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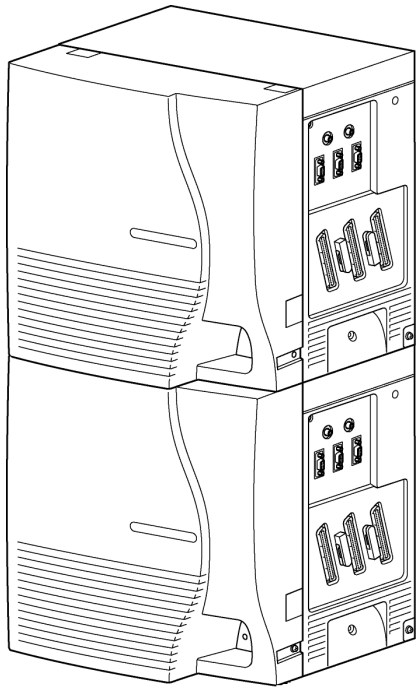
NEC

Electra Elite® IPK



General Description Manual

INT-1024 (IPK)

Document Revision 4

(Release 4000/4500)

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

Technology Development

PREFACE

GENERAL INFORMATION

The Electra Elite IPK system is a feature-rich key system that provides over 200 features including Computer Telephony Integration, Least Cost Routing, Uniform Call Distribution, ISDN-BRI Voice Trunks, ISDN-PRI Voice Trunks, IP Telephony, Voice over Internet Protocol (VoIP) trunks and stations, and many others.

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

The Electra Elite IPK system has a set of manuals that provide 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 IPK system and is useful when presenting information to potential customers.

Chapter 1 – Introduction

This chapter provides an overview 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 IPK Features and Specifications Manual

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

Electra Elite IPK System Hardware Manual

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

Electra Elite IPK Programming Manual

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

Electra Elite IPK Least Cost Routing Manual

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

Electra Elite IPK Job Specifications Manual

This manual is intended to help the technician with installing and maintaining the Electra Elite IPK 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.

Electra Elite IPK Key-Common Channel Interoffice Signaling (K-CCIS) Manual

This manual provides information for installing and programming the Key-Common Channel Interoffice Signaling (K-CCIS) System.

Electra Elite IPK Wireless System Manual

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

Regulatory Information

REGULATORY

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 IPK 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:

     NIFMUL-43074-KF-E

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

     NIFMUL-43076-MF-E

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

     NIFMUL-43075-PF-E

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

   - USOC jacks required: **RJ21X** and **RJ2GX**

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 IPK System ETUs

Trunk/Station ETU Type	FIC	REN	SOC	Jack
BRT(4)-U( ) ETU	02IS5	N/A	6.0F	N/A
CAMA Trunk	02RV-O	0.7A	9.0F	RJ21X
COI(4)-U( ) ETU (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COI(8)-U( ) ETU (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COI(8)-U( ) ETU (Ground Start)	02GS2	0.7A	9.0F	RJ21X
COIB(4)-U(10) ETU ETU for COI/ COID Mode (Loop Start)	02GS2	0.7A	9.0F	RJ21X
COIB(4)-U(10) ETU ETU for COI Mode (Ground Start)	02GS2	0.7A	9.0F	RJ21X
COIB(4)-U(20) ETU ETU for COID/COI Mode (Loop Start)	02LS2	0.7A	9.0F	RJ21X
COIB(8)-U( ) ETU for COI/COID Mode (Loop Start)	02LS2	0.7A	9.0F	RJ21X
DID(4)-U( ) ETU	02RV2T	N/A	9.0F	RJ21X
DTI-U( ) ETU	04DU9-BN 04DU9-DN 04DU9-1KN 04DU9-1SN	N/A	6.0P	N/A
OPX(2)-U( ) ETU	0L13C	N/A	9.0F	RJ21X
PRT(1)-U( ) ETU	04DU9-1SN	N/A	6.0P	N/A
TLI(2)-U( ) 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 System Hardware Manual, may cause interference to radio communications. This equipment has been tested and approved for compliance with the limits for a Class B (except as noted below) 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."

✎ *When equipped with the B64-U30 KSU and P64-U20 PSU, the Electra Elite IPK can be operated as a Class B device except when using one of the ETUs in the following table. The system then becomes a Class A device that may not be used in a residential area.*

ACD(8)-U10	CMS(2)/(4)-U30	FMS(2)/(4)/(8)-U30	IPCA( )-U10
CCH(4)-U-10	EXPT(2)-U10	HUB(8)-U10	VMS(2)/(4)/(8)-U30
SPE(M)-U( )			

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 Unified Solutions, Inc., hereby disclaims any liability arising out of the failure to obtain such a license."

SERVICE REQUIREMENTS

If equipment malfunctions, all repairs must be performed by an authorized agent of NEC Unified Solutions, Inc. or by NEC Unified Solutions, Inc. The user requiring service is responsible for reporting the need for service to an NEC Unified Solutions, Inc. authorized agent or to NEC Unified Solutions, 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 present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de Classe A prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

BATTERY DISPOSAL

The Electra Elite IPK 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-U20 KSU	Lead Acid	2
CPUI( )-U( ) ETU	Nickel-Cadmium	1
CTI/VP(4)/(8)/(12)/(16)-U( ) ETU	Lithium	1

Table 2 Battery Types and Quantities for KSUs and ETUs (Continued)

Unit Name	Type of Battery	Quantity
DTP-1HM-1 TEL DTP-1HM-2 TEL	Lithium	1
DTP-16HC-1 TEL	Nickel-Cadmium	1
DTR-1HM-1 TEL	Lithium	1
DTR-4R-1 TEL	Nickel-Cadmium	1
DTU-4R-1 TEL	Lead Acid	1
FMS(2)/(4)/(8)-U( ) ETU	Nickel-Cadmium	1
MIFA-U10 ETU	Nickel-Cadmium	1
MIFM-U10 ETU	Nickel-Cadmium	1
VMS(2)/(4)/(8)-U( ) ETU	Lithium	1

The Electra Elite IPK CPUI( )-U( ) 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-BATTERY^{SM} when further information is required.

The packaging for the Electra Elite IPK 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

Introduction

CHAPTER 1

SECTION 1 SYSTEM OVERVIEW

The Electra Elite IPK 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 IPK, like all NEC communications products, is user-friendly, reliable, and cost-effective.

- Easy to Install
  With the Electra Elite IPK 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 DTR and DTH Multiline Terminals
  - Compact KSU
  - Flash ROM for software upgrades
  - Flash ROM upgrade by using PC programming

- Easy to Expand
  The Electra Elite IPK 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 Electra Elite IPK KSU, B64-U( ) KSU, offers eight interface slots (or 64 ports). Each slot can support 24 PRI/T-1 trunk ports, or 16 digital station ports. The system can be expanded to a maximum of 192 ports by adding two expansion cabinets. The first expansion cabinet provides an additional eight slots. A second expansion cabinet provides another eight slots (for a maximum of 24 slots or 192 ports).

- Easy to Use
  The Electra Elite IPK 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 IPK 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 IPK system can grow with your business. You can easily and economically add slots when necessary. Two expansion units can be added to provide a total capacity of 24 slots.

The feature-rich Electra Elite IPK system provides the telephone functions and supports advance features such as:

- Automatic Number Indication (ANI)/Caller ID
- Automatic Call Distribution (ACD)
- Automatic Route Selection
- Caller ID Call Return
- Centralized Voice Mail
- Computer Telephony Integration (CTI)
- Dialed Number Indication Service (DNIS)
- *D*^{term} Analog Cordless Terminal
- *D*^{term} Cordless II Terminal
- *D*^{term} Handset Cordless

- *D*^{term} Headset Cordless
- *D*^{term} Cordless II Lite Terminal
- Emergency 911 – Cut Through
- Enhanced 911
- Integrated Digital Voice Mail
- ISDN-BRI and ISDN-PRI Voice Trunks
- K-CCIS Common Channel Interoffice Signaling
- Least Cost Routing (LCR)
- Live Monitoring
- Live Record
- Multiline Conference Bridge
- Multilingual LCD Indication
- Multiple Music on Hold Using CO Interface
- PC Attendant Console
- Single Point of Entry (SPE)
- Unified Messaging
- Universal Slots
- Voice over Internet Protocol (VoIP) and stations
- Wireless
- IP Telephony
- Optional 33.6 kbps Modem for Remote Programming and Maintenance

SECTION 2 MULTILINE TELEPHONES

The Electra Elite IPK 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 Elite terminals, they can be easily connected to the Electra Elite IPK system, providing inexpensive migration. Most Electra Elite IPK system features are available with the Electra Elite Terminals.

- Electra Elite IPK (DTH/ITH telephones), *D*^{term} Series i (DTR telephones), Electra Elite (DTU telephones), and *D*^{term} Series E (DTP telephones) can be used with the Electra Elite IPK system.

❑ Electra Elite IPK Terminals

The Electra Elite IPK Terminals (DTH/ITH telephones) offer a variety of colors, display and non-display and line sizes.

- ◆ Terminals are available in black or white.
- ◆ Two terminal types: with LCD and without LCD. The large Liquid Crystal Display (LCD) on the display terminals provides call status data and programming information.
- ◆ Line sizes include: 8-line, 16-line and 32-line.
- ◆ Two IP terminals are available in 8-line and 16-line (both with LCD).
- ◆ Speakerphones with full handsfree operation and headset jacks are standard.
- ◆ All are compatible with the AD(A)-R, AP(A)-R, AP(R)-R, CT(A)-R Unit and CT(U)-R Unit adapters. The AP(R)-R Unit requires an AC-R Unit to supply AC power.
- ◆ An Attendant Add-On DCR-60-1 CONSOLE is available with 60 station, outside line, and or function key assignments.

❑ Electra Elite IPK Terminal Feature Access, Single On/Off, or One-Touch Keys

Keys are designated Feature Access, Single On/Off, or One-Touch throughout this manual. The keys operate much the same, but various limitations imposed on each type are described in this paragraph.

- ◆ Feature Access Keys

  Depending on the type, a Multiline Terminal can have 2, 8, 16, or 24 line keys. These highly-flexible keys can be used for station DSS/ BLF and Speed Dial.

- ◆ Single On/Off Keys

  Line keys may also be assigned as Single On/Off keys in System Programming to toggle a feature on/off. This assignment has no impact on the Feature Access keys, but the assigned features are very specific. Call Forward – All Call, Call Forward – Busy/No Answer, Scrolling (CID), headset, and DND are examples of features available for Single On/Off keys.

- One-Touch Keys

  One-Touch keys can perform the same function as Feature Access keys. A Multiline Terminal has a fixed number of these keys. No system assignment is necessary, and the number of keys ranges from none to 16 depending on the terminal type.

Figure 1-1 Key Assignment Example

❑ *D*^{term} Series i Terminals

The *D*^{term} Series i Terminals (DTR telephones) offer a variety of colors, display and non-display types and line sizes.

- Terminals are available in black or white.
- Two Terminal types: with LCD and without LCD. The large Liquid Crystal Display (LCD) on the display terminals provides call status data and programming information.
- Line sizes include: 8-line, 16-line and 32-line.

  ✎ 2-line on the DTR-2DT-1.

- Speakerphones with full handsfree operation and headset jacks are standard (except on the DTR-2DT-1).

- All but the DTR-2DT-1 are compatible with the AD(A)-R, AP(A)-R, AP(R)-R and CT(A)-R Unit adapters. The AP(R)-R Unit requires an AC-R Unit to supply AC power. For Attendant Positions, an Attendant Add-On DCR-60-1 CONSOLE is available with 60 station, outside line, and or function key assignments. The DTR-2DT-1 has an internal Analog Port without ringer.

- Two-line terminal with two Flexible Line keys (each with 2-color LED), nine function keys, built-in speakerphone, a large LED to indicate incoming calls or messages, and an outgoing only Analog SLT Port (AD[A]-R).

- The Electra Elite IPK Single Line Terminals are offered in two variations (DTR-1-1 and DTR-1HM-1). Both terminals come in black or white. Both have DTMF and Pulse Dialing compatibility, and offer Flash and Redial key functionality. The Electra Elite IPK Single Line Terminals come standard with a Message Waiting Indicator that also functions as an Incoming Call Indication. During a call, the receive audio level can be increased three levels and decreased two levels from the default setting (six volume level settings in all). The terminals offer four ring volume settings (Off, Soft, Medium, and Loud), and three ring patterns (Slow, Medium, and Fast). The DTR Single Line Terminals also have a Data Port that functions similar to that of an AP(R)-R optional adapter, and have a built-in wall mount adapter. The DTR-1HM-1 terminal has eight programmable speed dial buttons (maximum 21 digits each). The DTR-1HM-1 also has Hold and Monitor Function keys.

❑ Electra Elite and *D*^{term} Series E Terminals

The Electra Elite Terminals (DTU telephones) and *D*^{term} Series E terminals (DTP telephones) are available in a variety of colors, display and non-display types and lines sizes.

- Terminals are available in black or white.

- Two terminal types: with LCD and without LCD. The large Liquid Crystal Display (LCD) on the display terminals provides call status data and programming information.

- Line sizes include: 8-line, 16-line and 32-line.

- Speakerphones with full handsfree operation and headset jacks are standard.

- The *D*^{term} Handset Cordless terminal is a 16-button phone (display only).

- An Attendant Add-On DCR-60-1 CONSOLE is available with 60 station, outside line, and or function key assignments.
- An SLT Adapter can be used in place of a digital terminal for connecting Single Line Telephones, or similar devices.

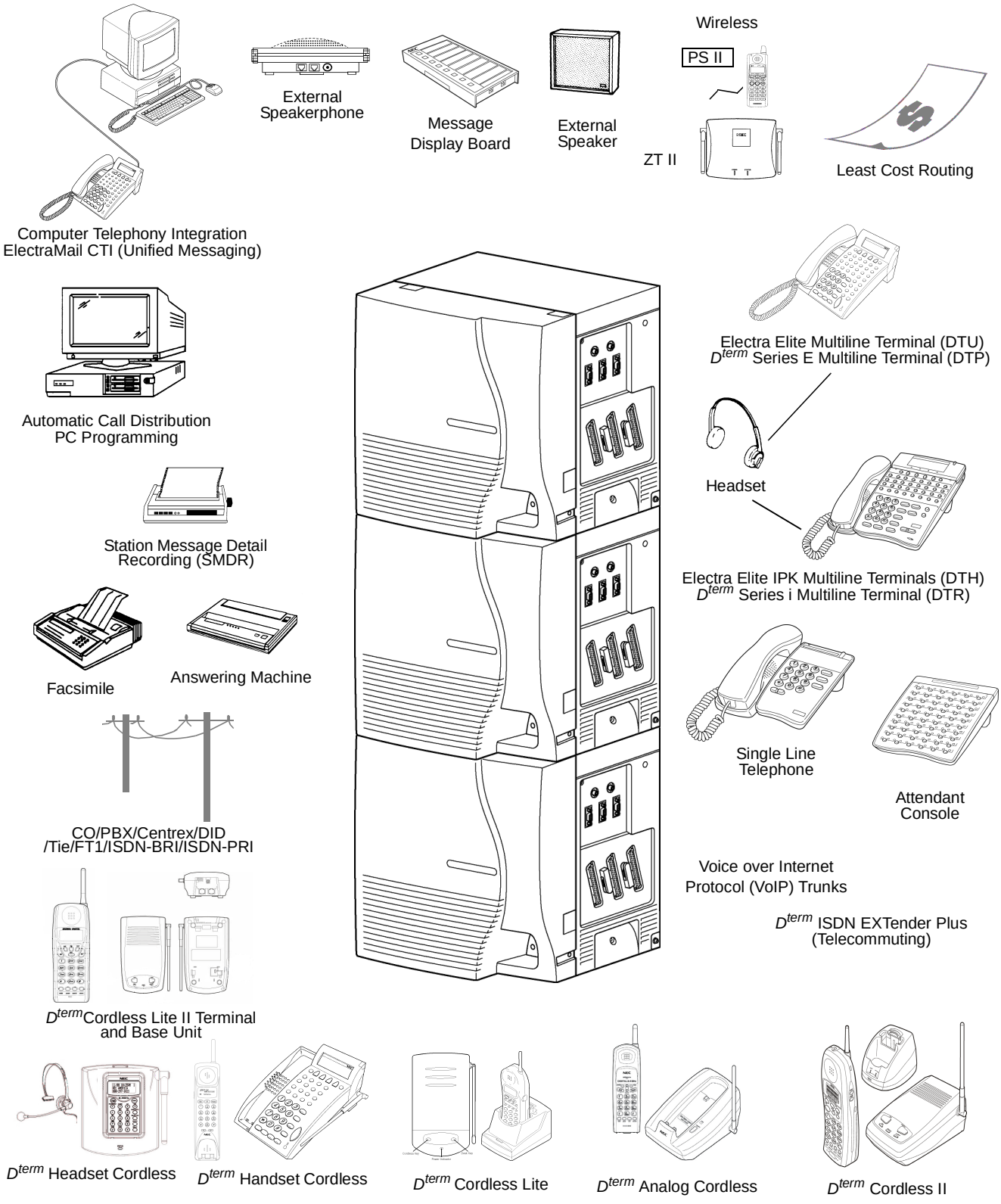


Figure 1-2 System Configuration Example

SECTION 3 SYSTEM DESCRIPTION

The Electra Elite IPK 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 3-1 Maximum System Capacities for Station Interface ETUs on page 3-1, Table 3-2 Maximum System Capacities for Trunk Interface ETUs on page 3-8, Table 3-3 Maximum System Capacities for Application Interface ETUs on page 3-15, Table 3-4 KSU Power-Based ETU Quantity Limitations for Systems without EliteMail VP/CTI or CTI ETU loaded with Q-Master application on page 3-19, and Table 3-5 KSU Power-Based ETU Quantity Limitations for Systems with EliteMail VP/CTI or CTI ETU loaded with Q-Master Application on page 3-20.

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

Design Technologies

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

Design Goals

- Modular Growth
- Universal Slots
- Variety of Terminals
- Ease of Operation
- Networking Ability
- Computer Telephony Integration
- IP Converged Technology

The Electra Elite IPK 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 IPK KSUs can be installed to accommodate the requirements of each customer.

The KSUs are built for modular growth. The Electra Elite IPK 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 same ETUs are used for both the basic and expanded port packages.

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 1-3 ETU Slot Design.

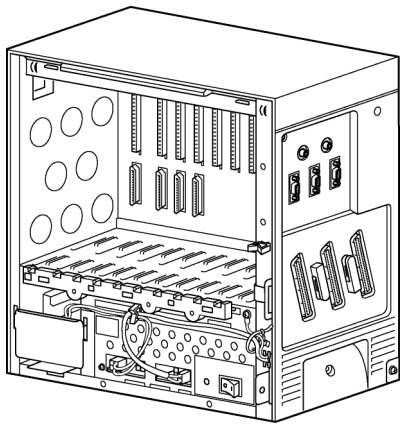


Figure 1-3 ETU Slot Design

The Electra Elite IPK KSU contains an application (AP) slot, a CPU/EXP ETU slot, and 8 interface slots. A power supply and battery backup area complete the KSU.

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

The Elite IPK (DTH), *D*^{term} Series i (DTR), Electra Elite (DTU), and *D*^{term} Series E (DTP) telephones are briefly described below.

DTH/ITH Multiline Terminals (Elite IPK)

- 8-line terminal without display, DTH-8-1 TEL
- 8-line terminal with display, DTH-8D-1 TEL or ITH-8D-2/3 TEL
- 16-line terminal without display, DTH-16-1 TEL
- 16-line terminal with display, DTH-16D-1 TEL or ITH-16D-2/3 TEL
- 16-line terminal with display and 16 programmable One-Touch keys, DTH-32D-1 TEL
- 16-line terminal with display, DTH-16LD-1 TEL. This telephone is equipped with two additional LCDs. These can be programmed to identify the line key designations.

DTR Multiline Terminals (*D*^{term} Series i)

- 2-line terminal without display, DTR-2DT-1 TEL
- 4-line display, DTR-4D-1 TEL
- 8-line terminal without display, DTR-8-1 TEL
- 8-line terminal with display, DTR-8D-1 TEL
- 16-line terminal without display, DTR-16-1 TEL
- 16-line terminal with display, DTR-16D-1 TEL
- 16-line terminal with display and 16 programmable One-Touch keys, DTR-32D-1 TEL
- Attendant Console, DCR-60-1 console

Comparison of DTH/ITH/DTR and DTP/DTU Terminals

- DTR-1-1 Single Line Telephone has 6-level receive volume control, 4-level ring volume control, and 3-tone ring pitch. DTP-1-1 has only 3-level receive volume control, and 2-level ring volume control.
- DTR-1HM-1 Single Line Hotel-Motel Telephone has 6-level receive volume control, 4-level ring volume control, 3-tone ring pitch, and monitor dialing. DTP-1HM-1 has only 3-level receive volume control, and 2-level ring volume control.
- DTR-2DT-1 has one more function key (nine) than DTP-2DT-1 and an outgoing only Analog SLT port.
- DTH-8-1/DTR-8-1, DTH-8D-1/ITH-8D-2/DTR-8D-1 [with three additional fixed keys for message (MSG) microphone (MIC), and directory (DIR)], DTP-8-1, DTU-8-1, DTP-8D-1, and DTU-8D-2 have the same line capacity.

- DTH-16D-1/ITH-16D-2/DTR-16D-1, DTP-16D-1, DTU-16D-2 [with three additional fixed keys for message (MSG) microphone (MIC), and directory (DIR)], and DTP-16HC-1 have the same line capacity.
- DTH-32D-1/DTR-32D-1 [with three additional fixed keys for message (MSG) microphone (MIC), and directory (DIR)], DTP-32D-1, and DTU-32D-2 have the same line capacity.
- DTP terminal supports handset cordless, DTP-16HC-1 model
- DTH/ITH/DTR terminals are compatible with AD(A)-R, AP(A)-R, AP(R)-R, or CT(A)-R Unit adapters. DTP/DTU terminals except for DTP-2DT-1, and DTP-16HC-1, or cordless terminals are compatible with ADA-U, APA-U, APR-U, CTA-U, CTU(S)-U, or HFU-U.

DTP or DTU Terminals

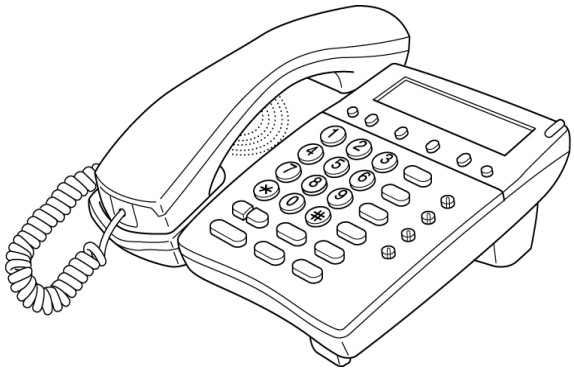
- 2-line Multiline Terminal without display, DTP-2DT-1 TEL
- 8-line Multiline Terminal without display, DTP-8-1 or DTU-8-1 TEL
- 8-line Multiline Terminal with display, DTP-8D-1 or DTU-8D-2 TEL
- 16-line Handset Cordless Terminal, DTP-16HC-1 TEL
- 16-line Multiline Terminal without display, DTP-16-1 or DTU-16-1TEL
- 16-line Multiline Terminal with display DTP-16D-1 or DTU-16D-2 TEL
- 16-line Multiline Terminal without display and 16 programmable One-Touch keys DTP-32-1 or DTU-32-1 TEL
- 16-line Multiline Terminal with display and 16 programmable One-Touch keys DTP-32D-1 or DTU-32D-2 TEL
- Attendant Console DCU-60-1 Console

Comparison of DTP and DTU Terminals

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

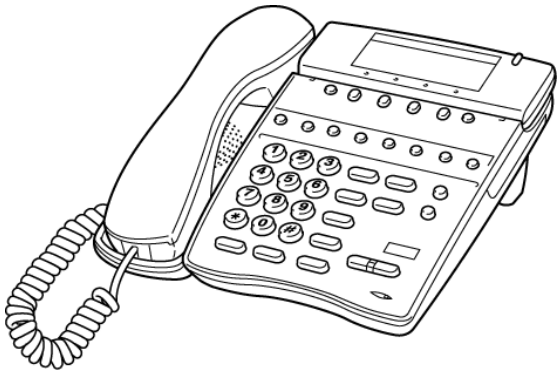
Refer to Figure 1-4 Elite IPK (DTH/ITH) / D^{term} Series i (DTR) Multiline Terminals, Figure 1-5 Electra Elite Multiline Terminals, Figure 1-6 DTR Single Line Telephones, Figure 1-7 Attendant Consoles, Figure 1-8 D^{term} Cordless Lite Terminal, Figure 1-9 D^{term} Cordless II Terminal, Figure 1-10 D^{term} Cordless Lite II Terminal, Figure 1-11 D^{term} Cordless Lite II Base Unit, Figure 1-12 D^{term} Handset Cordless Terminal, Figure 1-13 D^{term} PS II, Figure 1-14 D^{term} PS III, Figure 1-15 D^{term} Analog Cordless Terminal, Figure 1-16 D^{term} Headset Cordless, Figure 1-17 Zone Transceiver (ZT II), Figure 1-18 DBM(B)-U( ) Message Display Board, Figure 1-19 DBM(E)-U( ) Message Display Board.

DTR-2DT-1 TEL
2-Line Non-display

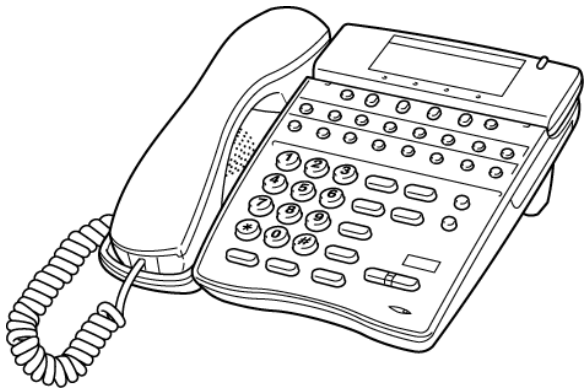


DTR-4D-1 TEL
4-Line Display

DTH-8-1 TEL / DTR-8-1 TEL
8-Line Non-display



DTH-8D-1/ITH-8D-2/3/DTR-8D-1 TEL
8-Line Display

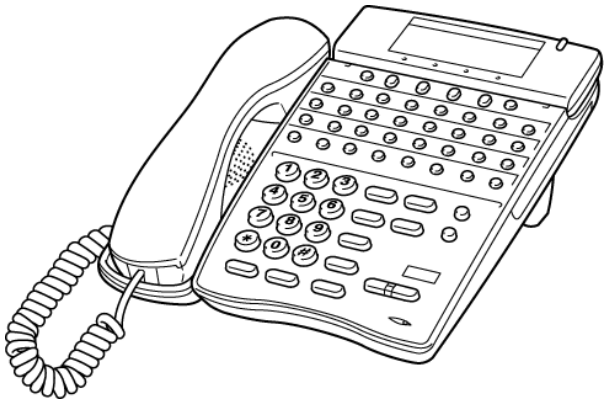


DTH-16D-1/ITH-16D-2/3/ DTR-16D-1 TEL
16-Line Display

DTH-16-1 TEL / DTR-16-1 TEL
16-Line Non-display

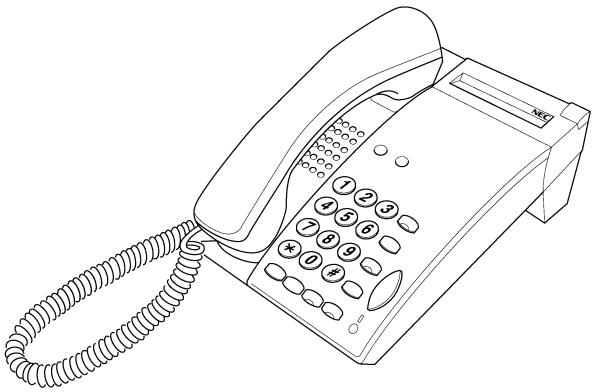
Figure 1-4 Elite IPK (DTH/ITH) / *D*^{term} Series i (DTR) Multiline Terminals

DTH-16LD-1 TEL / DTR-16LD-1 TEL
3 Displays



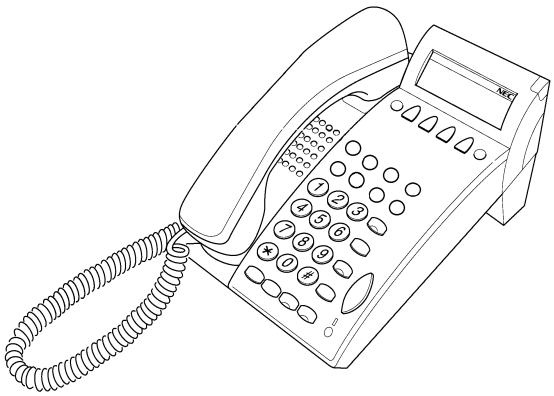
DTH-32D-1 TEL / DTR-32D-1 TEL
16-Line Display with 16 Programmable One-Touch Keys

Figure 1-4 Elite IPK (DTH/ITH) / *D*^{term} Series i (DTR) Multiline Terminals (continued)



DTP-2DT-1 TEL
2-Line Non-display

DTU-8-1 TEL
8-Line Non-display



DTU-8D-2 TEL
8-Line Display

DTU-16-1 TEL
16-Line Display

Figure 1-5 Electra Elite Multiline Terminals

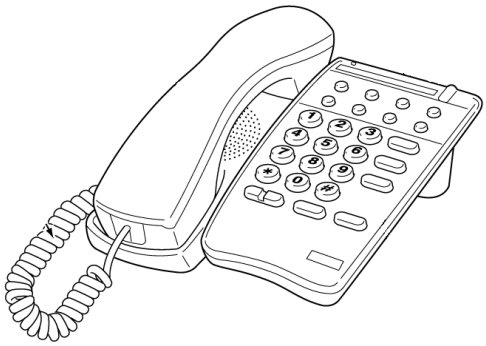
DTU-16D-2 TEL
16-Line Display

DTU-32-1 TEL
16-Line Non-display with
16 Programmable One-Touch Keys

DTU-32D-2 TEL
16-Line Display with 16 Programmable
One-Touch Keys

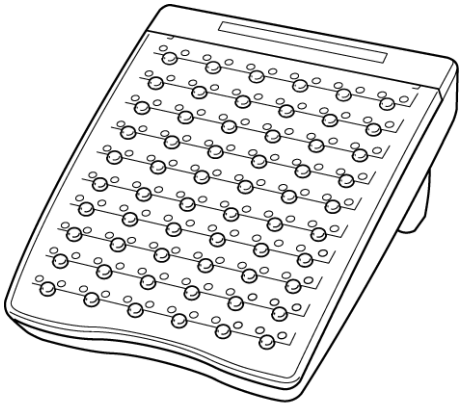
Figure 1-5 Electra Elite Multiline Terminals (continued)

DTR-1-1 TEL

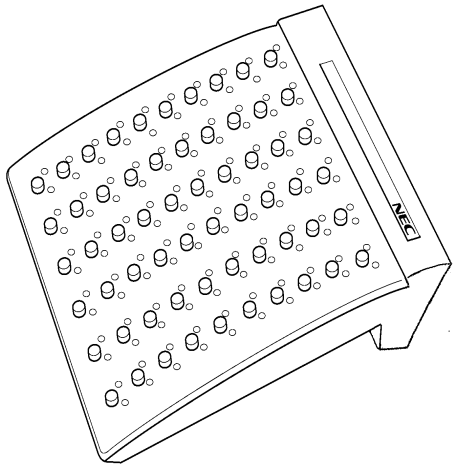


DTR-1HM-1 TEL

Figure 1-6 DTR Single Line Telephones

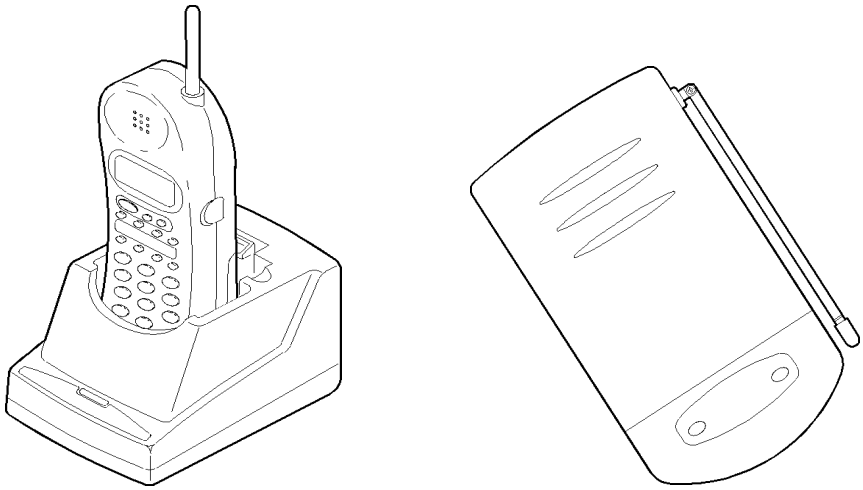


DCR-60-1 Console
(*D*^{term} Series i / Electra Elite IPK)



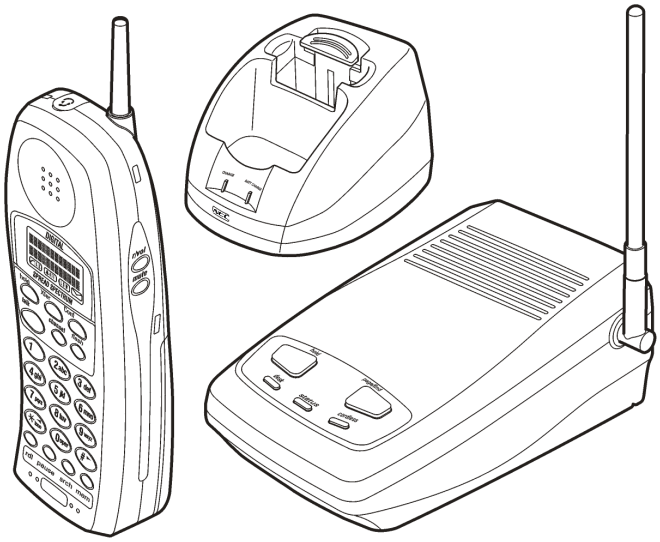
DCR-60-1 Console
(Electra Elite IPK)

Figure 1-7 Attendant Consoles



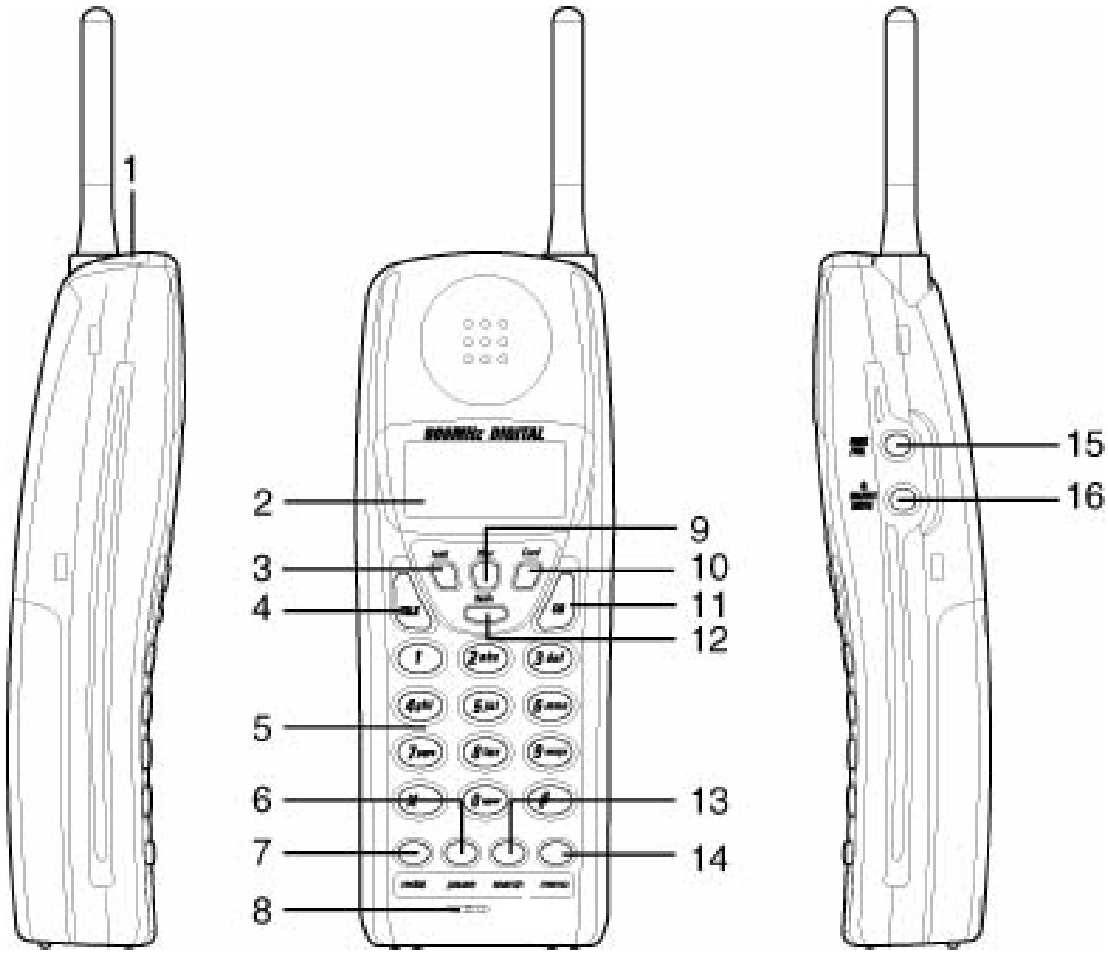
DTU-4R-1 TEL

Figure 1-8 *D*^{term} Cordless Lite Terminal



DTR-4R-1 TEL

Figure 1-9 *D*^{term} Cordless II Terminal

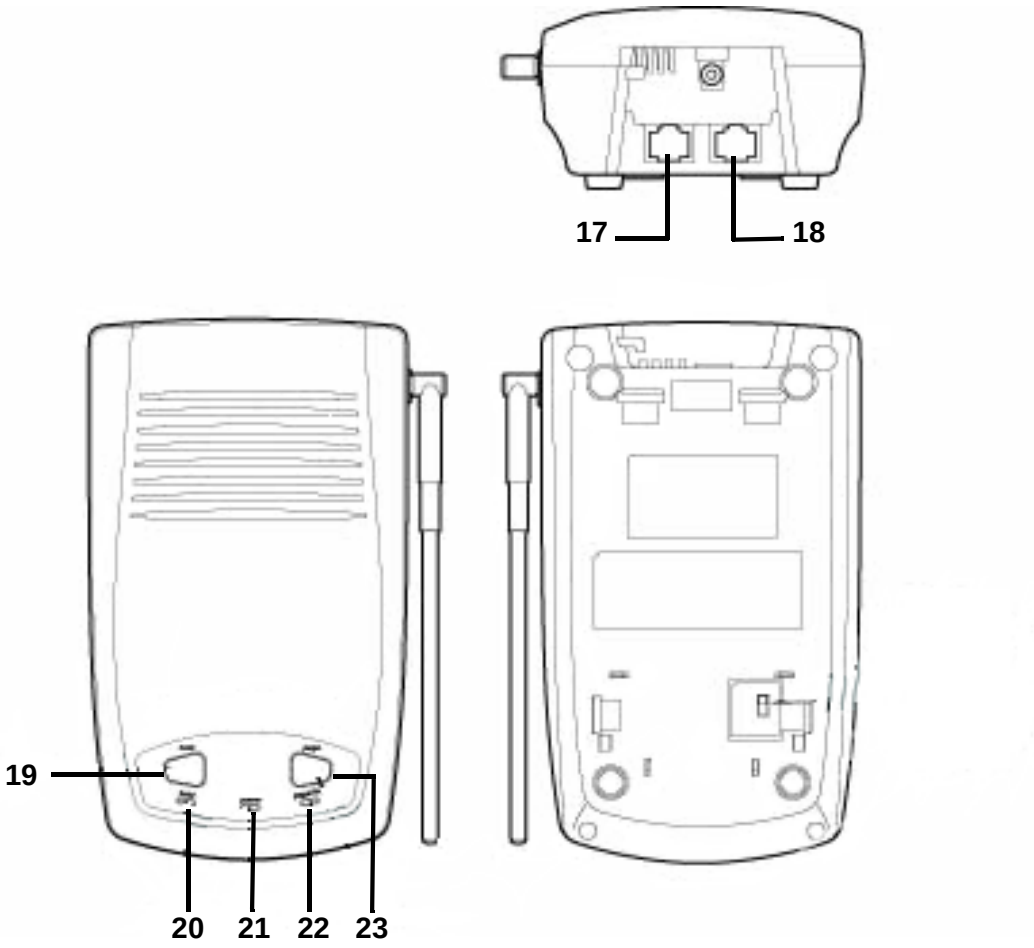


DTH-4R-1 Handset

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

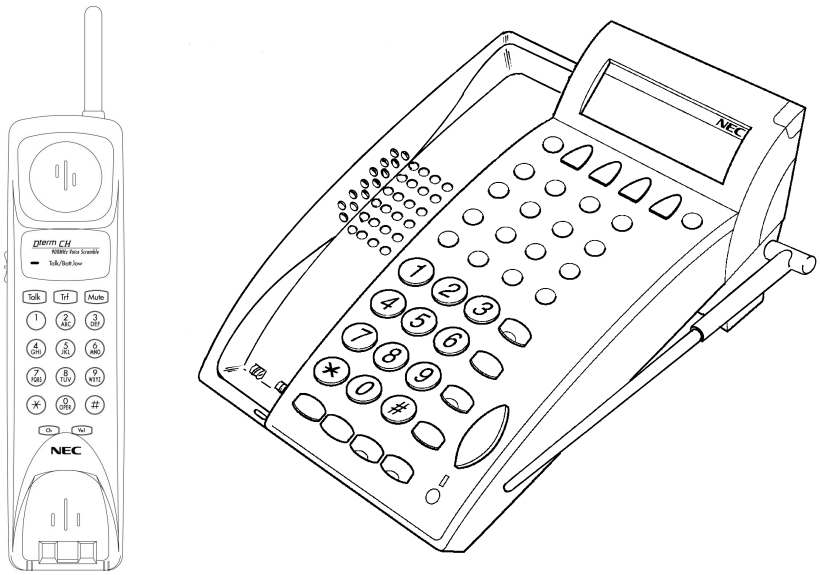
D^{term} Cordless Lite II Terminal Controls

1 Headset Jack	5 Numeric Key Pad	9 CONF (Conference) Key	13 F3
2 LCD Message Display	6 F2	10 TRANSFER Key	14 F4
3 HOLD Key	7 F1	11 CH (Channel) Key	15 Ring/Vol Key
4 TALK Key	8 Microphone	12 REDIAL or Desk/Cordless Softkey Switch Key	16 MUTE Key



17. Line Out
18. Line In
19. Cordless
20. Cordless LED
21. Power
22. Desk LED
23. Desk

Figure 1-11 *D*^{term} Cordless Lite II Base Unit



DTP-16HC-1 TEL

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

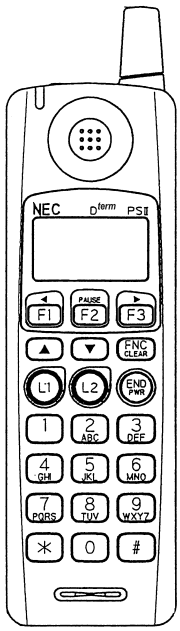


Figure 1-13 *D*^{term} PS II

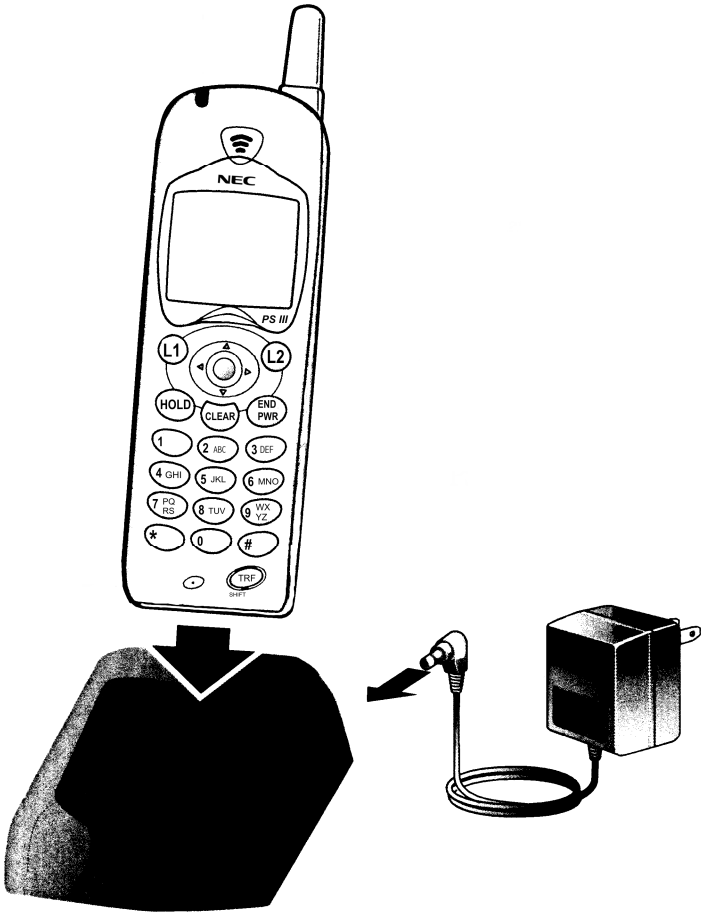


Figure 1-14 *D*^{term} PS III

DTR-1R-1 TEL

Figure 1-15 *D*^{term} Analog Cordless Terminal

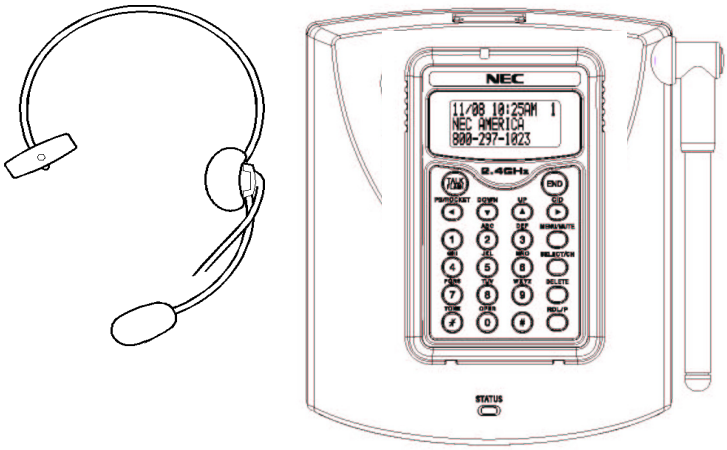


Figure 1-16 *D*^{term} Headset Cordless

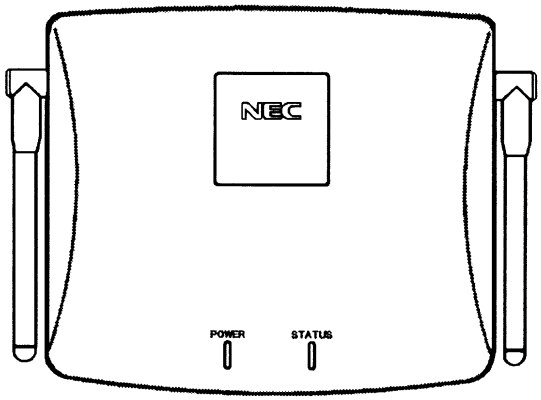


Figure 1-17 Zone Transceiver (ZT II)

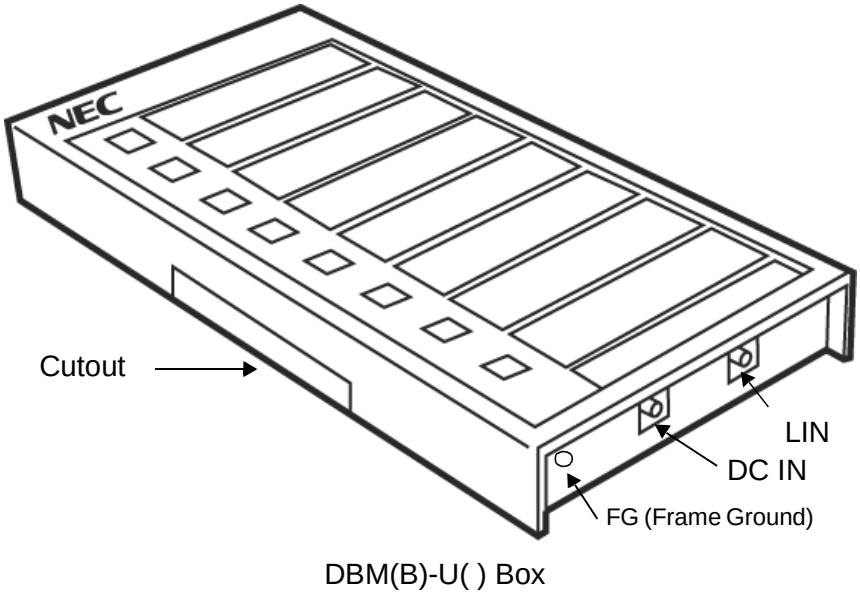


Figure 1-18 DBM(B)-U( ) Message Display Board

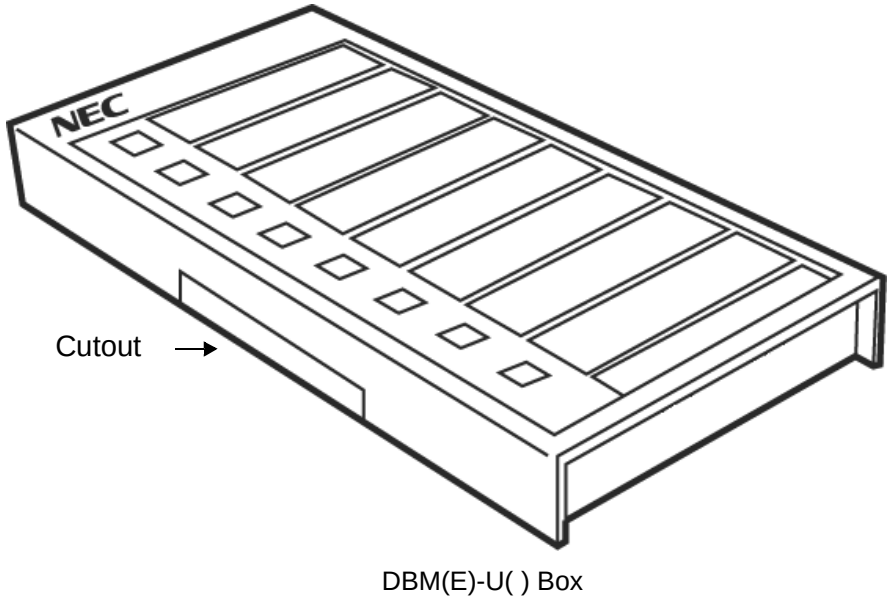


Figure 1-19 DBM(E)-U( ) Message Display Board

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Chapter 2

Features

Features

CHAPTER 2

SECTION 1 FEATURES LIST

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

- A -

A-1 Account Code Entry
A-2 Account Code – Forced/Verified/Unverified
A-3 Add-On Conference
A-4 All Call Page
A-5 Alphanumeric Display
A-6 Analog Line Extender (*D^term* Analog EXT)
A-7 Ancillary Device Connection
A-8 Answer Hold
A-9 Answer Key
A-10 Assigned Night Answer
A-11 Attendant Add-On Console
A-12 Attendant Camp-On
A-13 Attendant Positions
A-14 Attendant Station Outgoing Lockout
A-15 Attendant Transfer
A-16 Authorization Code
A-17 Automated Attendant
A-18 Automatic Answer with Delay Message
A-19 Automatic Callback
A-20 Automatic Call Distribution
A-21 Automatic Day/Night Mode Switching
A-22 Automatic Hold
A-23 Automatic Number Indication on T1
A-24 Automatic Redial
A-25 Automatic Release
A-26 Automatic Route Selection
A-27 Automatic Trunk-to-Trunk Transfer

- B -

B-1 Background Music Over External Speakers
B-2 Background Music – Multiline Speaker
B-3 Barge-In
B-4 Battery Backup – System Memory
B-5 Battery Backup – System Power
B-6 Busy Lamp Field on Multiline Terminals

- C -

C-1 Call Alert Notification
C-2 Call Appearance Keys
C-3 Call Arrival Keys
C-4 Callback Request
C-5 Caller ID Indication (Analog Trunks)
C-6 Caller ID Call Return
C-7 Call Forward – All Call
C-8 Call Forward – Busy/No Answer

C-9 Call Forward – Centrex
C-10 Call Forward – Display
C-11 Call Forward – Off-Premise
C-12 Call Forward – Split
C-13 Call Monitoring
C-14 Call Park – System
C-15 Call Pickup Direct
C-16 Call Pickup Group
C-17 Cascade CPU
C-18 Centralized Voice Mail (With E&M Tie Lines)
C-19 Class of Service
C-20 Clock/Calendar Display
C-21 Code Restriction
C-22 CO/PBX, Tie Line Digit Restriction
C-23 CO Message Waiting Indication
C-24 Computer Telephony Integration
C-25 Consecutive Speed Dial
C-26 Cordless Telephone Connection
C-27 Customized Message

- D -

D-1 Data Line Security
D-2 Delay Announcement
D-3 Delayed Ringing
D-4 Dialed Number Indication Service
D-5 Dial 0 for Attendant
D-6 Digit Insertion
D-7 Digital Line Extender (D^{term} ISDN EXTender Plus)
D-8 Digital Voice Mail
D-9 Direct Inward Dialing
D-10 Direct Inward System Access (DISA)
D-11 Direct Inward Termination
D-12 Direct Paging Access
D-13 Direct Station Selection
D-14 Distinctive Ringing
D-15 Do Not Disturb
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 II Terminal
D-22 D^{term} Cordless Lite II Terminal
D-23 D^{term} Handset Cordless
D-24 D^{term} IP Gateway System

- E -

E-1 Elapsed Call Time
E-2 Electra Elite IPK Terminals
E-3 Electra Elite IPK Terminal Migration
E-4 Electra Professional Terminal Migration
E-5 Electronic Volume Control
E-6 E&M Tie Lines (4-Wire)
E-7 Elite ACD Plus
E-8 Elite CallAnalyst
E-9 ElteApps – Interactive Voice Response
E-10 EliteApps – PC Attendant
E-11 Elite Q-Master
E-12 Emergency 911 – Cut Through
E-13 Enhanced 911
E-14 Equal Access Accommodation
E-15 External Tone Ringer
E-16 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 Key Pad
H-7 Hot Line
H8 Howler Tone Service

- I -

I-1 I-Hold Indication
I-2 Incoming Call Identification
I-3 Incoming Trunk Name or Number Display
I-4 Internal Hub
I-5 Internal Voice/Tone Signaling
I-6 Internal Zone Paging (Meet-Me)
I-7 IP CPU & Media Gateway
I-8 IP Station (MEGACO)
I-9 ISDN-BRI Trunk Connections
I-10 ISDN-PRI Trunk Connections
I-11 I-Use Indication

- K -

K-1 Key-Common Channel Interoffice Signaling
K-2 Key Function/Multifunction Registration

- L -

L-1 Large LED Indication
L-2 Last Number Redial
L-3 Least Cost Routing
L-4 Live Monitoring
L-5 Live Record
L-6 Loop Start Trunks

- M -

M-1 Message Display Board
M-2 Message Waiting
M-3 Microphone Control
M-4 Multiline Conference Bridge
M-5 Multilingual LCD Indication
M-6 Multiple Trunk Groups
M-7 Music on Hold

- N -

N-1 NEC Elite PC Assistant
N-2 Nesting Dial
N-3 Night Call Pickup
N-4 Night Chime
N-5 Night Transfer

- O -

O-1 Off-Hook Ringing
O-2 Off-Premise Extension
O-3 One-Touch Feature Access

- P -

P-1 PC Programming
P-2 Pooled Line (Outgoing)
P-3 Power Failure Transfer
P-4 Preset Dialing
P-5 Prime Line Assignment
P-6 Privacy on All Calls
P-7 Privacy Release
P-8 Private Lines
P-9 Programming from Multiline Terminal
P-10 Pushbutton Dial – DTMF or DP

- Q -

Q-1 Quick Transfer to Voice Mail

- R -

R-1 Recall Key
R-2 Recall with Station Identification
R-3 Redial Key
R-4 Remote Programming
R-5 Resident System Program
R-6 Restriction (Outgoing)
R-7 Ring Tone Variation
R-8 Ringing Line Preference
R-9 Route Advance Block

- S -

S-1 Save and Repeat
S-2 Scrolling Directories
S-3 Secondary Incoming Extension
S-4 Seized Trunk Name/Number Display
S-5 Simplified Call Distribution
S-6 Single Point of Entry (SPE)
S-7 Single Line Telephone Access
S-8 SLT Adapter
S-9 SLT Timed Alarm
S-10 Softkeys
S-11 Speed Dial – Station
S-12 Speed Dial Stored Characters
S-13 Speed Dial – System
S-14 Station Add-On Console
S-15 Station Camp-On
S-16 Station Hunt
S-17 Station Message Detail Recording
S-18 Station Name Assignment – User Programmable
S-19 Station Outgoing Lockout

- S - (continued)

S-20 Station Relocation
S-21 Station Transfer
S-22 Step Call
S-23 Store and Repeat
S-24 Stored Hookflash
S-25 Synchronous Ringing
S-26 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-5 Tone Override
T-6 Trunk Queuing
T-7 Trunk-to-Trunk Transfer
T-8 Two-Color LEDs

U

U-1 Unified Messaging
U-2 Unified Messaging – EliteMail CTI-LX Lite
U-3 Uniform Call Distribution (UCD)
U-4 Uniform Numbering Network
U-5 Universal Slots
U-6 Unsupervised Conference
U-7 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
V-4 Voice Over Split
V-5 Voice Prompt

- W-

W-1 Wireless
W-2 Wireless – DECT

SECTION 2 FEATURES DESCRIPTIONS

A-1 ACCOUNT CODE ENTRY

Account Code Entry allows assignment of Account Codes with up to 16 digits. Account Codes are incorporated in the call records generated by Station Message Detail Recording (SMDR) and provide a reference for billing.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), only the last four digits of the extension number are printed by SMDR.

A-2 ACCOUNT CODE – FORCED/VERIFIED/UNVERIFIED

Account Code – Forced/Verified forces selected station users to dial an Access Code and a verified Account 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 after the unverified Account Code is dialed.

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

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), only the last four digits of the extension number are printed by SMDR.

A-3 ADD-ON CONFERENCE

Add-On Conference allows a conference call with a total of four parties with various combinations of outside lines and stations. This increases efficiency by allowing multiple parties to enter a conversation.

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

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), only the last four digits of the extension number are displayed during an Add-On Conference call.

With **R2000 or higher**, an SLT or PSII user can perform a 1 terminal to 2 outside parties conference call.

A-4 ALL CALL PAGE

All Call Page allows simultaneous paging (internal and external) of all idle Multiline Terminals in a zone over each built-in speaker and over all external paging speakers. This enables a person within hearing distance of a Multiline Terminal or external speaker to respond to the paging call.

A-5 ALPHANUMERIC DISPLAY

Each Electra Elite IPK, *D*^{term} Series E, or *D*^{term} Series i Display Multiline Terminal has a 24-character by 3-line Liquid Crystal Display (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)

The *D*^{term} Analog EXT allows a user with an NEC Multiline Telephone to make or receive calls from a remote location while maintaining a station appearance from the office KTS.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

A-7 ANCILLARY DEVICE CONNECTION

Ancillary Device Connection allows installation of selected peripheral (ancillary) devices to a Multiline Terminal. This feature enhances peripheral device objectives.

An Electra Elite IPK Terminal user can accomplish this by using the AP(R)-R Unit (Analog Port Adapter with Ringer) or AP(A)-R Unit (Analog Port Adapter without Ringer) for analog telephone devices, or installing the AD(A)-R Unit to connect devices such as tape recorders.

The AP(A)-R/AP(R)-R Unit is the interface for installing a Single Line Telephone, Modem, Credit Card Reader, Wireless Headset, NEC Voicepoint/Voicepoint Plus Conferencing unit or other compatible analog device.

A-8 ANSWER HOLD

Answer Hold allows a Multiline Terminal user to press the flashing Answer key to answer an incoming ringing call. When the Multiline Terminal user is already answering 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 key speeds call handling, and Answer Hold prevents accidental call dropping.

A-9 ANSWER KEY

Multiline Terminals have an Answer key with an LED that flashes when the Multiline Terminal user receives an incoming CO/PBX, Tie/DID transfer, or CO/PBX transfer call ringing in the same tenant group. When multiple calls are received, the Answer key is used to pick up calls. The Answer key continues flashing until the last unanswered call is answered. Press the Answer key during a call to hold the current call and allow the next call to be answered.

A-10 ASSIGNED NIGHT ANSWER

Assigned Night Answer (ANA) is a Direct Inward Termination programmed to ring directly at a selected station when the system or tenant is in Night Mode. This assignment operates independently from the DIT (Day Mode) ringing assignment.

A-11 ATTENDANT ADD-ON CONSOLE

The Attendant Add-On Console functions with a Multiline Terminal programmed as an Attendant. This console provides access to a maximum of 48 stations and/or outside lines. The Busy Lamp Field status is shown by a red LED for each station or trunk. Trunks can include CO/PBX, ISDN, DID, E&M Tie Lines, and FT1 lines. The Attendant Add-On Console also has 12 function keys that can be used for attendant messaging, paging access, or other undefined functions.

With **R2000 or higher**, Digital Voice Mail integrated functions can be assigned to keys on the Attendant Console, but when 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), Digital Voice Mail integrated functions are not supported.

A-12 ATTENDANT CAMP-ON

Attendant Camp-On, used at an Attendant Position with an Attendant Add-On Console, allows a call to be transferred to a busy station. Press the Transfer 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. A camp-on call that is not answered in a programmed time recalls to the Attendant Position.

A-13 ATTENDANT POSITIONS

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

A-14 ATTENDANT STATION OUTGOING LOCKOUT

Attendant Station Outgoing Lockout allows an Attendant Position with an Attendant Add-On Console to set a predetermined Code Restriction Class Assignment at any station assigned on the Attendant Add-On Console. This allows an Attendant to set/reset a restriction to allow/deny an outgoing call.

A-15 ATTENDANT TRANSFER

Attendant Transfer 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 AUTHORIZATION CODE

Authorization Code permits a station to dial outside numbers that would otherwise be restricted. When an access code plus Authorization Code is dialed, the station code restriction class temporarily changes to allow calls when permitted by a new code restriction class.

The Authorization Code can be verified or unverified based on class of service and is assigned in the Forced/Verified Account Code table (these share the same table).

The Authorization/Account Code is part of the Station Message Detail Recording (SMDR) call record.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), only the last four digits of the extension number are printed by SMDR.

A-17 AUTOMATED ATTENDANT

The Automated Attendant answers incoming CO/PBX calls and sends a greeting message to 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 transfers the call to a designated station or Station Hunt group. The Automated Attendant can be set to provide eight automated message levels.

Incoming DID calls can be answered by the Automated Attendant.

A-18 AUTOMATIC ANSWER WITH DELAY MESSAGE

Automatic Answer with Delay Message answers incoming CO/PBX calls and plays a specified message to the outside caller while still ringing designated stations. Up to two messages can be played to the outside caller. The message(s) played are the same as the Automated Attendant message(s).

A-19 AUTOMATIC CALLBACK

After receiving a call waiting tone from a busy station, a user can set Automatic Callback when allowed in Class of Service (Station). When both stations are idle, the system signals the Automatic Callback originator first and, after the originator answers, signals the other station.

A-20 AUTOMATIC CALL DISTRIBUTION

Automatic Call Distribution (ACD) forwards any incoming trunk call (DIT, ANA, DID, or CO Ring Transfer) to a selected ACD Group of Agents. An incoming call is distributed to the ACD Group Agent that has been idle the longest. The ACD feature has four distinct parts: Call Distribution, Agents and Supervisor Function, Status screens and Management Information System (MIS) reports, and Delay Announcement.

A Real Time Display (RTD) feature (**R1500 or higher**) has been added that provides real time queue and agent information to the agent desktop and serves as a cost effective alternative to expensive wall displays. Text messages can be sent to agents or groups of agents. Elite Stat Plus Software Suite V 1.1.1 or higher is required to support RTD.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

A-21 AUTOMATIC DAY/NIGHT MODE SWITCHING

Automatic Day/Night Mode switching programs the system to switch automatically in or out of the Night Mode at a programmed time. This eliminates the daily need to manually set/reset the Night Mode. After a programmed time, the system automatically switches back to Day Mode.

A-22 AUTOMATIC HOLD

Automatic Hold works when an Attendant at an Attendant Add-On Console presses a DSS key programmed for station or page access during an outside call or when a Multiline Terminal user, engaged in an outside call, presses 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 the required operational steps.

A-23 AUTOMATIC NUMBER INDICATION ON T1

T1 ANI displays the calling party telephone number on the LCD of the Multiline Terminal for incoming trunk calls. ANI information follows the call to where it is transferred.

Historically ANI has been a feature of long-distance carriers typically provided on T1 circuits. The Electra Elite IPK system supports ANI on T1-FGD (Feature Group D) trunks. This feature is functionally the same as Caller ID.

With **R1700 or higher**, and with the MIFM-U10 ETU with KMM(1.0)U installed or MIFM-U20 ETU with KMM-U20 installed (**R3000 or higher**), Caller ID information can be displayed for the last 50 incoming calls using the Directory key or a Caller ID Scroll key when it is assigned.

A-24 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-25 AUTOMATIC RELEASE

Automatic Release drops the line circuit when 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, DID, ISDN, and Tie Line Trunks.

A-26 AUTOMATIC ROUTE SELECTION

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

A-27 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, or holidays).

B-1 BACKGROUND MUSIC OVER EXTERNAL SPEAKERS

Background music over external speakers is integrated with the three-zone paging system provided by the ECR-U( ) 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

Music on hold provides station background music 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.

B-3 BARGE-IN

Barge-In allows selected Multiline Terminal users in the system to override another station user conversation with or without an audible alert to that station user. The alert tone is programmable.

With **R1700 or higher**, Memory Block 1-1-76 (Barge-In Alert Tone Assignment) controls the Conf LED to light or not light at the station barged into. Prior to this, the Conf LED was always on at the barged-into station.

B-4 BATTERY BACKUP - SYSTEM MEMORY

A battery is provided on the CPUI( )-U( ) ETU for the Electra Elite IPK system to retain System Program Memory when power fails. When fully charged, the battery maintains backup power for approximately 21 days. System Data, Speed Dial Memories, and Clock/Calendar functions are protected by the backup battery. After power is restored, the system returns to normal operation.

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.

B-6 BUSY LAMP FIELD ON MULTILINE TERMINALS

The Busy Lamp Field (BLF) indicates station status using LEDs. The applicable LED is on for Feature Access keys and One-Touch keys that are programmed for Direct Station Selection (DSS). This allows Multiline Terminal users to determine at a glance that a station is in use.

C-1 CALL ALERT NOTIFICATION

Call Alert Notification allows a station user to receive an alert tone, flashing ICM, Large LED, and LCD identification during an incoming call while 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. This feature works with Call Forward – Busy/No Answer so the second incoming call is queued to the station for eight seconds (default) before it is forwarded.

C-2 CALL APPEARANCE KEYS

Call Appearance (CAP) keys automatically place an outside call on a Call Appearance key when the system is operated as a hybrid (Multifunction) system. These keys can be assigned on any Multiline Terminal or the same key can appear on multiple terminals. This feature allows efficient call handling when numerous CO calls are received and a limited number of CO line key appearances are available. These keys are often called CO loop keys.

C-3 CALL ARRIVAL KEYS

Call Arrival (CAR) keys are available software extensions as part of 120 station numbers on the Expanded Port Package. The Basic Port Package provides 32 station numbers (24 can be shared CAR ports) and 40 dedicated CAR ports. A CAR extension assigned to a line key, can appear and ring on an individual station or multiple stations. When a call is directed to a CAR, any station with the CAR can answer. This ensures that every call to that group is answered promptly. Multiline Terminals may have several CAR extension appearances depending on the application.

C-4 CALLBACK REQUEST

A Callback Request can be set at any Multiline Terminal to notify the user that another station wants a call returned. The Multiline Terminal user can receive a maximum of three Callback Requests from other station users. Non-display Multiline Terminal users receive a Feature LED indication when a Callback Request is set. Single Line Telephone users can set but not receive a Callback Request.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), only two Callback Requests can be set at a Multiline Terminal.

C-5 CALLER ID INDICATION (ANALOG TRUNKS)

Analog Caller ID can display the calling party name and telephone number or name on the LCD of the Multiline Terminal for incoming calls. For normal incoming calls (Day or Night Ring Assignment), up to 16 Multiline Display Terminals can display the Caller ID for the incoming analog trunk. For Direct Inward Termination (DIT) calls, the Caller ID information is displayed at the terminating station. After the CO call is answered, the Caller ID information follows when the call is transferred.

When the MIFM-U10 ETU has the KMM(1.0)U installed or the MIFM-U20 has the KMM-U20 installed (**R3000 or higher**), the Caller ID information can be displayed for the last 50 incoming calls by using the Caller ID Scroll key, when assigned.

MIFM-U( ) firmware V5.00 is required for 50 Caller ID scroll buffers. With lower-level firmware, 10 Caller ID scroll buffers are provided.

With **R1700 or higher**, all stations can display Caller ID or ANI information during incoming calls. Prior to this, only 16 stations could display Caller ID or ANI information during an incoming day or night ring assigned call.

With **R2000 or higher**, incoming calls to SIE keys display Caller ID on a Multiline Terminal.

C-6 CALLER ID CALL RETURN

The Caller ID Call Return feature allows the voice mail system to use Caller ID information captured with the message to call and connect the person that left the message with the voice mail user that is checking messages. After the call is ended by either party, the voice mail user returns to checking messages.

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.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

C-7 CALL FORWARD – ALL CALL

Call Forward – All Call forwards all calls directed to one station to another station, Voice Mail system, or to the Attendant. This permits more efficient call processing by allowing a station to be left unattended and have 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.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

C-8 CALL FORWARD – BUSY/NO ANSWER

Call Forward – Busy/No Answer forwards calls directed to one station, to another station, Voice Mail system, or to the Attendant Position for Busy or Ring No Answer. This permits more efficient call processing by allowing calls to be routed to another station or to the Attendant Position.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

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.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

C-10 CALL FORWARD – DISPLAY

When a call is forwarded from one Multiline Terminal to another, the forwarding indication and forward station number are shown on the Multiline Terminal display.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

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 IPK system.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

C-12 CALL FORWARD – SPLIT

The Call Forward – Split 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.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Call Forward settings to be assigned and saved as part of the site database.

C-13 CALL MONITORING

This feature allows selected Multiline Terminal users to monitor another user conversation with or without an audible alert tone to that station user. The alert tone is programmable. With silent monitoring (no tone) no indication is provided to the monitored station or the outside party.

R2000 or higher is required.

C-14 CALL PARK – SYSTEM

Call Park – System allows the user to place a call in one of 10 common Call Park 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 at any station in the system.

With **R4000 or higher**, 40 common Call Park – System locations can be supported, and the System Call Park keys can retrieve Caller ID information for a parked call.

C-15 CALL PICKUP DIRECT

Call Pickup Direct allows station users to answer any call directed at another station. This permits efficient handling of calls that are directed to unattended stations.

C-16 CALL PICKUP GROUP

A Station user can answer a call intended for another station either in the same 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-17 CASCADE CPU

This feature provides a cost-effective means to increase the size of a system by connecting multiple systems using the EXPT(2)-U( ) ETU that allows the functionality of two DTI-U( ) ETUs in one ETU. The feature compatibility between the linked systems using the EXPT(2)-U( ) ETU is the same as an Electra Elite IPK linked to another Electra Elite IPK using K-CCIS.

R1700 or higher is required.

C-18 CENTRALIZED VOICE MAIL (With E & M TIE LINES)

Centralized Voice Mail allows two or more systems that are 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, or Call forward – Off-Premise to a VM port. The Electra Elite IPK system communicates Message Waiting (MW) LED, Mailbox and other information using DTMF Signaling between two Electra Elite IPK systems.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

C-19 CLASS OF SERVICE

Class of Service assigns and controls access to features. Various Class of Service combinations can be programmed. Stations are then assigned according to the features they can access.

C-20 CLOCK/CALENDAR DISPLAY

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

The system can automatically adjust the clock for Daylight Savings Time.

C-21 CODE RESTRICTION

Code Restriction for outgoing calls is 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-22 CO/PBX TIE LINE DIGIT RESTRICTION

CO/PBX, Tie Line Digit Restriction eliminates unauthorized calls by restricting the number of digits that can be dialed from a station on an outside line.

C-23 CO MESSAGE WAITING INDICATION

This feature provides a Message Waiting Indication when Voice Mail from the Central Office is used. The CO uses Visual Message Waiting Indication (VMWI) standards to provide this feature. When VMWI is used, the Electra Elite IPK provides a flashing LED on a line key assigned with the trunk appearance.

R2000 or higher is required**.**

C-24 COMPUTER TELEPHONY INTEGRATION

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 transmissions, 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 Computer Telephony Adapter (CT(A)-R/CTA-U Unit) or CT(U)-R/CTU(S)-U Unit. The *CT(A)-R Unit* can be attached to any *DTH/ITH/DTR* terminal except the *DTR-2DT-1 TEL,* or the *CTA-U Unit* can be attached to any *DTU/DTP* terminal except the *DTP-2DT-1 TEL* to provide a serial RS-232 connector to the PC that allows TAPI applications to control telephony features of the KSU.

The *CT(U)-R Unit* can be attached to any *DTH/ITH/DTR* terminal except the *DTR-2DT-1 TEL* or the *CTU(S)-U Unit* can be attached to any *DTU/DTP* terminal except the *DTP-2DT-1 TEL* to provide a Universal Serial Bus (USB) connection to the PC that allows TAPI applications to control telephony features on the KSU.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

C-25 CONSECUTIVE SPEED DIAL

Consecutive Speed Dial allows using System Speed Dial, Station Speed Dial, and manual dialing for all stations consecutively. Simplified dialing sequences permit easier access to secondary common carriers, credit card verification, and other applications that require entry of authorization codes or customer numbers.

C-26 CORDLESS TELEPHONE CONNECTION

Using an *AP(A)-R Unit* or an *AP(R)-R Unit* for a *DTH/ITH/DTR* telephone, or an *APA-U Unit* or an *APR-U Unit* for a *DTU/DTP* telephone, 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; however, only the *AP(R)-R* and the *APR-U Units* provide ringing.

The SLI(4)/(8)-U( ) ETU and the SLT(1)-U( ) ADP also supports cordless telephones, but this feature refers to Multiline Terminal cordless connection.

C-27 CUSTOMIZED MESSAGE

A station with Do Not Disturb set can select a Customized Message that is displayed at any other Multiline Display Terminal 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

Data Line Security protects any station port from receiving audible tones (such as Camp-On or Override) and denies a station from barging in while busy to prevent disruption of data transmission when using a modem or 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.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

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 Keys.

D-4 DIALED NUMBER INDICATION SERVICE

DNIS allows a name to be assigned to inbound DID digits for more efficient call handling.

With **R4000 or higher**, DNIS can be displayed for transferred calls.

D-5 DIAL 0 FOR ATTENDANT

Stations can access a system Attendant Position by dialing 0 (zero).

D-6 DIGIT INSERTION

Digit Insertion 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. The user does not have to dial an 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 permits data access to the office LAN.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

D-8 DIGITAL VOICE MAIL

The VMS(4)/(8)-U( ) ETU, VMP (2)/(4)/(8)-U( ) ETU, FMS(2)/(4)/(8)-U( ) ETU, CMS(2)/(4)-U( ) ETU, or CTI/VP(4)/(8)/(12)/(16)-U( ) ETU provides Digital Voice Mail Service, Automated Attendant (AA), Audiotext, Fax Detection, Message Notification, Live Record, and Centrex Transfer. The VMS, FMS, and CMS ETU are 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. The CTI/VP(12)/(16)-U( ) ETU is built on two ETUs.

With **R1500 or higher**, CoSession, a communication software tool is available from NEC to perform configuration, maintenance, and backup functions.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

D-9 DIRECT INWARD DIALING

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.

When 5-, 6-, or 7-digit station numbers are used, DID Digit Conversion is not supported.

With **R4000 or higher**, the BRT(4)-U( ) ETU using 3.00 or higher firmware can support DID for ISDN-BRI trunks.

D-10 DIRECT INWARD SYSTEM ACCESS

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

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 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

Direct Station Selection (DSS) allows all Multiline Terminal users to press one key to make station calls.

D-14 DISTINCTIVE RINGING

The Distinctive Ringing feature distinguishes between internal and incoming outside calls and provides distinct ring audible signals and patterns.

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

D-15 DO NOT DISTURB

Do Not Disturb (DND) temporarily eliminates all audible signals for incoming calls to isolate the station from others in the system.

With **R2000 or higher**, System Administration Terminal (SAT) software allows Do Not Disturb settings to be assigned and saved as part of the database.

D-16 DOOR LOCK RELEASE RELAYS

The DPH(4)-U( ) 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

The Electra Elite IPK system supports up to four Door/Monitor telephones. A doorphone can be called by a station user or a station (or number of stations) can be signaled when a doorphone call button is pressed. When a station answers the doorphone ringing, a 2-way speech path is established.

Both the tone and cadence of doorphone ringing can be defined to allow the station user to distinguish a doorphone call from any other call. The Door or Monitor Telephone works closely with the Door Lock Release feature, and the DPH(4)-U( ) ETU that supports both features.

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.

D-19 DROP KEY

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

D-20 D^{term} ANALOG CORDLESS TERMINAL

The NEC D^{term} Analog Cordless terminal may be used with the Electra Elite KTS. The DTR-1R-1 TEL terminal uses 2.4 GHz Digital Spread Spectrum (DSS) Technology and is connected to an analog port using SLI(4)/(8)-U( ) or OPX(2)-U( ) ETU, SLT(1)-U( ) ADP, or an APR-U Unit connected to a multiline terminal. This terminal does not have an LCD display. 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 II TERMINAL

The NEC *D^term* Cordless II Terminal may be used with the Electra Elite IPK KTS. The DTR-4R-1 TEL uses 900 MHz Digital Spread Spectrum (DSS) Technology and must be connected in tandem to a Multiline Terminal.

D-22 D^term CORDLESS LITE II TERMINAL

The NEC *D^term* Cordless Lite II Terminal may be used with the Electra Elite IPK KTS. The DTH-4R-1 TEL uses 900 MHz FM with ADPCM (digital) Technology and must be connected in tandem to a Multiline Terminal. **R1500 or higher** is required.

D-23 D^term HANDSET CORDLESS

The *D^term* Handset Cordless Terminal is a stand-alone telephone with a direct connection to one digital port on the ESI(8)-U( ) ETU.

D-24 D^term IP Gateway System

The *D^term* IP Gateway system converts traditional voice traffic and its accompanying signaling for call setup and networking to IP for transport across a managed IP network. The system allows users at branch offices or telecommuters to take advantage of the rich feature set of the company central site Key Telephone System as though they were connected locally without loss of functionality. Traditional voice traffic (plus call setup and networking signaling) travel from the KTS to the Gateway where they are converted to IP packets that are shipped to a 10 Mb (Gateway) or 10/100 (Gateway II) Ethernet LAN port. They are then picked up by the enterprise router and sent to the Corporate WAN.

At the branch office, the local router receives and feeds the WAN signals to the local 10/100 LAN. From there they reach the *D^term* IP Branch unit that converts the IP packets back to standard (TDM) voice signals for distribution to attached Series E/Electra Elite telephones. The *D^term* IP Branch supports up to 12 voice circuits.

When the remote site is a telecommuter at home or only a few workers, the remote IP/TDM conversion is performed by a *D^term* IP Adapter that fits easily on the bottom of a standard *D^term* Series E telephone.

When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

E-1 ELAPSED CALL TIME

The Elapsed Call Time displays how long the station has been connected to an outside line on Multiline Terminals with an LCD.

E-2 ELECTRA ELITE IPK TERMINALS

The Electra Elite IPK Terminals provide ergonomic form and user-friendly functions. With advanced digital circuitry, these terminals consists of distinct models to meet diverse user telephone terminal needs. With **R1500 or higher**, an HF-R Unit Adapter for Full Duplex Handsfree is now available.

E-3 ELECTRA ELITE TERMINAL MIGRATION

Electra Elite Terminal Migration allows an Electra Elite IPK customer to protect their investment in terminals when purchasing Electra Elite IPK systems. Electra Elite Multiline Terminals can be easily used with the Electra Elite IPK systems. With very few exceptions, all terminal features and abilities that are possible on Electra Elite 48/192 are also possible with the Electra Elite IPK system.

E-4 ELECTRA PROFESSIONAL TERMINAL MIGRATION

Electra Professional Terminal Migration allows an Electra Elite IPK customer to protect their investment in terminals when purchasing Electra Elite IPK systems. With very few exceptions, all terminal features and abilities that are possible on Electra Professional Level II/IIA/120 are also possible with the Electra Elite IPK system.

R1600 or higher is required.

E-5 ELECTRONIC VOLUME CONTROL

Electronic Volume Control is provided on all Multiline Terminals to allow easy changes to the LCD contrast on Multiline Display Terminals, Off-Hook Ringing volume, Station Ringing volume, and Handset/Station Speaker volume.

E-6 E&M TIE LINES (4-WIRE)

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

E-7 ELITE ACD PLUS

Elite ACD Plus is an Automatic Call Distribution ETU that supports up to 40 agents and 12 supervisors. This feature allows any incoming DIT, ANA, DID, or CO Ring Transfer call to terminate at a prearranged 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 Automatic Attendant (AA), ACD only, or both AA and ACD.

The Administration Program uses a Local Area Network (LAN) that allows one administrator and up to five remote PCs, depending on site license, to monitor ACD statistics and generate reports.

An agent or supervisor logged in as an agent can be an active member in up to four ACD Groups and can be logged on and receive calls from all four groups.

With **R1500 or higher**, a Real Time Display (RTD) feature has been added that provides real time queue and agent information to the agent desktop and serves as a cost effective alternative to expensive wall displays. Text messages can be sent to agents or groups of agents.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

With **R4000 or higher**, the Elite ACD Plus software or higher supports the following features:

- The DNIS number and name can be displayed to an agent during the ringing of an ACD call.
- The display of the DNIS number and name can be recalled while talking on the ACD call. Reports are printed and viewed based on the DNIS number and name.

E-8 ELITE CALLANALYST

Elite CallAnalyst is an easy to use, graphically oriented software package that allows a user to monitor and analyze telephone calls, understand telephone usage, and cut costs. Incoming and outgoing calls are tracked accurately along with the date and time of the call. When the incoming telephone call must be tracked with name and/or telephone numbers, Elite CallAnalyst requires Caller ID service from the local telephone company.

Elite CallAnalyst increases productivity, facilitates billing, and helps detect toll fraud and telephone abuse. It also has powerful tabular (text) and graphic report generating ability. Reports include extension/line summaries, date, time, and department summaries, longest/most expensive calls, and most frequently called numbers. These reports can be used to analyze your telephone as a critical business communication tool, improve its business effectiveness, and reduce your telephone costs.

A report can be generated showing calling patterns by volume or duration on a color-coded United States map. This can help a Customer Support, Sales Order, or Telemarketing business become more focused, more productive, and more cost effective.

E-9 ELITEAPPS – Interactive Voice Response

This system can be used as a man-machine interface that uses scripting language to play prompts that guide a caller to select different available options using a touchtone telephone key pad (DTMF tones). A technician can program the prompts using the scripting language, and scripts can be generated manually or by using the provided EliteApps IVR Visual Editor. The scripts can access any Open Database Connectivity (ODBC) compliant database using Structured Query Language (SQL) commands. The database can either be stored on the hard drive that is installed on the VMP(4)/(8)-U( ) ETU or on a separate database server. The IVR accesses the separate database server using ODBC connections on the Ethernet network. **R3000 or higher** is required.

The programmable IVR uses ODBC connections to completely customize all call flow data and information anytime. The IVR can be remotely monitored and configured using a LAN or WAN network in a totally secure environment.

E-10 ELITEAPPS – PC ATTENDANT

This feature allows easy access to the most common functions required by an operator or receptionist. Using this application, the attendant can manage call handling without having to switch attention between the telephone and PC. A company directory, recording ability, and PC-to-PC messaging provide additional aids to the attendant position.

R1500 or higher is required.

With **R1500 or higher**, a Real Time Display (RTD) feature has been added that provides real time queue and agent information to the agent desktop and serves as a cost effective alternative to expensive wall displays. Text messages can be sent to agents or groups of agents.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

E-11 Elite Q-Master

This feature is a modular multimedia Contact Center solution that provides skilled-based routing (SBR) and blends customer contacts using Telephone, Email, Web Callback, and Web chat. Starter Packs incorporate the EliteMail CTI ETU to provide the basic hardware platform. A Windows 2000 PC with voice ports inside the Electra Elite IPK telephone system comes with the core Administration and Reports modules installed.

Elite Q-Master supports up to 60 concurrent Agents and Supervisors (9999 agents can be defined, but only 60 can be active at one time). Telephone calls (incoming DIT, ANA, DID, CO, or ring Transfer) terminate to a programmed queue (Up to 32 queues are supported). **R2000 or highe**r is required.

E-12 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.

E-13 ENHANCED 911

The Electra Elite IPK system supports Enhanced 911 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. Callback information generated from the Electra Elite E911 trunk. is provided to the PSAP. The Electra Elite IPK system administrator must maintain and update the callback telephone number database per station.

E-14 EQUAL ACCESS ACCOMMODATION

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

E-15 EXTERNAL TONE RINGER

The External Tone Ringer provides a common audible tone with relay contacts for control when incoming CO/PBX calls are received in Day or Night Mode. The relay contact closures may be used for external bells or chimes. When an Attendant is not available, station users may respond to the external ring and answer incoming calls. This feature provides wide area coverage or loud ringing for noisy locations where incoming CO/PBX calls are answered.

E-16 EXTERNAL ZONE PAGING (MEET-ME)

External Zone Paging (Meet-Me) allows 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 respond quickly to the paged call.

With the Electra Elite IPK system, a single external paging zone output is built into and provided with the basic B64-U( ) KSU.

F-1 FACSIMILE CO BRANCH CONNECTION

The Electra Elite IPK system provides branch connection of locally provided facsimile machines to CO/PBX lines. Additional dedicated CO/PBX lines are not required for a facsimile to operate. The facsimile shares the last CO/PBX line on the COI(4)-U( ) ETU, or COIB(4)-U( ) ETU through the Main Distribution Frame (MDF) where the CO line is connected from TELCO.

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.

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.

With **R2000 or higher**, Digital Voice Mail integrated functions can be assigned to Line Keys that are assigned as Feature Access Keys on a multiline Terminal, but when 5-, 6-, or 7-digit station numbers are used, Digital Voice Mail integrated functions are not supported.

F-4 FLEXIBLE NUMBERING PLAN

A Flexible Numbering 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 customer needs. A station can be assigned a 2-, 3-, or 4-digit station number. An Automated Attendant Numbering Plan is also available with this plan.

With **R2500 or higher**, 2~7 digit station numbers can be supported.

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

The Flexible Timeouts feature provides a variety of over 40 timeouts in the Resident System Program to allow the system to operate without initial programming. The system timeouts can be changed to meet customer needs according to the system application requirements.

F-7 FULL DUPLEX HANDSFREE

The HF-R Unit is an add-on device to Electra Elite IPK Multiline Terminals that provides a full duplex speakerphone for small conference rooms. An external microphone is provided with a locking push-to-mute control button. A microphone LED is On when the microphone is On and Off when mute.

R1500 or higher is required.

F-8 FULL HANDSFREE OPERATION

Built-in half-duplex handsfree operation is included with all Multiline Terminals for internal and external calls. The MIC ON/OFF key or Feature Access Code allows the microphone to be muted.

G-1 GENERAL PURPOSE RELAYS

Two relays are provided on the ECR-U( ) ETU to use as an application dictates. These relays are either off or on, and do not change state until a station user manually makes the change.

G-2 *GROUND START TRUNKS*

Ground Start Trunks can be connected to the system. Assignment of trunks as Ground Start is per trunk (by switch settings) at the associated COI(8)-U( ) 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*

Group Listening allows the user to press the Speaker key so others in the room can listen to a conversation over the built-in speaker of a Multiline Terminal. While Group Listening is active, the Multiline Terminal user can continue to talk on the handset or headset.

H-1 HANDSET MUTE

Handset Mute is provided to most terminals connected to the Electra Elite IPK 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 during internal voice calls. Microphone status is indicated by the MIC LED located on each Multiline Terminal. The MIC key or Feature Access Code mutes the microphone to ensure privacy.

H-3 HANDSFREE DIALING AND MONITORING

Handsfree Dialing and Monitoring 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.

H-4 HEADSET CONNECTION (BUILT IN)

A headset can be connected directly to an Electra Elite IPK Multiline Terminal. 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) or 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.

With **R4000 or higher**, only the first 13 digits of a 16-character name are displayed while a Hold Recall is recalling to a display terminal.

H-6 Hot Key PAd

This feature allows an outgoing or internal call to be made by pressing digits on the Dial Pad of a multiline terminal without pressing the Speaker key or Trunk key before going off-hook (**R4000 or higher**).

H-7 HOT LINE

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

H-8 HOWLER TONE SERVICE

Howler Tone Service 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 in a programmed time.

I-1 I-HOLD INDICATION

I-Hold Indication provides a flashing green LED line key indication for external calls held at a Multiline Terminal. Calls held at other stations provide a flashing red LED line key indication. This feature allows 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 allows both name and number to be displayed by Caller ID.

With **R4000 or higher**, each station can assign a 16-character (including spaces) name.

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.

I-4 INTERNAL HUB

For data communications, a hub is a convergence point where data arrives from one or more directions and is forwarded out in one or more other directions. A hub usually includes a switch (a switch could usually be considered a hub as well). Data comes together at the hub, and the switch determines how and where data is forwarded. When multiple ETUs requiring Ethernet data connections are installed in an Electra Elite IPK KSU, the HUB(8)-U( ) ETU can provide a relatively simple installation.

The HUB(8)-U( ) ETU is an in-skin fast Ethernet switching HUB unit that provides multiple services.

R1500 or higher is required.

I-5 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-6 INTERNAL ZONE PAGING (MEET-ME)

Internal Zone Paging (Meet Me) allows for up to three internal paging zones. 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-7 IP CPU and MEDIA GATEWAY

The IPCA( )-U( ) ETU is an IP communication system that integrates voice terminals with peer-to-peer connections over a Data Communication IP Network (Intranet). When the Media Gateway [MG(8)-U( ) ETU] is installed, the IPCA( )-U( ) ETU can communicate with the CPUI( )-U( ) ETU (Legacy system) to accommodate both IP Multiline Terminals (D^{term} IPK terminals) or IP soft telephones and Legacy terminals (Electra Elite IPK terminals). The IP Multiline Terminals and/or soft telephones are controlled by the IPCA( )-U( ) ETU. The Legacy terminals are controlled by the CPUI( )-U( ) ETU (Legacy system). The MG(8)-U( ) ETU provides the actual speech path between the two CPUs.

R2500 (R2.5) or higher is required for the CPUI( )-U( ) ETU.

With **R3000 or higher**, 12 Session Initiation Protocol (SIP) Trunks are supported.

I-8 IP STATION (MEGACO)

The IAD(8)-U( ) ETU is an optional interface for Electra Elite IPK that converts digital station ports to MEGACO IP station ports. An onboard 10/100 Base-T connector provides a WAN/LAN connection. Voice or signaling data from/to the IP stations is converted to IP frames and transmitted through the Data Communication IP Intranet /Internet Network. This ETU supports station-to-station direct RTP connections (peer-to-peer) for calls between IP telephones.

R1500, R2500, or R3500 is required.

I-9 ISDN-BRI TRUNK CONNECTIONS

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 (2B + D) for voice call trunking. The B channels provide two CO/PBX connections. Caller ID is usually a standard feature on ISDN-BRI provided trunks. Caller ID indication displays the calling party telephone number on the LCD of the Multiline Terminal for CO incoming calls. This interface provides voice communication path only.

With **R1.03 or higher** and BRT firmware 1.31 or higher, Caller ID Name is supported on ISDN-BRI trunks when the Telco provides this ability.

With **R4000 or higher** and BRT firmware 3.00 or higher, DID can be supported for ISDN-BRI trunks.

I-10 ISDN-PRI TRUNK CONNECTIONS

Integrated Service Digital Network - Primary Rate Interface (ISDN-PRI) is a Public Switched Telephone Network (PSTN) service that provides 23 B channels (16 B channels for the Electra Elite IPK - Basic port package) and a single D channel (23B+1D) for trunking. The Electra Elite IPK supports CO Line or DID Line type connections.

I-11 I-USE INDICATION

I-Use Indication provides a green LED line key indication for the line being used on Multiline Terminals. Other busy line keys are indicated with red LEDs. This quickly identifies the line being used by the station user.

K-1 KEY-COMMON CHANNEL INTEROFFICE SIGNALING

Key-Common Channel Interoffice Signaling (K-CCIS) allows multiple systems to be connected together to provide additional feature compatibility, above what normal Tie Lines provide. The system is configured with the 24-channel Digital Trunk Interface (DTI), a Common Channel Handler (CCH) for receiving or transmitting common signaling data from/to a distant office, and a CLKG-U( ) Unit for network synchronization. The system can provide a variety of interoffice service features such as Calling Name display, Centralized Voice Mail Integration, or Link Reconnect.

With **R1500 or higher**, Centralized BLF (K-CCIS) and IP (K-CCIS) features are available. MIFM-U( ) firmware V4.00 or higher and LCR PC software 3.00 or higher are required to program the expanded Route Advance Block Assignments in LCR. When Centralized Billing - KCCIS is required, MIFM-U( ) firmware V5.00 or higher is required.

With **R2000 or higher**, a Single Line Telephone or PSII user can perform a Trunk-to-Trunk Transfer, including the transfer of a trunk or K-CCIS call to another user on a remote system across K-CCIS.

With **R2000 or higher**, Centralized E911 - K-CCIS and 2~7 digit station numbers can be supported.

With **R4000 or highe**r, the Calling Party Number (CPN) Presentation from Station – K-CCIS feature is added, and the Compatibility tables are upgraded to **R4500 or higher**.

K-2 *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 by a switch on the CPUI( )-U( ) ETU for the Electra Elite IPK system during installation.

L-1 LARGE LED INDICATION

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

L-2 LAST NUMBER REDIAL

Last Number Redial allows the user to press the Redial key and ✱ to redial the last outside number dialed. This is useful when a busy or no answer is received when trying to place a CO/PBX call.

With **R4000 or higher**, the last 10 numbers dialed are supported.

L-3 LEAST COST ROUTING

Least Cost Routing (LCR) allows outside calls using the least expensive available route. The MIFM-U( ) ETU and KMM(1.0)U provide cost effective call routing based on the time of day, day of week, weekend or holiday based on the Central Office number dialed. Call costs are minimized by automatically selecting the least expensive available connection for outgoing calls.

With **R3000 or higher**, LCR can be used with the MIFM-U20 ETU and KMM-U20 upgrade chip or the SPE(M)-U( ) ETU.

L-4 LIVE MONITORING

An Electra Elite IPK Multiline Terminal user can listen to voice mail messages as the message is being recorded by the EliteMail VMS/FMS. 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.

EliteMail VMS version Q00631 or higher or an EliteMail FMS version QOS531 or higher are required.

EliteMail ETI supports Live Monitoring using ViewCall Plus ONLY. It does not support Live Monitoring via telephone.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

L-5 LIVE RECORD

Live record simplifies Message and note taking by permitting a portion of the conversation in progress to be recorded automatically or manually.

L-6 LOOP START TRUNKS

Loop Start Trunks can be connected to the Electra Elite IPK 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. The COI(4)-U( ), COIB(4)-U20, and COIB(8)-U( ) ETU are Loop Start only.

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.

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

Microphone Control allows 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)-U( ) ETU to place a multiparty conference call. Each CNF(8)-U( ) ETU supports one 8-party conference or two 4-party conferences regulated by a switch setting. Two CNF(8)-U( ) ETUs may be installed. DSP based amplification provides a higher quality conference call.

M-5 MULTILINGUAL LCD INDICATION

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

With **R3000 or higher**, a multilingual Clock/Calender display is supported.

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 outside trunks. With Tenant Service, different tenants can be programmed to access only their Trunk group.

M-7 MUSIC ON HOLD

A locally provided external 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 allows CO ports to provide multiple music sources to different COs in the system.

N-1 NEC Elite PC Assistant

This new feature allows basic telephone functionality through a software interface from a desktop application. The CT(U)-R/CT(A)-R Adapter is the TAPI device for the application to control the user telephone. Using this application, the user can easily manage call handling tasks without switching attention between the telephone and the PC.

For Call Park to work, Memory Block 1-8-51 (Call Park Selection) must be set to LK1 to support 10 park locations (R4000 or higher).

N-2 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 key and dial a single Station Speed Dial buffer number to consecutively dial all four buffers.

System software permits input stored characters to be entered on the dial pad, but does not allow the character code table to be used.

N-3 NIGHT CALL PICKUP

Night Call Pickup functions when the system is in Night Mode and an incoming call rings. When the 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-4 NIGHT CHIME

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

N-5 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 Assigned Night Answer (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

Off-Hook Ringing 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

Off-Premise Extension allows a 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.

O-3 ONE-TOUCH FEATURE ACCESS

One-Touch Feature Access is provided with Multiline Terminals to allow a Multiline Terminal user 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 PROGRAMMING

The MIFM-U( ) 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 disk 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.

With **R1500 or higher**, refer to the *Electra Elite IPK and Electra Elite System Administration Terminal (SAT) Technician's Guide* for details.

With **R2000 or higher**, SAT software allows many user programmable settings (*e.g.*, DND or Call Forward) to be assigned and saved as part of the database.

With **R3000 or higher**, PC Programming (SAT) can be used with the new MIFM-U20 ETU and the SPE(M)-U( ) ETU.

P-2 POOLED LINE (OUTGOING)

Pooled Line (Outgoing) 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-3 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-U( ) KSU provides three circuits for this feature. When power returns, any conversation in progress is disconnected.

P-4 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.

P-5 PRIME LINE ASSIGNMENT

Prime Line Assignment 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 assignment of a trunk, Trunk group, or Route Advance Block.

P-6 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-7 PRIVACY RELEASE

Privacy Release allows the multiline terminal user to release the 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.

P-8 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-9 PROGRAMMING FROM MULTILINE TERMINAL

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

P-10 PUSHBUTTON DIAL - DTMF OR DP

Pushbutton Dial – DTMF or DP is provided on all Single Line Telephones and outside lines. Tie Lines are assigned per trunk to generate either Dual-Tone Multifrequency (DTMF) or Dial Pulse (DP) dialing signals.

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.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

R-1 RECALL KEY

The Recall Key either generates a hookflash to access features provided by the outside exchange or abandons a call while retaining the CO/PBX line for 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

Users can press the Redial key and dial the Speed Dial buffer number to access System and Station Speed Dial. Users can also press the Redial key and ∗ to redial the last outside 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

The Route Advance Block assigns up to 32 tables. Each table can 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

Save and Repeat allows a Multiline Terminal user to save the last outside number dialed in system memory for later use.

With **R4000 or higher**, # # must be entered (Instead of #) to repeat the saved number.

S-2 SCROLLING DIRECTORIES

Scrolling Directories functions like a telephone directory, and provides an Electra Elite IPK Display Multiline Terminal user a list of system and/or station speed dial numbers. Using Softkeys, the user can select a speed dial number and press the Speaker key or lift the handset to dial the number.

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)-U( ) 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 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

S-6 SINGLE POINT OF ENTRY (SPE)

This feature provides a single access point (remote or direct) to configure the system and/or individual ETUs. The SPE(M)-U( ) ETU provides the same functions as the MIFM-U10 with the KMM( )-U PAL chip installed or the MIFM-U20 with the KMM-U20 upgrade chip installed, and comes with a standard built-in modem. An Ethernet port is provided to allow programming over a network using TCP/IP.

The SPE(M)-U( ) ETU has six physical COM ports. Two ports go through the backplane to COM1 for PC Programming and COM2 for SMDR on the side of the KSU just like the MIFM-U( ) ETU. The other four ports (COM-A, COM-B, COM-C, and COM-D) are accessible along the front of the ETU to interface other programmable ETUs (*e.g.*, VMS).

S-7 SINGLE LINE TELEPHONE ACCESS

The Expanded Port Package allows connection of 112 Electra Elite IPK system Single Line Telephones (SLTs). The Basic Port Package allows the connection of 24 Single Line Telephones. Single Line Telephone users can make CO/PBX calls, internal calls, and paging calls.

With **R2000 or higher**, a Single Line Telephone user can perform a Trunk-to-Trunk Transfer or make a 1 terminal to 2 outside parties conference call.

With **R3000 or higher**, Caller ID to Single Line Telephones is supported only for the incoming outside trunk calls (Loop Start, T1, ISDN, BRI, or PRI). Send Caller ID Information to Single Line Telephones Class of Service is added. Version 1.54 is required for the SLIB(4)-U10 ETU to support Caller ID to Single Line Telephones.

S-8 SLT ADAPTER

The Single Line Telephone (SLT) Adapter allows a port of an ESIB(8)-U( ) or ESIE(8)-U( ) ETU to support a Single Line Telephone. A Single Line Telephone can be connected to the ESI(8)-U( ) ETU using the SLT Adapter and 2-wire cable. Eight SLT(1)-U( ) ADP Single Line Telephone Adapters can be installed in the Electra Elite IPK system.

With **R2000 or higher**, a Single Line Telephone connected to the SLT(1)-U( ) ADP can be used to perform a Trunk-to-Trunk Transfer or make a 1 terminal to 2 outside parties conference call.

S-9 SLT TIMED ALARM

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

S-10 SOFTKEYS

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

With **R4000 or highe**r, Interactive softkeys are supported.

S-11 SPEED DIAL - STATION

When 100-memory allocation is specified, each station in the system can be assigned 20 Station Speed Dial buffers. Each Station Speed Dial buffer may contain 24 digits or four other buffer numbers (Nesting Dial) and the called party name. The DTH/DTR/-32D-1 TEL, DTU/DTP-32-1 TEL, and DTU-32D-2 TEL have 16 One-Touch keys that can also be used for Speed Dial. The One-Touch key buffer may contain a maximum of 16 digits with no characters for names.

Using System Software these keys can be used for station speed dialing in addition to the 20 station speed dial buffers. System Software permits input stored characters to be entered on the dial pad.

S-12 SPEED DIAL STORED CHARACTERS

Speed Dial buffers may contain 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.

When1000-memories are allocated, a maximum of 12 characters can be entered for the name. System Software permits input stored characters to be entered on the dial pad.

S-13 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 Software permits input stored characters to be entered on the dial pad, but does not allow the Character Code Table to be used.

With **R4000 or higher**, an additional 10 Station Speed Dials are supported when the system is assigned for 1000 System Speed dials.

S-14 Station Add-On Console

This console functions with a Multiline Terminal to provide an additional 16 DSS/BLF keys. The Busy Lamp Field status is shown by icons for each station or feature. This console has an additional 100 programmable speed dials that are separate from the System or Station Speed dials (**R4000 or higher**).

S-15 STATION CAMP-ON

Station Camp-On 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-16 STATION HUNT

Station Hunt distributes internal and outside calls to multiple stations in a Station Hunt group. When a dialed station number programmed as an Intercom Master Hunt Number is busy, the call is forwarded to another station in that hunt group.

S-17 STATION MESSAGE DETAIL RECORDING (SMDR)

An optional MIFM-U( ) ETU provides detailed outside call records of system telephone usage to support cost control by identifying telephone users, trunk usage, and digits dialed. SMDR enables connection of call accounting equipment to audit local and long distance telephone bills.

When 5-, 6-, or 7-digit station numbers are used (**R2500 or higher**), only the last four digits of the extension number are printed by SMDR.

With **R4000 or higher**, SMDR can be supported over Ethernet (SMDRoE). SMDRoE enables connection of call accounting equipment such as Elite CallAnalyst Enterprise using TCP/IP to audit local and long distance telephone bills.

S-18 Station Name Assignment – User Programmable

This feature allows a user to program a 16-character Station Name for telephone extensions and allows the Attendant Station user to program any extension in the system (**R4000 or higher**).

S-19 STATION OUTGOING LOCKOUT

Station Outgoing Lockout allows a station user to restrict outgoing calls by assigning a personal password.

S-20 STATION RELOCATION

Station Relocation enables a station to be moved from one location to another without programming the station data again. The station features and extension number are the same after it is moved to the new location.

S-21 STATION TRANSFER

Station Transfer 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. To initiate Call Transfer, press the Transfer key on a Multiline Terminal or use the hookswitch on a Single Line Telephone. The transfer is completed by going on-hook on a Multiline Terminal or Single Line Telephone.

S-22 STEP CALL

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

S-23 STORE AND REPEAT

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

With **R4000 or higher**, # # must be entered (instead of #) to repeat the stored number.

S-24 STORED HOOKFLASH

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

S-25 SYNCHRONOUS RINGING

Synchronous Ringing synchronizes CO/PBX incoming ringing with the incoming ringing pattern from a Central Office.

S-26 SYSTEM DATA UP/DOWN LOAD

System Data Up/Down Load, included with NEC Electra Elite IPK System Administration Terminal (SAT) Software, transfers Station Speed Dial data, System Speed Dial data, and all System Data from/to an NEC PowerMate® or Pentium[1]-compatible PC. System Data Up/Down Load can be performed locally or from a 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-U( ) ETU, provides for different types of trunk signaling with FT1 carrier links using System Programming. The DTI-U( ) ETU supports Loop Start/Ground Start, Tie line/DID trunks.

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)-U( ) ETU by a programmable transmission pad to adjust to the line loss levels of the Tie line accessed.

T-3 TENANT SERVICE

Tenant Service subdivides the system into a maximum of 48 Tenants that have outside line access.

1. Pentium is a registered trademark of Intel Corporation.

T-4 THREE-MINUTE REMINDER

The Three-Minute Reminder tone is heard every three minutes by the Multiline Terminal user who originated or answered an outside call.

T-5 TONE OVERRIDE

The Multiline Terminal user that calls a busy station and receives a call waiting tone can generate a Tone Override that is heard by the originator and busy station. The busy station user can place the existing call on hold to answer the Override.

T-6 TRUNK QUEUING

Trunk Queuing increases call processing efficiency. When all outside lines or a selected line are busy, the telephone user can queue on the busy line. When a line becomes available, the system provides an internal incoming ring to the queuing station. When the line is no longer needed, the queue request can be canceled before the line becomes available by dialing an Access Code. Each station user can queue 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

Trunk-to-Trunk Transfer allows any station user to establish Trunk-to-Trunk Transfers between two CO/PBX (when disconnect signal is provided), DID, and/or E&M Tie line calls.

With **R2000 or higher**, a Single Line Telephone or PSII user can perform Trunk-to-Trunk Transfer.

T-8 TWO-COLOR LEDS

Multiline Terminals have Two-Color (green or red) LEDs for Flexible Line keys and the Large LED indications. The color indicates station status (red) or message status (green). Green indicates 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 2-color (green or red) LEDs for direct access to stations.

U-1 UNIFIED MESSAGING

The EliteMail CTI Voice Processing systems, using the Electra Elite IPK system and a Local Area Network, provide Unified Messaging services for voice, fax and e-mail messages with access at either the desktop PC or the telephone. Unified Messaging lets the PC control telephone calls and information about each call, both inbound and outbound. This system includes the basic EliteMail CTI TeLANophy® Module.

With **R1500 or higher**, CoSession, a communication tool available from NEC, can be used for ELiteMail to perform configuration, maintenance and backup functions. When 5-, 6-, or 7-digit station numbers are used (**R2000 or higher**), this feature is unavailable.

U-2 UNIFIED MESSAGING – EliteMail CTI-LX Lite

This feature uses the Electra Elite IPK system and a Local Area Network to provide Unified Messaging services for voice, fax, and Email messages with access at either the desktop PC or the telephone and lets the PC control telephone calls and information about each inbound and outbound call (**R4000 or higher**).

U-3 UNIFORM CALL DISTRIBUTION (UCD)

Uniform Call Distribution permits incoming DIT/ANA, DID/Tie, and CO ring transferred calls to terminate in a prearranged hunt group. Incoming calls are distributed based on *longest idle* time among all members 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 programmed time.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

U-4 UNIFORM NUMBERING NETWORK

Uniform Numbering Network allows multiple or compatible systems to be connected in a network using Tie lines. A Station user 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.

With **System Software R2500**, 2~7-digit station numbers can be assigned.

U-5 UNIVERSAL SLOTS

The Electra Elite IPK system, B64-U( ) KSU, has eight universal slots and up to three cabinets can be installed. The system uses the same KSU for the basic and expansion cabinets to support up to 24 Universal Slots.

With **R1500 or higher**, the IAD(8)-U( ) ETU optional interface has been added to support IP CCH ETU and Megaco Station applications. Tables have also been added to show the component limitations regulated by the number of installed ESI, ESIB, and ESIE ETUs.

With **R3000 or higher**, the SLIB/SLIE(4)-U10 ETU, MIFM-U20 ETU, and SPE(M)-U( ) ETU are added to the Universal Slots.

U-6 UNSUPERVISED CONFERENCE

The Unsupervised Conference allows a Multiline Terminal user to exit an established conference call and leave the remaining parties to continue talking. This same user can then reenter the conference anytime.

U-7 USER PROGRAMMING ABILITY

A Station user can perform programming functions. 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)

Voice Mail Integration (Analog) provides the interface between the Expanded Port Package and the Basic Port Package and a locally-provided **analog** 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. When the Voice Mail system has the ability, a message can be sent to the station indicating a Voice Mail Message was received. The two packages can support a maximum of 16 ports for Analog Voice Mail when Digital Voice Mail integration or Built-in Voice Mail is not available.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

V-2 VOICE MAIL MESSAGE INDICATION ON LINE KEYS

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

V-3 VOICE OVER INTERNET PROTOCOL (VoIP) TRUNK CARD

Voice over IP sends the real time voice/fax over the corporate LAN or WAN. The voice from the telephone is digitized and then put into packets to be sent over a network using Internet protocol.

Savings in the telephony charges for calls between two KTSs and using the LAN/WAN infrastructure to its full capacity are advantages in having VoIP for the Electra Elite IPK system.

The IAD(8)-U( ) ETU is an optional interface that can combine trunk and Tie line calls into Gateway trunks using Session Initiation Protocol (SIP) or H.323 Protocol that can operate in the following operating modes: COI, COID, DID, DTI, and TLI.

Depending on the requirements and resource allocation in the LAN/WAN/ Internet, the IAD(8)-U( ) ETU can be configured to use any of the following voice compressions: G.711 Mu Law — Highest Bandwidth, G.723 — Lowest Bandwidth, G.729(a) — Most often used.

The IAD(8)-U( ) ETU is assigned as a two-port TLI(2)-U( ) ETU, 4-port DID(4)/COI(4)/COIB(4)/COID(4)-U( ) ETU, an 8-port COI(8)/COIB(8)/ COID(8)-U( ) ETU or an 8-port DTI(8)-U( ) and can be installed in any interface slot. The LAN/WAN or internet connection is provided by a 10/100 Base T Ethernet. 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, only the station that received the Voice Over hears it.

V-5 VOICE PROMPT

Voice Prompt provides voice guidance for assisting station users. The voice prompt replaces the call waiting tone and/or internal dial tone.

A VRS(4)-U( ) ETU *must be installed*.

W-1 WIRELESS

Using a Personal Station, *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)-U( ) 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 a *D*^{term} PS II.

With **R2000 or higher**, the PSII user can perform a Trunk-to-Trunk Transfer or make a 1 terminal to 2 outside parties conference call.

When 5-, 6-, or 7-digit station numbers are used, this feature is unavailable.

W-2 Wireless – DECT

This feature allows 2.4 GHz IPK Wireless – DECT (Digital Enhanced Cordless Telecommunication) telephones. A BSU(M)-U20 ETU interfaces the Electra Elite IPK KSU with four Base Stations that can be expanded to 16 base stations using the BSU(2S)-U20 and BSU(6S)-U20 ETUs.

Chapter 3

Equipment

Equipment

CHAPTER 3

SECTION 1 EQUIPMENT LIST

The tables below list all equipment used with the Electra Elite IPK system. The equipment name, a description of the equipment, and the maximum capacities that are allowed for a Basic Port Package and an Expanded Port Package are given. The Equipment Name is listed alphabetically by category.

The maximum capacities available in the Electra Elite IPK system are shown in Table 3-1 Maximum System Capacities for Station Interface ETUs, Table 3-2 Maximum System Capacities for Trunk Interface ETUs, and Table 3-3 Maximum System Capacities for Application Interface ETUs.

Table 3-1 Maximum System Capacities for Station Interface ETUs

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
ACD(8)-U( ) ETU	8-port ACD System The Automatic Call Distribution ETU interfaces the Elite ACD Plus Server with the Electra Elite IPK KSU. This ETU is installed in slots S1~S8 in any KSU.	1	1	Notes 1, 7, 10
CMS(2)/(4)-U( ) ETU	2- or 4-port Digital Voice Mail System The CMS(2)/(4)-U( ) ETU is a Digital Voice Mail system that supports a maximum of eight ports.	1	1	Notes 1, 3, 4, 5, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
CNF(8)-U( ) ETU	8-port Conference Unit The Multiline Conference Bridge allows any intercom user or outside party calling to a port of the CNF(8)-U( ) ETU to join or make a multiparty Conference Call. Each CNF(8)-U( ) ETU supports one 8-party conference or two 4-party conferences regulated by a switch setting. This ETU is installed in slots S1~S8 in the B64-U20 KSU. The system recognizes this ETU as SLI(8)-U( ) ETU. This ETU shares the total number of station ports in the system.	2	2	Notes 1, 8, 9
CTI(12)/(16)-U( ) ETU (Daughter Board)	This ETU and the 4- and 8-port ETU provide a 12- or 16-port Digital Voice Mail system with ports that support TeLANophy, inbound/outbound faxing, and Hospitality/HVM applications. It is installed in one of the interface slots. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 6, 10
CTI(4)/(8)-U( ) ETU (System Board)	This ETU is a 4-or 8-port Digital Voice Mail system with ports that support TeLANophy, inbound/outbound faxing, and Hospitality/HVM applications. It is installed in one of the interface slots. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
ESI(8)-U( ) ETU	8-port Electronic Station Interface The Electronic Station Interface ETU contains eight circuits. Each circuit can support any Attendant Console, Multiline Terminal, or Single Line Telephone adapter. This ETU is installed in slots S1~S8 in the basic or expansion B64-U20 KSU. The maximum number depends on other station cards installed. This ETU shares the total number of extension ports in the system.	4	15	Notes 1, 10
ESIB(8)-U( ) ETU	8-port Electronic Station Interface The Electronic Station Interface ETU contains eight circuits. Each circuit can support any Attendant Console, Multiline Terminal, or Single Line Telephone adapter. This ETU is installed in slots S1~S8 in the basic or expansion B64-U20 KSU. The maximum number depends on other station cards installed. This ETU shares the total number of extension ports in the system.	4	15	Notes 1, 2, 10
ESIB(8)-U( ) ETU with ESIE(8)-U( ) ETU	ESIB(8)-U( ) ETU – 16-port Electronic Station Interface The Electronic Station Interface ETU contains eight circuits. Each circuit can support any Attendant Console, Multiline Terminal, or Single Line Telephone adapter. This ETU is installed in slots S1~S8 in the basic or expansion B64-U20 KSU. The maximum number depends on other station cards installed. This ETU shares the total number of extension ports in the system. The ESIE(8)-U( ) ETU is installed on the ESIB(8)-U( )ETU.	2	7	Notes 1, 2, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
FMS(2)/(4)-U( ) ETU	2- or 4-port Digital Voice Mail system This ETU is installed in one of the interface slots. It has two or four channels of built-in Voice Mail. The system recognizes this ETU as VMS(4)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 3, 4, 5
FMS(8)-U( ) ETU	8-port Digital Voice Mail system This ETU is installed in one of the interface slots. It has eight channels of built-in Voice Mail. The system recognizes this ETU as VMS(8)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 3, 4, 5
OPX(2)-U( ) ETU	2-port Off-Premise Extension Interface The Off-Premise Extension ETU provides termination and operation 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. This ETU is installed in slots S1~S8 in any B64-U20 KSU. This ETU shares the total number of station ports in the system.	6	22	Notes 1, 3
SLI(4)-U( ) ETU	4-port Single Line Interface The Single Line Interface ETU supports 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. This ETU is installed in slots S1~S8 in any B64-U20 KSU. The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.	6	22	Notes 1, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
SLI(8)-U( ) ETU	8-port Single Line Interface The Single Line Interface ETU supports 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. This ETU is installed in slots S1~S8 in any KSU. The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.	3	14	Notes 1, 10
SLIB(4)-U( ) ETU	4-port Single Line Interface The Single Line Interface ETU supports four Single Line Telephones . This ETU provides Ringing Signal Generator (RSG), and Message Waiting (MW) LED voltage to Single Line Telephones. This ETU is installed in slots S1~S8 in any KSU. The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.	6	22	Notes 1, 10
SLIB(4)-U( ) ETU with SLIE(4)-U( ) ETU installed	8-port Single Line Interface The SLIB(4)-U ETU with the SLIE(4)-U( ) ETU installed supports eight Single Line Telephones. Ringing Signal Generator (RSG), and Message Waiting (MW) LED voltage is provided to Single Line Telephones. This combination ETU is installed in slots S1~S8 in any KSU. The maximum number depends on other station cards installed. This ETU shares the total number of station ports in the system.	3	14	Notes 1, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
VMS(2)/(4)-U( ) ETU	2-or 4-port Digital Voice Mail System This ETU is installed in one of the interface slots. It has two or four channels of built-in Voice Mail. The system recognizes this ETU as VMS(4)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 3, 4, 5, 10
VMS(8)-U( ) ETU	8-port Digital Voice Mail System This ETU is installed in one of the interface slots. It has eight channels of built-in Voice Mail. The system recognizes this ETU as VMS(8)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 10
VMP(2)/(4)-U( ) ETU	2-or 4-port Digital Voice Mail System This ETU is installed in one of the interface slots. It has two or four channels of built-in Voice Mail. The system recognizes this ETU as VMS(4)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 3, 4, 5, 10
VMP(8)-U( ) ETU	8-port Digital Voice Mail System This ETU is installed in one of the interface slots. It has eight channels of built-in Voice Mail. The system recognizes this ETU as VMS(8)-U( ) ETU. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 10

Table 3-1 Maximum System Capacities for Station Interface ETUs (Continued)

Station Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
VP(12)/(16)-U( ) ETU (Daughter Board)	This ETU and the 4- or 8-port ETU provide a 12- or 16-port Digital Voice Mail system with ports that support TeLANophy, inbound/outbound faxing, and Hospitality/HVM applications. It can be installed in one of the interface slots. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 6, 10
VP(4)/(8)-U( ) ETU (System Board)	This ETU is a 4-or 8-port Digital Voice Mail system with ports that support TeLANophy, inbound/outbound faxing, and Hospitality/HVM applications. It can be installed in one of the interface slots. This ETU shares the total number of station ports in the system.	1	1	Notes 1, 4, 5, 10

Note 1: Calculating maximum capacities is based on the system having a minimum of eight Electronic Station Interface (ESI) ports and four trunk ports.

Note 2: When seven ESIB(8)-U( ) ETUs with seven ESIE(8)-U( ) ETUs are installed, eight additional station ports are available.

Note 3: When 2-port Station Interface ETUs are installed, the system uses four ports from its maximum port capacity.

Note 4: Only one CMS, FMS, VRS, VMP, VP, CTI, or IVR system can be installed in one Electra Elite IPK system.

Note 5: In Memory Block 7-2 (Telephone Type Assignment), a maximum of 32 Digital Voice Mail ports are available.

Note 6: Two physical Interface Slots are used for the EliteMail VP (12)/(16)-U( ), or CTI (12)/(16)-U( ) ETU.

Note 7: The ACD(8)-U( ) ETU is assigned as VMS 8 in Memory Block 7-1 (Card Interface Slot Assignment), and as Digital VM in Memory Block 7-2 (Telephone Type Assignment).

Note 8: The CNF(8)-U( ) ETU is assigned as SLI 8 in Memory Block 7-1 (Card Interface Slot Assignment), and as YS (VM) in Memory Block 4-35 (Voice Mail/SLT Selection).

Note 9: A maximum of 16 analog Voice Mail ports are available in Memory Block 4-35 (Voice Mail/SLT Selection).

Note 10: Refer to the KSU power-based ETU quantity limitations in Table 3-4 KSU Power-Based ETU Quantity Limitations for Systems without EliteMail VP/CTI or CTI ETU loaded with Q-Master application, and Table 3-5 KSU Power-Based ETU Quantity Limitations for Systems with EliteMail VP/CTI or CTI ETU loaded with Q-Master Application.

Table 3-2 Maximum System Capacities for Trunk Interface ETUs

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
BRT (4)-U( ) ETU	4-port ISDN Interface for 8 trunks This Basic Rate Interface unit provides four channels (eight voice channels) for ISDN-Basic Rate Interface. Caller ID is supported. This ETU is installed in slots S1~S4 in the basic or first expansion B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system. A CLKG-U( ) Unit must be installed.	2	8	Note 1
COI(4)-U( ) ETU	4-port CO/PBX Line Interface Electrical fuses (posistors) are built into this ETU that supports four outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing. The outside lines must be Loop Start DTMF trunks. This ETU is installed in slots S1~S8 in the basic or expansion B64-U20 KSU. This ETU can provide an E911 CAMA trunk. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.	4	16	Note 1

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
COI(8)-U( ) ETU	8-port CO/PBX Line Interface Electrical fuses (posistors) are built into this ETU that supports eight outside (CO/PBX) lines and provides circuitry for ring detection, holding, and dialing. The outside lines can be any combination of Loop Start or Ground Start DTMF trunks. This ETU is installed in slots S1~S8 in the basic or expansion B64-U20 KSU. This ETU can provide an E911 CAMA trunk. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.	2	8	Note 1
COIB(4)-U( ) ETU	4-port COI or COID (CO/PBX) Line Interface This ETU can function the same as the COI(4)-U( ) or COID(4)-U( ) ETU to provide Central Office interface. When ETU is set for COID mode, Loop Start trunks and/or Caller ID trunks are supported. The COIB(4)-U20 supports loop start only. When the ETU is set for COI mode, Loop Start or Ground Start is supported using COIB(4)-U10. Caller ID is **not** supported in COI mode. Connections for Ground Start trunks are polarity sensitive. Only DTMF signaling is supported. This ETU can provide an E911 CAMA trunk. COID mode: Caller ID trunks must be installed in slots 1~4. This ETU shares the total number of CO/PBX lines in the system. Tip and Ring electrical fuses are provided to comply with UL 1459 requirements.	4	14	Note 1

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
COIB(8)-U( ) ETU	8-port (COI or COID CO/PBX Line Interface This ETU can function the same as the COI(8)-U( ) or COID(8)-U( ) ETU to provide Central Office interface. When ETU is set for COID mode, Loop Start trunks and Caller ID trunks are supported. When the ETU is set for COI mode, Loop Start is supported. **Ground Start Trunks are not supported**. Caller ID is **not** supported in COI mode. Fax CO Branch is not supported. Only DTMF signaling is supported. This ETU can provide an E911 CAMA trunk on port 3 or 7. The maximum number depends on other Trunk cards installed. This ETU shares the total number of CO/PBX lines in the system. Tip and Ring electrical fuses are provided to comply with UL 60950 requirements.	2	8	Note 1
DID (4)-U( ) ETU	4-port Direct Inward Dialing Interface The Direct Inward Dialing Interface Unit supports four DID or four 2-way DID lines. Each DID(4)-U( ) ETU requires one interface slot position in the KSU. ✎ Immediate, wink start, second dial tone, and delay dial signaling can be combined on this ETU. This ETU is installed in slots S1~S8 in any B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.	4	16	Note 1

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
DTI-U( ) ETU	T1/FT1 Trunk Interface The Digital Trunk Interface ETU provides termination of Fractional T1 (24 DS-0 channels) lines. This ETU contains circuitry for outside ring detection, holding, dialing, control function, Tie line (E&M), and DID signaling. Automatic Number Indication (ANI) is supported. Only the DTI-U30 ETU supports K-CCIS common channel signaling. 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. This ETU is installed in any slot in the basic or expansion B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system. A CLKG-U( ) Unit must be installed.	4	8	Note 1, 3, 4, 5

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
DTI-U40 ETU	T1/FT1 Trunk Interface The Digital Trunk Interface ETU terminates Fractional T1 trunks (up to24 DS-0 channels). This ETU supports K-CCIS, ANI/DNIS trunks, and CSU Less Function on T1. A combination of Loop Start and Ground Signaling can be used on the DTI-U40 ETU. Dial Pulse dialing, DTMF, Tie line (E&M), and DID are supported. This ETU has 24 built-in DTMF detectors. Each trunk is assigned in groups of four. When channels are assigned to ANI, Feature Group D is supported. Feature Group D incoming MF/outgoing DTMF signaling is also supported. This ETU also supports K-CCIS signaling with point-to-point E&M Tie Lines. This ETU is installed in any slot in the basic or expansion B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system. A CLKG-U( ) Unit must be installed.			
EXPT(2)-U ETU	T1/FT1 Trunk Interface The EXPT(2)-U ETU allows multiple IPK Systems to be connected with a K-CCIS connection. This ETU combines the functions of the EXP-U ETU and the DTI-U( ) ETUs (one DTI for system 1 and one DTI for system 2. This ETU can be installed only in S1 of the basic cabinet of the system. A maximum of four cabinets can be connected.			Note 1, 6

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
IPT(4)-U( ) ETU	4-port Voice over Internet Protocol Trunk Interface This IP Gateway ETU is an optional Interface that can combine trunk calls into Gateway trunks. This ETU can emulate the following ETUs: TLI(2)-U( ), DID(4)-U( ), COI(4)-U( ), or COIB(4)-U( ). Refer to the applicable ETU assignment for the trunk capacity. This ETU can be installed in KSU slots that support the applicable assigned ETU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system. This ETU shares the total number of station ports in the system.	4	15	Note 1, 5
IPT(8)-U( ) ETU	8-port Voice over Internet Protocol Trunk Interface This IP Gateway ETU is an optional Interface that can combine trunk calls into Gateway trunks. This ETU can emulate the following ETUs: TLI(2)-U( ), DID(4)-U( ), COI(8)-U( ), or COIB(8)-U( ). Refer to the ETU type assignment for the trunk capacity. This ETU can be installed in KSU slots that support the applicable assigned ETU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.	2	7	Note 1

Table 3-2 Maximum System Capacities for Trunk Interface ETUs (Continued)

Trunk Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
PRT(1)-U( ) ETU	ISDN-Primary Rate Trunk Interface 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. This ETU is installed in slots S1 ~ S8 in the basic and expansion B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of Trunk lines in the system. A CLKG-U( ) Unit must be installed.	4	8	Note 1, 3, 4
TLI (2)-U( ) ETU	2-port Tie Line Interface The Tie Line Interface ETU supports the termination and operation of two E&M Tie lines (4-wire, type I and type V, and 10/20 pps Dial Pulse or DTMF). ✎ Immediate, wink start, second dial tone, and delay dial signaling can be combined on this ETU. This ETU is installed in slots S1~S8 in the B64-U20 KSU. The maximum number depends on other trunk cards installed. This ETU shares the total number of CO/PBX lines in the system.	4	16	Note 2

Note 1: Calculating maximum capacities is based on the system having a minimum of eight Electronic Station Interface (ESI) ports and four Trunk ports.

Note 2: When 2-port Trunk Interface ETUs are installed, the system uses four ports from its maximum port capacity.

Note 3: With the Basic Port Package, a maximum of four DTI-U( ) ETUs, PRT(1)-U( ) ETUs, or a combination of both can be installed. If four DTI or PRT ETUs or a combination of both are installed, up to four trunks each can be assigned.

Note 4: With the Expanded Port Package, a maximum of eight DTI-U( ) or PRT(1)-U( ) ETUs, or a combination of both can be installed. When eight DTI or PRT ETUs or a combination of both are installed, up to eight trunks each can be assigned.

Note 5: With the Electra Elite IPK Expanded Port Package, a maximum of 14 of the following 4-port trunk-type interface ETUs can be installed:

- COIB(4)-U( ) ETU [installed as COID(4)-U( ) ETU]
- DTI-U( ) ETU (installed as DTI4)
- IPT(4)-U( ) ETU [installed as COID(4)-U( ) ETU or DTI4]

- PRT(1)-U( ) ETU (installed as PRT4)

Note 6: The EXPT(2)-U ETU is assigned as a DTI8 in Memory Block 7-1.

Table 3-3 Maximum System Capacities for Application Interface ETUs

Application Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
BSU(2)-U( ) ETU	2-Channel - Base Station Unit for Wireless 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 KSU. A CLKG-U( ) Unit must be installed.	8	8	
BSU(4M)-U20 ETU	4-Channel Base Station Unit (Master) for Wireless DECT with connection for up to 16 Base Stations when using two BSU(6S) ETUs. This ETU is installed in slots S1~S8 (S2~S8 when using one slave ETU or S3~S8 when using two slave ETUs) in any KSU.	1	1	Notes 6, 7
BSU(2S)-U20 ETU	2-Channel Base Station Unit (Slave) for Wireless DECT with connection for two Base Stations and must be used with the BSU(4M)-U20 ETU. This ETU is installed in the first or second slot to the left of the BSU(4M)-U20 ETU.	2	2	Notes 6, 7
BSU(6S)-U20 ETU	6-Channel Base Station Unit (Slave) for Wireless DECT with connection for six Base Stations and must be used with the BSU(4M)-U20. This ETU is installed in the first or second slot to the left of the BSU(4M)-U20 ETU.	2	2	Notes 6, 7
CCH(4)-U( ) ETU	4-Channel - Common Channel Handler (CCH) for K-CCIS The CCH furnishes four K-CCIS routes to coordinate receiving common channel data from a distant system or to coordinate sending it to a distant system.	1	1	

Table 3-3 Maximum System Capacities for Application Interface ETUs (Continued)

Application Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
DPH(4)-U( ) ETU	4-Channel - Door Phone Interface Unit 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. This ETU is installed in slots S1~S8 in any KSU.	1	1	
ECR-U( ) ETU	External Control Relay Unit 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-U20 KSU.	1	1	
HUB(8)-U( ) ETU	This ETU is an optional Ethernet Interface that supports eight Ethernet ports. Each port has two LEDs that indicate status and activity. One port can be a source port and another port can be used to mirror source and monitor data traffic. One ETU can be installed in slots S1~S8 in each cabinet. **This ETU cannot be installed in a KSU that contains EliteMail VP and IVR or CTI and IVR systems**.	1	1	Note 4
IAD(8)-U( ) ETU	This ETU is an optional interface integration device that supports various IP applications such as IP CCH and Megaco Station Applications. This ETU can be installed in any KSU slot that supports the DTI or ESI ETU it simulates. The maximum number depends on other station cards installed. This ETU shares the total number of extension ports in the system.	4	8 for DTI 15 for ESI	Note 4

Table 3-3 Maximum System Capacities for Application Interface ETUs (Continued)

Application Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
IVR Application (VMP(4)/(8)-U( ) ETU with IVR HDD Kit)	This ETU is an Interactive Voice Response system with 4 ports to support IVR applications. When the DSP-U( ) module is attached, 8 ports are available. It can be installed in any interface slots. This ETU shares the total number of station ports in the system.	1	1	Note 5
MIFA-U( ) ETU	Multiple Interface Unit for UCD/ACD This ETU provides additional memory for processing ACD/UCD. When ACD feature is desired, the KMA(1.0)U must be installed.	1	1	Note 1, 3
MIFM-U10 ETU	Multiple Interface Unit for Multifunction 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	1	Note 1, 2
MIFM-U20 ETU	Multiple Interface Unit for Multifunction This ETU provides additional memory and processing power for PC programming, Wireless activation, SMDR, LCR, ANI/Caller ID scrolling. PC programming, Wireless activation, and SMDR are standard. When the LCR or Caller ID Scroll functions are desired, the KMM-U20 upgrade chip must be installed.	1	1	Note 1, 2, 5
PBR( )-U( ) ETU	4-Channel - Push Button Receiver Unit 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 CPUI( )-U( ) ETU.	1	1	

Table 3-3 Maximum System Capacities for Application Interface ETUs (Continued)

Application Interface ETUs	Description	Maximum Capacities		Notes
		Basic Port Package	Expanded Port Package	
SPE(M)-U( ) ETU	Single Point of Entry This ETU provides a single (remote or direct) access point to configure the system and individual ETUs. This ETU contains all the functionality of the MIFM-U10 ETU with KMM(1.0)U installed or the MIFM-U20 with the KMM-U20 installed. An Ethernet port is provided to allow programming over a network using TCP/IP. Serial, modem or Ethernet communication can be used.	1	1	Note 1, 5
VRS(4)-U( ) ETU	4-Channel - Voice Recording Service Unit 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 any KSU.	2	2	

Note 1: The MIFM-U( ), MIFA-U( ), or SPE(M)-U( ) ETU must be installed in the AP slot, slot S1, or slot S2 of the first B64-U20 KSU.

Note 2: The MIFM-U10 ETU has an optional built-in modem that works only when the MIFM-U10 ETU is installed in slot S1 or slot S2 of the first B64-U20 KSU. The MIFM-U20 ETU optional MOD-U10 Unit modem can be installed when the MIFM-U20 ETU is installed in slot S1 or S2 of the first B64-U20 KSU.

Note 3: The MIFA-U( ) ETU (with KMA(1.0)U installed) has an ACD-MIS output that works only when the MIFA-U( ) ETU is installed in the ISA slot. When ACD-MIS and remote SAT PC programming are required, install the ACD-MIS in the ISA slot and the MIFM-U( ) ETU in slot S1 or slot S2 of the first B64-U20 KSU.

Note 4: **R1500 or higher** is required.

Note 5: **R3000 or higher** is required.

Note 6: **R4000/R4500** only.

Note 7: A maximum of one BSU(M) Master and two BSU(2S)/(6S) Slave ETUs can be installed.

SECTION 2 KSU POWER-BASED ETU QUANTITY LIMITATIONS

Table 3-4 indicates the quantity limitations for systems without EliteMail VP/CTI. Table 3-5 indicates the quantity limitations for systems with EliteMail VP/CTI.

Table 3-4 KSU Power-Based ETU Quantity Limitations for Systems without EliteMail VP/CTI or CTI ETU loaded with Q-Master application

Number of ESI(8) ETUs*	Number of ESI Ports	Either EliteMail VP/ CTI	Maximum NO. of ACD+/CMS/FMS/ VMS/VMP/IPC/MG/ IVR/IPT/IAD/SLI/ OPX/BSU(4M)/ BSU(2S)/BSU(6S) or DID ETUs	Other ETUs
10	80	0	2	No Limitation
9	72	0	2	No Limitation
8	64	0	3	No Limitation
7	56	0	4	No Limitation
6	48	0	5	No Limitation
5	40	0	5	No Limitation
4	32	0	6	No Limitation
3	24	0	6	No Limitation
2	16	0	7	No Limitation
1	8	0	7	No Limitation

* The number of 8-port ESI ETUs installed including ESI(8)-U( ) ESIB(8)-U( ) ETU, or ESIE(8)-U( ) ETU.

✎ When the SPE(M)-U( ) ETU or MIFM-U20 with Ethernet option installed in the AP slot, the HUB or EliteMail CTI/VP ETU must be installed in a different cabinet.

✎ Only one CTI ETU can be installed in a KSU (EliteMail, VP, or Q-Master).

Table 3-5 KSU Power-Based ETU Quantity Limitations for Systems with EliteMail VP/CTI or CTI ETU loaded with Q-Master Application

Number of ESI(8) ETUs*	Number of ESI Ports	Either EliteMail VP/ CTI	Maximum NO. of ACD+/CMS/FMS/ VMS/VMP/IPC/MG/ IVR/IPT/IAD/SLI/ OPX/BSU(4M)/ BSU(2S)/BSU(6S) or DID ETUs	Other ETUs
9	72	1	0	No Limitation
8	64	1	0	No Limitation
7	56	1	1	No Limitation
6	48	1	2	No Limitation
5	40	1	2	No Limitation
4	32	1	3	No Limitation
3	24	1	4	No Limitation
2	16	1	4	No Limitation
1	8	1	5	No Limitation

* The number of 8-port ESI ETUs installed including ESI(8)-U( ) ESIB(8)-U( ) ETU, or ESIE(8)-U( ) ETU.

✎ When the SPE(M)-U( ) ETU or MIFM-U20 with Ethernet option installed in the AP slot, the HUB or EliteMail CTI/VP ETU must be installed in a different cabinet.

✎ Only one CTI ETU can be installed in a KSU (EliteMail, VP, or Q-Master).

Chapter 4

Installation, Programming, and Maintenance Overview

Installation, Programming, and Maintenance Overview

CHAPTER 4

SECTION 1 INSTALLATION

Reduced Installation Time

The Electra Elite IPK 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 IPK 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-U( ) ETU in the Electra Elite IPK 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-U( ) ETU and SPE(M)-U( ) ETU that can only be installed in the AP slot, slot S1, or slot S2 of the first B64-U( ) KSU. 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 (default) values are assigned in the System Program for all system and device parameters to allow 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 done using DTH/DTR/DTP-8D-1 TEL, ITH/DTU-8D-2 TEL, DTH/DTR/DTP-16D-1 TEL, ITH/DTU-16D-2 TEL, DTH/DTR/DTP-32D-1 TEL, or DTU-32D-2 TEL Multiline Terminal. The first two ESI(8)-U( ) or ESIB(8)-U( ) 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 calls in progress.

PC Programming

Using the MIFM-U( ) ETU or SPE(M)-U( ) ETU allows the user to program the system from a personal computer. System data can be transferred to/from a disk 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:

- Ringing Line Preference
- Feature Access and/or One-Touch keys (*e.g.*, Speed Dial or Direct Station Selection.)
- 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-U( ) ETU or SPE(M)-U( ) 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

Hardware Specifications

CHAPTER 5

SECTION 1 SYSTEM CAPACITY

The Electra Elite IPK system consists primarily of the Basic KSU and the Expansion KSUs. Expansion KSUs can be stacked vertically on the Basic KSU to expand the system capacity. Two expansion KSUs can be added to expand to 24 interface slots. The B64-U( ) KSU 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 IPK 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

Refer to Section 3 System Description on page 1-9 in Chapter 1 Introduction for maximum system capacities.

SECTION 2 TRAFFIC CAPACITY

Traffic Capacity	Basic Port Package	Expanded Port Package
Traffic Capacity (CPUI)	1200 BHCA	1200 BHCA

- Busy-Hour Call Attempts (BHCA) is the number of times a telephone call is attempted during the busiest hour.

SECTION 3 CABLING REQUIREMENTS AND SPECIFICATIONS

This section provides cabling requirements and specifications for various equipment used in the Electra Elite IPK 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 D^term Series i or D^term IP Terminal Loop Resistance and Cable Length and Table 5-2 Electra Elite/D^term Series E Multiline Terminal Loop Resistance and Cable Length for the loop resistance and cabling requirements for Multiline Terminals and adapters.)

Table 5-1 *D^term* Series i or *D^term* IP Terminal Loop Resistance and Cable Length

Terminal or Adapter	Maximum Loop Resistance (without AC Adapter) (Ohms)	By Twisted 1-Pair Cable (without AC Adapter) 24 AWG	By Twisted 2-Pair Cable (without AC Adapter) 24 AWG	Maximum Loop Resistance (with AC Adapter) (Ohms)	By Twisted 1-Pair Cable (with AC Adapter) 24 AWG	By Twisted 2-Pair Cable (with AC Adapter) 24 AWG
DTH-8-1 TEL DTR-8-1 TEL	37	700	1400	107	2000	2000
DTH-8D-1 TEL DTR-8D-1 TEL ITH-8D-2/3 TEL	37	700	1400	107	2000	2000
DTH-16-1 TEL DTR-16-1 TEL	35	660	1320	107	2000	2000
DTH-16D-1 TEL DTR-16D-1 TEL ITH-16D-2/3 TEL	35	660	1320	107	2000	2000
DTH-32D-1 TEL DTR-32D-1 TEL	26	500	1000	107	2000	2000
DTH-16LD-1 TEL	37	700	1400	107	2000	2000
DCR-60-1 Console✱	—	—	—	107	2000	2000

✱ An AC Adapter is required.

Table 5-2 Electra Elite/*D*^{term} Series E Multiline Terminal Loop Resistance and Cable Length

Terminal or Adapter	Maximum Loop Resistance (Ohms)	Maximum Feet by Twisted 1-Pair Cable 24 AWG	Maximum Feet by Twisted 2-Pair Cable 24 AWG
DBM(B)-U( ) Box	N/A	900	900
DCU-60-1 CONSOLE *	N/A	1000	1000
DTU-8-1 TEL DTP-8-1 TEL	35	600	1000
DTU-8D-2 TEL DTP-8D-1 TEL	35	600	1000
DTU-16-1 TEL DTP-16-1 TEL	26	450	900
DTU-16D-2 TEL DTP-16D-1 TEL	26	450	900
DTP-16HC-1 TEL*	57	1083	
DTU-32-1 TEL DTP-32-1 TEL	21	360	720
DTU-32D-2 TEL DTP-32D-1 TEL	21	360	720
DTR-2DT-1 TEL	35	600	1000
DTR-4D-1 TEL	37	700	1400
DTR-4R-1/2 TEL	N/A	650	1000
DTH-4R-1/2 TEL	N/A	650	1000
SLT(1)-U( ) ADP**	35	600	1000
DP-D-1	20	410	820

* An AC Adapter is required for the DTP-16HC-1 TEL or 60-button Attendant Console DCU-60-1.

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

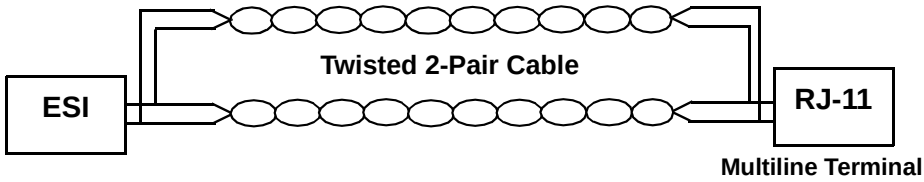


Figure 5-1 Connecting the ESI to the Multiline Terminal Using Twisted 2-Pair Cable

Table 5-3 Cable Connection Between the Analog Port and the Single Line Equipment

Connected Equipment	Cable	Maximum Feet from Connected Equipment to Telephone
AD(A)-R or AD(A)-2R Unit	Twisted Pair	10 feet
ADA(2)-W Unit	Twisted Pair	10 feet
AP(A)-R or AP(R)-R Unit	Twisted Pair	50 feet
APA-U Unit or APR-U Unit	Twisted Pair	50 feet
OPX(2)-U( ) ETU	Twisted Pair	1,600 ohms
SLI(4)/(8)-U( ) ETU	Twisted Pair	300 ohms
SLT(1)-U( ) ADP	Twisted Pair	50 feet

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

Table 5-4 Cable Connection Between ESI/VDH and PCT Board

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

Table 5-5 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 4 POWER REQUIREMENTS

4.1 Power Supply Inputs

The AC input (P64-U( ) PSU) requirements for the Electra Elite IPK are listed below:

AC input (P64-U( ) PSU)

- 117 Vac ± 10%
- 60 Hz ± 10%
- Single Phase
- 7.5A circuit
- A dedicated outlet, separately fused and grounded, is required.

4.2 Power Supply Consumption

The power consumption for the Electra Elite IPK system is listed in the table below.

Table 5-6 Power Consumption

KSU	Maximum RMS Current	Watts Used (Idle)	Watts Used (Maximum)
Basic KSU – B64-U( ) 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 5 ENVIRONMENTAL CONDITIONS

5.1 Temperature

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

5.2 Humidity

- Operating: 10% ~ 90% noncondensing

5.3 Weights and Dimensions.

Table 5-7 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)-U( ) ETU	102.4 oz** (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
AC-R Unit	5.6 oz (158 g)	3.61” (92 mm)	6.87” (175 mm)	4.2” (107 mm)
AD(A)-R Unit	4.0 oz (113 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 mm)
AD(A)-2R Unit	4.0 oz (113 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 mm)
ADA-U Unit	4.0 oz (113 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 mm)
AP(A)-R Unit	5.6 oz (158 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 mm)
AP(R)-R Unit	5.6 oz (158 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 mm)
APA-U Unit	4.3 oz (122 g)	2.4” (60 mm)	2.3” (59 mm)	4.8” (121 mm)
APR-U Unit	4.3 oz (122 g)	2.4” (60 mm)	2.3” (59 mm)	4.8” (121 mm)
B64-U( ) 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)
BRT(4)-U20 ETU	11.3 oz (320 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
BS(F)-R Unit	3.46 oz (98 g)	5.04” (128 mm)	4.25” (108 mm)	1.02” (26 mm)
BS(S)-R Unit	3.46 oz (98 g)	5.04 “ (128 mm)	4.25 “ (108 mm)	1.02 “ (26 mm)
BSU(2)-U( ) ETU	13.2 oz (374 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
BSU(4M)-U20 ETU	14.8 oz (419 g)	1.97” (50mm)	8.27” (210 mm)	11,47” (290 mm)
BSU(2S)-U20 ETU	13.4 oz (381 g)	1.97” (50mm)	8.27” (210 mm)	11,47” (290 mm)
BSU(6S)-U20 ETU	15 oz (423 g)	1.97” (50mm)	8.27” (210 mm)	11,47” (290 mm)

Table 5-7 Weights and Dimensions (Continued)

Unit	Shipping Weight*	Height	Width	Depth
CCH(4)-U( ) ETU	12.0 oz (340 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
CMS(2)/(4)-U( ) ETU	102.4 oz (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
CMS/FMS/VMS-U30 ( ) ETU	102.4 oz (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
CNF(8)-U( ) ETU	12.0 oz (340 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
COI(4)-U( ) ETU	13.6 oz (385 g	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
COI(8)-U( ) ETU	16.6 oz (471 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
COIB(4)-U( ) ETU	14.4 oz (408 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
COIB(8)-U( ) ETU	16.6 oz (471 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
COID(4)-U( ) ETU	14.4 oz (408 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
COID(8)-U( ) ETU	16.6 oz (471 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
CPUI( )-U( ) ETU	13.4 oz (380 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
CT(A)-R Unit	4.0 oz (113 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137.5 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)-U( ) ETU	192 oz** (5443 g)	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)
CT(U)-R Unit	8.4 oz (239 g)	2.25” (56.25 mm)	2.75” (68.75 mm)	5.5” (137 mm)
DBM(B)-U( ) Box	74.4 oz (2109 g)	2.75” (70 mm)	13.5” (343 mm)	9.75” (248 mm)
DBM(E)-U( ) Box	74.4 oz (2109 g)	2.75” (70 mm)	13.5” (343 mm)	9.75” (248 mm)
DCR-60-1 Console	53 oz (1503 g)	4.2” (107 mm)	12.8” (326 mm)	7.14” (182 mm)

Table 5-7 Weights and Dimensions (Continued)

Unit	Shipping Weight*	Height	Width	Depth
DCU-60-1 Console	53 oz (1503 g)	3.6” (92 mm)	8.8” (223 mm)	10.6” (270 mm)
DID(4)-U( ) 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)-U( ) ETU	12.1 oz (343 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
DTH-16D-1 TEL DTR-16D-1 TEL	43.5 oz (1233 g)	4.78” (122 mm)	10.2” (260 mm)	9.8” (250 mm)
DTH-8-1 TEL DTR-8-1 TEL	41.0 oz (1163 g)	4.78” (122 mm)	10.2” (260 mm)	9.8” (250 mm)
DTH-8D-1 TEL DTR-8D-1 TEL	43.5 oz (1233 g)	4.78” (122 mm)	10.2” (260 mm)	9.8” (250 mm)
DTH-32D-1 TEL DTR-32D-1 TEL	48 oz (1361 g)	4.78” (122 mm)	10.2” (260 mm)	9.8” (250 mm)
DTI-U( ) ETU	13.2 oz (374 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
DTI-U40 ETU	5.99 oz (170 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
DTP-1-1 TEL DTP-1-2 TEL DTP-1HM-1 TEL DTP-1HM-2 TEL	26.8 oz (760 g)	2.36” (60 mm)	6.22” (158 mm)	8.81” (224 mm)
DTU-16-1 TEL DTP-16-1 TEL	41 oz (1162 g)	4.8” (123 mm)	7.8” (197 mm)	9.3” (235 mm)
DTU-16D-2 TEL DTP-16D-1 TEL	43.5 oz (1233 g)	4.8” (123 mm)	7.8” (197 mm)	9.3” (235 mm)
DTP-16HC-1 TEL	53 oz (1503 g)	6.00” (152 mm)	9.08” (230 mm)	8.04” (204 mm)
DTP-2DT-1 TEL	41 oz (1163 g)	4.8” (123 mm)	7.8” (197 mm	9.3” (235 mm)
DTU-32-1 TEL DTP-32-1 TEL	46 oz (1304 g)	4.8” (123 mm)	8.7” (220 mm)	9.3” (235 mm)
DTU-32D-2 TEL DTP-32D-1 TEL	48 oz (1361 g)	4.8” (123 mm)	8.7” (220 mm)	9.3” (235 mm)
DTU-8-1 TEL DTP-8-1 TEL	41.0 oz (1163 g)	4.8” (123 mm)	7.8” (197 mm)	9.3” (235 mm)
DTU-8D-2 TEL DTP-8D-1 TEL	43.5 oz (1233 g)	4.8” (123 mm)	7.8” (197 mm)	9.3” (235 mm)

Table 5-7 Weights and Dimensions (Continued)

Unit	Shipping Weight*	Height	Width	Depth
DTR-1-1 TEL DTR-1HM-1 TEL	26.8 oz (760 g)	2.47” (100 mm)	7.65” (195 mm)	9.54” (243 mm)
DTR-1R-1 TEL	14.4oz (408 g)	4.5” (114 mm)	6.1” (153 mm)	8.62” (218 mm)
DTR-2DT-1 TEL	41 oz (1163 g)	2.47” (100 mm)	7.65” (195 mm)	9.54” (243 mm)
DTR-4D-1 TEL	44 oz (1250 g)	5.98” (152 g)	8.54” (217 g)	9.65” (245 mm)
DTR-4R-1 TEL	15.4 oz (437 g)	2.25” (57 mm)	4.25” (108 mm)	7.5” (191 mm)
DTU-4R-1 TEL	15.4 oz (437 g)	2.25” (57 mm)	4.25” (108 mm)	7.5” (191 mm)
D16(LD)-R ADM	27 oz (770 g)	4.33” (110 mm)	10.24” (260 mm)	7.09” (180 mm)
ECR-U( ) ETU	21.2 oz (344 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
ESI(8)-U( ) ETU	14.5 oz (411 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
ESIB(8)-U( ) ETU	11.1 oz (315 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
ESIE(8)-U( ) ETU	9.9 oz (280 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
EXP-U( ) ETU	14.6 oz (414 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
EXPT(2)-U( ) ETU	14.7 oz*** (417 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
FMS(2)/(4)/(8)-U( ) ETU	102.4 oz** (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
HF-R Unit	9.9 oz (280 g)	2.9’ (74 mm)	4.2’ (106 mm)	5.6’ (141 mm)
HUB(8)-U( )ETU	10.4 oz (294 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
IAD(8)-U( ) ETU	8.11 oz (230 g)	7.5” (190 mm)	6.3” (160 mm)	0.87” (22 mm)
IPT(4)-U( ) ETU	32 oz (907 g)	5.0” (127 mm)	10” (254 mm)	10” (254 mm)
IPT(8)-U( ) ETU	32 oz (907 g)	5.0” (127 mm)	10” (254 mm)	10” (254 mm)
ITH-8D-2/3 TEL	50.92 oz (1445 g)	9.84” (250 mm)	10.31” (262 mm)	4.76” (121 mm)

Table 5-7 Weights and Dimensions (Continued)

Unit	Shipping Weight*	Height	Width	Depth
ITH-16D-2/3 TEL	50.92 oz (1445 g)	9.84” (250 mm)	10.31” (262 mm)	4.76” (121 mm)
IVR Application VMP(4)/(8)-U( ) ETU with IVR HDD	14.6 oz (414 g)	1.75” (44 mm)	10.5” (266 mm)	8.62’ (219 mm)
MIFA-U( ) ETU	12.1 oz (343 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
MIFM-U( ) ETU	12.3 oz (349 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
OPX(2)-U( ) ETU	13.4 oz (380 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
PBR( )-U( ) ETU	10.7 oz (303 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
PRT(1)-U( ) ETU	13.2 oz (374 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
PS(A)-R Unit	7.32 oz (205 g)	5.43” (138 mm)	5.04” (128 mm)	2.28” (58 mm)
RAK-U( ) Unit	320 0z (9072 g)	20” (507 mm)	15’ (380 mm)	8.5’ (216 mm)
SLI(4)-U( ) ETU	13.0 oz (370 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
SLI(8)-U( ) ETU	14.1 oz (400 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
SLIB(4)-U10 ETU	13.0 oz (370 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
SLIE(4)-U10 ETU	10.7 oz (303 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
SLT(1)-U( ) ADP	9 oz. (255 g)	1.8” (45 mm)	2.8” (70 mm)	4.8” (120 mm)
SPE(M)-U( ) ETU	12.3 oz (349 g)	10.5” (268.7 mm)	8.5” (220.6 mm)	1.75” (44.8 mm)
TLI(2)-U( ) ETU	13.8 oz (391 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
VMS(2)/(4)/(8)-U( ) ETU	102.4 oz** (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
VMP(2)/(4)/(8)-U( ) ETU	102.4 oz** (2903 g)	1.89” (48 mm)	11.47” (290 mm)	8.46” (214 mm)
VRS(4)-U( ) ETU	12.0 oz (340 g)	1.97” (50 mm)	9.45” (240 mm)	7.68” (195 mm)
WM-R Unit	10.6 oz (301 g)	4.1” (104 mm)	5.9” (151 mm)	7.1” (180 mm)

Table 5-7 Weights and Dimensions (Continued)

Unit	Shipping Weight*	Height	Width	Depth
WMU-U Unit	10.6 oz (301 g)	4.1” (104 mm)	5.9” (151 mm)	7.1” (180 mm)

* Shipping weight includes the shipping carton.
** Shipping weight includes the shipping carton and documentation.
*** Includes cable for connection of two KSUs.

SECTION 6 AUDIBLE AND VISUAL INDICATION

6.1 Tone Patterns

Table 5-8 Tone Patterns lists the frequency and the pattern for the tones. Tones are used to inform Electra Elite IPK station users of system functions such as dial tone, busy tone, or ringback tone.

6.2 Multiline Terminal LED Flash Patterns

The Electra Elite IPK 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 5-9 Multiline Terminal LED Flash Patterns.

Table 5-8 Tone Patterns

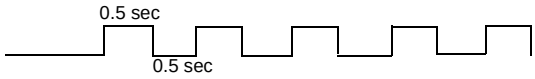
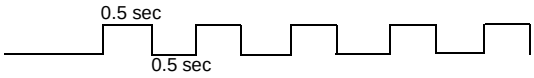
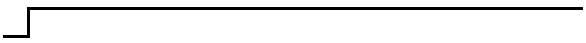
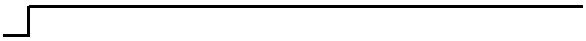
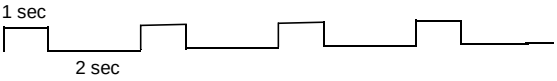
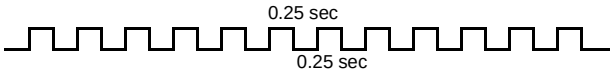
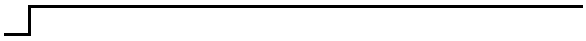
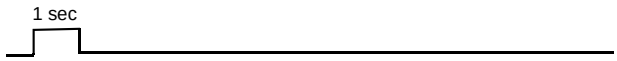
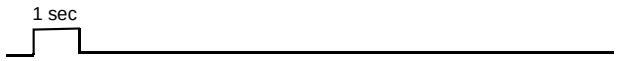
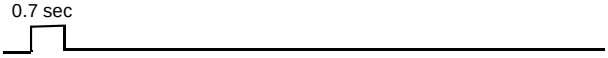
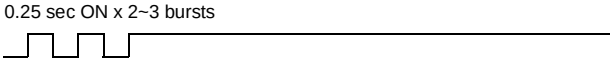
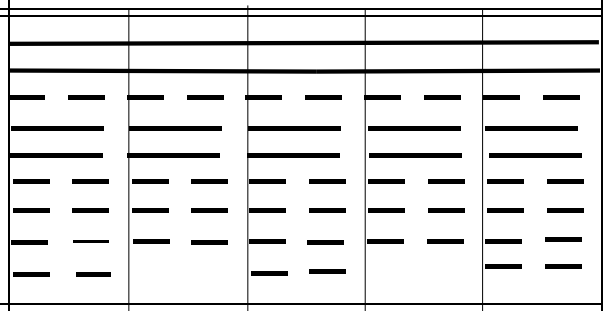
System Tone (Fixed)	Frequency (Hz) (Fixed)	Intermit (Default)	Cycle
Busy Tone	480/620	60 IPM	
Call Waiting Tone	440	60 IPM	
Second Dial Tone	350/440	120 IPM	
Howler Tone	2400 Modulation (16 Hz)	Continuous	
Internal Dial Tone	350/440	Continuous	
Internal Ringback Tone	440/480	1 sec On 2 sec Off	
LCR Dial 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 5-9 Multiline Terminal LED Flash Patterns

LED	Condition	Color	Flash Patterns
Line Key	I-Use	Green	
	Busy	Red	
	Incoming Call	Red	
	I-Hold	Green	
	Call Hold	Red	
	Hold Recall	Green	
	Transfer Recall	Green	
	Live Monitoring Mode	Green	
	Message Waiting on Line Key	Red	
Microphone	ON	Red	
Mic	ON (Series i)	Red	
ICM	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	
Speaker	ON	Red	
	System Data Entry	Red	
Conf	Conference in Progress/Barge In	Red	
	All Conference Circuits Used	Red	
	Hold Conference Call	Red	
	ICM Call Hold	Red	
	SPD Confirmation	Red	
Answer	Incoming Trunk	Red	
	Exclusive Hold	Green	
	User Ringing Line Preference	Red	
	Voice Over with Broker's Call	Green	
Feature	Callback Set	Red	
	Auto Repeat Set	Red	
	ON (to set function)	Red	
	Call FWD - All Calls Set	Red	
BLF or DSS Key	Use, Hold	Red	
	DND, Call FWD-All Calls Set	Red	
	Special Mode (while pressing Feature or going off-line)	Red	

0 0.5 1.0 1.5 2.0 sec.

SECTION 7 OUTSIDE LINE TYPES

The following outside lines can be used with the Electra Elite IPK system.

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

SECTION 8 NETWORK AND CONTROL

8.1 Transmission, Network, and Control Specifications

8.1.1 Transmission

- Data Length:

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

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

- Data Transmission Rates:

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

- Scanning Time for each Multiline Terminal: 32 ms.

8.1.2 Network

Time Division Multiplexing (TDM) allows transmission of a number of separate data and voice simultaneously over one communications medium. The information below indicates the specifications the Electra Elite IPK system uses for switching, clock, data bus, timeframe.

- TDM Switching: PCM (µ Law)
- TDM Clock: 2.048 MHz
- TDM Data Bus: 8 bit
- TDM Timeframe: 125 µs.

8.1.3 Control

This section indicates the speed or capacity.

- 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- or 32-bit microprocessor
- Multiline Terminal (TDM): 8-bit microprocessor
- Multiline Terminal (IP): 32-bit microprocessor
- IP Adapter: 32-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 IPK Multiline Terminals, Single Line Telephone equipment, and AP(A)-R/ AP(R)-R 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)-U( ) ADP

  Standard 2500 Set: 500 type network

  Nominal Current: 30 mA

  Ring Signal: 56 Vac RMS @ 20 Hz

- AP(A)-R Unit

  Standard 2500 Set: 500 type network

  Nominal Current: 30 mA

- AP(R)-R Unit

  Standard 2500 Set: 500 type network

  Nominal Current: 30 mA

  - Ring Signal: 56 Vac RMS @ 20 Hz

SECTION 9 DIALING SPECIFICATIONS

9.1 Dial Pulse Address Signaling

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

- Pulse Rate: 0 ± 0.5 pps/20 ± 1.0 pps
- Percent Break: 60 ± 1.5%
- Interdigit Interval: 0 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 IPK system, the following DTMF specifications are used.

- Frequencies

  Two sinusoidal frequencies are provided, one from the high frequency group and one from the low frequency group.

- Frequency Deviation: Less than ±1.0%
- 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

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

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

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

10.5 SMDR Output

- Female Connector (System Output) Standard DB-9 (straight)

10.6 PC Connection

- Female Connector (System Output) Standard DB-9 (straight)

10.7 Relay Contact

- All Relay Contact Ratings: 500 mA, 24Vdc

SECTION 11 BATTERY BACKUP

The Electra Elite IPK 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 CPUI( )-U( ) 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.

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NEC

Electra Elite® IPK

General Description Manual

NEC Unified Solutions, Inc.

Document Revision 4

(Release 4000/4500)