

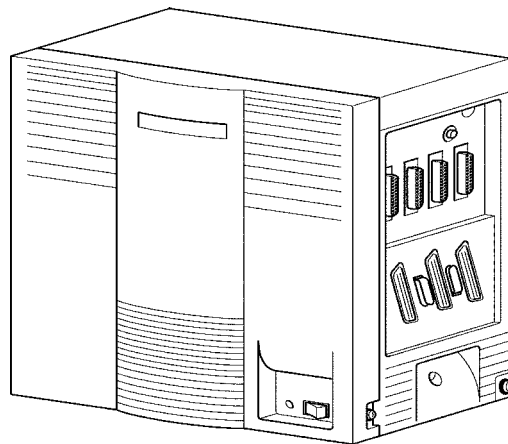
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NEC

ElectraElite[®] 192



GENERAL DESCRIPTION MANUAL

Stock Number 750360

Issue 6

(Series 6000)

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**NEC Infrontia, Inc.
6535 N. State Highway 161
Irving, TX 75039-2402**

Technology Development

Preface

GENERAL INFORMATION

The Electra Elite system is a feature-rich key system that provides over 200 features including Computer Telephony Integration, Least Cost Routing, Automatic Call Distribution, ISDN-BRI Voice Trunks, ISDN-PRI Voice Trunks, LAN/KTS Cabling Integration, Voice over Internet Protocol (VoIP), and many others.

The Electra Elite system meets the customer needs today, and as business expands, the system can be expanded to grow as well.

A set of manuals for the Electra Elite system provides all the information necessary to install and support the system. The manuals are described in this preface.

THIS MANUAL

This manual provides general information about the system, its features, system configuration, and standards. This manual provides an overview of the Electra Elite system and is useful when presenting information to potential customers.

Chapter 1 – Introduction

This chapter provides an overview of NEC Corporation, an overview of the system, and a brief description of the system.

Chapter 2 – Features

This chapter provides a list of features that are available with the system. Each feature is briefly described.

Chapter 3 – Equipment

This chapter provides a list and brief description of the equipment that is available with the system.

Chapter 4 – Installation, Programming, and Maintenance Overview

This chapter briefly describes the installation, programming functions, and maintenance of the system.

Chapter 5 – Hardware Specifications

This chapter provides requirements and specifications relating to the system hardware. This chapter is helpful to those that install the system.

SUPPORTING DOCUMENTS

Electra Elite 48/192 Features and Specifications Manual (Stock Number 750361)

This manual provides detailed information concerning every feature available in the system.

Electra Elite 192 System Hardware Manual (Stock Number 750363)

The System Hardware Manual is provided for the system installer. This manual has detailed instructions for installing the Electra Elite KSU, ETUs, Multiline Terminals, and optional equipment.

Electra Elite 48/192 Programming Manual (Stock Number 750362)

This manual provides instructions for programming the Electra Elite system using a Multiline Terminal or PC.

Electra Elite Least Cost Routing Manual (Stock Number 750364)

This manual provides instructions to the service technician for programming the customer site for least cost routing.

Electra Elite Automatic Call Distribution Manual (Stock Number 750365)

This manual provides the service technician with instructions for programming the ACD. This manual can also be used by the ACD supervisor at the customer site to become familiar with the ACD/MIS feature.

Electra Elite 48/192 Job Specifications Manual (Stock Number 750377)

This manual helps the technician to install and maintain the Electra Elite system. This manual contains the job specification worksheets. When these worksheets are completed, they provide all of the system programming values and configuration information necessary to assist technicians in maintaining the system.

Elite ACD Plus Installation Manual (Stock Number 750359)

This manual provides general information about the Elite ACD Plus features, installation procedures and feature programming. The NEC Elite ACD Plus is an Automatic Call Distribution card that supports up to 40 Agents and 12 supervisors at one time.

Electra Elite Wireless System Manual (Stock Number 750423)

This manual describes the system and provides hardware installation and programming procedures for the Electra Elite Wireless Communication System (WCS).

Regulatory Information

Regulatory Information

GENERAL INFORMATION


Established Federal Communications Commission (FCC) rules 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 are not provided on party lines or coin lines.

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


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:

 When the system is to be installed as a Key Function system (no dial access to Trunk Groups/Route Advance Blocks), use the following number:


AY5THA-24363-KF-E

 When the system is to be installed as a Multifunction system, use the following number:

AY5THA-24361-MF-E

 When the system is to be installed as a PBX Function system, use the following number:

AY5THA-24362-PF-E

 Ringer Equivalence Number (REN): **2.0B**

 USOC jack required: **RJ21X**

The following table lists the Facility Interface Codes (FIC), Ringer Equivalent Numbers (REN), Service Order Codes (SOC), and Jack Types for the interface ETUs.

Table 1 FIC, REN, SOC, and Jack Types for Electra Elite System ETUs

Trunk/Station ETU Type	FIC	REN	SOC	Jack
BRT(4)-U10 ETU	02IS5	N/A	6.0F	N/A
CAMA Trunk	02RV-O	0.7A	9.0F	RJ21X
COI(4)-U10 ETU (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COI(8)-U10 ETU (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COI(8)-U10 ETU (Ground Start)	02GS2	0.7A	9.0F	RJ21X
COIB(4)-U10 ETU for COID/COI Mode (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COIB(4)-U10 ETU for COI Mode (Ground Start)	02GS2	0.7A	9.0F	RJ21X
COID(4)/(8)-U10 ETU (Loop Start)	02LS2	0.7A	9.0F	RJ21X
DID(4)-U10 ETU	02RV2T	N/A	9.0F	RJ21X
DTI-U10/20 ETU	04DU9-BN 04DU9-DN 04DU9-1KN 04DU9-1SN	N/A	6.0P	N/A
OPX(2)-U10 ETU	0L13C	N/A	9.0F	RJ21X
PRT(1)-U10/20 ETU	04DU9-1SN	N/A	6.0P	N/A
TLI(2)-U10 ETU	TL31M	N/A	9.0F	RJ21X

INCIDENCE OF HARM

When 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. When this is not done, the telephone company may temporarily disconnect service.

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, that 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, is required to take whatever measures may be required to correct the interference."

HEARING AID COMPATIBILITY

The NEC Multiline Terminals and NEC Single Line Telephones that are provided for this system are hearing aid compatible. The manufacturer of other Single Line Telephones for use with the system must provide notice of hearing aid compatibility to comply with FCC rules that now prohibit the use of non-hearing aid compatible telephones.

DIRECT INWARD DIALING

Operating this equipment without providing proper answer supervision is a violation of Part 68 of the FCC rules.

Proper Answer Supervision occurs when:

☎ This equipment returns answer supervision to the Public Switched Telephone Network (PSTN) when Direct Inward Dialing (DID) calls are:

- ⌚ Answered by the called station.
- ⌚ Answered by the Attendant.
- ⌚ Routed to a recorded announcement that can be administered by the Customer Premise Equipment (CPE) user.
- ⌚ Routed to a dial prompt.

☎ This equipment returns answer supervision on all DID calls forwarded to the Public Switched Telephone Network (PSTN). Permissible exceptions are:

- ⌚ A call is unanswered.
- ⌚ A busy tone is received.
- ⌚ A reorder tone is received.

**VOICE
ANNOUNCEMENT/
MONITORING OVER
DID LINES****CAUTION**

Using the Voice Announcement feature to eavesdrop or record sound activities at the other end of the telephone line may be illegal under certain circumstances and laws. Consult a legal advisor before implementing any practice to monitor or record a telephone conversation. Some federal and state laws require a party monitoring or recording a telephone to use a beep-tone(s), notify all parties to the telephone conversation and/or obtain consent of all parties to the telephone conversation. In monitoring or recording sound activities at the other end of the telephone line using the Voice Announcement feature, the sound of the alert tone at the beginning of the Voice Announcement may or may not be considered sufficient under applicable laws. Some of the applicable laws provide for strict penalties for illegal monitoring or recording of telephone conversations.

MUSIC ON HOLD**IMPORTANT NOTE**

"In accordance with U.S. Copyright Law, a license may be required from the American Society of Composers, Authors and Publishers, or other similar organization, if radio or TV broadcasts are transmitted through the Music On Hold feature of this telecommunication system. NEC America Inc., hereby disclaims any liability arising out of the failure to obtain such a license."

**SERVICE
REQUIREMENTS**

If equipment malfunctions, all repairs will be performed by an authorized agent of NEC America, Inc. or by NEC America, Inc. The user requiring service is responsible for reporting the need for service to an NEC America, Inc. authorized agent or to NEC America, Inc.

**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.

INDUSTRY CANADA REQUIREMENTS

Industry Canada 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. IC registration number: **140 7942 A**
3. Ringer Equivalence Number (REN) of the equipment: **2.1**

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the applicable Terminal Equipment Technical Requirements document(s). The Department does not guarantee that equipment operates to the user 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. 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 coordinated by a representative 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, When 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 applicable electric inspection authority or electrician.

The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalent Numbers of all the devices does not exceed five.

This equipment has been listed by the Canadian Standards Association and found to comply with all applicable requirements of the standard for telephone equipment **C 22.2 No. 225**.

This equipment meets IC 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 Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

BATTERY DISPOSAL

The Electra Elite system includes the batteries listed below. When disposing of these batteries, KSUs, and/or ETUs, you must comply with applicable federal and state regulations regarding proper disposal procedures.

Table 2 Battery Types and Quantities for KSUs and ETUs

Unit Name	Type of Battery	Quantity
B64-U10 KSU	Lead Acid	2
CPUB()-U10 ETU	Nickel-Cadmium	1
CTI/VP(4)/(8)/(12)/(16)-U10 ETU	Lithium	1
DTP-1HM-1 (WH) TEL	Lithium	1
DTP-1HM-2 (WH)/(BK) TEL		1
DTP-16HC-1 (BK) TEL	Nickel-Cadmium	1
DTR-4R-1(BK) TEL	Nickel-Cadmium	1
DTU-4R-1(BK) TEL	Lead Acid	1
ETW-4R-1(BK) TEL	Nickel-Cadmium	1
FMS(2)/(4)/(8)-U10 ETU	Nickel-Cadmium	1

Table 2 Battery Types and Quantities for KSUs and ETUs

MIFA-U10 ETU	Nickel-Cadmium	1
MIFM-U10 ETU	Nickel-Cadmium	1
VMS(2)/(4)/(8)-U10 ETU	Nickel-Cadmium	1

The Electra Elite CPUB()-U10 ETU provides memory backup for approximately 21 days. The Ni-Cd battery should be replaced about every two years.

IMPORTANT SAFEGUARDS FOR BATTERY DISPOSAL

DO NOT PLACE USED BATTERIES IN YOUR REGULAR TRASH! THE PRODUCT YOU PURCHASED CONTAINS A NICKEL-CADMIUM OR SEALED LEAD BATTERY. NICKEL-CADMIUM OR SEALED LEAD BATTERIES MUST BE COLLECTED, RECYCLED, OR DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER.

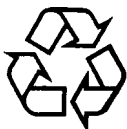
The incineration, landfilling or mixing of nickel-cadmium or sealed lead batteries with the municipal solid waste stream is PROHIBITED BY LAW in most areas. Contact your local solid waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the battery.

Nickel-Cadmium (or sealed lead) batteries must be returned to a federal or state approved nickel-cadmium (or sealed lead) battery recycler. This may be where the batteries were originally sold or a local seller of automotive batteries. Contact your local waste management officials for other information regarding the environmentally sound collection, recycling and disposal of the battery contained in this product. For Ni-Cd batteries, you can also call 1-800-8-BATTERYSM when further information is required.

The packaging for the Electra Elite system contains the following labels regarding proper disposal.

PRODUCT PACKAGE LABELING**Ni-Cd**

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

**Pb**

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

**Ni-MH**

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

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Chapter 1

Introduction

SECTION 1 CORPORATE OVERVIEW

Founded in 1899, NEC is the only corporation in the world to be consistently ranked among the top 10 vendors of computers, communications, and integrated circuits.

NEC America, Inc., a subsidiary of NEC Corporation, was founded in 1963. From that single sales office in downtown Manhattan, New York, NEC now has multiple sales and service locations to serve all of the United States, Canada, and Puerto Rico with a diverse portfolio of telecommunications products. NEC America was the first to offer skinny-wire and digital key telephone systems.

SECTION 2 SYSTEM OVERVIEW

The Electra Elite 192 system is a complete communications system that enhances productivity and controls costs. Its objectives were based on four Es – Easy to Install, Easy to Maintain, Easy to Expand, and Easy to Use – all at a reasonable price. The Electra Elite System, like all NEC communications products, is user-friendly, reliable, and cost-effective.

Easy to Install

With the Electra Elite 192 system, NEC has reduced the number of hardware components, making the system easier to install. Only 1-pair wire is required to connect telephones. This system provides Windows 95/98, Windows ME, Windows 2000, and Windows XP-based PC programming, with a menu-driven guide, to both simplify and speed installation. All programming information and station labels can be printed as completed. For further convenience and versatility, end-user programming is provided for up to approximately 35 features.

🕒 Easy to Maintain

When system memory failure occurs, PC Programming software can be used locally or from a remote location to upload/download all system data. Each Electronic Telephone Unit (ETU) except those required to sustain system operation (e.g., CPU, ACD, IPT, and VMS) can be installed or removed (hot swap) without shutting down the system. Other considerations for easy maintenance include:

- Standard Amphenol Connectors
- Built-in RS-232 connectors for all communication needs
- Standard Station wiring for DTP and DTU Multiline Terminals
- Compact KSU
- Flash ROM for software upgrades
- Flash ROM upgrade by using PC programming

🕒 Easy to Expand

The Electra Elite 192 system offers a single cabinet that is used for both the Basic and Expansion KSUs to provide easy and cost effective growth using universal slots to enhance system configuration.

The basic Electra Elite system KSU, B64-U10 KSU, offers 64 ports. The system can be expanded to a maximum of 192 ports by adding two expansion (B64-U10) KSUs to an existing 64-port system.

🕒 Easy to Use

The Electra Elite 192 system is Centrex compatible to allow maximum flexibility and ease of use. One-Touch key access can be programmed for most features, including Centrex options and Speed Dial abilities. A voice prompt can be provided to help users make calls. Voice Mail integration, Automated Attendant, and personalized messaging all give the system that personal touch so important in a well-run business. Most communication equipment can be connected to this system including facsimile machines and modems. The user-friendly, cost-effective programs can be updated with future enhanced system upgrades, minimizing confusion about software levels, documentation, and configuration requirements.

🕒 Unique Design

The Electra Elite 192 system is a powerful key system that can meet the ever changing communications demands of current businesses. Its unique compact design allows the system to be easily and quickly installed.

The Electra Elite 192 system can grow with your business. You can easily and economically increase port size when necessary. Two expansion units can be added to provide a total capacity of 192 ports.

The feature-rich Electra Elite 192 system provides the basic telephone functions and supports:

- Automatic Number Indication (ANI)/Caller ID
- Automatic Call Distribution (ACD)
- Automatic Route Selection (ARS)
- Centralized Voice Mail
- Computer Telephony Integration (CTI)
- Dialed Number Indication Service (DNIS)
- D^{term} Handset Cordless
- Elite ACD Plus
- Emergency 911 – Cut Through
- Enhanced 911
- Integrated Digital Voice Mail
- ISDN-BRI and -PRI Voice Trunks
- LAN/KTS Cabling Integration
- Least Cost Routing (LCR)
- Live Monitoring and Live Record
- Multiline Conference Bridge
- Multilingual LCD Indication
- Multiple Music on Hold using CO Interface
- PC Attendant Console
- Unified Messaging
- Uniform Call Distribution (UCD)
- Voice over Internet Protocol Trunks (VoIP)
- Wireless
- Optional 33.6 kbps Modem for Remote Programming and Maintenance

The Electra Elite 192 system offers a variety of Multiline Terminals that are compatible with the system, available in 8-line, 16-line, and 32-line capacities, and offered as display and non-display terminals. A 2-line non-display terminal and 60-line Attendant Console are also available.

When a customer has existing Electra Professional terminals, they can be easily connected to the Electra Elite 192 system, providing inexpensive migration. Most Electra Elite 192 system features are available with the Electra Professional Multiline Terminals.

The Electra Elite 192 system supports a wide range of additional equipment that can be connected to the system to accommodate individual customer needs.

User Interface

The Electra Elite System offers a choice between the Electra Elite, D^{term} Series E, or Electra Professional terminals.

- Electra Elite Terminals

DTU terminals are available in black or white: 8-line display or non-display type, 16-line display or non-display type, and 32-line display or non-display type. A 2-line non-display terminal is also available in white. Speakerphones are standard, providing full handsfree operation. All Electra Elite terminals have a built-in headset jack. The large Liquid Crystal Display (LCD) on the display terminals provides call status data and programming information. The display terminals have four softkeys. For Attendant Positions, up to four Attendant Consoles are available, each providing 48 station and/or outside line assignments and 12 function keys. An SLT Adapter can be used in place of a digital terminal for connecting Single Line Telephones, or similar devices.

- D^{term} Series E Terminals

DTP Terminals are available in black or white and duplicate functions of the comparable DTU Terminal. The name is shown at the top of the terminal.

- Electra Professional Terminals

Electra Professional terminals are available in black or soft white: an 8-line non-display type, two 16-line display types (with or without DSS/BLF keys), and a 24-line display type with DSS keys. Speakerphones are standard, providing full handsfree operation. The large Liquid Crystal Display (LCD) provides call status data and programming information.

For Attendant Positions, up to four Attendant Add-On Consoles are available, each providing 48 station and/or outside line assignments and 12 function keys. An SLT Adaptor can be used in place of a digital terminal for connecting Single Line Telephones, or similar devices.

- Additional Equipment

Additional equipment such as: Single Line Telephones, external speakers, voice mail, or facsimile machines can be connected to the system to enhance the abilities of the Electra Elite 192 system. [Figure 1-1 System Configuration Example](#) shows the Electra Elite 192 system with standard and optional (some locally provided) functions that are available with the system.

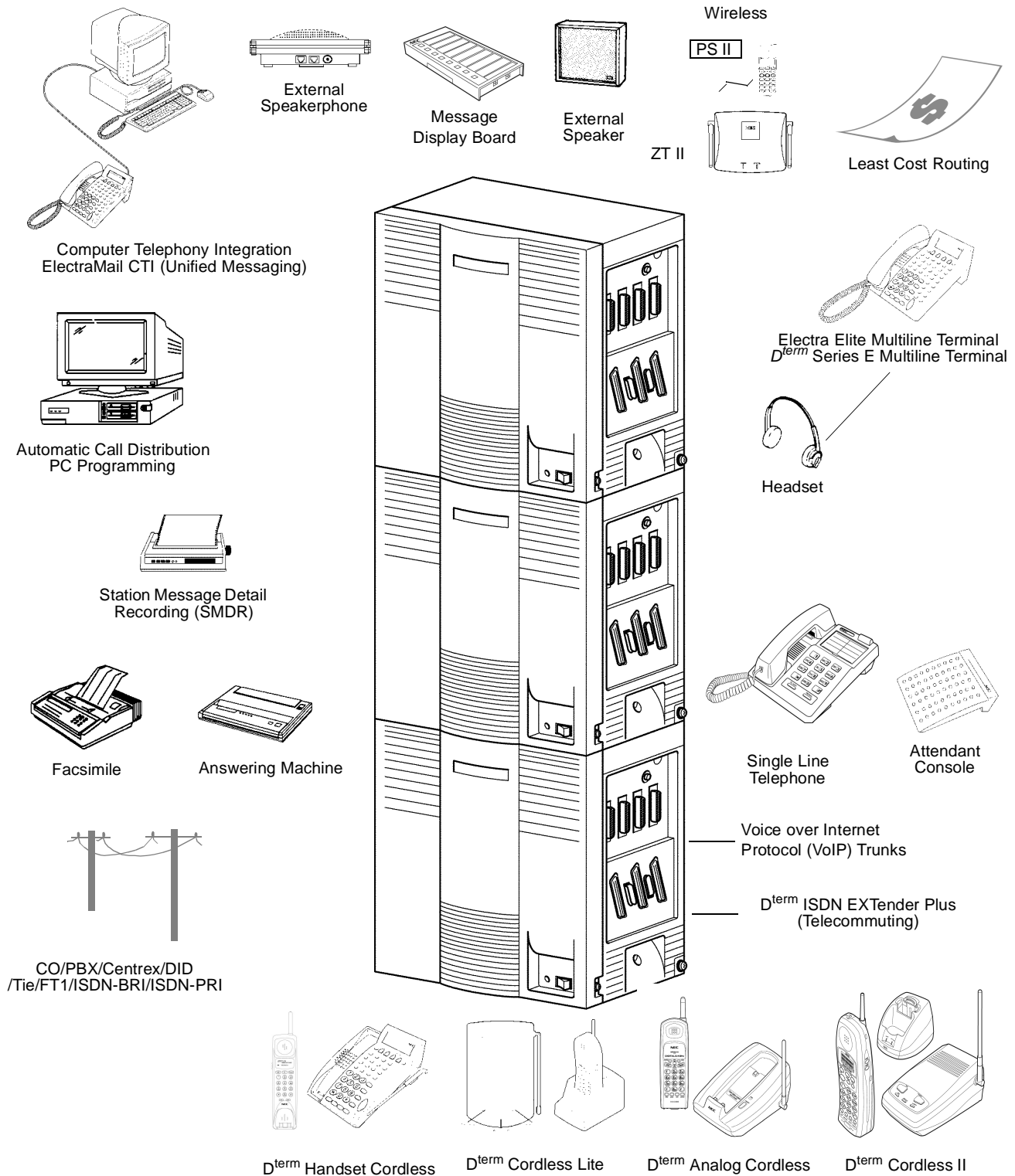


Figure 1-1 System Configuration Example

SECTION 3

SYSTEM DESCRIPTION

The Electra Elite 192 System uses a universal port concept. These ports support telephones, outside lines and other circuits and devices. The assignment of ports is flexible, but the system configuration determines the number of ETUs that can be installed. The maximum number of devices that can be supported by the system are shown in [Table 1-1 Maximum Capacities for Devices Supported by the System](#).

Table 1-1 Maximum Capacities for Devices Supported by the System

Devices	Basic KSU	Basic KSU + One Expansion KSU	Basic KSU + Two Expansion KSUs
Universal port	64	128	192
Outside lines (CO/PBX, DID, ISDN, TIE, T1 or FT1 or VoIP)	56	64	64
Multiline Terminals (including CAR key assignment)	120	120	120
Attendant Consoles	4	4	4
Internal Talk Paths (Multiline Terminal)	Non-Blocking	Non-Blocking	Non-Blocking
Single Line Telephones	56	118	118

The universal port technique provides flexibility for meeting various customer requirements by allowing a wide range of configurations.

Design Technologies

- ④ Non-blocking time division switching for Multiline Terminals
- ④ Stored program control
- ④ Distributed processing based on the use of microprocessors

Design Goals

- ④ Modular Growth
- ④ Universal Slots
- ④ Variety of Terminals
- ④ Ease of Operation
- ④ Networking Ability
- ④ Computer Telephony Integration

The Electra Elite 192 system is a 32-bit microprocessor based, stored program controlled, digital communication system using Pulse Code Modulation (PCM).

The system has central equipment cabinets and telephones located throughout the installation site. The central equipment cabinets contain the Key Service Unit (KSU). A maximum of three Electra Elite KSUs can be installed to accommodate the requirements of each customer.

The KSUs are built for modular growth. The Electra Elite 192 KSUs are stacked vertically for quick interconnection. Printed circuit boards, called Electronic Telephone Units (ETUs), provide common control and interface to equipment that is external to the KSUs.

Interface ETUs are installed in the KSU to support the various telephones, outside lines, and other devices or features. The Electra Elite KSU provides 64 ports with eight interface slots. The same ETU is used for basic and both expansion cabinets.

The universal slot design minimizes the hardware required for a system and provides greater flexibility in the number and types of devices that can be installed. Refer to [Figure 1-2 ETU Slot Design](#).

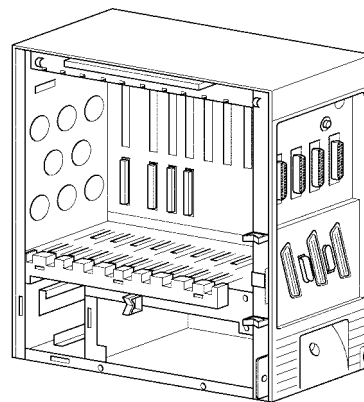


Figure 1-2 ETU Slot Design

The Electra Elite KSU contains an application slot and a CPU/EXP ETU slot. A power supply and battery backup area complete the KSU.

The Electra Elite 192 system allows connection of a variety of telephones. The different needs of the customer may require various types of telephones.

The following DTP, DTU, and Electra Professional telephones can be installed in the Electra Elite system:

DTP or DTU Terminals

- ④ 2-line Multiline Terminal without display [DTP-2DT-1(WH) TEL]
- ④ 8-line Multiline Terminal without display [DTP-8-1(BK)/(WH) or DTU-8-1(BK)/(WH) TEL]
- ④ 8-line Multiline Terminal with display [DTP-8D-1(BK)/(WH) or DTU-8D-2(BK)/(WH) TEL]
- ④ 16-line Handset Cordless Terminal [DTP-16HC-1(BK) TEL]
- ④ 16-line Multiline Terminal without display [DTP-16-1(BK)/(WH) or DTU-16-1(BK)/(WH) TEL]
- ④ 16-line Multiline Terminal with display [DTP-16D-1(BK)/(WH) or DTU-16D-2(BK)/(WH) TEL]
- ④ 32-line Multiline Terminal without display and 16 programmable One-Touch keys [DTP-32-1(BK)/(WH) or DTU-32-1(BK)/(WH) TEL]
- ④ 32-line Multiline Terminal with display and 16 programmable One-Touch keys [DTP-32D-1(BK)/(WH) or DTU-32D-2(BK)/(WH) TEL]
- ④ Attendant Console [DCU-60-1(BK)/(WH) Console]





Electra Professional Terminals

- ④ 8-line Multiline Terminal without display [ETW-8-1/2(BK)/(SW) TEL]
- ④ 16-line Multiline Terminal with display [ETW-16DC-1/2(BK)/(SW) TEL]
- ④ 16-line Multiline Terminal with display and 20 One-Touch keys that can be programmed for DSS/BLF [ETW-16DD-1/2(BK)/(SW) TEL]
- ④ 24-line Multiline Terminal with display and 12 One-Touch keys [ETW-24DS-1/2(BK)/(SW) TEL]
- ④ Attendant Add-On Console [EDW-48-1/2(BK)/(SW) DSS/BLF]
- ④ Single Line Telephone with DTMF dial, with or without a message waiting lamp

Comparison of Electra Professional and DTP or DTU Terminals

The Electra Professional terminals and the Electra Elite terminals have similar abilities. However, a few differences are listed below:

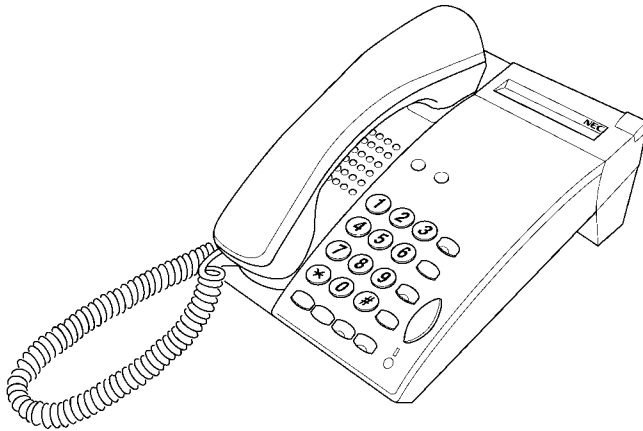
- ④ DTP or DTU Terminals use the green/red pair at the wall jack instead of the yellow/black pair used with the Electra Professional Terminals.
- ④ The ETW-8-1/2, DTP-8-1, DTU-8-1, DTP-8D-1 and DTU-8D-2 have the same line capacity.

- ④ The ETW-16DC-1/2, DTP-16D-1, DTU-16D-2, and DTP-16HC-1 have the same line capacity.
- ④ The DTP-32D-1 and DTU-32D-2 have four less One-Touch keys than the ETW-16DD-1/2.
- ④ The DTP or DTU Multiline Terminal (except DTP-2DT-1 or DTP-16HC-1) provides the full-duplex speakerphone option with push-to-mute ability.
- ④ The DTP or DTU Multiline Terminal has a built-in headset jack, a built-in wall mount unit, and a longer handset cord (12 feet).
- ④ The DTP-2DT-1 and DTP-16HC-1 do not provide a headset jack.
- ④ The DTP or DTU Multiline Terminal (except DTP-2DT-1 and Cordless Terminals) has snap-in option units for easy installation. The DTP-16HC-1 requires one ACA-U adapter as the only compatible snap-in option.
- ④ The  key on the Electra Professional Multiline Terminal performs the same operation as  on the DTP or DTU Multiline Terminal.
- ④ The  key on the Electra Professional Multiline Terminal performs the same operation as  on the DTP or DTU Multiline Terminal.
- ④ Handset/Headset Mute is not supported on DTP or DTU terminals.
- ④ The DTP or DTU Multiline Terminal has a matte finish.
- ④ The Revision 2 DTP or DTU Multiline Terminal has four softkeys.
- ④ The D^{term} PC and D^{term} PCII TAPI boards for the Electra Professional are not supported by the Electra Elite system.

Comparison of DTP and DTU Terminals

- ④ DTP terminals are feature comparable to DTU and are supported by the Electra Elite and NEAX family of products.
- ④ DTU Multiline terminals are supported by the Electra Elite and Electra Professional family of products.

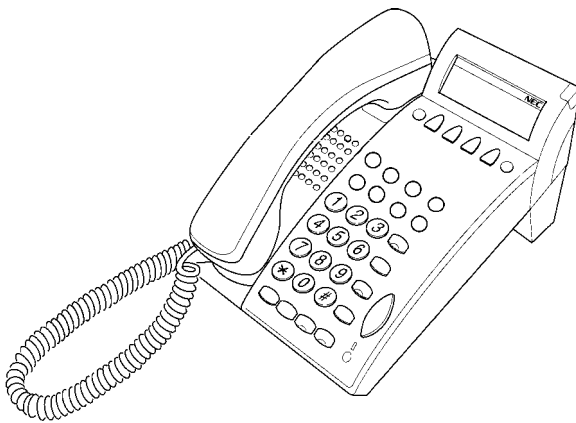
(Refer to [Figure 1-3 Electra Elite Multiline Terminals](#), [Figure 1-4 Electra Professional Multiline Terminals](#), [Figure 1-5 Single Line Telephone](#), [Figure 1-6 Hotel/Motel Telephone](#), [Figure 1-7 Electra Elite Attendant Console](#), [Figure 1-8 Electra Professional Attendant Add-On Console](#), [Figure 1-9 \$D^{term}\$ Cordless Terminal](#), [Figure 1-10 \$D^{term}\$ Cordless Lite Terminal](#), [Figure 1-11 \$D^{term}\$ Analog Cordless Terminal](#), [Figure 1-12 \$D^{term}\$ Cordless II Terminal](#), [Figure 1-13 \$D^{term}\$ Handset Cordless Terminal](#), [Figure 1-14 \$D^{term}\$ PS II](#), [Figure 1-15 Zone Transceiver \(ZT II\)](#), [Figure 1-16 DBM\(B\)-U10 Message Display Board](#), and [Figure 1-17 DBM\(E\)-U10 Message Display Board](#).)



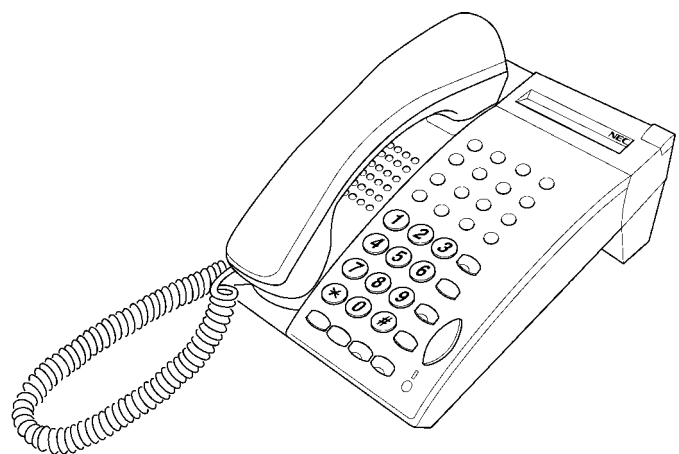
DTP-2DT-1(WH) TEL
2-Line Non-display



DTU-8-1(BK)/(WH) TEL
8-Line Non-display

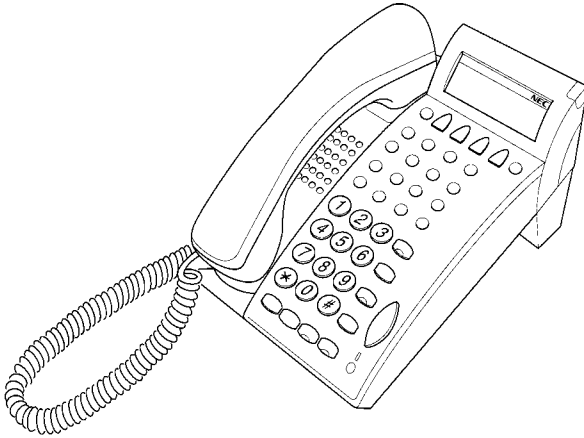


DTU-8D-2(BK)/(WH) TEL
8-Line Display

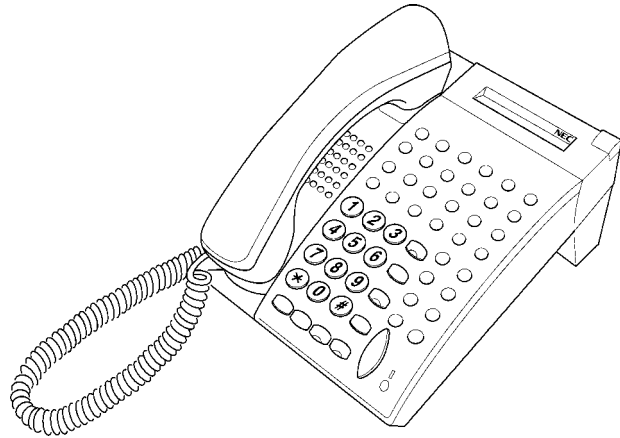


DTU-16-1(BK)/(WH) TEL
16-Line Non-display

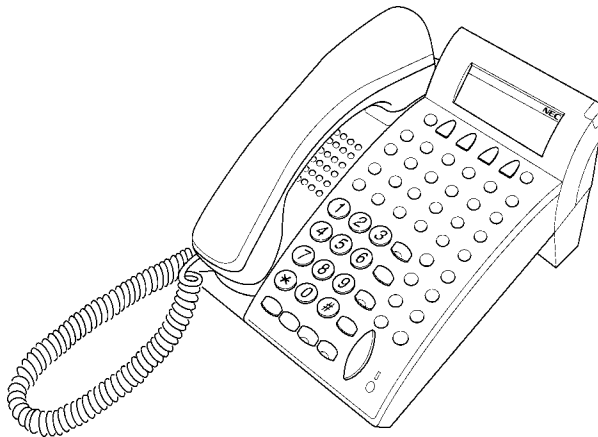
Figure 1-3 Electra Elite Multiline Terminals



DTU-16D-2(BK)/(WH) TEL
16-Line Display



DTU-32-1(BK)/(WH) TEL
16-Line Non-display with 16
Programmable One-Touch Keys



DTU-32D-2(BK)/(WH) TEL
16-Line Display with 16
Programmable One-Touch Keys

Figure 1-3 Electra Elite Multiline Terminals (Continued)



ETW-8-1/2(BK)/(SW) TEL



ETW-16DC-1/2(BK)/(SW) TEL

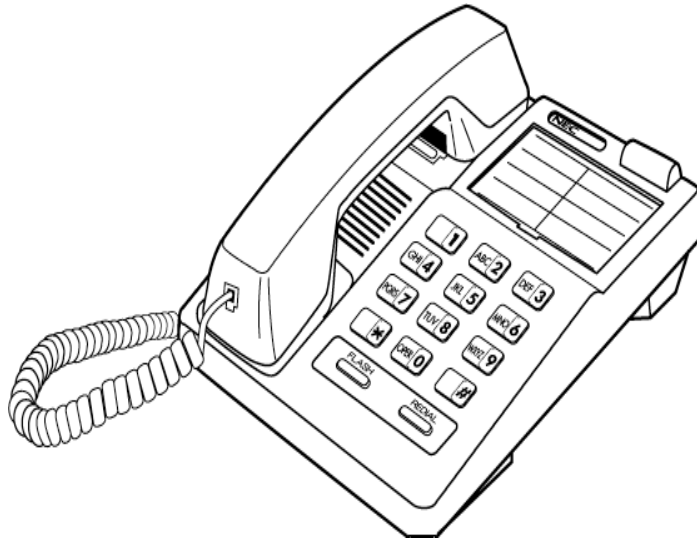


ETW-16DD-1/2(BK)/(SW) TEL



ETW-24DS-1/2(BK)/(SW) TEL

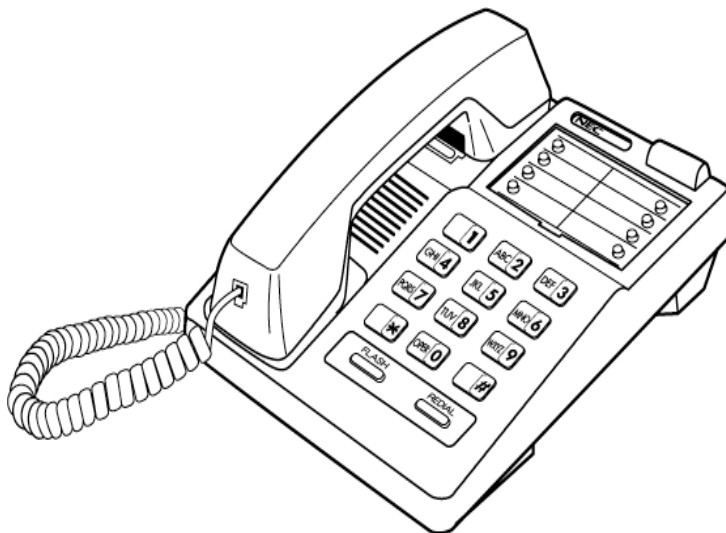
Figure 1-4 Electra Professional Multiline Terminals



DTP-1-1(WH) TEL

DTP-1-2(WH)/(BK) TEL

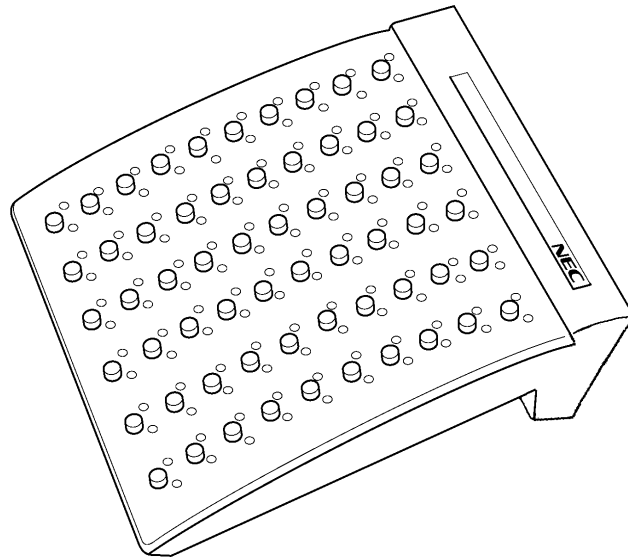
Figure 1-5 Single Line Telephone



DTP-1HM-1(WH) TEL

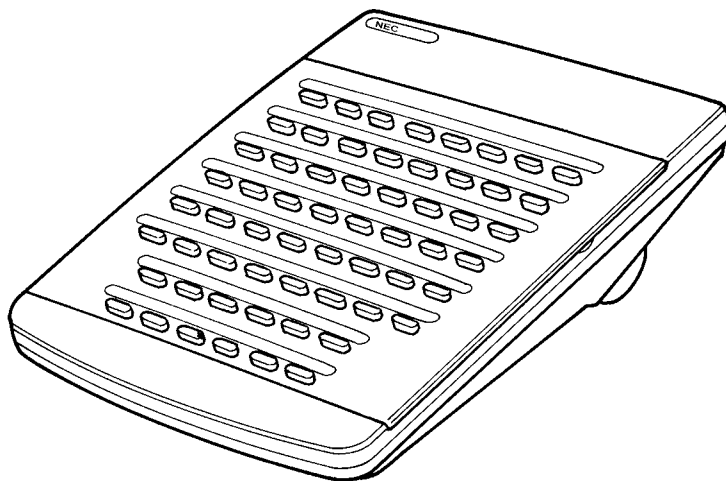
DTP-1HM-2(WH)/(BK) TEL

Figure 1-6 Hotel/Motel Telephone



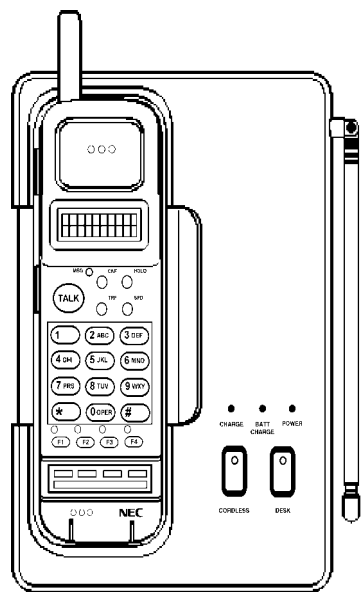
DCU-60-1(BK)/(WH) Console

Figure 1-7 Electra Elite Attendant Console



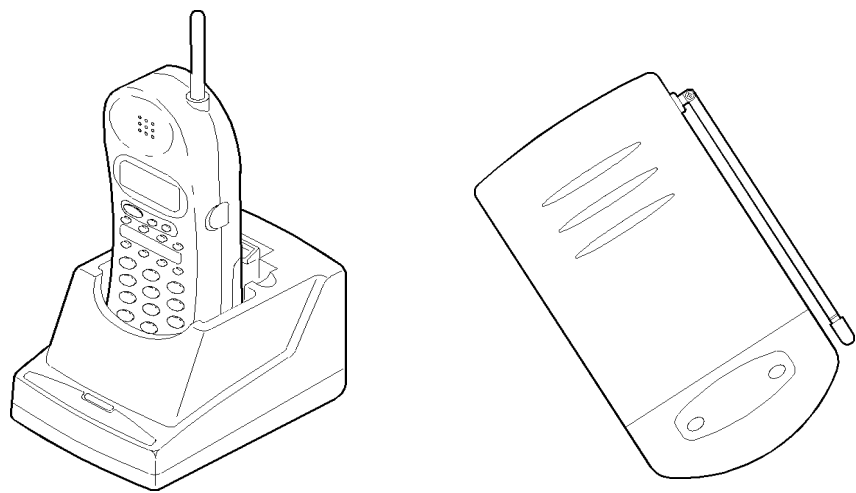
EDW-48-1/2(BK)/(SW) DSS/BLF

Figure 1-8 Electra Professional Attendant Add-On Console



ETW-4R-1 (BK) TEL

Figure 1-9 D^{term} Cordless Terminal

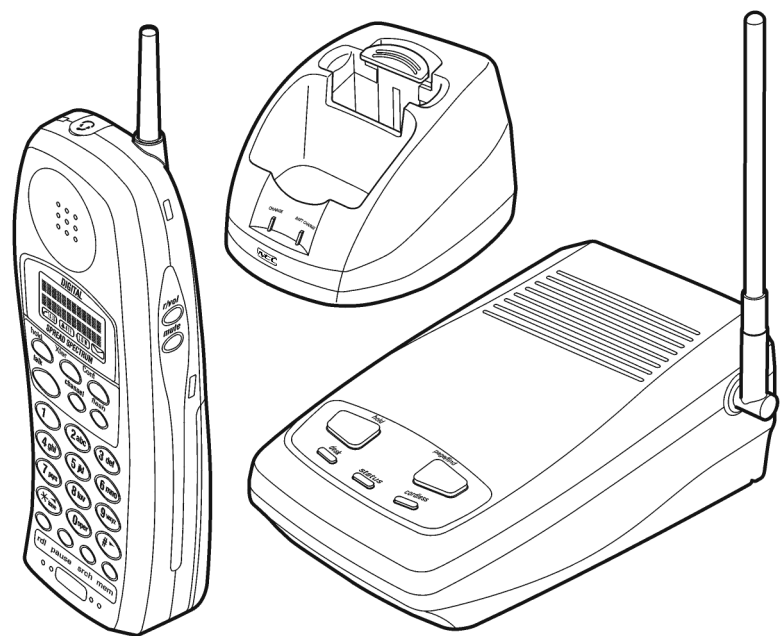


DTU-4R-1 (BK) TEL

Figure 1-10 D^{term} Cordless Lite Terminal

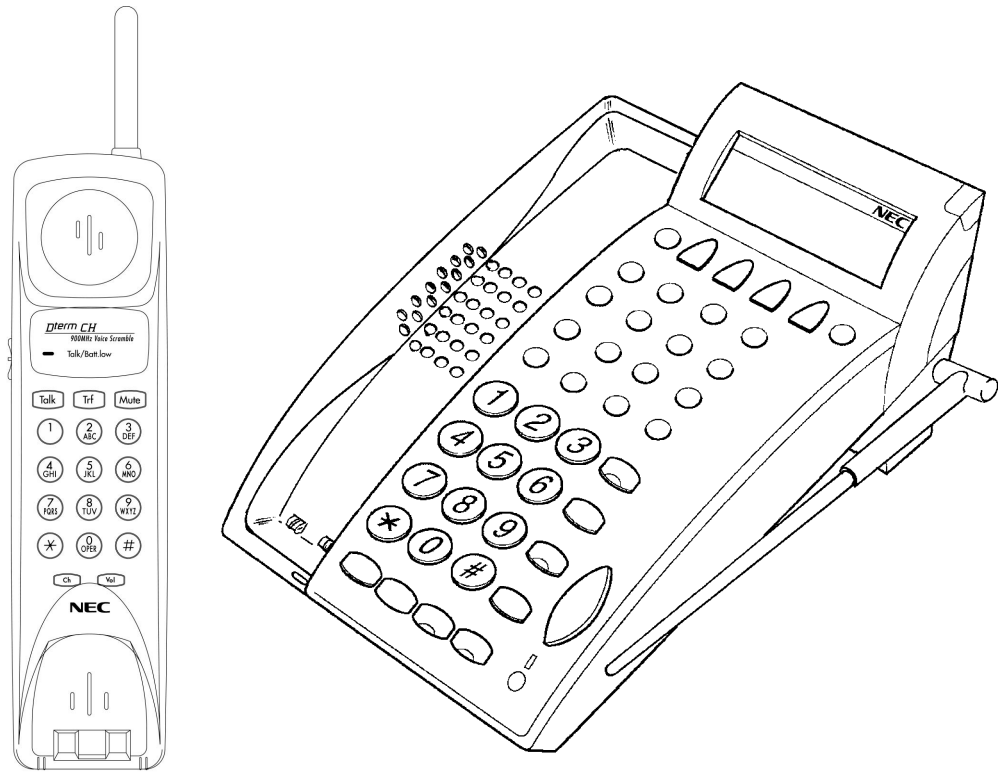


Figure 1-11 D^{term} Analog Cordless Terminal



DTR-1R-1 (BK) TEL

Figure 1-12 *D^{term}* Cordless II Terminal



DTP-16HC-1(BK) TEL

Figure 1-13 *D^{term}* Handset Cordless Terminal

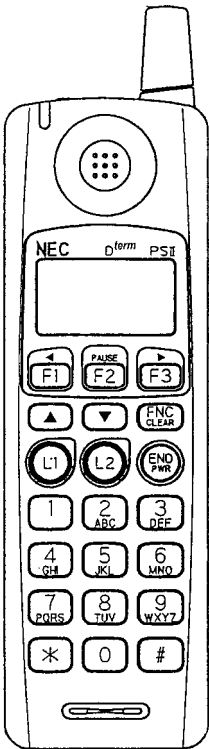


Figure 1-14 *D^{term}* PS II

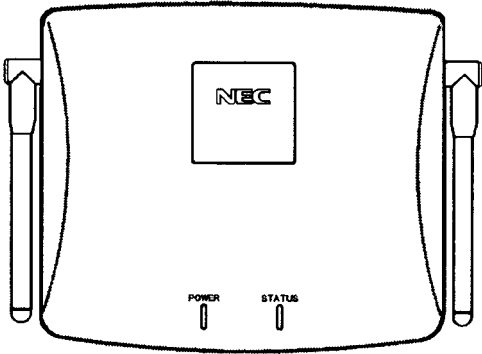


Figure 1-15 Zone Transceiver (ZT II)

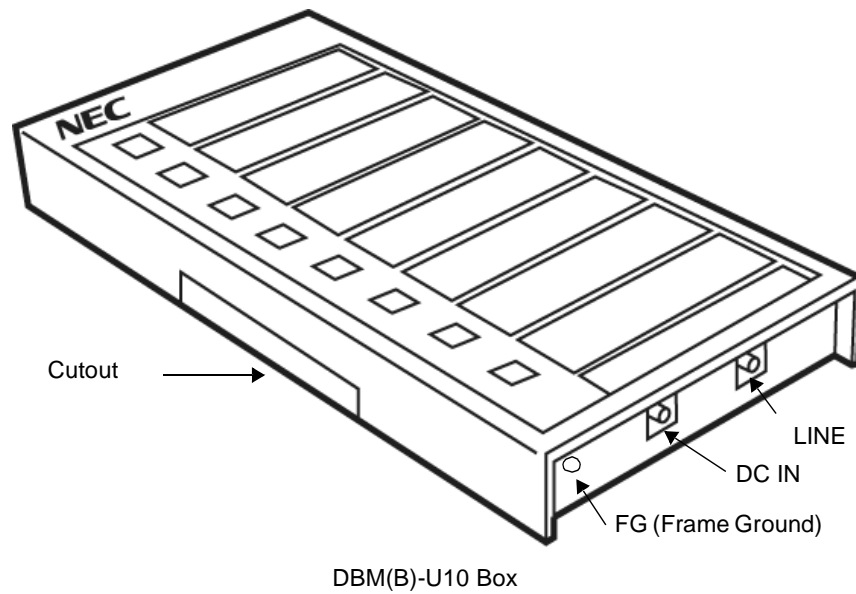


Figure 1-16 DBM(B)-U10 Message Display Board

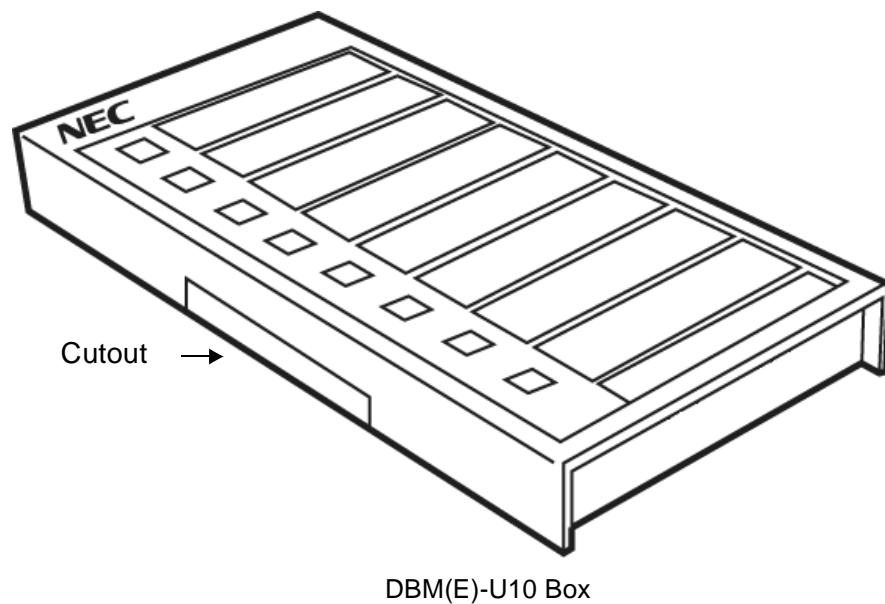


Figure 1-17 DBM(E)-U10 Message Display Board

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Chapter 2

Features

SECTION 1

FEATURES LIST

The following features are available in the Electra Elite 192 system.

- A -		A-26	Automatic Trunk-to-Trunk Transfer
A-1	Account Code Entry	- B -	
A-2	Account Code - Forced/Verified/Unverified	B-1	Background Music Over External Speakers
A-3	Add-On Conference	B-2	Background Music – Multiline Speaker
A-4	All Call Page	B-3	Barge-In
A-5	Alphanumeric Display	B-4	Battery Backup - System Memory
A-6	Analog Line Extender (D^{term} Analog EXT)	B-5	Battery Backup - System Power
A-7	Ancillary Device Connection	B-6	Busy Lamp Field on Multiline Terminals
A-8	Answer Hold	- C -	
A-9	Answer Key	C-1	Call Alert Notification
A-10	Assigned Night Answer (ANA)	C-2	Call Appearance (CAP) Keys
A-11	Attendant Add-On Console	C-3	Call Arrival (CAR) Keys
A-12	Attendant Camp-On	C-4	Callback Request
A-13	Attendant Positions	C-5	Caller ID Indication
A-14	Attendant Station Outgoing Lockout	C-6	Caller ID Call Return
A-15	Attendant Transfer	C-7	Call Forward - All Call
A-16	Automated Attendant	C-8	Call Forward - Busy/No Answer
A-17	Automatic Answer with Delay Message	C-9	Call forward - Centrex
A-18	Automatic Callback	C-10	Call Forward - Display
A-19	Automatic Call Distribution (ACD)	C-11	Call Forward - Off-Premise
A-20	Automatic Day/Night Mode Switching	C-12	Call Forward - Split
A-21	Automatic Hold	C-13	Call Park - System
A-22	Automatic Number Indication (ANI) on T1	C-14	Call Pickup Direct
A-23	Automatic Redial	C-15	Call Pickup Group
A-24	Automatic Release	C-16	Centralized Voice Mail
A-25	Automatic Route Selection (ARS)	C-17	Class of Service

- C -(continued)

C-18	Clock/Calendar Display
C-19	Code Restriction
C-20	CO/PBX, Tie Line Digit Restriction
C-21	Computer Telephony Integration (CTI)
C-22	Consecutive Speed Dial
C-23	Cordless Telephone Connection
C-24	Coreline (LAN/Station Cable Integration)
C-25	Customized Message

- D -

D-1	Data Line Security
D-2	Delay Announcement
D-3	Delayed Ringing
D-4	Dialed Number Indication Service (DNIS)
D-5	Dial 0 for Attendant
D-6	Digit Insertion
D-7	Digital Line D^{term} ISDN EXTender Plus
D-8	Digital Voice Mail
D-9	Direct Inward Dialing (DID)
D-10	Direct Inward System Access (DISA)
D-11	Direct Inward Termination (DIT)
D-12	Direct Paging Access
D-13	Direct Station Selection
D-14	Distinctive Ringing
D-15	Do Not Disturb (DND)
D-16	Door Lock Release Relays
D-17	Door/Monitor Telephone
D-18	DP to DTMF Switching
D-19	Drop Key
D-20	D^{term} Analog Cordless Terminal
D-21	D^{term} Cordless Terminal
D-22	D^{term} Cordless II Terminal
D-23	D^{term} Handset Cordless

- E -

E-1	Elapsed Call Time
E-2	Electronic Volume Control
E-3	E&M Tie Lines (4-Wire)
E-4	Electra Professional Terminal Migration
E-5	Elite ACD Plus
E-6	Emergency 911 - Cut Through
E-7	Enhanced 911
E-8	Equal Access Accommodation
E-9	External Tone Ringer
E-10	External Zone Paging (Meet-Me)

- F -

F-1	Facsimile CO Branch Connection
F-2	Feature Access - User Programmable
F-3	Flexible Line Assignment
F-4	Flexible Numbering Plan
F-5	Flexible Ringing Assignment
F-6	Flexible Timeouts
F-7	Full Duplex Handsfree
F-8	Full Handsfree Operation

- G -

G-1	General Purpose Relay
G-2	Ground Start Trunks
G-3	Group Listening

- H -

H-1	Handset Mute
H-2	Handsfree Answerback
H-3	Handsfree Dialing and Monitoring
H-4	Headset Connection (Built In)
H-5	Hold With Recall (Exclusive and Non-Exclusive)
H-6	Hot Line
H-7	Howler Tone Service

- I -		- P -	
I-1	I-Hold Indication	P-1	PC Attendant Console
I-2	Incoming Call Identification	P-2	PC Programming
I-3	Incoming Trunk Name or Number Display	P-3	Pooled Line (Outgoing)
I-4	Internal Voice/Tone Signaling	P-4	Power Failure Transfer
I-5	Internal Zone Paging (Meet-Me)	P-5	Preset Dialing
I-6	ISDN-BRI Trunk Connections	P-6	Prime Line Assignment
I-7	ISDN-PRI Trunk Connections	P-7	Privacy on All Calls
I-8	I-Use Indication	P-8	Privacy Release
- K -		P-9	Private Lines
K-1	Key Function/Multifunction Registration	P-10	Programming from Multiline Terminal
- L -		P-11	Push Button Dial - DTMF or DP
L-1	Large LED Indication	- Q -	
L-2	Last Number Redial	Q-1	Quick Transfer to Voice Mail
L-3	Least Cost Routing (LCR)	- R -	
L-4	Live Monitoring	R-1	Recall Key
L-5	Loop Start Trunks	R-2	Recall with Station Identification
- M -		R-3	Redial Key
M-1	Message Display Board	R-4	Remote Programming
M-2	Message Waiting	R-5	Resident System Program
M-3	Microphone Control	R-6	Restriction (Outgoing)
M-4	Multiline Conference Bridge	R-7	Ring Tone Variation
M-5	Multilingual LCD Indication	R-8	Ringing Line Preference
M-6	Multiple Trunk Groups	R-9	Route Advance Block
M-7	Music On Hold	- S -	
- N -		S-1	Save and Repeat
N-1	Nesting Dial	S-2	Scrolling Directories
N-2	Night Call Pickup	S-3	Secondary Incoming Extension
N-3	Night Chime	S-4	Seized Trunk Name/Number Display
N-4	Night Transfer	S-5	Simplified Call Distribution
- O -		S-6	Single Line Telephone Access
O-1	Off-Hook Ringing	S-7	SLT Adapter
O-2	Off-Premise Extension	S-8	SLT Timed Alarm
O-3	One-Touch Feature Access	S-9	Softkeys

- S -
(continued)

S-10	Speed Dial - Station
S-11	Speed Dial Stored Characters
S-12	Speed Dial - System
S-13	Station Camp-On
S-14	Station Hunting
S-15	Station Message Detail Recording (SMDR)
S-16	Station Outgoing Lockout
S-17	Station Relocation
S-18	Station Transfer
S-19	Step Call
S-20	Store and Repeat
S-21	Stored Hookflash
S-22	Synchronous Ringing
S-23	System Data Up/Down Load

- T -

T-1	T1 Connection
T-2	Tandem Switching of 4-Wire E&M Tie Lines
T-3	Tenant Service
T-4	Three-Minute Reminder

- T -
(continued)

T-5	Tone Override
T-6	Trunk Queuing
T-7	Trunk-to-Trunk Transfer
T-8	Two-Color LEDs

- U -

U-1	Uniform Call Distribution (UCD)
U-2	Unified Messaging
U-3	Uniform Numbering Network
U-4	Universal Slots
U-5	Unsupervised Conference
U-6	User Programming Ability

- V -

V-1	Voice Mail Integration (Analog)
V-2	Voice Mail Message Indication on Line Keys
V-3	Voice Over Internet Protocol (VoIP)
V-4	Voice Over Split
V-5	Voice Prompt

- W -

W-1	Wireless
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SECTION 2

FEATURES

DESCRIPTIONS

A-1 ACCOUNT CODE ENTRY

This feature allows assignment of up to 16-digit Account Codes. Account Codes are incorporated in the call records generated by the Station Message Detail Recording (SMDR) option, and provide a reference for billing.

A-2 ACCOUNT CODE - FORCED/VERIFIED/UNVERIFIED

Account Code - Forced/Verified forces selected station users to dial an Access Code and a verification code before making an outgoing call. The outgoing call is processed only after the dialed Account Code is verified.

Account Code - Forced/Unverified forces selected station users to dial an access code and an unverified Account Code before making an outgoing call. The outgoing call is processed only if the unverified Account Code is dialed.

System Software S5000 or higher is required for Account Code - Forced/Unverified. System Software S5500 or higher allows Scrolling Directories to be used with this feature.

This feature allows a system Administrator to control unauthorized outgoing calls. The Forced/Verified Account Code is part of the Station Message Detail Recording (SMDR) call record. An account code has a maximum of 13 digits.

A-3 ADD-ON CONFERENCE

This feature allows a conference call with a maximum of four parties with various combinations of outside lines and stations. This increases efficiency by allowing multiple parties to enter into a conversation.

System Software S3000 or lower allows up to six, 4-party conferences with no more than two outside lines per conference.

System Software S4000 or higher allows up to 16, 4-party conferences with no more than two outside lines per conference.

A-4 ALL CALL PAGE

This feature allows simultaneous paging (internal and external) over the built-in speaker of all idle Multiline Terminals in a zone. This enables a person, away from the station being called, but within hearing distance of a Multiline Terminal or external speaker, to respond to the paging call.

A-5 ALPHANUMERIC DISPLAY

The Electra Professional Multiline Terminals with display have a 16-character by 2-line Liquid Crystal Display (LCD). DTP and DTU Multiline Terminals with display have a 24-character by 3-line LCD. These displays provide information such as: date/time, elapsed call time on outside calls, digits dialed, internal calling party number, Customized Message, Speed Dial entries, or softkeys.

A-6 ANALOG LINE EXTENDER (*D^{term}* Analog EXT)

This feature allows a user with a DTP-32DE-1 Multiline Terminal to make or receive calls from a remote location while maintaining a station appearance from the office KTS.

A-7 ANCILLARY DEVICE CONNECTION

This feature allows installation of selected peripheral (ancillary) devices such as a headset, or tape recorder for use on any Electra Professional Multiline Terminal with an optional ADA(1)-W(BK)/(SW) Unit.

An optional ADA(2)-W(BK)/(SW) Unit adapter allows connection of single line equipment such as Single Line Telephone, modem, facsimile machine, automatic dialer answering machine, cordless telephone, or other compatible device on the Electra Professional Multiline Terminals.

The Electra Elite Multiline terminals use an ADA-U Unit to provide an interface for a tape recorder and an HFU-U Unit for full-duplex speakerphone. These terminals have a built-in headset jack. This feature enhances operation of the peripheral devices. A headset frees the user hands for order entry, checking files, or other functions.

The APR-U Unit (Analog Port Adapter with ringer) or APA-U Unit (Analog Port Adapter without ringer), available for Electra Elite Multiline terminals, allows connection of single line equipment such as a Single Line Telephone, modem, facsimile machine, automatic dialer, answering machine or other compatible analog device.

System Software S5500 or higher, allows or denies a hookflash on an APR/APA-U Unit.

A-8 ANSWER HOLD

This feature enables a Multiline Terminal user to press the flashing **Answer (ANS)** key to answer incoming ringing calls on a CO line key. When the Multiline Terminal user is already engaged in a call, the first call is automatically placed on Non-Exclusive Hold when the second call is answered. Answer Hold is particularly useful at Attendant Positions or other central answering positions. Using the **Answer (ANS)** key speeds call handling, while Answer Hold prevents accidental call dropping.

A-9 ANSWER KEY

Multiline Terminals have an **Answer (ANS)** key and associated LED. The LED flashes when the Multiline Terminal user receives an incoming CO/PBX, Tie/DID transferred, or CO/PBX transferred call. When multiple calls are received, the **Answer (ANS)** key is used to pick up calls. The LED continues flashing until the last unanswered call is answered. Press the **Answer (ANS)** key during a call to hold the current call and allow the next call to be answered.

A-10 ASSIGNED NIGHT ANSWER (ANA)

ANA allows CO/PBX lines to be programmed to bypass the attendant and ring directly at a selected station or tenant. A separate Direct Inward Termination (DIT) ringing assignment is available for Day Mode.

System Software S4000 or higher is required to support delay ringing to ANA or ANA trunks to a tenant.

A-11 ATTENDANT ADD-ON CONSOLE

This Console functions in conjunction with a Multiline Terminal programmed as an Attendant. Each console provides access to a maximum of 48 stations and/or outside lines. The Busy Lamp Field status is shown as a red LED for each station or trunk. These trunks can include CO/PBX, DID, ISDN, E&M Tie Lines, T1 lines, and VoIP trunks. The Attendant Add-On Console also has 12 function keys that can be used for attendant messaging or paging access.

Four Consoles can be installed.

A-12 ATTENDANT CAMP-ON

This feature allows a call to be transferred to a busy station and is used at an Attendant Position with an Attendant Add-On Console. Press the **Transfer (TRF)** key on the Attendant Add-On Console to send the camp-on tone to the busy station. When the station receives the camp-on tone, the call rings and can be answered. When the camped on call is not answered in a preprogrammed time, it recalls to the Attendant Position.

A-13 ATTENDANT POSITIONS

Any number of stations can be designated as Attendant Positions. These stations have access to distinct Attendant-type features. Two Attendant Positions can support two Attendant Add-On Consoles each. Attendant features such as setting Night Mode and System Speed Dial memory programming apply.

A-14 ATTENDANT STATION OUTGOING LOCKOUT

This feature allows an Attendant Position with an Attendant Add-On Console to set a predetermined Code Restriction Class Assignment to any station that is assigned on the Attendant Add-On Console. This allows the Attendant to set/reset restrictions to a station to disallow outgoing calls.

A-15 ATTENDANT TRANSFER

This feature permits efficient call transfers in the system using an Attendant Multiline Terminal equipped with one to four Attendant Add-On Console(s). Transferred calls can be voice announced, camped on (when the station is busy), or directly transferred to ring at stations. After a programmed time, all unanswered transferred calls return to the Attendant with distinct audible and visual indications.

A-16 AUTOMATED ATTENDANT

This Attendant answers incoming CO/PBX calls and sends a greeting message for calling parties. When the caller enters a station number or a 1- or 2-digit number from the dial pad, as instructed in the greeting message, the Automated Attendant then transfers the call to a designated station or station hunt group. The Automated Attendant can be set to provide eight automated message levels.

A VRS(4)-U10 ETU must be installed.

System Software S5000 allows a user to specify one of eight messages to be played for direct transfer to an extension.

A-17 AUTOMATIC ANSWER WITH DELAY MESSAGE

This feature answers incoming CO/PBX calls and plays a specified message to the outside caller while still ringing designated stations. One or two messages can be played to the outside caller. Message(s) played are the same as the Automated Attendant Message(s).

A VRS(4)-U10 ETU must be installed.

System Software V2.00 (S2000) or higher is required.

A-18 AUTOMATIC CALLBACK

After receiving a call waiting tone from a busy station, a user can set an Automatic Callback. When both stations are idle, the system signals the Automatic Callback originator first and, after a response, signals the other station.

A-19 AUTOMATIC CALL DISTRIBUTION (ACD)

This feature permits any incoming trunk call (DIT, ANA, DID, or CO Ring Transfer) to terminate at a prearranged ACD Group of Agents. An incoming call is distributed to the longest idle Agent of the ACD Group. The ACD feature has four distinct parts: Call Distribution, Agents and Supervisor Function, Status screens and Management Information System (MIS) reports, and Delay Announcement. (Refer to [D-2 DELAY ANNOUNCEMENT on page 2-17](#)). ACD does not work for any ICM call.

A-20 AUTOMATIC DAY/NIGHT MODE SWITCHING

This feature allows the system to be programmed to switch automatically into or out of the Night Mode at a preprogrammed time. Night Mode does not have to be manually set/reset daily. After a programmed time, the system automatically switches back to Day Mode.

A-21 AUTOMATIC HOLD

This feature activates during an outside call when an Attendant with an Attendant Add-On Console presses a DSS key, a Feature Access key, or One-Touch key programmed for Direct Station Selection or Direct Paging Access. This feature reduces the risk of accidentally disconnecting a call and simplifies access to various features by reducing required operational steps.

A-22 *AUTOMATIC NUMBER INDICATION (ANI) ON T 1*

T1 ANI displays the calling party telephone number on the LCD of the Multiline Terminal for incoming trunk calls on a Feature Group D T-1 span. ANI information follows the call to wherever it is transferred. This feature is functionally the same as Caller ID.

System Software S3000 or higher is required for incoming only.

System Software S4500 or higher supports outgoing on Feature Group D trunks.

A-23 *AUTOMATIC REDIAL*

Automatic Redial simplifies repetitive dialing to a busy or unanswered outgoing call. After a busy tone or no answer is received during a CO/PBX call, the system periodically redials the party number while the station user monitors the call for completion.

A-24 *AUTOMATIC RELEASE*

This feature releases the outside line circuit after an outside party abandons the call. For this feature to work with Loop Start Trunks, the CO/PBX providing the outside line must provide a timed disconnect signal. Automatic release is normally provided on Ground Start Trunks, E&M Trunks, ISDN Trunks and Tie/DID Lines.

A-25 *AUTOMATIC ROUTE SELECTION (ARS)*

This feature allows an outgoing line to be seized using a Trunk Group or Route Advance Block (RAB) for each number dialed by the user. ARS allows better use of trunks connected to the system.

System Software S4000 or higher is required.

A-26 *AUTOMATIC TRUNK-TO-TRUNK TRANSFER*

Automatic Trunk-to-Trunk Transfer allows an incoming CO/PBX call to be automatically dialed out of the system over another outside line to a programmed telephone number. This is especially useful for forwarding calls to an answering service during nonbusiness hours (*i.e.*, nights, weekends, holidays).

B-1 *BACKGROUND MUSIC OVER EXTERNAL SPEAKERS*

Background music over external speakers is integrated with the three-zone paging system that is provided by the ECR-U10 ETU. The connection does not require an external relay system. When a zone (or all zones) is connected to paging, the Paging System BGM is turned off automatically.

B-2 BACKGROUND MUSIC – MULTILINE SPEAKER

Background music is provided through the station speaker when the station is idle. A loop-start COI port can be used as an alternate background music source when a Valcom V-9941A unit, or equivalent, is provided. Music stops when the terminal is in use.

B-3 BARGE-IN

This feature allows selected Multiline Terminal users in the system to override another station user conversation with or without alerting that station user. The alert tone is a programmable option.

B-4 BATTERY BACKUP - SYSTEM MEMORY

A battery on the CPUB()-U10 ETU retains System Program Memory during a power outage. When fully charged, the battery maintains backup power for approximately 21 days. System Data, Speed Dial Memories, and Clock/Calendar are among the functions protected by the backup battery. When power is restored, the system returns to normal operation. The battery is continuously charged while the system is operating on commercial power.

B-5 BATTERY BACKUP - SYSTEM POWER

A built-in battery provides complete system operating power for approximately 30 minutes during commercial power outages. When optional (locally provided) batteries are connected and fully charged, full system operation can be maintained for an extended time. Actual time depends on system configuration, traffic conditions, and the capacity of the batteries being used. The built-in or external battery is continuously charged while the system is operating on commercial power.

B-6 BUSY LAMP FIELD ON MULTILINE TERMINALS

The BLF feature indicates station status with an LED. The LED lights when Feature Access keys and One-Touch keys are programmed for Direct Station Selection (DSS). The 32-key Electra Elite Multiline Terminals, 32-key *D^{term}* Series E Multiline Terminals, and Electra Professional ETW-16DD-1/2(BK)/(SW) are the only terminals supporting BLF on One-touch keys. This allows Multiline Terminal users to determine at a glance if a station is in use.

C-1 CALL ALERT NOTIFICATION

This feature allows a station user to receive an alert tone, flashing ICM, Large LED, and LCD identification when an incoming caller has called and the user station is busy. This allows the station user to put the current call on hold to answer a second call to increase call handling abilities.

C-2 CALL APPEARANCE (CAP) KEYS

This feature automatically places an outside call on a Call Appearance Key if the call is answered. These keys can be assigned on any Multiline Terminal. The user can press the applicable CAP that is flashing on any station with the same appearance to retrieve the call. This feature allows efficient call handling when numerous CO calls are received with only a limited number of available CO line key appearances.

C-3 CALL ARRIVAL (CAR) KEYS

CARs are software extensions. A Call Arrival Key is assigned to a line key and can appear and ring on an individual or multiple stations. When a call is directed to the CAR, any station with the CAR appearance can answer that call. This ensures that every call is answered promptly. CAR keys use system extension numbers and are assigned in groups of four.

Call Arrival and Call Appearance keys often work together to provide solutions to unique applications.

C-4 CALLBACK REQUEST

A Callback Request can be set to any Multiline Terminal to notify the user that another station wants a call returned. Users of Multiline Terminals can receive a maximum of three Callback Requests from other station users. Nondisplay Multiline Terminal users receive a **Feature** (or **FNC**) LED indication when a Callback Request is set. Single Line Telephone users can set but not receive a Callback Request.

C-5 CALLER ID INDICATION

This feature displays the calling party telephone number or name on the LCD of the Multiline Terminal for incoming CO calls. Up to 16 extensions can display Caller ID on incoming calls, and after the call is answered, Caller ID can be displayed at the station that has the CO call.

System Software S4000 or higher is required to allow the name and number to be displayed at the same time.

C-6 CALLER ID CALL RETURN

The Caller ID Call Return feature allows the voice mail system to use Caller ID information in a message to call back and connect to the applicable calling party that left the message. After the called party hangs up or the internal party decides to end the call, the voice mail user is returned to checking messages.

System Software S5500 or higher is required.

FMS Voice Mail System Software Q revision 05931 database version 6.68 or higher is required.

VMS Voice Mail System Software Q revision 00931 database version 6.68 or higher is required.

C-7 CALL FORWARD - ALL CALL

This feature forwards all calls directed to a station, to another station, Voice Mail system, or to the Attendant. This allows a station to be left unattended and still have the calls answered at another location. Call Forward - All Call can be set or canceled at the destination station. Attendant Positions can be used to cancel Call Forward - All Call system-wide.

C-8 CALL FORWARD - BUSY/NO ANSWER

This feature forwards calls directed to a station, to another station, Voice Mail system, or to the Attendant Position when there is a Busy or Ring No Answer condition. This allows calls to be routed to another station or to the Attendant Position.

C-9 CALL FORWARD - CENTREX

The Call Forward Split for Centrex feature allows a station to forward an incoming Centrex CO call to an outside location using the same Centrex CO line to free the line for additional use.

C-10 CALL FORWARD - DISPLAY

When a call is forwarded to a Multiline Terminal, the forwarding indication with the forwarded station number is shown on the Multiline Terminal display. The following incoming calls are supported: DIT, ANA, AA Transfer, DID, TIE, and SCD.

System Software S2000 or higher is required.

C-11 CALL FORWARD - OFF-PREMISE

Call Forward – Off-Premise allows a station to forward an internal or outside call to an off-premise destination, using various trunk types in the Electra Elite System.

System Software S4000 or higher permits Call Forward-Off-Premise on Call Arrival keys.

C-12 CALL FORWARD - SPLIT

This feature allows a station to forward internal or external calls to different locations, such as Voice Mail, Off Site, Attendant Position or another station. Split Forwarding is allowed for All Call, Busy, or Ring/No Answer to provide more efficient call processing.

System Software S5000 or higher is required.

C-13 CALL PARK - SYSTEM

This feature allows the user to place a call into one of 10 common Call Park - System locations from any station in the system. This feature allows the call to be removed from the station and frees that station to answer other calls. The call can be retrieved from System Call Park from any station in the system.

C-14 CALL PICKUP DIRECT

This feature allows a station user to answer any call directed to another station. This permits efficient handling of calls that are directed to unattended stations.

C-15 CALL PICKUP GROUP

Any station user can answer a call intended for another station user either in their programmed Call Pickup Group (Tenant Assignment) or another Tenant Group, depending on the Call Pickup Access Code used. Incoming ringing outside calls to a station can be answered by any station in the same Call Pickup Group or by stations in other Tenant Groups. The system can be subdivided into 48 separate Tenant Groups, each with its own outside line assignments.

C-16 CENTRALIZED VOICE MAIL

Centralized Voice Mail allows up to 17 systems that can be connected by Analog or Digital T1 Lines to share one Voice Mail (VM) system. This feature allows VM Box access from Intercom (ICM)/CO/Automated Attendant, VM message LED indication, and Call Forward - Off Premise to a VM port. The Elite system communicates MW LED, Mailbox and other information using DTMF Signaling between two Elite systems.

C-17 CLASS OF SERVICE

This feature allows or denies the user access to several features. Various Class of Service combinations can be programmed. Stations are then assigned to these different Class of Service assignments.

C-18 CLOCK/CALENDAR DISPLAY

The Clock/Calendar Display is available on Multiline Display Terminals. This feature displays the time and day of the week on the LCD and is programmable from the first two station ports in the system.

Using **System Software S6000 or higher**, the system can automatically adjust the clock for Daylight Savings Time.

C-19 CODE RESTRICTION

Code Restriction is an advanced method to restrict outgoing calls based on the first eight digits dialed. Code Restriction denies outside calls based on number dialed over a trunk group, and accommodates equal access to Other Common Carriers (OCCs) and CO Feature Codes. This eliminates unauthorized calls and configures system calling functions to provide cost control.

C-20 CO/PBX TIE LINE DIGIT RESTRICTION

This feature lets the user restrict the number of digits that can be dialed from a station on an outside line to eliminate unauthorized calls.

C-21 COMPUTER TELEPHONY INTEGRATION (CTI)

CTI integrates computers and telephones to allow access of sophisticated communication services using telephone lines. The Telephony Application Programming Interface (TAPI) supports speech and data transmission, allows a variety of attachment devices, and supports complex functions such as conference calls, call waiting, and Voice Mail. Through TAPI, all elements of telephone usage, including simple dial and voice calls, can be controlled by Windows 95 and higher Windows versions.

CTI is implemented using a PC Telephony Board or a Computer Telephony Adapter (CTA).

This PC Telephony Board is a multifunction PC-AT add-in card with telephone, sound system, fax and modem abilities.

The PC board is a telephone augmented by the functionality of a personal computer and allows telephone operations using a handset or headset. The separate elements of telephony,

multimedia audio, and fax/data are tied together as a single integrated platform. The PC board supports DTP and DTU Multiline Terminals.

The CTA can be attached to the Electra Elite terminals to provide a serial RS-232 connector to the PC that allows TAPI applications to control telephony features of the KSU.

System Software S4000 or higher is required to attach the CTU(C)-U or CTU(S)-U Unit to a DTP or DTU terminal to provide a Universal Serial Bus (USB) connection to the PC that allows TAPI applications to control telephony features on the KSU.

C-22 *CONSECUTIVE SPEED DIAL*

This feature provides System Speed Dial, Station Speed Dial, and manual dialing for all stations consecutively. Complicated dialing sequences are simplified. This feature eases access to secondary common carriers, credit card verification, and other applications requiring entry of authorization codes, or customer numbers.

C-23 *CORDLESS TELEPHONE CONNECTION*

Using an ADA(2)-W(BK)/(SW) Unit for Electra Professional terminals or APR/APA-U Unit for Electra Elite terminals, a cordless telephone (2500-type) can be connected to a Multiline Terminal. System Programming defines whether or not the cordless telephone rings when calls are directed to the Multiline Terminal associated with it. The SLI(8)-U10 ETU also supports cordless telephones, but this feature refers to Multiline Terminal cordless connection.

System Software S5500 or higher allows a hookflash from a Single Line Telephone connected to an APR/APA-U Unit.

C-24 *CORELINE - (LAN/Station Cable Integration)*

Coreline allows the Multiline Terminal cable to be integrated with a 10Base-T cable. A single cable runs from the KSU to the station and LAN terminal. To support this a VDH2(8)-U10 ETU is used instead of the ESI(8)-U10 ETU in the KSU and a VDD-U Unit is installed at each station.

The VDH2(8)-U10 ETU is an ESI(8)-U10 ETU with a LAN HUB mounted on board. Ports 1~7 can be LAN/Station cable integrated or just a LAN cable. Port 8 is used for LAN/Station cable integration or cascading HUBs (either another VDH2(8)-U10 ETU or external HUB) together. A 10Base-2

connector mounted on the VDH2(8)-U10 ETU can also be used to cascade HUBs. In this case, the eighth port can still be used for Coreline (LAN/station port).

C-25 *CUSTOMIZED MESSAGE*

A station in Do Not Disturb can select a Customized Message that is displayed at Multiline Display Terminals when an internal call is made to that station. The message (10 messages can be Programmed) remains displayed on the LCD of the Multiline Terminal where the message was set.

D-1 *DATA LINE SECURITY*

This feature protects any station port from receiving audible tones (such as camp-on or override tones) and denies a station from barging in while busy to prevent disruption of data transmission when using a modem or fax (facsimile) machine.

D-2 *DELAY ANNOUNCEMENT*

Delay Announcement activates when an incoming call to an Automatic Call Distribution (ACD) or Uniform Call Distribution (UCD) group encounters all ACD/UCD stations busy or receives no answer within a programmed time. The call is queued and receives a recorded announcement after a programmed time. First and second Delay Announcements are available. The incoming call can be Direct Inward Termination (DIT/ANA), CO Ring Transfer, Automated Attendant Transfer, or DID/Tie line.

D-3 *DELAYED RINGING*

Delayed Ringing allows programmed secondary answering positions to ring on incoming calls after a programmed time. This feature applies to CO/PBX lines, Secondary Incoming Extensions, and Call Arrival (CAR) Keys.

D-4 *DIALED NUMBER INDICATION SERVICE(DNIS)*

This feature allows a name to be assigned to inbound DID digits to allow more efficient call handling.

System Software S5000 or higher is required.

D-5 *DIAL 0 FOR ATTENDANT*

Stations can dial **0** to access a system Attendant Position.

D-6 *DIGIT INSERTION*

This feature provides user friendly operation when the system is installed behind a PBX or Centrex Central Office. When a system user originates an outgoing call, the system automatically inserts the PBX/Centrex Trunk Access Code. This feature saves the user from dialing an additional Access Code.

D-7 *DIGITAL LINE EXTENDER (D^{term} EXTENDER PLUS)*

D^{term} ISDN EXTender Plus allows a user with an NEC Multiline Telephone to make/receive calls from a remote location while maintaining a station appearance from the office KTS and allows data access to the office LAN.

D-8 *DIGITAL VOICE MAIL (DVM)*

The VMS(2)/(4)/(8)-U10 ETU, FMS(2)/(4)/(8)-U10 ETU, CTI(4)/(8)/(12)/(16)-U10 ETU, or ElectraMail VMS provide Digital Voice Mail Service, Automated Attendant (AA), Audiotext, Fax Detection, Message Notification, Live Record, and Centrex Transfer. The VMS(2)/(4)/(8)-U10 ETU is a complete voice mail application (EliteMail) built on a single ETU. This method has advantages that include tighter application integration and built-in battery backup for the complete system.

System Software S3000 supports only 8 DVM ports.

System Software S4000 or higher is required to support 16 DVM ports.

System Software S5000 or higher provides a Digital Voice Mail Centrex Transfer feature that allows the SLT Hookflash dial access code to be accessed by a Digital Voice Mail (DVM) port to send a Hookflash to the outside network.

System Software S6000 or higher is required to support 32 Digital Voice Mail (DVM) ports.

D-9 *DIRECT INWARD DIALING (DID)*

Direct Inward Dialing (DID) lines can be connected to the system. With DID, incoming calls from the CO can reach any station in the system without Attendant intervention.

System Software S4000 or higher allows sending DID calls to a tenant.

System Software S5000 or higher allows limiting the number of incoming DID calls to a tenant.

D-10 *DIRECT INWARD SYSTEM ACCESS (DISA)*

Direct Inward System Access (DISA) allows an outside caller to access the system from an outside line without Attendant or station assistance. The outside user may originate a call over any system facility such as a Tie line network or CO/PBX trunk after successfully entering a password.

D-11 DIRECT INWARD TERMINATION (DIT)

Direct Inward Termination (DIT) allows CO/PBX lines to be programmed to bypass the Attendant and ring directly at stations or tenants. A separate Assigned Night Answer (ANA) ringing assignment is available. A System or Tenant group can be set to the Night Mode independently.

System Software S4000 or higher supports delay ringing to DIT or to DIT trunks to a tenant.

D-12 DIRECT PAGING ACCESS

The Attendant Add-On Console Direct Station Selection/Busy Lamp Field (DSS/BLF) keys allow direct access to Internal or External Page Zones or All Call Paging. Feature Access and One-Touch keys on the Multiline Terminals can be used. for Direct Paging Access.

D-13 DIRECT STATION SELECTION

This feature allows all Multiline Terminal users to press only one key to make station calls.

D-14 DISTINCTIVE RINGING

This feature distinguishes between internal and incoming outside calls and provides distinct audible ring signals and patterns.

System Software S5000 or higher allows Distinctive Ring Patterns to be assigned per outside CO line or per telephone.

D-15 DO NOT DISTURB (DND)

This feature temporarily eliminates all audible signals for incoming calls to isolate the station from others in the system.

D-16 DOOR LOCK RELEASE RELAYS

The DPH(4)-U10 ETU provides four doorphones and four Door Lock Release Relays. While a station user is talking to a Doorphone, an Access Code can be dialed to operate the relay associated with that Doorphone.

The time the door lock release is active depends on the digit code dialed.

D-17 DOOR/MONITOR TELEPHONE

A DPH(4)-U10 ETU is required for this feature. Up to four DP-D-1A doorphones can be installed per system. A doorphone can be called or answered individually or be used as a room monitor. While user is talking to a doorphone, a door lock release relay can also be activated.

D-18 DP TO DTMF SWITCHING

DP to DTMF Switching is required for systems connected to Dial Pulse (DP) Tie lines that communicate with computers that require DTMF signaling.

A TLI(2)-U10 ETU or DTI-10/20 ETU must be assigned to support Tie lines.

D-19 DROP KEY

The Drop Key abandons a call while retaining the PBX/Centrex line for originating another call. The Drop Key is provided by programming a Feature Access or One-Touch key. This feature allows the **Recall** key to provide a hookflash to the PBX or Central office.

D-20 D^{term} ANALOG CORDLESS TERMINAL

The DTR-1R-1(BK) TEL terminal uses 2.4 GHz Digital Spread Spectrum (DSS) Technology and is connected to an analog port using SLI(4)/(8)-U10 or OPX(2)-U10 ETU, SLT(1)-U10 ADP, or an APR/APA-U Unit connected to a multiline terminal. This terminal does not have an LCD display. The following keys are included: talk, memory, flash, redial, pause, tone, mute, and channel.

The 2.4 GHz frequency range provides secure conversation with the clarity of digital sound and reduced interference. The operating range is 50 to 250 feet.

D-21 D^{term} CORDLESS TERMINAL

The ETW-4R-1(BK) TEL, D^{term} Cordless Terminal, or the DTU-4R-1(BK) TEL Cordless Lite Terminal can be connected to the Electra Elite system in tandem with a Multiline Terminal. The Cordless Terminal has a 10-digit, 2-Line LCD and TALK, TRF, HOLD, CNF, SPD, MUTE, and R/VOL keys. The Cordless Lite Terminal has a 16-digit, 2-line LCD and talk, transfer, hold, conf, mute, chan, and vol keys. The D^{term} Cordless or Cordless Lite Terminal user can use a key on the Base Unit to switch between cordless and the Multiline Terminal connected to it. The

ETW-4R-1(BK) TEL uses 900 MHz Digital Spread Spectrum (DSS) technology providing improved voice and audio quality over greater distances than traditional cordless telephones.

D-22 *D^{term} CORDLESS II TERMINAL*

The DTR-4R-1(BK) TEL uses 900 MHz Digital Spread Spectrum (DSS) Technology and must be connected in tandem to a Multiline Terminal. This terminal has a 16-digit by 2-line LCD display, the following keys: HOLD, CONF, TRANSFER, TALK, CHAN, REDIAL, four function keys with a red LED, and four status indicators: Handset icon+TALK, Bell icon+OFF, battery icon+LOW, and an envelope icon.

This terminal can be switched between cordless and the Multiline Terminal connected to it using a key on the base unit.

D-23 *D^{term} HANDSET CORDLESS*

The DTP-16HC-1(BK) TEL is a stand-alone telephone with a direct connection to one digital port on the ESI(8)-U10 ETU. An installed ACA-U is required for each terminal.

E-1 *ELAPSED CALL TIME*

This feature provides each Multiline Terminal with an LCD indication to show the time the station has been connected to an outside line.

E-2 *ELECTRONIC VOLUME CONTROL*

This feature is provided on all Multiline Terminals to allow easy changes to the LCD contrast on Display Multiline Terminals, Off-Hook Ringing volume, Station Ringing volume, and handset/station speaker volume control.

E-3 *E&M TIE LINES (4-WIRE)*

E&M Tie Lines (4-Wire) can be connected to the system to provide access to and from remote systems and facilities. The system can receive and/or transmit DTMF or Dial Pulse signals on E&M Tie Lines.

E-4 *ELECTRA PROFESSIONAL TERMINAL MIGRATION*

This feature allows an Electra Elite customer to protect their terminal investment when purchasing an Electra Elite 192 system. Electra Professional Multiline Terminals can be easily used with Electra Elite. With very few exceptions, all terminal features and abilities possible on Electra Professional Level II/IIA/120 are also possible with the Electra Elite.

E-5 *ELITE ACD PLUS*

Elite ACD Plus is an Automatic Call Distribution ETU [ACD(8)-U10] that supports up to 40 agents and 12 supervisors logged on at the same time. This feature allows any incoming DIT, ANA, DID, or CO Ring Transfer call to terminate at a programmed ACD group of agents. The incoming call is either distributed to the agent that has been idle the longest or in accordance with a programmed preference level. Operation includes Automated Attendant (AA), ACD only, or both AA and ACD.

A Local Area Network (LAN) is used to allow one administrator and five PCs to monitor statistics and generate reports.

System Software S4500 or higher is required.

E-6 *EMERGENCY 911 - CUT THROUGH*

When all trunks that belong to the Dial Access Code 9 are busy, and a 911 call is placed, an assigned trunk in the Trunk Group/Route Advance Block is dropped and accessed again by the system to place the 911 call.

System Software S5500 or higher is required.

E-7 *ENHANCED 911*

The Electra Elite system supports the Enhanced 911 feature by defining an available loop start trunk as a CAMA or an ISDN PRI trunk. When a station user dials 911, 9+ 911, or CO line key + 911, the E911 trunk is selected and the Public Safety Answering Point (PSAP) is called. The PSAP is provided callback information generated from the E911 trunk. The Electra Elite system administrator must maintain and update the callback telephone number database per station.

System Software S3000 or higher is required to support the CAMA trunk.

System Software S4500 or higher is required to support the ISDN PRI trunk.

E-8 *EQUAL ACCESS ACCOMMODATION*

This feature permits Speed Dial memories and Code Restriction processes to be applied to CO/PBX lines that provide access to a Specialized Common Carrier (SCC).

E-9 *EXTERNAL TONE RINGER*

This feature provides a common audible tone signal with relay contacts for control when incoming CO/PBX calls are received in Day and Night Mode. The relay contact closures may also be used for external bells or chimes.

When an Attendant is not available, a station user may respond to the external ring signal and answer incoming calls. This feature provides for wide area coverage or loud ringing for noisy locations.

An ECR-U10 ETU must be installed.

E-10 *EXTERNAL ZONE PAGING (MEET-ME)*

This feature allows for up to three zones of External Zone Paging plus All Zone External Paging. The user can locate personnel quickly using external paging. An external speaker can be installed in a noisy area where a telephone would not be appropriate. All Zone External Paging enables emergency announcements to be made to all areas quickly. The Meet-Me function allows the paged party to quickly respond to the paged call.

An ECR-U10 ETU and a 1- or 2-way amplifier must be installed.

F-1 *FACSIMILE CO BRANCH CONNECTION*

This feature provides for branch connection of a locally provided facsimile machine to CO/PBX lines. Additional CO/PBX lines are not required. The facsimile shares the last CO/PBX line on the COI(4)-U10 ETU, COID(4)-U10 ETU, or COIB(4)-U10 ETU.

System Software S2000 or higher is required.

F-2 *FEATURE ACCESS - USER PROGRAMMABLE*

The User Programmable - Feature Access keys and One-Touch keys on the Multiline Terminals can be used for System/Station Speed Dial and many system features.

System Software S4500 or lower supports 10 Feature Access Keys.

System Software S5000 or higher supports 16 Feature Access Keys.

F-3 FLEXIBLE LINE ASSIGNMENT

Each Multiline Terminal has complete flexibility of line key assignments to meet individual needs. Functions can be programmed on Flexible Line Keys, including DSS numbers and a variety of Feature Access Codes to simplify the use of these functions. Outside line appearances and Secondary Incoming Extensions can also be assigned to Flexible Line Keys.

System Software S4500 or lower supports 10 Feature Access Keys.

System Software S5000 or higher supports 16 Feature Access Keys.

F-4 FLEXIBLE NUMBERING PLAN

This plan is automatically assigned by the Resident System Program when the system power is first turned on. The Station Numbering Plan may be changed using System Programming to fit the customer needs. A station can be assigned a 2-, 3-, or 4-digit station number. An Automated Attendant Numbering Plan is also available in the Flexible Numbering Plan.

F-5 FLEXIBLE RINGING ASSIGNMENT

Flexible Ringing Assignments for incoming outside calls and Secondary Incoming Extension appearances can be programmed to ring at specified Multiline Terminals. Separate day and night ring assignments are available, and Delayed Ringing is an option for Multiline Terminals.

F-6 FLEXIBLE TIMEOUTS

This feature provides a variety of timeouts in the Resident System Program to allow the system to operate without initial programming. The system timeouts can be changed to meet the customer needs according to the requirements of the system application. Some timeouts make the system operate to customer specifications such as hold, recall, transfer recall or delayed ringing. Others are more technical and are used for optimum system performance in the existing network environment.

F-7 FULL DUPLEX HANDSFREE

The HFU-U Unit is an add-on device to the Electra Elite Multiline Terminals that provides a full duplex speakerphone for small conference rooms. An external microphone is also provided that has a push-to-mute control button that must be held down to turn the microphone off.

F-8 *FULL HANDSFREE OPERATION*

This half-duplex ability is included with all Multiline Terminals for internal and outside calls. The MIC ON/OFF key or Feature Access Code allows microphone muting. With the addition of an HFU-U Unit, full-duplex operation is possible.

G-1 *GENERAL PURPOSE RELAYS*

When an ECR-U10 ETU is installed, two general purpose relays are provided that are controlled by access code for multiline Terminals or by key control. The relays remain activated until deactivated by the station user.

G-2 *GROUND START TRUNKS*

Ground Start Trunks can be connected to the system. Trunks are Assigned as Ground Start per trunk (using switch settings) at the associated COI(8)-U10 or COIB(4)-U10 ETU. Ground and Loop Start Trunks can be mixed in the system per trunk. Ground Start Trunks are provided with line supervision to reduce call collisions.

G-3 *GROUP LISTENING*

This feature allows others in the room to hear a conversation over the built-in speakerphone of a Multiline Terminal. The user can continue to talk on the handset or headset. The electronic volume control can be used to adjust speaker volume.

H-1 *HANDSET MUTE*

Handset Mute is provided to most terminals connected to the Electra Elite system. While talking on the Multiline Terminal handset, a station user can dial a feature code or press the MIC button to mute the transmit speech path. The station user can still hear the outside (or intercom) voice.

H-2 *HANDSFREE ANSWERBACK*

Each Multiline Terminal has a microphone for Handsfree Answerback of internal voice calls. Microphone status is indicated by the MIC LED on each Multiline Terminal. The MIC key or Feature Access Code mutes the microphone to ensure privacy.

H-3 *HANDSFREE DIALING AND MONITORING*

This feature enables all Multiline Terminal users to dial and monitor calls without using the handset. This feature frees the user to perform other tasks while waiting for a call to be answered or while on hold. The electronic volume control can be used to adjust Monitor volume.

H-4 HEADSET CONNECTION (BUILT IN)

A headset can be connected directly to an Electra Elite Multiline Terminal or it can be connected to an Electra Professional Multiline Terminal using the ADA(1)-W(BK)/(SW) Unit. This eliminates the need for an external headset switch. A headset ON/OFF key can be assigned to the terminal to allow easy operation of the headset.

H-5 HOLD WITH RECALL (EXCLUSIVE AND NON-EXCLUSIVE)

A Station user can place a call on Hold to free the station for other calls. A Multiline Terminal user can use Exclusive Hold (call picked up only where it was put on hold) and Non-Exclusive Hold (call picked up at any station that has access to that line). A Single Line Telephone user can place calls on Exclusive Hold.

A call on hold for longer than a preprogrammed interval generates a recall at the originating station. When the recalled Multiline Terminal is idle, an audible signal and an LCD indication (when equipped) are provided to indicate that the line is recalling.

H-6 HOT LINE

This feature enables a station user to automatically dial an outside number or another station when the station goes off-hook. This feature is provided for Multiline Terminals and Single Line Telephones.

H-7 HOWLER TONE SERVICE

This feature provides a howler tone when a station remains off-hook after a call is completed or when a station is off-hook and digits are not dialed within a predetermined time.

I-1 I-HOLD INDICATION

This feature provides a green LED line key indication for calls held at a Multiline Terminal. Calls held at other stations provide a red LED line key indication. This feature allows for easy identification of calls the user placed on hold.

I-2 INCOMING CALL IDENTIFICATION

Incoming Call Identification (provided for Internal Ring Transfer, Call Forward, and CO Transfer Ring) displays caller name or station number on Multiline Terminals with an LCD. Internal calls are identified by caller name and station number. A ringing Tie line/DID call generates a display on the LCD of the line number. When Caller ID is provided, the CO incoming caller directory number or name is displayed.

System Software S4000 or higher allows both name and number to be displayed by Caller ID.

I-3 INCOMING TRUNK NAME OR NUMBER DISPLAY

Incoming Trunk Name or Number Display allows names or numbers to be assigned to each trunk of the system. These names or numbers appear on the Multiline Terminal LCD when receiving an incoming call.

System Software S2000 or higher is required for the Incoming Trunk Name feature.

I-4 INTERNAL VOICE/TONE SIGNALING

Internal Voice/Tone Signaling allows a Multiline Terminal user to be signaled on incoming internal calls by voice announcement or by ringing, depending on System Programming. The caller can dial an additional digit to switch a voice announcement call to a ringing call, or switch a ringing call to voice announcement. This feature allows Voice/Tone switching from the calling side only.

I-5 INTERNAL ZONE PAGING (MEET-ME)

This feature allows for up to three zones of internal paging. The zones, consisting of Multiline Terminals, can be paged individually or all zones can be paged at once. Any station user can answer the page and speak privately to the originator of the page with the Meet-Me feature.

I-6 ISDN-BRI TRUNK

Integrated Service Digital Network - Basic Rate Interface (ISDN-BRI) is a Public Switched Telephone Network (PSTN) service that provides two B channels and a D channel, commonly called 2B+D. When used for voice call trunking, the two B channels provide two CO/PBX connections. Caller ID is usually a standard feature on ISDN-BRI provided trunks. The Electra Elite 192 System supports National ISDN-1(NI-1) protocol. This interface provides voice communication only.

I-7 ISDN-PRI TRUNK CONNECTIONS

Integrated Services Digital Network - Primary Rate Interface (ISDN-PRI) is a Public Switched Telephone Network (PSTN) service that provides 23 B channels and a single D channel, commonly called 23B+1D, for trunking. When used for voice call trunking, the B channels provide 23 CO/PBX or DID connections.

Automatic Number Indication (ANI) is usually a standard feature on ISDN-PRI provided trunks. ANI displays the telephone number of the calling party on the LCD of the Multiline Terminal for incoming calls.

System Software S4000 or higher is required.

Implementation of ISDN-PRI features is described below:

- ④ PRT(1)-U10, Firmware Version 1.00 and System Software S3000 Version 3.01 Initial Release CO Line emulation only.
- ④ PRT(1)-U10, Firmware Version 2.00 and System Software S4000 or higher supports the Call by Call and DID functions.
- ④ PRT(1)-U10, Firmware Version 2.10 and System Software S4500 or higher supports the E-911 service using PRI.
- ④ PRT(1)-U10/20, Firmware Version 3.50 or higher and System Software S4000 or higher supports Caller ID Name.
- ④ PRT(1)-U10/20, Firmware Version 3.50 or higher and System Software S6000 or higher supports Calling Party Number (CPN) presentation from the station.

I-8 I-USE INDICATION

This feature provides a green LED line key indication for the line being used on Multiline Terminals. Other busy line keys are shown with a red LED. This quickly identifies the line being used by the station user.

K-1 KEY FUNCTION/MULTIFUNCTION REGISTRATION

The system can be registered as either a Key Function (KF) or a Multifunction (MF) telephone system. This feature is set using a switch on the CPUB()-U10 ETU during installation.

L-1 LARGE LED INDICATION

All Multiline Terminals have a Large LED to indicate incoming calls or messages that are sent from the Attendant or a Voice Mail system.

L-2 LAST NUMBER REDIAL

This feature allows user to press the **Redial** (or **LNR/SPD**) key, and press * to redial the last outside number the user dialed. This is useful when a busy or no answer is received when trying to place a call.

L-3 *LEAST COST ROUTING (LCR)*

This feature routes outside calls to the least expensive route available. The MIFM-U10 ETU with KMM(1.0)U provides cost effective call routing based on the time of day, day of week, and Central Office number dialed. This option minimizes costs by automatically selecting the least expensive available connection for outgoing calls.

L-4 *LIVE MONITORING*

An Electra Elite Multiline Terminal user can listen to voice mail messages as the message is being recorded by the EliteMail VMS. Live Monitoring is password protected and can be used in automatic or manual mode. When Live Monitoring is in use, the audio is played from the Multiline Terminal Speaker. The terminal user can pick up the handset and speak to the caller anytime during the recording.

System Software S3000 or higher and Q3XX EliteMail software are required.

L-5 *LOOP START TRUNKS*

Loop Start Trunks can be connected to the Electra Elite system. Loop Start is assigned per trunk at the associated ETU. Ground Start and Loop Start Trunks can be mixed in the system per trunk. COI(8)-U10, COID(8)-U10, COID(4)-U10, and COI(4)-U10 ETU are Loop Start only. The COIB(4)-U10 ETU can be used for either Loop Start or Ground Start in COI or COID mode.

M-1 *MESSAGE DISPLAY BOARD*

The Message display Board indicates voice mail messages left for those without telephones. Message Display Boards include a basic board and expansion boards. Each basic and expansion board provides up to eight messages.

System Software S2000 or higher is required.

M-2 *MESSAGE WAITING*

Message Waiting is set from the Attendant Add-On Console or from a Voice Mail Unit to allow the large LED to provide a distinctive message indication to the station. The station user is alerted to contact the Attendant or Voice Mail Unit for the message.

M-3 *MICROPHONE CONTROL*

This feature allows microphone control with ON/OFF status indication on all Multiline Terminals. A Flexible Line key or One-Touch key programmed for Microphone Control or an

Access Code is used to mute the microphone for privacy during incoming voice announcement calls and during calls using the built-in speakerphone.

M-4 *MULTILINE CONFERENCE BRIDGE*

Multiline Conference Bridge allows any intercom or outside caller to call the CNF(8)-U10 ETU to place a multiparty conference call. Each CNF(8)-U10 ETU supports one 8-party conference or two 4-party conferences regulated by a switch setting. Two CNF(8)-U10 ETUs may be installed. DSP based amplification provides a higher quality conference call. This new feature can be used with any version of software on the Electra Elite 48- or 192-port system.

M-5 *MULTILINGUAL LCD INDICATION*

The Multilingual LCD Indication provides the option for English, French, Japanese, or Spanish characters on Multiline Terminals that have an LCD. The language selection is made per station using System Programming.

Please refer to the EliteMail VMS/Limited features for its multilingual capabilities. This is necessary as the EliteMail controls the voice mail softkey LCD.

System Software S3000 or higher is required to display Japanese and Spanish.

M-6 *MULTIPLE TRUNK GROUPS*

A maximum of 32 Trunk Groups may be assigned. Each group can have a separate Trunk Group Access Code. Assigning Trunk Groups provides access to different types of outside trunks. With Tenant Service, different tenants can be programmed to access only their Trunk Group.

M-7 *MUSIC ON HOLD*

A locally provided music source or an internal music source can be used to supply music to parties on hold, to assure them that they are still connected to the system.

System Software S4000 or higher is required to allow CO ports to provide multiple music sources to different COs in the system.

N-1 *NESTING DIAL*

Multiline Terminal users may store up to four System or Station Speed Dial numbers in one Station Speed Dial buffer. The user can press the **Redial** (or **LNR/SPD**) key and dial a single Station Speed Dial buffer number to successively access all four buffers.

N-2 NIGHT CALL PICKUP

This feature functions when the system is in Night Mode and an incoming call rings in. When a Night Chime is ringing, a station user can dial the Night Call Pickup Access Code or press a Feature Access key programmed for Night Call Pickup to answer incoming calls.

N-3 NIGHT CHIME

This feature provides a common audible tone signal with one relay contact for control when incoming CO/PBX calls are received in Night Mode. The relay contact closure may also be used for external bells or chimes. The Night Chime feature is used after working hours to alert night personnel of incoming outside calls.

An ECR-U10 ETU must be installed.

N-4 NIGHT TRANSFER

Attendant Positions (with or without Attendant Add-On Consoles) can place the system in or out of Night Mode. This changes the ring assignment of CO/PBX lines, activates ANA Assignments, Night Call Pickup, Night Chime, Code Restriction Class Assignments, and Automated Attendant messages. This feature can operate system-wide or per tenant.


O-1 OFF-HOOK RINGING

This feature alerts a Multiline Terminal user that an incoming outside call is ringing to that station during another call. Off-Hook Ringing is provided through the built-in speaker of the Multiline Terminal and at a lower volume than On-Hook Ringing.

O-2 OFF-PREMISE EXTENSION

This feature allows the connection of a standard DTMF Single Line Telephone, located remotely from the main installation site, to access the system features with the same abilities as an on-premise Single Line Telephone.

An OPX(2)-U10 ETU must be installed.

 Message waiting lamps are not supported by the OPX(2)-U10 ETU.

O-3 ONE-TOUCH FEATURE ACCESS

One-Touch Feature Access is provided with Multiline Terminals. This feature allows Multiline Terminal users to press a single, flexible Feature Access key or One-Touch key to access many system features or System/Station Speed Dial without going off-hook first.

P-1 PC ATTENDANT CONSOLE

ElectraCall PC Attendant is a Windows 95 application that integrates the major features of the traditional attendant position with the power of a PC to form a powerful database-driven application that increases productivity and provides the efficient, accurate call processing required in the service oriented marketplace of today. ElectraCall runs on the PC and communicates with the Electra Elite 192 system through a normal digital station port using the PCT(S)-U10 Unit that is installed in the PC or the CTU(S)-U Unit with OS Windows 98 SE or higher.

P-2 PC PROGRAMMING

The MIFM-U10 ETU and System Administration Terminal (SAT) software allow the system to be programmed from a personal computer (PC). System Data is transferred to/from a diskette for backup of system data. SAT PC programming software also allows the user to print station designation strips to shorten installation time. End users can use end-user SAT PC programming software to program several features for their Multiline Terminals such as: Line Key Assignment, Telephone Names, Zone Paging Groups, or various programmed times.

P-3 POOLED LINE (OUTGOING)

This feature allows Multiline Terminal users to seize an outside line on one Pooled Line key. One Pooled Line key can accommodate a Trunk Group or Route Advance Block.

P-4 POWER FAILURE TRANSFER

Power Failure Transfer ensures that a customer has access to the Central Office network during a power outage. The CO/PBX tip and ring are automatically transferred to the tip and ring of a preselected Single Line Telephone. The Single Line Telephone can function in the system during normal operation or be used during a power failure. Each B64-U10 KSU provides three circuits for this feature. When power returns, any ongoing conversation is disconnected.

P-5 PRESET DIALING

Preset Dialing enables a Multiline Terminal user to originate an outgoing call by predialing digits on the keypad. After dialing the number, the user can go off-hook, press the Speaker key, or press a line key to make the call.

System Software S2000 or higher is required.

P-6 PRIME LINE ASSIGNMENT

This feature allows a station user to go off-hook and originate an outside call from the trunk assigned as the Prime Line without pressing the line key. This feature allows the assignment for a trunk, Trunk Group, or Route Advance Block.

P-7 PRIVACY ON ALL CALLS

The system provides complete Privacy on All Calls. A station user cannot enter another conversation unless allowed using Barge-In, Add-On Conference, or Privacy Release.

P-8 PRIVACY RELEASE

This feature allows the Multiline Terminal user to release privacy on an outside line by pressing a privacy release key programmed on the station. Another user can then press the same CO/PBX or CAP key to join the conversation in progress.

System Software S5000 or higher is required.

P-9 PRIVATE LINES

Two outside lines can be programmed as private lines. Only a Multiline Terminal that is programmed for the Private Lines feature can have access to these private lines. The Private Line LED status is not displayed on any other Multiline Terminal.

P-10 PROGRAMMING FROM MULTILINE TERMINAL

System Programming can be performed from designated Display Multiline Terminals in the first two ESI(8)-U10 ETU ports. Some programming changes become effective immediately. Other programming changes become effective after applicable busy telephones and circuits become idle.

P-11 PUSH BUTTON DIAL - DTMF OR DP

This feature is provided on all Single Line Telephones and outside lines. Tie Line Trunks are assigned per trunk to generate either Dual-Tone Multifrequency (DTMF) or Dial Pulse (DP) dialing signals. Loop Start/Ground Start CO trunks are DTMF only.

A TLI(2)-U10 ETU must be installed.

Q-1 QUICK TRANSFER TO VOICE MAIL

A station user transferring a call can force the call to be transferred to the called party voice mail box after the transferred call recalls, after an internal station number is dialed while performing a screened transfer, or during intercom calls.

R-1 *RECALL KEY*

This feature either generates a hookflash to access features provided by the outside exchange or abandons a call while retaining the CO/PBX line for origination of another call. Each Multiline Terminal has a **Recall** key. The function of this key is Programmed.

R-2 *RECALL WITH STATION IDENTIFICATION*

A transferred, held, or camped-on call that is not answered in a specified time, recalls. During the recall, the Multiline Terminal display shows the station number that is recalling and the station that did not answer.

R-3 *REDIAL KEY*

User can press the **Redial (LNR/SPD)** key and dial the Speed Dial buffer number to access System and Station Speed Dial. User can also press the **Redial** key and press * to redial the last CO/PBX number dialed.

R-4 *REMOTE PROGRAMMING*

Remote Programming is used to modify and save all system parameters from a remote location using a modem. This is a variation of System Administration Terminal (SAT) PC Programming, and additional software other than PC Programming is not required.

R-5 *RESIDENT SYSTEM PROGRAM*

When power is supplied to the system, the hardware configuration is scanned and Resident System Program default values are assigned. This enables immediate operation, even before the system is programmed to accommodate the individual site requirements.

R-6 *RESTRICTION (OUTGOING)*

Restriction (Outgoing) prohibits station users from originating outside calls per station/per trunk. At stations where Outgoing Restriction is assigned, a user can answer an incoming call, place and receive an internal call, or pick up a held line on a specified trunk. The number of digits dialed on outgoing calls may also be restricted per station.

R-7 *RING TONE VARIATION*

Ring Tone Variation provides three different tones that can be assigned per telephone or per CO/PBX. With this feature, the user can verify priority CO/PBX calls or identify particular ringing stations in an area.

R-8 RINGING LINE PREFERENCE

Ringing Line Preference allows a station user to answer any outside ringing line by going off-hook without having to press the Answer key or the Flexible Line key associated with the ringing line.

R-9 ROUTE ADVANCE BLOCK

This feature allows assignment of up to 16 tables. Each table may contain four Trunk Group priority levels from lowest cost to most expensive. Station users may have a Route Advance key programmed on their telephone or may access this feature using a Trunk Access Code. When placing an outside call, the system follows the Route Advance table assigned for the station, ensuring that the lowest cost available Trunk Group is used. Any Trunk Group can be assigned to multiple route advance priority tables.

S-1 SAVE AND REPEAT

This feature allows a Multiline Terminal user to save the last outside number dialed in system memory for later use.

S-2 SCROLLING DIRECTORIES

This feature provides the user of an Electra Elite DTU or D^{term} Series E Display Multiline Terminal with a list of system or station speed dialing numbers. Using the softkeys, the user can select a speed dial number and then press the **Speaker** key or lift the handset to dial the number.

System Software S5500 or higher allows Account Code-Forced/Verified/Unverified to be used with this feature.

S-3 SECONDARY INCOMING EXTENSION

A Secondary Incoming Extension (SIE) can be assigned on a Flexible Line key. The status is indicated by the LED of the assigned SIE. An incoming internal, ringing Tie/DID, DIT/ANA, CO Transfer Ring, or call forwarded call can be picked up from an SIE.

S-4 SEIZED TRUNK NAME/NUMBER DISPLAY

Seized Trunk Name/Number Display shows the programmed telephone name or number of each trunk in the system. The name or number is displayed on the Multiline Terminal LCD when a trunk is seized.

S-5 SIMPLIFIED CALL DISTRIBUTION

Simplified Call Distribution is a hunting method that distributes calls evenly to all members of a hunt group. It is very similar to UCD but does not require members to control call processing

status by logging off. Hunting is instituted when a DIT, DID, TIE or VRS(4)-U10 ETU call is terminated at an SCD group pilot number. Up to 32 SCD members can be divided among four SCD groups or assigned in one SCD group. When the system reaches the end of the hunt group list, it advances to the top of the list and repeats the sequence. Transferred/internal calls are not supported by this feature.

S-6 *SINGLE LINE TELEPHONE ACCESS*

The Electra Elite 192 system allows connection of 118 Electra Elite system Single Line Telephones (SLTs). Single Line Telephone users can make CO/PBX calls, internal calls, and paging calls. This option requires an SLI(4)/(8)-U10 ETU, an OPX(2)-U10 ETU, an SLT(1)-U10 ADP, an APR/APA-U Unit connected to the DTP/DTU Terminals, or an ADA(2)-W(BK)/(SW) Unit connected to an Electra Professional (ETW) Multiline Terminal.

S-7 *SLT ADAPTER*

The Single Line Telephone (SLT) Adapter allows a port of an ESI(8)-U10 ETU to support a Single Line Telephone. A Single Line Telephone can be connected to the ESI(8)-U10 ETU using the SLT Adapter and 2-wire cable. Eight SLT(1)-U10 ADP Single Line Telephone Adapters can be installed in the Electra Elite 192 system. SLT Adapters do not support voice mail systems or Message Waiting Lamps.

S-8 *SLT TIMED ALARM*

A Timed Alarm (reminder) may be set at any Single Line Telephone. At programmed intervals, the system automatically calls the SLT station to remind the user of a scheduled time.

S-9 *SOFTKEYS*

The Electra Elite system provides softkeys on all display Electra Elite (DTU) or *D^{term}* Series E (DTP) Multiline Terminals. Currently Speed Dial Scrolling Directories, Account Code - Forced/Verified/Unverified, EliteMail Digital Voice Mail systems, and Elite ACD Plus make extensive use of these keys to guide a station user effortlessly through difficult-to-use feature operations.

S-10 *SPEED DIAL - STATION*

Each station in the system can be assigned 20 Station Speed Dial buffers. Depending on System Programming, when 1000 System Speed Dial numbers are assigned, the stations do not have Station Speed Dial. Each Station Speed Dial buffer may contain a maximum of 24 digits or four other buffer numbers (Nesting Dial) and the called party name.

The ETW-16DD-1/2(BK)/(SW) TEL has 20 One-Touch keys, and the ETW-24DS-1/2(BK)/(SW) TEL has 12 One-Touch keys that can also be used for Speed Dial.

The DTP-32D-1(BK)/(WH) TEL and DTU-32D-2(BK) TEL can be assigned 16 One-Touch keys (with 16 line keys) or eight One-Touch keys (with 24 line keys). In either case, its One-Touch keys are in addition to the 20 Station Speed Dial buffers.

The One-Touch key buffer may contain a maximum of 16 digits with no characters for names.

S-11 *SPEED DIAL STORED CHARACTERS*

Speed Dial buffers may contain a maximum of 24 digits. When 100-memories (80 System Speed Dial buffers and 20 Station Speed dial buffers) are allocated, a maximum of 13 characters can be entered for the name. When 1000-memories are allocated, a maximum of 12 characters can be entered for the name.

System Software S4000 or higher permits input stored characters to be entered on the dial pad, but does not allow the Character Code Table to be used.

S-12 *SPEED DIAL - SYSTEM*

Attendant Positions can be used to program either 80 or 1000 System Speed Dial memories that provide shared access by all stations. Selection may be set per Class to override System Speed Dial.

When 80 system speed dial buffers are allowed, each station user also has 20 station speed dial buffers. System Speed Dial memories may be set to override or not override code restriction.

S-13 *STATION CAMP-ON*

This feature allows a call to be transferred to a busy station. When the station receiving the camp-on tone becomes idle, the call rings and can be answered. After a programmed time, unanswered camp-on calls recall to the station that initiated the camp-on.

S-14 *STATION HUNTING*

This feature distributes internal and outside calls to multiple stations in a station hunt group. When a station number, programmed as a Station Hunting master number is dialed and this number is busy, the call is forwarded to another station in that hunt group.

S-15 STATION MESSAGE DETAIL RECORDING (SMDR)

An optional MIFM-U10 ETU provides detailed outside call records of system telephone usage. This supports cost control by identifying telephone users, trunk usage, or digits dialed. SMDR enables connection of call accounting equipment that audits local and long distance telephone bills.

Using System Software S5000 or higher and MIFM Software Version 3.00 or higher, a call record can or cannot be printed for a specified station.

S-16 STATION OUTGOING LOCKOUT

This feature allows a station user to temporarily restrict outgoing calls by assigning a personal code (password). The Attendant position can override or reset the Station Lockout setting at will.

S-17 STATION RELOCATION

This feature enables a station to be moved from one location to another without reprogramming the station data. The station features and extension numbers remain the same after it is moved to the new location.

S-18 STATION TRANSFER

This feature allows any station user in the system to transfer any call to any other station. Outside calls can be transferred to Multiline Terminals without the direct line appearance. Press the **Transfer (TRF)** key on a Multiline Terminal or use the hookswitch on a Single Line Telephone to initiate call transfer. The transfer is completed by going on-hook on a Multiline Terminal or Single Line Telephone.

S-19 STEP CALL

A caller that receives a call waiting tone during an internal call, can dial **2** (default) to access the next highest station number in the same 10s group (e.g., 10~19, 20~29, or 110~119, 220~229).

S-20 STORE AND REPEAT

This feature allows a Multiline Terminal user talking on a CO/PBX line to store any telephone number in memory for later use.

S-21 STORED HOOKFLASH

This feature allows any Multiline Terminal user to store a hookflash in a Speed Dial buffer to allow one-step access to certain Centrex or PBX features.

S-22 SYNCHRONOUS RINGING

This feature provides CO/PBX incoming ringing, synchronized with the incoming ringing pattern from a Central Office.

S-23 *SYSTEM DATA UP/DOWN LOAD*

This feature, included with NEC System Administration Terminal (SAT) Software, transfers Station Speed Dial data, System Speed Dial data, and all System Data from/to a PC. System Data Up/Down Load can be performed from a local or remote location.

T-1 *T1 CONNECTION*

T1 Connection allows the system to be connected directly to FT1 carrier links using a public or private network. The Digital Trunk Interface, DTI-U10/20 ETU, provides for different types of trunk signaling with FT1 carrier links using System Programming. The DTI-U10/20 ETU supports Loop Start/Ground Start, Tie line/DID trunks.

System Software S3000 or higher is required for the DTI-U10 ETU to support Feature Group D incoming only signaling.

System Software S4500 or higher is required for the DTI-U20 ETU to support Feature Group D incoming MF/outgoing DTMF signaling.

T-2 *TANDEM SWITCHING OF 4-WIRE E&M TIE LINES*

Tandem Switching of 4-wire E&M Tie Lines allows connecting E&M Tie Lines to other trunks through the system without help or supervision from an internal station to allow distant-end system users to remotely access trunks. Pad control is provided on the TLI(2)-U10 ETU by a programmable transmission pad to adjust to the line loss levels of the Tie line accessed.

T-3 *TENANT SERVICE*

Tenant Service allows user to subdivide the system into a maximum of 48 Tenants that have their own outside line access.

System Software S4000 or higher allows directing incoming DID calls to a Tenant.

System Software S5000 or higher allows the number of incoming DID calls to the Tenant to be limited.

T-4 *THREE-MINUTE REMINDER*

This feature provides the Multiline Terminal user that originated or answered an outside call, a reminder tone that is heard through the Multiline Terminal speaker every three minutes.

T-5 *TONE OVERRIDE*

Multiline Terminal users calling a busy station and receiving a call waiting tone can generate a tone override that is heard by the originator and busy station. Multiline Terminal users may place the existing call on hold to answer the override.

T-6 *TRUNK QUEUING*

This feature allows a station user to increase call processing efficiency. When a selected line is busy because all outside lines are busy, telephone users can queue onto the busy lines. When a line is available, the system provides an internal incoming ring to the queuing station. When the queued line is no longer needed, user can dial an Access Code to cancel the queue request.

Each station can be queued on an outside line by selecting the specific trunk in the queue procedure. This feature allows a station user to set trunk queuing to the specified trunk, internal Trunk Group, or Route Advance Block.

T-7 *TRUNK-TO-TRUNK TRANSFER*

This feature allows any station user to establish Trunk-to-Trunk Transfers between two CO/PBX (a disconnect signal must be provided), DID, and/or E&M Tie line calls.

T-8 *TWO-COLOR LEDS*

Multiline Terminals have a 2-Color LED (green or red) for Flexible Line keys, the **LNR/SPD** key on Electra Professional terminals, and the Large LED indications. The two colors indicate station status (red) and message status (green). Green is used to indicate I-Hold (Exclusive and Non-Exclusive), I-Use, and recall conditions. Other functions are indicated with a red LED. The Attendant Add-On Console is also provided with Two-color LEDs (green or red) for direct access to stations.

U-1 *UNIFORM CALL DISTRIBUTION (UCD)*

This feature permits incoming DIT/ANA, DID/Tie, and CO ring transferred calls to terminate in a prearranged hunt group in the order of arrival. Incoming calls are distributed to the longest-idle member of the UCD group.

When an incoming DIT/ANA, DID call to a UCD group encounters all UCD stations busy or no-answer, the call is queued and the caller receives a Delay Announcement after a predetermined time. (Refer to [D-2 DELAY ANNOUNCEMENT on page 2-17](#)).

An MIFA-U10 ETU must be installed.

U-2 UNIFIED MESSAGING

The ElectraMail CTI Voice Processing system, using the Electra Elite 192 system and a Local Area Network (LAN), provides Unified Messaging services for voice, fax, and e-mail messages with one access point: the desktop PC or the telephone. Unified Messaging lets the PC control telephone calls and information about each inbound or outbound call. The system includes the basic Active Voice TeLANophy[®] Module.

U-3 UNIFORM NUMBERING NETWORK

Uniform Numbering Network allows multiple or compatible systems to be connected in a network using Tie lines. Station users can dial a system number and a station number (open numbering) or dial the station number only (closed numbering) to access any station. When the calling and called systems are not directly connected, several Tie lines may be accessed to route the call.

Each system extends the call to the next system until the final destination is reached.

U-4 UNIVERSAL SLOTS

Universal Slots provide flexibility for installation and cost savings for the end user. The system allows the installation of most interface circuit boards into any interface slot.

U-5 UNSUPERVISED CONFERENCE

This feature allows a Multiline Terminal user to exit an established conference call, leaving the remaining parties to continue talking. This same user can then reenter the conference anytime.

U-6 USER PROGRAMMING ABILITY

Station users can perform programming functions at their station. Station Speed Dial and Ringing Line Preference are two features programmable from a station. Using NEC System Administration Terminal End-User Software, approximately 35 additional features can be programmed by the user.

V-1 VOICE MAIL INTEGRATION (ANALOG)

This feature provides the necessary interface between the system and a locally provided Voice Mail system. When a station is forwarded to the Voice Mail system and a station user calls that forwarded station, the call goes directly to the individual personal mail box. The Voice Mail system can send a message to the station indicating a Voice Mail Message was received. The system can support a maximum of 16 analog ports for Voice Mail. Analog Voice Mail is provided when Digital Voice Mail integration or Built-in Voice Mail is not available.

V-2 VOICE MAIL MESSAGE INDICATION ON LINE KEYS

Voice Mail Message Waiting on Line Keys indicates an existing or new voice mail message on Line Keys or DSS/BLF keys.

System Software S5000 or higher is required.

V-3 VOICE OVER INTERNET PROTOCOL (VoIP)

Voice over Internet Protocol sends real time voice/fax over the corporate LAN or WAN. The voice from the telephone is digitized and put into packets that are sent over a network using Internet Protocol. The IPT(4)/(8)-U10 ETU can combine trunk and Tie line calls into gateway trunks that can operate in the COI, COID, DID, or TLI mode and be installed in the interface slots supporting these ETUs.

The operating mode can be configured per ETU, but not per port.

V-4 VOICE OVER SPLIT

By dialing an Access Code, a station user can voice override the conversation between another station user and another party. When the conversation is interrupted, the other party cannot hear the Voice Over.

V-5 VOICE PROMPT

This feature provides voice guidance for assisting station users with tones such as call waiting tone and internal dial tone.

A VRS(4)-U10 ETU must be installed.

W-1 WIRELESS

Using a D^{term} PS II, the features and benefits of the desktop telephone are provided without the inconvenience of having to stay close to the Desktop. A BSU(2)-U10 ETU interfaces the KSU to an antenna unit called a Zone Transceiver (ZT II). These units are placed throughout the facility to manage calls through a network for wireless communication using D^{term} PS IIs.

Chapter 3

Equipment


SECTION 1 EQUIPMENT LIST


The following table lists all equipment used with the Electra Elite System. The equipment name, a description of the equipment, and the maximum quantities that are allowed for a Basic KSU, a Basic KSU with one Expansion KSU, and a Basic KSU with two Expansion KSUs are included in the table. The Equipment Name is listed alphabetically by category.


Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Key Service Units, Power Supply Units, and Adapters				
B64-U10 KSU	<p>The Basic Key Service Unit (KSU) for the Electra Elite System provides service for outside lines, Attendant Consoles, and interconnection of the station terminals. The basic KSU provides 64 ports that can be expanded to a maximum of 192 ports with the addition of two expansion KSUs.</p> <p>The basic KSU is also used for the expansion KSUs. System software allows a maximum of 184 ports to be used for stations and trunks. There are two fixed slots and eight flexible slots.</p> <p>The Expansion Key Service Unit (KSU) of the Electra Elite System provides an additional 64 ports. Expansion units can be added to the Basic KSU to provide 128 ports with one expansion unit and 192 ports with two expansion units.</p> <p>Each Expansion KSU provides eight flexible slots and accommodates any interface cards.</p> <p>The P64-U10 PSU (power supply unit), backup batteries, and three PFT relays are included with each KSU.</p>		1 Basic KSU per system 2 expansion KSUs per system	
FCE-U10 Unit	The Front Cover Extender Unit is required when a VDH2(8)-U10, IPT(4/8)-U10, or CTI(4/8)-U10 ETU is installed.		1 per KSU	
P64-U10 PSU	The Power Supply Unit is included with the B64-U10 KSU.		1 per KSU	



Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Common Electronic Telephone Units				
CPUB()-U10 ETU	The Central Processing Unit contains a 32-bit microprocessor that has overall control of the system. This ETU communicates with the interface boards and supports up to 192 ports (24 interface cards).	1 CPU per system		
		4 PBR circuits		
		16 voice mail ports (analog) 32 voice mail ports (digital)		
		64 Physical ports	128 Physical ports	192 Physical ports
		8 slots	16 slots	24 slots
		56 Station Ports	120 Station Ports	120 Station Ports
		56 Trunks	64 Trunks	64 Trunks
		32 PC Telephony Boards	32 PC Telephony Boards	32 PC Telephony Boards
		16 Conference Circuits		
CLKG-U10 Unit	The Clock Unit provides synchronization for FT1/T1 lines, ISDN-Primary Rate, and ISDN-Basic Rate connections. The unit is piggybacked on the CPUB()-U10 ETU and supports the DTI-U10/20, BRT(4)-U10, PRT(1)-U10/20, and BSU(2)-U10 ETUs.	1 per system with FT1, ISDN-BRI, ISDN-PRI or Wireless connections		
EXP-U10 ETU	The Expansion KSU Controller controls data transmission between the CPUB()-U10 ETU and other ETUs installed in the B64-U10 KSU.	N/A	1 ETU	2 ETUs
KMA(1.0)U	This unit is mounted on the MIFA-U10 ETU and adds ACD.	1 per MIFA-U10 ETU		
KMM(1.0)U	This unit is mounted on the MIFM-U10 ETU and adds LCR and Caller ID scrolling and dialing features.	1 per MIFM-U10 ETU		
MIFA-U10 ETU	This ETU provides additional memory for processing ACD/UCD. When ACD feature is desired, the KMA(1.0)U must be installed.	1 per system		
MIFM-U10 ETU	This ETU provides additional memory for PC programming, SMDR, LCR, Caller ID scrolling, and Wireless programming. When the LCR or Caller ID Scroll functions are desired, the KMM(1.0)U must be installed.	1 per system		

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Modem Kit Unit	The modem unit is installed on the PCT(S)-U10 Unit or the MIFM-U10 ETU.	1 per system		
Trunk Electronic Telephone Units				
BRT(4)-U10 ETU	<p>This Basic Rate Interface unit provides four channels (eight voice channels) for ISDN-Basic Rate Interface.</p> <p>Caller ID is supported.</p> <p>This ETU is installed in slots S1~S4 in the basic or first expansion B64-U10 KSU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p> <p>A CLKG-U10 Unit must be installed.</p>	4 ETUs (32 B Channels)	8 ETUs (64 B Channels)	8 ETUs (64 B Channels)
COI(4)-U10 ETU	<p>Electrical fuses (posistors) are built into this ETU. This ETU supports four outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing.</p> <p>The outside lines must be Loop Start DTMF trunks.</p> <p>This ETU is installed in slots S1~S8 in the basic or expansion B64-U10 KSU.</p> <p>This ETU can provide an E911 CAMA trunk.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	7 ETUs 28 CO/PBX lines	15 ETUs 60 CO/PBX lines	16ETUs 64 CO/PBX lines
COI(8)-U10 ETU	<p>Electrical fuses (posistors) are built into this ETU. This ETU supports eight outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing.</p> <p>The outside lines can be any combination of Loop Start or Ground Start DTMF trunks.</p> <p>This ETU is installed in slots S1~S8 in the basic or expansion B64-U10 KSU.</p> <p>This ETU can provide an E911 CAMA trunk.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	7 ETUs 56 CO/PBX lines	8 ETUs 64 CO/PBX lines	8 ETUs 64 CO/PBX lines

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
COIB(4)-U10 ETU	<p>This ETU can function the same as the COI(4)-U10 or COID(4)-U10 ETU to provide Central Office interface. When ETU is set for COID mode, Loop Start trunks and /or Caller ID trunks are supported. When the ETU is set for COI mode, Loop Start or Ground Start is supported. Caller ID is not supported in COI mode. Connections for Ground Start trunks are polarity sensitive.</p> <p>Only DTMF signaling is supported.</p> <p>This ETU can provide an E911 CAMA trunk.</p> <p>The maximum number depends on other Trunk cards installed.</p> <p> COID mode: Caller ID trunks must be installed in slots 1~4 in basic or first expansion KSU.</p> <p>This ETU shares the total number of CO/PBX lines in the system.</p> <p>Tip and RIng electrical fuses are provided to comply with UL 1459 requirements.</p>	<p>COI Mode 7 ETUs 28 CO/PBX Lines</p> <p>COID mode 4 ETUs 16 CO (Class) lines</p>	<p>COI Mode 15 ETUs 60 CO/PBX Lines</p> <p>COID mode 8 ETUs 32 CO (Class) lines</p>	<p>COI Mode 16 ETUs 64 CO/PBX Lines</p> <p>COID mode 8 ETUs 32 CO (Class) lines</p>
COID(4)-U10 ETU	<p>The Central Office Caller ID ETU detects Caller ID signals from the central office and sends caller identification to the CPUB()-U10 ETU.</p> <p>Electrical fuses (posistors) are built into this ETU That supports four outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing.</p> <p>This ETU is loop start, DTMF only and is installed in slots S1~S4 in the basic or first expansion B64-U10 KSU.</p> <p>This ETU can provide an E911 CAMA trunk.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	<p>4 ETUs</p> <p>16 CO (Class) lines</p>	<p>8 ETUs</p> <p>32 CO (Class) lines</p>	<p>8 ETUs</p> <p>32 CO (Class) lines</p>


Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Coid(8)-U10 ETU	<p>The Central Office Caller ID ETU detects Caller ID signals from the central office and sends caller identification to the CPUB()-U10 ETU.</p> <p>Electrical fuses (posistors) are built into this ETU That supports eight outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing.</p> <p>This ETU is loop start only and is installed in slots S1~S4 in the basic or first expansion B64-U10 KSU.</p> <p>This ETU can provide an E911 CAMA trunk.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	<p>4 ETUs</p> <p>32 CO (Class) lines</p>	<p>8 ETUs</p> <p>64 CO (Class) lines</p>	<p>8 ETUs</p> <p>64 CO (Class) lines</p>
DID(4)-U10 ETU	<p>The Direct Inward Dialing Interface Unit supports up to four DID or four 2-way DID lines. Each DID(4)-U10 ETU requires one interface slot position in the KSU.</p> <p> Immediate, wink start, second dial tone, and delay dial signaling can be combined on this ETU.</p> <p>This ETU is installed in slots S1~S8 in any B64-U10 KSU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	<p>7 ETUs</p> <p>28 DID Trunks</p>	<p>15 ETUs</p> <p>60 DID Trunks</p>	<p>16 ETUs</p> <p>64 DID Trunks</p>

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
DTI-U10/20 ETU	<p>The Digital Trunk Interface ETU provides for the termination of Fractional T1 (24 DS-0 channels) line. This ETU contains circuitry for outside ring detection, holding, dialing, control function, Tie line (E&M), and DID signaling.</p> <p>Automatic Number Indication (ANI) is supported.</p> <p>A combination of Loop Start and Ground Start trunks, DID trunks, or Tie lines can be used on the ETU. Each trunk is assigned in groups of four. DTMF or Dial Pulse dialing is supported.</p> <p>This ETU is installed in slots S1 and S4 in the basic B64-U10 KSU or slot S1 of the first expansion B64-U10 KSU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p> <p> The maximum combination of DTI-U10/20 and PRT(1)-U10/20 ETUs is 3 per system.</p> <p>A CLKG-U10 Unit must be installed.</p>	<p>2 ETUs</p> <p>48 lines</p>	<p>3 ETUs</p> <p>64 lines</p>	<p>3 ETUs</p> <p>64 lines</p>
IPT(4)-U10 ETU	<p>This IP Gateway ETU is an optional Interface that can combine trunk calls into Gateway trunks.</p> <p>This ETU can emulate the following ETUs: TLI(2)-U10, DID(4)-U10, COI(4)/(8)-U10, or COID(4)/(8)-U10. Refer to the applicable ETU assignment for the trunk capacity.</p> <p>This ETU can be installed in KSU slots that support the applicable assigned ETU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p> <p>When this ETU is installed, the FCE-U10 Unit is required. This ETU shares the total number of station ports in the system</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks 16 lines</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks 32 lines</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks 48 lines</p>

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
IPT(8)-U10 ETU	<p>This IP Gateway ETU is an optional Interface that can combine trunk calls into Gateway trunks.</p> <p>This ETU can emulate the following ETUs: TLI(2)-U10, DID(4)-U10, COI(4)/(8)-U10, or COID(4)/(8)-U10 . Refer to the ETU type assignment for the trunk capacity.</p> <p>This ETU can be installed in KSU slots that support the applicable assigned ETU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p> <p>When this ETU is installed, the FCE-U10 Unit is required. This ETU shares the total number of station ports in the system</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks</p>	<p>4 ETUs Variable</p> <p>IP Gateway Trunks</p>
PRT(1)-U10/20 ETU	<p>The Integrated Service Digital network (ISDN)-Primary Rate Interface (PRI) is a Public Switched Telephone Network (PSTN) service that provides 23 B channels and one D channel (23B + D) for voice call trunking. The B channels provide 23 CO/DID connections.</p> <p>This ETU is installed in slots S1 and S4 in the basic B64-U10 KSU and slot S1 of the first expansion B64-U10 KSU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of Trunk lines in the system.</p> <p> The maximum combination of PRT(1)-U10/20 and DTI-U10/20 ETUs is three per system.</p> <p>A CLKG-U10 Unit must be installed.</p>	<p>2 ETUs</p> <p>46 lines</p>	<p>3 ETUs</p> <p>62 lines</p>	<p>3 ETUs</p> <p>62 lines</p>
TLI(2)-U10 ETU	<p>The Tie Line Interface ETU supports the termination and operation of up to two E&M Tie lines (4-wire, type I and type V, and 10/20 pps Dial Pulse or DTMF).</p> <p> Immediate, wink start, second dial tone, and delay dial signaling can be combined on this ETU.</p> <p>This ETU is installed in slots S1~S8 in the B64-U10 KSU.</p> <p>The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.</p>	<p>7 ETUs</p> <p>14 Tie lines</p>	<p>15 ETUs</p> <p>30 Tie lines</p>	<p>16 ETUs</p> <p>32 Tie lines</p>

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Station Electronic Telephone Units				
CNF(8)-U10 ETU	<p>The Multiline Conference Bridge allows any intercom user or any outside party calling to a port of the CNF(8)-U10 ETU to join or make a multiparty Conference Call.</p> <p>Each CNF(8)-U10 ETU supports one 8-party conference or two 4-party conferences regulated by a switch setting.</p> <p>This ETU is installed in slots S1~S8 in the B64-U10 KSU.</p> <p>The system recognizes this ETU as SLI(8)-U10 ETU. This ETU shares the total number of station ports in the system.</p>	<p>2 ETUs</p> <p>16 Conference Ports</p>	<p>2 ETUs</p> <p>16 Conference Ports</p>	<p>2 ETUs</p> <p>16 Conference Ports</p>
CTI/VP(4)/(8)/(12)/(16)-U10 ETU	<p>This ETU is a 4-, 8-, 12-, or 16-port Digital Voice Mail system with ports that can support TeLANophy, inbound/outbound faxing, and Hospitality/HVM applications.</p> <p>It can be installed in one of the interface slots.</p> <p>This ETU shares the total number of station ports in the system.</p>	1 ETU		
DPH(4)-U10 ETU	<p>The Doorphone interface ETU allows four DP-D-1A Doorphones to be connected. Two simultaneous calls are allowed, and four Door Lock Release relays are provided.</p> <p>This ETU is installed in slots S1~S8 in the B64-U10 KSU.</p>	1 ETU	1 ETU	1 ETU
ESI(8)-U10 ETU	<p>The Electronic Station Interface ETU contains eight circuits. Each circuit can support any Attendant Console, Multiline Terminal, or Single Line Telephone adapter.</p> <p>This ETU is installed in slots S1~S8 in the basic B64-U10 KSU or expansion B64-U10 KSU.</p> <p>The maximum number depends on other station cards installed. This ETU shares the total number of extension ports in the system.</p>	<p>7 ETUs</p> <p>56 Extensions</p>	<p>15 ETUs</p> <p>120 Extensions</p>	<p>15 ETUs</p> <p>120 Extensions</p>
FMS(2)/(4)/(8)-U10 ETU	<p>This ETU is installed in one of the interface slots. It has two, four or eight channels of built-in Voice Mail.</p> <p>The system recognizes this ETU as VMS(4)/(8)-U10 ETU. This ETU shares the total number of station ports in the system.</p>	1 ETU		

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
OPX(2)-U10 ETU	<p>The Off-Premise Extension ETU provides for the termination and operation of a maximum of two off-premise extensions. Each ETU has a built-in ringer (RSG). Up to 1600 ohms of loop resistance (including the Single Line Instrument) is acceptable between the OPX ETU and the Single Line Telephone.</p> <p>This ETU is installed in slots S1~S8 in any B64-U10 KSU. This ETU shares the total number of station ports in the system.</p>	<p>6 ETUs</p> <p>12 extensions</p>	<p>14 ETUs</p> <p>28 extensions</p>	<p>22 ETUs</p> <p>44 extensions</p>
SLI(4)-U10 ETU	<p>The Single Line Interface ETU supports a maximum of four Single Line Telephones and/or analog voice mail ports. This ETU provides Ringing Signal Generator (RSG), and Message Waiting (MW) LED voltage to Single Line Telephones.</p> <p>This ETU is installed in slots S1~S8 in any B64-U10 KSU.</p> <p>The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.</p>	<p>6 ETUs</p> <p>24 ports</p>	<p>14 ETUs</p> <p>56 ports</p>	<p>22 ETUs</p> <p>88 ports</p>
SLI(8)-U10 ETU	<p>The Single Line Interface ETU supports a maximum of eight Single Line Telephones and/or voice mail ports. This ETU provides Ringing Signal Generator (RSG), and Message Waiting (MW) LED voltage to Single Line Telephones.</p> <p>This ETU is installed in slots S1~S8 in the B64-U10 KSU.</p> <p>The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.</p>	<p>6 ETUs</p> <p>48 ports</p>	<p>14 ETUs</p> <p>112 ports</p>	<p>14 ETUs</p> <p>112 ports</p>
VDH2(8)-U10 ETU	<p>The Voice Data Hub ETU allows integration of both Terminal and 10Base-T cables for local area network (LAN) into the same cable (10Base-T and 10Base-2 are supported).</p> <p>This ETU is installed in slots S1~S8 in the B64-U10 KSU.</p> <p>When this ETU is installed, the FCE-U10 Unit is required. This ETU shares the total number of station ports in the system.</p>	<p>3 ETUs</p> <p>24 extensions</p>	<p>6 ETUs</p> <p>48 extensions</p>	<p>9 ETUs</p> <p>72 extensions</p>
VMS(2)-U10 ETU	<p>This ETU is installed in one of the interface slots. It has two channels of built-in Voice Mail.</p> <p>This ETU shares the total number of station ports in the system.</p>	1 VMS(2), VMS(4), or VMS(8)-U10 ETU		

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
VMS(4)-U10 ETU	This ETU is installed in one of the interface slots. It has four channels of built-in Voice Mail. This ETU shares the total number of station ports in the system.	1 VMS(2), VMS(4), or VMS(8)-U10 ETU		
VMS(8)-U10 ETU	This ETU is installed in one of the interface slots. It has eight channels of built-in Voice Mail. This ETU shares the total number of station ports in the system.			
Optional Electronic Telephone Units				
ACD(8)-U10 ETU	The Automatic Call Distribution ETU interfaces the Elite ACD Plus Server with the Electra Elite KSU. This ETU is installed in slots S1~S8 in any B64-U10 KSU.	1 ETU		
BSU(2)-U10 ETU	The Base Station Unit ETU interfaces the KSU with the ZT II Zone Transceiver for wireless communication with a PS II Personal Station. This ETU is installed in slots S1~S8 in any B64-U10 KSU. A CLKG-U10 ETU must be installed.	6 ETUs 12 ZT IIs	8 ETUs 16 ZT IIs	8 ETUs 16 ZT IIs
ECR-U10 ETU	The External Control Relay ETU provides common audible tone signaling using relay contacts for external ringing equipment and an audible output for external paging systems. Four External Tone Ringer Control relays, one Night Chime relay, three External Paging relays, and two General Purpose relays are provided. This ETU is installed in slots S1~S8 in the basic B64-U10 KSU.	1 ETU		
PBR()-U10 ETU	The Push Button Receiver ETU detects and translates DTMF tones generated by Single Line Telephones, modems, or facsimile machines. The PBR provides four circuits for Single Line Telephones only.  Four PBR circuits are built in the CPUB()-U10 ETU.	1 ETU		
VRS(4)-U10 ETU	The Voice Recording Service ETU provides voice recording messages for internal stations, automatic answering on incoming outside calls, Delay Announcement messages for ACD/UCD by a voice recorded message, and receives DTMF tones. This ETU is installed in slots S1~S8 in the B64-U10 KSU.	2 ETUs	2 ETUs	2 ETUs

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
Terminals				
DCU-60-1(BK)/(WH) CONSOLE	This Attendant Console is equipped with 60 programmable line keys (each with 2-color LED). Twelve keys can be programmed as Feature Access keys and 48 keys can be programmed as Direct Station Selection or outside line keys.	4		
DP-D-1A	This Doorphone may be used when DPH(4)-U10 ETU is installed.	4		
DTP-1-1(WH) TEL DTP-1-2(WH)/(BK) TEL	This Single Line Telephone is a fully modular terminal with a flash key, Redial key, 3-level receive volume control, 2-level ring volume control, data jack, and message waiting lamp. Each terminal requires an SLI(4)/(8)-10 ETU or SLT(1)-U10 ADP.	56	118	118
DTP-1HM-1(WH) TEL DTP-1HM -2 (WH)/(BK) TEL	This Single Line Telephone is a fully modular terminal with a flash key, Redial key, 3-level receive volume control, 2-level ring volume control, data jack, message waiting lamp, and eight programmable Feature/Speed Dial keys. Each terminal requires an SLI(4)/(8)-U10 ETU or SLT(1)-U10 ADP.	48	112	112
DTP-2DT-1(WH) TEL	This is a fully modular terminal with two Flexible Line keys (each with 2-color LED), eight function keys, built-in Speakerphone, and a large LED to indicate incoming calls and messages. This phone does not support any adapter. Each terminal requires an ESI(8)-U10 ETU.	56	118	118
DTU-4R-1(BK) TEL	This D ^{term} Cordless Lite Terminal can be connected to the Electra Elite System using a tandem connection to a Multiline Terminal. The terminal has a 16-digit, 2-line LCD, dial pad, talk key, chan key, hold key, transfer key, conf key, mute key, vol key, a msg icon, vibrator, and four function keys with red LEDs. The cordless terminal can be switched to the Multiline Terminal connected to it by pressing the Desk key on the base unit of the idle D ^{term} Cordless Lite Terminal.	30		

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
DTP/DTU-8-1 (BK)/(WH) TEL	This digital Multiline Terminal has eight programmable line keys (each with a 2-color LED), built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units.	55	119	119
DTP-8D-1/DTU-8D-2 (BK)/(WH) TEL	This digital Multiline Terminal has eight programmable line keys (each with a 2-color LED), built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units. This terminal is also equipped with a 24-character, 3-line, adjustable Liquid Crystal Display (LCD). The DTP-8D-1/DTU-8D-2 (BK)/(WH) TEL provides four softkeys.	56	120	120
DTP-16HC-1(BK) TEL	This D ^{term} Handset Cordless Terminal is a stand-alone telephone with direct connection to a single port on the ESI(8)-U10 ETU. An ACA-U Unit adapter is required for this terminal. Each terminal requires an ESI(8)-U10 ETU port.	40		
DTP/DTU-16-1 (BK)/(WH) TEL	This digital Multiline Terminal has 16 programmable line keys (each with a 2-color LED), a built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units.	55	119	119
DTP-16D-1/DTU-16D-2 (BK)/(WH) TEL	These digital Multiline Terminals are equipped with 16 programmable line keys (each with a 2-color LED), a built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units. This terminal also has a 24-character, 3-line, adjustable Liquid Crystal Display (LCD). The DTP-16D-1/DTU-16D-2 (BK)/(WH) TEL provides four softkeys.	56	120	120
DTP/DTU-32-1 (BK)/(WH) TEL	This digital Multiline Terminal has 32 programmable line keys (each with a 2-color LED), a built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units.	55	119	119

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
DTP-32D-1/ DTU-32D-2 (BK)/(WH) TEL	<p>This digital Multiline Terminal is equipped with 32 programmable line keys (each with a 2-color LED), a built-in speakerphone, a large LED to indicate incoming calls and messages, headset jack, and compatibility with ADA-U, APR-U, CTA-U, CTU(C)-U, CTU(S)-U, HFU-U, and VDD-U Units.</p> <p>This terminal has a 24-character, 3-line, adjustable Liquid Crystal Display (LCD).</p> <p>The DTP-32D-1/DTU-32D-2 (BK)/(WH) TEL provides four softkeys.</p>	56	120	120
D ^{term} PS II	The Personal Station wireless terminal provides the features and benefits of a desktop telephone without the inconvenience of having to remain close to the desktop.	40		
DTR-1R-1(BK) TEL	<p>The D^{term} Analog Cordless terminal uses 2.4 GHz Digital Spread Spectrum (DSS) Technology and is connected to an analog port using SLI(4)/(8)-U10 or OPX(2)-U10 ETU, an SLT(1)-U10 ADP, or an APR-U Unit connected to the Multiline Terminal.</p> <p>This terminal does not have an LCD display.</p>	20		
DTR-4R-1(BK) TEL	<p>The D^{term} Cordless II terminal uses 900 MHz Digital Spread Spectrum (DSS) Technology and is connected in tandem to a Multiline Terminal.</p> <p>This terminal can be switched between cordless and the Multiline Terminal connected to it using a key on the base unit or the Handset.</p> <p>This terminal has a 16-digit by 2-line LCD Display.</p>	10		
ETW-4R-1(BK) TEL	<p>This D^{term} Cordless Terminal can be connected to the Electra Elite System using tandem connection to a Multiline Terminal. This terminal has a cordless handset, a 10-digit, 2-line LCD, dial pad, TALK key, HOLD key, TRF key, CNF key, SPD key, a MSG LED, optional vibrator, and four function keys with red LED.</p> <p>This D^{term} Cordless Terminal can be switched to the Multiline Terminal connected to it by pressing the DESK key on the base unit of the idle D^{term} Cordless Terminal.</p>	9		
ETW-8-1/2(BK)/ (SW) TEL	This terminal is a fully modular instrument with tilt stand, eight Flexible Line keys (each with 2-color LED), eight function keys, built-in speakerphone, ADA compatibility, and a large LED to indicate incoming calls and messages.	55	119	119

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
ETW-16DC-1/2 (BK)/(SW) TEL	<p>This terminal is a fully modular instrument with tilt stand, 16 Flexible Line keys (each with 2-color LED), eight function keys, built-in speakerphone, ADA compatibility, and a large LED to indicate incoming calls and messages.</p> <p>This terminal has a 16-character by 2-line Liquid Crystal Display (LCD).</p>	56	120	120
ETW-16DD-1/2 (BK)/(SW) TEL	<p>This terminal is a fully modular instrument with tilt stand, 16 Flexible Line keys (each with 2-color LED), eight function keys, 20 programmable One-Touch keys with red LEDs, built-in speakerphone, ADA compatibility, and a large LED to indicate incoming calls and messages.</p> <p>This terminal has a 16-character by 2-line Liquid Crystal Display (LCD).</p>	56	120	120
ETW-24DS-1/2(BK)/(SW) TEL	<p>This terminal is a fully modular instrument with tilt stand, 24 Flexible Line keys (each with 2-color LED), eight function keys, 12 programmable One-Touch keys, dual-path ability, built-in speakerphone, ADA compatibility, and a large LED to indicate incoming calls and messages.</p> <p>This terminal has a 16-character by 2-line Liquid Crystal Display (LCD).</p>	56	120	120
EDW-48-1/2(BK)/(SW) CONSOLE	<p>This console has a tilt stand, 48 programmable keys with dual LEDs (green and red) and 12 function keys with red LED. All 48 keys can be assigned as DSS keys, outside line keys, or function keys.</p>	4		
Adapters and Optional Units				
ACA-U Unit	<p>The AC Adapter unit connects to one of the following: APR-U Unit, CTA-U Unit, CTU(C)-UUnit, CTU(S)-U Unit, HFU-U Unit, VDD-U Unit, or DTP-16HC-1(BK) TEL.</p>	One per Multiline Terminal as required		
ADA-U Unit	<p>This Ancillary Device adapter provides the Digital Multiline Terminal with connection for a tape recorder.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	56	120	120

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
ADA(1)-W (BK)/(SW) Unit	<p>This Ancillary Device adapter provides the Electra Professional Multiline Terminal with connection for headset, or audio recorder.</p> <p>This adapter can be installed on any Electra Professional Multiline Terminal.</p>	56	120	120
ADA(2)-W (BK)/(SW) Unit	<p>This Ancillary Device adapter provides the Electra Professional Multiline Terminal with connection for Cordless Telephone.</p> <p>This adapter can be installed on any Electra Professional Multiline Terminal.</p>	56	120	120
APA-U Unit	<p>This Analog Port adapter without ringer is the interface used to install a Single Line Telephone, Modem, Credit Card Reader, Wireless Headset, NEC VoicePoint/VoicePoint Plus Conferencing unit, or other compatible Analog device.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	56	120	120
APR-U Unit	<p>When this Analog Port Ringer adapter is used, an additional Single Line Telephone or a modem can be connected to an Electra Elite Multiline Terminal.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	56	120	120
CTA-U Unit	<p>TAPI (Microsoft Telephony Application Programming Interface) adapter allows an Electra Elite Multiline Terminal to be connected to a PC.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	32	32	32
CTU(C)-U Unit	<p>This unit is a CTA adapter for Universal Serial Bus with a Coreline, VDH2(8)-U10 ETU, connection.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	32	32	32
CTU(S)-U Unit	<p>This unit is a CTA adapter for Universal Serial Bus with an ESI(8)-U10 ETU connection.</p> <p>This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.</p>	32	32	32

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
DBM(B)-U10 Box	This Message Display Board is connected to the ESI(8)-U10 ETU to provide a message waiting light for voice mail boxes. Each board supports eight message waiting lights.	8	8	8
DBM(E)-U10 Box	Expansion Message Display Board. Each board supports eight message waiting lights. Up to five DBM(E)-U10s can be connected to one DBM(B)-U10.	40	40	40
HFU-U(BK)/(WH) Unit	This optional Handsfree Unit provides full-duplex handsfree communication. This unit comes with the handsfree adapter and an external microphone. This adapter can be installed on any DTP or DTU Multiline Terminal except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.	56	120	120
PCT(C)-U10 Unit	NEC PC Telephony Board (TAPI) with a Coreline interface. The VDD-U Unit is built into the PCT(C)-U10 so that this unit can connect directly to the VDH2(8)-U10 ETU. This unit can be connected directly to the test port. This unit can be installed on the ISA bus on any IBM-compatible PC.	32	32	32
PCT(S)-U10 Unit	NEC PC Telephony Board (TAPI) without a modem. This unit can be installed on the ISA bus on any IBM-compatible PC.	32	32	32
RAK-U10 Unit	This 19" unit is used to simplify installation by rack mounting the Electra Elite 192 system.	1	2	3
SLT(1)-U10 ADP	The Single Line Telephone Adapter provides an interface for Single Line Telephones and other similar devices from an ESI ETU channel. This adapter can be connected to any ESI port except 01 and 02.	8		
VDD-U Unit	The Voice/Data Interface Adapter provides LAN split for digital terminals when the VDH2(8)-U10 ETU is used. This unit is used to incorporate LAN and telephone lines into one cable. This adapter can be installed on any DTP or DTU Multiline Terminal connected to a VDH2(8)-U10 ETU except DTP-2DT-1(WH) TEL, DTP-16HC-1(BK) TEL, or Cordless terminals.	24	48	72

Equipment Name	Description	Basic KSU	Basic + 1 Expansion KSU	Basic + 2 Expansion KSUs
WMU-U Unit	This Wall Mount Unit is used to mount any Electra Elite Multiline Terminal to the wall. This unit connects to the back side of the Multiline Terminal. This unit is required when an APA-U Unit, APR-U Unit, CTA-U Unit, CTU(C)-U Unit, CTU(S)-U10 Unit HFU-U (BK)/(WH) Unit, or a VDD-U Unit is installed.	56	120	120
WMU-W Unit	This universal Wall Mount Unit is used to mount any Electra Professional Multiline Terminal or DTP-2DT-1(WH) TEL to the wall.	56	120	120
ZT II	The Zone Transceiver maintains radio communication with the PS II terminals.	12	16	16
Software				
SAT S/W (END USER) S6000	System Administration Terminal Software for End User	1		
SAT S/W (TECH) S6000	System Administration Terminal Software for Technician	1		
SAT LCR Version 2.00	System Administration Terminal Software for Least Cost Routing	1		
Wireless Service Console (WSC)	Wireless Service Console (WSC) Administration Terminal Software	1		
IP Configurator	VoIP Administration Terminal (VAT) Software	1		

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Chapter 4

Installation, Programming, and Maintenance Overview

Installation, Programming, and Maintenance Overview

CHAPTER 4

SECTION 1 INSTALLATION

Reduced Installation Time

The Electra Elite 192 System uses modularity and connectivity throughout to reduce installation time and labor. The modular Key Service Units (KSUs) are installed vertically for the Electra Elite 192 System. Most internal connections are made with plug and jack.

Reducing the labor required for installation, modularity and connectivity increase reliability. No wiring changes are made in the KSUs and all connectors are factory tested.

The power supply unit and the battery backup unit are installed in the KSU and allow for easy connection to extra battery backup units. All circuits installed in the KSUs are located on printed circuit boards that plug into prewired connector slots. Connection for voice and data between the KSUs is provided by a single ribbon cable between the basic and expansion KSUs. Voice and data are transmitted between KSUs using an EXP-U10 ETU in the Electra Elite 192 System.

Connection to telephones, outside lines, and other external devices is made using telephone cable connectors. A music source for Music on Hold is connected by standard audio equipment plugs.

Universal Slots

Using Universal Slots maximizes flexibility by allowing installation of any ETU into any interface slot (except the MIFA/MIFM-U10 ETU that can only be installed in a dedicated slot or the first interface slot, and the DTI/PRT ETU that must be installed in a specified interface slot). Full use of each KSU, before adding another, reduces hardware requirements.

Resident System Program

A Resident System Program is provided when the system first receives power. The CPU scans the KSUs and recognizes the ETUs and Multiline Terminals that are connected to the system. Standard values (called default values) are assigned in the System Program for all system and device parameters. This allows the system to operate immediately after initialization, before programming is done.

The assignments provided by the Resident System Program can be altered to fit the requirements of a particular installation. Changing programming assignments is the function of two preassigned Multiline Terminals or a personal computer. When programming from a Multiline Terminal, Flexible Line keys and the dial pad are used to enter new values, and the display provides the necessary information for programming.

Multiline Terminals and Single Line Telephones

A variety of telephones can be connected to satisfy the requirements of a particular installation. All Multiline Terminals are fully modular and are powered from the central unit. Cabling is twisted 1-pair for proprietary Multiline Terminals and Single Line Telephones.

SECTION 2 PROGRAMMING

From Multiline Terminals

Programming is accomplished using ETW-16DC-1/2 (BK)/(SW) TEL, ETW-16DD-1/2(BK)/(SW) TEL, ETW-24DS-1/2(BK)/(SW) TEL, DTP-8D-1(BK)/(WH) TEL, DTU-8D-2(BK)/(WH) TEL, DTP-16D-1(BK)/(WH) TEL, DTU-16D-2(BK)/(WH) TEL, DTP-32D-1(BK)/(WH) TEL, or DTU-32D-2(BK)/(WH) TEL Multiline Terminal. The first two ESI(8)-U10 ETU ports are automatically assigned for programming.

When a programming Multiline Terminal is off-line in the Program Mode, the rest of the system continues to function. Most program changes can be entered anytime, but some changes take effect only when the affected stations and circuits are idle. This avoids disrupting any calls in progress.

PC Programming

Using the MIFM-U10 ETU allows the system to be programmed from a personal computer. System data can be transferred to/from a diskette for backup. The System Program End User software allows end users to program several features for their Multiline Terminals, such as: Line Key Assignment, Telephone Names, Zone Paging Groups, or various timers.

Battery Backup

CPU battery backup retains the System Program and System Programmed Data for approximately 21 days during power loss when the batteries are fully charged.

The batteries, located in the KSUs, support system operation for up to 30 minutes during a power outage.

User Programmable Features

Multiline Terminal users can also program the following features from their station:

- ④ Ringing Line Preference
- ④ Feature Access and/or One-Touch keys (e.g., Speed Dial or Direct Station Selection.)
- ④ Speed Dial

Multiline Terminals without programmable One-Touch keys and Single Line Telephones can be used to program Station Speed Dial memories. Attendant Positions can be used to program System Speed Dial memories and the System Clock/Calendar.

**SECTION 3
MAINTENANCE****Installing Interface ETUs without Disrupting Ongoing Calls**

Each interface and optional ETU has an ON/OFF switch with an LED indication of power status. An interface ETU with this switch OFF can be removed or installed with the system power on.

The combination of status indication and ETU replacement with power on allows the maintenance technician to replace suspect circuits without disrupting ongoing calls.

Up/Down Load of Data

Using an MIFM-U10 ETU and System Program Technician/End-User Software, Station Speed Dial data, System Speed Dial data, and all System Data can be transferred from/to a PC. The Up/Down Load may be accomplished from a local or remote location.

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Chapter 5

Hardware Specifications

SECTION 1 SYSTEM CAPACITY

The Electra Elite 192 System consists primarily of the Basic KSU and the Expansion KSUs. Expansion KSUs can be stacked vertically on the Basic KSU to expand the capacity of the system. A maximum of two expansion KSUs can be added to expand to 24 interface slots. The same KTU is used for the basic and both expansion KSUs.

1. Basic KSU: 8 interface slots
2. Basic KSU + Expansion KSU: 16 interface slots
3. Basic KSU + 2 Expansion KSUs: 24 interface slots

Some capacities of the Electra Elite System are listed below.

Hardware	Maximum Capacities
System Slots	
Basic Unit	8 interface slots + 1 application slot
Basic + Expansion Unit	16 interface slots + 1 application slot
Basic + 2 Expansion Units	24 interface slots + 1 application slot
Number of CO/PBX Lines	
Basic Unit	56
Basic + Expansion Unit	64
Basic + 2 Expansion Units	64
Number of 4-Wire E&M Lines	
Basic Unit	14
Basic + Expansion Unit	30
Basic + 2 Expansion Units	32

Number of DID Lines

Basic Unit	28
Basic + Expansion Unit	60
Basic + 2 Expansion Units	64


Multiline Terminal Equipment

Basic Unit	64
Basic + Expansion Unit	120
Basic + 2 Expansion Units	120

Electra Professional Multiline Terminal Equipment

Basic Unit	64
Basic + Expansion Unit	120
Basic + 2 Expansion Units	120

Single Line Telephone Equipment with SLI(8)-U10 ETUs or OPX(2)-U10 ETU

 The installed OPX ETU is treated as Single Line Telephone equipment and is counted toward the maximum Single Line Telephone equipment that can be installed in a system. The OPX(2)-U10 ETU provides **two** station circuits per KSU slot.

Basic Unit	56
Basic + Expansion Unit	118
Basic + 2 Expansion Units	118

Single Line Telephone Adapter

Basic Unit	8
Basic + Expansion Unit	8
Basic + 2 Expansion Units	8

Message Display Box

Basic Unit	8
Expansion Units	40

Attendant Consoles

Basic Unit	4
Basic + Expansion Unit	4
Basic + 2 Expansion Units	4

T1 Connection (Digital Trunk DS-0 Channels)

Basic Unit	2
Basic + Expansion Unit	3
Basic + 2 Expansion Units	3

PRT(1)-U10/20 ETU

Basic Unit	2
Basic + Expansion Unit	3
Basic + 2 Expansion Units	3

BRT(4)-U10 ETU

Basic Unit	4 (32 B Channels)
Basic + Expansion Unit	8 (64 B Channels)
Basic + 2 Expansion Units	8 (64 B Channels)

BSU(2)-U10 ETU

Basic Unit	6
Basic + Expansion Unit	8
Basic + 2 Expansion Units	8

Zone Transceiver (ZT II)

Basic Unit	12
Basic + Expansion Unit	16
Basic + 2 Expansion Units	16

SECTION 2

CABLING

REQUIREMENTS AND

SPECIFICATIONS

This section provides cabling requirements and specifications for various equipment used in the Electra Elite System.

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). (Refer to [Table 5-1 Multiline Terminal Loop Resistance and Cable Length](#) for the loop resistance and cabling requirements for Multiline Terminals and adapters.)

Table 5-1 Multiline Terminal Loop Resistance and Cable Length

Terminal or Adapter	Maximum Loop Resistance (Ohms)	Maximum Feet by Twisted 1-Pair Cable	Maximum Feet by Twisted 2-Pair Cable
		24 AWG	24 AWG
DBM(B)-U10 Box	N/A	900	900
DCU-60-1(BK)/(WH) CONSOLE	N/A	1000	1000
DTP-2DT-1(WH) TEL	35	600	1000
DTU 4R-1(BK) TEL	N/A	650	1000
DTP-8-1(BK)/(WH) TEL DTU-8-1(BK)/(WH) TEL	35	600	1000
DTP-8D-1(BK)/(WH) TEL DTU-8D-2(BK)/(WH) TEL	35	600	1000
DTP-16-1(BK)/(WH) TEL DTU-16-1(BK)/(WH) TEL	26	450	900
DTP-16D-1(BK)/(WH) TEL DTU-16D-2(BK)/(WH) TEL	26	450	900
DTP-16HC-1(BK) TEL	57	1083	
DTP-32-1(BK)/(WH) TEL DTU-32-1(BK)/(WH) TEL	21	360	720
DTP-32D-1(BK)/(WH) TEL DTU-32D-2(BK)/(WH) TEL	21	360	720
DTR-1R-1(BK) TEL	35	600	1000
DTR-4R-1(BK) TEL	N/A	650	1000
ETW-8-1/2(BK)/(SW) TEL	35	600	1000
ETW-16DC-1/2(BK)/(SW) TEL	26	450	900
ETW-16DD-1/2(BK)/(SW) TEL	21	360	720
ETW-24DS-1/2(BK)/(SW) TEL	26	450	900
ETW-4R-1(BK) TEL	N/A	650	650
EDW-48-1(BK)/(SW) DSS/BLF with AC Adapter	N/A	1000	1000
SLT(1)-U10 ADP	35	600	1000

ⓘ An AC Adapter is required when installing the following devices: DTP-16HC-1(BK) TEL, Electra Elite DCU 60, or Electra Professional EDW 48 Attendant Console.

ⓘ The length for the specified SLT Adapter is the length between the SLT Adapter and the ESI.

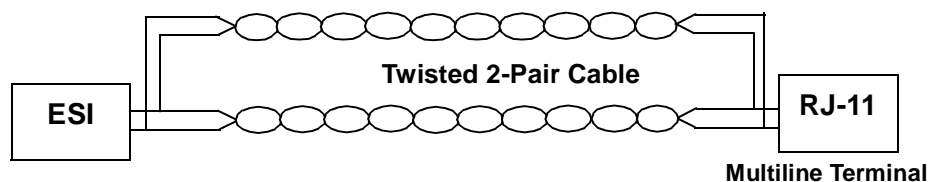


Figure 5-1 Connecting the ESI to the Multiline Terminal Using Twisted 2-Pair Cable

Table 5-2 Cable Connection Between the Analog Port and the Single Line Equipment

Connected Equipment	Cable	Maximum Loop Resistance (24 AWG) from Connected Equipment to Telephone
APR/APA-U Unit	Twisted Pair	50 feet
ADA(2)-W Unit	Twisted Pair	10 feet
SLT(1)-U10 ADP	Twisted Pair	50 feet
OPX(2)-U10 ETU	Twisted Pair	1600 ohms
SLI(4)/(8)-U10 ETU	Twisted Pair	300 ohms

⚠ Mixing digital and analog ports through the same 25-pair cable runs is not recommended.

Table 5-3 Cable Connection Between ESI/VDH and PCT Board

Connected Equipment	Cable	Maximum Loop Resistance (Ohms)	Attached Telephone
PCT(C)- U10 Unit	10 Base-T	35	Connected
		31	Not Connected
PCT(S)- U10 Unit	Twisted 1-Pair	35	Connected
		31	Not Connected

Table 5-4 Cabling Requirements for Audio

Connected Equipment	Cable
Music on Hold and Background Music Sources	Hi-Fi Shielded Audio Cable
External Amplifier	Hi-Fi Shielded Audio Cable

SECTION 3

POWER REQUIREMENTS

3.1 Power Supply Inputs

The AC input (P64-U10 PSU) requirements for the Electra Elite 192 System are listed below:

- ⌚ 117 Vac \pm 10%
- ⌚ 60 Hz \pm 10%
- ⌚ Single Phase
- ⌚ 15A circuit
- ⌚ A dedicated outlet, separately fused and grounded, is required.

3.2 Power Supply Consumption

The power consumption for the Electra Elite 192 System is listed in [Table 5-5 Power Consumption](#).

Table 5-5 Power Consumption

KSU	Maximum RMS Current	Watts Used (Idle)	Watts Used (Maximum)
Basic KSU – B64-U10 KSU	2.5 A	120	230
Basic KSU + Expansion KSU	5.0 A	240	460
Basic KSU + 2 Expansion KSUs	7.5 A	360	690

SECTION 4

ENVIRONMENTAL CONDITIONS

4.1 Temperature

- ⌚ Operating: +32°F ~ +104°F (0°C ~ 40°C)
- ⌚ Recommended Long Term: +50°F ~ +90°F (10°C ~ 32.2°C)

4.2 Humidity

- ⌚ Operating: 10% ~ 90% noncondensing

SECTION 5

WEIGHTS AND DIMENSIONS

Weights and Dimensions shows the shipping weight, height, width, and depth of each Electra Elite 192 KSU, Multiline Terminal, and adapter.

Table 5-6 Weights and Dimensions

Unit	Shipping Weight*	Height	Width	Depth
ACA-U Unit	22.5 oz (638 g)	3.4" (86 mm)	4.2" (107 mm)	5.2" (133 mm)
ACD(8)-U10 ETU	6.4 lbs** (2903 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
ADA-U Unit	2.3 oz (65 g)	1.1" (29 mm)	2.3" (59 mm)	3.9" (99 mm)
APA-U Unit or APR-U Unit	4.3 oz (122 g)	2.4" (60 mm)	2.3" (59 mm)	4.8" (121 mm)
B64-U10 KSU	460.8 oz (13063 g)	13.1" (312 mm)	13.7" (348 mm)	18" (457 mm)
BRT(4)-U10 ETU	14.6 oz (414 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
BSU(2)-U10 ETU	13.2 oz (374 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
CNF(8)-U10 ETU	12.0 oz (340 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
COI(4)-U10 ETU	13.6 oz (385 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
COI(8)-U10 ETU	16.6 oz (471 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
COIB(4)-U10 ETU	14.4 oz (408 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)

Unit	Shipping Weight*	Height	Width	Depth
COID(4)-U10 ETU	14.4 oz (408 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
COID(8)-U10 ETU	17.3 oz (490 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
CPUB()-U10 ETU	13.4 oz (380 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
CTA-U Unit	4.3 oz (122 g)	2.4" (60 mm)	2.3" (59 mm)	4.8" (121 mm)
CTI/VP(4)/(8)/(12)/(16)-U10 ETU	12 lbs** (5.44 Kg)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
CTU(C)-U Unit	9.5 oz (270 g)	2.4" (60 mm)	4.3" (110 mm)	4.4" (112 mm)
CTU(S)-U Unit	9.5 oz (270 g)	2.4" (60 mm)	4.3" (110 mm)	4.4" (112 mm)
DBM(B)-U10 Box	74.4 oz (2109 g)	2.75" (70 mm)	13.5" (343 mm)	9.75" (248 mm)
DBM(E)-U10 Box	74.4 oz (2109 g)	2.75" (70 mm)	13.5" (343 mm)	9.75" (248 mm)
DCU-60-1(BK)/(WH) Console	53 oz (1503 g)	3.6" (92 mm)	8.8" (223 mm)	10.6" (270 mm)
DID(4)-U10 ETU	15.5 oz (439 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
DP-D-1A Doorphone	8.4 oz (238 g)	1.5" (38 mm)	5.5" (140 mm)	\$.75" (121 mm)
DPH(4)-U10 ETU	12.1 oz (343 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
DTI-U10/20 ETU	13.2 oz (374 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
DTP-1-1(WH) TEL DTP-1-2(WH)/(BK) TEL DTP-1HM-1(WH) TEL DTP-1HM-2(WH)/(BK) TEL	26.8 oz (760 g)	2.36" (60 mm)	6.22" (158 mm)	8.81" (224 mm)
DTP-2DT-1(WH) TEL	41 oz (1163 g)	4.8" (123 mm)	7.8" (197mm)	9.3" (235 mm)
DTU-4R-1(BK)/(WH) TEL	15.4 oz (437 g)	2.25" (57 mm)	4.25" (108)	7.5" (191)
DTP-8D-1(BK)/(WH) TEL DTU-8-1(BK) TEL	41.0 oz (1163 g)	4.8" (123 mm)	7.8" (197 mm)	9.3" (235 mm)
DTP-8D-1(BK)/(WH) TEL DTU-8D-2(BK) TEL	43.5 oz (1233 g)	4.8" (123 mm)	7.8" (197 mm)	9.3" (235 mm)
DTP-16HC-1(BK) TEL	53 oz (1503 g)	6.00" (152 mm)	9.08" (230 mm)	8.04" (204 mm)

Unit	Shipping Weight*	Height	Width	Depth
DTP-16-1(BK)/(WH) TEL DTU-16-1(BK) TEL	41 oz (1162 g)	4.8" (123 mm)	7.8" (197 mm)	9.3" (235 mm)
DTP-16D-1(BK)/(WH) TEL DTU-16D-2(BK) TEL	43.5 oz (1233 g)	4.8" (123 mm)	7.8" (197 mm)	9.3" (235 mm)
DTP-32-1(BK)/(WH) TEL DTU-32-1(BK) TEL	46 oz (1304 g)	4.8" (123 mm)	8.7" (220 mm)	9.3" (235 mm)
DTP-32D-1(BK)/(WH) TEL DTU-32D-2(BK) TEL	48 oz (1361 g)	4.8" (123 mm)	8.7" (220 mm)	9.3" (235 mm)
DTR-1R-1(BK) TEL	14.4oz (408 g)	4.5" (114 mm)	6.1" (153 mm)	8.62" (218 mm)
DTR-4R-1(BK) TEL	15.4 oz (437 g)	2.25" (57 mm)	4.25" (108)	7.5" (191)
ECR-U10 ETU	21.2 oz (344 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
EDW-48-1/2(BK)/(SW) TEL	49 oz (1389 g)	2.72" (69 mm)	6.89" (175 mm)	8.81" (223 mm)
ESI(8)-U10 ETU	14.5 oz (411 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
ETW-4R-1(BK) TEL	26oz (737 g)	3.42" (87 mm)	5.51" (140 mm)	7.48" (190 mm)
ETW-8-1/2(BK)/(SW) TEL	32 oz (907 g)	3.98" (101mm)	6.89" (175 mm)	8.81" (223 mm)
ETW-16DC-1/2(BK)/(SW) TEL	35 oz (992 g)	3.98" (101mm)	6.89" (175 mm)	8.81" (223 mm)
ETW-16DD-1/2(BK)/(SW) TEL	39 oz (1106 g)	3.98" (101mm)	8.07" (205 mm)	8.81" (223 mm)
ETW-24DS-1/2(BK)/(SW) TEL	39 oz (1106 g)	3.98" (101mm)	8.07" (205 mm)	8.81" (223 mm)
EXP-U10 ETU	14.6 oz (414 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
FMS(2)/(4)/(8)-U10 ETU	6.4 lbs** (2903 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
HFU-U(BK)/(WH) Unit	7.1 oz (201 g)	2.4" (60 mm)	4.2" (107 mm)	5.2" (133 mm)
IPT(4)-U10 ETU	32 oz (907 g)	5.0" (127 mm)	10" (254 mm)	10" (254 mm)
IPT(8)-U10 ETU	32 oz (907 g)	5.0" (127 mm)	10" (254 mm)	10" (254 mm)
MIFA-U10 ETU	12.1 oz (343 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)

Unit	Shipping Weight*	Height	Width	Depth
MIFM-U10 ETU	12.3 oz (349 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
OPX(2)-U10 ETU	13.4 oz (380 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
PBR()-U10 ETU	10.7 oz (303 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
PRT(1)-U10/20 ETU	13.2 oz (374 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
RAK-U10 Unit	20 lbs 9072g	20" (507 mm)	15 (380 mm)	8.5 (216 mm)
SLI(4)-U10 ETU	13.0 oz (370 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
SLI(8)-U10 ETU	14.1 oz (400 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
SLT(1)-U10 ADP	9 oz. (255 g)	1.8" (45 mm)	2.8" (70 mm)	4.8" (120 mm)
TLI(2)-U10 ETU	13.8 oz (391 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
VDD-U Unit	12.4 oz (352 g)	2.5" (63 mm)	8.8" (224mm)	10.8" (275 mm)
VDH2(8)-U10 ETU	18.4 oz (522 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
VMS(2)/(4)/(8)-U10 ETU	6.4 lbs** (2903 g)	1.89" (48 mm)	11.47" (290 mm)	8.46" (214 mm)
VRS(4)-U10 ETU	12.0 oz (340 g)	1.97" (50 mm)	9.45" (240 mm)	7.68" (195 mm)
WMU-U Unit	10.6 oz (301 g)	4.1" (104 mm)	5.9" (151 mm)	7.1" (180 mm)
WMU-W Unit	20 oz (567 g)	5.75" (147 mm)	5.75" (147 mm)	2.5" (63 mm)

* Shipping weight includes the shipping carton.

** Shipping weight includes the shipping carton and documentation.

SECTION 6

AUDIBLE AND VISUAL INDICATIONS

6.1 Tone Patterns

[Table 5-7 Tone Patterns](#) lists the frequency and the pattern for the tones. Tones are used to inform Electra Elite 192 station users of system functions such as dial tone, busy tone, or ringback tone.

6.2 Multiline Terminal LED Flash Patterns

The Electra Elite 192 System has 2-color LEDs. Green is used primarily for I-Use conditions and for outside calls. Red is used primarily for Other Use conditions and internal calls. Refer to [Table 5-8 Multiline Terminal LED Flash Patterns](#).

Table 5-7 Tone Patterns

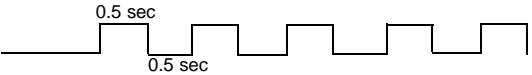
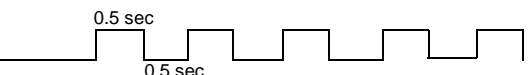
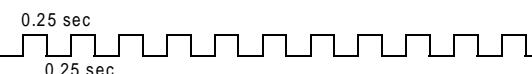
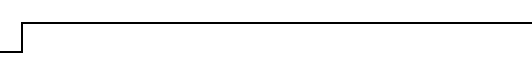
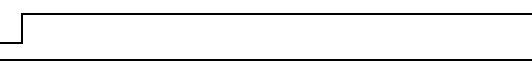
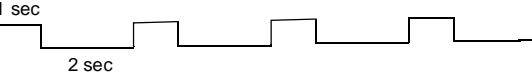
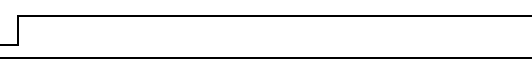
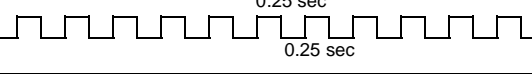
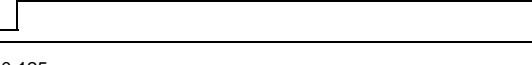

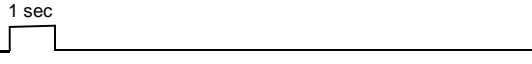
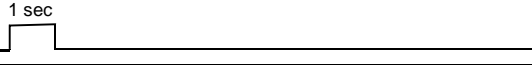
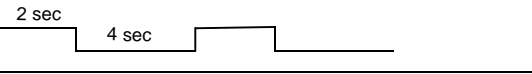

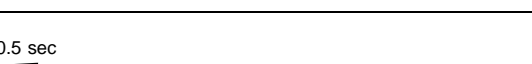
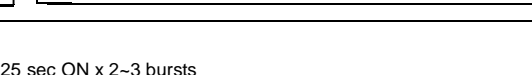










System Tone (Fixed)	Frequency (Hz) (Fixed)	Intermit (Default)	Cycle
Busy Tone	480/620	60 IPM	
Call Waiting Tone	440	60 IPM	
Second Dial Tone	350/440	120 IPM	
Howler Tone	2400 Modulation (16 Hz)	Continuous	
Internal Dial Tone	350/440	Continuous	
Internal Ringback Tone	440/480	1 sec On 2 sec Off	
LCR Dial Tone	440	Continuous	
Reorder Tone	480/620	120 IPM	
Service Set Tone	440	Continuous	
Special Dial Tone	440	240 IPM	
Tone Burst 1 Tone	440	Continuous	
Tone Burst 2 Tone	620	Continuous	
Tie/DID Ringback Tone	440/480	2 sec On 4 sec Off	
Camp-On Tone Call Alert Notification Attendant Tone Override	440	Continuous	
DIT Alert Tone	480/620	Continuous	
Call Forward Alert Tone Call Forward Configuration Tone	350/440	120 IPM	

Table 5-8 Multiline Terminal LED Flash Patterns

LED	Condition	Color	Flash Patterns				
	I-Use	Green					
	Busy	Red					
	Incoming Call	Red	— —	— —	— —	— —	— —
	I-Hold	Green	— —	— —	— —	— —	— —
	Call Hold	Red	— —	— —	— —	— —	— —
	Hold Recall	Green	— —	— —	— —	— —	— —
	Transfer Recall	Green	— —	— —	— —	— —	— —
	Live Monitoring Mode	Green	— —	— —	— —	— —	— —
	Message Waiting on Line Key	Red	— —	— —	— —	— —	— —
Microphone	ON	Red					
 	I-Use	Red					
	ICM Incoming Call	Red	— —	— —	— —	— —	— —
	Voice Over Broker	Red	— —	— —	— —	— —	— —
Large LED	Incoming Internal Call	Red	— —	— —	— —	— —	— —
	Incoming Outside Call	Green	— —	— —	— —	— —	— —
	Message from Attendant	Green	— —	— —	— —	— —	— —
	Voice Mail Message	Red	— —	— —	— —	— —	— —
	ON	Red					
	System Data Entry	Red	— —	— —	— —	— —	— —
	Conference in Progress/Barge In	Red					
	All Conference Circuits Used	Red	— —	— —	— —	— —	— —
	Hold Conference Call	Red	— —	— —	— —	— —	— —
	ICM Call Hold	Red	— —	— —	— —	— —	— —
	SPD Confirmation	Red	— —	— —	— —	— —	— —
	Incoming Trunk	Red	— —	— —	— —	— —	— —
	Exclusive Hold	Green	— —	— —	— —	— —	— —
	User Ringing Line Preference	Red	— —	— —	— —	— —	— —
	Voice Over with Broker's Call	Green	— —	— —	— —	— —	— —
	Callback Set	Red	— —	— —	— —	— —	— —
	Auto Repeat Set	Red	— —	— —	— —	— —	— —
	ON (to set function)	Red	— —	— —	— —	— —	— —
	Call FWD - All Calls Set	Red	— —	— —	— —	— —	— —
 	Use, Hold	Red					
	DND, Call FWD-All Calls Set	Red	— —	— —	— —	— —	— —
	Special Mode (while pressing  or going off-line)	Red	— —	— —	— —	— —	— —
			0	0.5	1.0	1.5	2.0 sec.

SECTION 7**OUTSIDE LINE TYPE**

The following outside line types can be used with the Electra Elite 192 System.

- ④ 2-wire, Loop Start or Ground Start Trunks
- ④ 2-wire, 2-way, DID Lines (Dial Pulse or DTMF)
- ④ 4-wire, E&M Tie Lines (Type I or V, Dial Pulse, or DTMF)
- ④ ISDN-BRI Trunks
- ④ Digital Trunk T1/FT1 (Loop Start or Ground Start, Tie Line (E&M), or DID.)
- ④ ISDN-PRI Trunks

SECTION 8**NETWORK AND
CONTROL****8.1 Transmission, Network, and Control Specifications****8.1.1 Transmission****④ Data Length**

From Multiline Terminal to ESI(8)-U10 ETU: 23 bits

From ESI(8)-U10 ETU to Multiline Terminal: 23 bits

④ Data Transmission Rates:

Between ESI(8)-U10 ETU and Multiline Terminal:
184K bps (voice and signaling)

④ Scanning Time for each Multiline Terminal: 32 ms.**8.1.2 Network**

Time Division Multiplexing allows transmission of a number of separate data, voice and/or video simultaneously over one communications medium. The information below indicates the specifications the Electra Elite 192 System uses for switching, clock, data bus, timeframe.

④ TDM Switching: PCM (μ Law)**④ TDM Clock: 2.048 MHz****④ TDM Data Bus: 8 bit****④ TDM Timeframe: 125 μ s.**

8.1.3 Control

This section indicates the speed and capacities of the control.

- ⌚ Control: Stored program with distributed processing
- ⌚ Central Processor: 32-bit microprocessor
- ⌚ Clock: 25 MHz
- ⌚ Interface ETU: 8-bit or 16-bit microprocessor
- ⌚ Optional ETUs: 16-bit or 32-bit microprocessor
- ⌚ Multiline Terminal: 8-bit microprocessor
- ⌚ Attendant Console: 4-bit microprocessor
- ⌚ SLT Adapter: 4-bit microprocessor

8.1.4 Telephone

The voltage, current, ring signal information for the Electra Elite Multiline Terminals, Single Line Telephone equipment, and APR units are listed below.

- ⌚ Multiline Terminal

Voltage: -11 ~ -26 Vdc

Maximum Current: 250 mA

Acoustical characteristics meet Electronic Industry Association (EIA) standard proposal SP-1286 and standard EIA RS-470.

- ⌚ Single Line Telephone

Standard 2500 Set: 500 type network

Nominal Current: 35 mA

Ring Signal: 56 Vac RMS @ 20 Hz

- ⌚ SLT(1)-U10 ADP

Standard 2500 Set: 500 type network

Nominal Current: 30 mA

Ring Signal: 56 Vac RMS @ 20 Hz

④ APR/APA-U Unit

Standard 2500 Set: 500 type network

Nominal Current: 30 mA

Ring Signal: 70 Vac RMS @ 18 Hz

ⓘ APA-U does not provide ringing signal.

SECTION 9

DIALING

SPECIFICATIONS

9.1 Dial Pulse Address Signaling

Dial Pulse Signaling is a type of address signaling that uses dial pulses (regular momentary interruptions) to signal the equipment. In the Electra Elite 192 System, the following Dial Pulse specifications are used.

- ④ Pulse Rate: 10 ± 0.5 pps/ 20 ± 1.0 pps
- ④ Percent Break: $60 \pm 1.5\%$
- ④ Interdigit Interval: 10 pps/20 pps 770 ms. ~ 830 ms.

9.2 Dual-Tone Multifrequency (DTMF) Address Signaling

DTMF signaling is a term that describes push button or Touchtone dialing. When a key on a telephone is pushed, two tones (one high frequency and one low frequency) are provided. In the Electra Elite 192 System, the following DTMF specifications are used.

- ④ Frequencies

Two sinusoidal frequencies are provided, one from the high frequency group and one from the low frequency group.
- ④ Frequency Deviation: Less than $\pm 1.0\%$
- ④ Signal Level:

Nominal level per frequency: -6 ~ -4 dBm

Minimum level per frequency: Low Group: -10 dBm
High Group: -8 dBm

Maximum level per frequency: 0 dBm
- ④ Rise Time: Within 5 ms.

- ⌚ Duration of Dual Frequency Signal:
110 ms. default/60 ms. minimum
- ⌚ Interdigital Time: 80 ms. default/70 ms. minimum

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

SECTION 10

EXTERNAL EQUIPMENT CONNECTION

10.1 Music Sources for Music on Hold via KSU

- ⌚ Auxiliary Input: 0.6V PPS Signal Level
- ⌚ Input Impedance: 600 Ω

10.2 Music Source for Station Background Music via COI ETU

- ⌚ Auxiliary Input: 0.6V PPS Signal Level
- ⌚ Input Impedance: 600 Ω

10.3 External Paging (Audio)

- ⌚ Output Power: -10 dBm Signal Level
- ⌚ Output Impedance: 600 Ω
- ⌚ Relay Contact Rating: 500 mA, 24 Vdc

10.4 External Tone Ringer/Night Chime Output

- ④ Output Level: -10 dBm
- ④ Output Impedance: 600 Ω
- ④ Relay Contact Rating: 500 mA, 24 Vdc

10.5 SMDR Output

- ④ Female Connector (System Output) Standard RS-232C

10.6 PC Connection

- ④ Female Connector (System Output) Standard RS-232C

10.7 Relay Contact

- ④ All Relay Contact Ratings: 500 mA, 24Vdc

SECTION 11 BATTERY BACKUP

The Electra Elite 192 System has battery backup functions for system backup and for memory backup.

11.1 System Backup

During a power failure, the system is backed up using a rechargeable battery. This battery backup supports all system operations for approximately 30 minutes.

11.2 Memory Backup

The CPUB()-U10 ETU has a battery installed to provide backup of system memory. When the battery is fully charged, system memory (programmed data) is retained for approximately 21 days.

NEC

ElectraElite[®] 192

GENERAL DESCRIPTION MANUAL

NEC America, Inc.

Issue 6

(Series 6000)