NEC

D^term® *EXT*

OWNER'S MANUAL

NEC America, Inc.

Issue 2

Stock Number 722076

NEC America, Inc. reserves the right to change the specifications, functions, or features, at any time, without notice.

NEC America, Inc. has prepared this document for the use by its employees and customers. The information contained herein is the property of NEC America, Inc. and shall not be reproduced without prior written approval from NEC America, Inc.

D^{term}, Electra Professional, and NEAX are registered trademarks of NEC America, Inc.

NEC America, Inc.

1555 Walnut Hill Lane
Irving, TX 75038

Business Terminals Division

Regulatory Information

SECTION 1 MANUFACTURING

The *D^term EXT*, models OPE-RE and OPE-OF are telecommunication devices manufactured by:

MCK Communications, Inc.
130 Bowness Centre N.W.
Calgary, Alberta
Canada T3B 5M5
(800) 661-2625

and marketed in North America for use with NEC Electra Professional key telephone systems and the NEAX family of private brand exchange systems by:

NEC America, Inc.
1555 W. Walnut Hill Lane
Irving, TX 75038
(972) 751-7000

SECTION 2 FCC REGULATIONS

2.1 Limitations

This equipment has been tested and found to comply with the limits for a Class A digital device (*D^term EXT* OPE-OF) and Class B digital (*D^term EXT* OPE-RE), pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial and/or home environment.

2.2 Interference

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Dterm EXT OPE-RE

FC Tested to comply with FCC standards.

FOR HOME OR OFFICE USE

Table of Contents

Chapter 1 Introduction

Section 1 Purpose 1-1

Section 2 Product Description 1-1

Section 3 System Operation and Configuration 1-1

Section 4 Equipment List..... 1-3

Chapter 2 Specifications

Section 1 Size and Weight 2-1

Section 2 Power Requirements..... 2-1

Section 3 Communication Connection and Operation 2-1

Section 4 Facilities Specification 2-2

Chapter 3 Installation and Operation Overview

Section 1 Location Requirements 3-1

Section 2 Electrical Requirements 3-1

Section 3 Wiring Requirements..... 3-2

Section 4 Module Description..... 3-3

Chapter 4 Installation

Section 1 Office Site Installation..... 4-1

Section 2 Remote Site Installation 4-2

Chapter 5 Programming Using the Remote Telephone

Section 1 *D*^{term} *EXT* Programming 5-1

Section 2 Setting The Communication Link 5-2

Section 3 Setting Port Parameters..... 5-3

Section 4 Terminal Adapter..... 5-4

Section 5 Programming the KTS/PBX ISDN Telephone Number..... 5-5

Section 6 Programming the Remote ISDN Telephone Number..... 5-5

Section 7 Call On Demand (COD) 5-6

Section 8 COD Modes..... 5-7

Section 9 Enabling/Disabling COD..... 5-7

Section 10 Setting the Call Timeout Period from the Remote Telephone 5-8

Section 11 Setting the Connect Timeout Period from the Remote Telephone..... 5-9

Section 12 Call On Demand Intruder 5-10

Section 13 Setting the TA Type..... 5-10

Chapter 6 Programming Using a Terminal

Section 1 Introduction 6-1

Section 2 Accessing the Terminal Menu 6-2

Section 3 Editing the AT Command String 6-2

Chapter 7 Operation

Section 1 Introduction 7-1

Section 2 Connecting to the NEC KTS/PBX 7-2

Section 3 Disconnecting the NEC *D^term EXT* 7-3

Chapter 8 Passwords

Section 1 Introduction 8-1

Section 2 Entering Passwords 8-2

Section 3 Changing Passwords 8-2

Chapter 9 Special System Requirements

Section 1 Requirements 9-1

Chapter 10 Leased Line Operation

Section 1 Configuration 10-1

Chapter 11 Data Networking with the Dterm EXT

Section 1 Remote Data Networking 11-1

Section 2 Terminal Application Configuration 11-2

Section 3 Remote Control Configuration 11-5

Section 4 Remote Network Access Configuration 11-7

Section 5 Voice and Data Over Separate B Channels 11-10

Chapter 12 Troubleshooting

Section 1 LED Sequences 12-1

Section 2 Problem Checklist 12-3

Section 3 No Information on the Display of the Remote Telephone 12-3

Section 4 Cannot Make a Connection to the Office Module... 12-4

Section 5 Office Module Will Not Answer Call 12-4

Section 6 Additional Communication Errors 12-5

Appendix A ISDN Terminal Adapters

Section 1 Configuration Overview A-1

Section 2 Adtran ISU 2x64 ISDN Terminal Adapter A-2

Section 3 Adtran ISU Express Terminal Adapter A-7

Section 4 Motorola BitSURFR A-8

Section 5 Motorola BitSURFR Pro A-12

Section 6 Motorola UTA220 (UTA220k) A-15

List of Figures

Figure 1-1 Typical Configuration 1-2

Figure 3-1 Typical RJ-11 Modular Jack (4-Conductor) 3-2

Figure 3-2 *D*^{term} *EXT* Module 3-3

Figure 10-1 *D*^{term} *EXT* with Motorola on a DDS Circuit 10-2

Figure 10-2 *D*^{term} *EXT* with Adtran T1 TSU600 Channel Bank and DSU 3 Interface Card 10-2

Figure 11-1 Terminal Applications 11-3

Figure 11-2 Remote Control 11-5

Figure 11-3 Remote Network Access 11-7

Figure 11-4 Voice and Data Over Separate B Channels 11-10

Introduction

CHAPTER 1

SECTION 1 PURPOSE

The purpose of this manual is to provide the information required to successfully install, program, and operate the NEC *D^term^ EXT*. All applications may not be specifically addressed in this manual.

SECTION 2 PRODUCT DESCRIPTION

The NEC *D^term^ EXT* provides remote voice and data communication between your office and an off-site location. In addition to the telephone voice connection, remote users can access the office LAN or an office computer running a terminal emulation package.

When using the NEC *D^term^ EXT* with the DTP-32DE-1 Multiline Terminal, a remote site can access the features and functions of the office KTS/PBX.

SECTION 3 SYSTEM OPERATION AND CONFIGURATION

The NEC *D^term^ EXT* system consists of two modules.

- ❒ The **Office Module** connects to a single digital station port on the KTS/PBX. The office module is located at the KTS/PBX site.
- ❒ The **Remote Module** connects to the NEC *D^term^ Series E* (DTP-32DE-1) Multiline Terminal at the remote site.

The NEC *D^term^ EXT* system provides most of the features and capabilities of a normal office terminal to an off-premise site. Refer to Chapter 9 Special System Requirements.

The Typical Configuration diagram illustrates the NEC *D^term EXT* System.

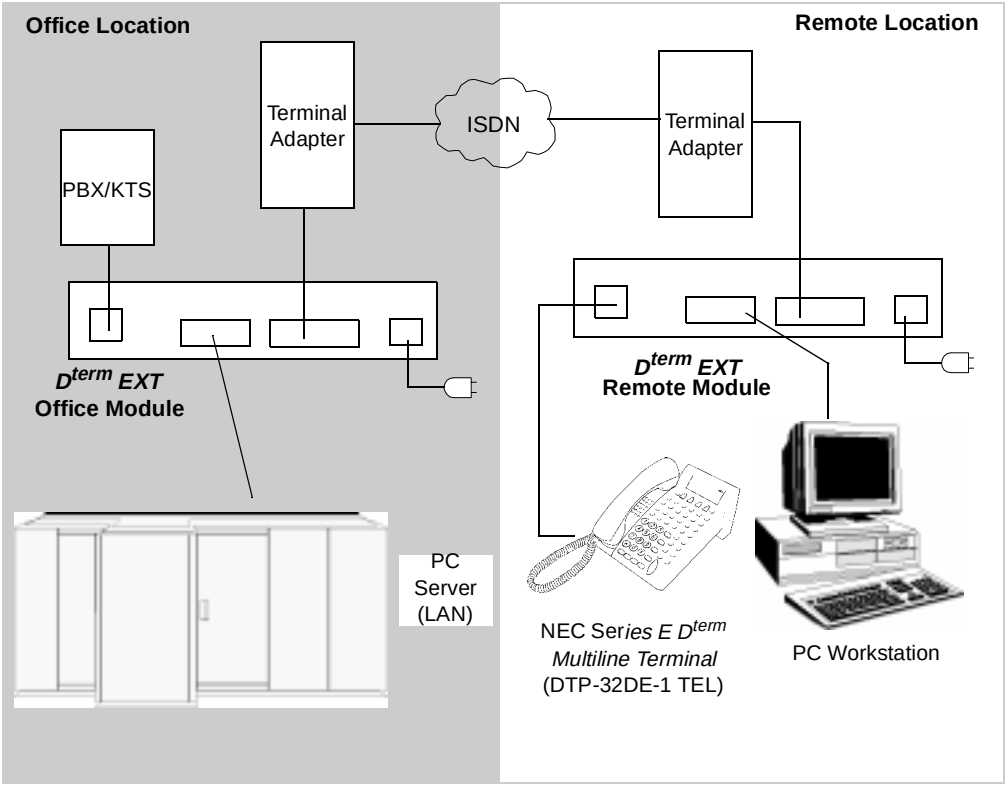


Figure 1-1 Typical Configuration

SECTION 4 EQUIPMENT LIST

The basic NEC *D^term EXT* system setup requires:

- ❒ One Office Module
  (OPE-OF Module – NEC Stock Number: 770260)
- ❒ One Remote Module
  (OPE-RE Module – NEC Stock Number: 770270)
- ❒ One NEC *D^term EXT* Owner's Manual (included with the *D^term EXT* modules)
  (NEC Stock Number: 722076)
- ❒ One of the following NEC *D^term Series E* Telephones
  (DTP-32DE-1 (BK) – NEC Stock Number: 770070)
  (DTP-32DE-1 (WH) – NEC Stock Number: 770071)
- ❒ One DB25 RS-232 cable is used to connect each module to the TA (includes 25-pin male-to-female). Each module comes equipped with one RS-232 cable.
- ❒ One AC adapter is required for each module. Each module comes equipped with one AC adapter.

Only the AC adapter, which is included with the module, should be used with the module. Using another manufacturer's AC adapter may cause damage to the modules.

- ❒ NEC Electra Professional Level I, Electra Professional 120, Level II, or Level II Advanced Key Telephone System
  - Electra Professional Level I requires system software version 4.00 or higher and an ESI digital line card (all revisions).
  - Electra Professional Level 120, Level II, or Level II Advanced requires system software version 6.50 or higher and an ESI digital line card (all revisions).

  - OR -

NEAX 1000 IVS/NEAX 2000 IVS/NEAX 2400 PBX

- NEAX 2000 IVS requires system software series 1600 or higher and a digital line card PN-4DLCD.
- NEAX 2400 requires system software series versions II, IIIa, IV, and V for MDS/HDs systems and 6000, 6100, 6200, 6300 and higher for ICS 7200, 7300 and higher for IMX. Also required is a digital line card PA-16ELCH-E and higher revisions (includes PA-16ELCHJ and PA-16ELCJ-B).

❒ Two telephone line cords (RJ-11 termination)

One line cord connects the Office Module to the PBX, the other line cord connects the Remote Module to the Multiline Terminal.

A serial cable with one end as male DB9 for Office Module programming. The gender of the other end of the cable depends on which PC COM port the administrator uses for module setup.

The following are also required for ISDN operation but ***are not*** provided by NEC:

❒ One Office ISDN Terminal Adapter *

❒ One Remote ISDN Terminal Adapter *

❒ One ISDN-BRI Line at the Office Site

❒ One ISDN-BRI Line at the Remote Site

* The compatible terminal adapters include: Adtran ISU Express, Adtran ISU 2x64, Motorola BitSURFR PRO, Motorola BitSURFR, and Motorola UTA220K. The terminal adapter must be configured for Synchronous Clear Channel communication for operation with the *D^{term} EXT*. Refer to the user's manual that comes with the terminal adapter for the configuration.

The following are required for leased line operation, but ***are not*** included with the system:

- ❒ One CSU/DSU at the Office Site
- ❒ One CSU/DSU at the Remote Site
- ❒ Switched 56K Line (point-to-point) from the Office Site to the Remote Site

  - OR -

- ❒ One T1 channel bank with a single channel interface card at the Office Site
- ❒ One T1 channel bank with a single channel interface card at the Remote Site
- ❒ T1 circuit

Specifications

CHAPTER 2

SECTION 1 SIZE AND WEIGHT

The *D*^{term} *EXT* Office Module and Remote Module each weigh 0.68 kilograms (1.5 pounds) and measure 205mm x 205mm x 40mm (8.0" x 8.0" x 1.50").

SECTION 2 POWER REQUIREMENTS

12 Vdc supplied by 120 Vac adapters.

SECTION 3 COMMUNICATION CONNECTION AND OPERATION

The Office and Remote Modules are connected to separate external ISDN terminal adapters (TA). Communication between modules takes place over a single ISDN B channel, provided by the local telephone company. This allows a 64 Kbps digital link to be established between the Office and Remote Modules.

The modules are able to transmit and receive voice and data over the ISDN connection (gateway). Speech is compressed by the modules to 32 Kbit ADPCM. After it is compressed, it is combined with the signaling data for the telephone.

The Remote Module is connected to the *D*^{term} *Series E* (DTP-32DE-1 TEL) and to the remote PC. The modules also provide a serial connection for data transmission to the office LAN. In this case, the Office Module connects to the KTS/ PBX and the office LAN server.

The NEC *D^term EXT* system performs dynamic bandwidth allocation by detecting silence within the speech. For no voice transmission, the modules allow for an increase in LAN communication speed for a variable data rate of up to 38.4 Kbps. ***Priority is always given to speech ensuring the highest quality at all times.***

The remote PC and LAN server connections are made from the serial connector on the *D^term EXT*. This connector is labeled as COM 1 on the Office and Remote Modules. Throughput of the COM 1 port is controlled by hardware handshaking. When going online, DCD (Data Carrier Detect) is off until a valid password is entered.

Data communication can be configured as follows:

User Data Port	Data Type	RS232
Data Rate Setting Options	Data Rate:	2.4 Kbps - 38.4 Kbps
	Parity:	Even, odd, none
	Data Bits:	7 or 8
	Stop Bits:	1 or 2

SECTION 4 FACILITIES SPECIFICATION

The NEC *D^term EXT* system operates with any ISDN BRI or switched 56K facility. Customers using ISDN must ensure compatibility with their ISDN terminal adapter (TA).

Installation and Operation Overview

CHAPTER 3

SECTION 1 LOCATION REQUIREMENTS

The installation area should be:

- ❒ Well ventilated and free of dust.
- ❒ Have an ambient temperature of 32° F (0° C) to 131° F (55° C), with a relative humidity between 0% and 95%.
- ❒ Free of any large electrical equipment such as copiers or motors that generate electromagnetic, radio frequency or electrostatic interference.
- ❒ The Office Module must be connected within 250 feet (60 meters) of the NEC KTS/PBX.
- ❒ The Remote Module must be connected within 250 feet (60 meters) of the DTP-32DE-1 telephone at the remote site.

SECTION 2 ELECTRICAL REQUIREMENTS

Power should not be applied to the Office and Remote Modules until specified in the installation procedures. When installing, use only the provided AC adapters with the Office and Remote Modules.

SECTION 3 WIRING REQUIREMENTS

Twisted pair cable (shielded 24 AWG 1-pair) should be used to connect the PBX/KTS to the Office Module and to connect the Remote Module to the remote telephone. Both the Office and Remote Modules should be wired for operation on the inner pair (red-green). Refer to Figure 3-1 Typical RJ-11 Modular Jack (4-Conductor).

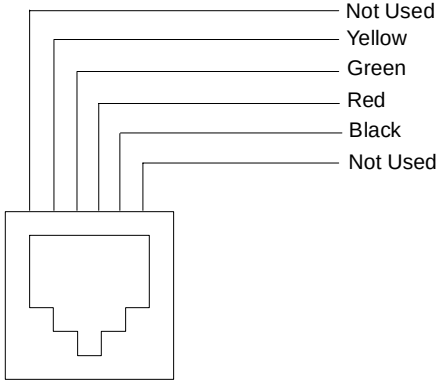


Figure 3-1 Typical RJ-11 Modular Jack (4-Conductor)

SECTION 4 MODULE DESCRIPTION

- ❒ On the Office Module, "PORT" is the connection to the NEC KTS/PBX. On the Remote Module, "PORT" is the connection to the NEC DTP-32DE-1 Multiline Terminal.
- ❒ "COM 1" provides for simultaneous RS-232 communication between equipment at the office site and remote site.
- ❒ "TA PORT" is used to connect a DB25 cable from the TA to a NEC *D^term EXT* module.
- ❒ "+12VDC" is the connection from the AC adapter.
- ❒ A three-color LED (Light Emitting Diode) is visible through the top panel of each module, and provides information about the status of the equipment.

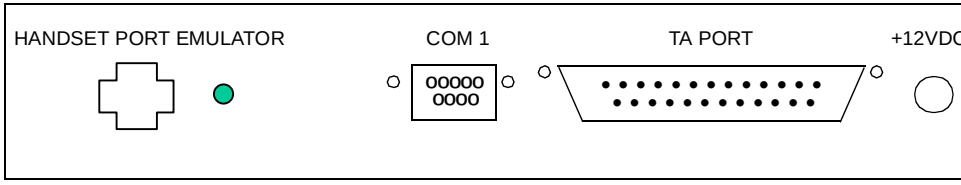


Figure 3-2 *D^term EXT* **Module**

Installation

CHAPTER 4

SECTION 1 OFFICE SITE INSTALLATION

***Before installation*, verify that the module being installed is labeled as the Office Module (OPE-OF). Connecting the Remote Module (OPE-RE) to the NEC KTS/PBX could result in damage to the unit.**

Do not plug the AC adapters into the electrical outlets until indicated in the following procedures.

To install the Office Module to the KTS/PBX:

- ❒ Locate the digital station port on the KTS/PBX that connects to the Office Module.
- ❒ Using a DB-25 RS-232 cable (provided), connect one end to the TA and the other end to the port labeled **TA PORT** located on the back of the Office Module.
- ❒ Using a telephone cable, connect one end to the KTS/PBX digital station port and the other end to the port labeled **PORT** located on the back of the Office Module.
- ❒ Connect the AC adapter to the Office Module port labeled **+12 Vdc**.
- ❒ Plug the AC adapter into a standard 120 volt electrical outlet.

After connecting the power, the Office Module begins a series of self-diagnostics. During this time, the LED at the top of the module flashes red and yellow. When the Office Module completes its diagnostics, the LED flashes green.

SECTION 2 REMOTE SITE INSTALLATION

To install and use the Remote Module at the remote site, an **NEC DTP-32DE-1** Multiline Terminal with the Remote Module ***must*** be used. The NEC DTP-32D-1 Multiline Terminal, however, is not FCC certified for use in a home environment. Therefore, it should not be used with the Remote Module. Also, a third-party telephone does not operate with the Remote Module.

Before installation, **verify that the module being installed is labeled as the Remote Module (OPE-RE). Connecting the Office Module (OPE-OF) to the voice terminal could result in damage to the unit.**

To install the Remote Module at the remote site:

- ❒ Using a DB25 RS-232 cable (provided), connect one end to the TA and the other end to the port labeled **TA PORT** located on the back of the Remote Module.
- ❒ Using a telephone line cord, connect one end to the NEC DTP-32DE-1 Multiline Terminal and the other end to the port labeled **PORT** located on the back of the Remote Module.
- ❒ Connect the AC adapter to the Remote Module port labeled **+12 V DC**.
- ❒ Plug the AC adapter into a standard 120 volt electrical outlet.

After connecting the power, the Remote Module begins a series of self diagnostics. During this time, the LED at the top of the module flashes red and yellow. When the Remote Module completes its diagnostics, the LED flashes green. The display on the remote terminal indicates:

"GO ONLINE?"

Programming Using the Remote Telephone

CHAPTER 5

SECTION 1 *D^term EXT* PROGRAMMING

Programming the operating parameters is accomplished at the remote site using the NEC DTP-32DE-1 Multiline Terminal. Prompts are shown on the LCD display of the remote terminal. User programming is conducted by pressing the softkeys on the DTP-32DE-1 Multiline Terminal. Programming can be accomplished through a series of menus that appear on the LCD of the remote telephone when offline.

Softkey Definitions

Softkey	Function
EXIT	Enables the user to send a password to the module after it is manually entered using the dial pad. Also used for accepting a feature.
1	Enables the user to move backward through the menus. (PREV)
2	Enables the user to select an option from the menu.
3	Enables the user to move forward through the menus. (NEXT)
4	Enables the user to backspace.
HELP	Not used for logon or programming.

SECTION 2 SETTING THE COMMUNICATION LINK

The communication link sets the communication identification parameters between the office site and the remote site.

It may be helpful to read the *D*^{term} Series E User's Guide to become familiar with the basic operation of the telephone.

When setting the communications link, the following settings ***must*** be made to the modules for normal operation:

- ❒ Set the Communication Port parameters.
- ❒ Set Terminal Adapter (TA) Port settings.
- ❒ Program the directory numbers (telephone numbers) of the ISDN B channel used by the Office Module and Remote Module.

  The communication parameters can only be changed while the remote user is logged off. Refer to Chapter 7, Section 3 - Disconnecting the NEC D^{term} EXT on page 7-3 for logging off.

All communication parameters set from the remote site use the display on the remote DTP-32DE-1 Multiline Terminal. To program at the office site, a PC running terminal emulation software is required.

While setting communication parameters (when configuring for the first time), the display on the remote telephone shows the ***Go Online?*** prompt at default. The *D*^{term} *EXT* is in offline mode which permits remote programming via the DTP-32DE-1 telephone.

Note 1: When programming the NEC *D*^{term} *EXT* and a key is not pressed within 30 seconds, the unit times out and the display returns to the ***Go Online?*** prompt.

Note 2: If the settings displayed on the DTP-32DE-1 Multiline Terminal are not the same as those described below, use Softkey 1 or Softkey 3 to cycle through the submenus until the desired parameters are displayed. Some submenus require the user to enter numbers. If the user makes a mistake, he/she can use Softkey 4 for backspace. (Backspacing is not allowed when entering a password.) Alternatively, the user can first accept his/her input by pressing Softkey 2 and then go back into the same menu to change the values.

SECTION 3 SETTING PORT PARAMETERS

COM 1 is the standard port installed with every system.

To set the communication port parameters:

- ❒ Press Softkey 3 until the display shows ***Set COM 1 Port ?***.
- ❒ Press Softkey 2. The display shows ***Data Rate:38.4Kbps?***.
- ❒ Press Softkey 2 for OK. The data rate setting is accepted and the display shows ***Data Bits:8***.

  (Setting the data bits refers to changing the number of bits in the character sent to the COM port.)
- ❒ Press Softkey 2 for OK. The data bits setting is accepted and the display shows ***Parity:None***.
- ❒ Press Softkey 2 for OK. The parity setting is accepted and the display shows ***Stop Bits:1***.
- ❒ Press Softkey 2 for OK. The stop bits setting is accepted and the display menu returns to ***Set COM 1 Port ?***. Use the PREV or NEXT softkeys to access other parameters.

SECTION 4 TERMINAL ADAPTER

To set the terminal adapter:

- ❒ Scroll through the offline menu by pressing the NEXT or PREV softkey until ***Set TA Port?*** appears. Press ***OK*** and verify the following information:

  Data Rate: 9.6 Kbps

  Data Bits: 8

  Parity: None

  Stop Bits: 1

- ❒ Press Softkey 3 until the display shows ***Set TA Port Equipment?***.

  The *D*^{term} *EXT* can support these three pre-programmed terminal adapters: Motorola BitSURFR, Motorola BitSURFR PRO, and Motorola UTA220K. A custom TA can also be configured. Refer to Section 13 Setting the TA Type on page 5-10.

- ❒ Press Softkey 2 for OK. The display shows the current setting ***TA Port: Terminal Adapter***.

Below is a description of the three choices for TA Port equipment.

LEASED LINE	This option changes how the Office and Remote Modules operate. In this mode, CSU/DSU equipment is used to provide the connection between the Office Module and the Remote Module.
TERMINAL ADAPTER	This setting is for the AT off-line communications and is the method the Office and Remote Modules use to dial a particular phone number and receive call information from the terminal adapter.

NULL MODEM This is for testing purposes only. This setting allows the user to connect the Office and Remote Modules "back-to-back" (without a terminal adapter) using a Null Modem cable to test communication and functionality.

SECTION 5 PROGRAMMING THE KTS/PBX ISDN TELEPHONE NUMBER

To program the telephone number from the DTP-32DE-1 Multiline Terminal:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set PBX Phone Number?***.
- ❒ Press Softkey 2 for OK.

  If a previous number was stored as the PBX Phone Number, it appears on the display.

  If no number was stored, the display appears blank.
- ❒ Enter the telephone number of the office site (maximum 15 digits).
- ❒ Press the Exit key to accept.

SECTION 6 PROGRAMMING THE REMOTE ISDN TELEPHONE NUMBER

To program a remote telephone number:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set REM Phone Number?***.
- ❒ Press Softkey 2 for OK.

  If a previous number was stored as the Remote Phone Number, it appears on the display.

  If no number was stored, the display appears blank.
- ❒ Enter the telephone number of the remote site (maximum 15 digits).
- ❒ Press the Exit key to accept.

SECTION 7 CALL ON DEMAND (COD)

Call On Demand (COD) permits a remote user to be logged into the *D^term EXT* while the ISDN communication is temporarily disabled. Enabling COD avoids continuous ISDN usage charges, which are billed from the telephone company.

When the COD feature is enabled, the NEC *D^term EXT* reconnects the ISDN circuit when a call is either initiated or received, or if any button is pressed.

Note: The LCD indicates “Call On Demand Waiting” after logging into the *D^term EXT*. If the user goes off-hook to make a call during this time, there can be a one-minute delay for updating the time and date on the LCD. Refer to Chapter 7 Operation for detailed information.

COD has four parameters that require programming by the user:

- ❒ The KTS/PBX (Office) Phone Number (ISDN or Switched 56K phone number).
- ❒ The Remote Phone Number (ISDN or Switched 56K phone number).
- ❒ Call On Demand Disable/Enable.
- ❒ Call Timeout period and Connect Timeout period.

SECTION 8 COD MODES

There are two Call On Demand modes. These are described below.

DISABLED The ISDN line remains active at all times.

ENABLED The Remote Module COD Timer starts when there are no active calls. When the COD Timer reaches the Call Timeout period, the ISDN line is dropped and the Remote Module enters COD Waiting. Some activities, such as a Ring command from the KTS/PBX, or on-hook/off-hook command, causes the Remote Module to leave Call On Demand Waiting and re-establish the ISDN connection.

SECTION 9 ENABLING/DISABLING COD

To enable/disable Call On Demand mode while off-line:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set COD Mode?***.
- ❒ Press Softkey 2 for OK. The display shows ***Change to Enable?*** or ***Change to Disable?***.
- ❒ Press Softkey 2 for OK to accept the setting.

SECTION 10 SETTING THE CALL TIMEOUT PERIOD FROM THE REMOTE TELEPHONE

If the remote telephone is configured for Call On Demand (Enabled) and online, the user accesses the connect timeout period to enter "Call On Demand Waiting." (Refer to Section 11 Setting the Connect Timeout Period from the Remote Telephone.) If the user does not wait for the system to enter Call On Demand and a call is made to/from the remote terminal and then terminated, the remaining time to enter Call On Demand is governed by the call timeout setting. This is configured under the ***Main*** menu options.

To set the timeout period:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set Timing Parameters ?***.
- ❒ Press Softkey 2 for OK. The display shows ***Set Call Timeout?***.
- ❒ Press Softkey 2 for OK.
- ❒ Enter the amount of time after which the system will disconnect in seconds. Valid values for call timeout range from six seconds to 300 seconds.
- ❒ Press the Exit key to accept.

SECTION 11 SETTING THE CONNECT TIMEOUT PERIOD FROM THE REMOTE TELEPHONE

After a call is made to/from the remote telephone when configured for Call On Demand Waiting, there is a period of time to re-enter the COD state once the call has been terminated. This amount of time is called the *Connect Timeout Period*, which can be configured via the remote telephone while off-line.

Note: Incoming ringing also "wakes up" the remote telephone from Call On Demand Waiting. It takes the Connect Timeout Period to re-enter the COD state.

To set the timeout period:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set Timing Parameters ?***.
- ❒ Press Softkey 2 for OK. The display shows ***Set Call Timeout?***.
- ❒ Press Softkey 3. The display shows ***Set Connect Timeout?***.
- ❒ Press Softkey 2 for OK.
- ❒ Enter the amount of time (in seconds) after which the system disconnects. Values for connect timeout range from six seconds to 300 seconds.

SECTION 12 CALL ON DEMAND INTRUDER

The NEC *D^term EXT* allows multiple remote users to connect to one Office Module at different times. Therefore, if one remote user logs out from the office site, another remote user can log on to the same Office Module.

There are times when both the Remote Module and Office Module are online and in COD mode, and another remote user tries to connect to the Office Module. This scenario is referred to as Call On Demand Intrusion.

The COD Intruder feature ensures that when the Office and Remote Modules are in COD mode, the System Administrator is able to logout an unauthorized user.

In many cases, users are assigned to the same Office Module, however, only one user can access the Office Module at any given time. If another remote user tries to connect to the Office Module in COD mode, the Office Module compares the new user's password with the ones already programmed. If the password is correct, a connection is established. This allows the Remote Module to reconnect to the Office Module in case there is a power failure at the remote site.

SECTION 13 SETTING THE TA TYPE

The Office and Remote Modules must be programmed for the TA profile.

The Remote Module can be programmed using either the *D^term* telephone display, or a PC running terminal emulation software.

Each time the NEC *D^term EXT* powers up, an initialization string will be sent to the TA.

When using a leased line or null modem, nothing is sent.

The following are options for the initialization string:

BitSURFR PRO This option selects the Motorola BitSURFR PRO TA profile. This is a special option used in setting the AT initialization string.

(The Motorola BitSURFR PRO EZ is not compatible with the D^term EXT.)

BitSURFR: This option selects the Motorola BitSURFR TA profile. This is a special option used in setting the AT initialization string.

UTA220K This option selects the Motorola UTA220K TA profile. This is a special option used in setting the AT initialization string.

Adtran 2x64 This option is valid for the Adtran ISU 2x64 or the Adtran ISU Express TA profile. This is a special profile.

Custom This option allows the user to edit the AT initialization command for a custom terminal adapter. Refer to Chapter 6, Section 3 - Editing the AT Command String on page 6-2.

To select the TA type:

- ❒ Press Softkey 3 from the ***Go Online?*** menu until the display shows ***Set TA Type?***.
- ❒ Press Softkey 3 until the appropriate TA profile is displayed.
- ❒ Press Softkey 2 for OK.

Note: The Diagnostic Menu is for service technicians only.

Programming Using a Terminal

CHAPTER 6

SECTION 1 INTRODUCTION

The NEC *D*^{term} *EXT* can also be programmed using a PC or terminal.

On the Remote Module, most features can be programmed using the remote telephone, but the Office Module requires a terminal to access all its parameters. Programming the Remote Module via a PC is necessary only if a Custom TA Type is required. (Refer to Section 3 Editing the AT Command String on page 6-2.)

The PC must have its communications parameters set to:

- ❒ 9600 bps
- ❒ No parity
- ❒ 8 bits
- ❒ 1 stop bit.

The NEC *D*^{term} *EXT* must also be connected to the PC using an RS-232 cable. When programming from the PC, connection is made to the COM 1 port on the Office and Remote Modules.

SECTION 2 ACCESSING THE TERMINAL MENU

When the NEC *D^term EXT* powers up, a series of LED flashes occur. A sequence of eight red flashes is followed by one or two more red flashes. After these flashes are finished, the LED flashes yellow.

During the yellow flashes, the user has *5* seconds to type MENU (using a terminal emulation program) to access the programming menu. If this time expires, the *D^term EXT* must be reset by unplugging the AC power and then reinstalling it.

SECTION 3 EDITING THE AT COMMAND STRING

When the NEC *D^term EXT* powers up, it sends initialization commands to the TA to set up the communication parameters between the TA and the module. The AT Command String can only be edited if a custom TA is chosen. This can be configured by using a PC, running terminal emulation software in the Set TA Type menu.

This programming parameter allows the user to input text of up to 30 characters to initialize the TA. The initialization commands must be set for the particular manufacturer to ensure proper operation of the modules.

The NEC *D^term EXT* has the following constraints:

- ❒ The module must connect at 56K to 64K.
- ❒ When the module goes online, the DCD is enabled by the TA, except in the case of LEASED MODE.
- ❒ When the module goes online, the TA goes to synchronous clear channel communications protocol, except in the case of LEASED MODE.
- ❒ When the TA detects an on/off transition of the DTR, it terminates a connection, except in the case of LEASED MODE.

- ❒ Echo off and numeric responses required from the TA, except in the case of LEASED MODE.
- ❒ AT command communication set up as 9600 bps, no parity, 8 bits, 1 stop bit, except in the case of LEASED MODE.

Consult the instruction manual that accompanies the Terminal Adapter for the AT commands needed to set these requirements.

Operation

CHAPTER 7

SECTION 1 INTRODUCTION

To start the system:

- ❒ When the message ***Go Online?*** appears, press Softkey 2. The Remote Module dials the Office Module at the programmed number.
- ❒ You are prompted to enter your password.

  If your password is valid, the telephone displays "Password OK".

  If your password is invalid, you are prompted to re-enter it.
- ❒ The telephone displays ***Password OK*** and then ***Please Wait*** when the password is correct and a communication link is being established.

  If the *D^term EXT* is configured for continuous mode, the LCD on the remote telephone is updated with time and date information from the KTS/PBX.

  If the *D^term EXT* is configured for Call On Demand Mode, the LCD indicates time and date information first, followed by Call On Demand Waiting.

SECTION 2 CONNECTING TO THE NEC KTS/PBX

To connect to the office site:

- ❒ Ensure the NEC ISDN Office Module is installed.
- ❒ Press Softkey 2 on the remote telephone for OK when the display shows ***Go Online?***.

Before the connection is made, a series of communication tests occur. When connected to the Office Module, the time and date appear on the remote telephone display.

There are some instances when problems can occur with a connection. If a connection problem occurs, the remote telephone display shows the type of problem. There are two messages:

DCD NOT DETECTED	This message indicates the Office Module is not picking up the call, or the Remote Module does not receive a ringback or answerback tone. Ensure the telephone numbers are programmed correctly. Contact the office System Administrator for verification.
V42 FAIL	This message indicates that the two TAs have connected, but the communication setup is incorrect on the terminal adapters. This may be caused by loose or defective cables and/or gender changers between the TA and the modules.
DSP NO RESPONSE	Specific parameters may not have been updated. Retry the connection.

SECTION 3 DISCONNECTING THE NEC *D^term EXT*

To disconnect from the Remote Module:

- ❒ Press and hold the Recall key for one second. The display shows ***Logout?***.
- ❒ Press Softkey 2 for OK.

Passwords

CHAPTER 8

SECTION 1 INTRODUCTION

Passwords are an important security feature for your telephone system and are initially assigned by your System Administrator, but can later be changed by each user.

A valid password must be entered to allow the remote telephone to connect to the PBX. Passwords are retained in Non-Volatile Memory in the Office Module and are not affected by power outages.

The factory default setting is '00' for the ID number and '00000000' as the user password, and is meant for the System Administrator's use. All other passwords are disabled by default. ***This requires the System Administrator to enter a valid password for each user requiring access to the Office Module at the office.***

A password can contain eight, nine, or 10 digits which includes the user number.

Each user is assigned a two-digit user number which becomes the first two digits of their password. A user is permitted to change only their own password. If the first two digits of their new password do not correspond to their user number assigned by the System Administrator, the new password is not accepted.

Up to 100 passwords can be programmed into the Office Module. This allows a number of different users, such as employees on different shifts who share the KTS/PBX hardware, to connect to the same Office Module from multiple remote sites.

SECTION 2 ENTERING PASSWORDS

To enter a password:

- ❒ When going online, ***Please Enter Password then Press Exit*** is displayed automatically.
- ❒ ***Password OK*** or ***Invalid Password*** is displayed.

  If a valid password has been entered, the unit completes the connect sequence and the remote telephone and/or PC connection becomes operational.

  If an invalid password was entered, the user is prompted to re-enter the password. If after three attempts, a valid password has not been entered, the unit disconnects and returns to the ***"Go Online?"*** prompt.

SECTION 3 CHANGING PASSWORDS

To change an existing password:

- ❒ While online and idle, press the Transfer key one time.
- ❒ The display shows ***Change Password?***.
- ❒ Enter the old password (an * appears for each digit entered).
- ❒ If correct, a prompt for the new password appears.
- ❒ Enter the new password, starting with the original two-digit User ID number.

  The two-digit User ID number can only be changed by the System Administrator.

- ❒ Press the Exit key to accept the password.

Special System Requirements

CHAPTER 9

SECTION 1 REQUIREMENTS

The following service conditions must be addressed before using the *D^term EXT*.

- ❒ **911 calls should not be made via remote terminals since the telephone number at the KTS/PBX location is sent to the emergency center. The user should use a separate line that is not connected to the *D^term EXT* system.**
- ❒ Zone paging and voice paging must be turned off via KTS/PBX programming. The remote telephone should be programmed to ring for all incoming calls.
- ❒ If the remote Multiline Terminal is programmed to answer multiple calls, these calls should ring at the terminal. Configure secondary incoming extensions for ringing. If programming is necessary, contact your authorized NEC dealer.
- ❒ Synchronous ringing does not operate on the remote telephone when used with Electra Professional Level I or the 120, Level II, or Level II Advanced key systems. Incoming trunk calls ring “2 on/2 off.”
- ❒ Analog fax machines and modems are not operable with the DTP-32DE-1 Multiline Terminal when connected to the APR-U optional adapter.
- ❒ The NEC *D^term* Cordless telephone cannot be used in conjunction with the DTP-32DE-1 Multiline Terminal and *D^term EXT* for Electra Professional operation or with NEAX telephone switches.

- ❒ The NEC CTA-U optional adapter cannot be installed to a remote Multiline Terminal for TAPI functionality with the Electra Professional Level I, 120, Level II, or Level II Advanced key systems.
- ❒ The CTA-U does not operate in Call On Demand mode for TAPI applications.
- ❒ Forced Mode ACD is not operable from a remote PC station while operating in Call On Demand mode.
- ❒ The *D*^{term} PC interface card is not functional with the *D*^{term} *EXT* for Electra Professional Key Telephone or NEAX systems.
- ❒ The HFU-U handsfree adapter is not operable with the DTP-32DE-1 Multiline Terminal for *D*^{term} *EXT* operation when used in a home environment due to FCC restrictions. It is operable in an office environment.
- ❒ Remote system programming via Customer Administration Terminal (CAT) mode is not possible with the *D*^{term} *EXT* when operating with the NEAX 1000/2000 IVS.

Leased Line Operation

CHAPTER 10

SECTION 1 CONFIGURATION

The *D*^{term} *EXT* may be configured to operate over a 56K~64K leased line. In this case, the ISDN terminal adapters will be replaced by a CSU/DSU device. The *D*^{term} *EXT* connects to the CSU/DSU via a RS-232 DB25 cable at the "TA Port" location on the backside of the Office/Remote Module.

In order to configure the *D*^{term} *EXT* for leased line mode, both the Office and the Remote Module must have the ***TA Port*** option set to ***Leased Line***. Refer to Chapter 4 Installation and Chapter 5 Programming Using the Remote Telephone for instructions for installing and programming).

When the *D*^{term} *EXT* is configured for Leased Line operation:

- ❒ The Office and Remote Modules ignore the phone numbers entered for KTS/PBX ISDN Telephone Number (refer to Chapter 4 Installation and Chapter 5 Programming Using the Remote Telephone) when going online, since there will be no dialing of digits to establish a point-to-point connection.
- ❒ The TA Port Equipment settings in the Office and Remote Module will be ignored.
- ❒ The Leased Line equipment must be configured for synchronous clear channel data transmission.

The *D^term EXT* is compatible with the following CSU/DSU equipment for a point-to-point connection:

- ❒ Motorola MR64 (CSU/DSU) on a DDS circuit
- ❒ Adtran T1 TSU600 Channel Bank with DSU 3 Interface Card.

The *D^term EXT* may be configured for a leased line connection as shown in Figure 10-1 D^term EXT with Motorola on a DDS Circuit and Figure 10-2 D^term EXT with Adtran T1 TSU600 Channel Bank and DSU 3 Interface Card:

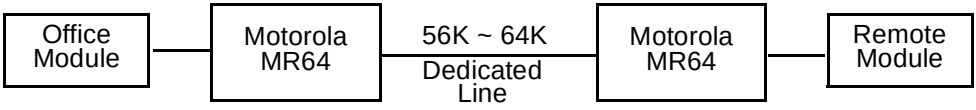
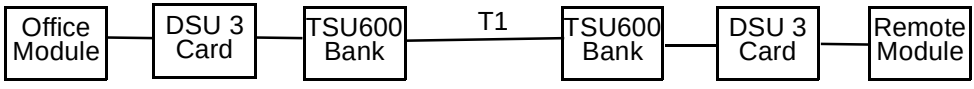


Figure 10-1 *D^term EXT* with Motorola on a DDS Circuit



The DSU 3 separates one channel from the T1 for use with the *D^term EXT*.

Figure 10-2 *D^term EXT* with Adtran T1 TSU600 Channel Bank and DSU 3 Interface Card

Data Networking with the D^term EXT

CHAPTER 11

SECTION 1 REMOTE DATA NETWORKING

General Information

The remote user may want data communication with an office LAN in addition to normal voice operation. This allows the remote user to handle voice calls while sending data through the COM1 port on the *D^term EXT*. ***Communication through the COM1 port on the Remote Module is only provided to the device connected to the COM1 device attached to the Office Module.*** If this type of functionality is required, both the Office and Remote Modules should have the COM1 port configured to 38.4/8/N/1. The Remote Module can be programmed for these setting via the configuration menu which is available through the remote telephone when in Offline Mode. (Refer to Section 3 Setting Port Parameters on page 5-3.) The system administrator should be contacted to configure the Office Module to the 38.4/8/N/1 settings.

There are many different ways to send/receive data through the COM1 ports on the modules. (Refer to the rest of the this chapter for an explanation of each configuration.)

Data Communication Guidelines

1. All equipment should be properly configured before attempting any data communication.
2. The remote user must be logged on (through the remote telephone by entering the password) for data communication to take place.

3. For simultaneous voice and data calls, voice has priority over data. Refer to the following table.

Connection Speed	Typical Speed (kbps)	Estimated Minimum Speed (kbps)	Condition
64K	22.5	12	With simultaneous speech
64K	38.4	19.2	Without simultaneous speech
56K (for leased line)	19.5	10	With simultaneous speech
56K (for leased line)	38.4	19.2	Without simultaneous speech

SECTION 2 TERMINAL APPLICATION CONFIGURATION

Summary

This configuration shows the terminal application and the RS-232 port of the Remote Module used to connect to a host computer at the office. Terminal access and digital multiline telephone functionality is provided across a single ISDN B channel. (Refer to Figure 11-1 Terminal Applications.)

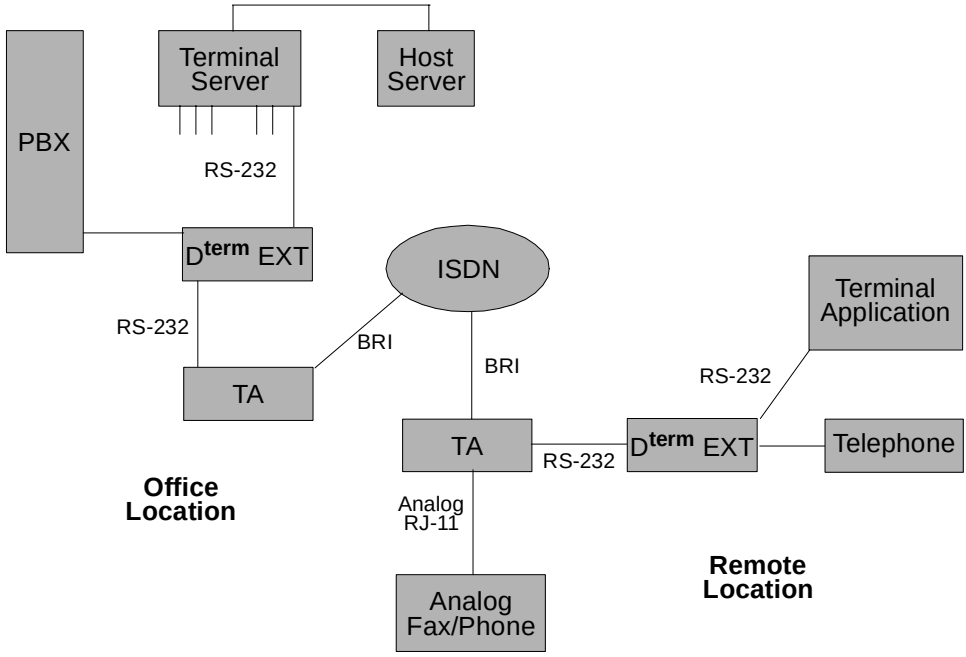


Figure 11-1 Terminal Applications

Features

The following features are provided:

- ❒ Compatible with standard terminal applications
- ❒ Simultaneous data and voice over a single ISDN B channel
- ❒ Data throughput of up to 38.4K without voice and up to 19.2K with voice
- ❒ Second B channel can be used by analog fax, telephone, or modem

Application Scenario

This scenario allows a standard terminal application such as, Procomm, Telix, or Windows HyperTerminal to be used to access a host computer at the main office. Many CTI applications only require terminal access rather than network access, making this a practical solution. It also supports file transfer using standard protocols like Xmodem, Ymodem, Zmodem, Kermit, ASCII, etc. Terminal access and digital phone access occur over a single ISDN B channel leaving the other B channel available for an analog device such as a telephone, fax, or modem. The analog device can be connected to the RJ-11 analog voice port of the terminal adapter.

Setup Notes

- ❒ The PC or terminal is connected to the Remote Module using a standard RS-232 cable. Connect the Office Module to a terminal server or directly to a host computer using a standard RS-232 cable.
- ❒ Configure the terminal server or host to accept a direct cable connection. Consult the software vendor for any questions.
- ❒ Enable the remote voice connection using the “Go Online” from the remote telephone. Log on by entering your password.
- ❒ Launch the terminal application. It is not necessary to be in Call on Demand mode, the connection will still take place.

SECTION 3 REMOTE CONTROL CONFIGURATION

Summary

This configuration shows a remote control product, such as PC Anywhere, used via the RS-232 port on the Remote Module controlling a host computer at the main office. All of the corporate resources available to the host PC can be accessed. Remote control and digital telephone functionality is provided across a single ISDN B channel. (Refer to Figure 11-2 Remote Control.)

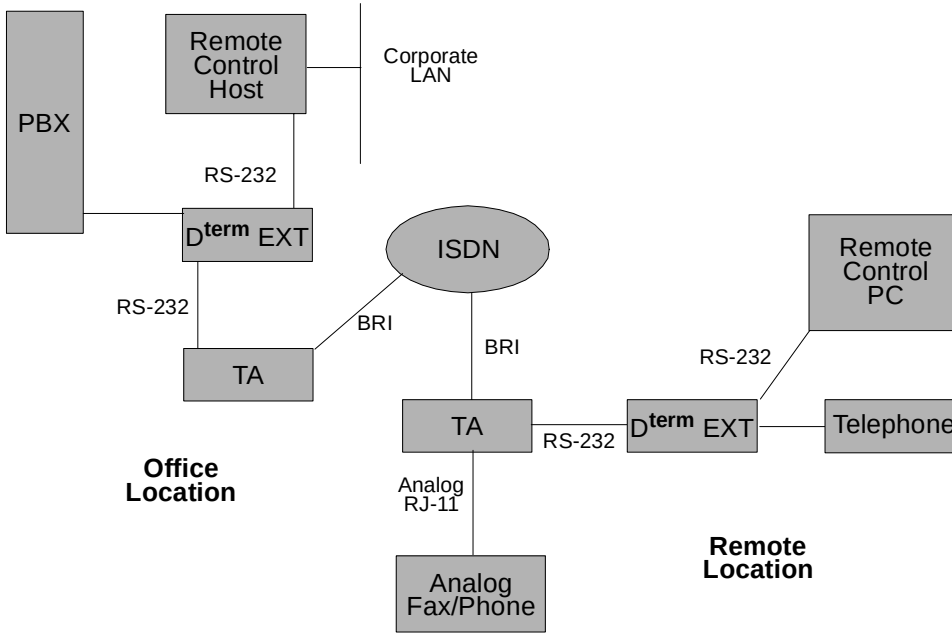


Figure 11-2 Remote Control

Features

The following features are provided:

- ❒ Accesses resources at network speeds by only sending keystrokes and screen shots across the ISDN link
- ❒ Compatible with most remote control applications
- ❒ Simultaneous data and voice over a single ISDN B channel
- ❒ Data throughput of up to 38.4K without voice and up to 19.2K with voice
- ❒ Second B channel can be used by analog fax, telephone, or modem

Application Scenario

This scenario allows a user to remotely control a host PC which is located in the main office. Using a remote control product such as PC Anywhere, allows the user to remotely access any resources the host PC can access. Remote control and digital telephone access occur over a single ISDN B channel leaving the other B channel available for an analog device such as a telephone, fax, or modem. The analog device can be connected to the RJ-11 analog voice port of the terminal adapter.

Setup Notes

- ❒ The remote PC is connected to the Remote Module using a standard RS-232 cable. Connect the Office Module to the host PC using a standard RS-232 cable.
- ❒ Configure the remote control software to accept a direct cable connection on both the remote and host PCs. Consult the software vendor with any questions.
- ❒ Enable the remote voice connection by using the “Go Online” command from the remote telephone. Log on by entering your password.
- ❒ Launch the remote control application and connect to the host. It is not necessary to be in Call on Demand mode, the connection will come up.

SECTION 4 REMOTE NETWORK ACCESS CONFIGURATION

Summary

This configuration shows a standard dial-in networking client such as Windows 95 Dialin used to simultaneously access the digital telephone functionality and the company network resources. Access is provided across a single ISDN B channel. (Refer to Figure 11-3 Remote Network Access.)

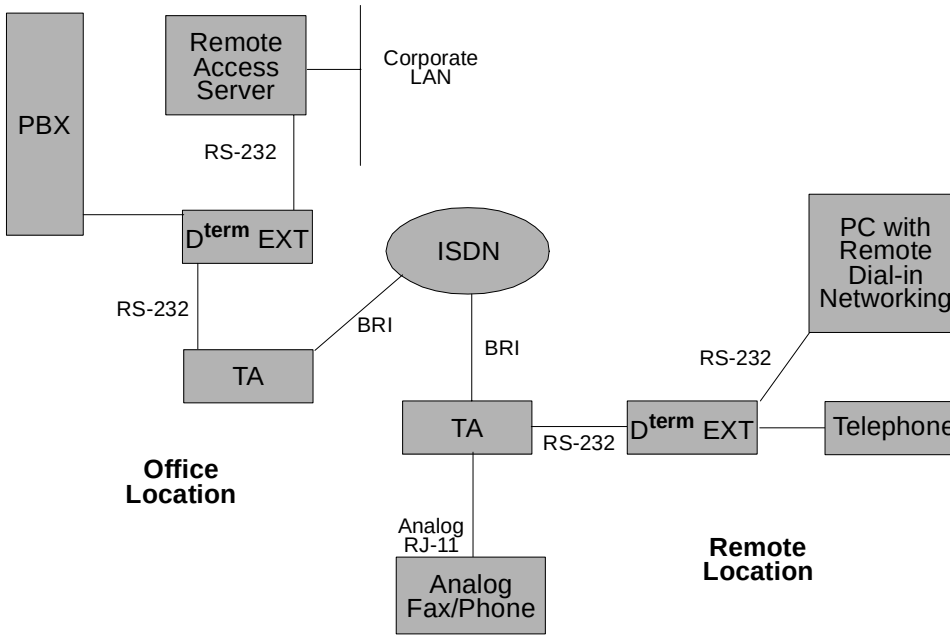


Figure 11-3 Remote Network Access

Features

The following features are provided:

- ❒ Compatible with Windows 95 Dialin client
- ❒ Leverages the company's existing remote data solution
- ❒ Compatible with most Remote Access Servers (RAS)
- ❒ Provides remote network access to corporate network resources including Novell, Windows NT, and Unix servers as well as e-mail and internet
- ❒ Simultaneous data and voice over a single ISDN B channel
- ❒ Data throughput of up to 38.4K without voice and up to 19.2K with voice
- ❒ Second B channel can be used by analog fax, telephone, or modem

Application Scenario

This scenario provides complete access to corporate network resources while simultaneously accessing the office PBX over a single ISDN B channel. The remote PC uses a remote dial-in client (usually Windows 95 Dialin) to create a networking connection to a Remote Access Server (RAS). The remote client uses the already existing voice channel to create a connection to the RAS. No additional dialing is necessary. This solution provides the remote user access to all of the corporate network resources including e-mail, internet, Novell, Windows NT, and Unix servers. The other B channel remains clear to be used by an analog device (telephone, fax, or modem) connected to the RJ-11 analog voice port of the terminal adapter.

Setup Notes

- ❒ Connect the PC to the Remote Module using a straight through RS-232 cable. Connect the RAS device to the Office Module using a straight through RS-22 cable.

- ❒ If using Windows 95 Dialin, install a special null.inf file for the remote networking client. This file allows the remote PC to connect to the network using a direct connection rather than a modem connection. The connection between the PC and the *D^term EXT* is a direct cable connection and uses a straight through RS-232 cable. ***DO NOT*** use a null modem cable. To install the null.inf file, add it as a modem type under the Modems Control Panel.

- ❒ Ensure that the Remote Access Server has an RS-232 connection type. It must also be able to support a direct cable connection/null modem connection. The connection between the *D^term 2000* and the RAS is a direct cable connection. Use a straight through RS-232 cable and ***NOT*** a null modem cable. Since most RAS devices expect either a modem or ISDN terminal adapter connection, configure the RAS to allow the RS-232 port to handle the direct cable connection. Contact the RAS vendor for details.

- ❒ Configure the remote networking client to use the direct connect/null modem setting as the modem type. Any number can be entered as the dialing string since it is not needed.

- ❒ Bring the remote voice connection up using the “Go Online” command from the remote telephone. Once the connection is established, launch the remote networking client and connect. It is not necessary to be in Call on Demand mode, the connection will come up.

SECTION 5 VOICE AND DATA OVER SEPARATE B CHANNELS

Summary

This configuration shows the Motorola UTA220 terminal adapter used to split the ISDN into separate B channels. Each channel has its own RS-232 interface. This allows the user to dedicate one B channel to digital telephone functionality using the *D^term EXT*, while the other B channel can be dedicated for another data application. When maximum data throughput is needed, this solution is ideal since it gives the user a dedicated ISDN B channel for data. This is typically used in conjunction with Windows 95 Dialin client to provide remote network access. (Refer to Figure 11-4 Voice and Data Over Separate B Channels.)

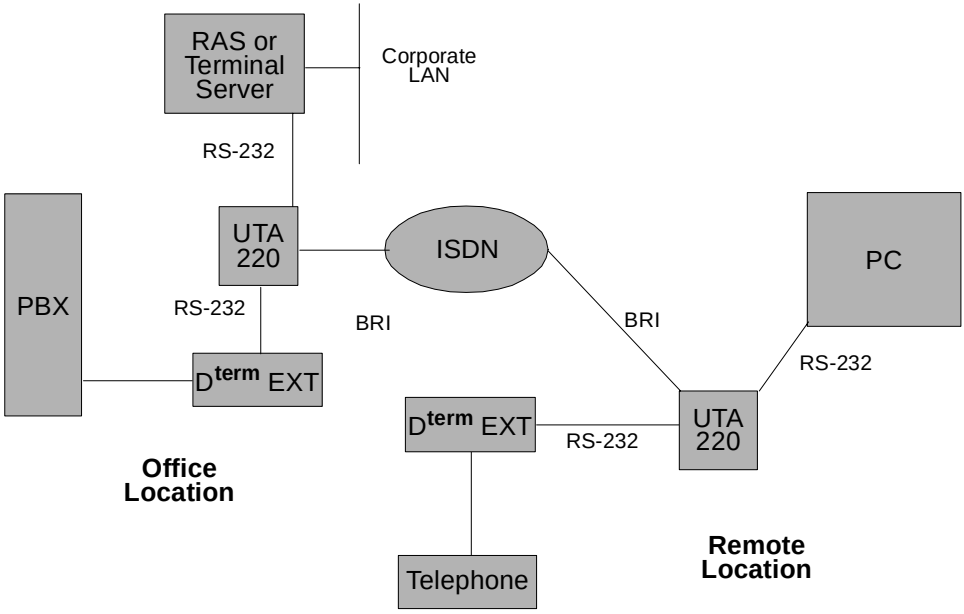


Figure 11-4 Voice and Data Over Separate B Channels

Features

The following features are provided:

- ❒ Complete 64K ISDN B channel dedicated for data
- ❒ Compatible with any application that works with standard terminal adapters
- ❒ Compatible with Windows 95 Dialin client
- ❒ Leverages the company's existing remote data solution
- ❒ Compatible with most Remote Access Servers (RAS)
- ❒ Provides remote network access to corporate network resources including Novell, Windows NT, and Unix servers as well as e-mail and internet

Application Scenario

This scenario provides simultaneous access to digital telephone functionality and access to the corporate data network. One B channel is dedicated to telephone functionality while the other 64K B channel is dedicated to data access. This increased throughput can be used for any data application including terminal access or access to e-mail, internet, Novell, Windows NT, and Unix servers.

Setup Notes

- ❒ The remote PC is connected directly to the Motorola UTA220 or the Adtran 2x64 directly, bypassing the *D*^{term} *EXT*. It is connected using a standard RS-232 cable. At the office side, the Remote Access Server is connected directly to the terminal adapter using a standard RS-232 cable. The Remote and Office Modules are also connected directly to the terminal adapters using standard RS-232 cables.
- ❒ Configure the remote application, typically Windows 95 Dialin, to use a Motorola/Adtran terminal adapter (a UTA220 if it is provided).

- ❒ Ensure that the Remote Access Server has an RS-232 connection type. Configure the RAS device to accept calls from a Motorola or Adtran terminal adapter, preferably a UTA220 or Adtran 2x64 (respectively) if it is provided. If necessary, contact the RAS vendor for details.
- ❒ Use the remote data application to initiate data calls. Use the remote telephone to initiate the voice connection. These are separate B channels, one channel can be brought up or down independently of the other.

Troubleshooting CHAPTER 12

SECTION 1 LED SEQUENCES

The LED Sequences can be a good indication of problems with the NEC *D*^{term} *EXT*. The Office and Remote Modules each have an LED and both should be checked if a problem is encountered. If the modules are powered with no errors, the LED flashes Red ⇨ Yellow ⇨ Green.

The following flash sequences can be observed on the Office and Remote Modules (the flash sequences periodically repeat):

Number of RED Flashes	Description
4	Terminal Adapter check failure. This means that the *D*^{term} *EXT* modules can not talk to the Terminal Adapter.
5	DSP Communication failure.

Number of GREEN Flashes	Description
1	*D*^{term} *EXTs* are connected and are online.
2	*D*^{term} *EXT* (Office Module) is waiting for a ring if connected via Terminal Adapter.
3	*D*^{term} *EXT* is waiting for a ring if connected via Null Modem or Leased Line.
4	Not Used.
5	Remote Module is in programming mode.

Number of YELLOW Flashes	Description
Continuous	Phone *is not* connected to Remote Module.
7	Waiting for "MENU" command to be typed in from COM 1 port. COM 1 settings: 9600 baud, 8 data bits, No parity, 1 Stop bit. **Note:** The Remote Module LED flashes yellow seven times, goes off for a few seconds and then flashes yellow six more times. The Office Module LED flashes yellow seven times.

SECTION 2 PROBLEM CHECKLIST

When problems are encountered:

- ❒ Verify the TAs between the Office and Remote Modules are communicating.
- ❒ Verify the power LEDs are illuminated.
- ❒ Ensure the Office Module is being used at the office site and the Remote Module at the remote site.
- ❒ Ensure the AC power adapter is connected to the Office Module and the Remote Module and the LEDs are lit.
- ❒ Ensure all interconnecting cables and connections to wiring blocks are secure and properly seated.
- ❒ Ensure circuits are free of noise and meet the NEC *D^term EXT* product specifications.
- ❒ Verify the power LEDs are flashing green only.

SECTION 3 NO INFORMATION ON THE DISPLAY OF THE REMOTE TELEPHONE

When there is no LCD information:

- ❒ Ensure the installation has not been moved or any new wiring done.
- ❒ Ensure the AC power adapter is connected to the Remote Module and all interconnecting cables are properly seated.
- ❒ If the telephone becomes disconnected from the Remote Module, wait for the LED on the module to flash yellow then reconnect the telephone. The LCD on the telephone will become operable.

Under special conditions, there may be a one-minute (maximum) delay in updating the clock and date information from the KTS/PBX to the LCD of the remote telephone. The remote telephone is still operable under these conditions, however, a delay can occur when:

- ❒ The user receives or initiates a call while in Call On Demand Waiting mode.
- ❒ The Recall key is pressed to logout and then the No softkey to abort logout is pressed.
- ❒ The Transfer key to change the password is pressed, and then the No softkey to keep the current password is pressed.

SECTION 4 CANNOT MAKE A CONNECTION TO THE OFFICE MODULE

When there is no connection to the office KTS/PBX:

- ❒ Ensure the correct telephone numbers have been programmed into the unit. Refer to Section 5 Programming the KTS/PBX ISDN Telephone Number on page 5-5 and Section 6 Programming the Remote ISDN Telephone Number on page 5-5.
- ❒ Ensure TAs can connect without the NEC Digital Line Extenders-ISDN connected.
- ❒ Ensure the AC power adapter is connected to the Office Module and all interconnecting cables are properly seated.

SECTION 5 OFFICE MODULE WILL NOT ANSWER CALL

When the Office Module does not answer a call:

- ❒ Ensure the phone numbers are set correctly. Refer to Section 5 Programming the KTS/PBX ISDN Telephone Number on page 5-5 and Section 6 Programming the Remote ISDN Telephone Number on page 5-5.

SECTION 6 ADDITIONAL COMMUNICATION ERRORS

There are some instances when problems can occur with a connection. If a connection problem occurs, the display shows the type of problem. There are two messages:

DCD NOT DETECTED

This message indicates the Office Module is not picking up the call, or the Remote Module does not receive a ringback or answerback tone. Ensure the telephone number is programmed correctly. Contact the office System Administrator for verification.

V42 FAIL

This message indicates that the two TAs have connected, but the communication setup is incorrect on the terminal adapters.

This may be caused by loose or defective cables and/or gender changers between the TA and the modules.

DSP NO RESPONSE

Specific parameters may not have been updated. Retry the connection.

ISDN Terminal Adapters

APPENDIX A

SECTION 1 CONFIGURATION OVERVIEW

This appendix guides users through setting up the ISDN terminal adapters (TAs) that have been tested to be compatible with the *D^term EXT*.

One of the first steps to configuring the *D^term EXT* is to program the TA. Some of the TA parameters are configured automatically by the Office/Remote Module when a specific type of terminal adapter is selected while programming the *D^term EXT*. Other information such as SPIDs (Service Profile Identifier) or DNs (Directory Number) must be configured manually.

The following is additional information necessary for setting up the terminal adapter:

- ❒ Bandwidth requirements are 64K or 56K.
- ❒ When the *D^term EXT* goes on-line, the DCD (Data Carrier Detect) is asserted by the TA, except in the case of LEASED MODE.
- ❒ When the *D^term EXT* goes online, the TA goes to synchronous, clear channel communications protocol, except in the case of LEASED MODE.
- ❒ When the TA detects an ON-OFF transition of the DTR (Data Terminal Ready), it terminates a connection, except in the case of LEASED MODE.
- ❒ Echo OFF and numeric responses from the TA, except in the case of LEASED MODE.

- ❒ AT command communication set up as 9600 BPS, no parity, 8 bits, 1 stop bit, except in the case of LEASED MODE.

SECTION 2 ADTRAN ISU 2X64 ISDN TERMINAL ADAPTER

2.1 Programming the Required Parameters using the Front Panel

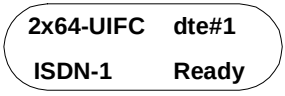
Press the CANCEL key a number of times to access the main menu, then perform the steps listed below:

Step	If the Adtran display value is...	then press...
1	2 * 64-UIFC - Link Down dte#1	ENTER
2	3 = CONFIG	3 then ENTER
3	1 = Netw. Options	ENTER
4	1 = Dial Line	ENTER
5	1 = Switch Protocol	ENTER
6	3=National ISDN	ENTER if NI-1 (National ISDN protocol is used). If other protocol is used, use the cursor to scroll through the menu and press corresponding number, then ENTER.
7	1=Switch Protocol	3 then ENTER
8	1 = Set SPID	ENTER
9	Select SPID dte1	Use the cursor to select the B1 channel (dte1) then ENTER, now enter the SPID number for B1 channel then ENTER.
10	Select SPID dte2	ENTER, now enter the SPID number for B2 channel then ENTER, CANCEL.
11	2=Set LDN	2 then ENTER

Step	If the Adtran display value is...	then press...
12	Select LDN dte?	Use the cursor to select B1 (dte1) then ENTER. Now enter the DN number for B1 channel. (Exclude the area code) then ENTER.
13	Select LDN dte?	Use the cursor to select B2 (dte2) then ENTER. Now enter the DN number for B2 channel. (Exclude the area code) then ENTER.
14	Press CANCEL until you return back to main menu.	
15	2 * 64-UIFC - Link Down dte#1	ENTER
16	3=CONFIG	3 then ENTER
17	2=DTE options	2 then ENTER
18	2=Synchronous dte#1	Press ENTER twice to set dte#1 port to Synchronous. Use cursor key to change the dte port from 1 to 2 and do the same (press ENTER twice when the display shows 2=Synchronous dte#2).
19	1=Bit Rate	1 then ENTER
20	Press CANCEL until you return back to main menu.	
21	2 * 64-UIFC - Link Down dte#1	ENTER
22	3=CONFIG	3 then ENTER
23	1 = Netw. Options	ENTER
24	1 = Dial Line	ENTER
25	5=Dial Options	5 then ENTER
26	3=AT Commands dte#1	Press ENTER twice to set dte#1 port Dial Options to AT Commands. Use cursor key to change the dte port from 1 to 2 and do the same (press ENTER twice when display will show 3=AT Commands dte#2). Press CANCEL.
27	7=Answer tone	7 then ENTER

Step	If the Adtran display value is...	then press...
28	1=No Answer Tone dte#1	Press ENTER twice to set dte#1 port to No Answer Tone. Use cursor key to change the dte port from 1 to 2 and do the same (press ENTER twice when display will show 1=No Answer Tone dte#2).
29	Press CANCEL until you return back to main menu.	

Once configuration is completed, power reset the Adtran. If ISDN information has been correctly programmed into the TA, the display shows READY right beside the switch type. For example,



Once programming is finished, connect the Adtran ISU 2x64 to a *D^term EXT* with the required RS-232 cable.

2.2 Programming the Terminal Adapter through a Terminal Emulation Package (Recommended)

Using a PC, with a terminal emulation package such as Telix, is the easiest and most efficient way to program Adtran ISU 2x64. Refer to the snapshot of the screen when programming Adtran.

Settings: 9600, N, 8, 1.

Connect: Via MAINTENANCE Port (9 pin COM Port on the Adtran TA)

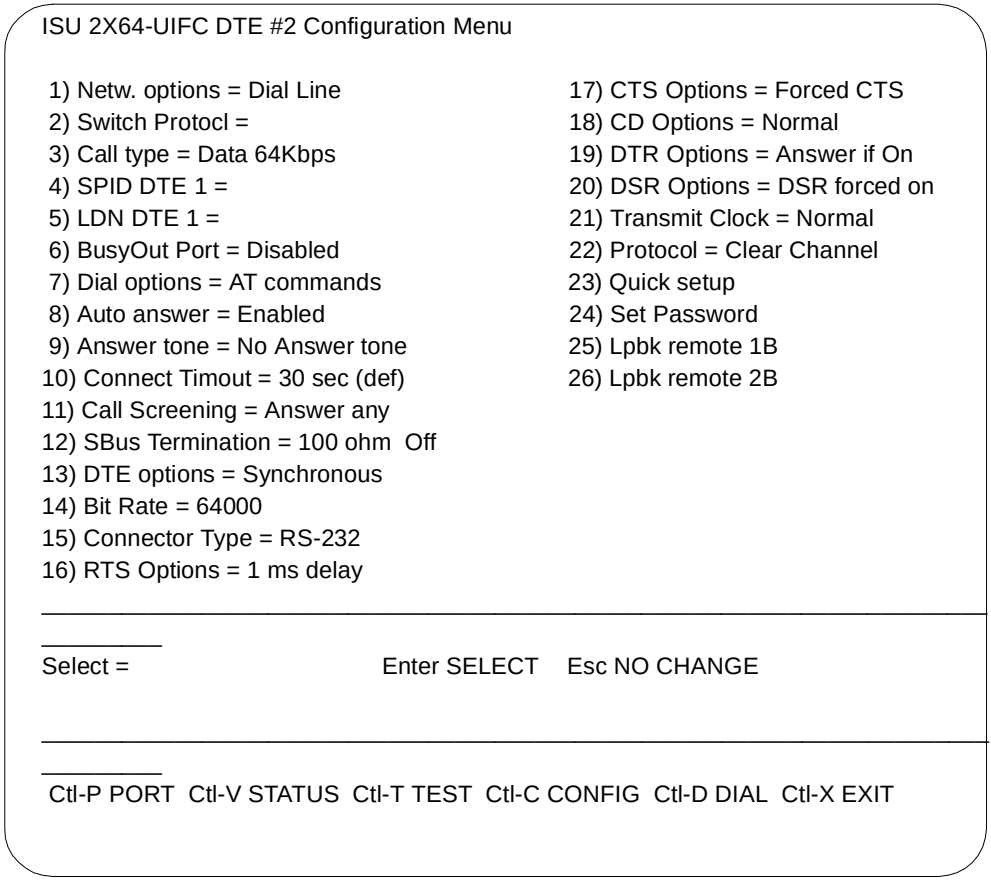
Once the unit is connected to the terminal emulation program, press the ENTER key for a prompt then **!V** to access the main menu.

The following information must be manually configured (using Adtran's front panel or a PC terminal connected to the Adtran):

1. ISDN switch type (information given by Telco)
2. SPID and DN numbers for the ISDN line for both B-channels (information given by Telco)
3. Dial options should be set to AT commands
4. DTE should be set to Synchronous
5. Bit rate should be set to 64000
6. Answer tone should be set to No Answer Tone
7. Call Screening should be set to "Answer Any". If using Call Screening options, you should allow incoming calls from an extender to be passed through.

Refer to the snapshot of the Adtran's configuration menu for more details. Telco switch protocol, SPID and DN numbers have to be programmed for both, DTE #1 and DTE #2. The rest of parameters should be programmed accordingly to the usage of a particular DTE port. For using Adtran with *D^term EXT*, refer to the example shown below. This example is given only for one port.

Press CTRL + P to toggle the DTE port settings from 1 to 2.


ISU 2X64-UIFC DTE #2 Configuration Menu
1) Netw. options = Dial Line
2) Switch Protocl =
3) Call type = Data 64Kbps
4) SPID DTE 1 =
5) LDN DTE 1 =
6) BusyOut Port = Disabled
7) Dial options = AT commands
8) Auto answer = Enabled
9) Answer tone = No Answer tone
10) Connect Timout = 30 sec (def)
11) Call Screening = Answer any
12) SBus Termination = 100 ohm Off
13) DTE options = Synchronous
14) Bit Rate = 64000
15) Connector Type = RS-232
16) RTS Options = 1 ms delay
17) CTS Options = Forced CTS
18) CD Options = Normal
19) DTR Options = Answer if On
20) DSR Options = DSR forced on
21) Transmit Clock = Normal
22) Protocol = Clear Channel
23) Quick setup
24) Set Password
25) Lpbk remote 1B
26) Lpbk remote 2B
Select =
Enter SELECT Esc NO CHANGE
Ctl-P PORT Ctl-V STATUS Ctl-T TEST Ctl-C CONFIG Ctl-D DIAL Ctl-X EXIT

SECTION 3 ADTRAN ISU EXPRESS TERMINAL ADAPTER

3.1 Configuring the ISU Express

Configuring the Adtran ISU Express requires a PC with a terminal software. Refer to the snapshot of the screen when programming Adtran ISU Express.

Set the terminal software as follows: 9600, No parity, 8 bits, 1 stop bit.

Connect the PC to the ISU Express via EIA232 Port (DB25 DTE Port on the ISU Express.)

Once the unit is connected to the terminal, type **AT!V** and press the ENTER key. The main menu should appear.

The factory default profile can be loaded. This profile can be found under the “Quick Setup” option in the Configuration Menu. In this case, all stored information will be defaulted to the factory settings. All your ISDN information is changed. The SPID, DN numbers, and ISDN switch type need to be programmed. The rest of the parameters are set by the initialization string sent from the corresponding Remote/Office Module.

The following information is required when manually configuring the TA:

1. ISDN switch type (information given by Telco)
2. SPID and DN numbers for the ISDN line for both B-channels (information given by Telco)

(Refer to the ISU Express Configuration Menu screen snapshot for configuring the other parameters.)

```
ISU EXPRESS Configuration Menu

 1) NETWORK options = Dial Line          17) CD Options = Normal
 2) Switch Protocl =                     18) DTR Options = Answer if On
 3) Call type = Data 64Kbps              19) DSR Options = DSR forced on
 4) SPID 1 =                             20) Transmit Clock = Normal
 5) SPID 2 =                             21) PROTOCOL = Clear Channel
 6) LDN  1 =                             22) QUICK setup
 7) LDN  2 =
 8) Dial options = AT commands
 9) Auto answer = Enabled
10) Connect Timout = 30 sec (def)
11) Call Screening = Answer any
12) Call Routing = All types->DTE
13) DTE options = Synchronous
14) Bit Rate = 64000
15) RTS Options = 1 ms delay
16) CTS Options = Forced CTS
--------------------------------------------------------------------------------
Select = 1                        Enter SELECT    Esc NO CHANGE
--------------------------------------------------------------------------------
Ctl-V STATUS   Ctl-T TEST   Ctl-C CONFIG   Ctl-D DIAL   Ctl-X EXIT
```

SECTION 4 MOTOROLA BITSURFR

4.1 BitSURFR Local Menu Configuration

The Motorola BitSURFR comes prepackaged with software for configuring the terminal adapter. *Disregard this software for configuring the TA when it is intended to be used with the D^{term} EXT*.

To configure:

1. Access the BitSURFR local menu by connecting a computer or dumb terminal to the DB 25 connector on the BitSURFR. The terminal emulation must be VT 100.
2. Type: **AT@MENU** and press enter. This brings up a menu screen.

   To move about the screen, use the space bar to change to the lower menu section, the enter key to access a menu option from the lower menu section, and the cursor keys to move around the menus.

   Some menus may not appear as described here due to software changes made by Motorola. Refer to the BitSURFR manual for more information if there are any differences.

NETWORK -- NATIONAL ISDN MENU

Network Switch Type	NI-1	Network Switch Version	NI-1
DROP Feature Value	062	CONFERENCE Feature Value	060
TRANSFER Feature Value	061	MSG WAITING Feature Value	063
Save Switch/Global Profile (EXECUTE)	(EXECUTE)	Restart Network Link	
Port To Configure	DATA		
TEI	AUTO		
SPID	(SPID # for Channel B2)		
Directory Number	(DN # for Channel B2)		
Port To Configure	VOICE		
TEI	AUTO		
SPID	(SPID # for Channel B1)		
Directory Number	(DN # for Channel B1)		

3. Save the Switch information using the Save Switch/Global Profile command in this menu.

PORT OPTIONS MENU

Port To Configure	DATA	DTR Pin Option	HANGUP
Sync Mode	SYNC 1	DTR Detect Time	001
Word Length	8 BITS	DSR Pin Option	AFTER PTCL
Parity	NONE	CTS Pin Option	NORMAL
Stop Bits	1 BIT	RTS to CTS Time	001
Bit Rate	9600 BPS	DCD Pin Option	NORMAL
Flow Control	BI RTS/CTS	DCD Drop Time	014

CALL SETUP MENU

Port To Configure	DATA	Auto Answer	ENABLED
Rings To Answer	001	Dialing Method	ENBLOC
Persistent DTR Dial	DISABLED	Call Connect Timer	030
B Channel Speed	64K BPS	Echo Cancellor	DISABLED
Call Originate BC	DATA	Answer Data Calls	ENABLED
Answer Speech Calls	DISABLED	Answer 3.1KHZ Audio Calls	DISABLED
Caller ID Delivery	DISABLED	Caller ID Logging	DISABLED

CMDS & MSGS MENU

Port To Configure	DATA	Command Set	AT CMDS
DTE Guard	DISABLED	Local Echo	DISABLED
Carriage Return Character	013	Message Format	NUMERIC
Line Feed Character	010	Status Messages	ON
Backspace Character	008	Connect Rate in Message	ALWAYS
Escape Guard Time	050	Carrier/Protocol Codes	DISABLED
Escape Sequence Character	043		

PROTOCOL OPTIONS MENU

Port To Configure	DATA	Rate Adaption Protocol	CLEAR
Bonding Rate Multiplier	1		

LOAD/SAVE MENU

Save Total Active Profile	Save to Profile 0

NETWORK - NATIONAL ISDN MENU

:	:
:	Restart Network Link

4. After saving the total active profile (0), return to the Network Menu and choose: Restart Network Link.

SECTION 5 MOTOROLA BITSURFR PRO

Configuration of BitSURFR Pro differs from BitSURFR only in configuring SPID and DN numbers. For BitSURFR Pro you will have to program Voice 2 option in the Network (Net Switch) menu.

5.1 BitSURFR PRO Local Menu Configuration

The Motorola BitSURFR Pro comes prepackaged with software for configuring the terminal adapter. *Disregard this software for configuring the TA when it is intended to be used with the D^{term} EXT.*

To configure:

1. Access the local menu by connecting a computer or dumb terminal to the DB 25 connector on the BitSURFR PRO. The terminal emulation must be VT 100.
2. Type **AT@MENU** and press enter.

   This brings up a menu screen. To move about the screen, use the space bar to change between the menu sections, the enter key to access a menu option or menu items, and the cursor keys to move around the menus.

   Some Menus may not appear as described here due to software changes made by Motorola. Refer to the BitSURFR PRO manual for more information if there are any differences in the menu options.

NETWORK -- NATIONAL ISDN MENU

S

Network Switch Type	NI-1	Network Switch Version	NI-1
DROP Feature Value	062	CONFERENCE Feature Value	060
TRANSFER Feature Value	061	MSG WAITING Feature Value	063
Save Switch/Global Profile	(EXECUTE)	Restart Network Link	(EXECUTE)
Port To Configure	DATA		
TEI	AUTO		
SPID	(SPID # for Channel B2)		
Directory Number	(DN # for Channel B2)		

For the Voice Ports, go to Port to Configure and change the following:

Port To Configure	VOICE 1
TEI	AUTO
SPID	(SPID # for Channel B1)
Directory Number	(DN # for Channel B1)
AND	
Port To Configure	VOICE 2
TEI	AUTO
SPID	(SPID # for Channel B2)
Directory Number	(DN # for Channel B2)

3. Save the Switch information using the Save Switch/Global Profile command in this menu.

DATA OPTIONS MENU

Port To Configure	DATA	DTR Pin Option	HANGUP
Sync Mode	SYNC 1	DTR Detect Time	001
Word Length	8 BITS	DSR Pin Option	AFTER PTCL
Parity	NONE	CTS Pin Option	NORMAL
Stop Bits	1 BIT	RTS to CTS Time	001
Bit Rate	9600 BPS	DCD Pin Option	NORMAL
Flow Control	BI RTS/CTS	DCD Drop Time	014

CALL SETUP MENU

Port To Configure	DATA	Auto Answer	ENABLED
Rings To Answer	001	Dialing Method	ENBLOC
Persistent DTR Dial	DISABLED	Call Connect Timer	030
B Channel Speed	64K BPS	Echo Cancellor	DISABLED
Call Originate BC	DATA	Answer Data Calls	ENABLED
Answer Speech Calls	DISABLED	Answer 3.1KHZ Audio Calls	DISABLED
Caller ID Delivery	DISABLED	Caller ID Logging	DISABLED

CMDS & MSGS MENU

Port To Configure	DATA	Command Set	AT CMDS
DTE Guard	DISABLED	Local Echo	DISABLED
Carriage Return Character	013	Message Format	NUMERIC
Line Feed Character	010	Status Messages	ON
Backspace Character	008	Connect Rate in Message	ALWAYS
Escape Guard Time	050	Carrier/Protocol Codes	DISABLED
Escape Sequence Character	043		

PROTOCOL OPTIONS MENU

Port To Configure	DATA	Rate Adaption Protocol	CLEAR
Bonding Rate Multiplier	1		

LOAD/SAVE MENU

Save Total Active Profile	Save to Profile 0

NETWORK - NATIONAL ISDN MENU

: :
: Restart Network Link (Execute)

4. After saving the total active profile (0), return to the Network Menu and choose: Restart Network Link.

SECTION 6 MOTOROLA UTA220 (UTA220K)

To configure the Motorola UTA220K, the unit needs to be configured for RS-232 operation:

6.1 Configuring the Adapter

1. Make sure the UTA220K is unplugged.
2. Remove the cover to the TA. (Refer to the UTA220K User's Guide.)
3. Locate the two boards and configure each slide switch to the RS-232 position. Configure the 8-position DIP switch as follows: 1,2,5,7 OFF and 3,4,6,8 ON.
4. Place the cover back on the unit, and turn on the TA.
5. The UTA220K is now ready for programming. Refer to the table on the following pages for configuring the TA for operation with the *D^term EXT*.

Step	If the UTA 220k display value is...	then press...
1	ISDN TERMINAL ADAPTER	NO
2	DIAL/HANGUP OPTIONS?	NO
3	STATUS DISPLAYS?	NO
4	CONFIGURATION OPTIONS?	YES
5	SWITCH CONFIG OPTIONS?	NO
6	PORT CONFIG OPTIONS?	YES
7	CURRENT PORT=1 CHANGE?	NO If PORT 2 is shown, press 1 to change to PORT 1.
8	P1:LOAD FROM NONVOL?	NO
9	P1:LOAD FROM FACTORY PROFILE?	NO
10	P1:ANSWER OPTIONS?	NO
11	P1:DTE OPTIONS?	NO
12	P1:DTE CMD AND MESSAGE OPTIONS?	NO
13	P1:DTE PIN OPTIONS?	NO
14	P1:ISDN PROTOCOL OPTIONS?	NO
15	P1:SESSION OPTIONS?	NO
16	P1:CALL SETUP OPTIONS?	YES
17	P1:ISDN SPEED=64 KBPS CHANGE?	If set to 56 Kbps, press YES to switch to 64 Kbps, then press ENTER. Otherwise, press HOME until “PORT CONFIG OPTIONS?” is shown.
18	PORT CONFIG OPTIONS?	YES
19	CURRENT PORT=1 CHANGE?	Press 2.

Step	If the UTA 220k display value is...	then press...
20	P2:LOAD FROM NONVOL?	NO
21	P2:LOAD FROM FACTORY PROFILE?	NO
22	P2:ANSWER OPTIONS?	NO
23	P2:DTE OPTIONS?	NO
24	P2:DTE CMD AND MESSAGE OPTIONS?	NO
25	P2:DTE PIN OPTIONS?	NO
26	P2:ISDN PROTOCOL OPTIONS?	NO
27	P2:SESSION OPTIONS?	NO
28	P2:CALL SETUP OPTIONS?	YES
29	P2:ISDN SPEED=64 KBPS CHANGE?	If set to 56 Kbps, press YES to switch to 64 Kbps, then press ENTER. Otherwise, press HOME until “ISDN TERMINAL ADAPTER” is shown.
30	ISDN TERMINAL ADAPTER	NO
31	DIAL/HANGUP OPTIONS?	NO
32	STATUS DISPLAYS?	NO
33	CONFIGURATION OPTIONS?	YES
34	SWITCH CONFIG OPTIONS?	NO
35	PORT CONFIG OPTIONS?	YES
36	CURRENT PORT=2 CHANGE?	Press 1.
37	P1:LOAD FROM NON VOL?	NO
38	P1:LOAD FROM FACTORY PROFILE?	NO
39	P1:ANSWER OPTIONS?	NO
40	P1:DTE OPTIONS?	YES

Step	If the UTA 220k display value is...	then press...
41	P1:ASYNCHRONOUS CHANGE?	YES If the display indicates “SYNCHRONOUS 1”, select NO and skip to step 43 .
42	P1:SYNCHRONOUS 1 CHANGE?	NO
43	P1:DTE SPEED=9600 CHANGE?	NO (if set differently) or press YES to select 9600, then press ENTER.
44	P1:WORD LENGTH = 8 CHANGE?	NO
45	P1:PARITY = NONE CHANGE?	NO
46	P1:CHARACTER ECHO = OFF CHANGE?	NO
47	P1:X25XPAR = NO CHANGE?	NO
48	P1: DTE GUARD = OFF CHANGE?	NO
49	P1: DTE OPTIONS?	NO
50	P1: DTE CMD AND MESSAGE OPTIONS?	NO
51	P1:DTE PIN OPTIONS?	NO
52	P1:ISDN PROTOCOL OPTIONS?	YES
53	P1:PROTOCOL=CLEAR CHANGE?	NO (if set differently) or press YES to select CLEAR, then press ENTER.
54	P1:RATE MULTIPLR = 1 CHANGE?	NO
55	P1:FLOW CONTROL OPTIONS?	NO
56	P1:V.120 OPTIONS?	NO
57	P1:TLINK OPTIONS?	NO
58	P1:BONDING OPTIONS?	NO

Step	If the UTA 220k display value is...	then press...
59	P1:ISDN PROTOCOL OPTIONS?	NO
60	P1:SESSION OPTIONS?	NO
61	P1:CALL SETUP OPTIONS?	NO
62	P1:SAVE TO NONVOL?	YES
63	P1:SAVE TO NONVOL 0 CHANGE?	NO Display indicates “SAVING.”
64	P1:PSW-UP USER PROF=0 CHANGE?	Press HOME until the LCD indicates “ISDN TERMINAL ADAPTER.”
65	ISDN TERMINAL ADAPTER	YES
66	DIAL/HANGUP OPTIONS?	NO
67	STATUS DISPLAYS?	NO
68	CONFIGURATION OPTIONS?	YES
69	SWITCH CONFIG OPTIONS?	YES
70	SWITCH TYPE OPTION?	YES
71	NATIONAL ISDN CHANGE?	Select NO to accept (go to step 75), or YES to change.
72	AT&T 5ess CHANGE?	Select NO to accept (go to step 74), or YES to change.
73	nti dms100 CHANGE?	Select NO to accept, or YES to change (go to step 71).
74	WILL DESTROY NET OPTS, CONT?	YES Display indicates “RESETTING SWITCH OPTIONS.”
75	SWITCH TYPE OPTION?	NO
76	SWITCH VERSION OPTION?	To select NATIONAL press NO (go to step 79), or to select NTI/AT&T, press YES.
77	<default version> VERSION. CHANGE?	Press NO if the version is correct, or press YES to change the version.

Step	If the UTA 220k display value is...	then press...
78	SWITCH VERSION OPTION?	NO
79	B-CHANNEL OPTIONS?	NO
80	D-CHANNEL OPTIONS?	YES
81	D-CHANNEL PROV OPTIONS?	NO
82	D-CHANNEL LAPD OPTIONS?	YES
83	CURRENT PORT=1 CHANGE?	NO
84	P1:X.25 TEI=DIS CHANGE?	NO If the TEI is set to another value, press YES until the display indicates “DIS”, then press ENTER.
85	P1:DATA TEI=AUTO. CHANGE	NO
86	P1:_____SPID. CHANGE?	YES
87	P1:■_____SPID. CHANGE	Enter B1 SPID number, then press ENTER.
88	P1:_____DN CHANGE?	YES
89	P1:■_____DN. CHANGE?	Enter B1 DN number, then press ENTER.
	P1: D-CHANNEL LAPD OPTIONS?	YES
90	CURRENT PORT = 1 CHANGE?	YES, then press 2.
91	P2:X.25 TEI = DIS. CHANGE?	NO
92	P2:DATA TEI = AUTO. CHANGE?	NO
93	P2:_____SPID. CHANGE?	YES
94	P2:■_____SPID. CHANGE?	Enter B2 SPID, then press ENTER.

Step	If the UTA 220k display value is...	then press...
95	P2:_____DN. CHANGE?	YES
96	P2:■_____DN. CHANGE?	Enter B2 DN, then press ENTER.
97	D-CHANNEL LAPD OPTIONS?	YES
98	CURRENT PORT=2 CHANGE?	HOME
99	D-CHANNEL PROVISION X.25 OPTIONS?	NO
100	D-CHANNEL OPTIONS?	NO
101	FRONT PANEL LOCK OPTION?	NO
102	SAVE SWITCH AND GLOBL TO NONVOL?	YES
103	RESTART NETWORK LINK?	YES

The menus on your UTA22OK may not exactly coincide with those shown above, depending on the revision of your TA. If you run into problems after programming the UTA220K for use with the *D^term EXT*, check the settings of the UTA220K with those of the BitSURFR PRO (refer to 5.1 BitSURFR PRO Local Menu Configuration). They should be identical. Consult the UTA220K User's Manual for more programming information.

NEC

D^term^® EXT

OWNER'S MANUAL

NEC America, Inc.

Issue 2