Dial Pad key to enter the Setting Data option.
   - To change 4 hr. to 8 hr., press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No Refresh	4 hr.	8 hr.	12 hr.	24 hr.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 2-01 (Trunk to Tenant Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - SYSTEM REFRESH TIMER SELECTION

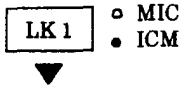
This Memory Block is used to assign the System Refresh Time. The system will refresh itself during idle periods.

VRS ANSWER MODE SELECTION

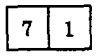
System	Data No.
1	71

OPERATION:

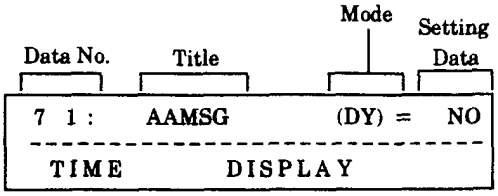
1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.



(Dial Pad)



Mode: DY = Day
NT = Night
WK = Weekend

Setting Data: NO = Automatic Answer
YS = Automated Attendant

4. Press the corresponding dial pad key to change setting data option.
   - To change NO to YS, press dial pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NO	YS			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key writes the selected data and advances to the next Memory Block 1-72 (Automated Attendant Answer Delay Time Assignment.)
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS ANSWER MODE SELECTION

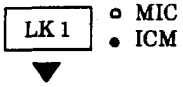
This Memory Block is used to specify the Day, Night, or Weekend Mode in which the Automatic Answer/Automated Attendant feature should answer incoming calls.

AUTOMATED ATTENDANT ANSWER DELAY TIME ASSIGNMENT

System	Data No.
1	72

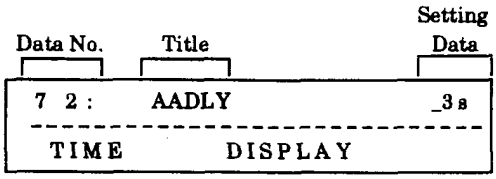
OPERATION:

1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.

(Dial Pad)



Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
0 sec.	3 sec.	6 sec.	12 sec.	18 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
24 sec.	30 sec.	36 sec.	42 sec.	48 sec.

Dial Pad keys Default

4. Use the dial pad to enter the seconds.
5. Pressing the **TRF** key writes the selected data and advances to the next Memory Block 1-73 (Automated Attendant PBR Release Timer Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - AUTOMATED ATTENDANT ANSWER DELAY TIME ASSIGNMENT

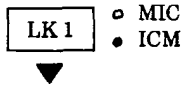
This Memory Block is used to assign the number of seconds before the Automated Attendant will answer an incoming CO/PBX call.

AUTOMATED ATTENDANT PBR RELEASE TIMER SELECTION

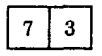
System	Data No.
1	73

OPERATION:

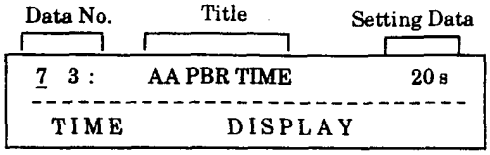
1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.



(Dial Pad)



4. Press the corresponding dial pad key to change setting data option.
   - To change 20 sec. to 30 sec., press Dial Pad key 3.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
0 sec.	10 sec.	20 sec.	30 sec.	40 sec.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
50 sec.	60 sec.			

Dial Pad keys Default

5. Pressing the **TRF** key writes the selected data and advances to Memory Block 1-74 (Automated Attendant Delay Ringing Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - AUTOMATED ATTENDANT PBR RELEASE TIMER SELECTION

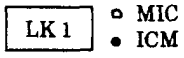
This Memory Block is used to specify the time interval during which a receiver is connected when a calling party, through an Automated Attendant trunk, is dialing.

AUTOMATED ATTENDANT DELAY RINGING TIME SELECTION

System	Data No.
1	74

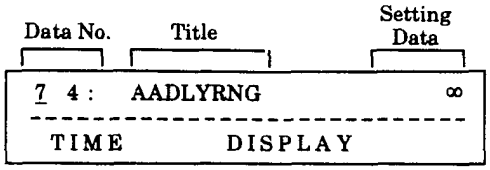
OPERATION:

1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.

(Dial Pad)



4. Press the corresponding dial pad key to change setting data option.
   - To change ∞ to 10 sec., press dial pad key 1.

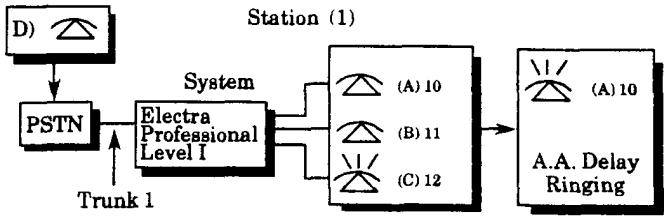
Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
∞	10 sec.	20 sec.	30 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key writes the selected data and advances to Memory Block 1-75 (Automated Attendant No Answer Disconnect Time Selection).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.



10~12 = Station Number

PSTN = Public Switching Telephone Network

- Trunk 1 is assigned to Automated Attendant Trunk.
- Automated Attendant transfers to station 12.
- Unanswered transfer delay rings to station 10.

NOTES:

1. When outside party D wishes to speak to station user A:
   a. Dial the telephone number corresponding to Trunk 1.
   b. Confirm Automated Attendant message.
   c. Dial 1-digit extension.
2. At station A:
   a. The ICM LED blinks and a ring tone different from the normal ringing tone is heard.
   b. The call can be answered by lifting the handset.
3. If station user A does not answer within the specified time:
   a. The ringing cycle changes to the normal cycle and CO line 1 starts ringing at stations assigned for Automated Attendant Delay Ring [Memory Block 4-24 (Automated Attendant Delay Ring Assignment)].
   b. Any station user (A, B, or C) can answer the call.

GENERAL INFORMATION - AUTOMATED ATTENDANT DELAY RINGING TIME SELECTION

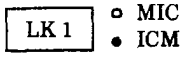
This Memory Block is used to specify the time for a No Answer at the transferred station before the Automated Attendant will change to ordinary CO/PBX ringing.

AUTOMATED ATTENDANT NO ANSWER DISCONNECT TIME SELECTION

System	Data No.
1	75

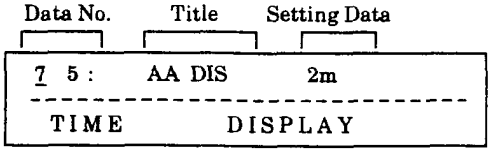
OPERATION:

1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.

(Dial Pad)



4. Press the corresponding dial pad key to change setting data option.
   - To change 2 min. to 3 min., press dial pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
1 min.	2 min.	3 min.	4 min.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Pressing the **TRF** key writes the selected data and advances to Memory Block 1-76 (Automated Attendant No DTMF Detect Selection).
6. Press the **SPKR** key to go back on-line.

NOTES:

1. If the called party does not answer within the predetermined time, the call is disconnected.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - AUTOMATED ATTENDANT NO ANSWER DISCONNECT TIME SELECTION

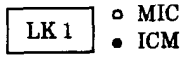
This Memory Block is used to determine how long the Automated Attendant will ring a station before disconnecting the caller.

AUTOMATED ATTENDANT NO DTMF DETECT SELECTION

System	Data No.
1	76

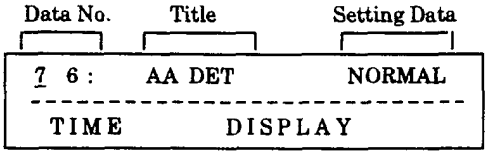
OPERATION:

1. Go off-line.
2. Enter: Mode System



3. Enter: Data No.

(Dial Pad)



4. Press the corresponding dial pad key to change data option.
   - To change Normal Call to Release, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Normal Call	Release			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key writes the selected data and advances to Memory Block 1-77 (Automated Attendant Access Code Assignment).
6. Press the **SPKR** key to go back on-line.

■ Additional Programming—

Refer to Section 6 - Guide to Feature Programming in this chapter.

NOTES:

1. Normal Call: If no DTMF tone(s) or undefined tone(s) is received from the calling party, before the PBR Release Timer expires, the system will ring at Delayed Ringing position(s) assigned in Memory Block 4-24 (Automated Attendant Delay Ring Assignment.
2. Release Set: If no DTMF tones are received from the calling party, before the PBR Release Timer expires, the system will disconnect the call.

GENERAL INFORMATION - AUTOMATED ATTENDANT NO DTMF DETECT SELECTION

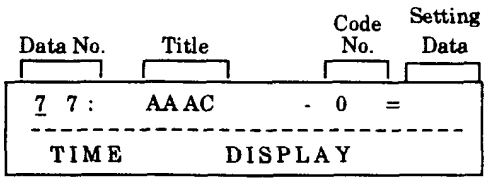
This Memory Block is used to specify how a call answered by the Automated Attendant should be processed if a DTMF tone is not received.

AUTOMATED ATTENDANT ACCESS CODE ASSIGNMENT

System	Data No.
1	77

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1] ○ MIC ● ICM
3. Enter: Data No. [7] [7] (Dial Pad)



4. Enter code number using the dial pad.

   Dial pad [0] ~ [9] : To enter data.

   Setting Data: Station Number (10 ~ 59)
   Delayed Ringing Position (00)

5. Pressing the **TRF** key writes the selected data and advances to the next Code No.
6. After all data has been entered, pressing the **TRF** key writes the selected data and advances to Memory Block 1-01 [Hookflash Time Selection (Multiline Terminal)].
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - AUTOMATED ATTENDANT ACCESS CODE ASSIGNMENT

This Memory Block is used to route a call that has come in to the Automated Attendant by entering a 1-digit code.

FAX LINE RESERVATION TIMER SELECTION

System	Data No.
1	78

OPERATION:

1. Go off-line.
2. Enter: Mode System [LK 1]
3. Enter: Data No. [7] [8] (Dial Pad)

Data No. Title Setting Data

```
7 8 :    FAXRSV    =    30
-------------------------
 TIME      DISPLAY
```

4. Press the corresponding Dial Pad key to enter the Setting Data option.
   - To change 30 sec. to 60 sec., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
30 sec.	60 sec.	120 sec.	240 sec.	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Pressing the **TRF** key will write the selected data and advance to Memory Block 1-01 [Hookflash Time Selection (Multiline Terminal)].
6. Press the **SPKR** key to go back on-line.

GENERAL INFORMATION - FAX LINE RESERVATION TIMER SELECTION

This Memory Block is used to specify the time the CO/PBX line is reserved for exclusive use by a facsimile machine.

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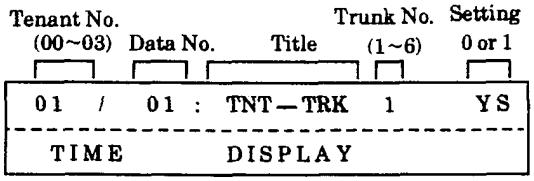
TRUNK TO TENANT ASSIGNMENT

Tenant	Data No.
2	01

OPERATION:

1. Go off-line.
2. Enter: Mode Tenant [LK 2]
3. Enter: Data No. [0] [1] (Dial Pad)



4. Press the corresponding dial pad to change the Setting Data option.

   [*] , [#] → : To move cursor.

   Dial pad [0] ~ [9] : To enter data.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

5. Press the **TRF** key to write the selected data; data for the next Trunk No. and Tenant No. are displayed.
6. After entering the desired data for the last Trunk No. and Tenant No., press the **TRF** key to write the data (no advance).
7. Press the **SPKR** key to go back on-line.

Default	Tenant 00:	CO/PBX lines 01~06 Assigned (Yes)
	Tenant 01~03:	CO/PBX lines 01~06 Assigned (No)

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	09		√

GENERAL INFORMATION - TRUNK TO TENANT ASSIGNMENT

This Memory Block specifies assignment of CO/PBX lines to each tenant group.

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TELEPHONE NUMBER TO TRUNK ASSIGNMENT

CO/PBX	Data No.
3	01 ~ 06

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [0][1] ~ [0][6] (Dial Pad)

Data No. (CO/PBX No. 01~06) Setting Data (13 digits max.)

```
0 1 / _
---------------------------
 TIME        DISPLAY
```

4. Enter data using the dial pad.
   - To program 214-753-4000, enter **214-753-4000** using the dial pad.

[←] [*] , [#] [→] : To move cursor

Dial pad [0] ~ [9] : To enter data (13 digits max.)

[LNR/SPD] key : "-" (Hyphen)

[#] key : " " (Space)

[HOLD] key : To clear data

Default: Not Specified

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-07 (CO/PBX DTMF Duration/Interdigit Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - TELEPHONE NUMBER TO TRUNK ASSIGNMENT

This Memory Block specifies telephone numbers for the CO/PBX lines accommodated so that the telephone number of a seized CO/PBX line is displayed on the LCD of the telephone when originating or answering a CO/PBX call. (13 digits maximum)

CO/PBX	Data No.
3	07

CO/PBX DTMF DURATION/INTERDIGIT ASSIGNMENT

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [0][7] (Dial Pad)

```
CO/PBX No.  Data
 (01~06)    No.      Title       Setting Data

 0 1 /      07       MF                 70/60
 -----------------------------------------
   TIME          DISPLAY
```

4. Move the cursor to the data position, and press the corresponding dial pad to change Setting Data option.
   - To change Digit DTMF Duration - 70 ms. and Interdigit Time - 60 ms. to D.T - 100 ms. and I.T. to 70 ms., press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
D.T. 70 ms. I.T. 60 ms.	D.T. 100 ms. I.T. 70 ms.	D.T. 400 ms. I.T. 100 ms.	D.T. 600 ms. I.T. 100 ms.	D.T. 900 ms. I.T. 200 ms.
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
00/0				

Dial Pad keys

(shaded) Default

D.T. = DTMF Digit Duration
I.T. = Interdigit Time

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-08 (Trunk Status Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. When DTMF is selected using Memory Block 3-10 [CO Line Section (Installed, DP, DTMF)] specify the time duration and the interdigit interval between digits sent.
2. Dial Pad key 5 is used for Special Test Mode (internal use only).

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
CO/PBX (LK 3)	10		√

GENERAL INFORMATION - CO/PBX DTMF DURATION/INTERDIGIT ASSIGNMENT

This Memory Block is used to specify the tone duration and interdigit time of DTMF signals.

TRUNK STATUS SELECTION

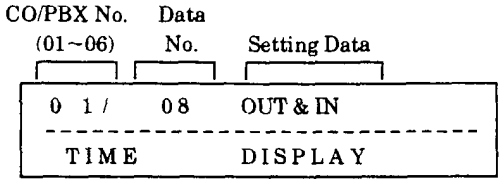
CO/PBX	Data No.
3	08

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]

3. Enter: Data No. [0] [8]

(Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change Out & In to In, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Out & In	In			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-09 (Trunk Type Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - TRUNK STATUS SELECTION

This Memory Block is used to specify whether a CO/PBX line is used for call origination and termination or termination only.

TRUNK TYPE SELECTION

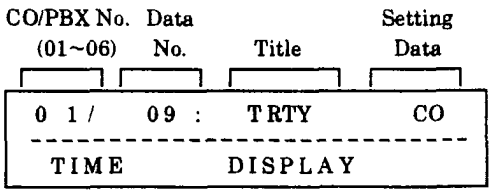
CO/PBX	Data No.
3	09

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]

   ▼
3. Enter: Data No. [0] [9]

   (Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change CO to PBX line, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
CO	PBX			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-10 [CO Line Selection (Installed, DP, DTMF)].
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - TRUNK TYPE SELECTION

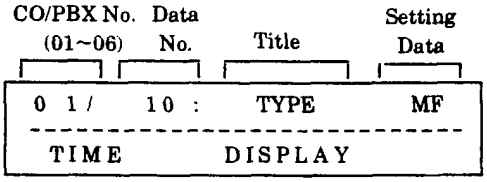
This Memory Block is used to specify each external line as CO Line or PBX line.

CO LINE SELECTION (INSTALLED, DP, DTMF)

CO/PBX	Data No.
3	10

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [0] (Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change MF to DP 10 pps, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
NIL	DP 10 pps	DP 20 pps	MF	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-11 (Trunk-to-Trunk Group Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	07		✓

GENERAL INFORMATION - CO LINE SELECTION (INSTALLED, DP/DTMF)

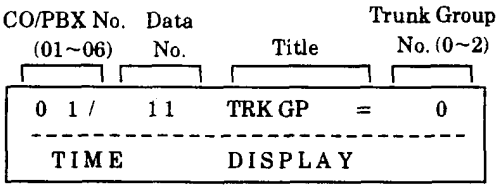
This Memory Block is used to specify each external line as DP (10 pps or 20 pps), DTMF, or not connected (NIL).

TRUNK-TO-TRUNK GROUP ASSIGNMENT

CO/PBX	Data No.
3	11

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [1] (Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.

   Example: Enter TRK GP 1 using the Dial Pad key.

   ← [*] , [#] → : To move cursor.

   Dial pad [0] ~ [9] : To enter data.

   Data { 0~2 : Trunk Group 0~2

Default	All CO/PBX line Group 0

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-12 (CO/PBX Line Code Restriction Override Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. There are three Trunk Groups available in the system.
2. Assign a Trunk Group Number to each CO/PBX Line (1~6).
3. When a Access Code corresponding to a Trunk Group is dialed, an idle CO/PBX line is automatically selected and seized from the same Trunk Group (CO/PBX line of either the same tenant or another tenant can be seized).

GENERAL INFORMATION - TRUNK-TO-TRUNK GROUP ASSIGNMENT

- This Memory Block is used to assign trunks to each Trunk Group.

CO/PBX LINE CODE RESTRICTION OVERRIDE SELECTION

CO/PBX	Data No.
3	12

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [2] (Dial Pad)

CO/PBX No. (01~06)	Data No.	Title	Setting Data
0 1 /	1 2	NONREST	N O
TIME		DISPLAY	

4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

Yes = Not Restricted
No = Restricted (Code Table check)

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-14 (Trunk-to-Trunk Transfer Yes/No Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - CO/PBX LINE CODE RESTRICTION OVERRIDE SELECTION

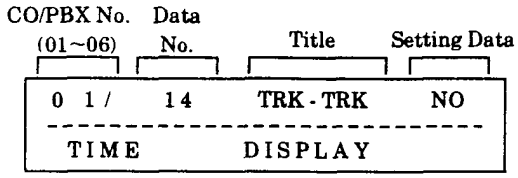
This Memory Block is used to specify CO/PBX lines to override the code restriction process on a per line basis.

TRUNK-TO-TRUNK TRANSFER YES/NO SELECTION

CO/PBX	Data No.
3	14

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [4] (Dial Pad)



← [*] , [#] → : To move cursor.

Dial pad [0] ~ [9] : To enter data.

4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-15 (VRS Automatic Answer Yes/No Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - TRUNK-TO-TRUNK TRANSFER YES/NO SELECTION

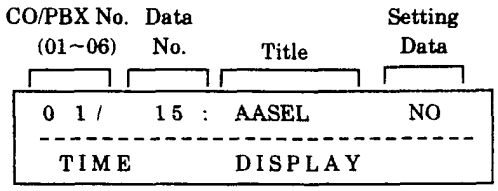
This Memory Block is used to specify whether to allow or deny Trunk-To-Trunk Transfer.

VRS AUTOMATIC ANSWER YES/NO SELECTION

CO/PBX	Data No.
3	15

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [5] (Dial Pad)



4. Move the cursor to the data position and press the corresponding dial pad to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

No = Deny
Yes = Allow

5. Pressing the **TRF** key writes the selected data; data for the next CO/PBX No. is displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-16 (PBX Night Transfer Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. The VRS Automatic Answer/Automated Attendant feature will answer calls in the Day, Night and Weekend Modes when assigned.

■ Additional Programming

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - VRS AUTOMATIC ANSWER YES/NO SELECTION

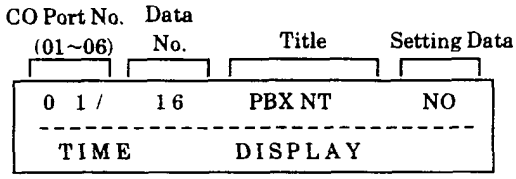
This Memory Block is used to specify whether the Automatic Answer/Automated Attendant feature is allowed or denied.

PBX NIGHT TRANSFER SELECTION

CO/PBX	Data No.
3	16

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [6] (Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

Yes = PBX (PBX code is deleted during night mode.)
No = PBX (PBX code is not deleted during night mode.)

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-17 (DP Dial Make Ratio Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - PBX NIGHT TRANSFER SELECTION

This Memory Block is used to automatically delete the PBX Access Code when the system is switched into Night Mode for each CO/PBX line.

DP DIAL MAKE RATIO SELECTION

CO/PBX	Data No.
3	17

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1][7] (Dial Pad)

CO/PBX No. (01~06)	Data No.	Title	Setting Data
0 1 /	17	INIT	39%

```
 0 1 /     17      INIT      39%
 ------------------------------
   TIME         DISPLAY
```

4. Press the corresponding dial pad key to change the Setting Data option.
   - To change 39% to 33%, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
33%	39% (Default)			
Dial 5	**Dial 6**	**Dial 7**	**Dial 8**	**Dial 9**

Dial Pad keys — Shaded: Default

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-01 (Telephone Number to Trunk Assignment).
7. Press the **SPKR** key to go back on-line.

- Additional Programming

  None

GENERAL INFORMATION - DP DIAL MAKE RATIO SELECTION

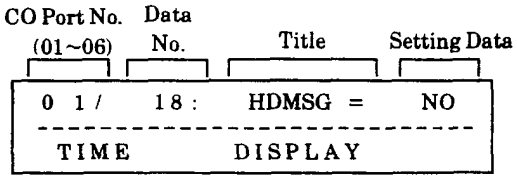
This Memory Block is used to select the make ratio for Dial Pulse lines.

VRS HOLD MESSAGE ASSIGNMENT

CO/PBX	Data No.
3	18

OPERATION:

1. Go off-line.
2. Enter: Mode CO/PBX [LK 3]
3. Enter: Data No. [1] [8] (Dial Pad)



4. Move the cursor to the data position, and press the corresponding Dial Pad to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

Yes = Allow
No = Deny

5. Press the **TRF** key to write the selected data; data for the next CO/PBX No. will be displayed.
6. After entering data for the last CO/PBX No., press the **TRF** key to write the data and advance to Memory Block 3-01 (Telephone Number to Trunk Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - VRS HOLD MESSAGE ASSIGNMENT

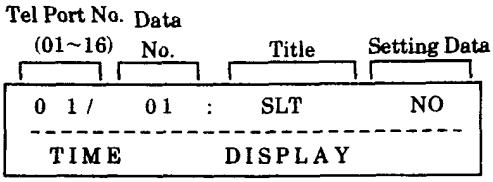
This Memory Block area is used to specify whether to send a Voice Message to the outside party when a call is placed on hold.

SLT CONNECTED YES/NO SELECTION

Telephone	Data No.
4	01

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [1] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-02 (Telephone to Tenant Assignment).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Specify "Yes" if the port number displayed is a Single Line Telephone.
2. Specify "No" if the port number in the display is a Multiline Terminal.
3. Do not specify "Yes" for telephones in Ports 01 and 02.
4. This assignment is automatically made when an SLT-F(1G)-10 ADP is installed on an ESI Port.

■ Additional Programming

None

GENERAL INFORMATION - SLT CONNECTED YES/NO SELECTION

This Memory Block is used to specify whether a Single Line Telephone is connected to a Multiline Terminal port.

TELEPHONE TO TENANT ASSIGNMENT

Telephone	Data No.
4	02

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
   ▼
3. Enter: Data No. [0] [2]
   (Dial Pad)

Tel Port No. (01~16)	Data No.	Title	Setting Data
01 /	02 :	TENANT	= 0

TIME DISPLAY

4. Enter data using the Dial Pad.

   Example: To enter TENANT 1 for TEL 01, enter 1 using the dial pad.

   ← [*] , [#] → : To move cursor.

   Dial pad [0] ~ [9] : To enter Setting Data.

Default	All Telephones Tenant 0

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-03 (Internal Zone Paging Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Stations can be assigned to four possible Tenant Numbers (0~3).
2. The system must be idle before this data is written into memory.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Tenant (LK2)	1		√

GENERAL INFORMATION - TELEPHONE TO TENANT ASSIGNMENT

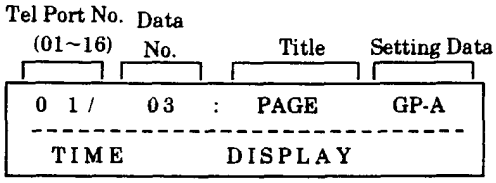
This Memory Block is used to specify tenant assignment on a per station basis.

INTERNAL ZONE PAGING SELECTION

Telephone	Data No.
4	03

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [3] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Group A to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Group A	Group B	Group C	
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-04 (Ringing Line Preference Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. Any of the following three zones can be specified.
   - Zone A: Paged by Dialing 71.
   - Zone B: Paged by Dialing 72.
   - Zone C: Paged by Dialing 73.
2. Telephones can be assigned to No Zone.
3. Single Line Telepohnes can initiate only an internal page.

GENERAL INFORMATION - INTERNAL ZONE PAGING SELECTION

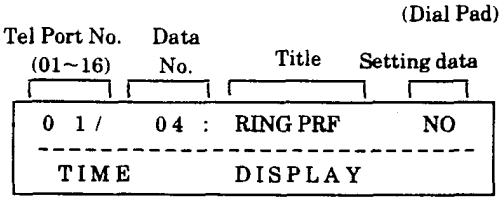
This Memory Block is used to place stations into internal page zones.

RINGING LINE PREFERENCE SELECTION

Telephone	Data No.
4	04

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [4] (Dial Pad)



4. Press the corresponding Dial Pad key to change the setting the data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-05 (DTMF/DP SLT Type Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. This Memory Block programming applies to Ring Assigned telephones only.
2. An intercom call cannot be originated when a ring assigned CO/PBX line is ringing on the telephone.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK 4)	15		√
Telephone (LK 4)	16		√

GENERAL INFORMATION - RINGING LINE PREFERENCE SELECTION

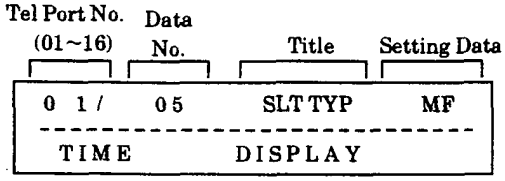
This Memory Block is used to specify whether each station user can automatically answer incoming CO/PBX calls on ring assigned CO/PBX Lines by lifting the handset.

DTMF/DP SLT TYPE SELECTION

Telephone	Data No.
4	05

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [5] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Tel Port No. 01 from MF to DP, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
DP	MF			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-06 (Station Number Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK4)	01		√

GENERAL INFORMATION - DTMF/DP SLT TYPE SELECTION

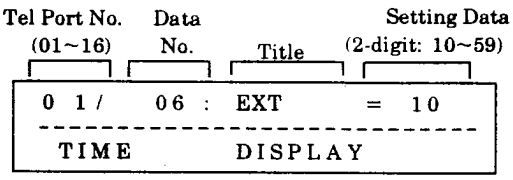
This Memory Block is used to specify the type of Single Line Telephone that is connected to the system (DP or DTMF) on a per port basis.

STATION NUMBER ASSIGNMENT

Telephone	Data No.
4	06

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [6] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Tel Port No. 01 to Station No. 11, enter 11 using the Dial Pad key.

   [←] [*] , [#] [→] : To move cursor.

   Dial pad [0] ~ [9] : To enter Setting Data.

Default	
Tel. No.	Sta. No. 2-digit
01	10
02	11
03	12
04	13
05	14
06	15
∫	∫
16	25

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-07 (Voice Mail/SLT Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Station Number Assignment is on a per station basis. (A telephone cannot have two station numbers and a station number cannot be assigned to more than one telephone.)

[Example]

Tel Port	Station Number	
	Default →	Change
01	10	11
02	11	10
03	12	46
04	13	59
05	14	Not changed (14)
06	15	Not changed (15)
∫	∫	∫
16	25	Not changed (25)

2. Station numbers can range from 10~59.

■ Additional Programming

None

GENERAL INFORMATION - STATION NUMBER ASSIGNMENT

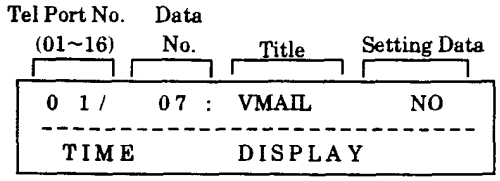
This Memory Block is used to assign a station number to each telephone.

VOICE MAIL/SLT SELECTION

Telephone	Data No.
4	07

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [7] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

No = SLT
Yes = Voic e Mail

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-08 (Distinctive Ringing Tone to Telephone Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - VOICE MAIL/SLT SELECTION

This Memory Block specifies whether an SLT port is used as Voice Mail or a Standard Single Line Telephone.

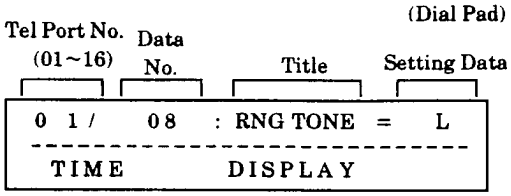
DISTINCTIVE RINGING TONE TO TELEPHONE SELECTION

Telephone	Data No.
4	08

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]

3. Enter: Data No. [0] [8] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Low to High, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Low (L)	Medium(M)	High (H)		
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-09 (3-Minute Alarm Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	28		√

GENERAL INFORMATION - DISTINCTIVE RINGING TONE TO TELEPHONE SELECTION

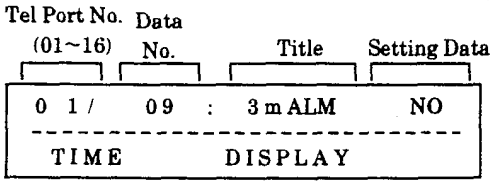
This Memory Block is used to specify the ring tone frequency for each telephone in the system as Low, Medium, or High.

3-MINUTE ALARM SELECTION

Telephone	Data No.
4	09

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [0] [9] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-10 (HFU Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. A warning tone (approximately one second in length) will sound every three minutes during CO/PBX calls.

■ Additional Programming

None

GENERAL INFORMATION - 3-MINUTE ALARM SELECTION

This Memory Block is used to specify whether a warning tone is generated at 3-minute intervals during an outgoing or incoming call.

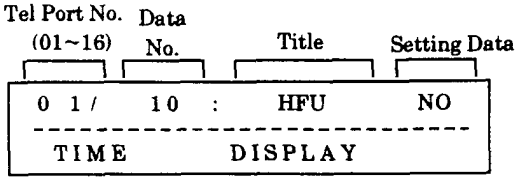
HFU SELECTION

Telephone	Data No.
4	10

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]

3. Enter: Data No. [1] [0] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys Default

No = Handsfree Unit not operational
Yes = Handsfree Unit operational

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-11 (Headset Connection Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - HFU SELECTION

This Memory Block is used to enable the built-in Handsfree Unit on a per station basis.

HEADSET CONNECTION SELECTION

Telephone	Data No.
4	11

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1] [1] (Dial Pad)

Tel Port No. (01~16) | Data No. | Title | Setting Data

```
01 / 11 : HEADSET NO
---------------------------
 TIME      DISPLAY
```

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes , press Dial Pad key 1.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-12 (Prime Line Assignment).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - HEADSET CONNECTION SELECTION

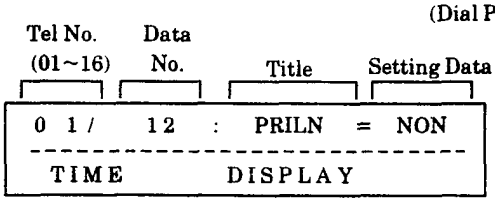
This Memory Block is used to specify whether a headset is connected to the Multiline Terminal.

PRIME LINE ASSIGNMENT

Telephone	Data No.
4	12

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1] [2] (Dial Pad)



4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change Non to Trunk 2, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Non	TK 1	TK 2	TK 3	TK 4
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
TK 5	TK 6			

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-13 (Attendant Group Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - PRIME LINE ASSIGNMENT

This Memory Block is used to enable the user to seize a specified trunk when going off-hook.

ATTENDANT GROUP SELECTION

Telephone	Data No.
4	13

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1][3] (Dial Pad)

Tel Port No. (01~16)	Data No.	Title	Setting Data
01 /	13 :	ATT	ATT1

TIME DISPLAY

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change ATT1 to ATT2, press Dial Pad key 1.
     ATT1: Attendant position Tel Port No. 1.
     ATT2: Attendant position Tel Port No. 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
ATT 1	ATT 2			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys ▒ Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-14 (Voice Call Block Selection).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - ATTENDANT GROUP SELECTION

This Memory Block is used to associate a station with a particular Attendant Position.

VOICE CALL BLOCK SELECTION

Telephone	Data No.
4	14

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1] [4] (Dial Pad)

Tel Port No. (01~16) | Data No. | Title | Setting Data

```
00 / 14 : V/RG NO
--------------------------
TIME DISPLAY
```

4. Press the corresponding Dial Pad key to change the Setting Data option.
   - To change No to Yes, press Dial Pad key 1.

   Yes: Tone call only
   No: Voice/Tone call

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys — Default

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-15 [CO/PBX Ring Assignment (Day Mode)].
7. Press the **SPKR** key to go back on-line.

NOTES:

1. When voice calls are set as block, incoming internal calls send a ring tone.

■ Additional Programming

None

GENERAL INFORMATION - VOICE CALL BLOCK SELECTION

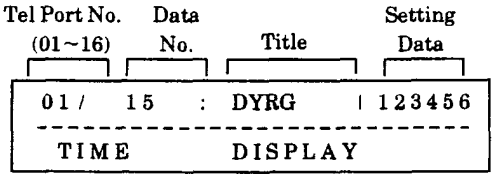
This Memory Block is used to block stations from receiving voice announced calls.

CO/PBX RING ASSIGNMENT (DAY MODE)

Telephone	Data No.
4	15

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1] [5] (Dial Pad)



4. Press the corresponding Dial Pad key (1~6) to change the Setting Data option.
   - The LCD indication changes to indicate the data each time a Dial Pad key is pressed.
   - If the Setting Data number appears on the LCD display, then an incoming call from the corresponding CO/PBX line will ring at the indicated station(1~16).

Setting Data: Dial 1~6 (Trunk No.)

Default	**Telephones connected to port numbers 01 and 02 ring on all incoming CO/PBX calls.** **Telephones connected to port numbers 03~16 do not ring on any incoming CO/PBX calls.**

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-16 [CO/PBX Ring Assignment (Night Mode)].
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - CO/PBX RING ASSIGNMENT (DAY MODE)

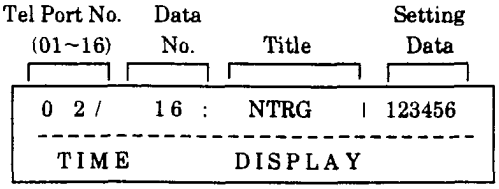
This Memory Block is used to assign Multiline Terminals to ring on incoming CO/PBX calls in the Day Mode.

CO/PBX RING ASSIGNMENT (NIGHT MODE)

Telephone	Data No.
4	16

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [1] [6] (Dial Pad)



4. Press the dial pad key corresponding to each CO/PBX number.
   - The LCD indication changes to indicate the data each time a Dial Pad key is pressed.
   - If the Setting Data number appears on the LCD display, then an incoming call from the corresponding CO/PBX line will ring at the indicated station (01~16).

Default	Telephones connected to port numbers 01 and 02 ring on all incoming CO/PBX calls. Telephones connected to port numbers 03~16 do not ring on any incoming CO/PBX calls.

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-17 [Doorphone Chime Assignment (Day Mode)].
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

GENERAL INFORMATION - CO/PBX RING ASSIGNMENT (NIGHT MODE)

This Memory Block is used to assign Multiline Terminals to ring on incoming CO/PBX calls in the Night Mode.

DOORPHONE CHIME ASSIGNMENT (DAY MODE)

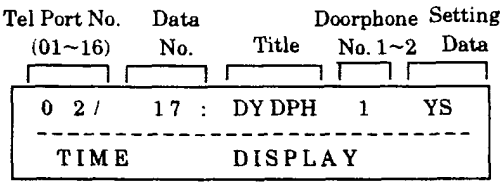
Telephone	Data No.
4	17

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]

3. Enter: Data No. [1] [7]

(Dial Pad)



4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

No = No Chime
Yes = Chime

Default	**Yes** Telephones connected to port numbers 01 and 02 ring on all Doorphone calls. **No** Telephones connected to port numbers 03~16 do not ring on all Doorphone calls.

5. Press the **TRF** key, the entered data will be written and the data for the next Doorphone No./Tel Port No. will be displayed.
6. After entering the desired data for the last Doorphone No./Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-18 [Doorphone Chime Assignment (Night Mode)].
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Single Line Telephones can be set, but will not chime.

■ Additional Programming

None

GENERAL INFORMATION - DOORPHONE CHIME ASSIGNMENT (DAY MODE)

This Memory Block is used to assign which stations will chime on a Doorphone call when the system is in the Day Mode.

DOORPHONE CHIME ASSIGNMENT (NIGHT MODE)

Telephone	Data No.
4	18

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]

▼

3. Enter: Data No. [1] [8]

(Dial Pad)

Tel Port No. (01~16) | Data No. | Title | Doorphone No. 1~2 | Setting Data

```
0 2 /   1 8 : NTDPH  1  YS
-------------------------
 TIME       DISPLAY
```

4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Yes to No, press Dial Pad key 0.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
No	Yes			
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9

Dial Pad keys

No = No Chime
Yes = Chime

Default	Yes Telephones connected to port numbers 01 and 02 ring on all Doorphone calls. No Telephones connected to port numbers 03~16 do not ring on all Doorphone calls.

5. Press the **TRF** key, the entered data will be written and the data for the next Doorphone No./Tel Port No. will be displayed.
6. After entering the desired data for the last Doorphone No./Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-19 [Station to Class of Service Feature Assignment (Day Mode)].
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

None

NOTES:

1. Single Line Telephones can be set, but will not chime.

GENERAL INFORMATION - DOORPHONE CHIME ASSIGNMENT (NIGHT MODE)

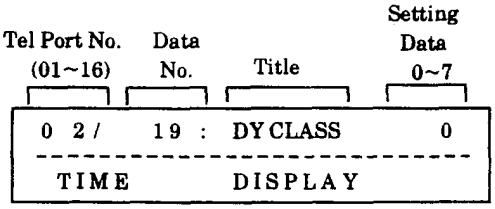
This Memory Block is used to assign which stations chime on a Doorphone call when the system is in Night Mode.

STATION TO CLASS OF SERVICE FEATURE ASSIGNMENT (DAY MODE)

Telephone	Data No.
4	19

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
   ▼
3. Enter: Data No. [1] [9]
   (Dial Pad)



4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Class 1 to Class 2, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Class 0	Class 1	Class 2	Class 3	Class 4
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
Class 5	Class 6	Class 7		

Dial Pad keys ▒ Default

Default	Port Numbers 01 and 02: Class 0 Port Numbers 03 ~ 16: Class 1

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-20 [Station to Class of Service Feature Assignment (Night Mode)].
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Refer to System Mode, Data Entry Number 55 Class of Service Feature Selection.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	55		√

GENERAL INFORMATION - STATION-TO-CLASS OF SERVICE FEATURE ASSIGNMENT (DAY MODE)

This Memory Block is used to specify the class to enable or disable features during the day mode on a per station basis.

STATION TO CLASS OF SERVICE FEATURE ASSIGNMENT (NIGHT MODE)

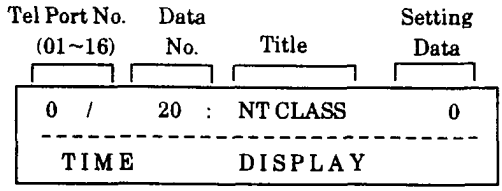
Telephone	Data No.
4	20

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]

3. Enter: Data No. [2] [0]

(Dial Pad)



4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Class 1 to Class 2, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Class 0	Class 1	Class 2	Class 3	Class 4
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
Class 5	Class 6	Class 7		

Dial Pad keys

Default	Port Numbers 01 and 02: Class 0 Port Numbers 03 ~ 16: Class 1

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-21 [Code Restriction Class Assignment (Day Mode)].
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Refer to System Mode, Data Entry No. 55 (Class of Service Feature Selection).

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK1)	55		√

GENERAL INFORMATION - STATION TO CLASS OF SERVICE FEATURE ASSIGNMENT (NIGHT MODE)

This Memory Block is used to specify the class to enable or disable features during the Night Mode on a per station basis.

CODE RESTRICTION CLASS ASSIGNMENT (DAY MODE)

Telephone	Data No.
4	21

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone LK 4
3. Enter: Data No. 2 1 (Dial Pad)

Tel Port No. (01~16)	Data No.	Title	Setting Data
0 1 /	21 :	DAY REST	0

TIME DISPLAY

4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Class 1 to Class 2, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Class 0	Class 1	Class 2	Class 3	Class 4
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
Class 5	Class 6	Class 7		

Dial Pad keys

Default	Port Numbers 01 and 02: Class 0 Port Numbers 03 ~ 16: Class 1

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-22 [Code Restriction Class Assignment (Night Mode)].
7. Press the **SPKR** key to go back on-line.

NOTES:

1. Refer to System Mode, Data Entry No. 55 (Class of Service Feature Selection).

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK3)	55		√
System (LK1)	56		√
System (LK1)	58		√

GENERAL INFORMATION - CODE RESTRICTION CLASS ASSIGNMENT (DAY MODE)

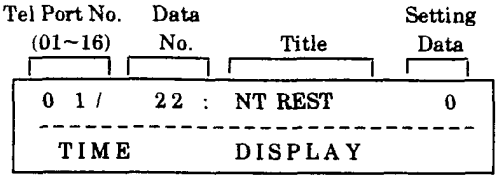
This Memory Block is used to specify Code Restriction Class in Day Mode on a per station basis.

CODE RESTRICTION CLASS ASSIGNMENT (NIGHT MODE)

Telephone	Data No.
4	22

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [2] [2] (Dial Pad)



4. Press the corresponding dial pad key to change the Setting Data option.
   - To change Class 1 to Class 2, press Dial Pad key 2.

Dial 0	Dial 1	Dial 2	Dial 3	Dial 4
Class 0	Class 1	Class 2	Class 3	Class 4
Dial 5	Dial 6	Dial 7	Dial 8	Dial 9
Class 5	Class 6	Class 7		

Dial Pad keys

Default	Port Numbers 01 and 02: Class 0 Port Numbers 03 ~ 16: Class 1

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-23 (Trunk Digit Restriction).
7. Press the **SPKR** key to go back on-line.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
System (LK 1)	55		√
System (LK 1)	56		√
System (LK 1)	58		√

GENERAL INFORMATION - CODE RESTRICTION CLASS ASSIGNMENT (NIGHT MODE)

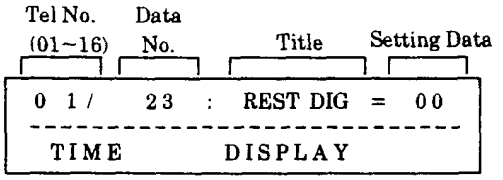
This Memory Block is used to specify Code Restriction Class in Night Mode on a per station basis.

TRUNK DIGIT RESTRICTION

Telephone	Data No.
4	23

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [2] [3] (Dial Pad)



4. Enter the data using the Dial Pad.

   Setting Data: 00, 01~99 digits
   (00: No Limit)

Default	00 (No Limit)

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-01 (SLT Connected Yes/No Selection).
7. Press the **SPKR** key to go back on-line.

NOTE:

1. This feature will have no affect on a station assigned to Code Restriction Class 0 or 7 in Memory Blocks 4-21 [Code Restriction Class Assignment (Day Mode)] and [Code Restriction Class Assignment (Night Mode)] 4-22.

■ Additional Programming

Mode	Data No.	System Data	
		Required	May Be Required
Telephone (LK4)	21		√
Telephone (LK4)	22		√

GENERAL INFORMATION - TRUNK DIGIT RESTRICTION

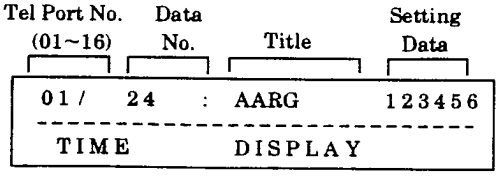
This Memory Block is used to specify, on a per station basis, the maximum number of digits that can be dialed while on an outside line.

AUTOMATED ATTENDANT DELAY RING ASSIGNMENT

Telephone	Data No.
4	24

OPERATION:

1. Go off-line.
2. Enter: Mode Telephone [LK 4]
3. Enter: Data No. [2] [4] (Dial Pad)



4. Press the corresponding Dial Pad key (1~6) to change the Setting Data option.
   - The LCD indication changes to indicate the data each time a Dial Pad key is pressed.
   - If the Setting Data number appears on the LCD display, then an incoming call from the corresponding CO/PBX line will ring at the indicated station(1~16).

   Setting Data: Dial 1~6 (Trunk No.)

Default	**Telephones connected to Port Nos. 01 and 02 ring on all incoming CO/PBX calls.** **Telephones connected to Port Nos. 03~16 do not ring on any incoming CO/PBX calls.**

5. Press the **TRF** key, the entered data will be written and the data for the next Tel Port No. will be displayed.
6. After entering the desired data for the last Tel Port No., press the **TRF** key to write the data and advance to Memory Block 4-01 (SLT Connected Yes/No Selection).
7. Press the **SPKR** key to go back on-line.

NOTES:

1. The ringing assignment is in effect for both Day and Night Modes.

■ **Additional Programming**

Refer to Section 6 - Guide to Feature Programming in this chapter.

GENERAL INFORMATION - AUTOMATED ATTENDANT DELAY RING ASSIGNMENT

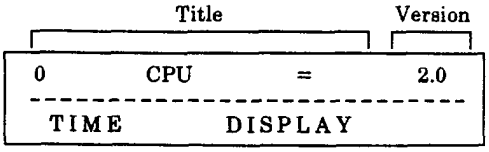
This Memory Block is used to assign which station(s) the incoming CO/PBX line(s) is transferred to (by the Automated Attendant) when the call is not answered within the preselected time period.

ROM VERSION CONFIRMATION

Special	Data No.
FNC	1

OPERATION:

1. Go off-line.
2. Enter: Mode Special FNC
3. Enter: Data No. 1 (Dial Pad)



Item	
0	CPU
1	MMC
2	COI
3	SMDR
4	PBR
5	VRS

4. Pressing the **TRF** key displays the version of the next item.
5. Press the **SPKR** key to go back on-line.

GENERAL INFORMATION - ROM VERSION CONFIRMATION

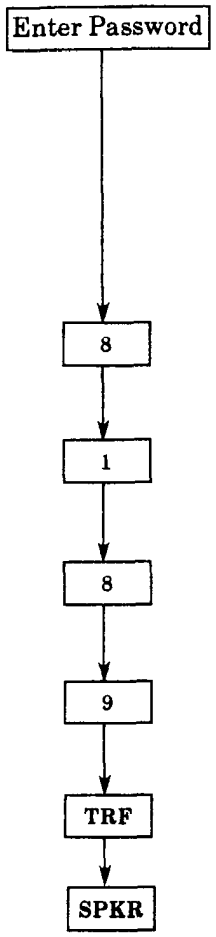
This Memory Block is used to confirm the version of ROM installed in the system.

SYSTEM SPEED DIAL MEMORY CLEAR

Special	Data No.
FNC	2

OPERATION:

1. Go off-line.
2. Enter: Mode Special FNC
3. Enter: Data No. 2 (Dial Pad)



CLR SYS SPD?	
TIME	DISPLAY

Use dial pad [0] ~ [9] : To enter password

WARNING

Before performing this procedure, completely understand implications of erasing all System Speed Dial buffers in the system.

NOTES:

1. Areas to be erased:
   - Speed Dial numbers 20~99.

GENERAL INFORMATION - SYSTEM SPEED DIAL MEMORY CLEAR

This Memory Block is used to clear all System Speed Dial programming in the system.

STATION SPEED DIAL MEMORY CLEAR

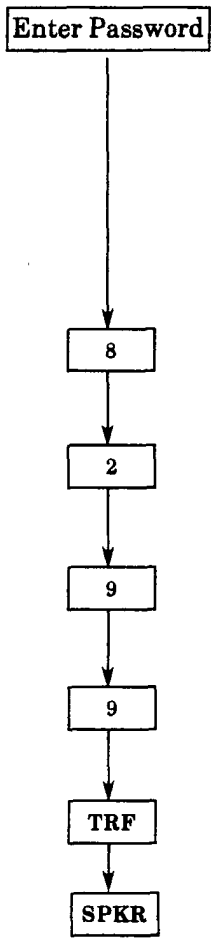
Special	Data No.
FNC	3

OPERATION:

1. Go off-line.
2. Enter: Mode Special FNC
3. Enter: Data No. 3 (Dial Pad)

CLR TEL SPD?	
TIME	DISPLAY

Dial pad 0 ~ 9 : To enter password



WARNING

Before performing this procedure, completely understand implications of erasing all System Speed Dial buffers in the system.

NOTES:

1. Areas to be erased:
   - Speed Dial numbers 00~19.

GENERAL INFORMATION - STATION SPEED DIAL MEMORY CLEAR

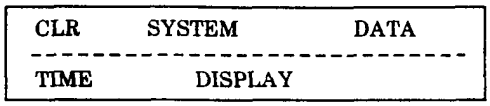
This Memory Block is used to clear all Station Speed Dial programming from the system

SYSTEM DATA MEMORY INITIALIZE OPERATION

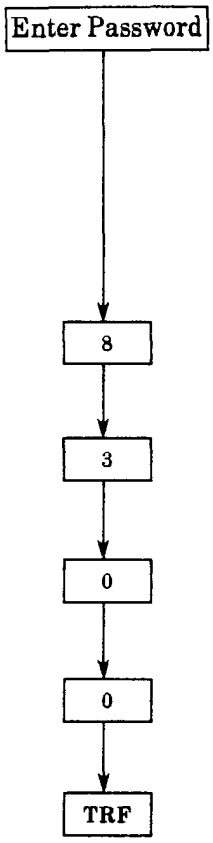
Special	Data No.
FNC	4

OPERATION:

1. Go off-line.
2. Enter: Mode Special FNC
3. Enter: Data No. 4 (Dial Pad)



Dial pad 0 ~ 9 : To enter password



WARNING

Before performing this procedure, completely understand implications of erasing all Program Data in the system.

GENERAL INFORMATION - SYSTEM DATA MEMORY INITIALIZE OPERATION

This Memory Block is used to initialize System Data memories of all programmed System Data and return the system to the default program.

CLOCK/CALENDAR SETTING

OPERATION:

FNC

▼

9

(Dial Pad)

▼

#

(Dial Pad)

11:08AM	
TIME	DISPLAY

←[*] [#]→ : To move cursor

Dial pad [0] ~ [9] : To enter Time, Date, Month, Year

[RECALL] key : To switch a.m./p.m. To switch month and weekdays

- Move the cursor to the data to be modified.
- Enter the new data using the dial pad.
- Press the **RECALL** key to switch a.m./p.m.
- Press the **HOLD** key to switch to set the Year, Month, and Day.

(Refer to the example on the next page.)

NOTES:

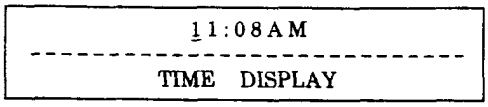
1. This is a station operation performed by the Attendant station.

GENERAL INFORMATION - CLOCK/CALENDAR SETTING

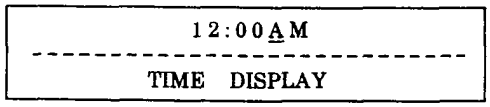
This Memory Block is used to program the year, month, day, hour, and minute, and a.m. or p.m.

EXAMPLE:

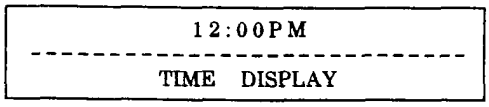
To change the time and date to 12:00 p.m. Sunday, December 31, 1992:



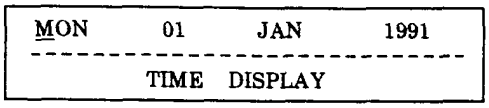
1. From the dial pad press **1 2 0 0**.



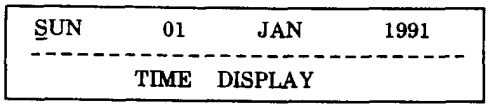
2. Press the **RECALL** key.



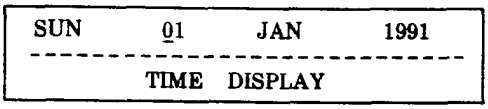
3. Press the **HOLD** key.



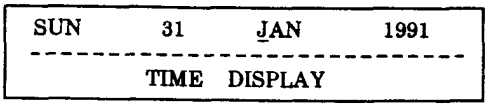
4. Press the **RECALL** key and select SUN.



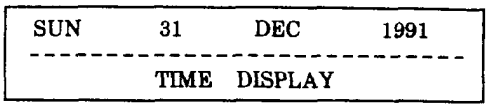
5. Move the cursor to the 01 position.



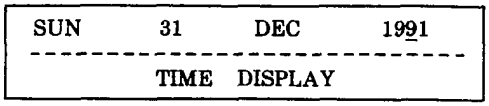
6. From the dial pad press **3 1**.



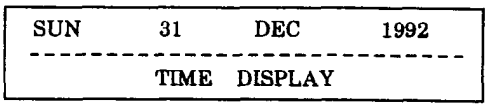
7. Press the **RECALL** key and select DEC.



8. Move the cursor to the 1991 position



9. From the dial pad press **9 2**.



10. Press the **FNC** key.

SECTION 5 FUNCTION TIMER CHART

Function Timer Chart

Timer	Memory Block	Definition	Timing Value		
			Min.	Default	Max.
Hookflash Time Selection	1-01	The break time for a hookflash signal (that breaks the DC loop of a CO/PBX line) sent to the CO or PBX when the RECALL key on a Multiline Terminal is pressed.	60 ms.	600 ms.	2 sec.
Hold Recall Timer Selection (Non-Exclusive Hold)	1-02	The interval of a held CO/PBX call until a recall tone is generated. If "No Limit" is selected, no hold alarm tone is generated.	1 min.	1 min.	No Limit
Exclusive Hold Recall Timer Selection	1-03	The interval for Exclusive Hold Recall tone. If "No Limit" is selected, no Exclusive Hold tone is provided.	1 min.	1 min.	No Limit
Internal/External Paging Timeout Selection	1-04	The length of time allowed for paging.	90 sec.	90 sec.	No Limit
Trunk Queuing Recall time Selection	1-05	The time an outgoing CO/PBX line will ring at the station where the queue was set, before the queue is automatically canceled.	10 sec.	10 sec.	60 sec.
Pause Time Selection	1-06	The length of the pause inserted between digits dialed on CO/PBX lines.	1 sec.	3 sec.	3 sec.
DP Interdigit Time Selection	1-07	The minimum length of the pause interval between Dial Pulse dialing.	650/500 ms.	800/800 ms.	800/800 ms.
Receiver (PBR) Release Timer Selection	1-08	The interval during which a receiver circuit is connected to a DTMF type Single Line Telephone waiting for each digit to be dialed.	5 sec.	10 sec.	60 sec.
Doorphone Display Time Selection	1-09	The duration of an incoming Doorphone call indication displayed at a Multiline Terminal.	10 sec.	10 sec.	90 sec.
CO Ring Transfer Recall Timer Selection	1-10	The interval from ringing tone transfer until a recall tone is generated to the originating telephone if the call is not answered.	30 sec.	60 sec.	240 sec.
Automatic Callback Time Selection	1-11	The length of time allowed for an Automatic Callback to occur before the request is automatically canceled.	30 min.	No Limit	No Limit
Automatic Redial Time Selection	1-12	The call time, wait time, and number of attempts for an automatic redial. (Call Time/Wait Time/Attempts)	15 sec. 60 sec. 5 times	15 sec. 60 sec. 5 times	30 sec. 120 sec. 5 times
Bounce Protect Time Selection	1-13	The length of time before a valid hookflash can be detected from a Single Line Telephone or Voice Mail system.	0 ms.	300 ms.	900 ms.
Hookflash Start Time Selection	1-14	Specifies the minimum hookflash duration from a Single Line Telephone.	100 ms.	300 ms.	850 ms.
Hookflash End Time Selection	1-15	Specifies a maximum duration from a Single Line Telephone in order to receive a dial tone. HST = Hookflash Start Time	HST + 0	HST + 700 ms.	HST + 1500 ms.

Function Timer Chart (continued)

Timer	Memory Block	Definition	Timing Value		
			Min.	Default	Max.
Call Forward No Answer Timer Selection	1-16	The time before incoming ICM calls or CO/PBX lines are forwarded to another station number when the called party does not answer.	10 sec.	10 sec.	30 sec.
Trunk-to-Trunk Transfer Automatic Disconnect Time Selection	1-17	The maximum time before an automatic disconnect of Trunk-to-Trunk connections occur.	30 min.	1 hr.	3 hr.
Elapsed Call and SMDR Time Selection	1-18	The interval after dialing until the start of call duration display.	10 sec.	10 sec.	30 sec.
Disconnect Time Selection	1-19	The minimum time for a circuit that has been disconnected until it can be accessed again.	0.3 sec.	1.0 sec.	4.0 sec.
Automatic Release Disconnection Signal Detection Time Selection	1-20	The signal detection time for release of a CO/PBX line when a disconnect signal is received from the distant CO/PBX.	0.5 ms.	350 ms.	500 ms.
Time Display (12h/24h) Selection	1-26	Specifies either a 12 hour or 24 hour time.	12 hr.	12 hr.	24 hr.
Voice Mail DTMF Delay Timer Selection	1-68	The length of delay before DTMF tones are sent to Voice Mail ports.	0.1 sec.	1.0 sec.	14 sec.
Voice Mail DTMF Duration/Interdigit Time Selection	1-69	Used to specify the DTMF duration and Interdigit time for Voice Mail.	70/60 ms.	600/100 ms.	900/200 ms.
System Refresh Time Selection	1-70	The length of time all terminals are idle before the system refreshes itself.	No Refresh	4 hr.	24 hr.
Automated Attendant Answer Delay Time Assignment	1-72	The length of time before an incoming CO/PBX call is answered by the Automated Attendant.	3 sec.	3 sec.	48 sec.
Automated Attendant PBR Release Timer Selection	1-73	The amount of time an Automated Attendant remains connected when a calling party is dialing.	10 sec.	20 sec.	60 sec.
Automated Attendant Delay Ringing Time Selection	1-74	Specifies the time before the Automated Attendant changes to CO/PBX ringing when a transferred call is not answered.	10 sec.	∞	30 sec.
Automated Attendant No Answer Disconnect Time Selection	1-75	The amount of time an Automated Attendant will ring a station before disconnecting the caller.	1 min.	2 min.	4 min.
Fax Line Reservation Timer	1-78	The time the CO/PBX line is reserved exclusively for the fax connection.	30 sec.	30 sec.	240 sec.
CO/PBX DTMF Duration/Interdigit Assignment	3-07	Used to specify the tone duration and interdigit time of DTMF signals.	70/60 ms.	70/60 ms.	900/200 ms.
DP Dial Make Ratio Selection	03-17	Used to select the make ratio for Dial Pulse lines.	33%	39%	39%

SECTION 6 GUIDE TO FEATURE PROGRAMMING

This section lists features that may require programming of specific Memory Blocks in order to use these features properly. Features are listed in alphabetic order, and the associated Memory Blocks for each feature are listed in numeric order.

An asterisk (*) is used to indicate the Memory Blocks that must be programmed before the feature can be used. The other Memory Blocks listed for a feature may have to be programmed, depending on the user's application.

Ancillary Device Connection Memory Blocks

Attendant Positions Memory Blocks

Automatic Day/Night Mode Switching Memory Blocks

Background Music - External Speaker Memory Blocks

Background Music - Multiline Speaker Memory Blocks

Call Forward Busy/No Answer Memory Blocks

Call Transfer Memory Blocks

Class of Service Memory Blocks

Code Restriction Memory Blocks

Refer to Section 7 of this chapter.

Dial 0 for Attendant Memory Blocks

Door Lock Release Memory Blocks

Door/Monitor Phone Memory Blocks

External Paging (Meet-Me) Memory Blocks

External Ring Control Memory Blocks

External Tone Ringer Via External Speaker Memory Blocks

Feature Access Keys - User Programmable Memory Blocks

Flexible Line Keys Memory Blocks

Flexible Station Numbering Plan Memory Blocks

General Purpose Relays Memory Blocks

(Refer to each Feature for additional programming.)

Headset Connection Via ADA (1)-W (BK) Unit Memory Blocks

Hold Free Transfer Memory Blocks

Internal Voice/Tone Signaling Memory Blocks

Multiple Trunk Groups Memory Blocks

Night Chime Memory Blocks

Off-Hook Ringing Memory Blocks

Prime Line Assignment Memory Blocks

Privacy Release Memory Blocks

Restriction (Outgoing) Memory Blocks

Ring Tone Variation Memory Blocks

Ringing Line Preference Memory Blocks

Room Monitor Terminal Memory Blocks

Single Line Telephone Access Memory Blocks

Speed Dial - System Memory Blocks

Station Hunting Memory Blocks

Tenant Service Memory Blocks

Timed Alarm Memory Blocks

Unsupervised Conference (Tandem) Memory Blocks

Voice Mail Integration Memory Blocks

Voice Over Memory Blocks

Voice Recording Service (VRS) Memory Blocks

VRS - Internal Memory Blocks

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SECTION 7 CODE RESTRICTION

7.1 General

The Electra Professional Level I system provides an advanced method for restricting outgoing calls based on the first eight digits dialed. Code Restriction denies placement of outside calls based on Trunk Groups and accommodates equal access to Other Common Carriers (OCC). This eliminates unauthorized calls and configures system calling functions to provide cost control.

There are eight Code Restriction Classes in System Programming. Class 0 is fixed and allows free dialing. Class 7 is fixed and denies all outside calls. Classes 1~6 are programmable in system software. Stations are assigned to Code Restriction Class on a per station basis. A separate Day Mode and Night Mode station to Code Restriction Class assignment is available.

7.2 Default Assignments

- At default, all stations are assigned to Code Restriction Class 0 for both Day and Night modes, this allows free dialing.
- At default, the Code Restriction Classes (listed below) are set up with the specified restrictions to provide the most common Code Restriction requirements and simplify Code Restriction programming.

Class 1:	Deny "0" and "1" plus calls
Class 2:	Deny "0" and "1" plus calls Allow "1800" calls
Class 3:	Deny "0", "1" plus, and "976" calls Allow "1800" calls
Class 4:	Deny only "1" plus calls Allow "1800" calls
Classes 5 & 6:	Allow only "911" calls

- At default, all OCC calls are denied for Code Restriction Classes 1 ~ 6.
- At default, System Speed Dial buffers 60 ~ 99 do not override Code Restriction for Classes 1 ~ 6.
- At default, Digit Restriction is not assigned.

(Refer to Section 7.5 - Code Restriction Tables in this chapter for additional default values.)

7.3 Memory Blocks

The following is a list of related Memory Blocks used when assigning Code Restriction.

Title	Memory Block
PBX/CTX Access Code Assignment	1-31
Trunk to Tenant Assignment	2-01
CO/PBX Line Code Restriction Override Selection	3-12
Trunk Type Selection	3-09
Trunk-to-Trunk Group Assignment	3-11
8-Digit Matching Table Assignment	1-56
Class Allow/Deny Assignment	1-57
8-Digit Matching Table to Class Assignment	1-58
8-Digit Matching Table to Trunk Group Assignment	1-59
OCC Table Assignment	1-60
OCC Table to Trunk Group Assignment	1-61
8-Digit Matching Table to OCC Table Assignment	1-62
System Speed Dial Override Selection	1-23
Trunk Digit Restriction	4-23
Telephone to Tenant Assignment	4-02
Code Restriction Class Assignment (Day Mode)	4-21
Code Restriction Class Assignment (Night Mode)	4-22

7.4 Memory Block Description

7.4.1 General

This section describes the function of the Memory Blocks that are directly related to Code Restriction. Some Memory Blocks from the list in Section 7.3 - Memory Blocks are not described in this section, but are included on the list because of their indirect effect on Code Restriction (e.g., Trunk to Tenant Assignment).

Code Restriction is based on a Trunk Group basis. Therefore, consideration should be given to Memory Block 1-61 (OCC Table to Trunk Group Assignment) because stations are assigned to a Tenant and trunks are assigned to a Trunk Group.

7.4.2 OCC Assignment/Operation

OCC Table Assignment (Memory Block 1-60)

This Memory Block allows an OCC Access Code (maximum of eight digits) to be assigned. There are 16 OCC Tables (01~16) in System Programming. Each table can have one OCC Access Code assigned.

OCC Table to Trunk Group Assignment (Memory Block 1-61)

This Memory Block is used to assign Trunk Groups to the OCC Tables. Any combination of Trunk Groups can be assigned to the OCC Tables.

8-Digit Matching Table to OCC Table Assignment (Memory Block 1-62)

This Memory Block is used to assign the 8-Digit Matching Tables to the OCC Tables. Any combination of 8-Digit Matching Tables can be assigned to the OCC Tables.

OCC Operations

When a restricted station user dials an OCC Access Code, the system searches the OCC Tables for a match. If no match is found, the system searches the 8-Digit Matching Tables. If a match is found, the system monitors the next eight digits dialed and searches the 8-Digit Matching Tables assigned to the OCC Table. The system searches only the 8-Digit Matching Tables assigned to the Code Restriction Class where the station is assigned. The trunks are assigned to the station on a Trunk Group basis. While the station user is dialing on an outside line, the system searches the assigned tables. If the interdigit time duration of the dialing party exceeds 10 seconds, the system automatically drops the call.

7.4.3 8-Digit Matching Table Assignment/Operation

8-Digit Matching Table to Trunk Group Assignment (Memory Block 1-59)

This Memory Block is used to assign Trunk Groups to the 8-Digit Matching Tables. Any combination of Trunk Groups can be assigned to the 8-Digit Matching Tables.

8-Digit Matching Table Assignment (Memory Block 1-56)

This Memory Block is used to assign the 8-Digit Matching Tables. Each 8-Digit Matching Table can have eight, 8-digit entries. In order to cover the many possible combinations (without listing each individual number), code restriction letters can be used in place of digits. The code restriction letters used and their numerical values are:

X = 0~9, *, and #

P = 0 and 1

N = 2~9

When 1X is entered in a table and the table is assigned as a Deny Table in the 8-Digit Matching Table to Class Assignment, any call (1+ any digit) is denied if the table is used. Using X, P, and N accommodates several combinations with just one entry.

Note: The Trunk Access Code should not be placed in the 8-Digit Matching Table because Code Restriction starts after a trunk is seized.

8-Digit Matching Table to Class Assignment (Memory Block 1-58)

This Memory Block is used to assign the 8-Digit Matching Tables to the Code Restriction Classes. The 8-Digit Matching Tables are also assigned as Allow/Deny Tables or as Allow/Deny (OCC only) Tables in this Memory Block. A maximum of six, 8-Digit Matching Tables can be assigned to Code Restriction Classes 1~6. Classes 0 and 7 are fixed and are not programmable.

Class Allow/Deny Assignment (Memory Block 1-57)

This Memory Block is used to assign Code Restriction Classes (1~6) as Allow or Deny. This assignment is used when there is no match or when there is an overlap (duplicate numbers in tables with opposite Allow/Deny assignments) of numbers in the 8-Digit Matching Tables.

8-Digit Matching Table Operations

The 8-Digit Matching Tables are used to restrict or allow OCC calls and non OCC calls. To understand the relationship of the 8-Digit Matching Tables with OCC calls, refer to Section 7.4.2 - OCC Assignment/Operation.

When a restricted station user makes a non OCC call, the system monitors the first eight digits dialed and searches the 8-Digit Matching Tables assigned as Allow or Deny. The system searches only the 8-Digit Matching Tables assigned to the Code Restriction Class where the station is assigned. The trunks are assigned to the station on a Trunk Group basis.

If a match is found, the system looks at the 8-Digit Matching Table to Class Assignment for the Allow or Deny Assignment. If the table is assigned as Allow, the call is allowed. If the table is assigned as Deny, the call is denied.

If no match is found or a duplicate match is made with opposite Allow/Deny assignments, the system looks at the Class Allow/Deny Assignment. If the class is assigned as Allow, the call is allowed. If the Class is assigned as Deny, the call is denied. While the station user is dialing on an outside line, the system is searches the assigned tables. If the interdigit time duration of the dialing party exceeds 10 seconds, the system automatically drops the call.

7.4.4 System Speed Dial Override Selection (Memory Block 1-23)

This Memory Block is used to allow System Speed Dial buffers 60 ~ 99 to override or not override Code Restriction for Code Restriction Classes 1 ~ 6.

7.4.5 Trunk Digit Restriction (Memory Block 4-23)

This Memory Block is used to specify, on a per station basis, the maximum number of digits that can be dialed while on any outside line.

7.4.6 CO/PBX Line Code Restriction Override Selection (Memory Block 3-12)

This Memory Block is used to specify whether Code Restriction is applied on a per line basis.

7.4.7 Code Restriction Class Assignment (Day Mode) (Memory Block 4-21)

This Memory Block is used to specify, on a per station basis, the Code Restriction Class to be used when the system is in the Day Mode.

7.4.8 Code Restriction Class Assignment (Night Mode) (Memory Block 4-22)

This Memory Block is used to specify, on a per station basis, the Code Restriction Class used when the system is in the Night Mode.

7.5 Code Restriction Tables

7.5.1 OCC Tables (Default Values)

- OCC Table Assignment (1-60)
- OCC Table to Trunk Group Assignment (1-61)
- 8-Digit Matching Table to OCC Table Assignment (1-62)

	TABLE 01	TABLE 02	TABLE 03	TABLE 04
Memory Block (1-60)				
Memory Block (1-61)	T.G. 0~2	T.G. 0~2	T.G. 0~2	T.G. 0~2
Memory Block (1-62)				

	TABLE 05	TABLE 06	TABLE 07	TABLE 08
Memory Block (1-60)				
Memory Block (1-61)	T.G. 0~2	T.G. 0~2	T.G. 0~2	T.G. 0~2
Memory Block (1-62)				

	TABLE 09	TABLE 10	TABLE 11	TABLE 12
Memory Block (1-60)				
Memory Block (1-61)	T.G. 0~2	T.G. 0~2	T.G. 0~2	T.G. 0~2
Memory Block (1-62)				

	TABLE 13	TABLE 14	TABLE 15	TABLE 16
Memory Block (1-60)				10XXX
Memory Block (1-61)	T.G. 0~2	T.G. 0~2	T.G. 0~2	T.G. 0~2
Memory Block (1-62)				

Note: X = 0~9, *, #
P = 0, 1
N = 2~9

7.5.2 8-Digit Matching Tables (Default Values)

- 8-Digit Matching Table to Trunk Group Assignment (1-59)
- 8-Digit Matching Table Assignment (1-56)

Memory Block (1-59) / Memory Block (1-56)	TABLE 01 T.G. 0~2	TABLE 02 T.G. 0~2	TABLE 03 T.G. 0~2	TABLE 04 T.G. 0~2
1	9 11			
2				
3				
4				
5				
6				
7				
8				

Memory Block (1-59) / Memory Block (1-56)	TABLE 05 T.G. 0~2	TABLE 06 T.G. 0~2	TABLE 07 T.G. 0~2	TABLE 08 T.G. 0~2
1				
2				
3				
4				
5				
6				
7				
8				

Note: X = 0~9, *, #
P = 0, 1
N = 2~9

(Continued on next page.)

Memory Block (1-59)

Memory Block (1-56)

TABLE 09

	T.G. 0~2
1	
2	
3	
4	
5	
6	
7	
8	

TABLE 10

	T.G. 0~2
1	
2	
3	
4	
5	
6	
7	
8	

TABLE 11

	T.G. 0~2
1	
2	
3	
4	
5	
6	
7	
8	

TABLE 12

	T.G. 0~2
1	0
2	
3	
4	
5	
6	
7	
8	

Memory Block (1-59)

Memory Block (1-56)

TABLE 13

	T.G. 0~2
1	9 76
2	
3	
4	
5	
6	
7	
8	

TABLE 14

	T.G. 0~2
1	1 800
2	
3	
4	
5	
6	
7	
8	

TABLE 15

	T.G. 0~2
1	1 X
2	
3	
4	
5	
6	
7	
8	

TABLE 16

	T.G. 0~2
1	X
2	
3	
4	
5	
6	
7	
8	

Note: X = 0~9, *, #
P = 0, 1
N = 2~9

- Class Allow/Deny Assignment (1-57)
- 8-Digit Matching Table to Class Assignment (1-58)

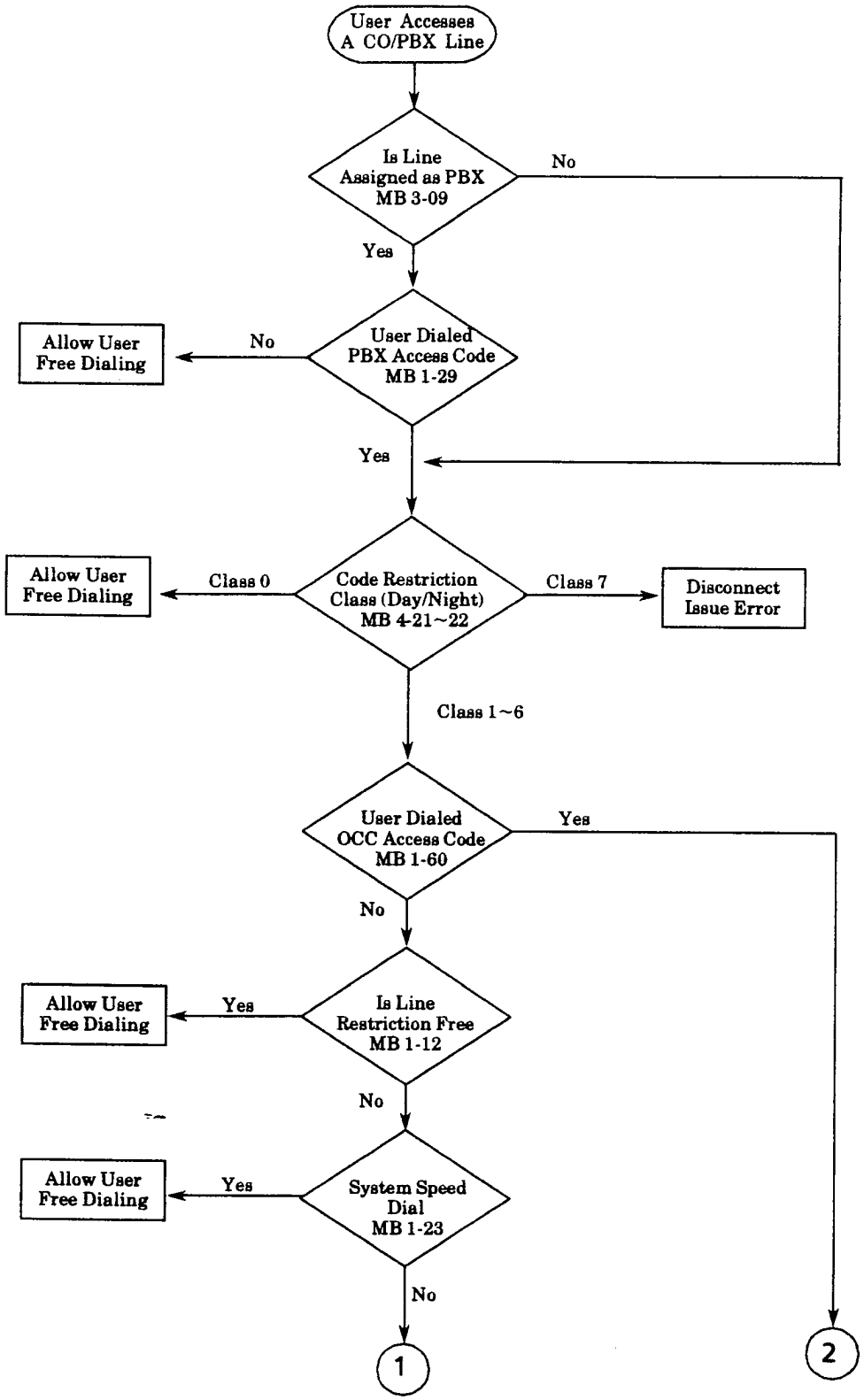
8-Digit Matching Table To Class Assignment (M.B. 1-58)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	Class Allow/Deny Assignment Memory Block (1-57)
Class 1	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	0	2	Allow
Class 2	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	1	0	2	Allow
Class 3	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	1	0	2	Allow
Class 4	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	0	2	Allow
Class 5	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Deny
Class 6	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Deny

Note 1: 0 = Deny
1 = Allow
2 = Deny (OCC Calls Only)
3 = Allow (OCC Calls Only)
N/A = Not Applicable

Note 2: A maximum of six, 8-Digit Matching Tables can be assigned to each Class.

7.6 Code Restriction Algorithm



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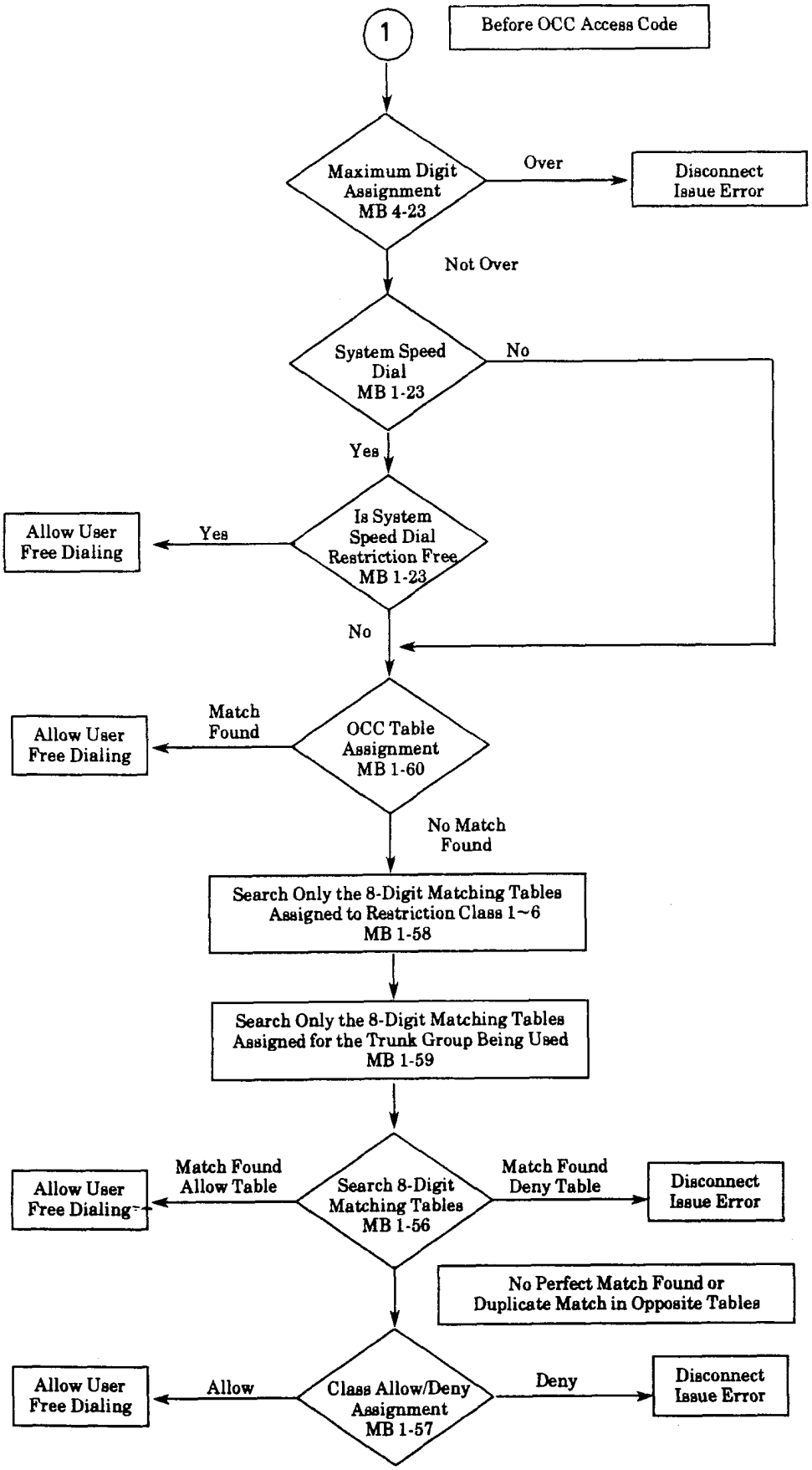

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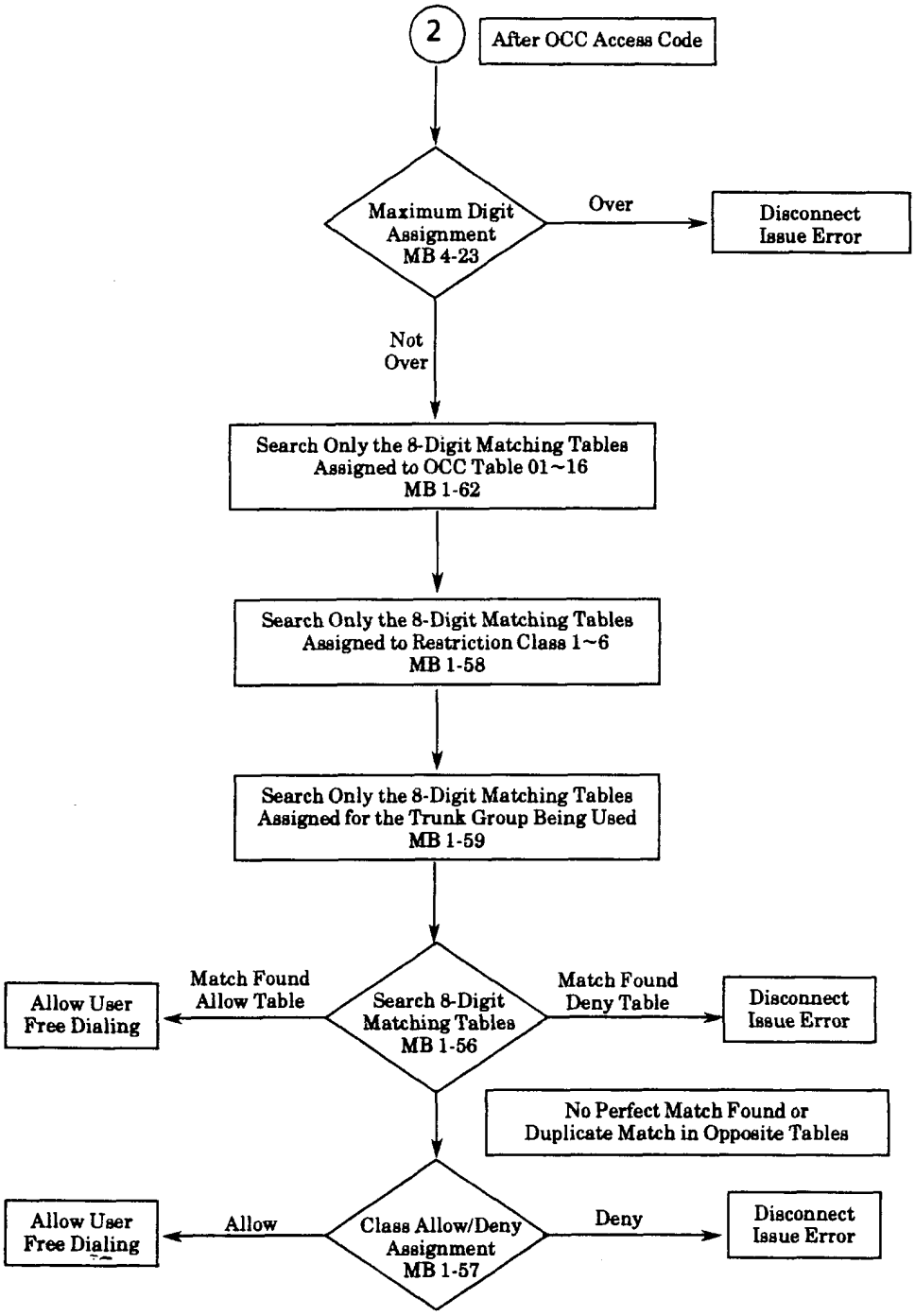
2
After OCC Access Code
Maximum Digit Assignment MB 4-23
Over
Disconnect Issue Error
Not Over
Search Only the 8-Digit Matching Tables Assigned to OCC Table 01~16 MB 1-62
Search Only the 8-Digit Matching Tables Assigned to Restriction Class 1~6 MB 1-58
Search Only the 8-Digit Matching Tables Assigned for the Trunk Group Being Used MB 1-59
Match Found Allow Table
Allow User Free Dialing
Search 8-Digit Matching Tables MB 1-56
Match Found Deny Table
Disconnect Issue Error
No Perfect Match Found or Duplicate Match in Opposite Tables
Allow User Free Dialing
Allow
Class Allow/Deny Assignment MB 1-57
Deny
Disconnect Issue Error

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SECTION 8 DISPLAY ABBREVIATIONS

The abbreviations as they appear in the display of the Multiline Terminal are listed on the following pages. The definition is listed to the right of each abbreviation.

ADD/DEL	:	addition/deletion	EXT MOH	:	external music on hold
ALM	:	alarm	FLSH	:	flash
ANS	:	answer	FLSH END	:	flash end
ARDT	:	automatic release detect timer	FLSH ST	:	flash start
ASSGN	:	assignment	FWD	:	forward
ATO	:	automatic	FWD NOANS	:	forward no answer
ATT	:	attendant	FWDG	:	forwarding
AUTO DIS	:	automatic disconnect	GP	:	group
BGM	:	background music	H	:	high
BNCE	:	bounce	HDFREE	:	handsfree
CHM	:	chime	HFU	:	handsfree unit
CL	:	class	HOFREETRF	:	hold free transfer
CLR	:	clear	HOLD RECL	:	hold recall
CLS	:	class	HR	:	hour
CONN	:	connection	IN	:	incoming
DIG	:	digit	INTER	:	interdigit
DIS	:	disconnect	L	:	low
DISP	:	display	LCD	:	liquid crystal display
DLY	:	delay signal time	LN	:	line
DP	:	dial pulse	LNR/SPD	:	Last Number/Speed Dial
DP INTER	:	dial pulse interdigit	m	:	minute
DPH	:	doorphone	M	:	medium
DPH DSP	:	doorphone display	MAN	:	manual
DPH PRF	:	doorphone preference	MF	:	dual tone multi frequency (DTMF)
DSP TM	:	display time	MOH	:	music on hold
DSS	:	direct station selection	ms	:	millisecond
DUR	:	duration	MSTER	:	master
DY	:	day mode	NANP	:	North American Numbering Plan
DYTM	:	daytime	NBR	:	number
ESP	:	external speaker	NOANS	:	no answer
EXT RG	:	external ring	NON	:	no assignment
EXHDRECL	:	exclusive hold recall	NONREST	:	nonrestricted
EXT	:	external	NT	:	night mode

(Continued on next page.)

NT CHM	:	night chime	SEL	:	selection
NTTM	:	night time	SLT	:	single line telephone
OFTM	:	off time	SP	:	speaker
OUT	:	outgoing	SPD	:	speed dial
PAG	:	paging	SPDOVR	:	speed dial override
PBR	:	push button receiver	SYS	:	system
PBR RLS	:	push button release	TEL	:	telephone
PBX	:	public branch exchange	TM	:	time
PBX AC	:	PBX access code	TR TY	:	trunk type
PRF	:	preference	TRF	:	transfer
PRNT	:	print	TRK	:	trunk
QUE	:	queue	TRK GP	:	Trunk Group
RCV	:	receiving volume	TRNS	:	transfer
RECL	:	recall	TYP	:	type
REST	:	restriction	VCO	:	voice over
RG	:	ring	VM	:	voice mail
RINGTONE	:	ringing tone	VRS	:	voice recording service
RLS	:	release	WK	:	weekend
s	:	second	YS	:	yes

CHAPTER 3

SYSTEM MAINTENANCE

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FLOWCHARTS

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CHAPTER 3
SYSTEM MAINTENANCE

SECTION 1 INTRODUCTION

This chapter is to be used as a guide for diagnosis and troubleshooting problems during and after system installation. The troubleshooting flowcharts and general test procedures will help to identify the cause of a problem by defining the problem area.

SECTION 2 OPERATIONAL CURRENT AND VOLTAGE CHECKS

2.1 Power Requirements

The effectiveness of this portion of the maintenance section depends upon the technician's ability to answer correctly all questions, in the flowcharts, as accurately as possible. Due to external factors, it is important that no answer be assumed. For example, it cannot be assumed that a power supply is working properly because it has been replaced with another power supply. It is necessary to test the output of the power supply with a volt meter.

This can be done in the KSU by measuring +5V and +28V from the CN1 plug on the PSU. Before a technician can attempt any troubleshooting, the correct tools should be available.

2.2 Equipment Needed

- Digital or Analog Multimeter
- Lineman's test set:
  1. Termination and Monitor Modes
  2. DTMF and Dial Pulse dialing
- Hand tools:
  1. Set of screwdrivers (common and Phillips head blades)
  2. Set of pliers, long nose and diagonals
  3. Punch down tool

SECTION 3 OPERATIONAL TEST PROCEDURES

3.1 General

When the system is first powered up, it runs through an initialization process. During this process, the CPU inside the basic KSU scans each of the KTUs to determine the hardware configuration used. This information is stored in the Resident System Program memory with the system default values. This section provides test procedures to be used before, during, and after the initialization process.

3.2 Before Installation

It is important that the following steps be taken by the technician installing the system:

1. Cable Connections

   All wiring for power supplies, flat cable connectors, *etc.*, should be checked for solid connections. Refer to Chapter 1 - Hardware Specifications and Installation of this manual for connection instructions.

2. AC/DC Power

   Check all power with an AC/DC multimeter. (Refer to Table 3-1 - Voltage Measurement).

Table 3-1 Voltage Measurement

Voltages	Tolerance	Measuring Points
PSF-C-10 PSU + 5V + 28V	 + 5 ± 0.25V + 5 ± 0.25V	CN1 Pin 4 GND Pin 3 +5V Pin 1 + 28V
AC Voltage (117 Vac) Line to Neutral Line to Conduit Ground Neutral to Conduit Ground	 117 ± 15% Vac 117 ± 15% Vac .05 V ac (max.)	AC TERMINAL STRIP Line L to N Line L to G N to G
Ring Generator (SLT)	65~ 120 V ac @ 20 Hz (Refer to Note below.)	Across TIP & RING of ringing SLT
CO Line Off-hook line current	 25 to 50 mA	In series with TIP side of CO line at MDF

Note: Measurement of ring voltage may be lower if the meter is designed for measuring 60 Hz signals only.

3. Initialization Check

   To determine if the system is initializing correctly, it is suggested that all optional and expansion KTUs from the system be removed. After initialization, all terminals in the main board and ESI-C(8)-11 should be able to call each other internally. (These stations, by default, will be assigned station numbers 10~25.)

3.3 System Initialization

After the three steps in Section 3.2 are completed and verified, the entire system should be initialized.

With the power off, all the interface and option cards can be installed in the KSU as indicated on the Job Specifications Worksheet. It is important to ensure that the lithium battery is removed from the ESF-C-10 KSU. At this point the technician can power up the system. This performs a First Initialization of the system. After the initialization process, each station display will show default time and date indication.
Example: 12:00 PM SUN 01.

3.4 After Initialization

Before any programming is attempted, the lithium battery should be inserted into the right position on the main board of the ESF-C-10 KSU. This will prevent all completed programming from being lost if the system loses power.

After all previous steps have been performed and any problems corrected, the System Programming can be completed. Using the Job Specifications Worksheets from the *Electra Professional Level I Job Specifications Manual,* Stock No. 722004 (supplied with the ESF-C-10 KSU) helps to simplify the programming process.

CAUTION

Ensure the lithium battery is on the ESF-C-10 KSU.

Performing a System Initialization a second time will cause all programming memory to be lost.

This completes the installation. The technician should check the operation of each Multiline Terminal to ensure the system is working properly.

SECTION 4 TROUBLESHOOTING FLOWCHARTS

4.1 Problem Solving

To find the cause of a problem, first consider all the symptoms carefully. It is imperative the problem be defined as accurately as possible so the most efficient steps to a solution can be taken. The troubleshooting flow charts in this section will help define problems and direct the technician through the troubleshooting steps. (Refer to Table 3-2 - Index Table of Flowcharts.)

- System Down

  Although this term is used to describe many conditions, it will only be used in this section to describe one of the following situations:

  1. No access to internal dial tone on any Multiline Terminal or Single Line Telephone installed.

  2. No LED indications or no display indications on any Multiline Terminal installed.

- Partial Operation

  This term will refer to any situation that cannot be completely described under the conditions of a **SYSTEM DOWN**. (Refer to the Table 3-2 - Index Table of Flowcharts listing these conditions.)

- Reset Definition

  In the troubleshooting flowcharts, the technician is at times directed to reset the station and/or KTU.

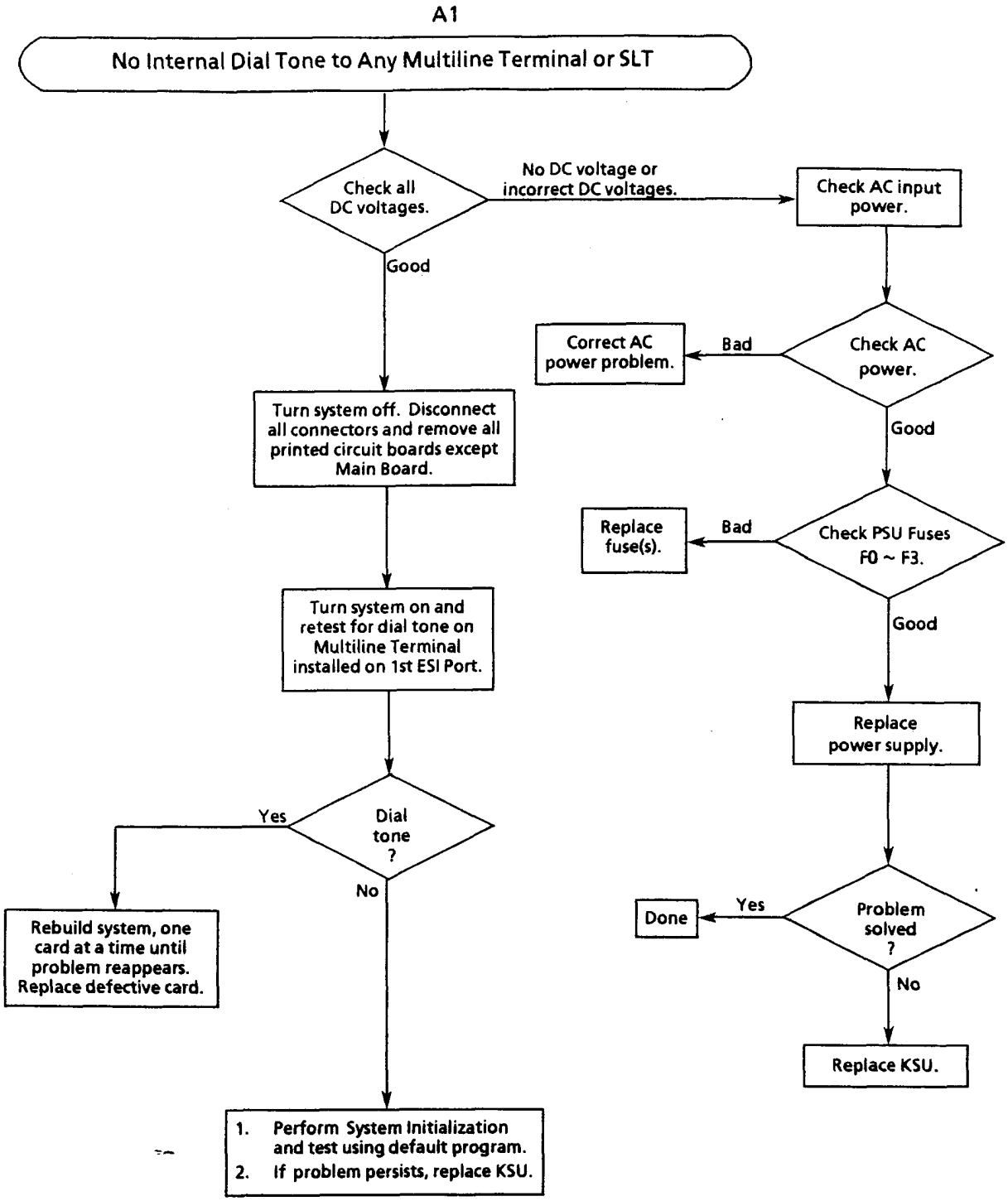
  1. Terminal Reset - Is accomplished by unplugging the station line cord from the station and then plugging it back in.

  2. **Do not install any KTUs with power ON.**

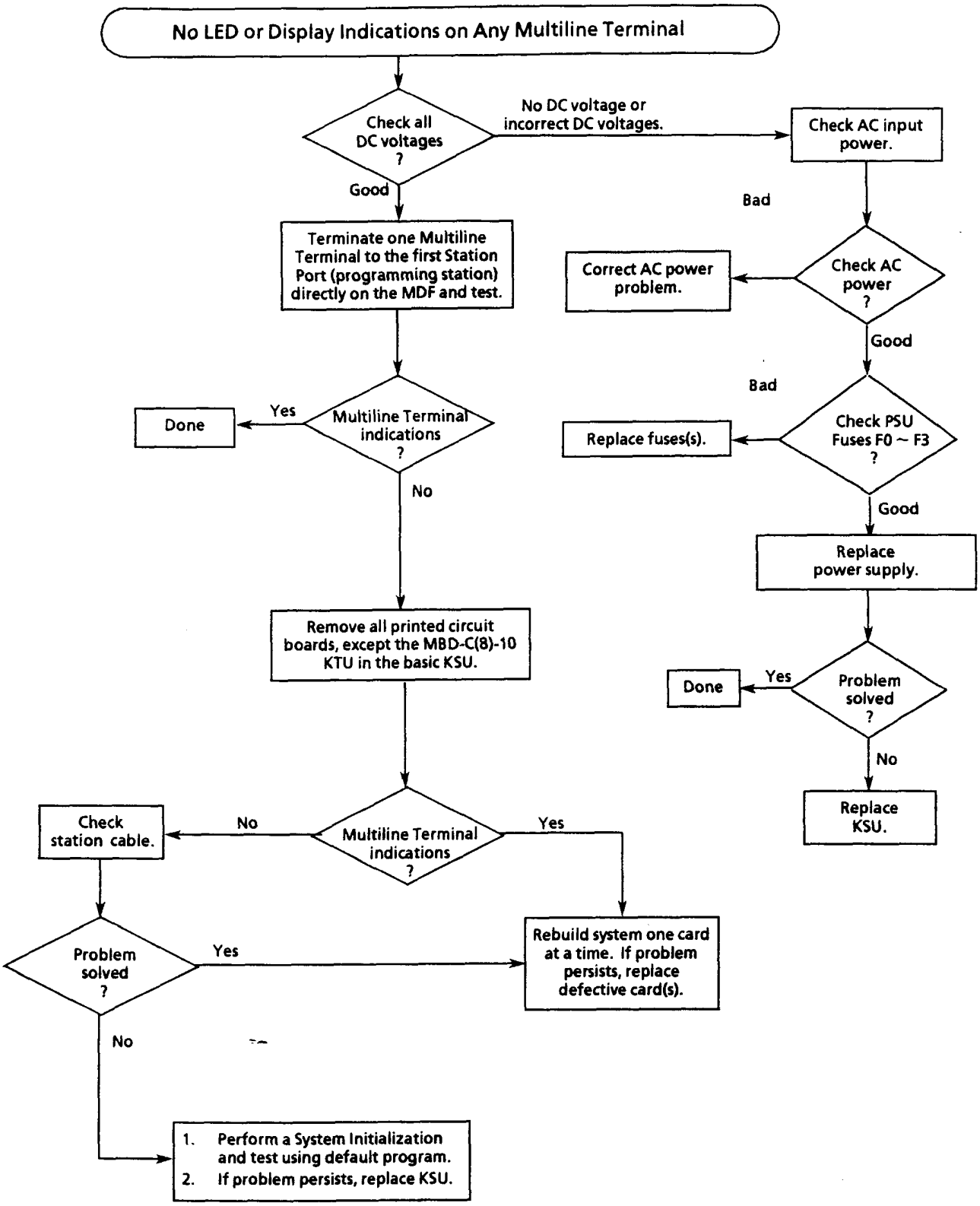
     COI-C(2)-10 KTU
     ESI-C(8)-11 KTU
     PBR-C(4)-11 KTU
     VRS-C(1)-11 KTU
     SMDR-C-10- KTU
     FAX-C(1)-11 KTU

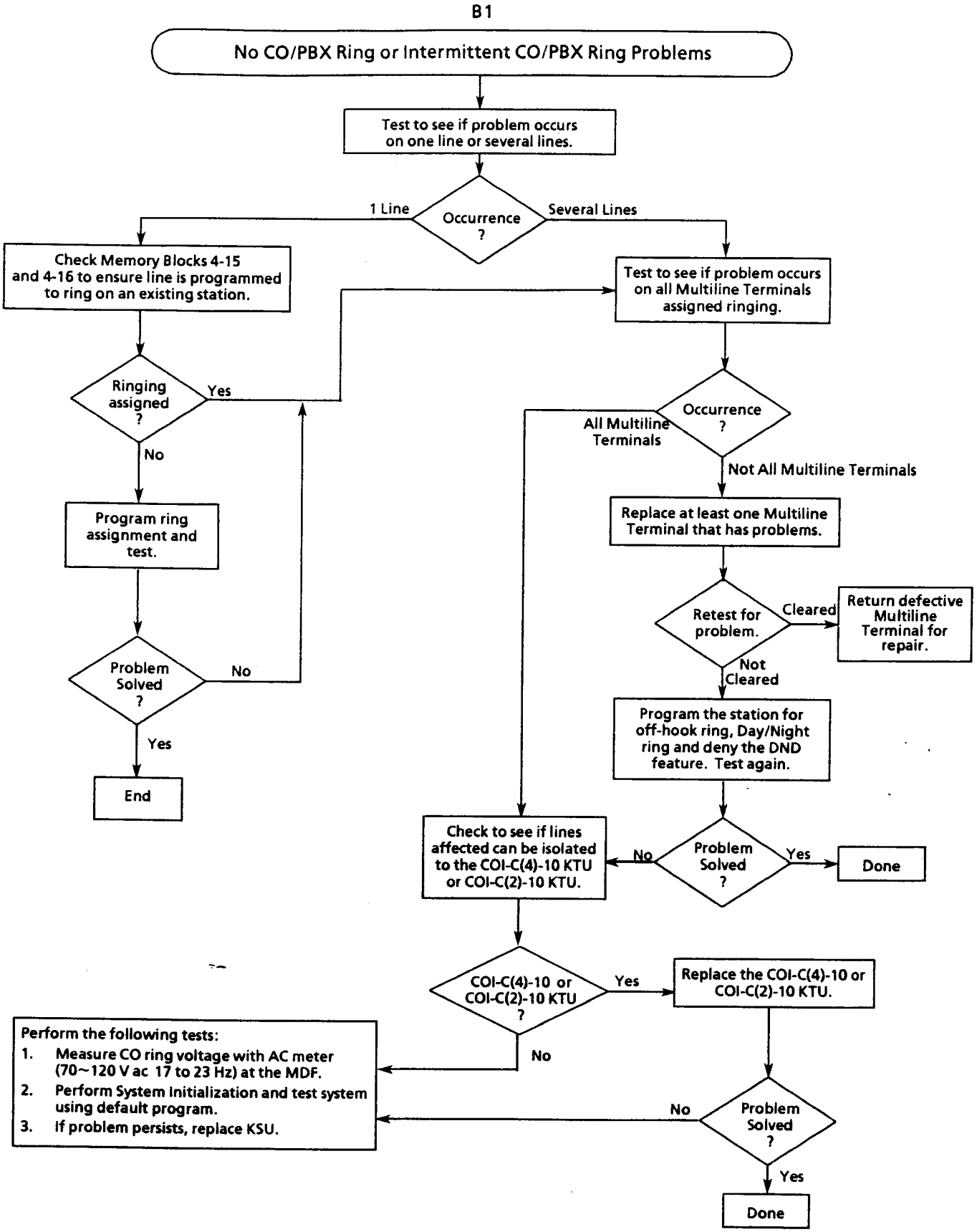
Table 3-2 Index Table of Flowcharts

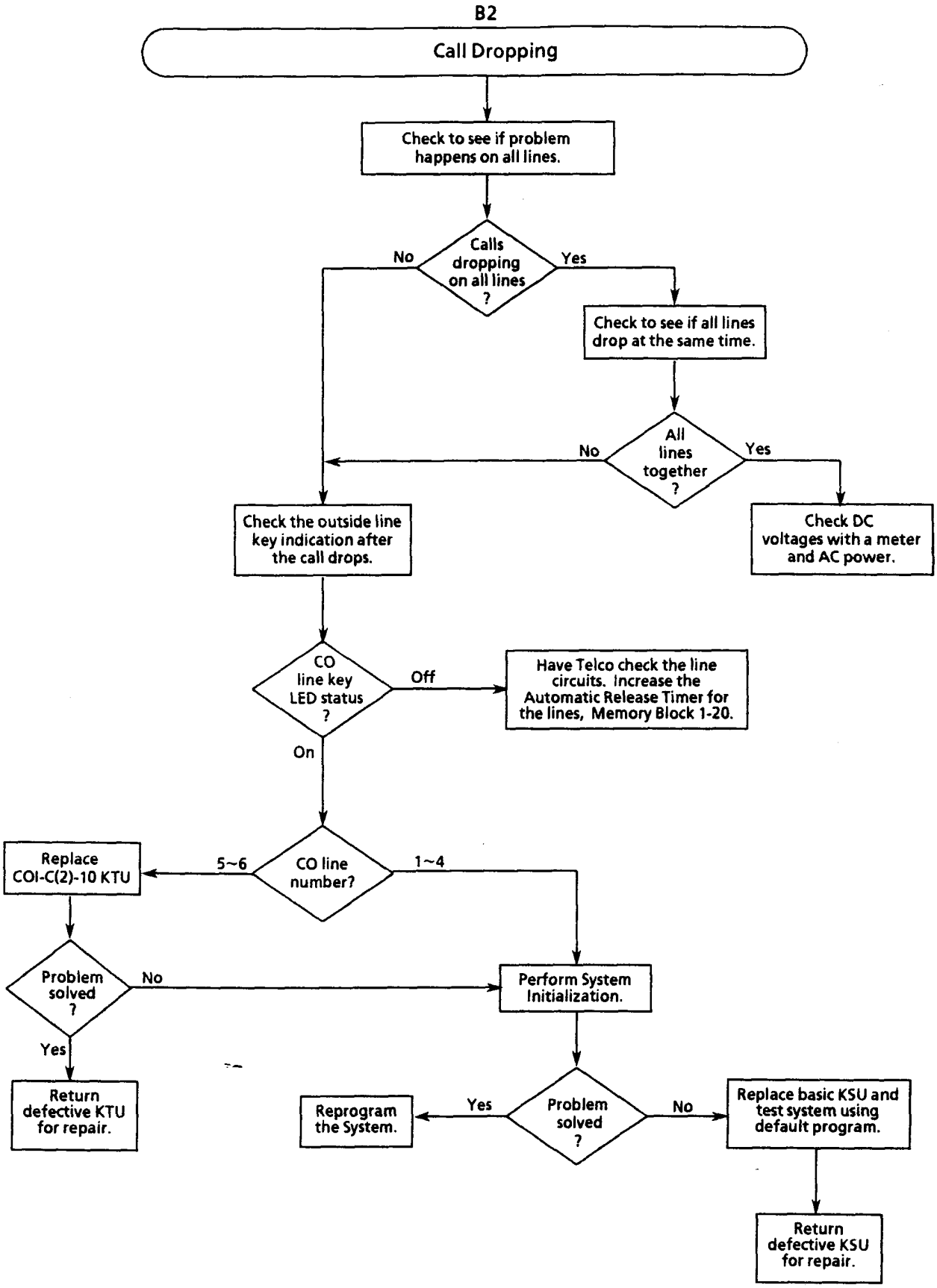
Condition	Flowchart Number	Page Number
A. System Down		
1. No Internal Dial Tone to Any Multiline Terminal or Single Line Telephone	A1	3-5
2. No LED or Display Indications on Any Multiline Terminal	A2	3-6
B. Partial Operations		
1. Central Office Line Problems:		
A. No CO/PBX Ring or Intermittent CO/PBX Ring Problems	B1	3-7
B. Call Dropping	B2	3-8
C. No Outside Dial Tone Access	B3	3-9
D. CO/PBX Dialing Problem (Cannot Dial Out on CO)	B4	3-10
2. Multiline Terminal Problems:		
A. Multiline Terminal Function Problem	C1	3-11
B. Multiline Terminal Ringing Problems	C2	3-12
C. Multiline Terminal Dial Tone Access Problems	C3	3-13
3. Single Line Telephone Problems:		
A. No Dial Tone Access on Single Line Telephones	D1	3-14
B. Ringing Problem on Single Line Telephones	D2	3-15
C. No Dial Access to Features on Single Line Telephones	D3	3-16
4. Low Volume Problems	E1	3-17
5. External Paging Problem	F1	3-18
6. Station Message Detail Recording (SMDR) Output Problems (No Call Accounting System)	G1	3-19

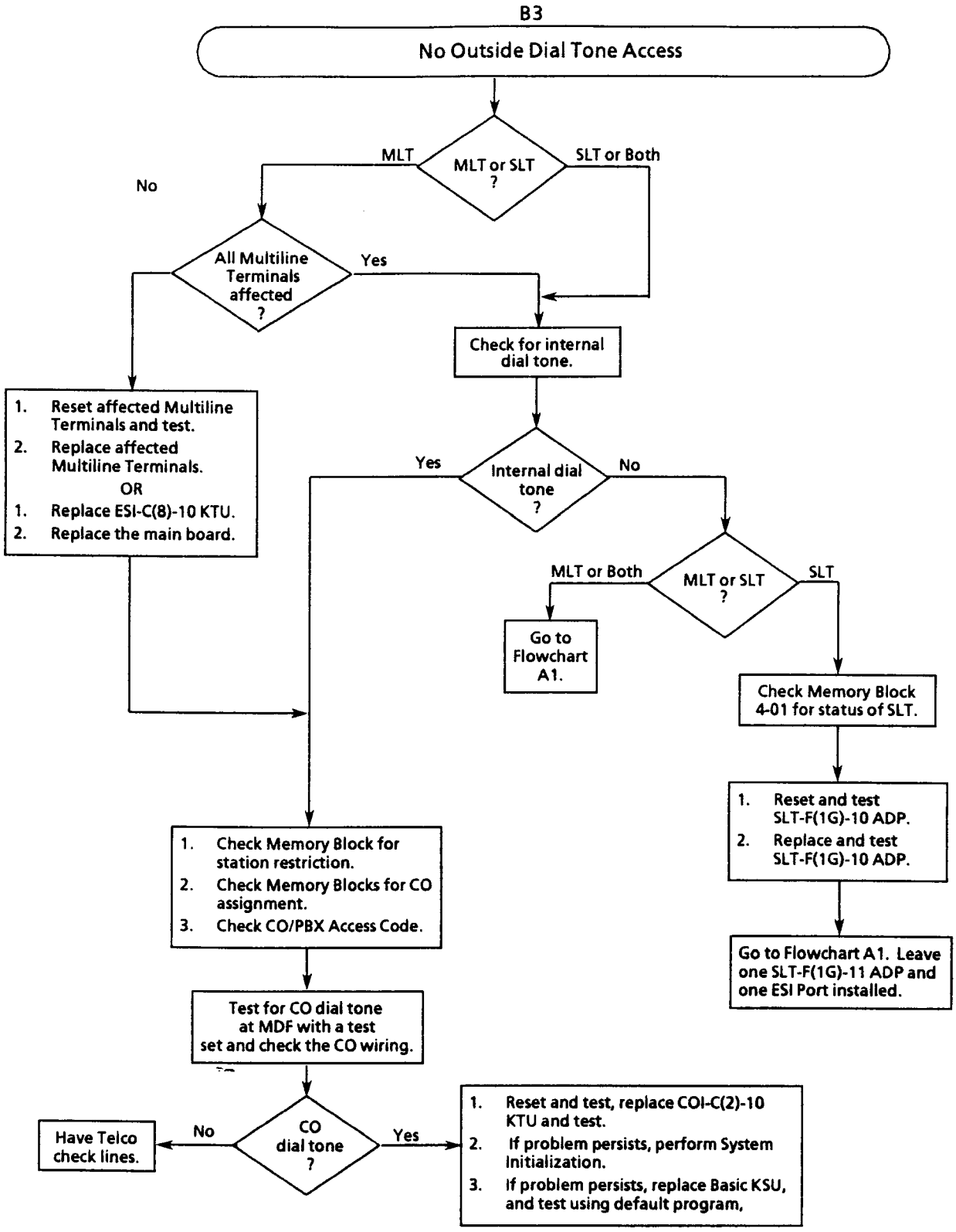

A1
No Internal Dial Tone to Any Multiline Terminal or SLT
Check all DC voltages.
No DC voltage or incorrect DC voltages.
Check AC input power.
Good
Correct AC power problem.
Bad
Check AC power.
Turn system off. Disconnect all connectors and remove all printed circuit boards except Main Board.
Good
Replace fuse(s).
Bad
Check PSU Fuses F0 ~ F3.
Turn system on and retest for dial tone on Multiline Terminal installed on 1st ESI Port.
Good
Replace power supply.
Yes
Dial tone ?
No
Done
Yes
Problem solved ?
Rebuild system, one card at a time until problem reappears. Replace defective card.
No
Replace KSU.
1. Perform System Initialization and test using default program.
2. If problem persists, replace KSU.

A2

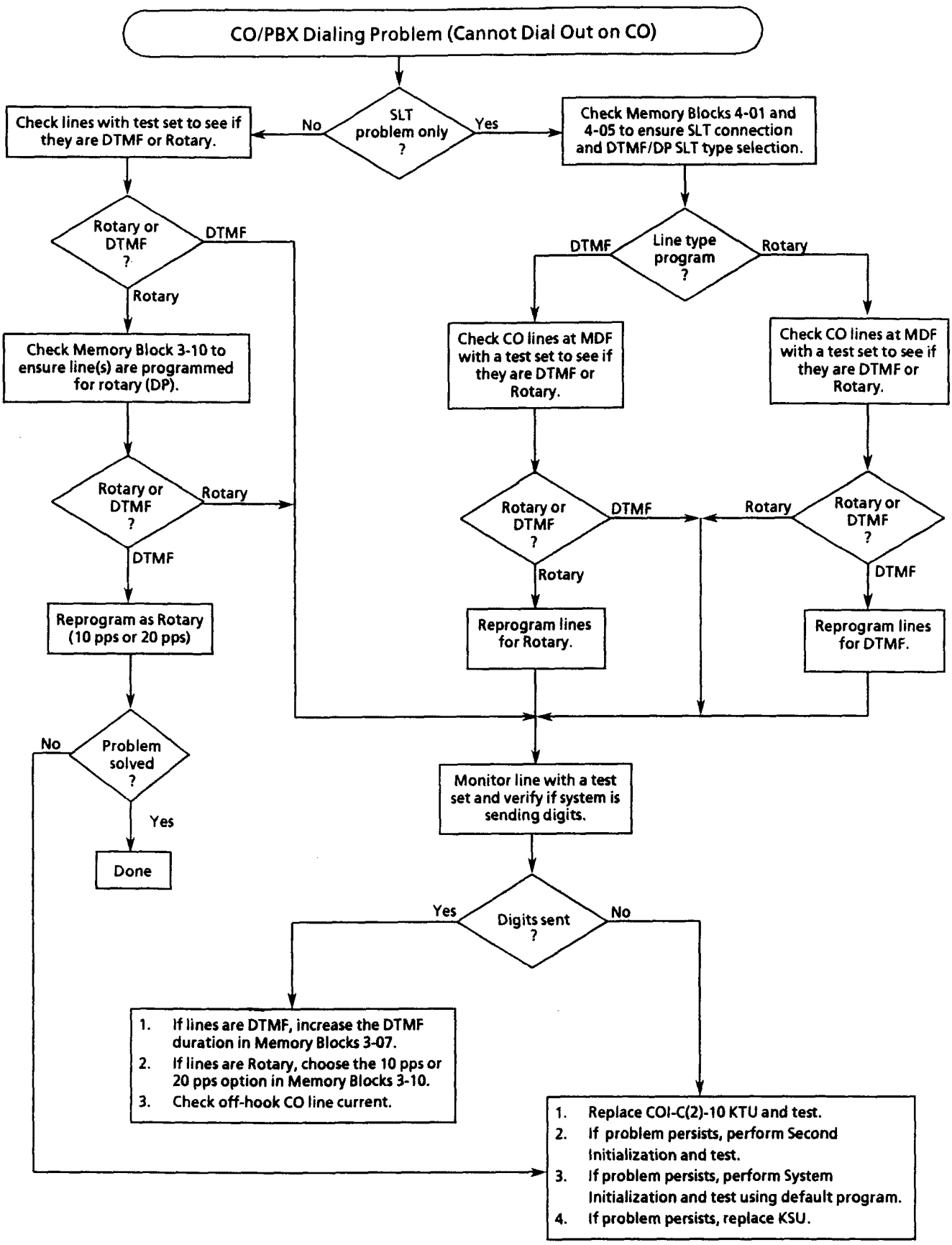

No LED or Display Indications on Any Multiline Terminal
Check all DC voltages ?
No DC voltage or incorrect DC voltages.
Check AC input power.
Good
Bad
Terminate one Multiline Terminal to the first Station Port (programming station) directly on the MDF and test.
Correct AC power problem.
Check AC power ?
Good
Bad
Done
Yes
Multiline Terminal indications ?
Replace fuses(s).
Check PSU Fuses F0 ~ F3 ?
No
Good
Replace power supply.
Remove all printed circuit boards, except the MBD-C(8)-10 KTU in the basic KSU.
Done
Yes
Problem solved ?
No
Replace KSU.
Check station cable.
No
Multiline Terminal indications ?
Yes
Problem solved ?
Yes
Rebuild system one card at a time. If problem persists, replace defective card(s).
No
1. Perform a System Initialization and test using default program.
2. If problem persists, replace KSU.

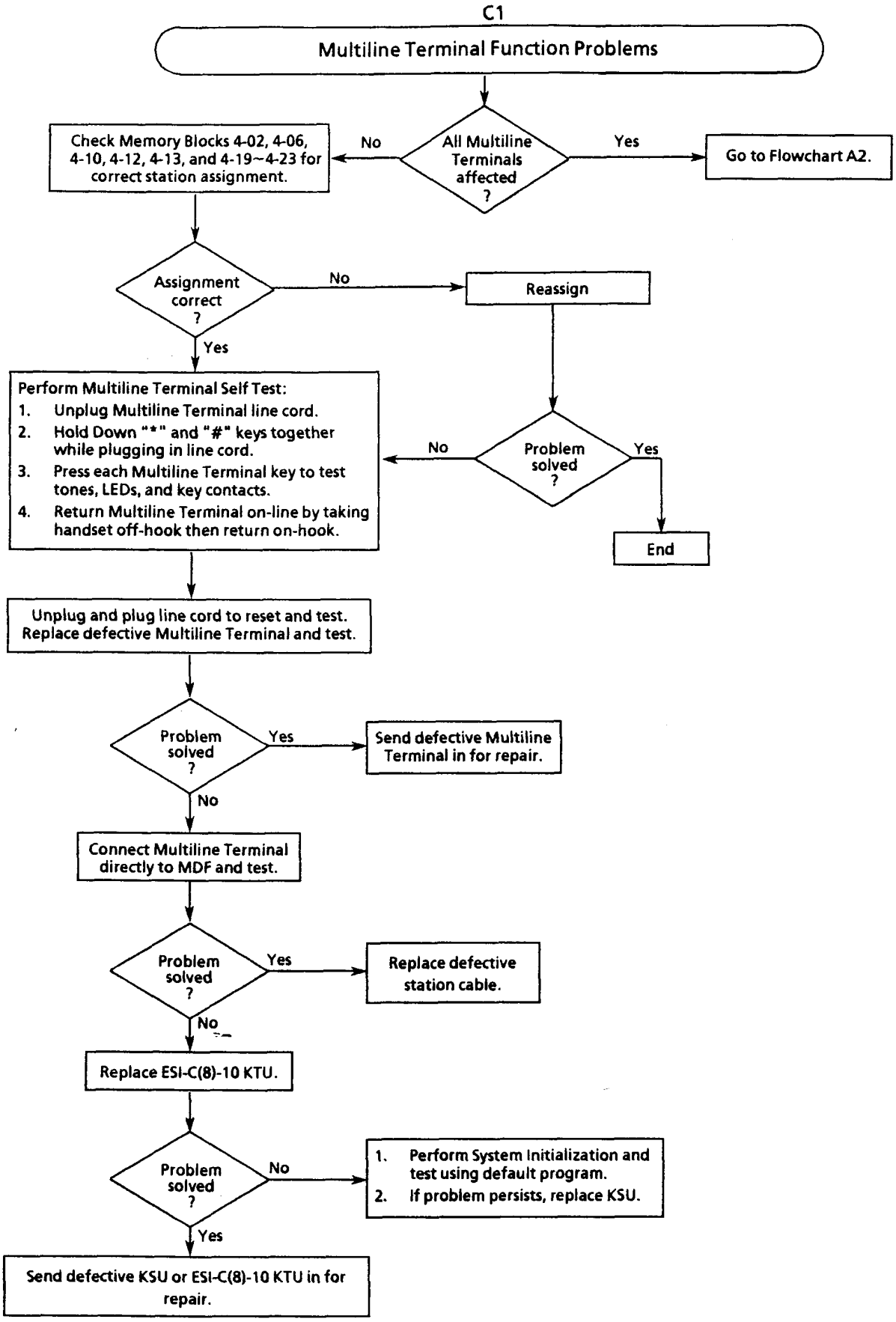

B1
No CO/PBX Ring or Intermittent CO/PBX Ring Problems
Test to see if problem occurs on one line or several lines.
Occurrence ?
1 Line
Several Lines
Check Memory Blocks 4-15 and 4-16 to ensure line is programmed to ring on an existing station.
Ringing assigned ?
Yes
No
Program ring assignment and test.
Problem Solved ?
No
Yes
End
Test to see if problem occurs on all Multiline Terminals assigned ringing.
Occurrence ?
All Multiline Terminals
Not All Multiline Terminals
Replace at least one Multiline Terminal that has problems.
Retest for problem.
Cleared
Return defective Multiline Terminal for repair.
Not Cleared
Program the station for off-hook ring, Day/Night ring and deny the DND feature. Test again.
Problem Solved ?
No
Yes
Done
Check to see if lines affected can be isolated to the COI-C(4)-10 KTU or COI-C(2)-10 KTU.
COI-C(4)-10 or COI-C(2)-10 KTU ?
Yes
Replace the COI-C(4)-10 or COI-C(2)-10 KTU.
No
Problem Solved ?
No
Yes
Done
Perform the following tests:
1. Measure CO ring voltage with AC meter (70~120 V ac 17 to 23 Hz) at the MDF.
2. Perform System Initialization and test system using default program.
3. If problem persists, replace KSU.

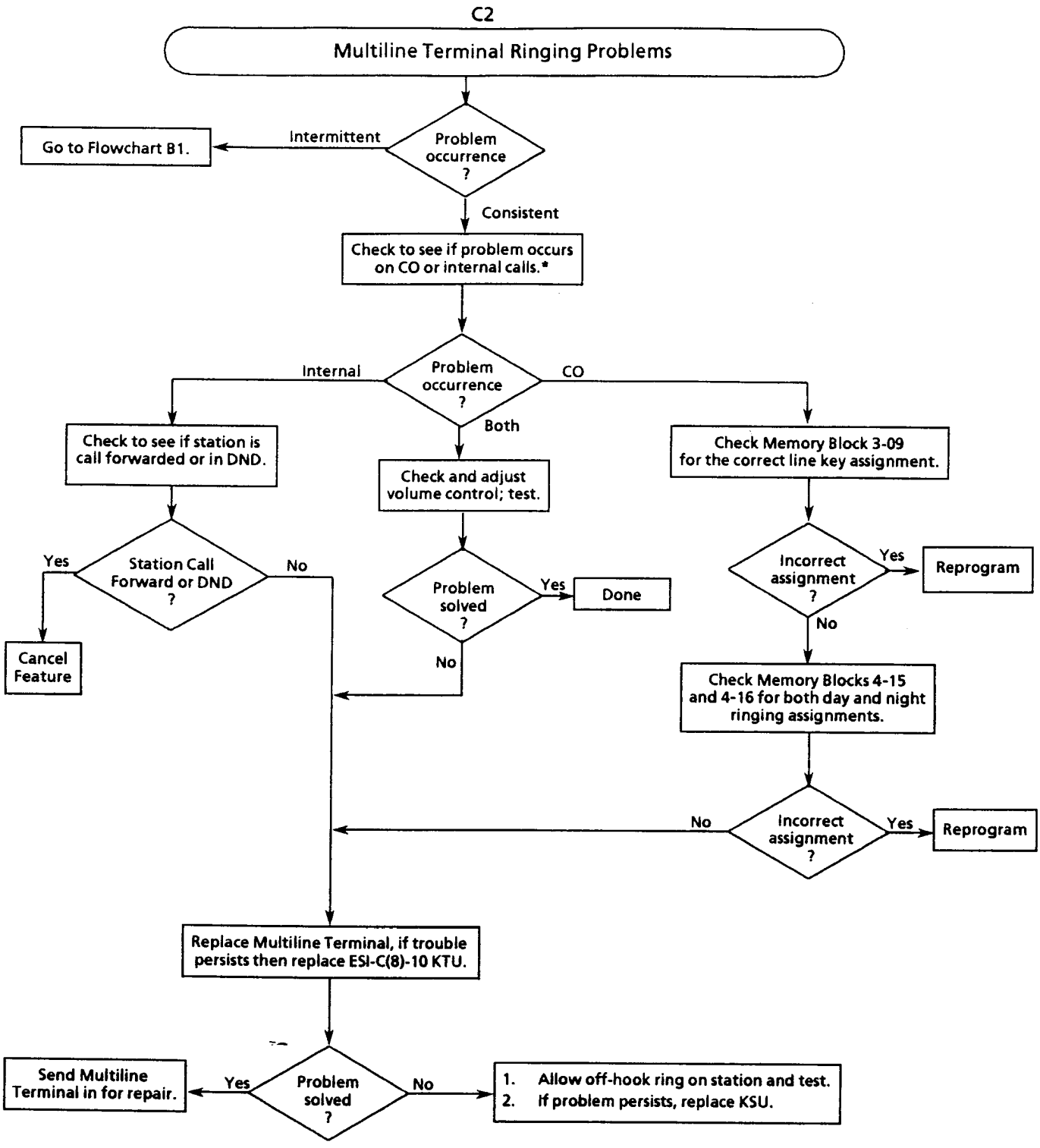

B2
Call Dropping
Check to see if problem happens on all lines.
Calls dropping on all lines ?
No
Yes
Check to see if all lines drop at the same time.
All lines together ?
No
Yes
Check the outside line key indication after the call drops.
Check DC voltages with a meter and AC power.
CO line key LED status ?
Off
Have Telco check the line circuits. Increase the Automatic Release Timer for the lines, Memory Block 1-20.
On
CO line number?
5~6
1~4
Replace COI-C(2)-10 KTU
Problem solved ?
No
Yes
Perform System Initialization.
Return defective KTU for repair.
Reprogram the System.
Yes
Problem solved ?
No
Replace basic KSU and test system using default program.
Return defective KSU for repair.


B3
No Outside Dial Tone Access
MLT or SLT ?
MLT
SLT or Both
No
All Multiline Terminals affected ?
Yes
Check for internal dial tone.
1. Reset affected Multiline Terminals and test.
2. Replace affected Multiline Terminals.
OR
1. Replace ESI-C(8)-10 KTU.
2. Replace the main board.
Yes
Internal dial tone ?
No
MLT or Both
MLT or SLT ?
SLT
Go to Flowchart A1.
Check Memory Block 4-01 for status of SLT.
1. Reset and test SLT-F(1G)-10 ADP.
2. Replace and test SLT-F(1G)-10 ADP.
Go to Flowchart A1. Leave one SLT-F(1G)-11 ADP and one ESI Port installed.
1. Check Memory Block for station restriction.
2. Check Memory Blocks for CO assignment.
3. Check CO/PBX Access Code.
Test for CO dial tone at MDF with a test set and check the CO wiring.
CO dial tone ?
No
Have Telco check lines.
Yes
1. Reset and test, replace COI-C(2)-10 KTU and test.
2. If problem persists, perform System Initialization.
3. If problem persists, replace Basic KSU, and test using default program,

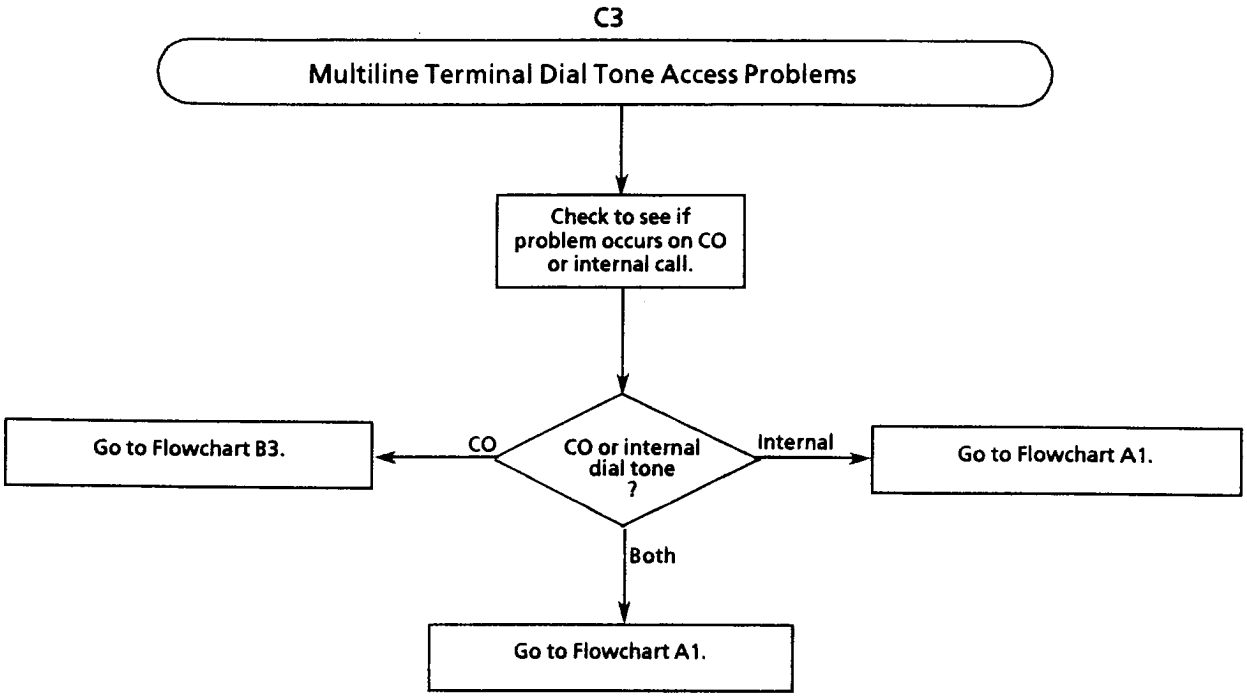
B4


CO/PBX Dialing Problem (Cannot Dial Out on CO)
SLT problem only ?
No
Yes
Check lines with test set to see if they are DTMF or Rotary.
Check Memory Blocks 4-01 and 4-05 to ensure SLT connection and DTMF/DP SLT type selection.
Rotary or DTMF ?
DTMF
Rotary
Check Memory Block 3-10 to ensure line(s) are programmed for rotary (DP).
Rotary or DTMF ?
Rotary
DTMF
Reprogram as Rotary (10 pps or 20 pps)
Line type program ?
DTMF
Rotary
Check CO lines at MDF with a test set to see if they are DTMF or Rotary.
Check CO lines at MDF with a test set to see if they are DTMF or Rotary.
Rotary or DTMF ?
DTMF
Rotary
Reprogram lines for Rotary.
Rotary or DTMF ?
Rotary
DTMF
Reprogram lines for DTMF.
Problem solved ?
No
Yes
Done
Monitor line with a test set and verify if system is sending digits.
Digits sent ?
Yes
No
1. If lines are DTMF, increase the DTMF duration in Memory Blocks 3-07.
2. If lines are Rotary, choose the 10 pps or 20 pps option in Memory Blocks 3-10.
3. Check off-hook CO line current.
1. Replace COI-C(2)-10 KTU and test.
2. If problem persists, perform Second Initialization and test.
3. If problem persists, perform System Initialization and test using default program.
4. If problem persists, replace KSU.

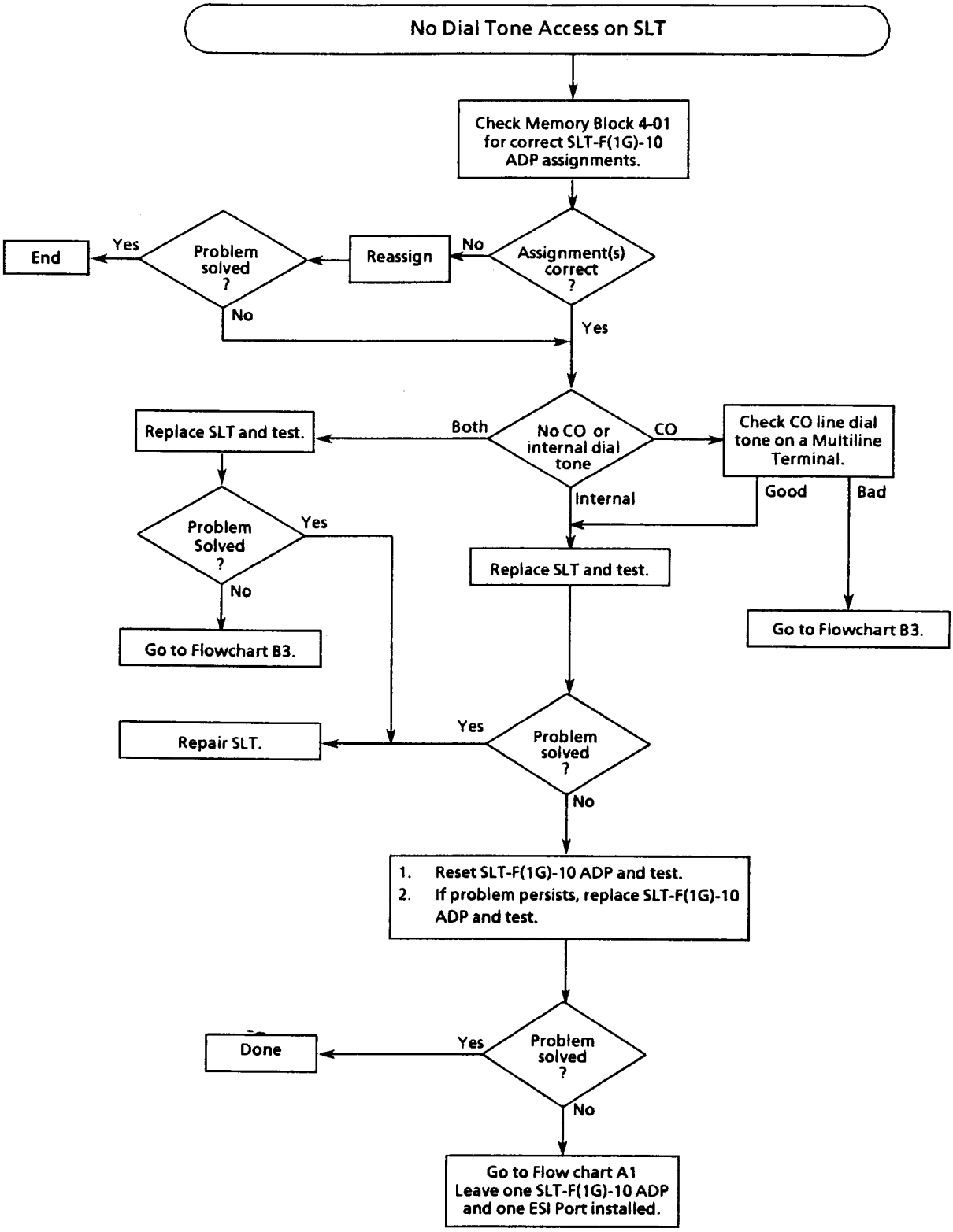

C1
Multiline Terminal Function Problems
All Multiline Terminals affected ?
No
Check Memory Blocks 4-02, 4-06, 4-10, 4-12, 4-13, and 4-19~4-23 for correct station assignment.
Yes
Go to Flowchart A2.
Assignment correct ?
No
Reassign
Yes
Perform Multiline Terminal Self Test:
1. Unplug Multiline Terminal line cord.
2. Hold Down "*" and "#" keys together while plugging in line cord.
3. Press each Multiline Terminal key to test tones, LEDs, and key contacts.
4. Return Multiline Terminal on-line by taking handset off-hook then return on-hook.
Problem solved ?
No
Yes
End
Unplug and plug line cord to reset and test. Replace defective Multiline Terminal and test.
Problem solved ?
Yes
Send defective Multiline Terminal in for repair.
No
Connect Multiline Terminal directly to MDF and test.
Problem solved ?
Yes
Replace defective station cable.
No
Replace ESI-C(8)-10 KTU.
Problem solved ?
No
1. Perform System Initialization and test using default program.
2. If problem persists, replace KSU.
Yes
Send defective KSU or ESI-C(8)-10 KTU in for repair.

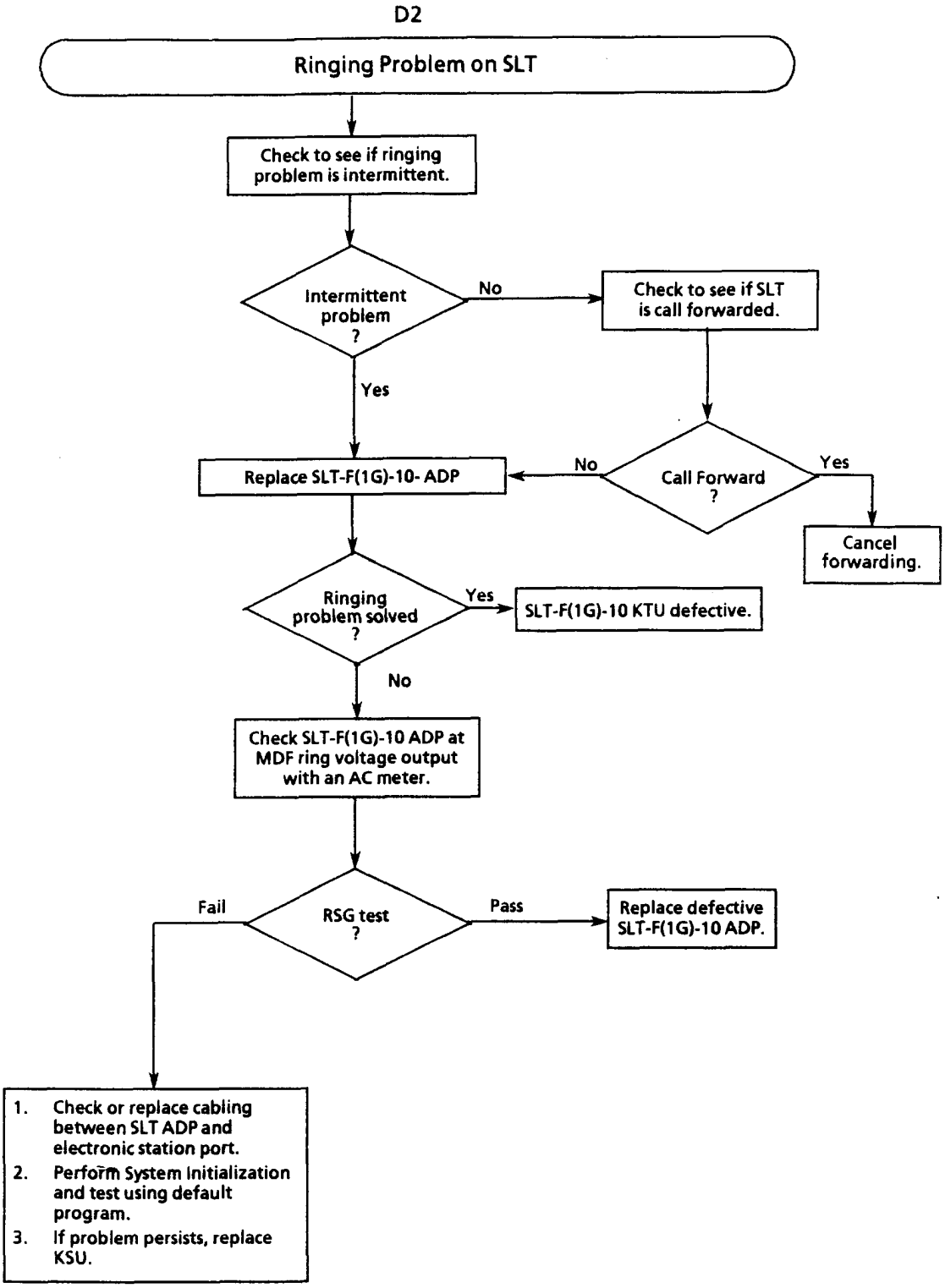


***Note:** Internal calls include station-to-station as well as transferred calls.

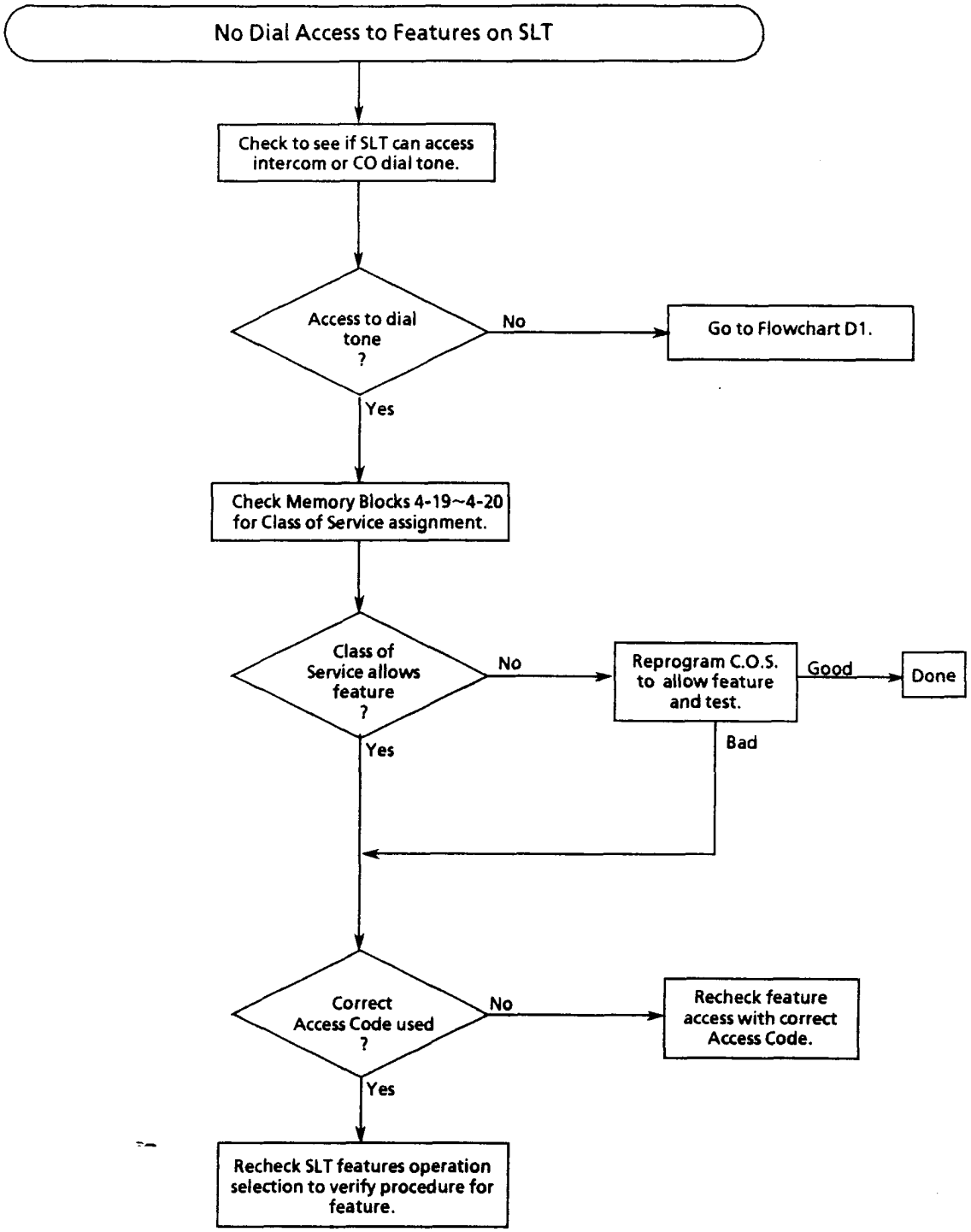

C3
Multiline Terminal Dial Tone Access Problems
Check to see if problem occurs on CO or internal call.
CO or internal dial tone ?
CO
Internal
Both
Go to Flowchart B3.
Go to Flowchart A1.
Go to Flowchart A1.

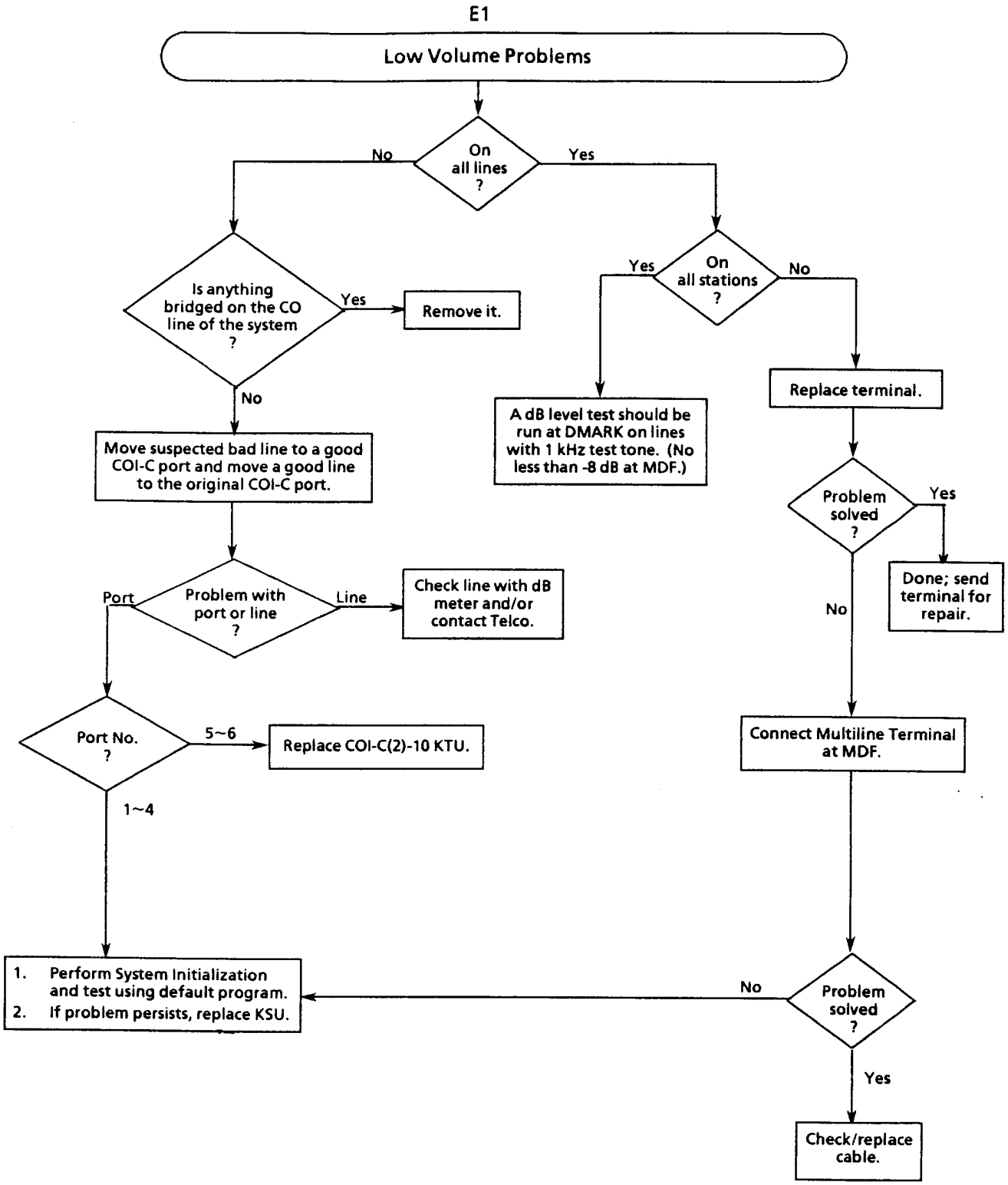
D1


No Dial Tone Access on SLT
Check Memory Block 4-01 for correct SLT-F(1G)-10 ADP assignments.
Assignment(s) correct ?
No
Reassign
Problem solved ?
Yes
End
Yes
No
No CO or internal dial tone
Both
CO
Internal
Replace SLT and test.
Problem Solved ?
Yes
No
Go to Flowchart B3.
Check CO line dial tone on a Multiline Terminal.
Good
Bad
Go to Flowchart B3.
Replace SLT and test.
Problem solved ?
Yes
Repair SLT.
No
1. Reset SLT-F(1G)-10 ADP and test.
2. If problem persists, replace SLT-F(1G)-10 ADP and test.
Problem solved ?
Yes
Done
No
Go to Flow chart A1
Leave one SLT-F(1G)-10 ADP and one ESI Port installed.

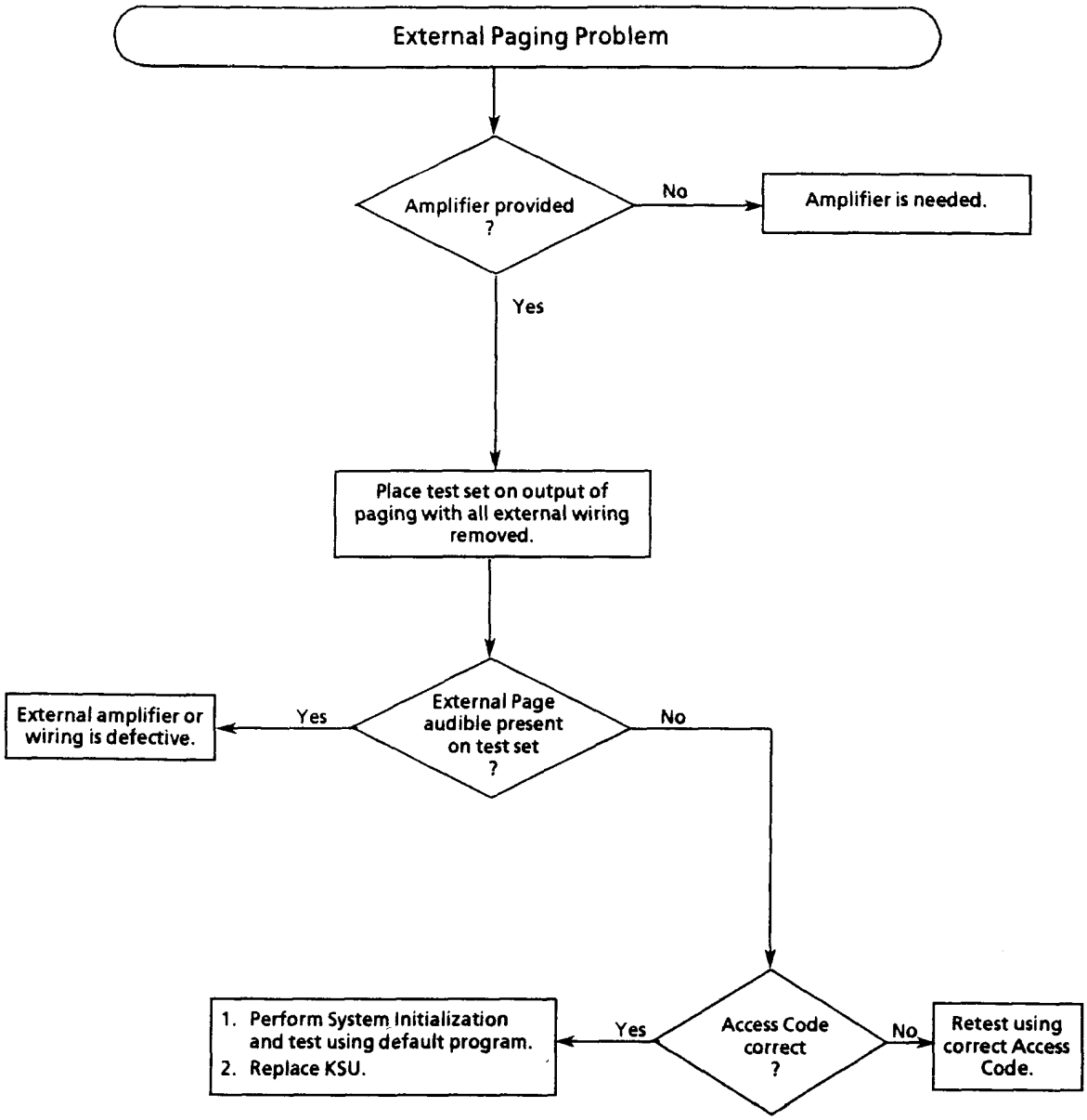

D2
Ringing Problem on SLT
Check to see if ringing problem is intermittent.
Intermittent problem ?
No
Check to see if SLT is call forwarded.
Yes
Call Forward ?
No
Yes
Cancel forwarding.
Replace SLT-F(1G)-10- ADP
Ringing problem solved ?
Yes
SLT-F(1G)-10 KTU defective.
No
Check SLT-F(1G)-10 ADP at MDF ring voltage output with an AC meter.
RSG test ?
Fail
Pass
Replace defective SLT-F(1G)-10 ADP.
1. Check or replace cabling between SLT ADP and electronic station port.
2. Perform System Initialization and test using default program.
3. If problem persists, replace KSU.

D3

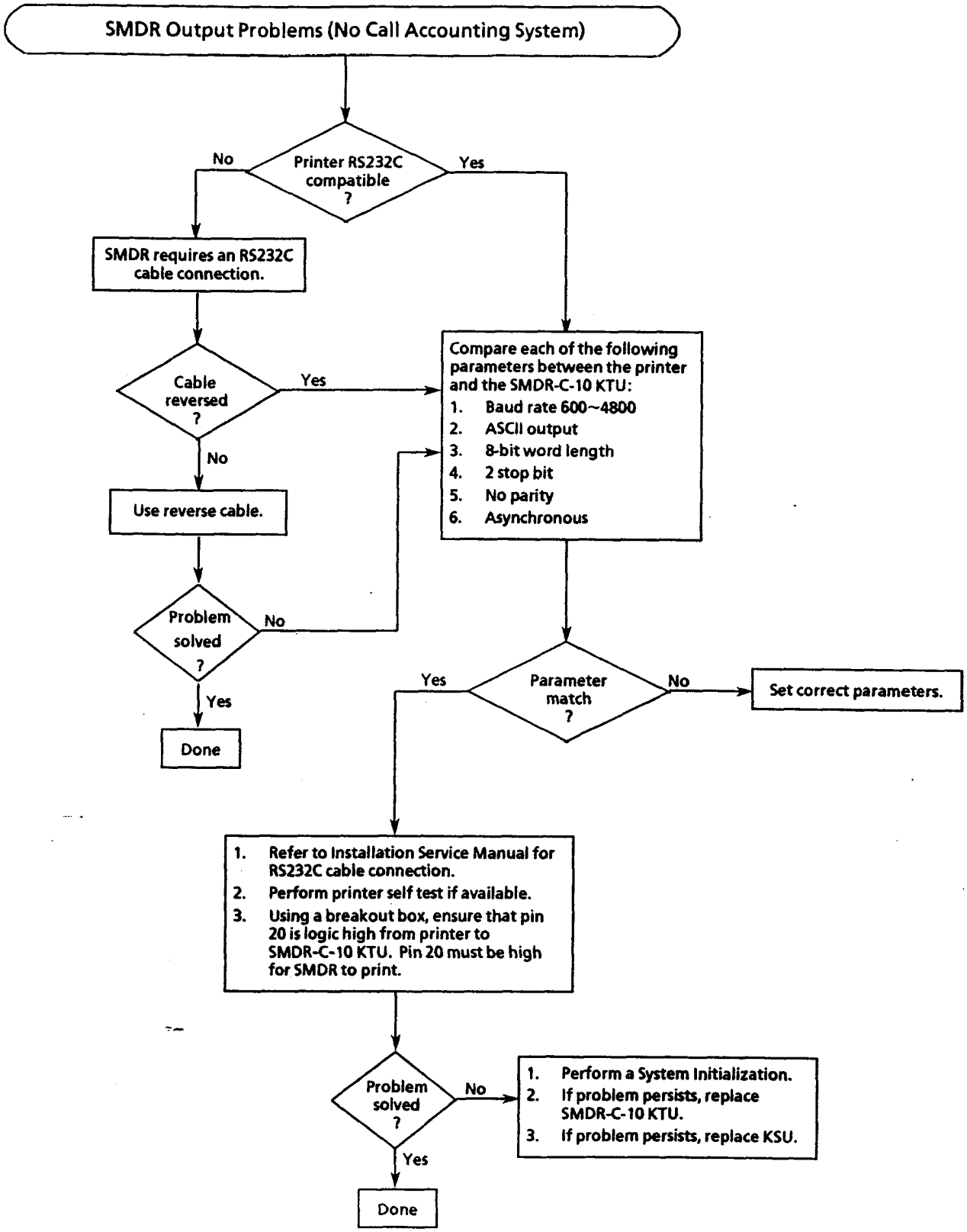

No Dial Access to Features on SLT
Check to see if SLT can access intercom or CO dial tone.
Access to dial tone ?
No
Go to Flowchart D1.
Yes
Check Memory Blocks 4-19~4-20 for Class of Service assignment.
Class of Service allows feature ?
No
Reprogram C.O.S. to allow feature and test.
Good
Done
Bad
Yes
Correct Access Code used ?
No
Recheck feature access with correct Access Code.
Yes
Recheck SLT features operation selection to verify procedure for feature.


E1
Low Volume Problems
On all lines ?
No
Yes
Is anything bridged on the CO line of the system ?
Yes
Remove it.
No
Move suspected bad line to a good COI-C port and move a good line to the original COI-C port.
Port
Problem with port or line ?
Line
Check line with dB meter and/or contact Telco.
Port No. ?
5~6
Replace COI-C(2)-10 KTU.
1~4
1. Perform System Initialization and test using default program.
2. If problem persists, replace KSU.
On all stations ?
Yes
No
A dB level test should be run at DMARK on lines with 1 kHz test tone. (No less than -8 dB at MDF.)
Replace terminal.
Problem solved ?
Yes
Done; send terminal for repair.
No
Connect Multiline Terminal at MDF.
Problem solved ?
No
Yes
Check/replace cable.

F1


External Paging Problem
Amplifier provided ?
No
Amplifier is needed.
Yes
Place test set on output of paging with all external wiring removed.
External Page audible present on test set ?
Yes
External amplifier or wiring is defective.
No
Access Code correct ?
Yes
1. Perform System Initialization and test using default program.
2. Replace KSU.
No
Retest using correct Access Code.

G1


SMDR Output Problems (No Call Accounting System)
Printer RS232C compatible ?
No
Yes
SMDR requires an RS232C cable connection.
Cable reversed ?
Yes
No
Use reverse cable.
Problem solved ?
No
Yes
Done
Compare each of the following parameters between the printer and the SMDR-C-10 KTU:
1. Baud rate 600~4800
2. ASCII output
3. 8-bit word length
4. 2 stop bit
5. No parity
6. Asynchronous
Parameter match ?
Yes
No
Set correct parameters.
1. Refer to Installation Service Manual for RS232C cable connection.
2. Perform printer self test if available.
3. Using a breakout box, ensure that pin 20 is logic high from printer to SMDR-C-10 KTU. Pin 20 must be high for SMDR to print.
Problem solved ?
No
Yes
Done
1. Perform a System Initialization.
2. If problem persists, replace SMDR-C-10 KTU.
3. If problem persists, replace KSU.

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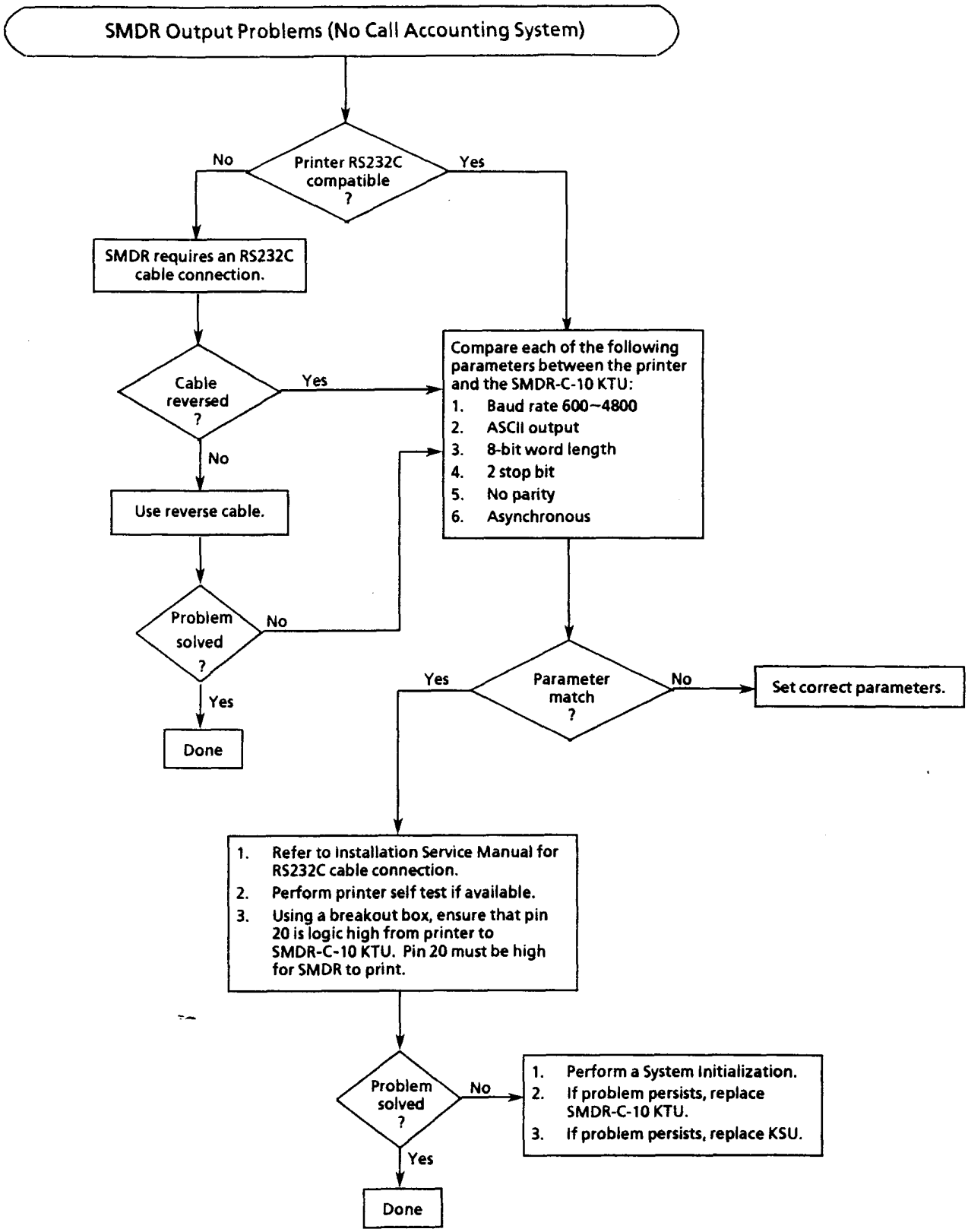
G1


SMDR Output Problems (No Call Accounting System)
Printer RS232C compatible ?
No
Yes
SMDR requires an RS232C cable connection.
Cable reversed ?
Yes
No
Use reverse cable.
Problem solved ?
No
Yes
Done
Compare each of the following parameters between the printer and the SMDR-C-10 KTU:
1. Baud rate 600~4800
2. ASCII output
3. 8-bit word length
4. 2 stop bit
5. No parity
6. Asynchronous
Parameter match ?
Yes
No
Set correct parameters.
1. Refer to Installation Service Manual for RS232C cable connection.
2. Perform printer self test if available.
3. Using a breakout box, ensure that pin 20 is logic high from printer to SMDR-C-10 KTU. Pin 20 must be high for SMDR to print.
Problem solved ?
No
Yes
Done
1. Perform a System Initialization.
2. If problem persists, replace SMDR-C-10 KTU.
3. If problem persists, replace KSU.

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