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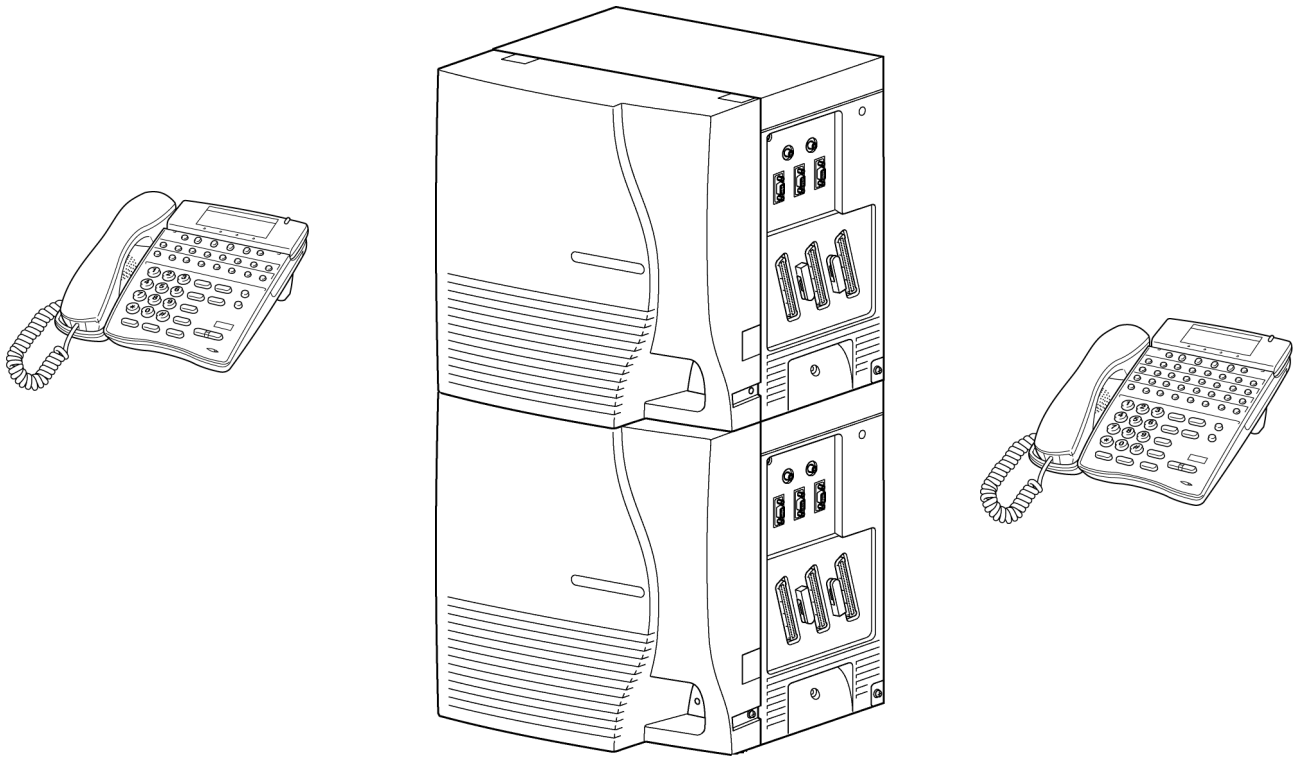
NEC

Electra Elite IPK



SPE(M)-U( ) ETU
Hardware, Installation, and Maintenance Manual

INT-1021

(SPE)

Document Revision 3

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Technology Development

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CHAPTER 1 *Electra Elite IPK SPE(M)-U( ) ETU*

SECTION 1 DESCRIPTION

The Single Point of Entry [SPE(M)-U( ) ETU] provides a single access point (remote or direct) for configuring the system and/or individual cards. The SPE(M)-U( ) ETU provides the same functionality as a MIF(M)-U( ) ETU with the Activation key [KMM( )-U] installed, plus a modem unit. An Ethernet port is also provided to allow programming over a network using TCP/IP.

The SPE(M)-U( ) ETU has six physical COM ports. Two go through the backplane to COM1 (for PC Programming) and COM2 (for SMDR) on the side of the KSU just like a MIF(M)-U( ) ETU. The other four COM ports (COM-A, COM-B, COM-C, and COM-D) are accessible along the front of the card. These COM ports are used for interfacing to other programmable cards such as a VMS, etc.

The SPE(M)-U( ) ETU provides three methods of communications to the Electra Elite IPK or Electra Elite 48/192 systems.

- ❑ Serial — Using COM 1 on the KSU
- ❑ Modem — v.34
- ❑ Ethernet — 10/100Mbps LAN/WAN Connection

The following table provides a comparison between the MIFM and the SPE ETUs.

Table 1-1 Comparison of ETUs

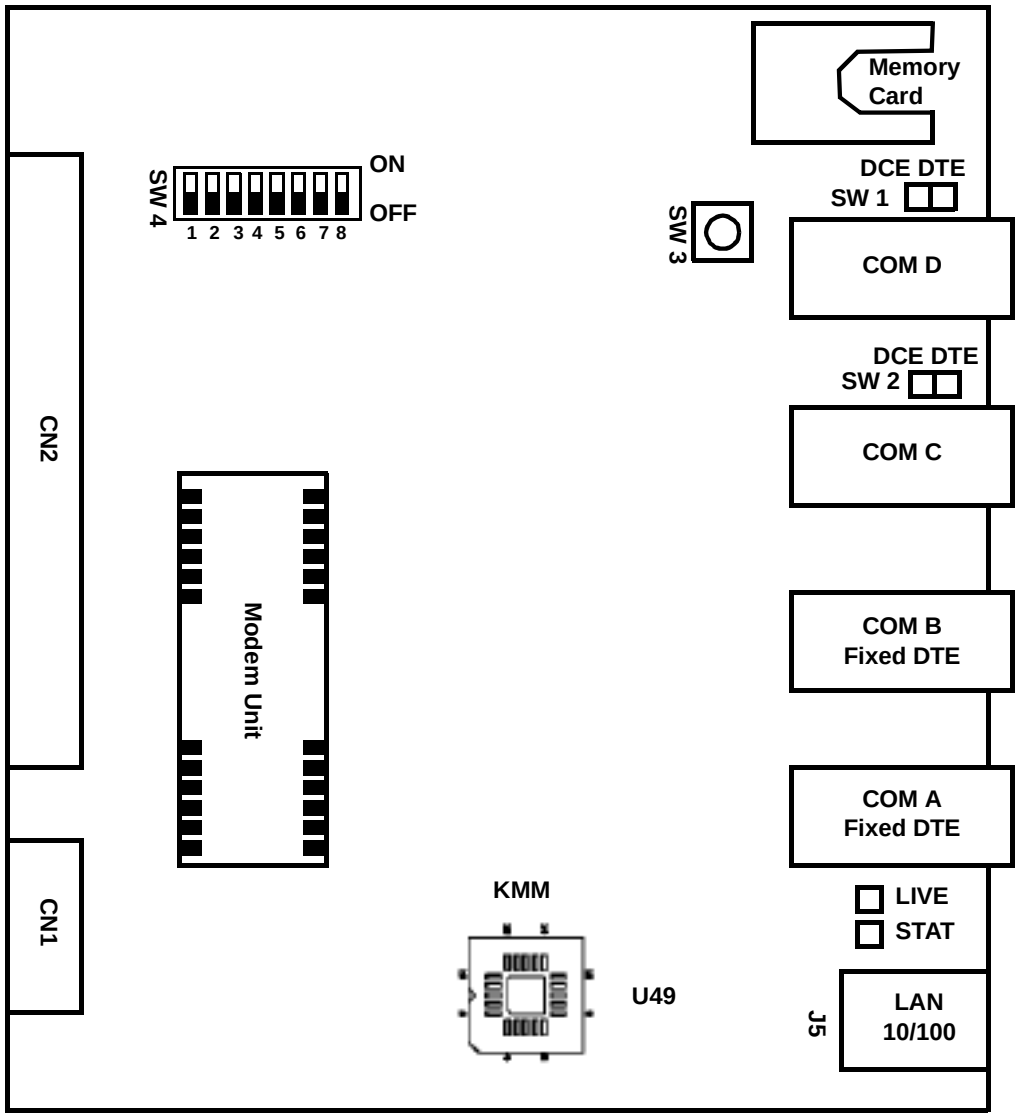
Feature	MIFM	SPE
Hardware Components	MIF(M)-U( ) ETU KMM PAL chip Socket Modem Unit	SPE( )-U( ) ETU
SAT Programming via serial	Yes	Yes
SAT Programming via Modem	Yes (Optional)	Yes (Standard)
Maximum Modem Speed	38.4 Kbps	38.4 Kbps
SAT Programming via Ethernet (Intra/Internet)	Yes (Optional) with Elite LAN PC Programming Device	Yes

Table 1-1 Comparison of ETUs (Continued)

Feature	MIFM	SPE
LCR Programming via Serial	Yes	Yes
LCR Programming via Modem	Yes	Yes
LCR Programming via Ethernet	No	Yes
SMDR over Serial	Yes	Yes
SMDR over Ethernet	No	Yes (simultaneously on serial also)
SMDR record storage when printer not connected	Approximately 100 call records	Maximum 200 records in nonvolatile memory
Caller ID Storage	50 per station	50 per station in nonvolatile memory
CoSession (VM) via KSU serial port (no open box)	No	Yes
CoSession (VM) via Modem (not on VM board)	No	Yes
CoSession (VM) via Ethernet	No	Yes
BRT/PRT/CCH remote debugging	No	Yes

SECTION 2 HARDWARE

2.1 SPE(M)-U( ) ETU Front View



Note: The detail on this board may not appear exactly like the board.

Figure 1-1 SPE(M)-U( ) ETU (Front View)

2.2 SPE(M)-U( ) ETU Back View

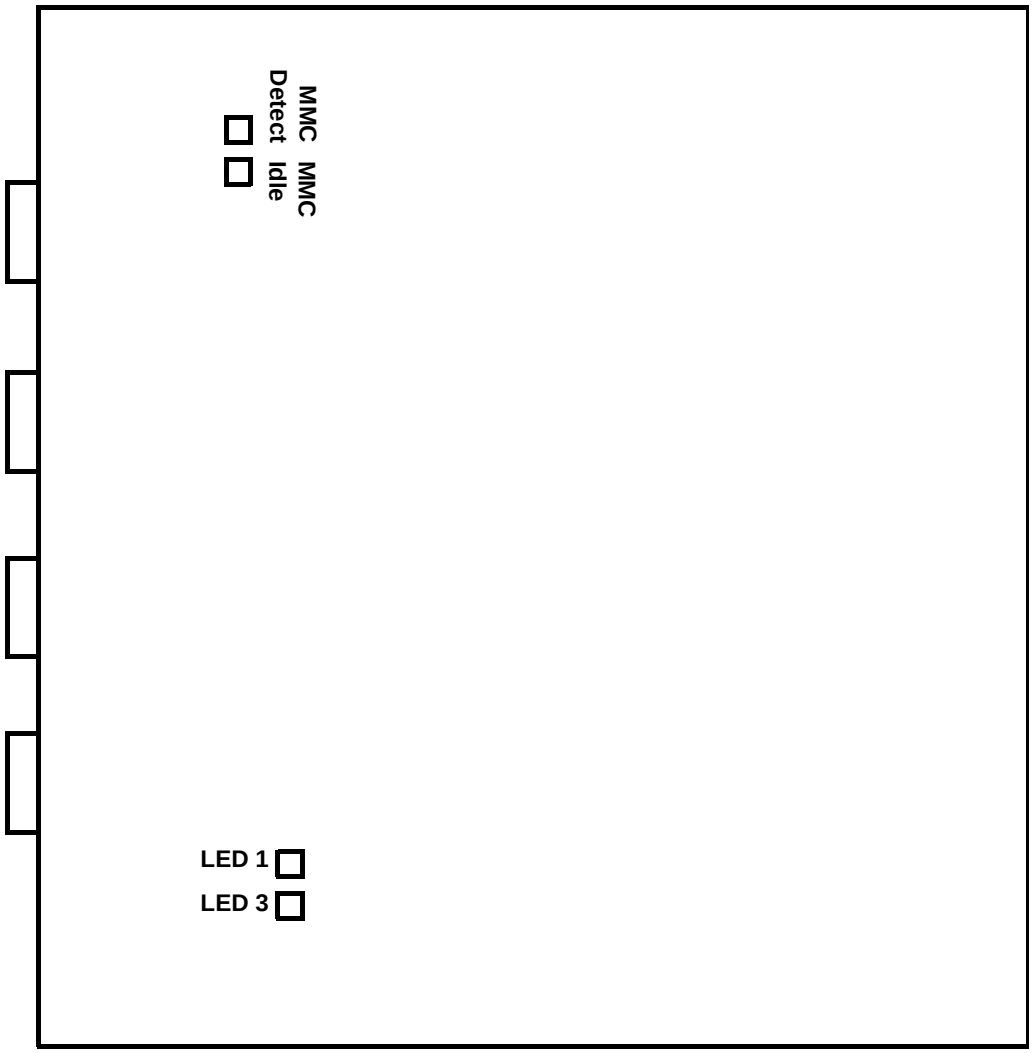


Figure 1-2 SPE(M)-U( ) ETU (Back View)

2.3 Installation

Only one SPE(M)-U( ) ETU can be installed in the system. The SPE(M)-U( ) ETU can be installed in the following slots: AP, S1 or S2. When the modem is used the SPE(M)-U( ) ETU must be installed in the S1 or S2 slot.

✎ A power condition may occur if installed in the AP slot.

2.4 Switch Settings

Table 1-2 Switch Settings

Switch	Setting	Description
SW 1	Off	COM – D Acting as a DCE (Default)
	On	COM – D Acting as a DTE
SW 2	Off	COM – C Acting as a DCE (Default)
	On	COM – C Acting as a DTE
SW 3	NA	Reset the SPE(M)-U( ) ETU
SW 4-1	On	Not Used
	Off	Not Used (Default)
SW 4-2	On	Restores Card to Factory Defaults
	Off	Save Settings (Default)
SW 4-3	On	Not Used
	Off	Not Used (Default)
SW 4-4	On	Not Used
	Off	Not Used (Default)
SW 4-5	On	Not Used
	Off	Not Used (Default)
SW 4-6	On	Not Used
	Off	Not Used (Default)
SW 4-7	On	Enables Debug through COM 1 of the KSU
	Off	Debug is disabled through COM 1 of KSU (Default)

Table 1-2 Switch Settings (Continued)

Switch	Setting	Description
SW 4-8	On	MIFM Mode Only (Emulates MIFM; SPE features are disabled)
	Off	SPE Mode (Default)

2.5 LED Indications

2.5.1 Ethernet LED Indication

	Green	Yellow
ON	Link Detected	100M bps
OFF	No Link Detected	10M bps
FLASHING	Activity	N/A

2.5.2 Initial Boot Process

All LEDs, except for Live (DS3), will light solid during the boot up process. Once the SPE(M)-U( ) ETU finishes the boot up process all LEDs will go out momentarily. Live (DS3) LED will remain flashing.

2.5.3 Normal Run Time LEDs

- Live LED
  - Off = Indicates problem
  - On = Indicates problem
  - Flashing = Normal
- STAT LED
  - On = When SPE ETU initialization is completed and was successful
  - Flashing = Error during Initialization.

- LED 1
  - Off = SMDR Idle, No Flash ROM write occurring
  - On (Stays ON and does not go out) = Flash ROM write Error
  - Flashing (momentarily ON) = Outputting SMDR Records via COM 2 of KSU or TCP Connection / Writing to Flash ROM
- LED 3
  - Off = No SPE Application connection or LAN PC Programming
  - On = SPE Application connected or LAN PC Programming
  - Flashing = State not used

2.5.4 Firmware Upload

The green LED on the Ethernet connector will light when data is being transferred via the Ethernet port. When upload data is being stored in nonvolatile memory, LED 1 will light momentarily.

2.6 Environmental Conditions

The following environmental conditions apply to the SPE(M)-U( ) ETU.

Operating Temperature: +32° to 104° F (0° to 40° C)

Operating Humidity: 0% to 90% (non-condensing)

SECTION 3 CONNECTORS

3.1 Ethernet Connector

A 10/100Mbps Ethernet connector is used by the SPE(M)-U( ) ETU to directly allow the connection with System Administration Terminal (SAT), Least Cost Routing (LCR), and SPE Application. The Ethernet connector can also be used for Station Message Detail Recording over Ethernet (SMDRoE).

3.2 COM Ports

There are four physical COM ports on the front edge of the SPE(M)-U( ) ETU — COM A, COM B, COM C and COM D. COM A and COM B are configured as DTE devices and cannot be changed. COM C and COM D are configured as DCE devices at default and can be changed by dip switch SW 1 for COM D and SW 2 for COM C for DTE devices when needed.

A special serial cable is used for connecting to these four SPE com ports. One cable is provided with each SPE(M)-U( ) ETU. Additional SPE cables can be purchased separately.

3.3 Memory Card

This will be used in the future.

3.4 KMM-U20 ETU

This will be used in the future.

CHAPTER 2 *Programming the KSU for SPE(M)-U( ) ETU*

SECTION 1 INSTALLING THE SPE(M)-U( ) ETU

1.1 Programming Requirements

The SPE(M)-U( ) ETU is programmed as a MIF(M)-U( ) ETU. There is not an SPE card-type in system programming.

Use the following memory blocks to program the system for the SPE(M)-U( ) ETU.

✍ Not all memory blocks will apply; use the ones necessary to configure the application.

- MB 7-1 Card Interface Slot Assignment to assign the appropriate slot for a MIF(M)-U( ) ETU.
- MB 7-3-01 MIF (LCR) Assignment to assign the LCR functions to the MIF(M)-U( ) ETU if using the LCR function.
- MB 7-3-02 MIF (SMDR) Assignment to assign the Station Message Detail Recording function to the MIF(M)-U( ) ETU.
- MB 7-3-04 MIF (Caller ID) Assignment to assign the class functions to the MIF(M)-U( ) ETU when using the Caller ID Scrolling feature.
- MB 1-8-35 COM Port Baud Rate Setting Assignment to assign the appropriate baud rate for COM 1 and COM 2 for PC Programming and SMDR if needed.
- MB 1-8-36 COM Port Parity/Stop Bit Setting Assignment to assign the appropriate parity and stop bit for COM 1 and COM 2.
- MB 1-8-38 Modem Number for Remote Programming Assignment, assign the modem extension number for the built in modem when using the internal modem of the SPE(M)-U( ) ETU.
- MB 1-8-18 Site Name Assignment, assign a site name for PC programming access if needed.
- MB 1-8-17 PC Programming Password Assignment, assign a password for PC programming access if needed.

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CHAPTER 3 *SPE(M)-U( ) ETU Configuration*

SECTION 1 CONFIGURING SPE(M)-U( ) ETU

Set the DIP switch SW 4-8 to the desired settings on the SPE(M)-U ( ). Refer to 2.4 Switch Settings on page 1-5.

On = MIFM Mode Only

Off = SPE Mode (Default)

Place the SPE(M)-U( ) ETU in the Electra Elite IPK KSU in the appropriate slot of the KSU. Refer to 2.3 Installation on page 1-5 for appropriate slots that the SPE card can be installed in.

Connect the Ethernet cable to the Ethernet connector on the SPE(M)-U( ) ETU. This is the bottom most connector on the SPE(M)-U( ) ETU. Refer to Section 2 Hardware on page 1-3. When installed for the first time, the SPE(M)-U( ) ETU, comes up with factory-set default parameters as shown in Table 3-1 Factory Network Settings.

Table 3-1 Factory Network Settings

IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1

In this configuration, the Ethernet port cannot be used in any randomly given environment, and its parameters must be redefined before the SPE(M)-U( ) ETU can work in your environment. The required parameters can be set by using the web browser and connecting to the default IP Address (192.168.1.100) in the browser navigation address bar. Refer to Appendix A Web-Based Setup and Configuration on page A-1 for a detailed description of this configuration utility.

SECTION 2 PC PARAMETERS

The initial configuration is performed using a PC (or laptop computer) connected directly to the SPE(M)-U( ) ETU's ethernet port or connecting through a hub. Make sure that the PC has the networking parameters set as shown in Table 3-2 Network Settings for the PC.

Table 3-2 Network Settings for the PC

IP Address	192.168.1.XXX
Subnet Mask	255.255.255.0

Boot up a client-enabled PC that is connected to the same network as the SPE(M)-U( ) ETU.

Connect to the SPE(M)-U( ) ETU via your web browser using the default IP Address 192.168.1.100. Login to the SPE(M)-U( ) ETU with the following:

Login ID = admin

Password = password

Set the IP Address and Subnet Mask in the SPE(M)-U( ) ETU configuration tab. Select **Submit** and then perform a SPE(M)-U( ) ETU Reset. Refer to Appendix A Web-Based Setup and Configuration.

SECTION 3 SHUTDOWN PROCEDURE

The SPE(M)-U( ) is a hot-swappable ETU and can be removed from the Electra Elite IPK KSU without powering down the SPE(M)-U( ) ETU or the Electra Elite IPK system.

If the Electra Elite IPK KSU requires a system reset, the SPE(M)-U( ) ETU will come back online.

WARNING! Do not shut down the SPE ETU under power when LED 1 is on.

APPENDIX A Web-Based Setup and Configuration

This chapter describes all the necessary screens used during the configuration of the SPE(M)-U( ) ETU.

SECTION 1 ACCESSING THE WEB-BASED SETUP

The SPE(M)-U( ) ETU is configured using an internet browser. It is recommended to use Microsoft Internet Explorer 6.0 or higher.

The Login page allows the user to enter their username and password for network access.

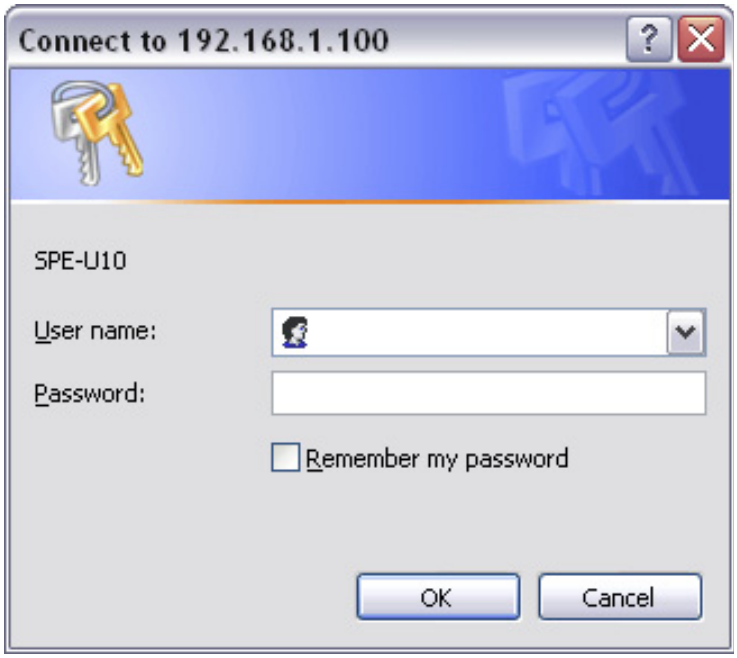

Figure A-1 Web Browser Login Screen

1. Start Internet Explorer from a PC that is connected to the same network as the SPE(M)-U( ) ETU.
2. The SPE(M)-U( ) ETU default IP Address is **192.168.1.100**.

3. Enter the default **IP Address** in the address link of your browser.
4. When the login screen appears enter the **Login ID** and **Password**.
5. Click **OK.**

   - ❑ Default User Name = admin
   - ❑ Default Password = password

SECTION 2 CARD CONFIGURATION SCREEN

The Card Configuration screen, also called the System screen, allows the user to set the IP parameters for the SPE(M)-U( ) ETU and other parameters that commonly apply to the operation of the SPE(M)-U( ) ETU.

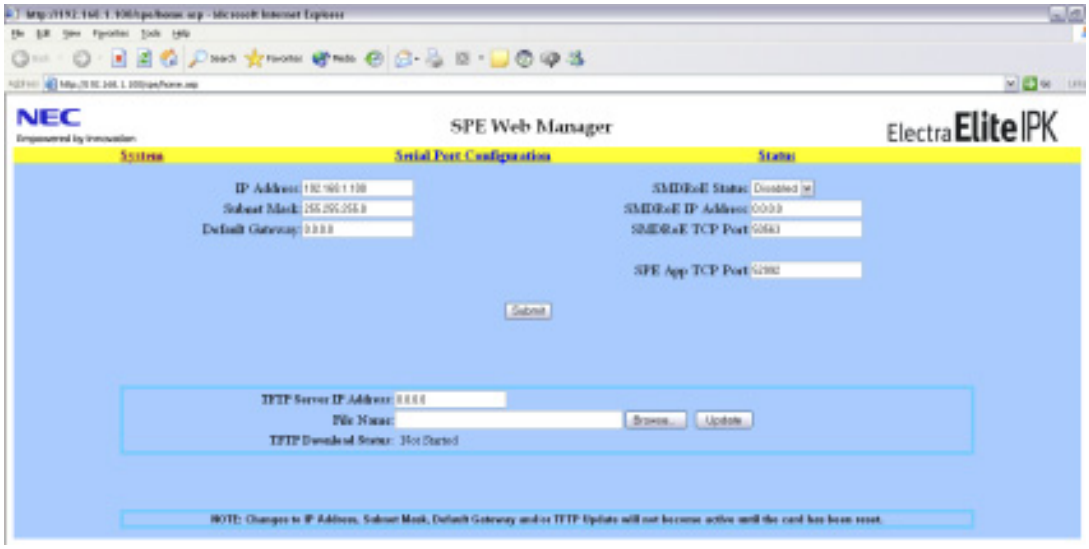

Figure A-2 Card Configuration Screen

IP Address: (Default value: 192.168.1.100)

This is the static IP address that is needed for the configuration. Currently, DHCP *is not* supported.

Subnet Mask: (Default value: 255.255.255.0)

Enter the Subnet mask for the SPE(M)-U( ) ETU. This is the same one you have been using on the subnet.

Default Gateway: (Default value: 192.168.1.1)

Enter the default gateway for the SPE(M)-U( ) ETU in this field.

✎ When the IP Address, Subnet Mask, or Default Gateway is changed the SPE(M)-U10 ETU must be rebooted in order to make the changes become active.

SMDRoE Status: (Default Disabled)

This setting is used to allow or disallow SMDR over the Ethernet port. The appropriate programming is required from the main CPU side in order for the SPE(M)-U( ) ETU to output SMDR records. For more detailed information pertaining to SMDR, refer to the Station Message Detail Recording (SMDR) section of the Features and Specification Manual.

✎ SMDRoE data sent by the SPE(M)-U( ) can be received with the help of applications designed to receive such data. Generic applications such as Hyperterminal will not capture SMDR records from the Ethernet Port on the SPE(M)-U( ) ETU.

SMDRoE IP Address: (Default 0.0.0.0)

Enter the IP Address of the device that will be set to receive the SMDRoE records.

✎ If the IP address is left at default, any IP address can be setup to receive SMDR packets.

SMDRoE TCP Port: (Default 50563)

This is the TCP Port number used for transmitting the SMDRoE records over the network. NEC recommends leaving this field at its default value, unless otherwise specified by the network administrator.

SPE App TCP Port: (Default 52992)

This is the TCP Port number used for transporting the SPE Application over Ethernet and SAT (System Administration Terminal). NEC recommends leaving this field at its default value, unless otherwise specified by the network administrator.

TFTP Server IP Address: (Default 0.0.0.0)

This is the IP Address for the TFTP server. This is only used when the SPE(M)-U( ) ETU is to have a firmware upgrade performed.

File Name

This is the file name that the SPE(M)-U( ) ETU uses for the firmware upgrade.

Submit Button

This is used to submit the changes to the working memory of the SPE(M)-U( ) ETU. When any of the above listed items are changed the Submit button must be used in order for the changes to become active.

SECTION 3 SERIAL PORT CONFIGURATION SCREEN

The Serial Port Configuration screen is used to configure the individual COM ports on the front of the SPE(M)-U( ) ETU to work with the appropriate connections that will be made. This screen allows each of the four COM ports to be configured for the appropriate speed, parity, data, and stop bits.

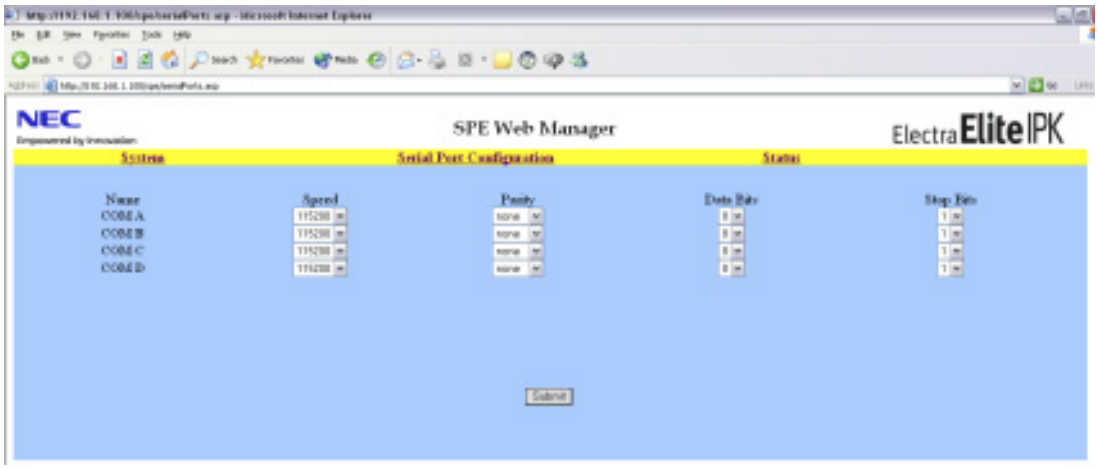

Figure A-3 Serial Port Configuration Window

Serial data communication to the SPE ETU from a PC, the physical COM port (e.g. COM1) that is normally used for Serial communication is superimposed on the Transport medium (physical COM port) by a series of Virtual COM ports (COM 4, and COM 50~54). The Virtual COM ports of the PC are mapped to physical COM ports on the SPE card as follows:

- ❑ COM4 ➔ CoSession (COM53)
- ❑ COM4 ➔ WSC (COM54)
- ❑ COM50 SPE Serial Port A
- ❑ COM51 SPE Serial Port B
- ❑ COM52 SPE Serial Port C
- ❑ COM53 SPE Serial Port D
- ❑ COM54 ➔ SAT/LCR

✎ COM54 is used by SAT and LCR PC-based applications and COM4 is used by the WSC PC-based application. Only **one** of these applications can be used at a time. SPE ETU Serial Port D (COM53) must be used for the physical connection to the Voice Mail card (CMS, FMS, VMS, CTI or VP).

Speed: (Default 115200)

This is used to select the speed that each of the available serial ports will communicate.

Parity: (Default None)

This is used to select the parity that each of the available serial ports will be set.

Data Bits: (Default 8)

This is used to select the data bits that each of the available serial ports will used to communicate.

Stop Bits: (Default 1)

This is used to select the stop bits that each of the available serial ports will use when communicating.

✎ All settings can be made to each of the available COM ports before the Submit button is selected. When the Submit button is selected the user is prompted to save the recently changed data into nonvolatile memory. Refer to Figure A-4 Configuration Save Screen on page A-6 for an example.

Use the Save button to immediately save the data into nonvolatile memory or you can press the Continue button to continue the configuration without saving the recently changed items to non volatile memory.

✎ If the ETU is reset all changes not saved into nonvolatile memory will be lost. Only the items that were previously saved into nonvolatile memory will remain after card comes back on line.

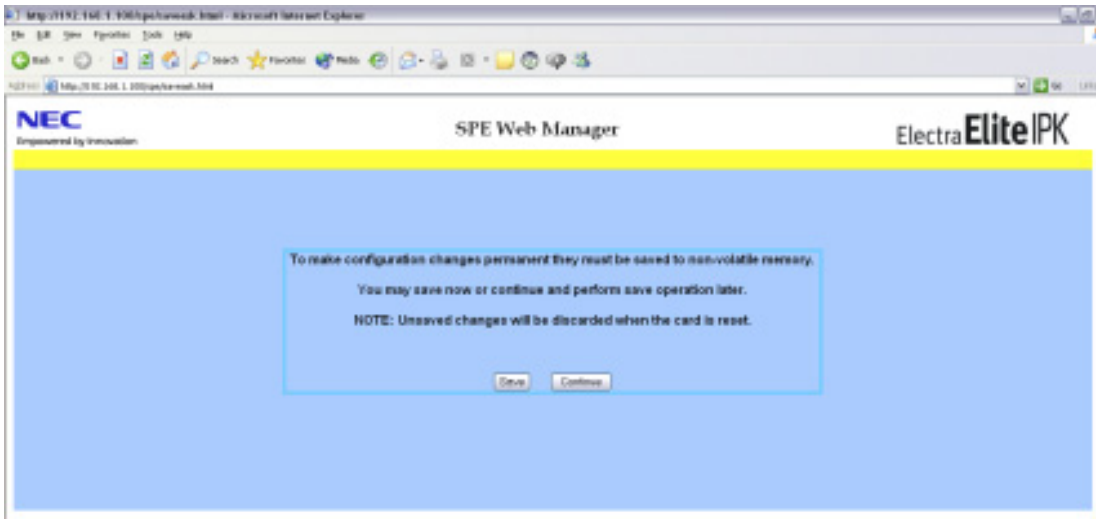

Figure A-4 Configuration Save Screen

SECTION 4 STATUS SCREEN

The Status screen provides information about the firmware revision, mode of operation and additional administrative functions.

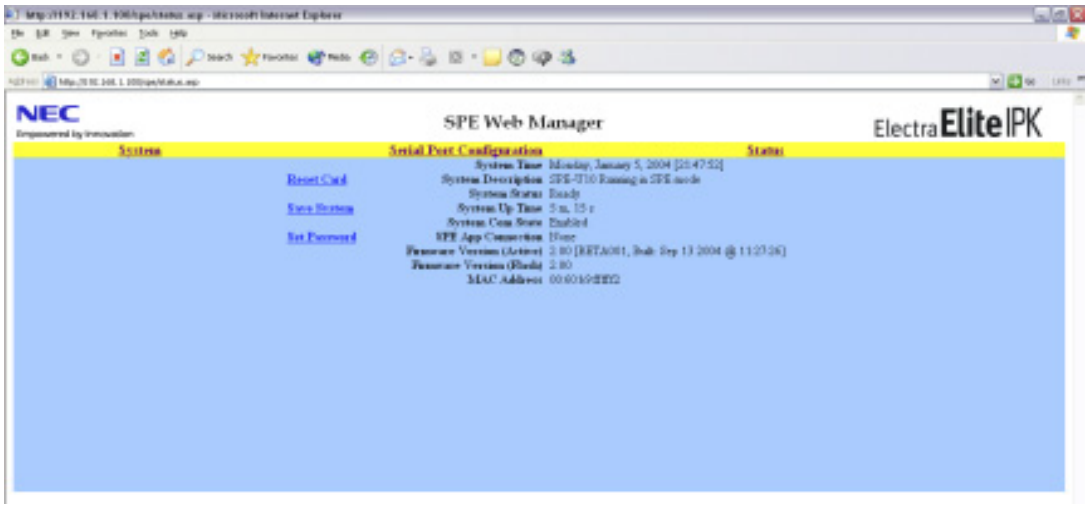

Figure A-5 Status Screen

The Status screen provides access to three administrative functions:

- ❑ Reset Card
- ❑ Save System
- ❑ Set Password

SECTION 5 RESET CARD

A reset is necessary when changing the operating modes and network parameters (such as IP address, subnet mask, gateway address, etc.).

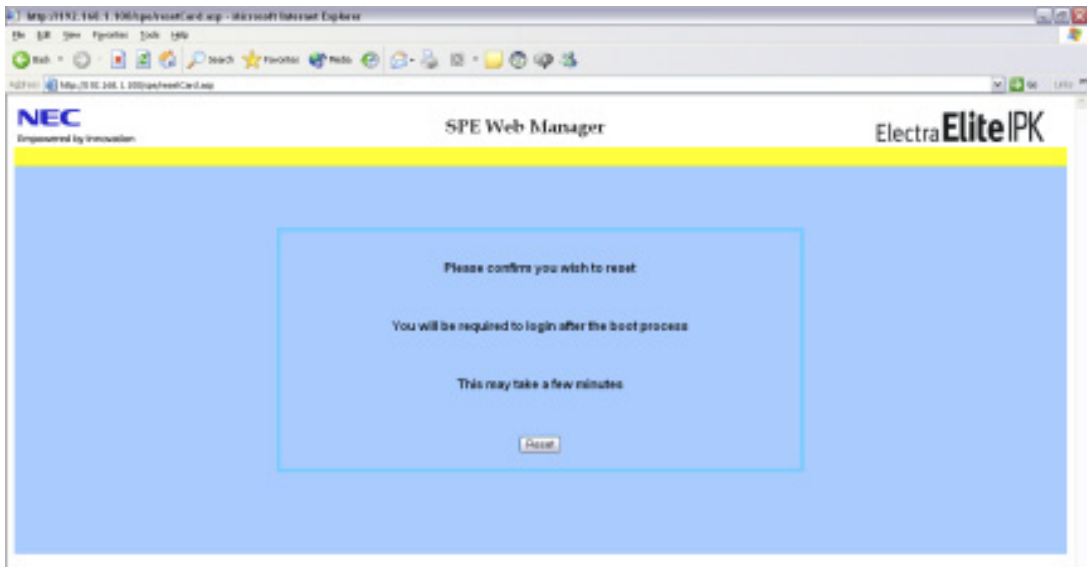

Figure A-6 Reset Card

Reset will immediately reboot the SPE(M)-U( ) ETU. All activity and items that have not been saved to nonvolatile memory and connections to the card will be lost.

SECTION 6 SAVE SYSTEM PAGE

Save System page has two possibilities. One is when the configuration has been changed the system data must be saved to nonvolatile memory in order for the changes to become active. When there are items that need to be saved the Save System page will indicate that items are waiting to be saved. The other is when there are no items to be saved, the save system page will indicate that no items are pending to be saved.

When there are items pending for saving to nonvolatile memory the screen display is as shown in Figure A-7 Items Pending for Saving.

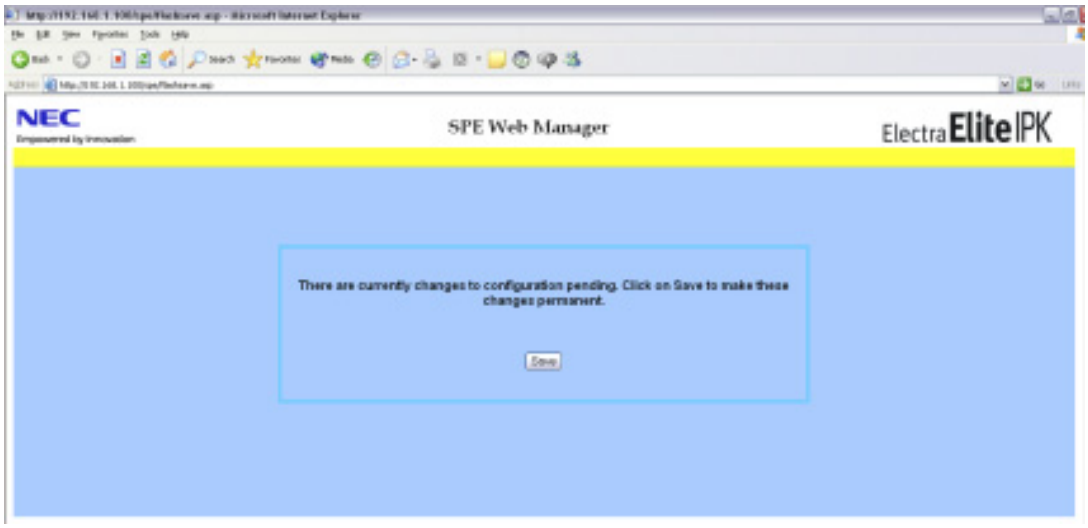

Figure A-7 Items Pending for Saving

When there are not any items pending for saving to nonvolatile memory, the screen appears as in Figure A-8 No Items Pending to be Saved.

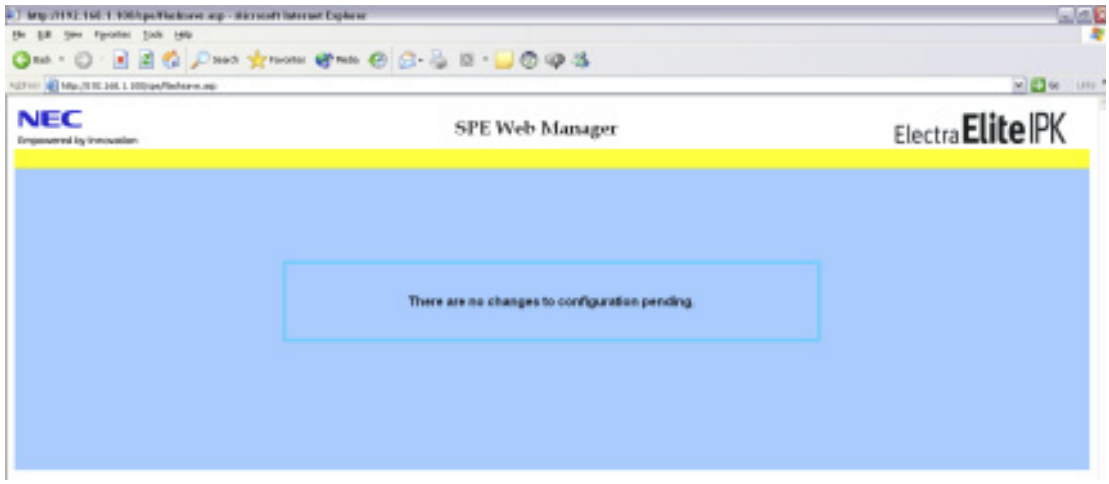

Figure A-8 No Items Pending to be Saved

SECTION 7 RESET PASSWORD PAGE

The Reset Password screen enables the "admin" user to change the current password. You cannot change the user name from "admin", only the password can be changed.

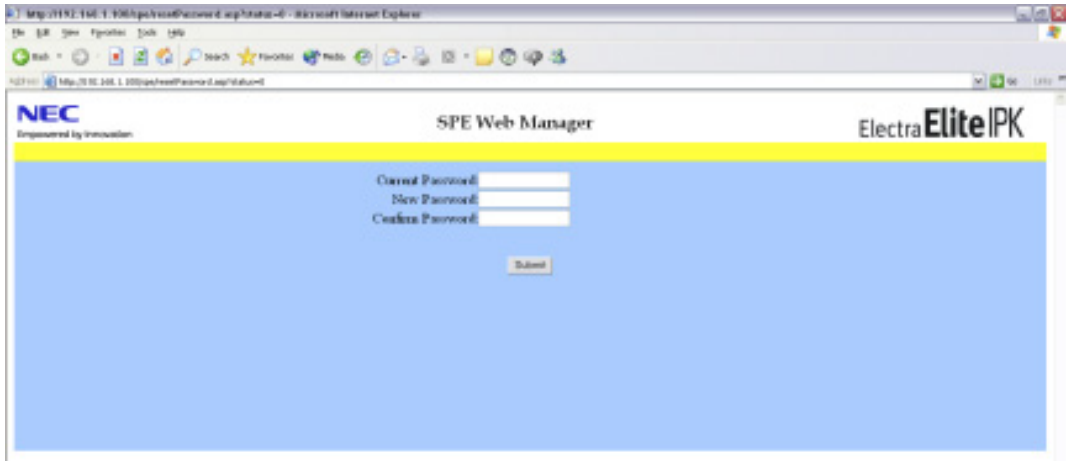

Figure A-9 Reset Password Screen

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APPENDIX B *SPE Application Software*

This section explains how to operate the SPE Application software and to explain the communication methods.

SECTION 1 INTRODUCTION

Before the existence of SPE, technicians were required to be on site to monitor or configure a module within the KTS and only one module could be configured at a time. With the SPE(M)-U( ) ETU, technicians can launch multiple applications on a remote laptop and monitor or configure multiple modules concurrently in the KTS. This is done through the creation of Virtual COM ports within the SPE application.

The SPE Application is required for any application to communicate with the SPE module as it performs the necessary encapsulation (virtualization) of the data that is sent out from a technician's laptop. This encapsulation uses a custom, serial-like protocol (in the case of a serial connection), that is initiated and terminated between the SPE Application and the SPE ETU module; no other application or module will recognize the data.

The general concept is as follows for Serial communication to the SPE(M)-U( ) ETU in the KTS:

1. Select the physical COM port (e.g. COM1) that is normally used for serial communication to the KTS. When this is done, the transport method is serial.
2. Superimposed on the transport medium (physical COM port) is a series of Virtual COM ports (COM 4, COM50~54).
3. COM50~53 are mapped to COMA~D on the SPE module, so:

	PC (Virtual)		SPE (Physical)
a.	COM50	→	COMA
b.	COM51	→	COMB
c.	COM52	→	COMC
d.	COM53	→	COMD
e.	COM54		

4. All four physical serial ports on the SPE can be connected and used concurrently.

5. COM4 and COM54 can be used by any of the PC-based applications, such as SAT, LCR and WSC. Note that because of firmware limitations within the original MIF(M)-U( ) ETU, only **one** of these applications can be run concurrently. The SPE application only allows one of these buttons to be selected.

6. Multiple applications can now be run over the virtual COM ports to communicate to multiple modules in the KTS.

When using Ethernet or modem as the transport medium, only Step 1 changes. The Virtual COM ports are still used to bridge the appropriate application conversation to the appropriate module within the KTS and back. If a Virtual COM port is not selected, then the associated SPE serial port or PC Application will not be operational.

Certain assumptions are being made when using the SPE ETU module and application within the context of the KTS.

1. The laptop being used does NOT have more than three physical COM ports, including the modem.

2. Multiple users are NOT accessing the SPE concurrently using different transport methods, e.g. one user using the Ethernet and another using Serial. Concurrent access can result in the SPE(M)-U( ) ETU entering an unstable state since it is not possible for the firmware to monitor the state of multiple instances of the same application.

SECTION 2 PC REQUIREMENTS

- ❑ Pentium Processor
- ❑ Microsoft Windows 2000 or NT 4.0 (or higher) operating system
- ❑ At least 10 MB of free hard disk space
- ❑ Unused PC serial communication port
- ❑ MNP Class 4 or V.42 bis modem (if remote programming is required)
- ❑ Maximum of three physical COM ports

SECTION 3 COMMAND BAR

The SPE Application has three command bar buttons at the top of the screen.

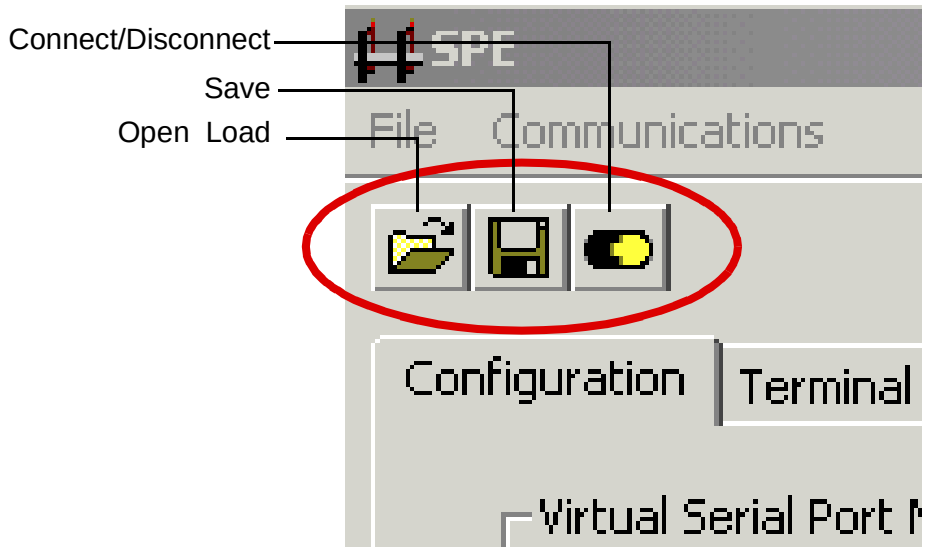

Figure B-1 Command Bar Buttons

These buttons correspond to the functions in the File and Communications groups.

The first button on the far left is the Open button which allows the user to open or load the profile information of a particular site. These files (.spe) can be stored in any specified Windows directory.

The middle button is the Save button which allows the user to save the profile information into a designated file. This profile load and save feature, allows the user to save off multiple site configurations and retrieve them at a later time, without having to remember the configuration options for each location. This includes everything on the Configuration screen, such as Virtual Serial Port Mapping selections, the Connection Method, the IP address, and the Modem telephone number. A Site Name must be entered before Save can be performed.

The far right button is the Connect/Disconnect button. This button is used to issue the command, but also displays the status of the command.

SECTION 4 CONFIGURATION SCREEN

The SPE Application is rather simple and contains four screens. When the application starts, the initial screen that displays is the **Configuration** screen.

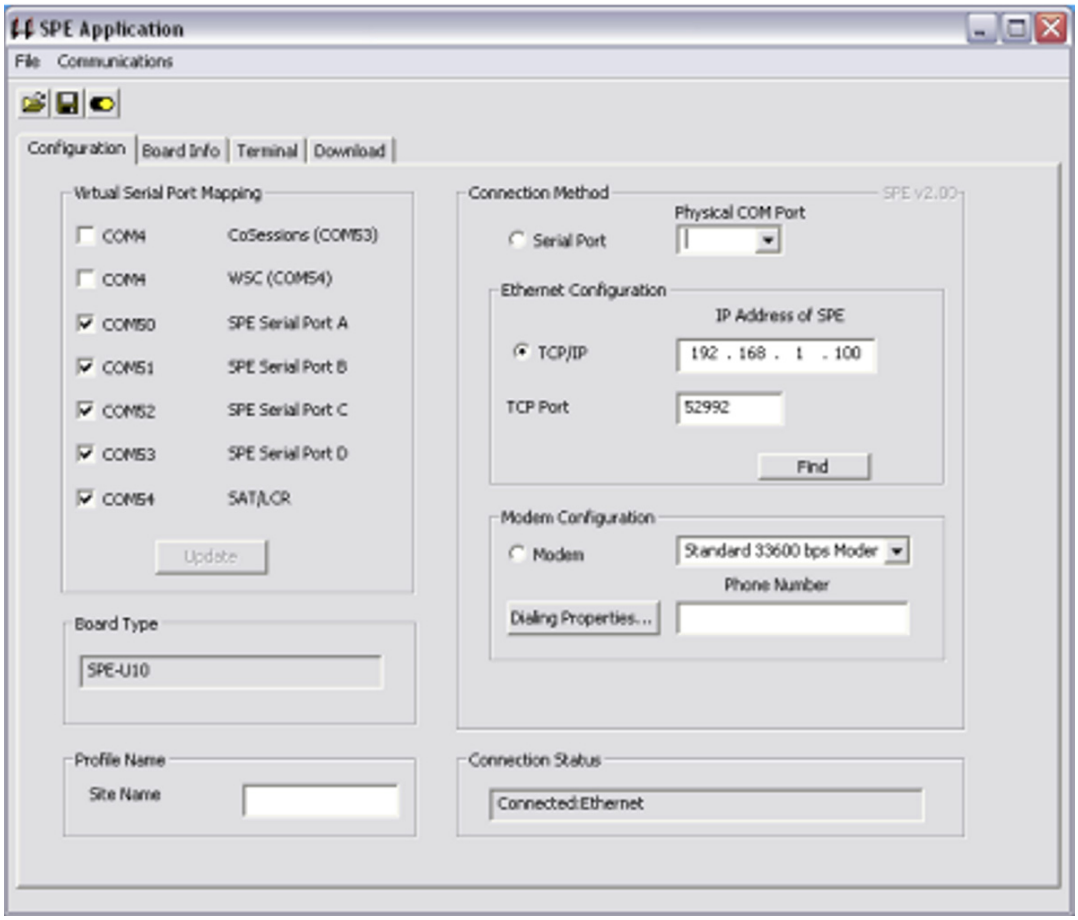

Figure B-2 Configuration Screen

Virtual Serial Port Mapping Select the Virtual COM ports that are needed in the current loaded configuration. The mapping to the applications and/or physical SPE serial ports is listed beside the respective Virtual COM port.

Update The Update button is used to enable/disable COM ports without having to disconnect from the SPE(M)-U( )ETU and then reconnect after the change has been made.

Profile Name This name allows the user to give a descriptive name to the site file. The actual file stored can be the same name or a different name.

Connection Method Only one connection method mapping can be selected at any one time: Serial, TCP/IP, or Modem. If the Serial method is chosen, then the user needs to select the physical COM port on the laptop that will be connected to the KTS chassis. If the TCP/IP method is chosen, then the technician must enter the IP Address of the SPE module into the fields shown. The TCP port number defaults to 52992, but can be modified if needed. The Find button allows one to verify whether or not the SPE(M)-U( ) ETU is reachable and working. The Modem Method allows the user to enter the telephone number of the SPE modem and to enter dialing properties, such as area codes, outside line dialing, etc.

Connection Status Once the Connection Method selection has been made and the Connect command has been issued, the Connection Status field will reflect the actual status of the SPE(M)-U( ) ETU connection. The following are the possible status conditions and their meaning.

- ***Disconnected*** indicates that no connection to the SPE(M)-U( ) ETU is present.
- ***Attempting Connection*** indicates that the SPE Application is attempting to connect to the SPE(M)-U( ) ETU via the connection method chosen. The indicator will display the Connection Method being attempted such as "Serial:Attempting Connection".
- ***Connected:Serial*** indicates that the SPE Application is connected via the direct Serial or COM port on the PC.
- ***Connected:Ethernet*** indicates that the SPE Application is connected to the SPE(M)-U( ) ETU via an Ethernet port at the IP address indicated in the Connection Method box.
- ***Modem:Connected at (indicated speed)*** indicates that the SPE Application is connected to the SPE(M)-U( ) ETU via the modem. It also indicates the speed at which it connected (i.e. "Modem:Connected at 33600").
- ***Modem:Call is Proceeding*** indicates that the PC modem is attempting to dial into the SPE modem.
- ***Please wait...disconnecting...*** indicates that the SPE Application is in the process of disconnecting either due to a disconnect command or an error condition.
- ***Ethernet:Busy: Ethernet*** indicates that the SPE App is currently connected via another SPE Application. The first "Ethernet" before the word "Busy" is the connection being attempted by the user. The "Ethernet" after the word "Busy" is what is actually connected and busy. The SPE Application will not allow a connection if it detects another SPE Application or PC Application is connected. The same holds true for a Serial connection (i.e. "Ethernet:Busy:Serial" or "Serial:Busy:Ethernet").

Mapping Caveats

There is some complexity within the Virtual Serial Port Mapping section because there are multiple instances of COM 4. The current mapping restrictions are as follows:

- WSC (COM4) and Cosession (COM4) cannot be selected at the same time.
- WSC (COM4) and SAT/LCR (COM54) cannot be selected at the same time because no more than one PC application is supported over the backplane at any given time through the MIF(M)-U( ) ETU core firmware.
- If WSC (COM4) is selected, then the user will not be able to run either Cosession or SAT/LCR.
- Cosession (COM4) and COM53 cannot be selected at the same time because a Voice Mail module MUST be tied to COM53. So, if Cosession is chosen, it will be using COM53.
- Cosession and SAT/LCR can be run concurrently.

SECTION 5 BOARD INFORMATION

The second tab is the Board Info that shows the hardware and software information of the SPE Application.

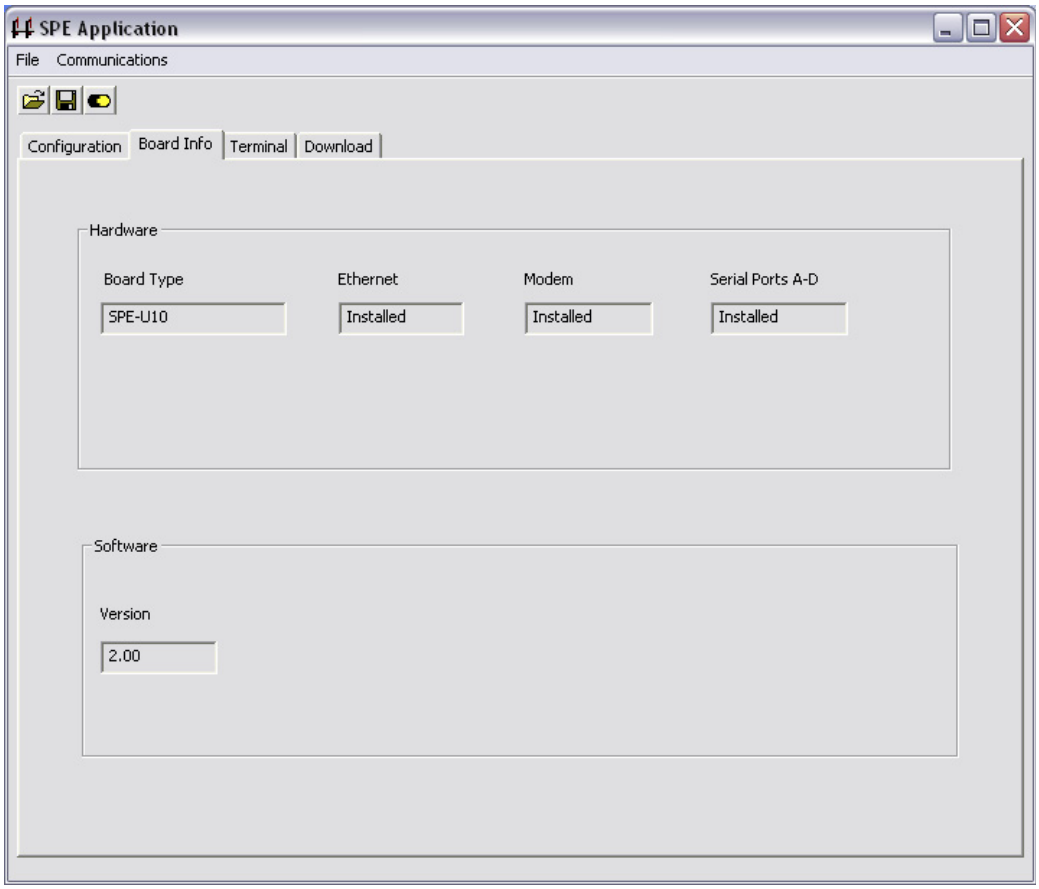

Figure B-3 Board Info Screen

Hardware This section lists the different hardware components that are installed and can be used on the SPE ETU.

Software The **Version** shows the current firmware version of the SPE ETU that the SPE Application is connected to.

SECTION 6 TERMINAL SCREEN

The third tab in the SPE Application is the Terminal screen. This screen provides access to the Command Line Interface (CLI).

✎ NEC highly recommends that changes not be made to this option.

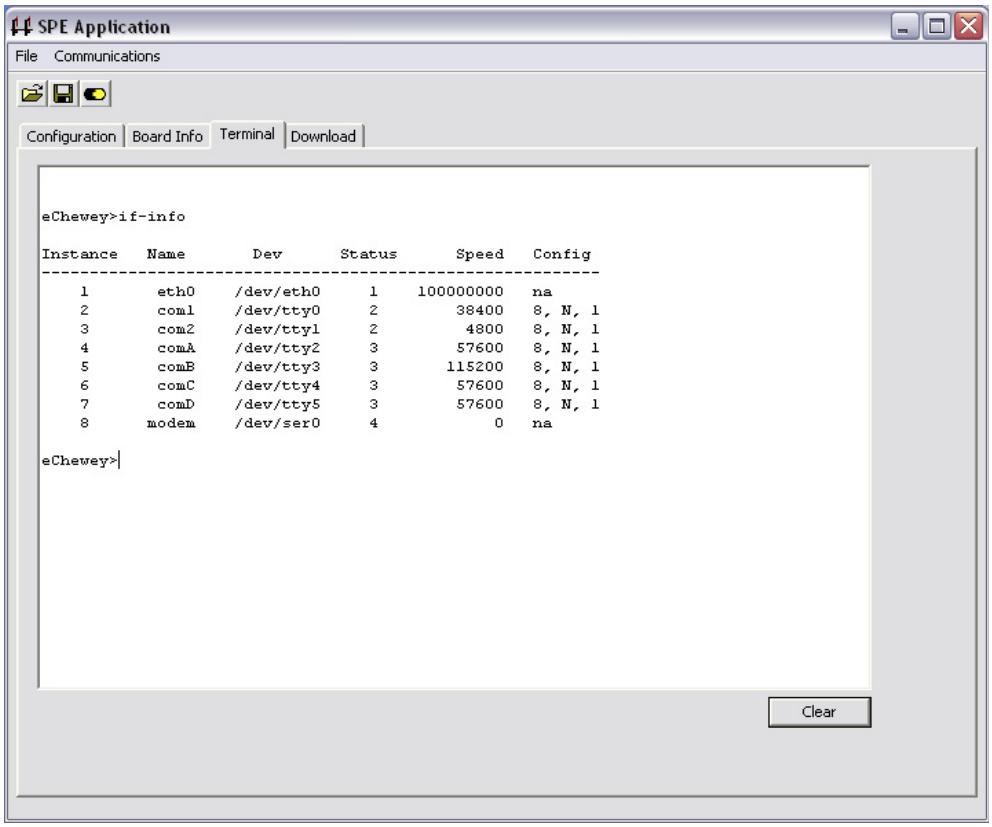

Figure B-4 Terminal Screen

SECTION 7 DOWNLOAD SCREEN

The fourth tab in the SPE Application is the Download screen. This screen allows the user to configure settings for downloading files.

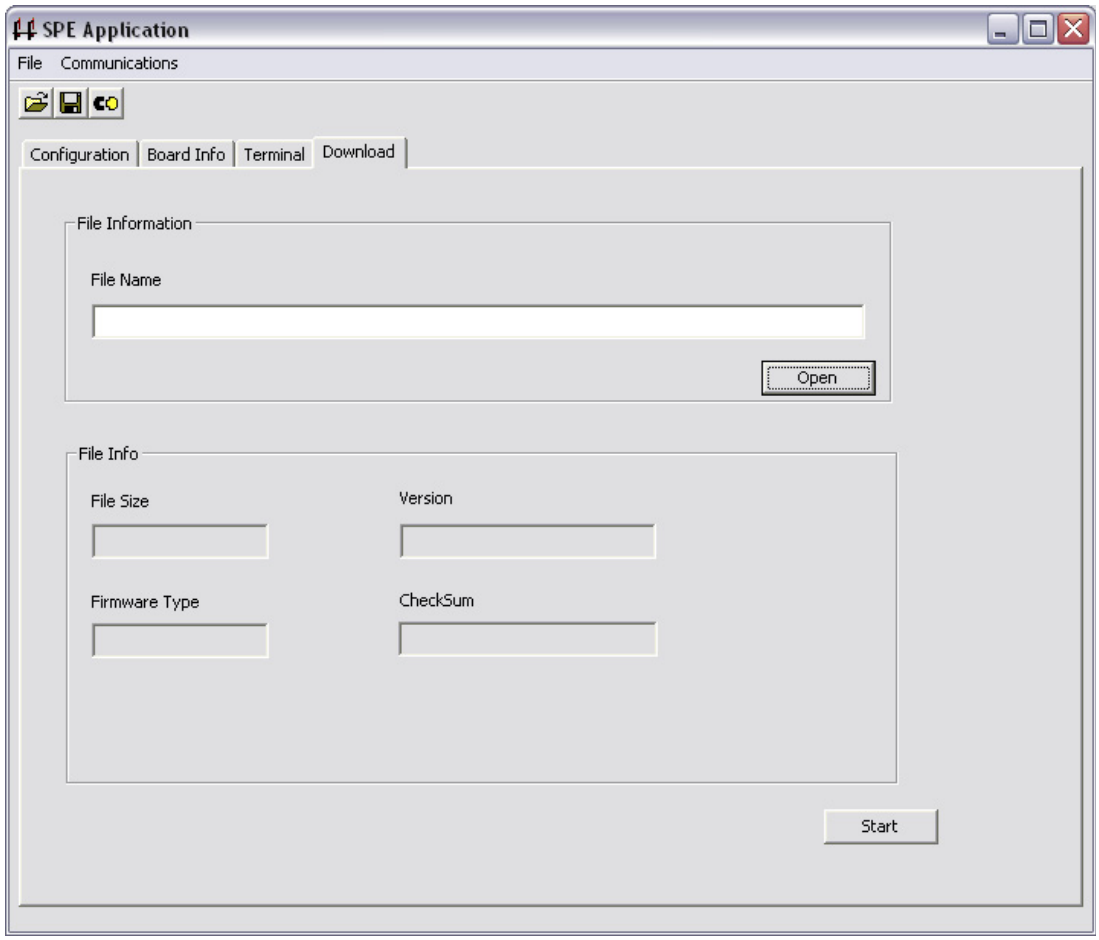

Figure B-5 Download Screen

File Information This section lists the **File Name** and location of the .dld file that is to be downloaded to the SPE(M)-U( ) ETU during a firmware upgrade. The **Open** button can be used to browse and search for the firmware file to be used.

File Size This shows the size of the firmware file that will be downloaded into the SPE(M)-U( ) ETU.

Version This field shows the version of the firmware file.

Firmware Type Lists the type of ETU this file will be used to update.

Checksum This shows the checksum of the **.**dld file being used in the update process.

Start This button is used to start the download process.

APPENDIX C *Configuration Examples and MISC*

SECTION 1 SAMPLE CONNECTION CONFIGURATION

This example shows how the SPE(M)-U( ) ETU can connect/monitor the applications from one connection using the Ethernet Connection.

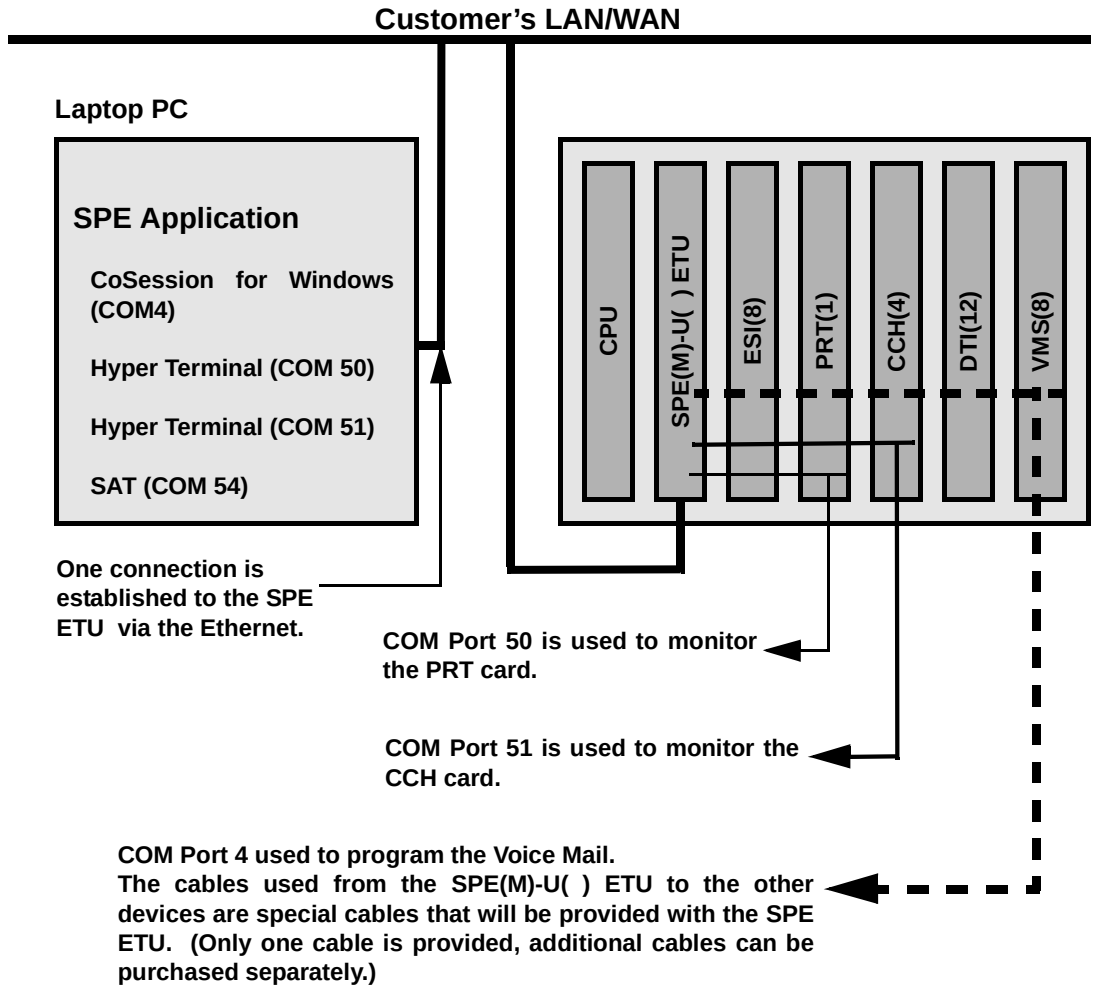

Figure C-1 Sample Connection Configuration

✎ The SPE Application must be launched prior to the other applications and a connection must be established. Once the applications are launched, proceed to connect as if the PC was connected directly to the cards.

✎ Some Application boards have stand-alone, independent serial ports that enable users to make configuration changes, run diagnostic tests, etc. Details for the COM ports on these boards are shown in Table C-1 Comparison of ETUs.

Table C-1 Comparison of ETUs

Board	Connector	Type
Voice Mail (VMS, VMS+, VMP, FMS, FMS+, CMS, CMS+)	DB9M	DTE
CTI	DB9M	DTE
BSU, CCH, PRT, BRT	DB9M	DCE

✎ Typical baud rates are 19,200,38,400, and 57.600 for these ETUs.

SECTION 2 CONFIGURING SAT TECHNICIAN OR END-USER TO COMMUNICATE DIRECTLY TO SPE(M)-U( ) ETU VIA ETHERNET

This is an example of how to configure SAT to directly communicate with the SPE card over the Ethernet. This example assumes that the SPE(M)-U( ) ETU has been configured with the appropriate IP address information.

In order for SAT to communicate with the SPE(M)-U( ) ETU directly, the version of SAT Technician or End-User must be version 2.51 or higher to properly support this type of connection.

Figure C-2 SAT Version 2.51

Configuring SAT to communicate with the SPE(M)-U( ) ETU via the direct Ethernet Connection:

Open SAT from the **Communications menu** and select **Connect**.

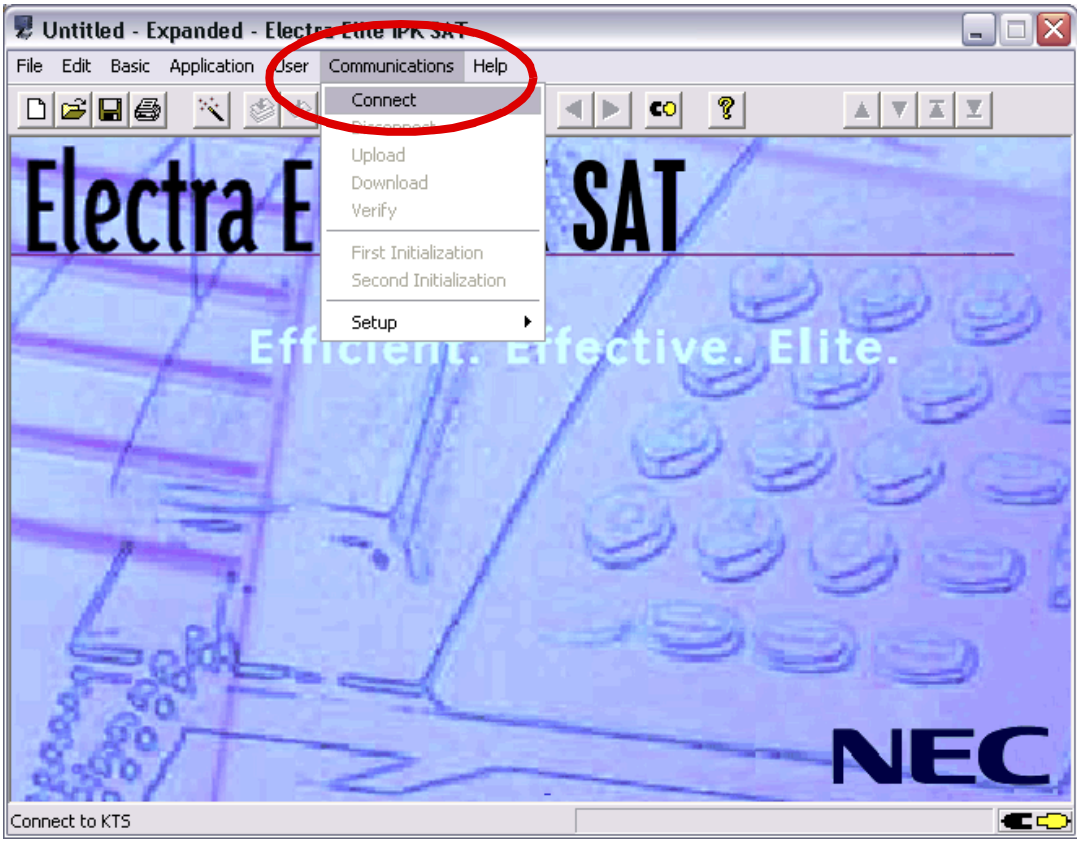

Figure C-3 Communications Menu

Once the **Connect** option is selected, select the **Direct Connection** for Connection Type.

Figure C-4 Connect Dialog Box - Connection Type Selection

This will allow a Direct Connection to the Electra Elite KSU using SAT, once you are connected using the SPE Application.

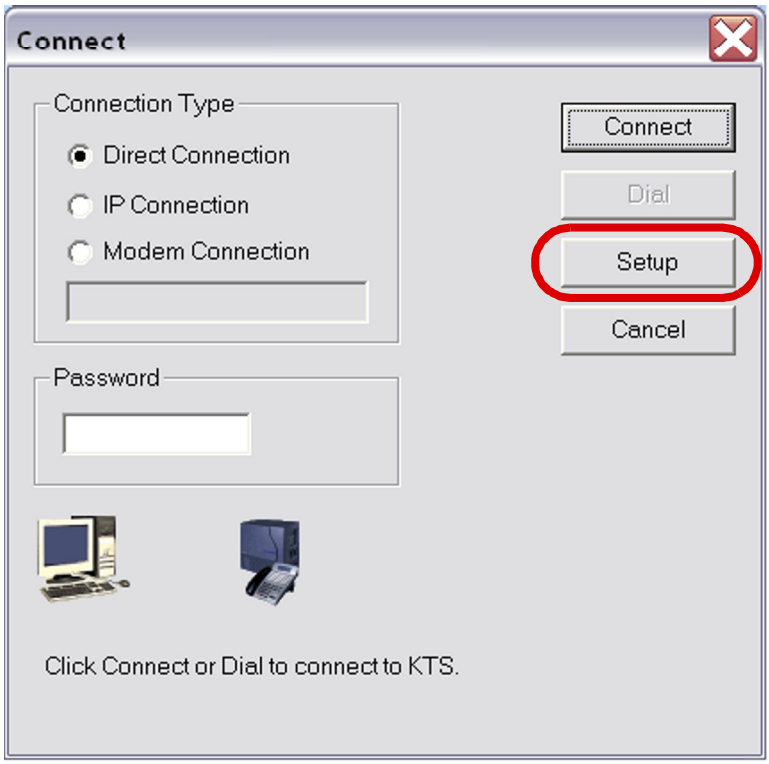

Figure C-5 Connect Dialog Box - Setup

After **Setup** has been selected, the screen in Figure C-6 Serial Port Settings will appear, allowing you to configure the appropriate information to communicate directly with the Electra Elite KSU.

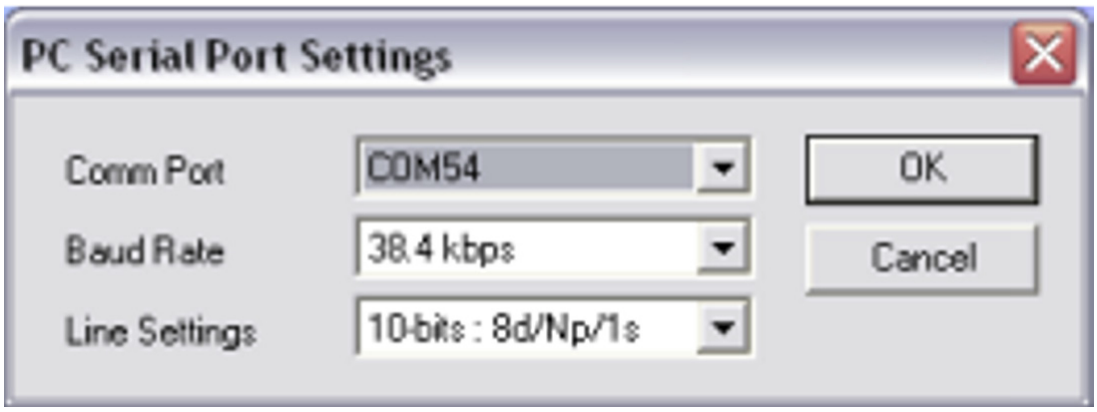

Figure C-6 Serial Port Settings

After the configuration has been properly setup, click the **Connect** button.

Once a connection has been established, Figure C-7 SAT Connection Confirmation will indicate that SAT has successfully connected using the SPE(M)-U( ) ETU.

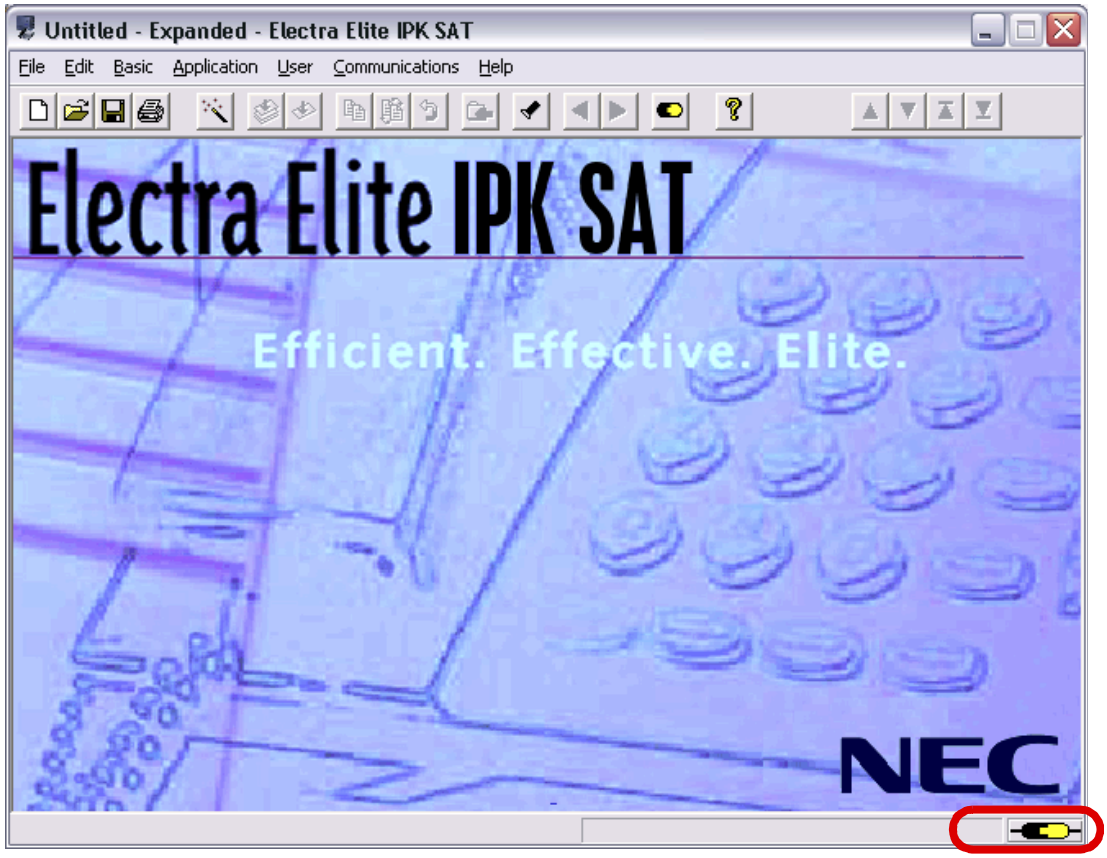

Figure C-7 SAT Connection Confirmation

Proceed to Downloading/Uploading the system data as if you were directly connected to the system via Serial or Modem connection.

SECTION 3 RETURNING THE SPE(M)-U( ) ETU TO FACTORY DEFAULT CONFIGURATION

This section allows an SPE(M)-U( ) ETU to return to factory default settings.

Step 1. Remove the SPE(M)-U( ) ETU from the system.

Step 2. Set DIP switch SW 4-2 to the following:

SW4 – 2 to (ON = Restores card to factory defaults)

Step 3. Reinsert the SPE(M)-U( ) ETU into the system. Once the LEDs have lit according to the boot procedure, remove the SPE ETU from the system.

LED Boot Procedure

All LEDs, except for live (DS3), will light solid during the boot up process. Once the SPE(M)-U( ) ETU finishes the boot up process, all LEDs will go dark momentarily. The Live (DS3) LED continues flashing and the STAT LED will light solid. At around the same time the STAT LED goes on, the Flash LED will blink signaling the Caller ID records being erased. If the board is not allowed to boot all the way to this state, the caller ID records will not be erased.

Step 4. Remove the SPE(M)-U( ) ETU from the system, and return DIP switch SW4-2 to the **OFF** Position.

Off = Save Settings (Default)

Step 5. Reinsert the SPE(M)-U( ) ETU into the system.

SECTION 4 SPE(M)-U( ) ETU CONFIGURATION — CLI

This option is used for advanced technical personnel.

CAUTION: NEC highly recommends that changes ***not*** be made to this option.

NEC

Electra Elite IPK

SPE(M)-U( ) ETU Hardware, Installation, and Maintenance Manual

NEC Unified Solutions, Inc.

Document Revision 3