

DIVA T/A ISDN Modem User's Guide

International



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Introduction

The DIVA T/A is an external ISDN modem available in S/T and U interface versions. It provides easy and affordable access to the Internet via ISDN.

With the DIVA T/A, Small Office Home Office (SOHO) users and telecommuters can combine the higher performance of ISDN with the simplicity of a terminal adapter. The DIVA T/A supports all standard modem AT commands.

You can connect the DIVA T/A to a serial port on your computer that complements your TCP/IP application, without the need for additional device drivers.

Internet Access

The DIVA T/A allows you to connect to the Internet over an ISDN line at speeds of up to 128 kilobits per second. With virtually no delays, you can access online services or browse the World Wide Web to download high-resolution graphics, video clips, interactive games, music, and more.

Work-at-Home Access

The DIVA T/A provides the telecommuter with fast access to network resources back at the office. You can access applications such as email or download data from a remote database in a fraction of the time it would take using a conventional analog modem.

Analog Device Ports (certain models only)

Certain DIVA T/A models include two analog device ports (also referred to as Plain Old Telephone Service, or POTS). You can use these ports to connect regular telephones, modems or fax machines to your DIVA T/A. Calls to and from these analog devices are carried over your ISDN line. This saves you the expense of installing a separate analog phone line.

The DIVA T/A supports a variety of calling features such as Call Forward, Call Waiting, Caller ID, Call Transfer, and Call Redirection. The available calling features, and the way each feature works, depends on your location. See "[Analog Device Support](#)" on page 104 for details.



Note: The DIVA T/A can work independently from your computer. If the DIVA T/A is turned on, your analog devices can use your ISDN line regardless of whether or not the DIVA T/A is connected to your computer.

Ease of Use

You can connect the DIVA T/A to any computer (desktop or notebook) equipped with a serial port. Under Windows 95/98/NT and Macintosh (System 7 or later), you can easily configure the DIVA T/A using the included DIVA Terminal Adapters software. For all platforms, the VT100 Configuration Tool can be used as well as AT commands.

Installation Requirements

To install the DIVA T/A, you will require the following:

Item	Description
DIVA T/A Package	<ul style="list-style-type: none">• DIVA T/A ISDN Modem• DIVA T/A software (CD)• ISDN cable (RJ-45)• Serial cable (RS-232)• A/C Adapter• Phone Adapter (RJ11) (where required)• Terminating Resistor (if required - see page 129)• DIVA T/A QuickStart Guide• DIVA T/A Release Notes
Desktop or Notebook	DIVA T/A can be attached to any desktop or notebook computer.
Remote Access Client Software	Supplied as part of operating platform or by Internet Service Provider (ISP).
ISDN Basic Rate Line	Must be installed by your telephone company.
Terminal Emulation Program	If you are using an operating system other than Windows 95/98/NT or Macintosh (System 7 or later), you will need a VT100-compatible terminal-emulation program (such as Telix or HyperTerminal) in order to configure the DIVA T/A.
Internet Access (Optional)	To establish an ISDN connection to the Internet, you will require the following: <ul style="list-style-type: none">• ISP that provides ISDN Basic Rate Interface service• PPP and TCP/IP communications protocols for accessing your Internet subscription (e.g. Windows 95/98/NT Dial-Up Networking)• TCP/IP clients (Web browser, FTP, Telnet)
Operating System	<ul style="list-style-type: none">• Microsoft® Windows® 95, Windows 98, or Windows NT® (3.51/4.0)• Windows 3.x, DOS, or OS/2• Macintosh
COM Port	IBM-compatible computers: <ul style="list-style-type: none">• UART 16650 (230.4 kbps) recommended for maximum throughput• UART 16550 Macintosh computers <ul style="list-style-type: none">• Serial port capable of 230.4 kbps transfer recommended (found on most PowerMacintosh and AV Macintosh computers).

Connecting the Cables to the DIVA T/A

Follow the steps below to connect the cables to your DIVA T/A.

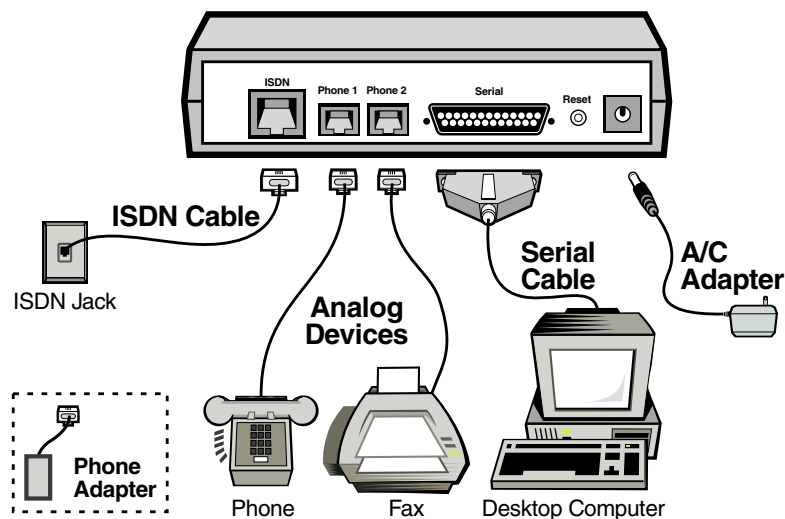
- 1 Turn off your computer before you connect the cables.
- 2 Connect the RJ45 end of the ISDN cable to the jack labeled 'ISDN' on the rear of the DIVA T/A. See below to complete the connection.
 - Integrated NT1 (U): Connect the other end of the ISDN cable to your ISDN wall jack.
 - S/T Interface: Connect the other end of the ISDN cable to an NT1 interface, whether part of the ISDN service (e.g. corporate phone switch) or external. In Australia, you may have to change the ISDN line termination. See "[ISDN Line Termination](#)" on page 129 for more information.
- 3 If your DIVA T/A model comes with phone ports, attach the cables from analog devices (telephone and fax machine, for example) to the jacks labeled PHONE 1 and PHONE 2 on the rear of the DIVA T/A. It is recommended that you use PHONE 1 for voice and PHONE 2 for data (modem or fax). Phone ports are only available on certain models.

In certain countries (such as France and the United Kingdom) you must attach your analog devices to phone adapters before connecting them to the DIVA T/A. One adapter has been included in your DIVA T/A package.

- 4 Connect one end of the serial cable to the port labeled SERIAL on the rear of the DIVA T/A, and the other end to the appropriate serial port on your computer.

Note: If you are connecting the DIVA T/A to a Macintosh, you will need a Macintosh-style modem cable (DB25M-to-DIN8M) that supports hardware handshaking. The included serial cable (DM25M-to-DB9F) is for use with IBM compatible PCs.

- 5 Connect the A/C adapter connector to the power jack on the rear of the DIVA T/A, then plug the adapter into an AC power outlet.



Note: On certain DIVA T/A models, the order of the serial and analog ports is reversed.

After Connecting the Cables

After connecting the power and the ISDN cable to the DIVA T/A, wait at least 10 seconds for the DIVA T/A to initialize and then check the 'D' and 'Link' LEDs. If they are both glowing continuously, then your DIVA T/A is operational from a previous configuration. If not, you will have to provide information on your ISDN setup using the DIVA Terminal Adapters software, which you will install next. See below.

What's Next?

The installation procedure you need to follow depends on the operating system you are using. Go to the page corresponding to your platform and continue.

- Windows 95/98/NT Installation and Setup.....9
- Macintosh (System 7 or Later) Installation and Setup.....25
- Setup for Other Operating Systems.....31

Windows 95/98/NT Installation and Setup

To properly set up the DIVA T/A with a Windows 95/98/NT system, you must connect the cables, configure the operating system, and install the DIVA Terminal Adapters Software. Once the Terminal Adapters software is installed, you will use the Configuration Wizard to set your ISDN parameters.

Step 1: Connect the Cables to your DIVA T/A

Following the steps outlined on [page 7](#).

Step 2: Configure your Operating System

The configuration procedure you must follow depends on the flavour of Windows you are using. After you have finished connecting the cables and gathering the required information, go to the page that corresponds to your platform.

- [Windows 95 \(Original Release and SP1\)](#) 10
- [Windows 95 \(OSR2\)](#) 12
- [Windows 98](#) 14
- [Windows NT 4.0](#) 16
- [Windows NT 3.51](#) 19

Note: If you are using Windows 3.x, see [page 31](#).

Step 3: Install the DIVA Software

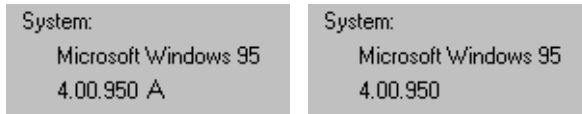
The Setup Wizard installs all necessary files on your system. These include the DIVA T/A on-line documentation, the DIVA Terminal Adapters Program, and the Uninstall utility.

Following the steps outlined on [page 20](#).

Windows 95 (Original Release and SP1)

This install procedure is for the original release and Service Pack 1 (SP1) version of Windows 95. If you are using Windows 95 Service Release 2 (OSR2), go to "[Windows 95 \(OSR2\)](#)" on page 12.

To verify the version installed on your machine, click 'Start', 'Settings', 'Control Panel', 'System', then click the 'General' tab. If you have the original or SP1 version of Windows 95 installed, you will see '4.00.950' or '4.00.950 A', as shown.



DUN 1.2 or Later Required

If you are using Dial-Up Networking (DUN), make sure you are using version 1.2 or later. If you are running a previous version, you must upgrade to DUN 1.2 or later before installing the DIVA T/A. For your convenience, DUN 1.3 is included on the DIVA T/A CD-ROM; run SETUP.EXE from the CD-ROM and click 'Bonus Software'.

Setup Instructions

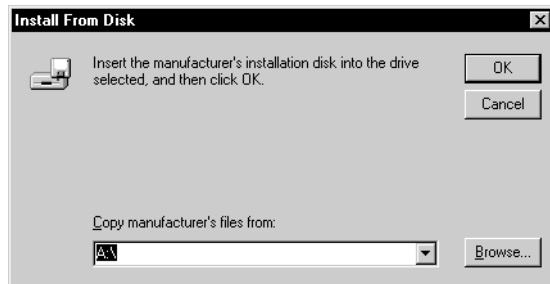
Follow these steps to set up the DIVA T/A under Windows 95 (Original Release and SP1).

- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Windows 95 detects the DIVA T/A and the 'New Hardware Found' window appears.



- 3 Insert the DIV AT/A CD into your computer's CD drive.
- 4 In the 'New Hardware Found' window, select 'Driver from disk provided by hardware manufacturer' and click 'OK'. The 'Install From Disk' window appears.

- 5 In the 'Install From Disk' window, enter the drive letter of your CD drive (or use the Browse button to locate your CD drive) and click 'OK'.

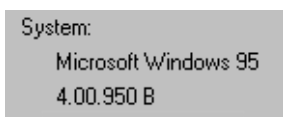


- 6 In the 'Select Device' window, select 'Eicon DIVA T/A ISDN Modem' and click 'OK'.
- 7 Go to ["Installing the DIVA Software"](#) on page 20.

Windows 95 (OSR2)

This install procedure is for Windows 95 Service Release 2 (OSR2). If you are using original release or Service Pack 1 (SP1) version of Windows 95, go to "[Windows 95 \(Original Release and SP1\)](#)" on page 10.

To verify the version installed on your machine, click 'Start', 'Settings', 'Control Panel', 'System', then click the 'General' tab. If you have Windows 95 OSR2 installed, you should see '4.00.950 B', as shown.



DUN 1.2 or Later Required

If you are using Dial-Up Networking (DUN), make sure you are using version 1.2 or later. If you are running a previous version, you must upgrade to DUN 1.2 or later before installing the DIVA T/A. For your convenience, DUN 1.3 is included on the DIVA T/A CD-ROM; run SETUP.EXE from the CD-ROM and click 'Bonus Software'.

Setup Instructions

Follow these steps to set up the DIVA T/A under Windows 95 (OSR2).

- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Windows 95 detects the DIVA T/A and the 'New Hardware Found' window appears followed by the 'Update Device Driver Wizard' window.



- 3 Insert the DIVA T/A CD into your computer's CD drive.
- 4 From the 'Update Device Driver Wizard' window, click 'Next'.
- 5 Click 'Other Location'.

- 6 Enter the drive letter of your CD drive (or use the Browse button to locate your CD drive) and click 'OK'.



- 7 In the 'Update Device Driver Wizard' window, click 'Finish'.



- 8 Go to "Installing the DIVA Software" on page 20.

Windows 98

Warning!

It is very important to follow the steps, exactly as described below, to install the DIVA T/A software. The setup file for ISDN modems (mdmisdn.inf), supplied on the Microsoft Windows 98 CD, contains incorrect information about the DIVA T/A ISDN Modem (incorrectly referred to as 'Eicon T-A External'). Using this setup file will cause the DIVA T/A to operate incorrectly. DO NOT use the 'Add New Hardware' applet (found in 'Control Panel') to install the DIVA T/A.

Setup Instructions

Follow these steps to set up the DIVA T/A under Windows 98.

- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Windows 98 detects the DIVA T/A and the 'New Hardware Found' window appears, followed by the 'Add New Hardware Wizard' window.



- 3 Insert the DIVA T/A CD into your computer's CD drive.
- 4 From the 'Add New Hardware Wizard' window, click 'Next'.
- 5 Select the 'Search for the best driver for your device' option and click 'Next'.



- 6 Select 'CD-ROM drive' and click 'Next'.



- 7 Click 'Next'.



- 8 Click 'Finish' and go to "Installing the DIVA Software" on page 20.



Windows NT 4.0

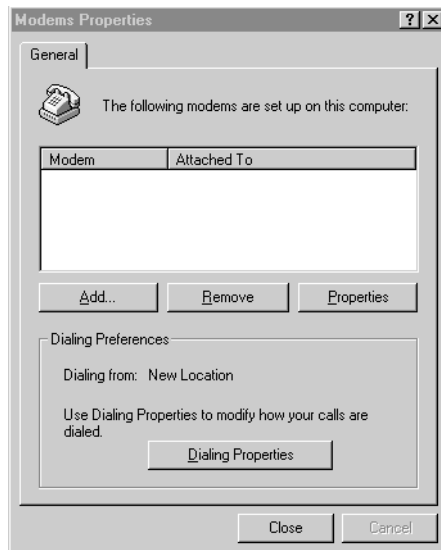
RAS Recommended

Before you begin installing the DIVA T/A, we suggest that the Remote Access Service (RAS), also known as Dial-Up Networking, be installed with at least one modem. Any modem will do; it is only needed to install the DIVA T/A and can later be removed.

Setup Instructions

Follow these steps to set up the DIVA T/A under Windows NT 4.0.

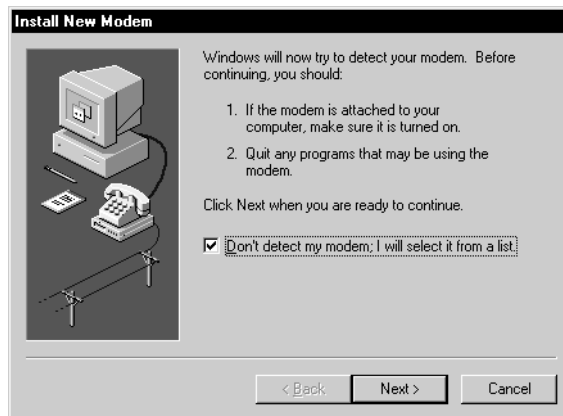
- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Insert the DIVA T/A CD into your computer's CD drive.
- 3 Click 'Start', 'Settings', 'Control Panel, then double-click the 'Modems' icon. If you have previously installed a modem, the 'Modem Properties' window opens; click 'Add'. If you have not previously installed a modem, go to step 4.



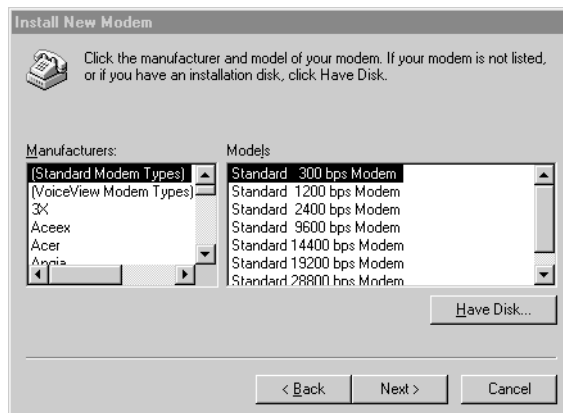
- 4 The 'Install New Modem' window appears. Select 'Don't detect my modem; I will select it from a list' then click 'Next'.



Important: Make sure that you select the choice above and do not let Windows NT choose its own modem driver. If you let Windows NT select the modem driver, you will not be able to communicate with the DIVA T/A. You will then have to delete the Windows NT installed modem and begin the install process again from Step 3.



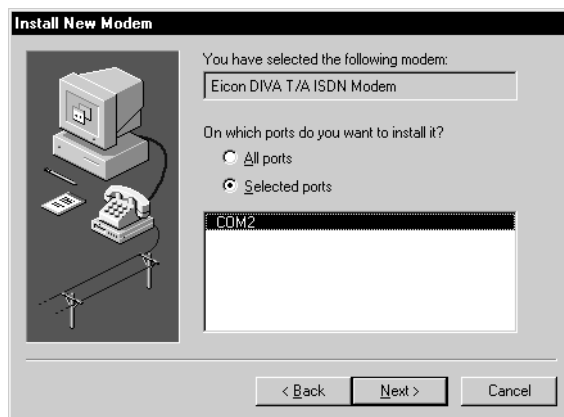
- 5 From the 'Install New Modem' window, click 'Have Disk'. When prompted, enter the path to the CD (or use the Browse button to locate your CD drive), then click 'OK'. The DIVA T/A will be detected.



- 6 Select 'Eicon DIVA T-A ISDN Modem', then click 'Next'.



- 7 Select the appropriate COM Port the DIVAT/A is connected to. Click 'Next', then click 'Finish'.



- 8 Close the 'Modem Properties' window.
- 9 After closing the 'Modem Properties' window, you are prompted to configure Dial-Up Networking, as the install modem list has changed. Click 'Yes' to configure Dial-Up Networking.
- 10 From the 'Remote Access Setup' window, remove any unused devices that use the same COM port as the DIVAT/A, and then click 'Add'.
- 11 In the 'Add RAS Device' window, select the Eicon DIVA T/A ISDN Modem from the drop-down list and click 'OK'.
- 12 From the 'Remote Access Setup' window, click 'Continue'. You will be prompted to shut down and restart your computer. Click 'No'. Do not restart your system.
- 13 Go to ["Installing the DIVA Software"](#) on page 20.

Windows NT 3.51

Note on RAS

If you are going to use the DIVA T/A with RAS, RAS must already be installed with at least one modem. Any modem will do; it is only needed to install the DIVA T/A and will later be removed. If you do not want to use RAS, go to [“Installing the DIVA Software”](#) on page 20.

Setup Instructions

- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Insert the DIV AT/A CD into your computer's CD drive.
- 3 Open any text editor.
- 4 Using your text editor, open the file MODEM.INF found in the Windows\System32\RAS directory.
- 5 Open the file WFWNTEI2.INF (found at the root of the DIV AT/A CD).
- 6 Copy the contents of WFWNTEI2.INF and append it to the end of the MODEM.INF file; save the appended MODEM.INF file, and exit your text editor.
- 7 You must now start the RAS setup program. From 'Control Panel', double-click the 'Network' icon. From the 'Installed Network Software' list, select 'Remote Access Service' and click 'Configure'.
- 8 From the RAS setup, remove the unused modem or any other devices that use the same COM port as the DIVA T/A, add the DIVA T/A, and then exit RAS. Refer to the RAS online help for removing and adding modems.
- 9 After exiting the RAS setup, you are prompted to reboot your PC. Click 'OK' and allow your PC to reboot and Windows NT to restart. To shut down the RAS server, double-click the 'Remote Access Admin' icon in the 'Remote Access Service' program group. From the 'Remote Access Admin Server' menu select 'Stop Remote Access Server', and then exit the Remote Access Admin program.
- 10 Go to [“Installing the DIVA Software”](#) on page 20.

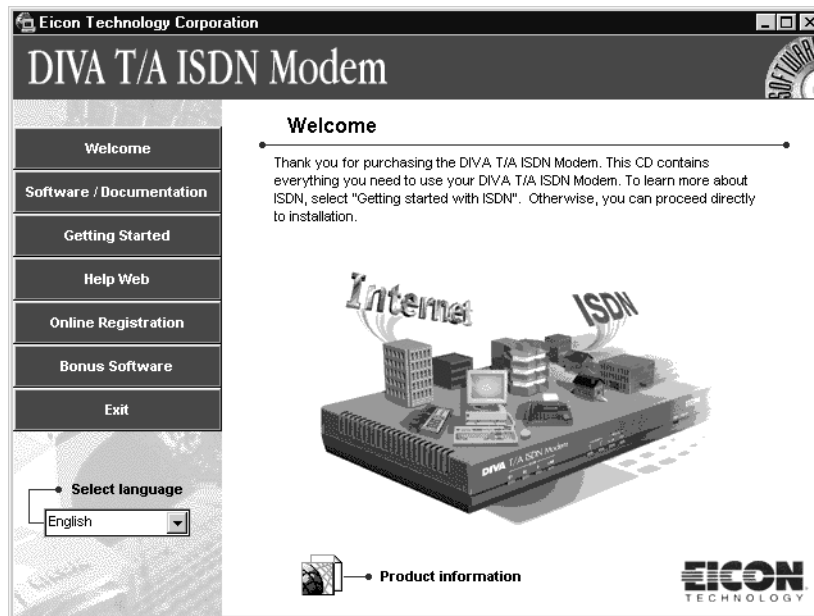
Installing the DIVA Software

The Setup Wizard installs all necessary files on your system. These include the DIVA T/A on-line documentation, the DIVA Terminal Adapters Program, and the Uninstall utility.

Before you proceed, make sure you have completed the pre-installation procedure relevant to your software platform. To find the procedure relevant to your platform, see "[Step 2: Configure your Operating System](#)" on page 9.

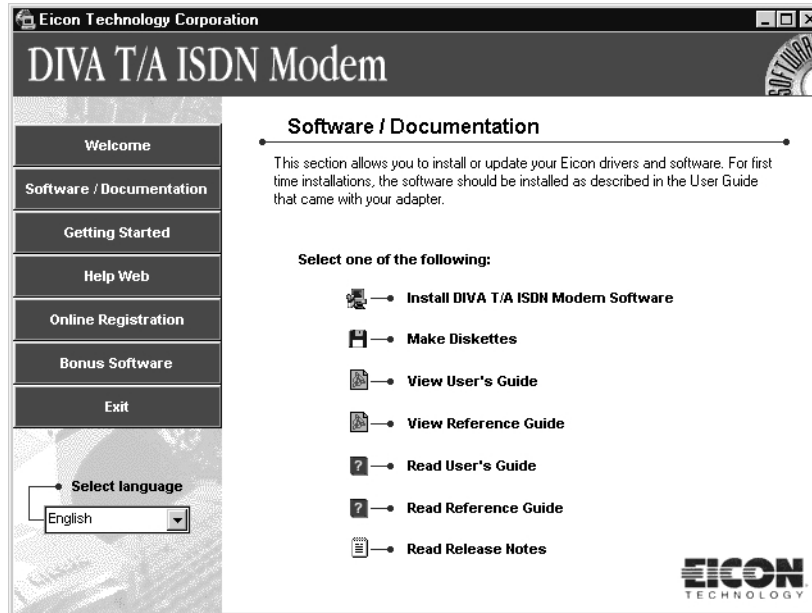
Installation Instructions

- 1 Insert the DIV AT/A CD.
- 2 Click 'Start' then 'Run' from the Windows Taskbar.
- 3 Enter `d:\SETUP.EXE` in the 'Run' field, with `d:` being the drive letter of your CD-ROM drive). Click 'OK'.
- 4 The DIVA T/A 'Welcome' screen appears. Click the 'Software / Documentation' button.



Note: You can change the language by clicking on the 'Select language' button at the bottom left of the screen.

- 5 Click the 'Install DIVA T/A ISDN Modem Software' button.



- 6 The Setup Wizard starts. Click 'Next' in the Setup Wizard's 'Welcome' screen.

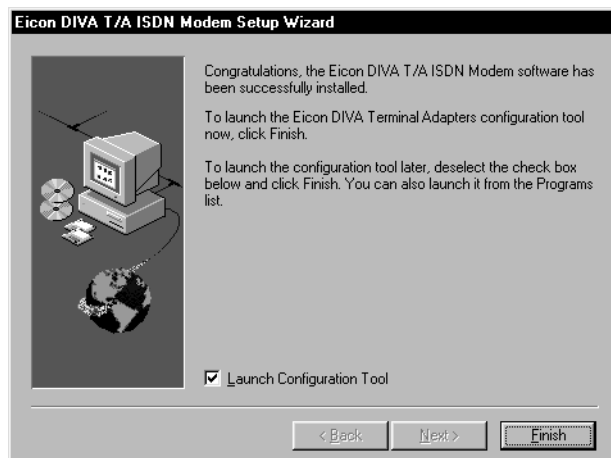


- Specify where you want to install the DIVAT/A software. Click 'Next' to install in the default directory (this differs according to your platform); otherwise, click the 'Browse' button and select a directory, then click 'Next'.



The Setup Wizard installs all necessary files.

- Once complete, the 'Congratulations' screen appear. Verify that the 'Launch Configuration Tool' option is checked and click 'Finish'.



Note: If you want to configure the DIVAT/A later, uncheck 'Launch Configuration Tool' before clicking 'Finish'. The Configuration Tool can be accessed later through the Eicon DIVA Terminal Adapters program. You can launch this program by double-clicking the 'T/A' icon on the taskbar, or by clicking 'Start', 'Programs', 'Eicon DIVA T-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.

- The DIVA Terminal Adapters Program for Windows 95/98/NT launches and detects your DIVAT/A ISDN Modem.

- 10 The Configuration Wizard's 'Welcome' screen appears. Click 'Next' and follow the on-screen instructions.



Note: If an existing configuration is detected, you can skip the Wizard. To keep the existing configuration, click 'Next'. To reconfigure your device using the Wizard, select 'Reconfigure using the Configuration Wizard', then click 'Next'.



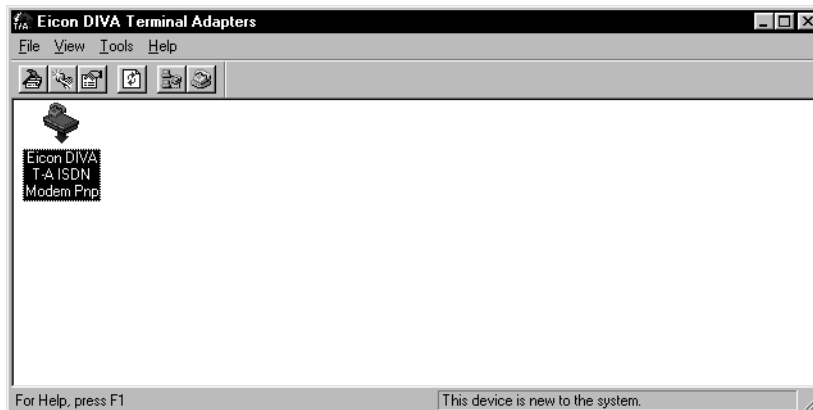
You should not click the 'Configure' button unless you know all of your ISDN parameters and want to configure them manually. If you click 'Configure', the Wizard closes and the Windows 95/98/NT Configuration Tool starts. If you select this option go to ["Configuring a Profile using the Configuration Tool"](#) on page 37.

Context sensitive help is available on all the Configuration Wizard's screens. For more details about a particular field displayed on the screen, click the Question Mark '?' icon at the top right corner of the screen, then click on a field.

- 11 When the 'Congratulations' screen appears, the installation is complete. Click 'Finish'.



The Wizard closes and the Eicon DIVA Terminal Adapters program appears. (For more information on using this software, see [page 32](#).)



Installation Complete

The installation under Windows 95/98/NT is complete. If the 'D' LED on your DIVA T/A is glowing continuously, the modem is ready to use.

- If you want to configure additional profiles or configure advanced ISDN parameters for the profile you created above, go to ["The DIVA Terminal Adapters Program for Windows 95/98/NT"](#) on page 32.
- If you want to learn more about using your DIVA T/A, go to ["Using the DIVA T/A"](#) on page 84.

Macintosh (System 7 or Later) Installation and Setup

To properly set up the DIVA T/A with a Macintosh system (System 7 or later), you must connect the cables, then install the DIVA Terminal Adapters software. You can then use the Configuration Assistant to set your ISDN parameters.

Step 1: Connect the Cables to your DIVA T/A

Following the steps outlined on [page 7](#).

Step 2: Install the DIVA Terminal Adapters Software

The installation program copies all necessary files on your system. These include the DIVA T/A on-line documentation and the DIVA Terminal Adapters Program.

Follow the steps outlined on [page 26](#).

Step 3: Specify your ISDN Settings via the Configuration Assistant

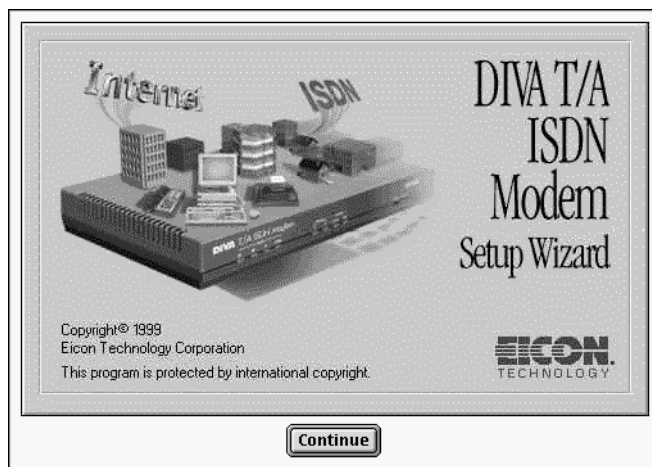
The Configuration Assistant helps you configure your DIVA T/A ISDN Modem to work with your ISDN network connection. Later you may re-run the Assistant or make changes manually using the Configuration Tool.

Follow the steps outlined on [page 28](#).

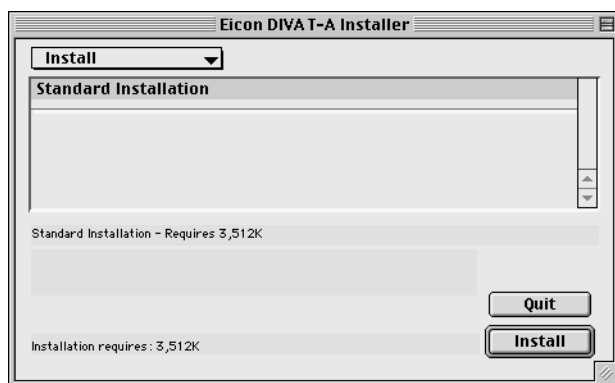
Installing the DIVA Software

The installation program copies all necessary files on your system. These include the DIVA T/A on-line documentation and the DIVA Terminal Adapters Program.

- 1 Power on your PC with all cables connected (see [page 7](#) for instructions).
- 2 Insert the DIV AT/A CD into your CD ROM drive.
- 3 Double-click the CD icon.
- 4 Double-click the 'Eicon DIVA T/A Installer' icon.
- 5 When the Eicon DIVA T/A ISDN Modem splash screen appears, click 'Continue'.



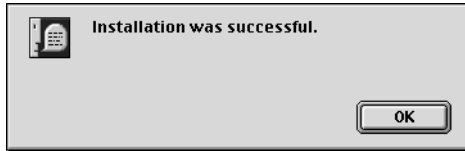
- 6 Click 'Install'.



- 7 When prompted, select a destination for the configuration tool files. The free space available in the selected location is shown in this dialog box. Once you select a destination, click 'Install' in the dialog and follow the prompts to finish the installation.

Note: You may be asked to select a destination for modem scripts. Usually these are placed in the 'Modem Scripts' folder in the 'Extensions' folder of 'System Folder'.

- 8 Click 'OK' at the 'Installation was successful' message.

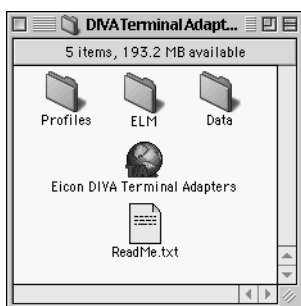


- 9 Continue with "[Specifying ISDN Settings via the Configuration Assistant](#)" on page 28.

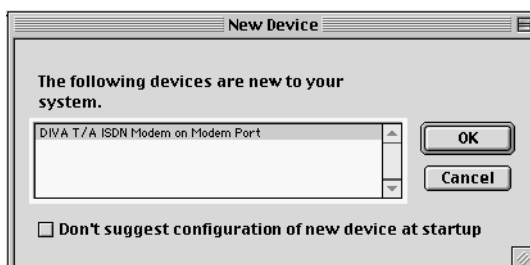
Specifying ISDN Settings via the Configuration Assistant

The Configuration Assistant helps you configure your DIVA T/A ISDN Modem to work with your ISDN network connection. Later you may re-run the Assistant or make changes manually using the Configuration Tool.

- 1 Open the 'Eicon Technology' folder, then the 'DIVA Terminal Adapters' folder.



- 2 Double-click the 'Eicon DIVA Terminal Adapters' icon.
- 3 Upon startup, the DIVA Terminal Adapters program searches for devices connected to your system. If your DIVA T/A is detected, the 'New Device' window appears.



- 4 Click 'OK'. This will start the Configuration Assistant.

If you do not want to be notified of a new device at startup, enable the 'Don't suggest configuration of new device at startup' checkbox before clicking 'OK'.

If you do not want to configure the DIVA T/A at this time, click 'Cancel'.

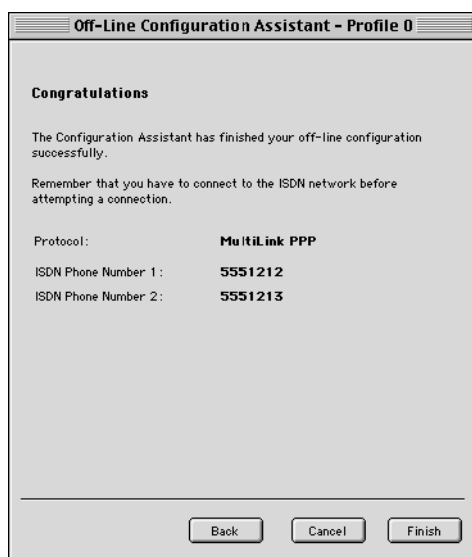
- 5 At the 'Welcome' screen, click 'Next' and follow the Configuration Assistant's on-screen instructions.



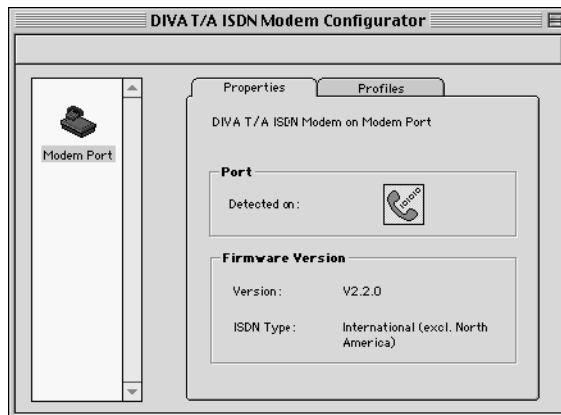
Note: You should not click the 'Configure' button unless you know all of your ISDN parameters and want to configure them manually. If you click 'Configure', the Assistant closes and the Configuration Tool starts. If you select this option, see "[Configuring a Profile using the Configuration Tool](#)" on page 60.



- 6 When the 'Congratulations' screen appears, the installation is complete. Click 'Finish'.



- 7 The Assistant closes and the Eicon DIVA Terminal Adapters program appears. Setup is now complete; you may quit the program by selecting 'Quit' from the 'File' menu.



Installation Complete

The installation is complete. If the 'D' LED on your DIVA T/A is glowing continuously, the modem is ready to use.

- If you want to configure additional profiles or configure advanced ISDN parameters for the profile you created above, you can use the DIVA Terminal Adapters program (see [page 55](#)).
- If you want to learn more about using your DIVA T/A, see [page 84](#).

Setup for Other Operating Systems

The DIVA T/A does not include native installation applications for Windows 3.x, Windows for Workgroups 3.11, DOS, OS/2, Macintosh (prior to System 7), and other operating systems. However, it is still possible to configure the DIV AT/A using the VT100 Configuration Tool. A VT100-compatible terminal emulation program is required.

Windows 3.x and Windows for Workgroups 3.11

If you are going to use the DIVA T/A with RAS for WFW, RAS must already be installed with at least one modem. Any modem will do; it is only needed to properly install the DIVA T/A and will later be removed.

If you are using RAS, follow the steps below. If you do not want to use RAS, see [“The VT100 Configuration Tool”](#) on page 73.

- 1 Connect the cables to your DIVA T/A as outlined on [page 7](#).
- 2 Power on your PC.
- 3 Insert the DIV AT/A CD into your computer's CD drive.
- 4 With any text editor, open the file MODEM.INF found in the Windows\System directory.
- 5 Open the file WFWNTEI2.INF (found at the root of the DIV AT/A CD).
- 6 Copy the contents of WFWNTEI2.INF to the end of the MODEM.INF file; save the appended MODEM.INF file, and exit your text editor.
- 7 Start the RAS setup program.
- 8 From the RAS setup, change the unused modem to the DIVA T/A. Refer to the RAS online help to change modems.
- 9 To set your ISDN parameters, follow the instructions provided in [“The VT100 Configuration Tool”](#) on page 73.

DOS, OS/2, Macintosh (prior to System 7), and Others

- 1 Connect the cables to your DIVA T/A as outlined on [page 7](#).
- 2 Power on your PC.
- 3 To set your ISDN parameters, follow the instructions provided in [“The VT100 Configuration Tool”](#) on page 73.

The DIVA Terminal Adapters Program for Windows 95/98/NT

The DIVA Terminal Adapters Program and Configuration Tool for Windows 95/98/NT provides a variety of convenient utilities for editing your ISDN settings.

In this Chapter:

<u>Introduction</u>	33
<u>The Profiles Window</u>	35
<u>About Configuration Profiles</u>	36
<u>Configuring a Profile using the Configuration Tool</u>	37
<u>General Tab</u>	38
<u>Phone Port Tabs</u>	41
<u>Data Tab</u>	44
<u>BACP Tab</u>	46
<u>X.25 Tab</u>	48
<u>Advanced Tab</u>	51
<u>Voice to PC Tab</u>	53
<u>Configuring a Profile using the Wizard</u>	54

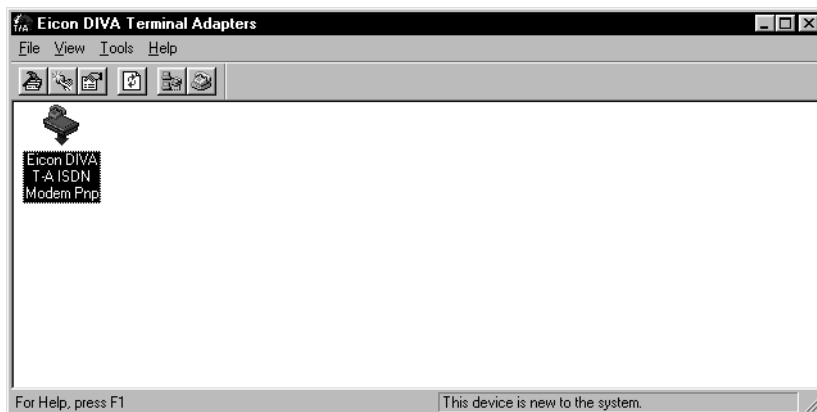
Introduction

Launching the DIVA Terminal Adapters Program

To launch the Terminal Adapters program:

- double-click the **T/A** icon on the taskbar, or
- click 'Start', 'Programs', 'Eicon DIV AT-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.

The 'Eicon DIVA Terminal Adapters Program' window appears as shown below.



You can launch the Configuration Tool by double-clicking on the DIVA T/A icon. The Configuration Tool allows you to edit your ISDN settings. For more information, see ["Configuring a Profile using the Configuration Tool"](#) on page 37.

Getting Help

To access the extensive on-line help, select 'Help Topics' from the 'Help' menu.














Menu Options

The menu bar provides you with a variety of shortcuts and utilities. You can launch commands from drop-down menus or by clicking icons.

Displaying Icons in the Toolbar

To display icons, select 'Toolbar' from the 'View' menu. The Toolbar pick list displays four options: 'Basic', 'Advanced', 'View', and 'Tools'. Select an option to have its associated icons displayed on the toolbar (a checkmark next to an option indicates it is already visible). Select 'Enable' to hide or show the whole toolbar.

The following table describes the action that each icon performs. To make sure you can see all the icons, select 'Toolbar' from the 'View' menu, then enable all the options in the list.

Click	or Select	To perform this Action
	File > Configure	Opens the Configuration Tool for the active profile, allowing you modify your ISDN settings. See " Configuring a Profile using the Configuration Tool " on page 37 for more information.
	File > Wizard	Launches the Configuration Wizard, which takes you step-by-step through the configuration of your ISDN settings. Changes are saved to the active profile. Not all settings can be configured through the Configuration Wizard. If you wish to modify all parameters, configure the profile manually using the Configuration Tool (see next command).
	File > Configure Profiles	Opens the Profiles window. The Profiles window allows you to edit and rename any of the three profiles. This is also where you set the active profile.
	File > Download Firmware	Downloads new Firmware. See " Updating Firmware " on page 79 for more details.
	File > Factory Reset	Resets your DIVA T/A to the original factory settings.
	File > Details	Displays a panel that contains details about your DIVA T/A. Use it if you need to determine details about your configuration (such as your firmware version).
	File > Delete	Deletes the currently selected device.
	File > Import Profiles	Imports a profile file (.PRF), which contains three profiles plus other configuration parameters. The file is imported to the selected device.
	File > Export Profiles	Exports the device configuration, which includes three profiles, to a profiles file (.PRF). Before updating firmware, it is strongly recommended that you export your current profiles.
	View > Refresh	Refreshes information about the selected device.
	Tools > Connect	Opens the 'Make New Connection' dialog box. Configured Dial-Up Networking connections are available from the drop down list. If you are using Windows NT, you can use this option to run RAS.
	Tools > Modems	Opens the 'Windows Modem Properties' box.
	Tools > Terminal	Launches a terminal emulation program, from which you can use AT commands on your device. This is primarily used for troubleshooting.

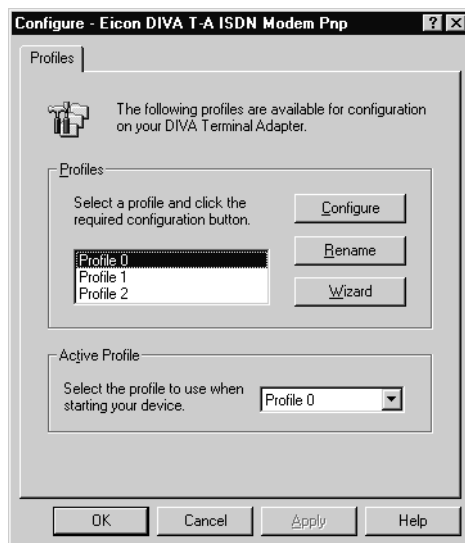
The Profiles Window

The Profiles window allows you to edit any of the three profiles using the Configuration Tool or Configuration Wizard. You can also rename profiles or set the active profile.

To open the Profiles window:

- 1 Double-click the **T/A** icon on the taskbar to start the Terminal Adapters program, or click 'Start', 'Programs', 'Eicon DIVA T-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.
- 2 Right-click on the device icon and choose 'Configure Profiles'. You can also select the device icon and choose 'Configure Profiles' from the 'File' menu.

The 'Profiles' window opens.



If you want to...	Then do this
Configure a profile manually	Select a profile from the 'Profiles' list in the center of the window, then click the 'Configure' button (see page 37).
Configure a profile using the Wizard	Select a profile from the 'Profiles' list in the center of the window, then click the 'Wizard' button (see page 54).
Rename a profile	Select a profile from the 'Profiles' list in the center of the window, then click the 'Rename' button.
Set the active profile	Select a profile from the 'Active Profile' list at the bottom of the window, then click 'OK'. The active profile is the profile the DIVA T/A uses when powering up. The Configuration Tool also opens the active profile when you double-click on the device icon, as does the Wizard when you run it from the File menu.

About Configuration Profiles

A profile is a set of parameters that define a particular ISDN setup.

When you installed the DIVA software, the Configuration Wizard helped you configure your ISDN settings. This set of settings was given the default name Profile0.

In addition to this profile, you can configure two other profiles that define different ISDN setups, which can correspond to the needs of your different applications. For example, you may configure profiles to match the ISDN setup needed to connect to your office, your Internet Service Provider (ISP), and CompuServe. When you need a particular ISDN configuration, you simply select the appropriate profile. This saves you the trouble of reconfiguring all your ISDN parameters each time you switch applications.

Parameter Categories

The different settings are described briefly below. The categories correspond with the panels in the Configuration Tool.

General	General ISDN settings include your location and data protocol (which must match the protocol implemented at the other end of the connection). If your DIVA T/A is not equipped with phone ports, you must also specify your ISDN phone numbers in this panel. For more details, see page 38 .
Phone Ports	If your DIVA T/A is equipped with analog device ports, the Phone Port 1 and Phone Port 2 tabs allow you to specify several options, such as which phone numbers the analog ports should answer. For more details, see page 41 . For more information on analog device support, see page 104 .
Data	The Data tab allows you to configure data port and protocol options. For more details, see page 44 .
BACP	The BACP tab allows you to specify the Bandwidth Allocation Control Protocol and ISDN cost reduction parameters. This tab is visible only if the data protocol is set to 'MultiLink PPP with BACP' or 'MultiLink PPP with AODI', and is discussed in more detail on page 46 .
X.25	The X.25 settings only apply if AO/DI is supported by your ISDN service provider, and is visible only if the data protocol is set to 'MultiLink PPP with AODI'. Use this panel to specify the X.25 version and X.25 facilities as required. For more details, see page 48 .
Advanced	The Advanced tab allows you to specify advanced ISDN parameters such as Call Routing, and is optional. For more details, see page 51 .
Voice to PC	This tab is visible only if the 'Voice to PC' option is enabled in the 'Advanced' tab. For more details, see page 53 .

Configuring Profiles

- To configure a profile manually using the Configuration Tool, see [page 37](#).
- To configure a profile using the Configuration Wizard, see [page 54](#).

Configuring a Profile using the Configuration Tool

To configure a profile manually using the Configuration Tool:

- 1 Double-click the **T/A** icon on the taskbar to start the Terminal Adapters program, or click 'Start', 'Programs', 'Eicon DIVA T-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.
- 2 To configure the active profile, double-click the 'DIVA T/A' icon. The Configuration Tool appears. By default, the General tab is displayed.

Note: To make changes to one of the other profiles, you must first use the 'Profiles' window. See "[The Profiles Window](#)" on page 35 for more information.

- 3 Go through each panel and make your changes. To move from panel to panel, click on the tabs at the top of the window. Note that some tabs do not appear unless certain options are configured. For example, the 'BACP' tab is not visible unless 'MultiLink with BACP' is chosen as the protocol in the 'General' tab.

For descriptions on parameters, refer to the sections below.

General Tab	38
Phone Port Tabs	41
Data Tab	44
BACP Tab	46
X.25 Tab	48
Advanced Tab	51
Voice to PC Tab	53

This information is also available through context-sensitive help. Click the question mark '?' icon at the top right corner of the screen, then click on a field or button.

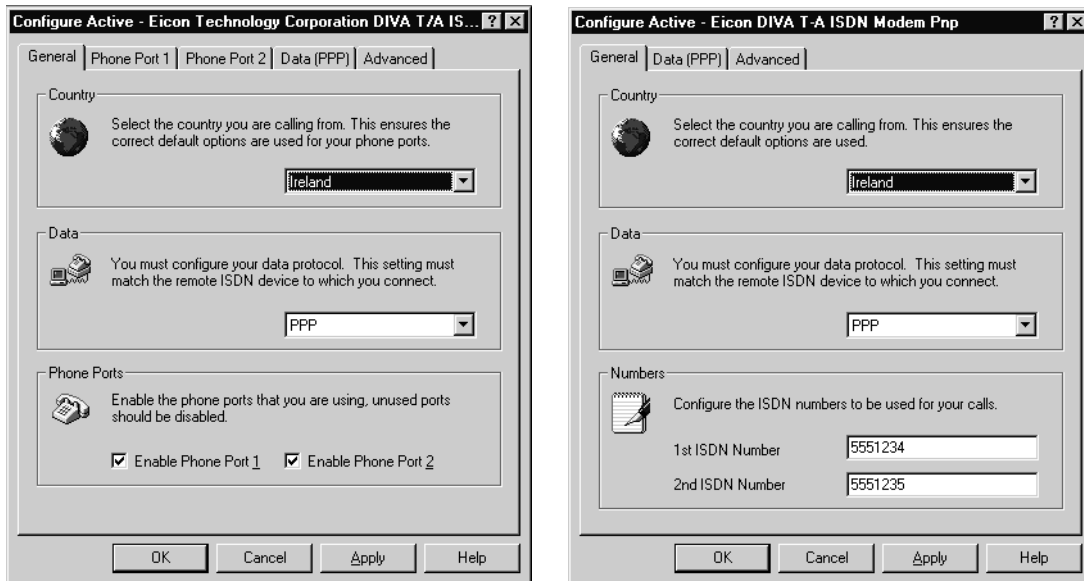
- 4 Click 'OK'. The changes are written back to the device.
- 5 After the DIVA T/A has restarted, check the 'D' and 'Link' LED on the front panel of the DIVA T/A. If the LEDs are steady, the DIVA T/A is working correctly; if they are not steady, check your configuration and try again. Note that, in Europe, an inactive 'Link' LED indicates an idle condition. (For more details on the LEDs, see "[LED Status Indicators on the DIVA T/A](#)" on page 132.)

For information on using your DIVA T/A modem, see "[Using the DIVA T/A](#)" on page 84.

General Tab

The General tab allows you to configure your location as well as the protocol you wish to use. If your DIVA T/A does not have phone ports, this is also where you specify your ISDN directory numbers. For DIVA T/A models with phone ports, this tab allows you to enable or disable individual ports; directory numbers are specified in the Phone Port tabs (see page 41).

Of the screen captures shown below, the first one is the 'General' tab for devices with phone ports; the second one is for devices that do not have phone ports.



Country

This setting ensures that the correct options specific to your country are used. If your country is not listed, select 'Other' and default options will be used.

Data

The data protocol must match the remote ISDN device to which you are going to connect. Your options are 'PPP', 'MultiLink PPP', 'MultiLink PPP with BACP', 'MultiLink PPP with AODI', 'V.110', and 'V.120'.

Setting	Description
PPP	'PPP' operates on a single ISDN channel. Since two ISDN channels are available, the DIVA T/A can support two PPP connections at the same time. This is useful if you need to have two connections running concurrently. For example, you could use one channel to maintain a connection to the Internet, and another to connect to a remote corporate network. Or perhaps you wish to support incoming data calls, as a PPP connection will never be disconnected to allow an incoming or outgoing analog call. Note that if two PPP connections are active, no analog calls can be made.

Setting	Description
MultiLink PPP	<p>When you activate Multilink PPP, the DIVA T/A combines both ISDN B-channels into a single 128 kbps communications link. Both channels remain in use as long as the connection is active, which may result in excessive ISDN connection charges if the link is frequently idle.</p> <p>Multilink PPP reserves both ISDN B-channels for its exclusive use. If you use Multilink PPP, you will not be able to make or receive other data calls.</p> <p>Analog calls are governed by a different set of rules. By default, the DIVA T/A is configured to support call bumping, which causes the DIVA T/A to drop one ISDN channel when you make or receive an analog call.</p> <p>This reduces the throughput of the data call to 64 kbps. When the analog call is done, Multilink PPP re-establishes the second channel, returning the data connection to 128 kbps.</p> <p>Only one of the two PHONE ports can be used when a Multilink PPP connection is active.</p>
MultiLink PPP with BACP	<p>To save on communications charges, use Bandwidth Allocation Control Protocol (BACP) in combination with Multilink PPP. The DIVA T/A uses BACP to monitor incoming and outgoing traffic.</p> <p>As traffic volume warrants, a second ISDN channel is opened or closed. This reduces your communications charges by ensuring that two ISDN channels are never active when one is sufficient.</p> <p>As with MultiLink PPP, this setting reserves both ISDN B-channels for its exclusive use. This means that if your Internet connection uses 'MultiLink PPP with BACP', you will not be able to make or receive other data calls.</p> <p>As with MultiLink PPP, if both B-channels are active, call bumping forces the DIVA T/A to drop one ISDN channel when you make or receive an analog call.</p> <p>Only one phone port can be used when a 'MultiLink PPP with BACP' connection is active. However, since 'MultiLink PPP with BACP' may only be using one ISDN channel, either Phone 1 or Phone 2 may not be available.</p> <p>For example, if Phone 2 was in use when the data connection was established, the data connection uses telephone number 1. Even though telephone number 2 becomes available when Phone 2 hangs up, the data connection does not switch over. If you try to use Phone 1, you will get a busy signal.</p>
MultiLink PPP with AO/DI	<p>Always On/Dynamic ISDN (AO/DI) uses the ISDN D-channel to maintain a permanent connection to your ISP or corporate network. The D-channel connection operates at 16 kbps using the X.25 protocol. However, only 8-9 kbps is available for data transfer, but it can be used to send and receive low-bandwidth data such as email.</p> <p>AO/DI incorporates BACP, and uses it to monitor incoming and outgoing traffic. When traffic volume warrants, it enables one or two ISDN B-channels to meet demand. As with MultiLink PPP, this setting reserves both ISDN B-channels for its exclusive use. If your Internet connection uses 'MultiLink PPP with AO/DI', you will not be able to make or receive other data calls.</p> <p>When using 'MultiLink PPP with AO/DI', both B-channels can be dropped, allowing you to make or receive two analog calls. Since the data connection is still active on the D-channel, you can use both phone ports at any time. However the speed of the D-channel (16 kbps) is much slower than a B-channel (64 kbps).</p>

Setting	Description
V.120	The V.120 protocol, more popular in North America, adapts other transmission rates to the 64 Kbps ISDN line rate.
V.110	The V.110 protocol, used mostly in Europe, adapts other transmission rates to the 64 Kbps ISDN line rate. V.110 carries asynchronous data rates from 2.4 to 19.2 Kbps.

Phone Ports (Enable / Disable) (models with phone ports)

Certain models of the DIVA T/A come equipped with phone ports for connecting analog devices such as telephones, fax machines, and modems. Voice calls originating from analog devices are carried over ISDN.

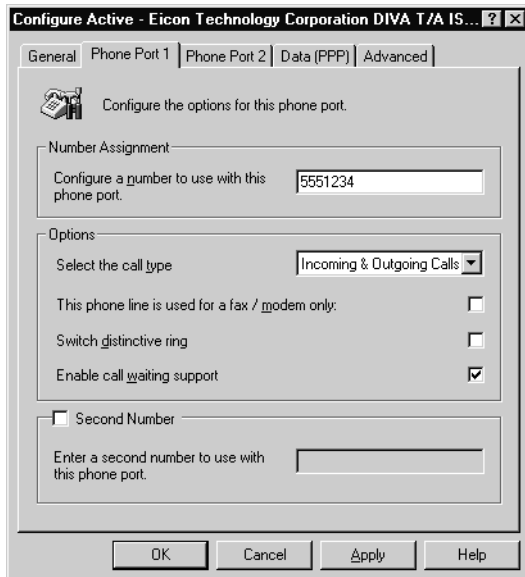
Both phone ports are enabled by default. If you are not going to use one or both phone ports, it is suggested that you disable them.

Numbers (models without phone ports)

Your ISDN numbers are assigned by your ISDN Service Provider. Depending upon your ISDN implementation, you may be given one or two ISDN numbers. The numbers are used by the DIVA T/A to identify itself on outgoing calls and to recognize incoming calls which are destined for it.

Phone Port Tabs

These tabs only applies if your DIVA T/A is equipped with analog device ports.



Certain DIVA T/A models provide two phone ports for connecting analog devices such as telephones, fax machines, and modems. Voice calls originating from analog devices are carried over ISDN.

Since there are two B-channels, the DIVA T/A supports up to two concurrent phone line connections, depending on whether there is a data call in place or not. The following method applies whenever simultaneous data and voice calls are required:

Data Only. Whenever possible, you should use Multilink PPP since it provides maximum throughput with the remote device. You can also configure PPP, V.120, and V.110 protocols. In these cases, one B channel is used for data and the other is used for voice.

Data and Voice. When there is only data, Multilink PPP is used as explained above. However, one phone line can still be used if Dynamic Bandwidth Allocation (DBA) is enabled.

For example, if one of your telephones rings while a Multilink PPP data connection is in progress, one of the B-channels is automatically dropped, reducing the data connection from 128 kbps to 64 kbps. The voice call is then connected. When the voice call ends, the connection on the second B-channel is re-established, bringing transfer back to 128 kbps. The same holds true if you decide to pick up the phone for an outgoing call. This is known as 'Call Bumping'.

While a data connection is in progress, only one voice connection can be established in order to retain the data connection. In order to use DBA, verify that 'Dynamic Bandwidth Allocation' is enabled on the 'Data' panel.

Two Voice Calls. When both B-channels are used for voice calls, data calls will not be allowed. The user will be responsible for any new attempt at placing a Data call.

Number Assignment

Your ISDN Phone number is assigned by your ISDN Service Provider and is used by the DIVA T/A to identify itself on outgoing calls and to recognize incoming calls which are destined for it.

Enter the ISDN number you are going to assign for this Phone Port connection. All calls made with this Phone Port will always use the ISDN number you enter here. This can be useful if your ISDN billing is broken down by numbers as you can trace the charges relating to a specific Phone Port. It is also helpful if your ISDN Service Provider offers a discount on all calls made to a favorite number.

Options

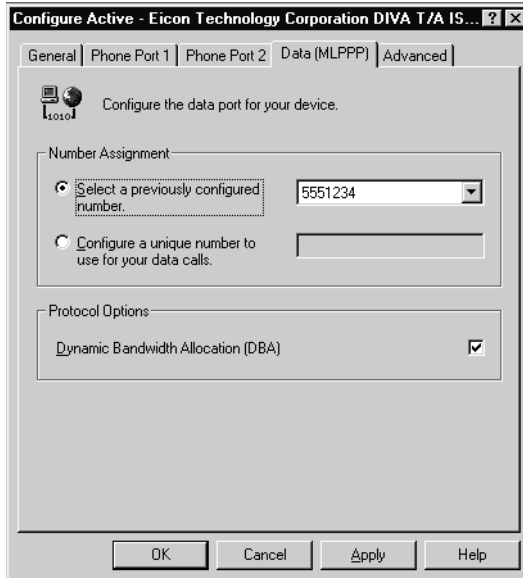
Parameter	Description
Call type	<p>Specifies the types of calls you will accept on your phone.</p> <ul style="list-style-type: none"> • 'Incoming & Outgoing Calls': Both incoming and outgoing calls will be accepted on the phone. • 'Incoming Calls only': Only incoming calls will be accepted; no outgoing calls can be made on the phone. • 'Outgoing Calls only': Only outgoing calls will be permitted; no incoming calls can be accepted on this phone.
This phone line is used for a fax / modem only	<p>Enabling this option:</p> <ul style="list-style-type: none"> • Enables "3.1KHz Audio." This specifies that the ISDN network has to preserve the quality of the 3.1KHz voice band which is required for data audio signals such as faxes and modems. • Disables supplementary services such as Call Forwarding and Call Waiting. • Disables Dial Access.
Switch distinctive ring	<p>Distinctive ring specifies that the phone ring will be slightly different to the regular ring. By enabling this option, distinctive ring will be switched from the second number on your phone port to the first number.</p> <p>Use this feature to help differentiate between your two phone numbers, so you can tell which phone is ringing. If you only have one number configured on each phone port, you can enable this option on one phone port to help differentiate between the two phone ports.</p> <p>If your modem, fax, or telephone is experiencing difficulty in detecting incoming voice calls, try toggling the distinctive ring feature.</p>
Enable call waiting support	<p>Call Waiting alerts you to an incoming call when you are already on the phone. You can put one call on hold while you accept another.</p> <p>The incoming call is often offered using the second B-channel and therefore there would be no B-channel available for any other connections.</p> <p>If you are using your second B-channel for sending/receiving faxes, you may not want Call Waiting enabled. You should disable this option if you do not want Call Waiting support to be available on either one or both phone lines.</p>

Second Number

If you have a second number that you want to use with this Phone Port, enable this option and enter the second number in this field.

Data Tab

This panel allows you to change the ISDN number assignment for your connections. If your DIVA T/A has phone ports and the data protocol is set to MultiLink PPP, you also have the option of enabling 'Dynamic Bandwidth Allocation'.



Number Assignment (models with phone ports)

If your DIVA T/A does not have phone ports, see ["Number Assignment \(models without phone ports\)"](#) on page 45.

Within the Number Assignment group box, you can either assign a previously configured number or numbers to your data ports, or you can enter a unique number to be assigned to your data ports for all your data connections. If you select a specific number for your data connections, you can then monitor the charges for your data calls. It is also helpful if your ISDN Service Provider offers a discount on all calls made to a favorite number.

Parameter	Description
Select a previously configured number	This option allows you to select from the numbers you previously configured on your phone ports. You can select either one number or both numbers and assign them to your data ports. For example, if you select the number that you configured for Phone Port 1, all data calls will use this number.
Configure a unique number to use for your data calls	This option allows you to enter a unique number and assign it to your data ports for all your data connections. If you want to enter a unique data number, you must request one from your Service Provider. It should only be used for data calls and should not be assigned to either of your phone ports.

Number Assignment (models without phone ports)

If your DIVA T/A is equipped with phone ports, see "[Number Assignment \(models with phone ports\)](#)" on page 44.

Within the Number Assignment group box, you can assign a previously configured number or numbers to your data ports for all your data connections. If you select a specific number for your data connections, you can then monitor the charges for your data calls. It is also helpful if your ISDN Service Provider offers a discount on all calls made to a favorite number.

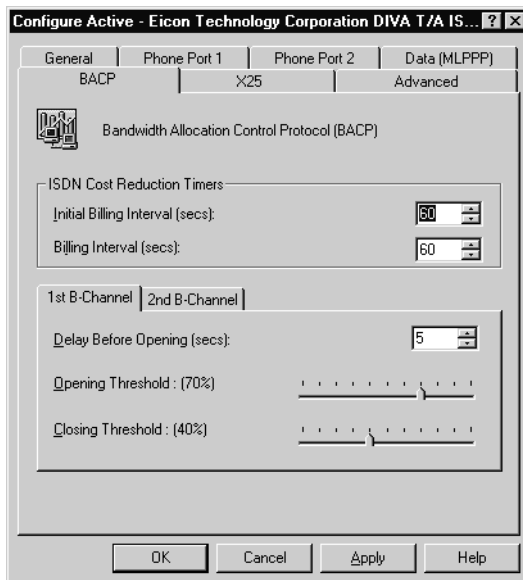
Parameter	Description
Select a previously configured number	This option allows you to select from the numbers you previously configured. You can select either one number or both numbers and assign them to your data ports. For example, if you select the first number that you configured, all data calls will use that number.

Protocol Options (models with phone ports)

Parameter	Description
Dynamic Bandwidth Allocation (DBA)	<p>This option is visible only if your DIVA T/A is equipped with phone ports and if the protocol is set to 'MultiLink PPP', 'MultiLink PPP with BACP', or 'MultiLink with AODI'.</p> <p>Dynamic Bandwidth Allocation (DBA) activates the DIVA T/A's Phone Line control for Multilink PPP connections. When activated, this function enables you to initiate or receive telephone calls on your regular (non-ISDN) telephone without interrupting your Multilink PPP connection.</p> <p>The DBA function releases one B-channel, as required for phone calls, without interrupting the data link. When the call is over, DBA automatically re-establishes the Multilink PPP session by reconnecting the second B-channel, if the throughput requires it.</p>

BACP Tab

This tab is visible only if the data protocol is set to 'MultiLink PPP with BACP' or 'MultiLink PPP with AODI'.



BACP activates the DIVA T/A's automatic traffic monitor for Multilink PPP connections. When activated, this DIVA T/A function monitors the send-and-receive traffic volume. BACP opens or closes the second B-channel as the traffic volume warrants. Activate this function to ensure that two B-channels are never active when one is sufficient.

With AO/DI support, when additional bandwidth is required, BACP automatically adds B-channels of 64 Kbps each (for a total of 128 Kbps speed when both B-channels are in use) to the connection. When the additional bandwidth is no longer required, one or both B-channels are dropped, leaving the D-channel connection in place.

Note: If you select Bandwidth Allocation Control Protocol, but do not set the timers, you could incur unnecessary expense as your second B-channel may open and close frequently, costing you the set first-interval amount each time the second B-channel connects.

ISDN Cost Reduction Timers

Set the ISDN Cost Reduction Timers if you intend to establish Multilink PPP connections and if you select the Bandwidth Allocation Control Protocol (described above). The ISDN Cost Reduction Timers combine with the Bandwidth Allocation Control Protocol to ensure you the most cost-efficient use of ISDN online time. With the timers set, the DIVA T/A will not connect and disconnect your second B-channel, except when it is most economical to do so.

If your ISDN provider charges one rate for the first interval of time online, and a different rate for any subsequent time online, select the appropriate Initial Billing Interval (in seconds) to match the amount of time your ISDN provider allocates as the first time interval. Select the appropriate Billing Interval to match the amount of time your ISDN provider designates as the minimum chargeable unit for all subsequent billing.

For example, if your ISDN provider charges a particular amount for the first five minutes online, select 300 seconds in the Initial Billing Interval field. If your ISDN provider charges another amount for each subsequent minute online, select 60 seconds in the Billing Interval field.

1st B-Channel

The '1st B-Channel' tab is only visible if the data protocol is set to 'MultiLink PPP with AODI'.

Parameter	Description
Delay before opening	<p>Specifies the amount of time (in seconds) the throughput on your D-channel must exceed the Opening Threshold before the 1st B-channel is added to the AO/DI connection.</p> <p>For example, if you specify 5 seconds, and the Opening Threshold is 70%, once the throughput on the D-channel reaches 70%, there will be a delay of 5 seconds before the 1st B-channel is added to the AO/DI connection. If the throughput drops below 70% during the 5 seconds, the 1st B-channel will not be added to the connection.</p>
Opening Threshold	<p>Specifies the threshold (percentage) that the throughput on your D-channel must exceed before the 1st B-channel is added to the AO/DI connection.</p>
Closing Threshold	<p>Specifies the threshold (percentage) that the throughput on your D-channel must be below before the 1st B-channel is dropped from the AO/DI connection.</p>

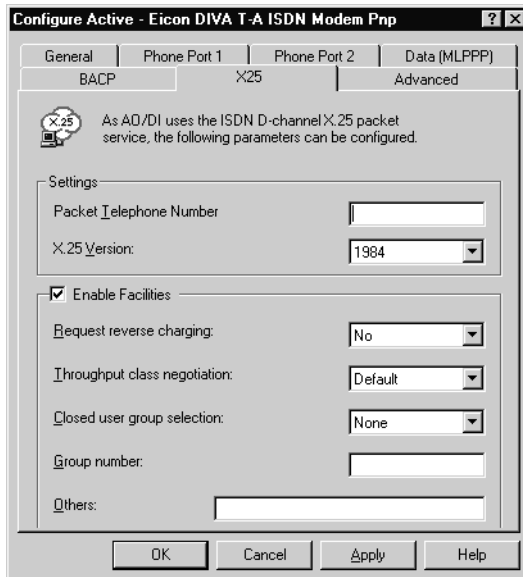
2nd B-Channel

If you have BACP configured, you can configure these options to specify when the 2nd B-channel will be added to the connection as the traffic volume warrants.

Parameter	Description
Delay before opening	<p>Specifies the amount of time (in seconds) the throughput on your 1st B-channel must exceed the Opening Threshold before the 2nd B-channel is added to the AO/DI connection.</p> <p>For example, if you specify 5 seconds, and the Opening Threshold is 70%, once the throughput on the 1st B-channel reaches 70%, there will be a delay of 5 seconds before the 2nd B-channel is added to the AO/DI connection. If the throughput drops below 70% during the 5 seconds, the 2nd B-channel will not be added to the connection.</p>
Opening Threshold	<p>Specify the threshold (percentage) that the throughput on your 1st B-channel must exceed before the 2nd B-channel is added to the AO/DI connection.</p>
Closing Threshold	<p>Specify the threshold (percentage) that the throughput on your 2nd B-channel connection must be below before the 2nd B-channel is dropped from the AO/DI connection.</p>

X.25 Tab

This tab is visible only if the data protocol is set to 'MultiLink PPP with AOD'.



As AO/DI uses the ISDN D-channel X-25 packet service to maintain an "always on" connection between you and your Service Provider, there are X.25 parameters that can be configured. These are X.25 Facilities and your X.25 Version. This information is provided by your Service Provider.

Settings options

Parameter	Description
Packet Telephone Number	<p>A Packet Telephone Number identifies a node on an X.25 network. The address is a series of one to fifteen digits. Every X.25 node has a Packet Telephone Number.</p> <p>It defines the D-channel's DTE address for communication with the local packet handler. This parameter allows the DIVA T/A to activate the D-channel during initialization and give its address to the switch.</p> <p>This value is assigned by your ISDN provider at subscription time.</p>
X.25 Version	<p>ITU (formerly CCITT) reviews and makes international standards recommendations for communications protocols. X.25 is a CCITT recommendation for the interface between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for packet-switched data networks (PSDNs).</p> <p>There are two X.25 CCITT recommendations available for selection, 1984 and 1988. This information is provided by your Service Provider and should match the X.25 recommendation supported on the switch you are connecting to.</p>

X.25 Facilities options

X.25 facilities are optional network services that let you perform tasks such as reversing charges on your calls, accessing a Closed User Group, or specifying a Network User Identification (NUI). The options you select must be supported by your Service Provider.

Facilities fall into two groups: those specified at subscription time, and those specified on a per-call basis. X.25 Facilities you configure must match your X.25 subscription as agreed with your Service Provider.

The X.25 tab's default parameters are suitable for most configurations. In some cases (such as with certain X.25 long distance providers), you might need to modify them. Use the table below as a guideline.

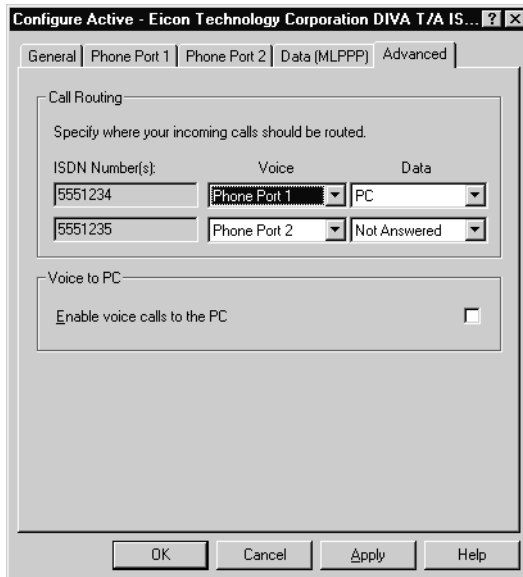
Parameter	Description
Request Reverse Charging	Determines who is charged by the X.25 network for the call. Select 'No' to pay for the call locally, or select 'Yes' to charge the remote DTE. Select 'Yes' only if the remote system accepts reverse charging, otherwise the call may not be accepted.
Throughput class negotiation	<p>Assigns a 'Throughput Class' for the virtual circuit. The Throughput Class specifies the effective throughput of the virtual circuit in bits per second (bps). Effective throughput may be limited by a number of factors such as level of link utilization, network congestion, and host processing.</p> <p>Select 'Default' to use the Throughput Class specified in your network subscription, or select one of the values between 75 and 9,600 bps. If you select a 'bps' value, the local and remote DTEs can negotiate to use a lower value on a per-call basis.</p>
Fast selection	<p>Increases the amount of Call User Data that you can include in the Call Request packet to 128 bytes, and specifies the type of response requested from the host. Fast selection is designed for short-duration, low-volume, transaction-oriented applications.</p> <ul style="list-style-type: none"> • 'No': Turns off Fast Selection. • 'Without Restriction': Host replies with a Call Accept packet that can contain up to 128 bytes of data. The connection is established and data transfer can occur. • 'With Restriction': Host replies with a Call Clear packet that can contain up to 128 bytes of data. The connection is terminated.
Closed user group selection	<p>Specifies the type of closed user group (CUG) subscribed to. CUGs can restrict the set of DTEs calls that can be made to or accepted from. Select the option that corresponds to the CUG specification in your network subscription.</p> <ul style="list-style-type: none"> • 'None': Does not subscribe to any CUG. • 'Standard': Subscribes to a CUG. Enter the CUG number in the Group Number box. • 'Outgoing Access': Can receive calls only from members of the CUG, but can make calls to any DTE. • 'Bilateral': Can receive calls from or make calls to only a specific DTE.
Group number	Specifies the number of the closed user group you have subscribed to. Obtain this number from your system administrator or network subscription.

Parameter	Description
Other	Lets you request additional facilities that are not listed in the 'Common Facilities' group box. Specifies the code for additional facilities that you want to request each time the destination makes an X.25 call. Enter facilities as hexadecimal octets (eight-bit bytes).

This is not intended as an exhaustive description of the User Facilities supported either by the CCITT or by the network you may be using. For more information, consult the CCITT Recommendation International User Services and Facilities in Public Data Networks, Vol. VIII, Fascicle VIII.2, Rec. X.2.

Advanced Tab

This tab allows you to configure advanced options, such as call routing.



Call Routing (models with phone ports)

If your DIVA T/A does not have phone ports, see [“Call Routing \(models without phone ports\)”](#) on page 52.

Call Routing allows you to specify where your incoming calls should be routed. For example, you can specify that any voice calls coming in on your first number are routed to either your PC through the serial port or to one of the phone ports on your DIV AT/A. You can also specify whether you want your data calls routed to your PC through the serial port or you can opt to disable incoming data calls on a specific number.

The options available depend on how you assigned your ISDN numbers and how you configured your phone lines. The Calling Routing dialog displays both numbers along with a voice and a data drop-down list. The options available from the drop-down lists are described below:

Voice Drop Down List

Parameter	Description
Phone Port 1	All voice calls to the selected number will be forwarded to Phone Port 1.
Phone Port 2	All voice calls to the selected number will be forwarded to Phone Port 2.
Phone Port 1&2	All voice calls to the selected number will be forwarded to either Phone Port 1, Phone Port 2, or both, depending on availability.
PC	All voice calls to the selected number will be forwarded to the PC via the serial port.
Not Answered	Any voice calls to the selected number will not be answered.

Data Drop Down List

Parameter	Description
PC	All data calls to the selected number are forwarded to the PC via the serial port.
Not Answered	Any data calls to the selected number will not be answered.

Call Routing (models without phone ports)

If your DIVA T/A is equipped with phone ports, see [“Call Routing \(models with phone ports\)”](#) on page 51.

Call Routing allows you to specify where your incoming calls should be routed. For example, you can specify that any voice calls coming in on your first number are routed to your PC through the serial port or you can opt to disable incoming voice calls on your first number. You can also specify whether you want your data calls routed to your PC through the serial port or you can opt to disable incoming data calls on a specific number.

The options available depend on how you configured your ISDN numbers. The Calling Routing dialog displays both numbers along with a voice and a data drop-down list. The options available from the drop-down lists are described below.

Voice and Data Drop Down Lists

Parameter	Description
PC	All voice calls to the selected number will be forwarded to the PC via the serial port.
Not Answered	Any voice calls to the selected number will not be answered.

Voice To PC

Enabling voice calls to the PC allows you to make or receive voice calls via your PC's serial port. If you enable this option, a Voice to PC tab will appear (see [“Voice to PC Tab”](#) on page 53), where you can select the number(s) you wish to assign to all the voice calls made or received via your PC's serial port.

Troubleshooting (United Kingdom only)

This option is only visible if the location is set to 'United Kingdom'.

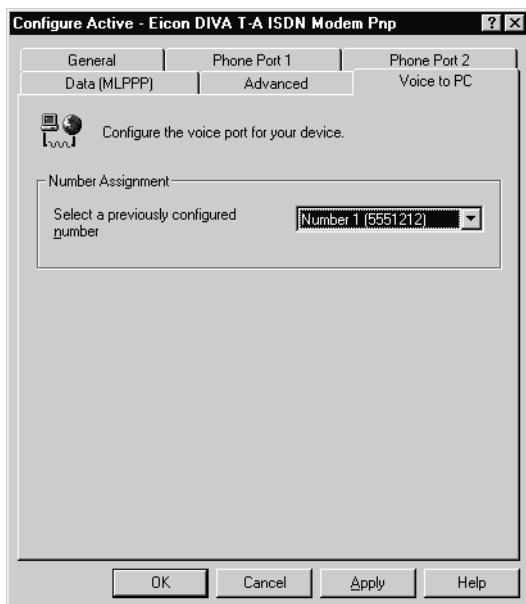
Enable this option if:

- you are in the United Kingdom,
- you are having trouble getting a dial tone on one of your phone lines,
- you are sure your B-channels are available for use,
- your ISDN lines are connected correctly.

Once enabled, you should get a dial tone on your phone line.

Voice to PC Tab

This tab is visible only if the 'Voice to PC' option is enabled in the 'Advanced' tab.



The Voice to PC configuration dialog allows you to select the number(s) you wish to assign to all the voice calls made or received via your PC's serial port. You can select either both numbers or one number. If you select a specific number for your voice calls, you can then monitor the charges for your voice calls.

For example, if you select Telephone Number 2, all voice calls made or received via your PC's serial port will always use Telephone Number 2. This can be useful if your ISDN billing is broken down by numbers as you can trace the charges relating to specific features.

It is also helpful if your ISDN Service Provider offers a discount on all calls made to a favorite number.

Configuring a Profile using the Wizard

The Configuration Wizard can take you step-by-step through the configuration of a profile. To use the Configuration Wizard:

- 1 Double-click the **T/A** icon on the taskbar to start the Terminal Adapters program, or click 'Start', 'Programs', 'Eicon DIVA T-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.
- 2 Right-click on the device icon and choose 'Wizard'. The Configuration Wizard appears.



Note: To use make changes to one of the other profiles using the Wizard, you must first open the 'Profiles' window. See "[The Profiles Window](#)" on page 35 for more information.

- 3 Follow the on-screen instructions.



Note: When you use the Configuration Wizard to configure a profile, you are not shown all available parameters (default settings are implemented). If you wish to modify these parameters, configure the profile manually using the Configuration Tool.

The DIVA Terminal Adapters Program for Macintosh

The DIVA Terminal Adapters Program for Macintosh computers (System 7 or later) provides you with convenient utilities for editing your ISDN settings.

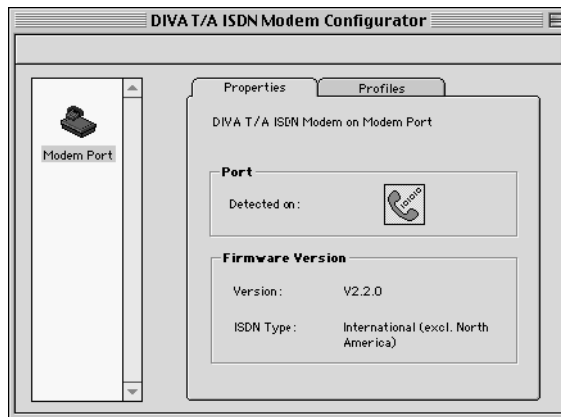
In this chapter:

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<u>The Profiles Window</u>	59
<u>Configuring a Profile using the Configuration Tool</u>	60
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Introduction

Launching the DIVA Terminal Adapters Program

To launch the Terminal Adapters program, double-click on the DIVA Terminal Adapters icon. The 'Eicon DIVA Terminal Adapters Program' window appears as shown below.



You can launch the Configuration Tool, which allows you to edit your ISDN settings, by clicking on the 'Profiles' tab, choosing a profile, then clicking the 'Configure' button. For more information, see ["Configuring a Profile using the Configuration Tool"](#) on page 60.

Getting Help

The DIVA Terminal Adapters program offers Balloon Help. To turn it on, select 'Show Balloons' from the Help menu. When you point the mouse at something that has help associated with it, a small balloon will appear with information on that topic.

Menu Bar Commands

The following table describes the commands found in the menu bar.

Select	To perform this Action
File > Save Configuration	Saves the current device configurations back to your DIVA T/A. If you have not made any changes, this command is not available.
File > Quit	Quits the program. You will be prompted to save your profiles to the DIVA T/A if you have not already done so with the 'Save Configuration' command.
Modem > Configure	Edits the currently selected profile. To select a profile, click on the 'Profile' tab and then choose a profile from the list in the center of the window. You can also click the 'Configure' button.
Modem > Configure Active	Edits the active profile. The active profile is the one selected in the 'Active Profile' area at the bottom of the 'Profile' window. Changes made to the active profile are automatically written back to the device.
Modem > Download Firmware	Downloads new firmware. Before downloading new firmware, use the 'Export Profiles' command to save your current configuration to disk. See "Updating Firmware" on page 79 for more details.

Select	To perform this Action
Modem > Refresh Modem Info	Scans the serial ports for devices.
Modem > Factory Default	Reverts your DIVA T/A to the original factory settings.
Modem > Remove Device	Removes the currently selected device. The device will not be available until detected again, and will be presented as a new device for configuration. To detect the device again, use the 'Refresh Modem Info' command.
Modem > Import Profiles	Imports a profile file, which contains the three profiles plus other configuration parameters. The information is saved to the selected device and replaces the current device configuration.
Modem > Export Profiles	Saves the current device configuration, which includes the three profiles plus other configuration parameters, to a profiles file. Before updating firmware, it is recommended that you export your current profiles.
Help > Show Balloons	Shows balloon help. Once on, position the mouse on a field or parameter and a brief explanation will appear.

About Configuration Profiles

A profile is a set of parameters that define a particular ISDN setup.

When you installed the DIVA software, the Configuration Assistant helped you configure your ISDN settings. These settings were saved to Profile 0.

In addition to this profile, you can configure two other profiles that define different ISDN setups, which can correspond to the needs of your different applications. For example, you may configure profiles to match the ISDN setup needed to connect to your office, your Internet Service Provider (ISP), and CompuServe.

When you need a particular ISDN configuration, you simply select the appropriate profile. This saves you the trouble of reconfiguring all your ISDN parameters each time you switch applications.

Parameter Categories

The different settings are described briefly below. The categories correspond with the panels in the Configuration Tool.

Protocol	This tab specifies your ISDN protocol. For more details, see page 62 .
Location	This tab specifies the location's ISDN switch type and telephone numbers as required. For more details, see page 63 .
Phone Lines	This tab specifies information about the location's phone lines and is only required if your DIVA T/A is equipped with analog device ports. For more details, see page 64 .
BACP	The BACP tab allows you to specify the Bandwidth Allocation Control Protocol and ISDN cost reduction parameters. This tab is visible only if the data protocol is set to 'MultiLink PPP'. For more details, see page 65 .
X.25	X.25 only applies if AO/DI is supported by your ISDN service provider and if the AO/DI option is enabled in the Protocol tab. For more details, see page 68 .
Advanced	Advanced ISDN parameters such as Dynamic Bandwidth Allocation (DBA). This information is optional. For more details, see page 70 .

Configuring Profiles

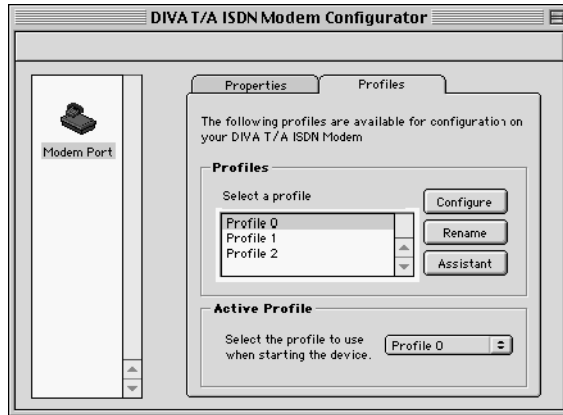
- To configure a profile manually using the Configuration Tool, see [page 60](#).
- To configure a profile using the Configuration Assistant, see [page 71](#).

The Profiles Window

The Profiles window allows you to edit any of the three profiles using the Configuration Tool or Configuration Assistant. You can also rename profiles or set the active profile.

To open the Profiles window:

- 1 Launch the DIVA Terminal Adapter Program.
- 2 Click on the 'Profiles' tab.



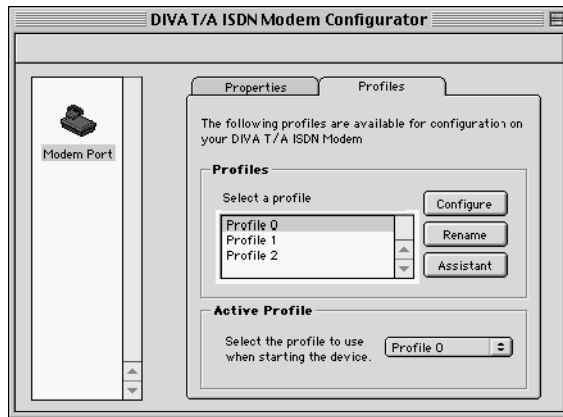
If you want to...	Then do this
Configure a profile manually	Select a profile from the 'Profiles' list in the center of the window, then click the 'Configure' button. For more information, see page 60 .
Configure a profile using the Assistant	Select a profile from the 'Profiles' list in the center of the window, then click the 'Assistant' button. For more information, see page 71 .
Rename a profile	Select a profile from the 'Profiles' list in the center of the window, then click the 'Rename' button.
Set the active profile	Select a profile from the 'Active Profile' list at the bottom of the window, then click 'OK'. The active profile is the profile the DIVA T/A uses when powering up. The Configuration Tool also opens the active profile when you double-click on the device icon, as does the Wizard when you run it from the File menu.

- 3 Select 'Save' from the 'File' menu. The changes are written to the device, the DIVA T/A restarts automatically, and the profile you selected in previous step is implemented. Your DIVA T/A is ready for use.

Configuring a Profile using the Configuration Tool

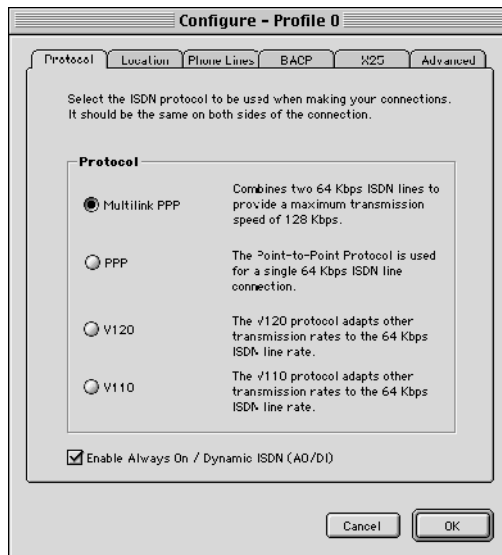
To configure a profile manually using the Configuration Tool:

- 1 Launch the DIVA Terminal Adapter Program.
- 2 Click on the 'Profiles' tab. Three default profiles are available: Profile 0, Profile 1, and Profile 2. Profile 0 was modified using the Configuration Assistant when you ran the DIVA Terminal Adapters program for the first time.



If you wish to rename a profile, select the profile from the list and click 'Rename.'

- 3 Select the profile from the list and click 'Configure.' The Configuration Tool dialog appears. By default, the Protocol tab is displayed.



- 4 Go through each panel and make your changes. To move from panel to panel, click on the tabs at the top of the window. Note that some tabs are not available unless certain options are configured. For example, the 'X.25' tab is not available unless 'Enable Always On / Dynamic ISDN' is checked in the 'Protocol' tab.

Parameters are explained on the following pages:

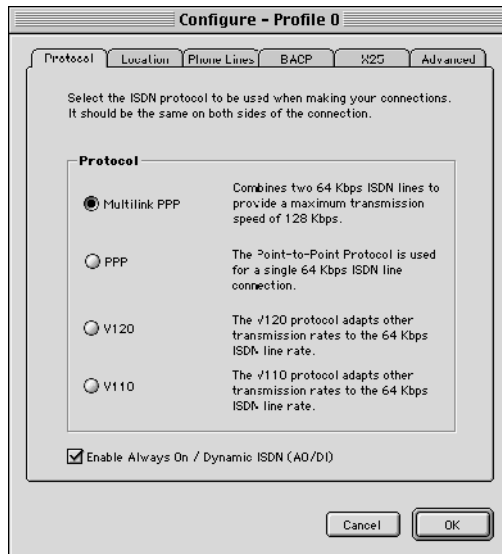
<u>Protocol Tab</u>	62
<u>Location Tab</u>	63
<u>Phone Lines tab</u>	64
<u>BACP Tab</u>	65
<u>X.25 Tab</u>	68
<u>Advanced Tab</u>	70

- 5 Click 'OK'.
- 6 If you want the profile to be active when you restart the DIV AT/A, select its name from the 'Active Profiles' pick list.
- 7 Select 'Save' from the 'File' menu. The changes are written to the device, the DIVA T/A restarts automatically, and the profile you selected in previous step is implemented. Your DIVA T/A is ready for use.
- 8 After the DIVA T/A has restarted, check the 'D' and 'Link' LED on the front panel of the DIVA T/A. If the LEDs are steady, the DIVA T/A is working correctly; if they are not steady, check your configuration and try again. Note that, in Europe, an inactive 'Link' LED indicates an idle condition. For more details on the LEDs, see "[LED Status Indicators on the DIVA T/A](#)" on page 132.

For information on using your DIVA T/A modem, see "[Using the DIVA T/A](#)" on page 84.

Protocol Tab

The Protocol tab lets you choose the protocol settings for your ISDN line.



By default, 'PPP' is enabled. Both 'PPP' and 'MultiLink PPP' require that a PPP communications stack be installed on your computer. Note that the protocol you choose must match the protocol on the receiving system.

About the Protocol panel

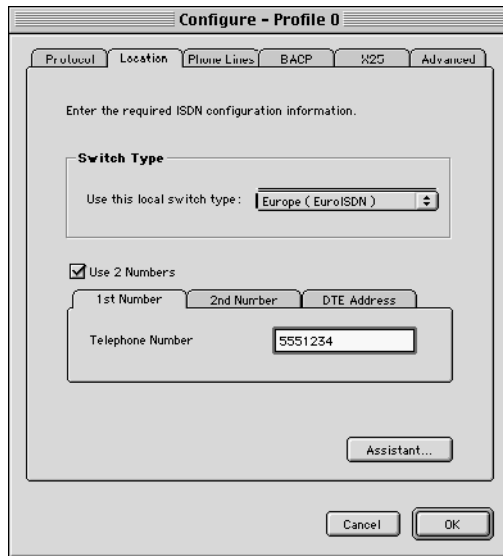
- For the 'Enable Always On / Dynamic ISDN (AO/DI)' option to be available, the protocol must be set to 'MultiLink PPP'. Also, AO/DI is only available if you have subscribed to it; check with your ISDN Service Provider.
- For the 'BACP' tab to be visible (see [page 65](#)), the protocol must be set to 'MultiLink PPP'.
- For the 'X.25' tab to be visible (see [page 68](#)), the 'Enable Always On / Dynamic ISDN (AO/DI)' option must be enabled.

About MultiLink PPP

- To obtain maximum performance when using the MultiLink PPP protocol, your computer's serial port should be capable of 230.4 kbps transfer. Macintosh computers that have serial ports capable of 230.4 kbps include all PowerMacintosh computers (except for the 52xx, 62xx, and 6300 models) and AV Macintosh computers. Check the user manual that came with your system or consult Apple's technical library at <http://til.info.apple.com/>.
- MultiLink PPP does not support the callback feature used by some servers.
- When using MultiLink PPP for *incoming* calls, only SPAP or PAP authentication are supported.

Location Tab

The 'Location' tab contains information on your ISDN switch type and telephone numbers.

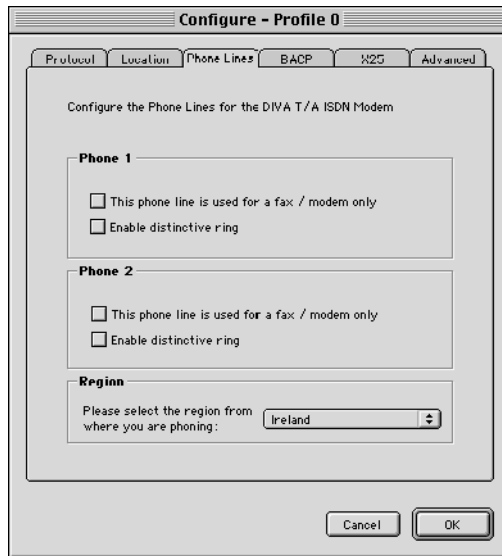


Use the table below as a guideline for setting these parameters.

Parameter	Description
Switch Type	Specifies the ISDN switch type used by your ISDN service provider. Your choices are Europe (EuroISDN), Australia (MicroLink), Australia (OnRamp), Japan (INS-Net64), China ISDN, and Singapore ISDN. Default: Europe (EuroISDN).
Use 2 Numbers	Activates the '2nd Number' tab. Use the second number tab if your ISDN provider assigns two numbers.
Telephone Number (1st Number/ 2nd Number)	Specifies your Directory Numbers. If your line supports Multiple Subscriber Numbers (MSNs), the DIVAT/A handles incoming calls differently, depending on what you enter in the Telephone Number fields. <ul style="list-style-type: none"> • If you do not specify a number in either the '1st Number' or '2nd Number' fields, all ports (PHONE 1, PHONE 2, and ISDN) answer both directory numbers. • If you specify a number in the '1st Number' field but leave the '2nd Number' field empty, all ports (PHONE 1, PHONE 2, and ISDN) answer only calls to the specified number. • If you specify one number in the '1st Number' field, and a different number in the '2nd Number' field, PHONE 1 answers only calls to the first number; PHONE 2 answers only calls to the second number; and the ISDN port answer calls to either the 1st or 2nd number.
DTE Address	This field only applies if AO/DI supported by your ISDN service provider and if 'Enable Always On / Dynamic ISDN' is enabled (see page 62). An X.25 DTE Address identifies a node on an X.25 network. The address is a series of one to fifteen digits. Every X.25 node has an X.25 address. Your service provider assigns this value at subscription time.

Phone Lines tab

This tab contains information on your phone lines.

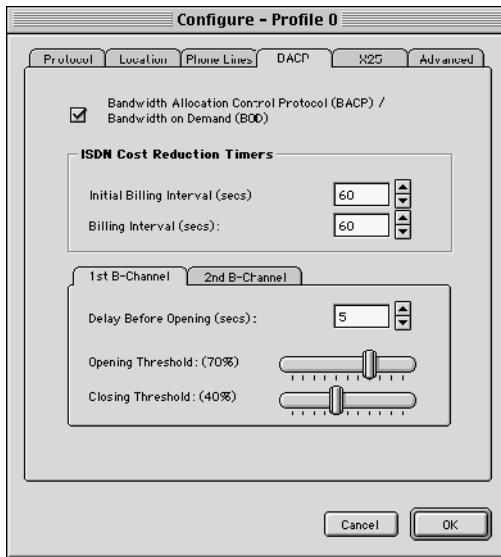


Use the table below as a guideline for setting these parameters.

Parameter	Description
This phone line is used for a fax / modem only	<p>Selecting this option:</p> <ul style="list-style-type: none"> • Enables '3.1KHz Audio'. This specifies that the ISDN network has to preserve the quality of the 3.1KHz voice band that is required for data audio signals such as faxes and modems. • Disables calling features such as Call Forward and Call Waiting. • Disables Dial Access.
Enable distinctive ring	<p>Specifies that the phone ring will be slightly different from the regular ring. If your modem, fax, or telephone is experiencing difficulty detecting incoming voice calls, try toggling the distinctive ring feature.</p>
Region	<p>Specifies the country where you are located. This ensures that the DIVA T/A implements the ring pattern (and other analog device parameters) suited to your country. If your country is not listed, use the default, International.</p> <p>If problems persist, try configuring this parameter using the AT commands <code>AT*F</code> and <code>AT!L</code>. See the 'DIVA T/A Reference Guide' for more information.</p>

BACP Tab

This tab allows you to configure the BACP options you want implemented on your DIVA T/A. Note that this tab is visible only if the protocol is set to 'MultiLinkPPP'.



Use the table below as a guideline for setting these parameters.

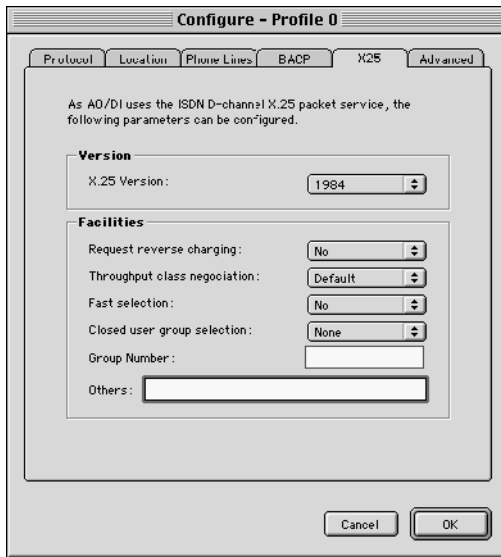
Parameter	Description
BACP/BOD (Bandwidth Allocation Control Protocol / Bandwidth on Demand)	<p>This option only applies if your ISDN connection protocol is set to 'Multilink PPP'. 'BACP/BOD' activates the DIVA T/A's automatic traffic monitor for Multilink PPP connections. When activated, this DIVA T/A function monitors the send-and-recv traffic volume.</p> <p>Without AO/DI support: 'BACP' opens or closes the second B-channel as the traffic volume warrants. Activate this function to ensure that two B-channels are never active when one is sufficient.</p> <p>With AO/DI support: When additional bandwidth is required, 'BACP' automatically adds B-channels of 64 Kbps each (for a total of 128 Kbps speed when both B-channels are in use) to the connection. When the additional bandwidth is no longer required, one or both B-channels are dropped, leaving the D-channel connection in place.</p> <p>Note: Be sure to configure the 'Cost Reduction Timers' (see next option) to avoid numerous first interval charges. If you select 'BACP', but do not set the 'Cost Reduction Timers', you could incur unnecessary expense as your second B-channel might open and close frequently, costing you the first-interval amount each time the second B-channel connects.</p> <p>Default: 'BACP/BOD' disabled.</p>

Parameter	Description
ISDN Cost Reduction Timers	<p>This option only applies if your ISDN connection protocol is set to 'Multilink PPP'.</p> <p>Note: You must activate 'BACP/BOD' before setting the intervals.</p> <p>Set these intervals to ensure your second B-channel is used most economically.</p> <p>'Initial Billing Interval': Specifies the minimum time a B-channel can remain open (in seconds). For example, if the value is set to 600, a channel, once open, will remain open for at least 10 minutes (600 seconds).</p> <p>If you are charged a fixed amount for the first x seconds of a call (e.g. 300 seconds), a good rule of thumb is to set the timer to this value, e.g. 300. For an example of setting the interval under more advanced conditions, see "Billing Interval Example" on page 137.</p> <p>Setting the timer to 0 disables it. The Billing Interval is also, effectively disabled.</p> <p>Default: 60 seconds.</p> <p>'Billing Interval': Specifies the time interval your Service Provider uses to bill usage of your ISDN line (in seconds). For example if your Provider charges \$Y per 60 seconds, enter 60.</p> <p>Setting the timer to 0 disables it. The Initial Billing Interval remains in effect.</p> <p>Default: 60 seconds.</p>
1st B-channel	<p>'Delay before opening': Specifies the amount of time (in seconds) the throughput on your D-channel must exceed the Opening Threshold before the 1st B-channel is added to the AO/DI connection.</p> <p>For example, if you specify 5 seconds, and the Opening Threshold is 70%, once the throughput on the D-channel reaches 70%, there will be a delay of 5 seconds before the 1st B-channel is added to the AO/DI connection. If the throughput drops below 70% during the 5 seconds, the 1st B-channel will not be added to the connection.</p> <p>'Opening Threshold': Specifies the threshold (percentage) that the throughput on your D-channel must exceed before the 1st B-channel is added to the AO/DI connection.</p> <p>'Closing Threshold': Specifies the threshold (percentage) that the throughput on your B-channel must be below before the 1st B-channel is dropped from the AO/DI connection.</p> <p>This option is only available with AO/DI support.</p>

Parameter	Description
2nd B-channel	<p>'Delay before opening': Specifies the amount of time (in seconds) the throughput on your 1st B-channel must exceed the Opening Threshold before the 2nd B-channel is added to the AO/DI connection.</p> <p>For example, if you specify 5 seconds, and the Opening Threshold is 70%, once the throughput on the 1st B-channel reaches 70%, there will be a delay of 5 seconds before the 2nd B-channel is added to the AO/DI connection. If the throughput drops below 70% during the 5 seconds, the 2nd B-channel will not be added to the connection.</p> <p>'Opening Threshold': Specifies the threshold (percentage) that the throughput on your 1st B-channel must exceed before the 2nd B-channel is added to the AO/DI connection.</p> <p>'Closing Threshold': Specifies the threshold (percentage) that the throughput on your 2nd B-channel connection must be below before the 2nd B-channel is dropped from the AO/DI connection.</p> <p>Note: This option is available without AO/DI support. If you have BACP configured, you can configure this option to specify when the 2nd B-channel will be added to the connection as the traffic volume warrants.</p>

X.25 Tab

This tab allows you to configure X.25 settings. Note that this tab is visible only if the protocol is set to 'MultiLink PPP' and if 'Enable Always On / Dynamic ISDN (AO/DI)' is enabled.



The X.25 tab's default parameters are suitable for most configurations, but in some cases (such as with certain X.25 long distance providers), you may need to modify them. Use the table below as a guideline.

Parameter	Description
X.25 Version	There are two X.25 CCITT recommendations available for selection, '1984' and '1988'. This information is provided by your Service Provider and should match the X.25 recommendation supported on the switch you are connecting to.
Request Reverse Charging	Determines who is charged by the X.25 network for the call. Select 'No' to pay for the call locally, or select 'Yes' to charge the remote DTE. Select 'Yes' only if the remote system accepts reverse charging, otherwise the call may not be accepted.
Throughput class negotiation	Assigns a 'Throughput Class' for the virtual circuit. The Throughput Class specifies the effective throughput of the virtual circuit in bits per second (bps). Effective throughput may be limited by a number of factors such as level of link utilization, network congestion, and host processing. Select 'Default' to use the Throughput Class specified in your network subscription, or select one of the values between 75 and 9,600 bps. If you select a 'bps' value, the local and remote DTEs can negotiate to use a lower value on a per-call basis.

Parameter	Description
Fast selection	<p>Increases the amount of Call User Data that you can include in the Call Request packet to 128 bytes, and specifies the type of response requested from the host. Fast selection is designed for short-duration, low-volume, transaction-oriented applications.</p> <ul style="list-style-type: none">• 'No': Turns off Fast Selection.• 'Without Restriction': Host replies with a Call Accept packet that can contain up to 128 bytes of data. The connection is established and data transfer can occur.• 'With Restriction': Host replies with a Call Clear packet that can contain up to 128 bytes of data. The connection is terminated.
Closed user group selection	<p>Specifies the type of closed user group (CUG) subscribed to. CUGs can restrict the set of DTEs calls that can be made to or accepted from. Select the option that corresponds to the CUG specification in your network subscription.</p> <ul style="list-style-type: none">• 'None': Does not subscribe to any CUG.• 'Standard': Subscribes to a CUG. Enter the CUG number in the Group Number box.• 'Outgoing Access': Can receive calls only from members of the CUG, but can make calls to any DTE.• 'Bilateral': Can receive calls from or make calls to only a specific DTE.
Group number	<p>Specifies the number of the closed user group you have subscribed to. Obtain this number from your system administrator or network subscription.</p>
Others	<p>Lets you request additional facilities that are not listed in the 'Common Facilities' group box. Enter a code for additional facilities you want to request each time the destination makes an X.25 call. Codes must be hexadecimal octets (eight-bit bytes).</p>

Advanced Tab

This tab allows you to configure advanced options you want implemented on your DIVA T/A.



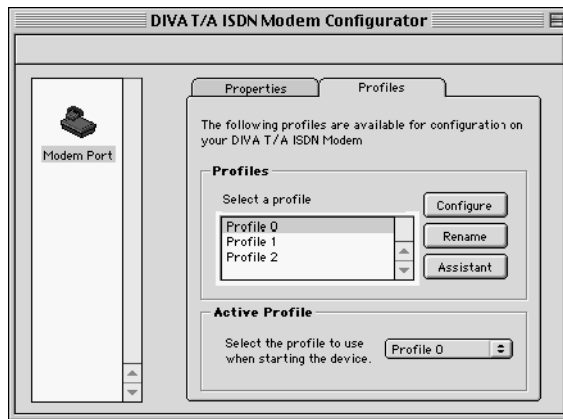
Use the table below as a guideline for setting these parameters.

Parameter	Description
DBA (Dynamic Bandwidth Allocation)	<p>This option only applies if your ISDN connection protocol is set to 'Multilink PPP'.</p> <p>Note: Only available on models equipped with analog device ports.</p> <p>When activated, this function lets you initiate or receive telephone calls on your regular (non-ISDN) telephone without interrupting your current connection. It releases one B-channel, as required for analog device calls, without interrupting the data link. (This is referred to as 'call bumping'.) After you hang up, the B-channel is automatically brought back up for your current connection.</p> <p>Default: 'DBA' Enabled.</p>
Update Time	<p>If you have a phone with call display and are receiving calls with the incorrect time or date, click the 'Update Time' button. The DIVA T/A uses the computer's clock to update the date and time.</p> <p>If you power off your DIVA T/A, click 'Update Time' when you turn it back on. This assures that the correct date and time are set.</p>

Configuring a Profile using the Assistant

The Configuration Assistant can take you step-by-step through setting the parameters required for your ISDN network connection. To use the Assistant:

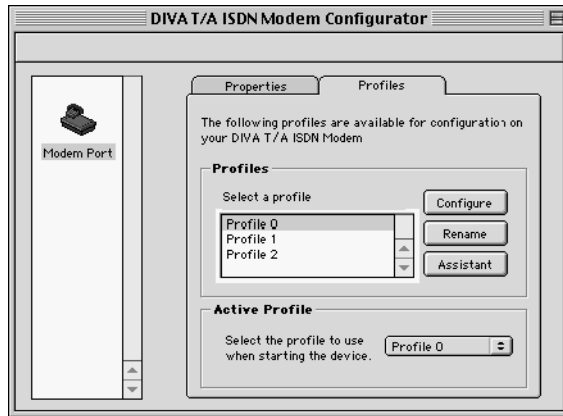
- 1 Launch the DIVA Terminal Adapter Program.
- 2 Click on the 'Profiles' tab. Three default profiles are available: Profile 0, Profile 1, and Profile 2. Profile 0 was modified using the Configuration Assistant when you ran the DIVA Terminal Adapters program for the first time.



- 3 Select a profile from the list and click 'Assistant.' The Configuration Assistant window appears. Follow the on-screen instructions.
- 4 When the 'Congratulations' screen appears, setup is complete. Click 'Finish'.



- 5 You are returned to the DIVA Terminal Adapters program.



- 6 If you want the profile to be active when you restart the DIV AT/A, select its name from the 'Active Profiles' pick list.
- 7 Select 'Save' from the 'File' menu. The changes are written to the device, the DIVA T/A restarts automatically, and the profile you selected in previous step is implemented. Your DIVA T/A is ready for use.



Note: When you use the Configuration Assistant to configure a profile, you cannot set 'Phone Lines' and 'Advanced' ISDN parameters (default settings are implemented). If you want to modify these parameters, configure the profile manually using the Configuration Tool.

The VT100 Configuration Tool

The VT100 Configuration Tool is included in your DIVA T/A firmware and can be used to configure your ISDN settings on any computer platform. To access the VT100 Configuration Tool, you need a VT100-compatible terminal emulation program such as Telix, HyperAccess, or Zterm.

- 1 Start the VT100-compatible terminal emulation program. Set the parameters of your VT100 terminal emulation program using the table below as a guideline:

Terminal Emulation Type:	VT100/VT102
Local Echo:	Off
CR Translation:	CR
LF after CR:	Off

- 2 Verify that the terminal-emulation program uses the same COM port as that assigned to the DIVA T/A.
- 3 Enter the following command at the prompt and press Enter:

AT@MENU

The main VT100 Configuration Tool screen opens:

```
*-----*
          DIVA T/A ISDN Modem - International   Version 2.2
          Copyright © 1999 Eicon Technology Corporation
*-----*
MENU: Main menu
          Open Profile:  Current profile
          ISDN Parameters: < press Enter >
            Protocol:  PPP async/sync
            Phone Line: < press Enter >
            Advanced:  < press Enter >
          Powerup Profile: Profile 0
          Save Profile:   Profile 0
          Restart Unit:  Profile 0
          Quit
<ESC> Quit
          Choice:
          Current profile
          Profile 0
          Profile 1
          Profile 2
          Factory profile
*-----*
          HELP
Selects which profile to open: current, stored (0,1,2) or factory.
-Loads the current profile.
*-----*
```

Navigating in the VT100 Configuration Tool screen

The following table describes the function keys that let you navigate the VT100 Configuration Tool's screen:

Key	Function
Up arrow	Moves the cursor to the previous field.
Down arrow	Moves the cursor to the next field.
Right arrow	Displays the sub-menu level. In a text field, it moves the cursor one character to the right.
Left arrow	Displays the previous menu level. In a text field, it moves the cursor one character to the left.
Enter	Validates the configuration setting and displays the next field, or displays the next menu.
Tab	Displays the next field.
Space bar	Displays the next choice available (in fields offering multiple choices).
F2	Selects a specific field. Press F2, and enter the letter corresponding to the field you want to edit.
F4	Toggles between text and graphics modes (text mode is the default).
ESC	Cancels your configuration setting (if a change was made) or moves to the previous menu level (if no change was made).

- 4 From 'Open Profile' in the main menu, use the pull-down list to select the profile you want to configure.
- 5 In the 'Protocols' field of the main menu, specify the B-channel protocol you want to use (note that the protocol must match the protocol on the receiving system). For most connections, the default 'PPP' (for single B-channel connections) should be used. If the default is not supported, use 'MultiLink PPP', 'V.110', or 'V.120'. Both 'PPP' and 'Multilink PPP' require that a PPP communications stack be installed on your computer.



Note: To obtain maximum Multilink PPP performance, your computer's serial port should be capable of 230.4 kbps transfer. On an IBM-compatible PC, you need a UART 16650 (versus 115.2 kbps with 16550). Macintosh computers that have serial ports capable of 230.4 kbps include all PowerMacintosh computers (except for the 52xx, 62xx, and 6300 models) and AV Macintosh computers.

Warning: When using Multilink PPP for **incoming** calls, only SPAP or PAP authentication are supported.

6 Select 'ISDN Parameters' and press Enter.

```

*-----*
          DIVA T/A ISDN Modem - International Version 2.2
          Copyright © 1999 Eicon Technology Corporation
*-----*
MENU: ISDN Parameters
          Switch Type: Euro ISDN
FIRST NUMBER
  Directory Number

SECOND NUMBER
  Directory Number

<ESC> Previous menu
          -----HELP-----
Sets the appropriate switch type to use during unit initialization.
*-----*
  
```

Configure the following parameters:

Parameter	Description
Switch Type	<p>Specifies the ISDN switch type used by your ISDN service provider. Your choices are Europe (Euro ISDN), Japan (INS-Net64), China ISDN, Singapore ISDN, and, for Australia, TPH1962 (Microlink) and Euro ISDN (OnRamp). Default: Europe (EuroISDN).</p> <p>Note: If you select China ISDN as the Switch Type, the Region parameter (on the Phone Lines screen) will automatically be set to China.</p>
Directory Number (1st/2nd Number)	<p>Specifies your ISDN number. If your line supports Multiple Subscriber Numbers (MSNs), the DIVA T/A handles incoming calls differently, depending on what you enter in the Directory Number field(s).</p> <ul style="list-style-type: none"> • If you do not specify a number in either the '1st Number' or '2nd Number' fields, all ports (PHONE 1, PHONE 2, and ISDN) answer all ISDN numbers assigned to your line. • If you specify a number in the '1st Number' field but leave the '2nd Number' field empty, all ports (PHONE 1, PHONE 2, and ISDN) answer only calls to the specified number. • If you specify one number in the '1st Number' field, and a different number in the '2nd Number' field, PHONE 1 answers only calls to the first number; PHONE 2 answers only calls to the second number; and the ISDN port answer calls to either the 1st or 2nd number.

7 After configuring the ISDN parameters, press Escape to exit the 'ISDN Parameters' menu.

- 8 *Models equipped with analog device ports:* From the main menu, select **'Phone Line'** and press Enter to open the configuration screen.

```

*-----*
                DIVA T/A ISDN Modem - International Version 2.2
                Copyright © 1999 Eicon Technology Corporation
*-----*
MENU: Phone Line
Phone 1
  Use modem/fax only: No
  Enable distinctive ring: No
Phone 2
  Use modem/fax only: No
  Enable distinctive ring: No

                Region: International

<ESC> Previous menu
                -----HELP-----
Set supplementary services for this Phone port.
-ISDN Bearer Capability is set for Speech during voice calls
on the Phone ports.
*-----*

```

The following parameters can be configured:

Parameter	Description
Use modem/fax only	<p>Enabling this option causes the following:</p> <ul style="list-style-type: none"> • Enables '3.1KHz Audio'. This specifies that the ISDN network has to preserve the quality of the 3.1KHz voice band that is required for data audio signals such as faxes and modems. • Disables calling features such as Call Forward and Call Waiting. • Disables Dial Access.
Enable distinctive ring	<p>Specifies that the phone ring will be slightly different from the regular ring. If your modem, fax, or telephone is experiencing difficulty detecting incoming voice calls, try toggling the distinctive ring feature.</p>
Region	<p>Specifies the country in which you are situated. This ensures that the DIVA T/A implements the ring pattern (and other analog device parameters) suited to your country. If your country is not listed, use the default, International.</p> <p>If problems persist, advanced users might also want to try and configure this parameter using the AT commands <code>AT*F</code> and <code>AT!L</code>. See the 'DIVA T/A ISDN Modem Reference Guide' for more information.</p> <p>Note: If you select China as the Region, the Switch Type parameter (on the ISDN Parameters screen) will automatically be set to China ISDN.</p>

- 9 After configuring the parameters, press Escape to exit the 'Phone Line' menu.

10 From the main menu, select **'Advanced'** and press Enter.

```

*-----*
                DIVA T/A ISDN Modem - International Version 2.2
                Copyright © 1999 Eicon Technology Corporation
*-----*
MENU: Advanced
Number/Feature association < press Enter >

                Enable DBA:   Yes
                Enable BACP/BOD: No

Initial Billing Interval: 60
Billing Interval:        60

                Update Date:   ( 05-17-1999 )
                Update Time:   ( 15:18:48 )

<ESC> Previous menu
                HELP-----
Allows you to configure the association between your phone numbers and the
features of your terminal adapter which respond to them.
*-----*
    
```

Configure the following parameters as required:

Parameter	Description
Number / Feature Association	Choosing this option will bring up the Number / Feature Association menu. This menu allows you to choose which ports will respond to which ISDN numbers. For example, if you have phone ports on your DIVA T/A, you may want to designate calls dialed to directory number 1 to be answered by phone port 1, and calls dialed to ISDN number 2 to be answered by phone port 2.
Enable DBA (Dynamic Bandwidth Allocation)	This option only applies if your ISDN connection protocol is set to 'Multilink PPP'. Note: Only available on models equipped with analog device ports. When activated, this function lets you initiate or receive telephone calls on your regular (non-ISDN) telephone without interrupting your current connection. It releases one B-channel, as required for analog device calls, without interrupting the data link. After you hang up, the B-channel is automatically brought back up for your current connection. Default: 'DBA' enabled.
Enable BACP/BOD (Bandwidth Allocation Control Protocol / Bandwidth on Demand)	This option only applies if your ISDN connection protocol is set to 'Multilink PPP'. 'BACP/BOD' activates the DIVA T/A's automatic traffic monitor for multilink PPP Connections. When activated, this function monitors the send-and-receive traffic volume, and opens or closes your second B-channel as the traffic volume warrants. Activate this function to ensure that two B-channels are never active when one is sufficient, thus reducing the chargeable time payable (see next option) to your ISDN provider. Note: Be sure to activate the 'Cost Reduction Timers' to avoid numerous first interval charges. If you select 'BACP/BOD', but do not set the 'Cost Reduction Timers', you could incur unnecessary expense as your second B-channel might open and close frequently, costing you the first-interval amount each time the second B-channel connects. Default: 'BACP/BOD' disabled.

Parameter	Description
Initial Billing Interval Billing Interval	<p>This option only applies if your ISDN connection protocol is set to 'Multilink PPP'.</p> <p>Note: You must activate 'BACP/BOD' before setting the intervals.</p> <p>Set these intervals to ensure your second B-channel is used most economically.</p> <p>'Initial Billing Interval': Specifies the minimum time a B-channel can remain open (in seconds). For example, if the value is set to 600, a channel, once open, will remain open for at least 10 minutes (600 seconds).</p> <p>If you are charged a fixed amount for the first x seconds of a call (e.g. 300 seconds), a good rule of thumb is to set the interval to this value, e.g. 300. For an example of setting the intervals under more advanced conditions see "Billing Interval Example" on page 137.</p> <p>Setting the interval to 0 disables it. The Billing Interval is also effectively disabled.</p> <p>Default: 60 seconds.</p> <p>'Billing Interval': Specifies the time interval your Service Provider uses to bill usage of your ISDN line (in seconds). For example, if your Provider charges \$Y per 60 seconds, enter 60. For an example of setting the Interval under more advanced conditions see "Billing Interval Example" on page 137.</p> <p>Setting the interval to 0 disables it. The Initial Billing Interval remains in effect.</p> <p>Default: 60 seconds.</p>
Update Date Update Time	<p>Models equipped with analog device ports only.</p> <p>If you have a phone with call display and are receiving calls with the incorrect time or date, use 'Update Date' and 'Update Time' to reset the date and calendar.</p> <p>If you power off the DIVA T/A, you should use 'Update Date' and 'Update Time' when you turn it back on. This assures that the correct date and time are set on the DIVA T/A.</p>

- 11 After completing the advanced parameters configuration, press Escape to exit the 'Advanced' menu.
- 12 From the main menu, select 'Save Profile' and press Enter to save the changes made to the profile.
- 13 Select 'Restart'. Verify that the correct startup profile is specified, then press Enter.

After the DIVA T/A has restarted, check that the 'D' and Link LEDs on the DIVA T/A's front panel. If the LEDs are steady, the DIVA T/A is working correctly; if they are not steady, check your configuration and try again. Note that, in Europe, an inactive 'Link' LED indicates an idle condition. For more details on the LEDs, see "[LED Status Indicators on the DIVA T/A](#)" on page 132.

Your DIVA T/A is configured for ISDN. Close your VT-100 application. Go to "[Using the DIVA T/A](#)" on page 84.

Updating Firmware

This chapter contains procedures for loading new firmware into your DIVA T/A. The procedure you use depends on your computer platform.

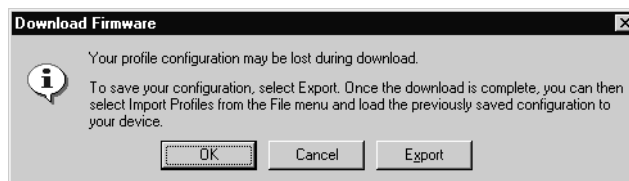
<u>Windows 95/98/NT</u>	80
<u>Macintosh (System 7 or Later)</u>	81
<u>Other Operating Systems</u>	82
<u>Updating the DIVA T/A INF file</u>	83

Windows 95/98/NT

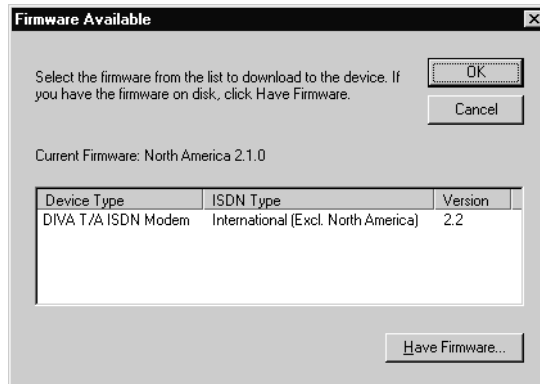
When you download new firmware, the DIVA T/A will ask you if you want to export your current profiles. It is recommended that you export the profiles. This assures you have a backup available in the event the profiles are lost during the download. If the profiles do get lost, use the Import Profile command and copy the exported profiles back to the device.

To update your firmware:

- 1 Launch the DIVA Terminal Adapters program.
- 2 Select the device to which you are going to download new firmware.
- 3 From the 'File' menu, select 'Download Firmware' (or right click your mouse, and then select 'Download Firmware').
- 4 Click 'Export' if you wish to export your current files to disk, or click 'OK' to skip this step.



- 5 Select the device with the required firmware and click 'OK. If necessary click 'Have Firmware', specify the path to the firmware, and click 'Open'.



- 6 Click 'Yes' when prompted if you want to continue. The new firmware will download to the device. This will take a few minutes.
- 7 Click 'OK' when the download is complete. The device will automatically be restarted.

Macintosh (System 7 or Later)

When you download new firmware, the DIVA T/A will ask you if you want to export your current profiles. It is recommended that you export the profiles. This assures you have a backup available in the event the profiles are lost during the download. If the profiles do get lost, use the Import Profile command and copy the exported profiles back to the device.

To update your firmware:

- 1 Launch the DIVA Terminal Adapters program.
- 2 Select the device to which you are going to download new firmware.
- 3 From the 'Modem' menu, select 'Download Firmware'.
- 4 Click 'Export' if you wish to export your current files to disk, or click 'OK' to skip this step.
- 5 Select one of the firmware files from the list. These files are located in the 'ELMs' folder of the 'DIVA Terminal Adapters' folder. If you wish to choose a firmware file from another location, click 'Browse'.
- 6 Click 'OK' to start the download. This will take a few minutes.



Note: When downloading new firmware, do not open another application until the process is complete. Doing so may cause the download to time out.

- 7 Click 'OK' when the download is complete. The device is automatically be restarted.

Other Operating Systems

Procedure for updating the firmware using Windows 3.x, Windows for Workgroups 3.11, DOS, OS/2, Macintosh (prior to System 7), and Others

When you update your DIVA T/A firmware, the current profile configurations might get erased. It is recommended, therefore, that you record your current settings and SPID numbers before updating (use the AT command AT&V or AT@MENU with any terminal emulation program to view the current settings).

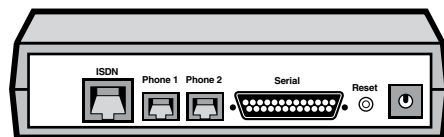
To update your DIVA T/A:

- 1 Start a terminal-emulation software application capable of X-Modem or 1K-Xmodem (faster) transfer.
- 2 Configure the terminal to talk to the DIVA T/A ISDN Modem.
- 3 Type AT\$Z.
- 4 Type at@load (this command is case sensitive).
- 5 Start the X-Modem transfer.
- 6 Select the firmware file required by your model of DIVA T/A from wherever it is located (your \TEMP directory, for example). Firmware files can also be found in the \FIRMWARE directory of your DIVA T/A CD.

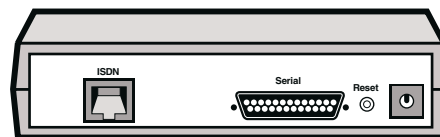


Note: The firmware file you need to use will depend on the DIVA T/A model. Use the diagrams below to identify the firmware file you should use.

Use **TABOXROW.ELM** if you have a DIVA T/A model similar to the following diagrams.

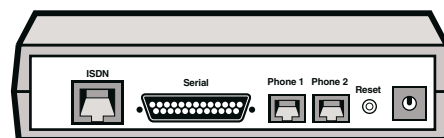


Phone ports next to ISDN port

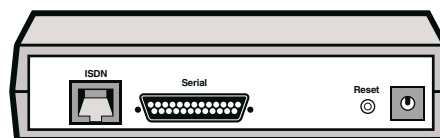


ISDN port, a space,
then the serial port

Use **TABLCROW.ELM** if you have a DIVA T/A model similar to the following diagrams.



Serial port next to ISDN port



Serial port next to ISDN port

- 7 Wait for the reply that denotes successful transfer. The DIVA T/A will restart automatically.



Warning: Powering off the DIVA T/A immediately following the transfer could damage your DIVA T/A. Wait a few moments before powering off your DIVA T/A.

- 8 If required, reconfigure your DIVA T/A.

Updating the DIVA T/A INF file

Procedure for Windows 3.x, Windows for Workgroups 3.11, and Windows NT 3.51

This section only applies if you are using RAS.

To update the DIVA T/A INF file:

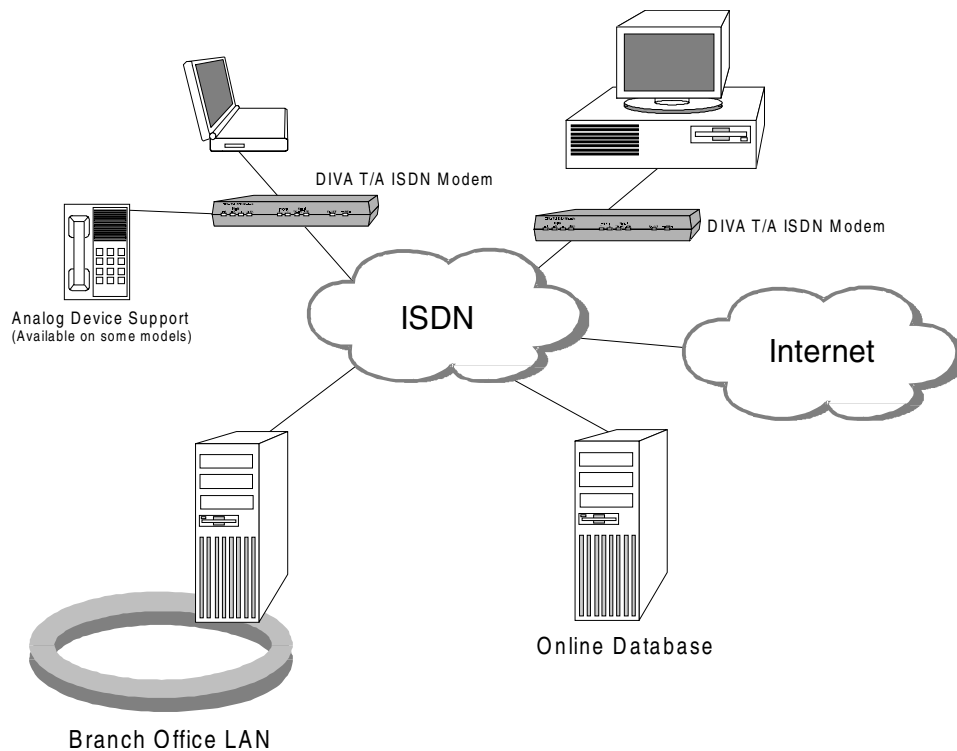
- 1** Open any text editor.
- 2** Open the file MODEM.INF found in the Windows\System directory for Windows 3.x or Windows\System32\RAS directory for Windows NT 3.51, and remove all sections relating to the DIVA T/A ISDN Modem.
- 3** Open the updated file WFWNTEI2.INF.
- 4** Copy the contents of WFWNTEI2.INF and append it to the end of the MODEM.INF file; save the appended MODEM.INF file, and exit your text editor.
- 5** (Windows NT only). From the RAS setup, remove the 'Eicon DIVA T/A ISDN Modem' and then restore it. Refer to RAS online help for information on removing and adding modems.

Using the DIVA T/A

Once you have installed and configured DIVA T/A, you can dial into your office LAN, access the Internet, as well as exchange data/faxes with any remote ISDN or analog equipment. Before attempting this, make sure that your PC is equipped with remote-access client software such as Dial-Up Networking, Shiva PPP client, or Microsoft RAS client software.

In this chapter:

<u>SecurID Connectivity</u>	85
<u>Dialing with Multilink PPP</u>	86
<u>Establishing a Connection</u>	88
<u>Connecting to the World Wide Web</u>	103



SecurID Connectivity

If you are using V.120, SecurID is available on all platforms. If you are using PPP or multilink PPP, SecurID is only available with Windows 95/98/NT4. Note that SecurID using PAP-Token and CHAP is not supported. PAP-Token and CHAP are usually used with servers other than Shiva (e.g. Ascend).

Using Windows 95/98 to Connect to a V.120 Server

The following example demonstrates how to use Windows 95/98 to connect to a V.120 Server:

- 1 From the Dial-Up Networking group, right-click the connection on which you want to implement Secure ID, and select 'Properties'.
- 2 Under the 'Connect using' field, click 'Configure'.
- 3 Click the 'Options' tab and enable 'Bring up terminal window after dialing'.

When you connect to the V.120 SecurID server, a terminal window will pop-up and prompt for your user name and password.

Using PPP and Multilink PPP

If you want to use PPP or Multilink PPP to access a SecurID server, ask your administrator if:

- the server is using Shiva PAP as the authentication protocol
- the server supports these protocols

If these conditions are not met, you cannot use SecurID. If the conditions are met install one of the following:

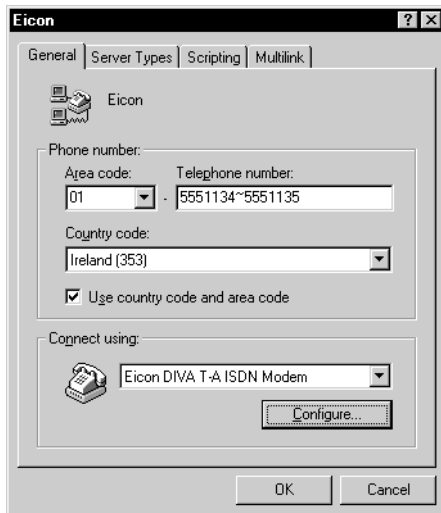
- The Shiva 'Security Pack' software (a special patch for Windows 95/98)
- The Shiva 'DialIn' software (replacement software for Windows 95/98 and Windows NT Dial-Up Networking)

These patches are available from your system administrator or at Shiva's Web site at <http://www.shiva.com/remote/clientsoft/index.html>. They add SPAP functionality to Windows. You require this added functionality to make a SecurID connection.

If you have trouble logging into a SecurID server, contact your administrator or Internet Service Provider (ISP).

Dialing with Multilink PPP

When you establish a Multilink PPP connection, each B-channel connects to a remote-directory number. In some ISDN implementations, each B-channel connects to a unique number. If this is the case, enter both numbers and separate them with the character '~' or '&'. For example, to make a Multilink PPP connection to the numbers 555 1134 and 555 1135, enter them as follows: 5551134~5551135.



For each telephone number, the maximum number of dialed digits is 40. The symbols # and * count as digits; punctuation (spaces, hyphens, periods, parentheses) and alphabetic digits (P, T, W, @, R) are ignored.

Using the " Symbol as a Shortcut

If you are dialing more than one number you can use the " symbol (the straight double-quote symbol) as a shortcut. For example, if you want to dial 8323005 and 8323006, you could simply type:

```
ATD8323005&"6
```

All numbers not specified in the second string are assumed to be the same as the first number. The two sets of numbers are assumed to have the same length.

Respect the following rules:

- The " symbol cannot be used alone
- The first B-channel must be specified first, before "
- The " symbol must directly follow the '&' or '~' symbols
- An X.25 DTE address can be specified, but should never count as the first number. The following example does not work:

```
ATDX8323000&"2
```

However, the following example does work:

```
ATDX8323000&8323001&"2
```

- The " symbol can be used with all other ATD commands, for example:

ATDX8323000&8323001&"2

ATD%123&8323001&"2



Note: If your ISDN implementation requires two numbers and BACP/BOD is enabled (on both your DIVA T/A and the remote ISDN device), you have the option of entering only one number. BACP will try to discover the second number and connect to it. If you know the two numbers, however, it is recommended that you enter both.

Note for Windows 95/98: If you use '~' or '&' to separate the phone numbers, deselect the 'Use Country and area code' parameter on the Properties tab of Dial-Up Networking. Manually enter the Country Code, Area Code, and PBX Prefix (if required) for both numbers. If both B-channels connect to the same number, it is not necessary to enter it twice. Contact your Internet Service Provider (ISP) if you are not sure whether you need one or two remote numbers.

Establishing a Connection

Go to the section that corresponds to your platform and follow the procedure.

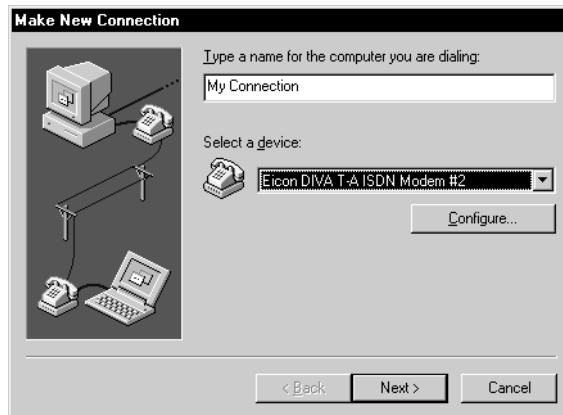
<u>Windows 95/98</u>	89
<u>Windows NT 4.0</u>	91
<u>Windows NT 3.51</u>	94
<u>Windows 3.x</u>	96
<u>DOS</u>	98
<u>OS/2</u>	100



Note: For a destination ISDN telephone number, the maximum number of dialed digits you can enter is 40. The symbols # and * count as digits; punctuation (spaces, hyphens, periods, parentheses) and alphabetic digits (P, T, W, @, R) are ignored.

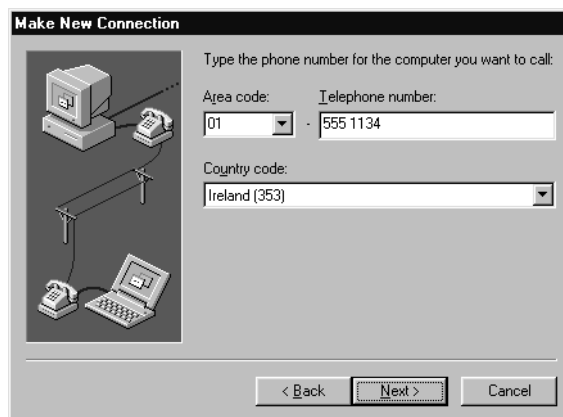
Windows 95/98

- 1 Double-click the 'Dial-Up Networking' icon.
- 2 Double-click 'Make New Connection'. The 'Make New Connection' wizard opens:



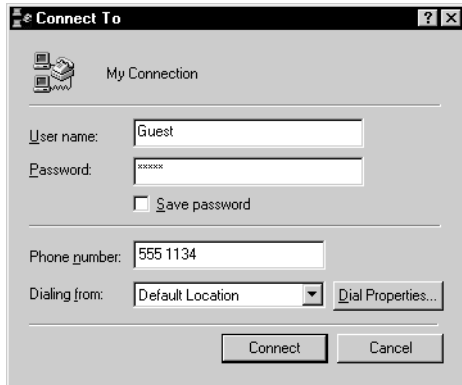
Select the 'Eicon DIVA T-A ISDN Modem' from the 'Select a modem field', then click 'Next'.

- 3 Enter the ISDN number and country code of the location you wish to call, click 'Next', then click 'Finish'.



- 4 Double-click the newly created 'My Connection' icon.

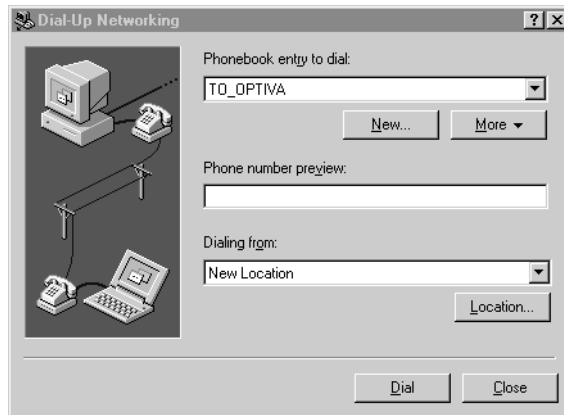
- 5 Enter your user name and password, and click 'Connect'.



- 6 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your server type and TCP/IP settings and alter them as required.

Windows NT 4.0

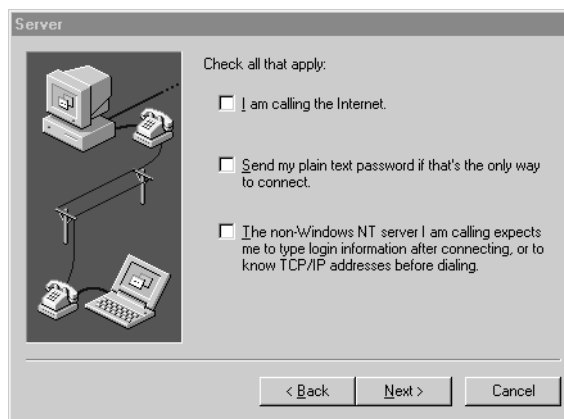
- 1 In the 'Dial-Up Networking' folder, double-click the 'Make Connection' icon.
- 2 Click 'New'.



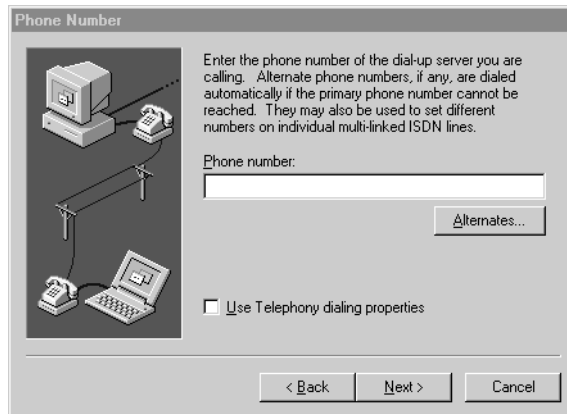
- 3 The 'Phonebook Entry Wizard' window opens. Click 'Next'.



- 4 Check each applicable statement, then click 'Next'.



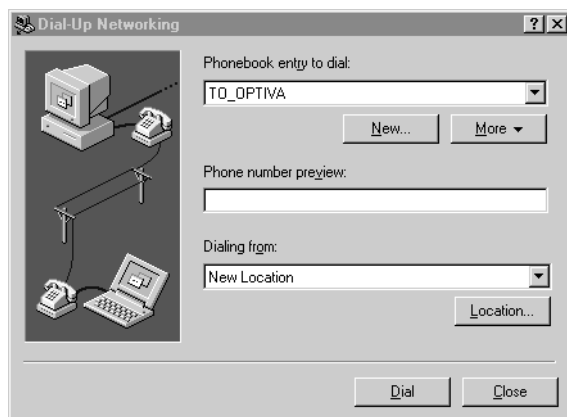
- 5 Enter the phone number you want to call, then click 'Next'.



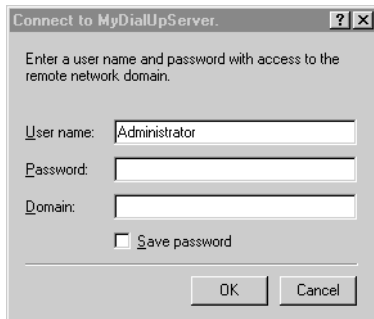
- 6 Click 'Finish'.



- 7 Click 'Dial'.



- 8 Enter your user name and password, then click 'OK'.

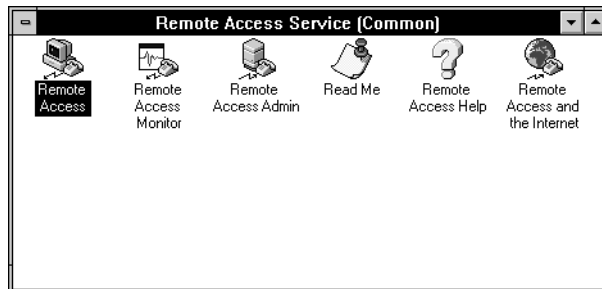


- 9 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your configuration and TCP/IP settings and alter them as required.

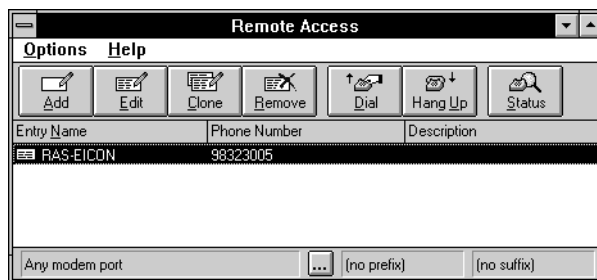
Windows NT 3.51

The following example assumes you are using RAS.

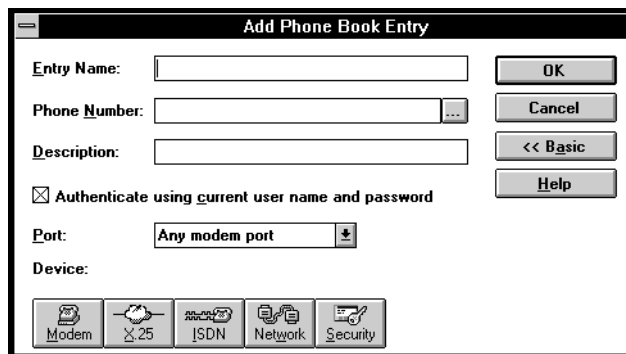
- 1 In the 'Remote Access Service' group, double-click 'Remote Access'.



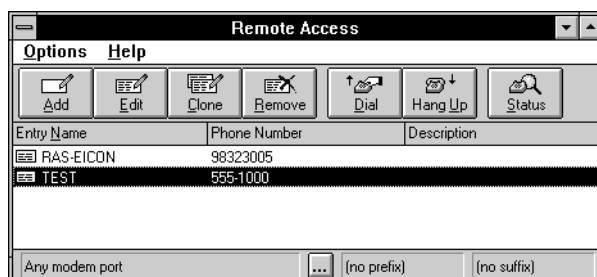
- 2 Click 'Add'.



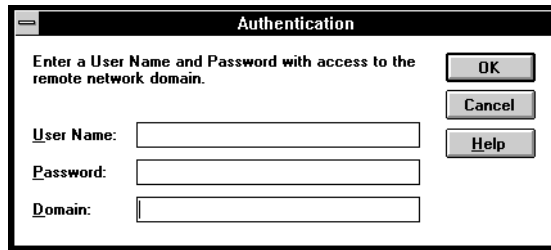
- 3 Enter the name and number you want to call, then click 'OK'.



- 4 Click 'Dial'.



- 5 Enter your user name and password, then click 'OK'.



The image shows a dialog box titled "Authentication". It contains the instruction "Enter a User Name and Password with access to the remote network domain." Below this are three input fields: "User Name:", "Password:", and "Domain:". To the right of the input fields are three buttons: "OK", "Cancel", and "Help".

- 6 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your configuration and TCP/IP settings, and alter them as required.

Windows 3.x

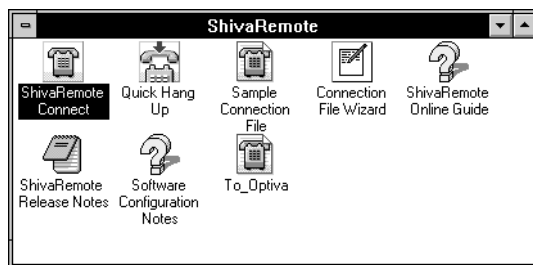


Note: If your workstation is configured as a Windows for Workgroups Remote Access Service (RAS) client, you must configure the V.120 rate adaption protocol on both the DIVA T/A workstation and on the remote device (RAS Server ISDN adapter).

The following example assumes you are using the Shiva PPP protocol stack.

If you are using the Shiva PPP protocol stack (or similar), you can use PPP or MLPPP.

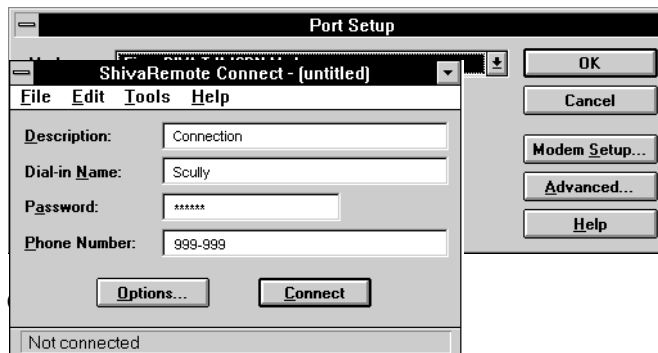
- 1 Ensure that the ShivaRemote connection software is installed on your computer.
- 2 Double-click 'ShivaRemote Connect'.



- 3 Enter your dial-in name, password, and the phone number you want to dial.

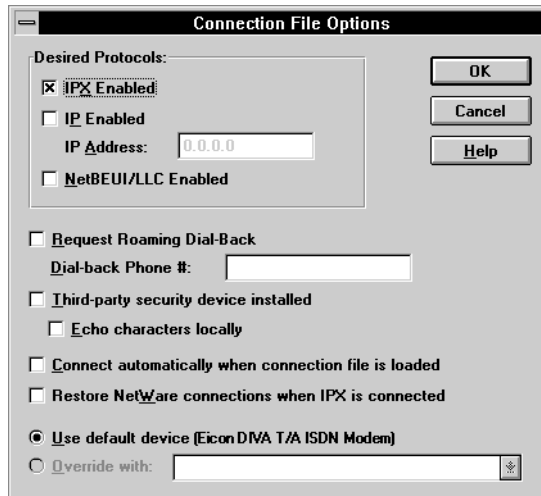


- 4 Select the 'Tools' menu, and choose 'Port Setup'. Select the 'DIVA T/A' as the modem, then click 'OK'.



- 5
- 6

- 7 Ensure that 'IPX' and/or 'IP' are enabled, then click 'OK'.



- 8 Click 'Connect'.



- 9 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your configuration and TCP/IP settings, and alter them as required.

DOS

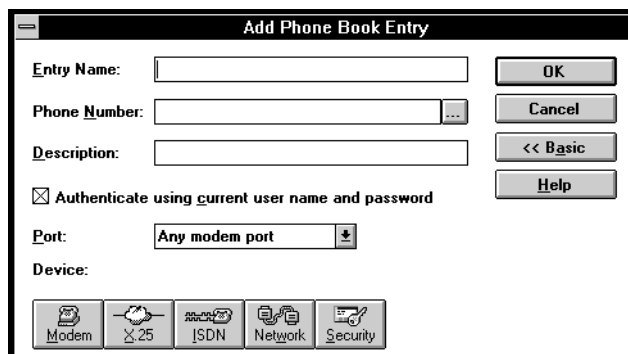
- 1 Ensure that the ShivaRemote connection software (or similar) is installed on your computer.
- 2 Enter the following command:
C : \SHIVA\CONNECT
- 3 From the 'Tools' menu, choose 'Port Setup' and select the COM port.



- 4 Select 'Modems'. Enter 'Eicon DIVA T/A ISDN Modem' in the 'Modem Name' field and set the speed to 115200 bps (or 230400 if your COM port supports it), then select 'OK'.

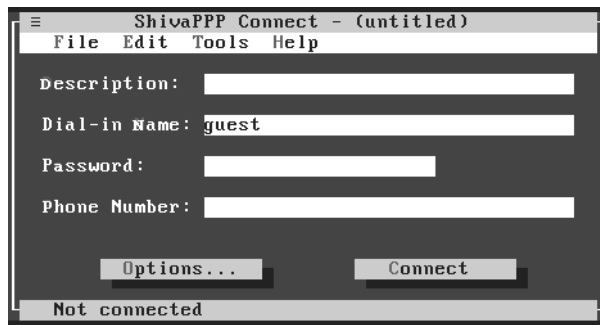


- 5 Click 'Network'.



- 6 Enable 'IP' and/or 'IPX' (as required), then select 'OK'.

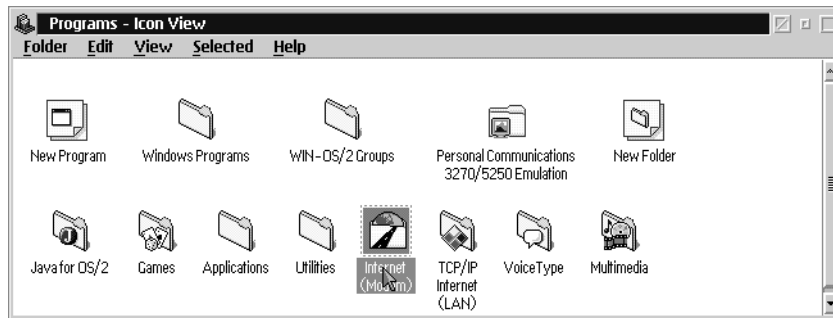
- 7 Enter your user name, password, and the phone number you want to dial, then click 'Connect.'



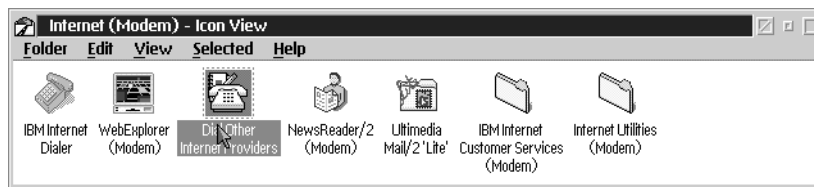
- 8 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your configuration and TCP/IP settings, and alter them as required.

OS/2

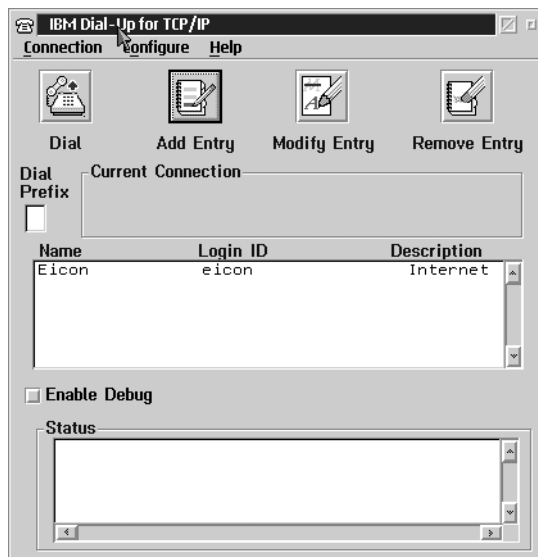
- 1 Double-click 'Programs', then double-click 'Internet Modems'.



- 2 Double-click 'Dial Other Internet Providers'.



- 3 Click 'Add Entry'.



- 4 Enter your login ID, password, and the phone number you want to dial.

Add Entries

*Name:

Description:

Login ID:

Password: Required

Phone Number:

Login Sequence: NONE

Connection Type
 SLIP PPP

Inactivity Timeout Option
 Minutes to Wait Before Automatic Hangup: 15

(* = required field)

Page 1 of 4

Login Info
 Connect Info
 Server Info
 Modem Info

- 5 Click 'Connect Info', then enter your domain name server, your host name, and your server name.
- 6 Click 'Modem Info'. Select a modem from the drop-down list, then select the COM port assigned to the DIVA T/A ISDN Modem.

Add Entries

Modem Type: Hayes Compatible

Com Port: com1

Speed (Baud): 115200

Data Bits: 8

Mode
 Dial Answer

Parity: NONE

Prefix: ATDT

Initialization String 1: ATE0Q0S0=0V1X1&C1&D

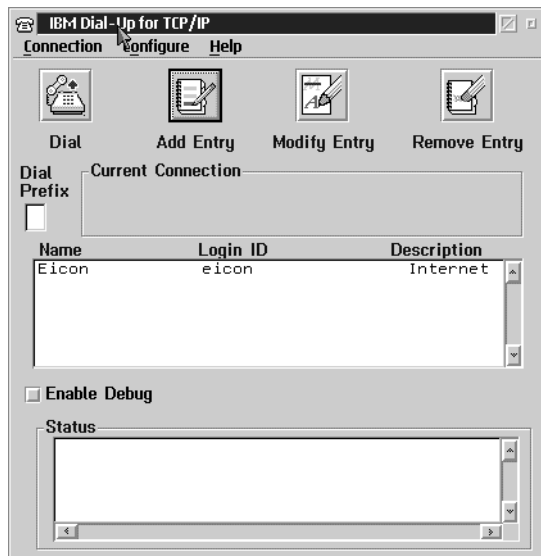
Initialization String 2:

Call Waiting
 Disable Enable
 Disable Sequence: *70

Page 4 of 4

Login Info
 Connect Info
 Server Info
 Modem Info

- 7 Click 'Dial' to place your call.



- 8 If you successfully establish the connection, you can communicate with the remote host. If you do not establish the connection, verify your configuration and TCP/IP settings, and alter them as required.

Connecting to the World Wide Web

To connect to the World Wide Web, follow the instructions in the section "Establishing a Connection" on page 88; when the procedure instructs you to enter a dial-up number, enter the number of your Internet Service Provider (ISP).

Once you are successfully connected to your ISP, go to your desktop and double-click the icon representing the web browser you want to use. The web browser opens and you are ready to explore the World Wide Web.



Note: If you need help using your web browser or exploring the Web, consult your web browser's on-line help.

Analog Device Support

Analog device ports are only available on certain DIVA T/A models. These two ports let you connect analog devices such as ordinary telephones, answering machines, fax machines, or modems to your DIVA T/A. Calls to and from these analog devices are carried over your ISDN line. You also get additional calling features such as Call Forwarding, etc.

For more information on these calling features, see [“Calling Features”](#) on page 105.

Whenever possible, you should use Multilink PPP (MLPPP) since it provides maximum throughput with the remote device.

In the case of a Multilink PPP connection that uses two B-channels, an analog device can still be used if Dynamic Bandwidth Allocation (DBA) is enabled. For example, while a MLPPP data connection is in progress using two B-channels, a telephone connected to one of the analog device ports rings. As soon as the phone rings, the MLPPP connection automatically drops one of the B-channels, reducing the data connection from 128 kbps to 64 kbps, and the voice call can then be connected. The same holds true if you decide to pick up the phone for an outgoing call.

After hanging up the voice call, the data connection re-establishes the second B-channel and brings the data connection back up to 128 kbps.

To use this feature, Dynamic Bandwidth Allocation (DBA) must be enabled.

- If you are using Windows 95/98/NT, launch the Windows Configuration Tool and verify this option in the ‘Data’ tab (see [page 44](#)).
- If you are using a Macintosh (System 7 or later), launch the Macintosh Configuration Tool and verify this option in the ‘Advanced’ tab (see [page 70](#)).
- If you are using any other platform, use the VT100 Configuration Tool and verify this option in the ‘Advanced’ menu (see [page 73](#)).

You can also use the PPP, V.110, or V.120 protocols. In these cases, one B-channel is always available for voice.



Note: There is no limit to the number of digits you can use when making calls through analog devices; however, calls made through ISDN have a maximum of 40 dialed digits.

Calling Features

The DIVA T/A's phone ports support a variety of calling features.

<u>Call Hold</u>	106
<u>Call Waiting</u>	107
<u>Calling Line Identity Presentation</u>	110
<u>Calling Line Identity on Call Waiting</u>	111
<u>Calling Line Identity Restriction (CLIR)</u>	112
<u>Call Forwarding</u>	113
<u>Malicious Caller Identification</u>	115
<u>Call Redirection between Analog Ports</u>	116
<u>Three-party Conference Call</u>	117
<u>Terminal Portability</u>	118

See "Quick Reference" on page 119 for a summary of features and their corresponding keys.

Not All Features Available in All Regions

Features described on the following pages will only work if supported by your ISDN Service Provider and if enabled on your ISDN line. If you attempt to use a calling feature that is not available to you, you will hear a service failure tone (four beeps) through your telephone handset. Contact your ISDN Service Provider for more information on the calling features available in your area and the provisioning of your ISDN connection.

Call Hold

Call Hold lets you suspend a voice conversation with a person (place them on hold), and make a call to a second number. You can then toggle back and forth between the first and second caller. When you are finished talking to the second person, you can hang up that call, and continue the call with the first person.

Using Call Hold

To place a call on hold:

- 1 With a voice call active, press R.
- 2 The person you are speaking with is placed on hold, and you hear a dial tone.
- 3 Dial the number of the second party.

To switch between held calls

- 1 Press R, then wait for a dial tone.
- 2 Press 2.

To disconnect the current call and continue the other:

- 1 Press R, then wait for a dial-tone.
- 2 Press 1.

Note: If you hang up while a call is on hold, the connection remains active and full communication charges may apply. To indicate that a call is still on hold, the phone will ring for 30 seconds (90 seconds in Denmark and Sweden).

Call Waiting

Call Waiting alerts you to a second incoming call during an active call. This feature is available as a service through your ISDN line (referred to as "ISDN Call Waiting") and also from the DIVA T/A modem itself (referred to as "DIV AT/A Call Waiting").

The DIVA T/A's internal Call Waiting uses the second B-channel (if available) to receive a second incoming call and offer it to you. However, if both B-channels are in use, DIV AT/A Call Waiting cannot offer you a call, and the second caller will hear a busy signal. ISDN Call Waiting is handled by your provider and does not need an available B-channel.

Enabling ISDN Call Waiting

ISDN Call Waiting can only be enabled by your ISDN service provider. If you are unsure if your ISDN line has this feature, check with your provider.

Enabling and Disabling DIVA T/A Call Waiting

To enable DIVA T/A Call Waiting:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *43#.
- 3 Three rising tones are played to confirm Call Waiting has been enabled.

To disable DIVA T/A Call Waiting:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press #43#.
- 3 Three falling tones are played to confirm that Call Waiting has been disabled.

To determine if Call Waiting is enabled

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *#43#.
- 3 If enabled, you will hear three rising tones; if disabled, you will hear three falling tones.

Using Call Waiting When Alerted to a Second Incoming Call

In order to use the following keypad commands, your ISDN line must also support Call Hold. These commands apply to both ISDN Call Waiting and the DIVA T/A's internal Call Waiting.

To ignore the incoming call:

- 1 Do nothing.
- 2 The two beeps will repeat te nseconds later.

To reject the incoming call:

- 1 Press R and wait for a dial tone.
- 2 Press 0.
- 3 The incoming caller will receive a busy signal. Call Waiting will also be disabled for the duration of the call.

To disconnect from the current call and accept the incoming call:

- 1 Press R and wait for a dial-tone.
- 2 Press 1.

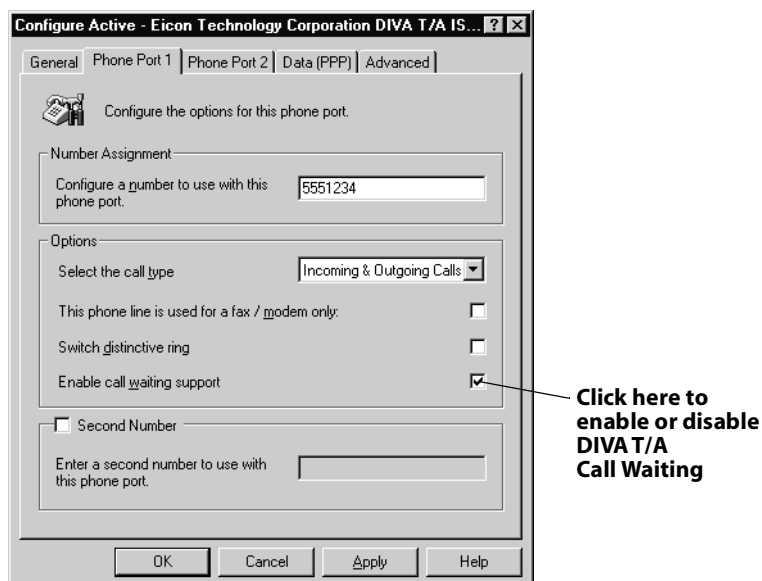
To place the first call on hold and answer the incoming call:

- 1 Press R and wait for a dial-tone.
- 2 Press 2.

Once the call is on hold, you can toggle back and forth between the two parties by pressing R,2. To disconnect from the current call and reconnect to the held call, press sR,1.

Enabling DIVA T/A Call Waiting using the Configuration Tool

The DIVA T/A Call Waiting setting is also available through the DIVA Terminal Adapter Program, which you can run by double-clicking the **T/A** icon in the lower right corner of the Windows taskbar. Once launched, double-click the DIVA T/A icon, then click one of the Phone Port tabs. The 'Call Waiting' setting is available in the 'Options' area, as shown below.



(If you are using a Macintosh, see the command AT*Wn in the Reference Guide.)

Notes on Call Waiting Behaviour

The following situations apply if you are on the phone and a second call comes in:

If...	Then...
<ul style="list-style-type: none"> • ISDN Call Waiting is available through your ISDN line 	<ul style="list-style-type: none"> • You will hear a Call Waiting alert. • Call switching is handled by your ISDN service provider.
<ul style="list-style-type: none"> • ISDN Call Waiting is not available • The DIVA T/A's Call Waiting is disabled 	<ul style="list-style-type: none"> • The second call receives a busy signal. • You do not receive a Call Waiting alert.

If...	Then...
<ul style="list-style-type: none">• ISDN Call Waiting is not available• The DIVA T/A's Call Waiting is enabled• But both B-channels are in use	<ul style="list-style-type: none">• The second call receives a busy signal, as the DIVA T/A's internal Call Waiting requires a free B-channel in order to hold the call.
<ul style="list-style-type: none">• ISDN Call Waiting is not available• The DIVA T/A's Call Waiting is enabled• One B-channel is free!	<ul style="list-style-type: none">• You will hear a Call Waiting alert.• The second call occupies the available B-channel.• Call switching is handled by the DIVA T/A.

Note on Call Bumping

If ISDN Call Waiting is disabled, Call Bumping will not occur, as MultiLink PPP uses the Call Waiting signalling information from your service provider to determine if it should release a B-channel to accommodate an incoming voice call. For more information on Call Bumping, see ["General Tab"](#) on page 38.

Calling Line Identity Presentation

Calling Line Identity Presentation works with telephones equipped with a Call Display indicator. When you receive an incoming call, the number of the call is displayed.

This feature is supported in Ireland, United Kingdom, Sweden, Denmark, France, and the United Arab Emirates.

Calling Line Identity on Call Waiting

Calling Line Identity on Call Waiting works with telephones equipped with a Call Display indicator. With this feature, if you are on the phone and another call comes in, the number of the second incoming call is displayed.

This feature is supported in Ireland, United Kingdom, China, Australia, Hong Kong, Singapore, and Denmark.

Note: In Denmark, this feature is known as CallerID Plus. CallerID Plus does not display the identity of the second call automatically; when you receive a Call Waiting signal, you must press R, then 9. The number of the incoming call will then be displayed, but you will remain connected to the person with whom you were talking. To connect to the incoming call, you must use the Call Waiting feature (see [page 107](#)) as normal.

Calling Line Identity Restriction (CLIR)

This feature permits you to restrict Calling Line Identity on outgoing calls on a per-call basis. Currently this feature is supported on the DIV AT/A's phone ports only, i.e., identification cannot be disabled on a data call or a voice-to-pc call. This feature is currently supported in Denmark, United Kingdom, and Ireland.

To restrict identification on a per-call basis, you must enter a code before dialing the number. This code depends on your region.

Using CLIR

In Denmark:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Dial *31# followed by the number you wish to call.

If you have CLIR enabled permanently on your line, you can temporarily using the prefix #31#.

In the United Kingdom and Ireland:

- Dial 141 before dialing the destination number. For example, if you were calling 5551234, you would dial 1415551234.
- If you have CLIR enabled permanently on your line, you can temporarily disable it with the prefix 1470 in the U.K. and 142 in Ireland.

Call Forwarding

When enabled, Call Forwarding automatically transfers incoming calls to another number. This feature is supported in Sweden and may be supported in other countries; check with your ISDN service provider.

The following instructions list the codes for Sweden. Check with your service provider for codes that will work in your area.

To forward incoming calls when your line is busy:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *67*.
- 3 Enter the telephone number to which calls are to be forwarded.
- 4 Press #.

To deactivate this feature, lift the receiver, wait for a dial tone, press #67#.

To forward incoming calls if they are not answered within 28 seconds:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *61*.
- 3 Enter the telephone number to which calls are to be forwarded.
- 4 Press #.

To deactivate this feature, lift the receiver, wait for a dial tone, press #61#.

To forward incoming calls to an announcement machine:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *24*.
- 3 Enter the announcement code.
- 4 Press #.

To deactivate this feature, lift the receiver, wait for a dial tone, press #24#.

To forward incoming calls to an operator:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *230#.

To deactivate this feature, lift the receiver, wait for a dial tone, press #230#.

To forward all incoming calls to a fixed number:

- 1 Lift the receiver, then wait for a dial tone.
- 2 Press *22#.

To deactivate this feature, lift the receiver, wait for a dial tone, press #22#.

To forward all incoming calls to a number you specify:

- 1** Lift the receiver, then wait for a dial tone.
- 2** Press *21*.
- 3** Enter the telephone number to which calls are to be forwarded.
- 4** Press #.

To deactivate, lift your receiver, wait for a dial tone, press #21#.

To detect if Call Forwarding is active:

If you are not sure whether or not this service is currently activate, lift the receiver and listen for the dial tone. If the tone is fast and intermittent, the service is active. If the tone is continuous, the service is not active.

Malicious Caller Identification

Malicious Caller Identification allows you to register a calling number with your ISDN Service Provider. To invoke this feature while you are on a call, press R, wait for the dial-tone, then press *39#. The held call is then automatically reconnected.

This feature is supported in Sweden and may be supported in other regions (but is not supported in Australia). Check with your ISDN service provider.

This feature requires that Call Hold be supported by your ISDN line.

Using Malicious Caller Identification

To invoke Malicious Caller Identification:

- 1 While you are on a call, press R, then wait for a dial-tone.
- 2 Press *39#.
- 3 The held call is then automatically reconnected.

You can also invoke this feature up to 30 seconds after the caller hangs up.

Call Redirection between Analog Ports

If two analog devices are connected to your DIVA T/A, you can transfer a call from the device on one port to the device on the other. For example, you can transfer a call from the phone on the PHONE 1 port to the phone on the PHON E2 port. (This is also referred to as "internal transfer.") To receive the transferred call, the second device must be on hook and not ringing. This feature requires Call Hold to be supported by your ISDN service.

Using Call Redirection between Analog Ports

To transfer a call to the other analog port:

- 1 Press R. The current call is put on hold (you will hear a dial tone).
- 2 Press '*', then hang up. The second analog device rings.
- 3 When the second analog device answers, the transfer is complete.

To transfer the current call with a call on hold:

- 1 Press R. The current call is put on hold (you will hear the dial tone)
- 2 Press *. The last call connected is transferred.
- 3 When the second device answers, the transfer is complete.

Other options:

- To cancel the transfer, lift the receiver of the initiating device and press *R. The call is then re-established with the first device.
- If the second device can not accept the redirected call (it is busy or ringing), the device initiating the transfer will ring. The call can then be answered and communication re-established.
- If the second device does not answer within 30 seconds (90 seconds in Denmark and Sweden), the call is cleared. Note that communication charges may apply while the transferred call is ringing (see Call Hold).

Three-party Conference Call

This feature lets you speak with up to two people at the same time. Once a Three-party Conference Call is set up, you may drop a call and continue with the other caller, or you put the one caller on hold while staying connected to the other caller.

Using Three-party Conference Call

Setting up a Three-party Conference Call:

- 1 Dial the first number, then press R to place the call on hold.
- 2 Dial the second number.
- 3 Press R,3 to begin the conference call.

Drop a party while conference is active:

During the Three-party Conference Call, you can press R,1 to disconnect the last-connected party and continue talking to the remaining party.

Splitting and reconnecting the calling parties:

During the Three-party Conference Call, you can press R,2 to place the last connected party on hold and talk exclusively with the first-connected party.

At this point you can press R,1 to disconnect the current call and switch to the call on hold; R,2 to switch between the two calls; or R,3 to re-establish the conference call (see "Call Hold" on page 106).

Note: If you hang up during a three-way conference call, all connections are dropped immediately.

Terminal Portability

Terminal Portability allows you to transfer an active analog call from your DIVA T/A to another ISDN terminal (an ISDN phone, for example) that shares the same access connection but is separate from the DIVA T/A.

To transfer the active call to a separate ISDN device:

- 1 Press R.
- 2 Press *79#. If you hear a dial tone, the call has been transferred successfully. You can hang up the phone.

Note: If the transfer fails, you are reconnected to the active call.

To resume a call:

- 1 Lift the receiver of the phone that will resume the call.
- 2 Press *79#. The call is resumed.

Assigning "Call Identities":

When transferring a call to the ISDN, you can give the call a "call identity". To do this, press R, *79*num#, with num being a one, two, or three digit number. When resuming the call, you must again identify the call by pressing *79*num#. By default, calls do not receive an identity number (with the exception of Denmark, where calls are given the identity number of 1).

Quick Reference

Always listen for a dial tone after pressing the R button.

Call Hold

R,1	Disconnect the current call and reconnect the held call
R,2	Toggle between calls

Call Waiting

R,0	Reject the incoming call and disable Call Waiting for the duration of the current call.
R,1	Disconnect from the current call and reconnect the held call
R,2	Hold the current call and accept the incoming call
*43#	Activate DIVA T/A Call Waiting.
#43#	Deactivate DIVA T/A Call Waiting.
*#43#	Determine whether or not DIVA T/A Call Waiting is currently active.

Calling Line Identity Restriction (per-call basis only)

U.K., Ireland	Prefix the number you wish to dial with the code 141. (To disable this feature in the U.K., use the prefix 1470; in Ireland, use 142.)
Denmark	Enter *31# followed by the number you wish to dial (#31# to disable).

Call Forwarding (codes for Sweden shown)

67 <u>number</u> #	Forward incoming calls to <u>number</u> when line is busy (#67# to disable).
61 <u>number</u> #	Forward incoming calls to <u>number</u> if they are not answered within 28 seconds (#61# to disable).
24 <u>code</u> #	Forward incoming calls to announcement machine using <u>code</u> (#24# to disable).
*230#	Forward calls to operator (#230# to disable).
*22#	Forward incoming calls to fixed number (#22# to disable).
21 <u>number</u> #	Forward all incoming calls to <u>number</u> (#21# to disable).
Active?	Dial tone is fast and intermittent.

Malicious Caller Identification (not available in Australia)

R,*39#	Invoke Malicious Caller Identification for current call.
--------	--

Call Redirection between Analog Ports

R,*,hang up	Redirect current call to other analog port.
offhook,*,R	Reclaim call if it has not yet been answered by other analog port.

Three-party Conference Call

R,3	Establish Conference Call with current connection and call on hold.
R,1	Drop last-connected party and continue with remaining party.
R,2	Place last connected call on hold and talk exclusively with the first-connected party (split the conference call). Press R,2 again to switch to the other party.

Terminal Portability

R,*79#	Transfer current call to ISDN phone sharing same access as the DIVA T/A.
offhook,*79#	Resume call transferred to ISDN phone.

Multiple Subscriber Numbering

Many telephone companies can assign several directory numbers to your ISDN line. This service, called Multiple Subscriber Numbering, allows you to use one directory number for your telephone and one for you fax machine (for example), as well have a separate number for data calls that should be sent directly to your computer. But when an incoming call is received by the DIVA T/A, a decision must be made as to where the call should go. Should it be sent to the telephone you have connected on phone port 1? Should it go to your fax machine on phone port 2? Should it be sent to the computer via the serial port?

To support multiple numbers, the DIVA Terminal Adapters Program allows to configure the the DIVA T/A's data and phone ports to answer directory numbers you specify.

Your options include:

- Assigning a primary and secondary number to each phone port (see [page 121](#)).
- Configuring a port to answer any number not configured elsewhere (see [page 123](#)).
- Specifying what numbers the data port should answer (see [page 124](#)).
- Specifying an exclusive data port directory number (see [page 125](#)).
- Routing voice calls to your PC (Voice to PC) (see [page 126](#)).

These options are explained on the following pages. Note that this is a general review of the number assignment options. For complete details on using the Configuration Tool to change these settings, see ["Configuring a Profile using the Configuration Tool"](#) on page 37 (Windows).

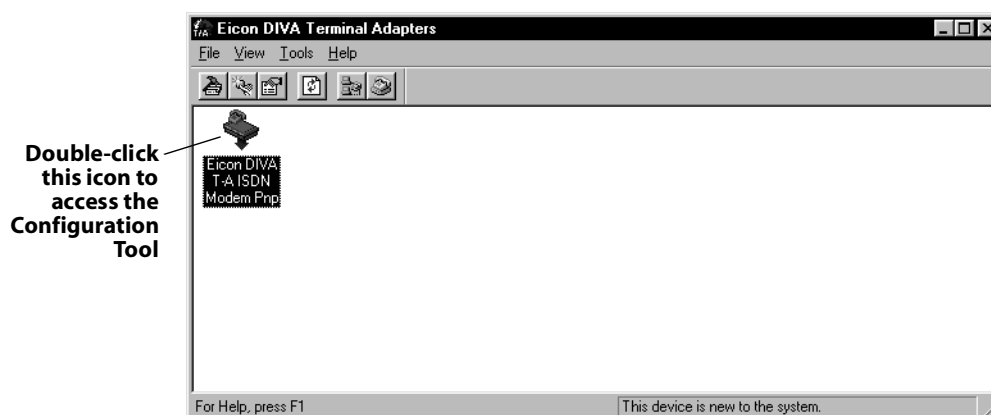
Note: The descriptions below apply mainly to Windows-based computers, as the DIVA Terminal Adapters Program for the Macintosh currently does not allow you to assign more than two numbers. If you wish to assign more than two numbers, you must use the AT!N1, AT!N2, and AT!N5 commands (see the DIVA T/A Reference Guide for more information).

Accessing the Configuration Tool

To launch the DIVA Terminal Adapters Program and access the Configuration Tool, you can:

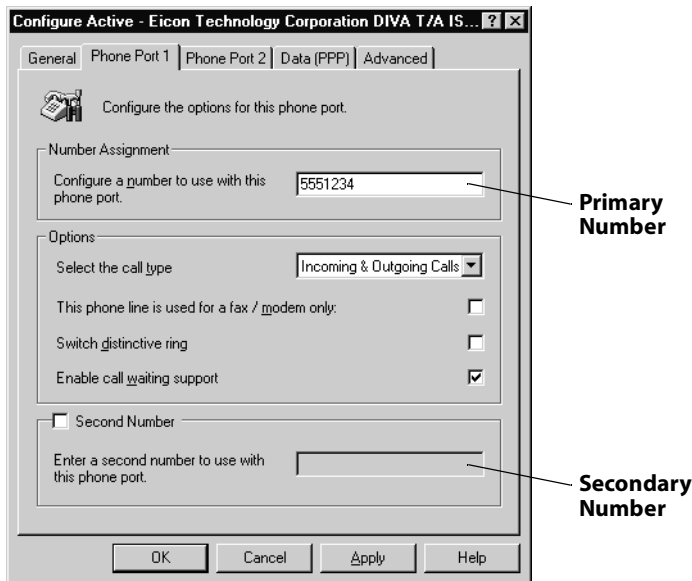
- double-click the **T/A** icon on the taskbar,
- or, click 'Start', 'Programs', 'Eicon DIVA T-A ISDN Modem', 'Eicon DIVA Terminal Adapters'.

The 'Eicon DIVA Terminal Adapters Program' window appears as shown below. Double-click the DIVA T/A icon to launch the Configuration Tool.



Assigning Primary and Secondary Numbers to the Phone Ports

To assign primary and secondary numbers to the phone ports, use the Configuration Tool's Phone Port 1 or Phone Port 2 panels. The primary numbers from each Phone Port tab will be used in other panels (the 'Call Routing' setting in the 'Advanced' tab for example) and will also be answered by the Data port if a data call comes in. The secondary numbers are answered exclusively by the phone ports.



Secondary Phone Port Numbers and Distinctive Ring

If you enter a number in the 'Second Number' field at the bottom of either Phone Port panels, the DIVA T/A automatically enables distinctive ringing for that number, i.e., if a call is placed to the second number, the telephone ring will be different from the regular ring. This allows you to determine which number was dialed by the calling party. You can switch the distinctive ring from the secondary number to the first by enabling the 'Switch Distinctive Ring' option located in the Phone Port tabs.

Use of secondary numbers and TeleDanmark's Duet service

TeleDanmark's Duet service offers, as a package, a mobile phone number along with ISDN basic access and three directory numbers. With this service, if the mobile phone is switched off, calls placed to the mobile phone number are automatically forwarded to a specific directory number as assigned by TeleDanmark.

To make use of this service with the DIVA T/A, you would enter this 'mobile forwarding' number in the secondary number field in order to receive the forwarded calls.

For example, suppose you are assigned three directory numbers: 555-1111 (which you will use for the telephone), 555-2222 (which you will use for fax), and 555-3333 (your mobile forwarding number). You connect your telephone to phone port 1 and your fax machine to phone port 2. To configure this on the DIVA T/A, you would:

- Set the primary number of Phone Port 1 to 555-1111;
- Set the 'Second Number' field of Phone Port 1 to 555-3333;
- Set the primary number of Phone Port 2 to 555-2222.

In this scenario, calls placed to your mobile phone will be forwarded to 555-3333 if the mobile phone is not on.

Configuring a Port to Answer Any Number not Configured Elsewhere

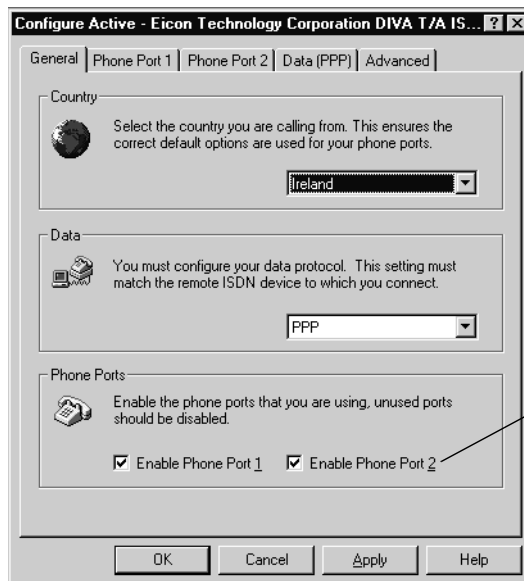
When a port is assigned a specific directory number, it only answers calls dialed to that number. For example, if you have been assigned the numbers 555-1234, 555-1235, and 555-1236, and you configure Phone Port 1 to answer 555-1234, this phone port won't try to answer calls placed to any of the two numbers assigned to you.

One feature of the DIVA T/A is that it allows you assign a port the status of having 'no directory number' (referred to as having been assigned a 'blank' DN). A port assigned a blank DN will answer any calls dialed to numbers not configured elsewhere.

For example, suppose you have four directory numbers assigned to your ISDN line: 555-1111, 555-2222, 555-3333, and 555-4444. You enter 555-1111 as the primary number for phone port 1 and 555-2222 as its secondary number. The primary and secondary numbers for phone port 2 are left blank.

In this scenario, a call placed to 555-1111 will be sent to phone port 1. A call placed to 555-2222 will also be sent to phone port 1 (as it is the secondary number for that port), and you will hear a distinctive ring. However, a call placed to either 555-3333 or 555-4444, both of which have not been configured to any other ports, will be sent to phone port 2.

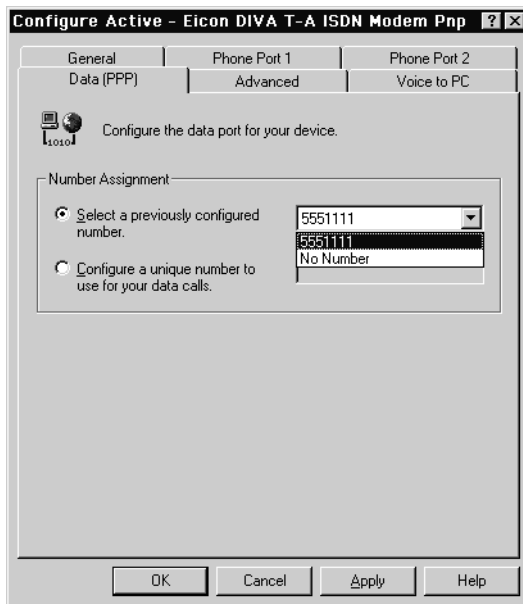
Note that if Phone Port 2 is disabled (using the checkboxes on the 'General' panel), Phone Port 2 won't answer the call.



You can disable phone ports entirely by unchecking these boxes

Specifying what numbers the data port should answer

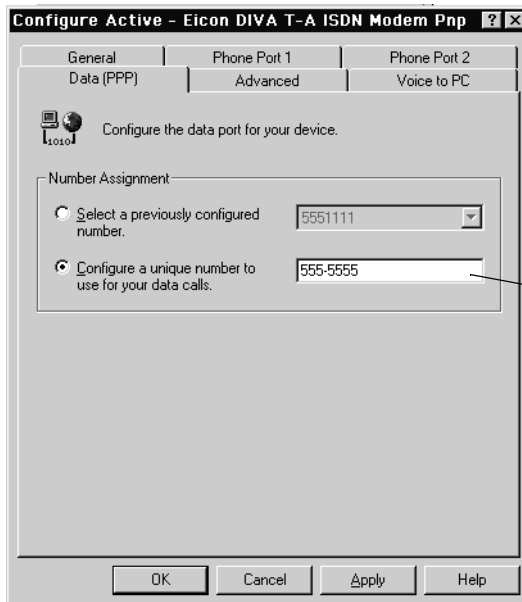
If you wish to set the data port parameters for the scenario described on the previous page, you would use the Configuration Tool's 'Data' tab. Notice that the choices for the option 'Select a previously configured number' are '555-1111' (the primary number you specified in Phone Port 1 tab) and 'No number' (since you left the primary number field blank in the Phone Port 2 tab).



If you set this option to '555-1111', the data port answers calls placed to 555-1111 only. If you set this option to 'No number', the data port answers on any call not placed to 555-1111 and 555-2222 (remember that we configured 555-2222 to be Phone Port 1's secondary number). If you were to go back and set the primary number of Phone Port 2 to 555-3333, the data port answering options would be '555-1111', '555-2222', or 'Both numbers'.

Specifying an Exclusive Data Port Directory Number

A specific number can be assigned exclusively to the data ports via the 'Data' tab. Click on the option 'Configure a unique number to use for data calls', then enter the number. The data port will answer only on that directory number, ignoring all other assignments.



If you enable this option, the data port will answer to this number only

You can also use the AT command AT!N5 to set this parameter (see the DIVA T/A Reference Guide for more information).

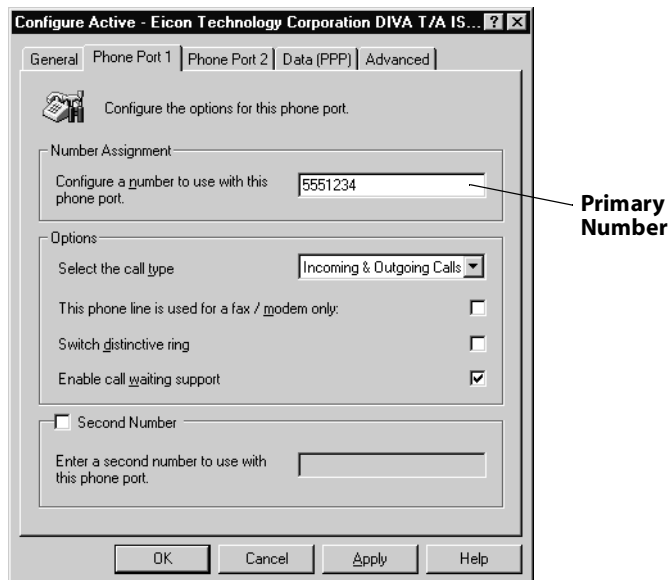
Routing voice calls to your computer (Voice to PC)

In addition to the two phone ports, calls can be sent to your computer through the serial port. Normally these are data calls, and the DIVA T/A can make the decision automatically; a data call should not be sent to the phone port, for example.

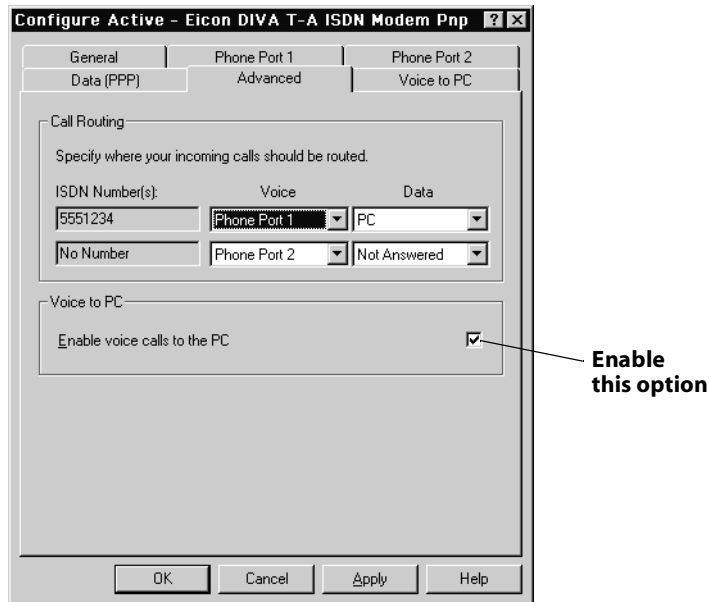
With the advent of Voice over PC software and hardware, it is possible to set up your computer to answer telephone calls. In this case, you may want to have voice calls sent to the computer instead of the phone port.

Suppose you wish to have a telephone application on your computer answer to voice calls placed to 555-1234. You would:

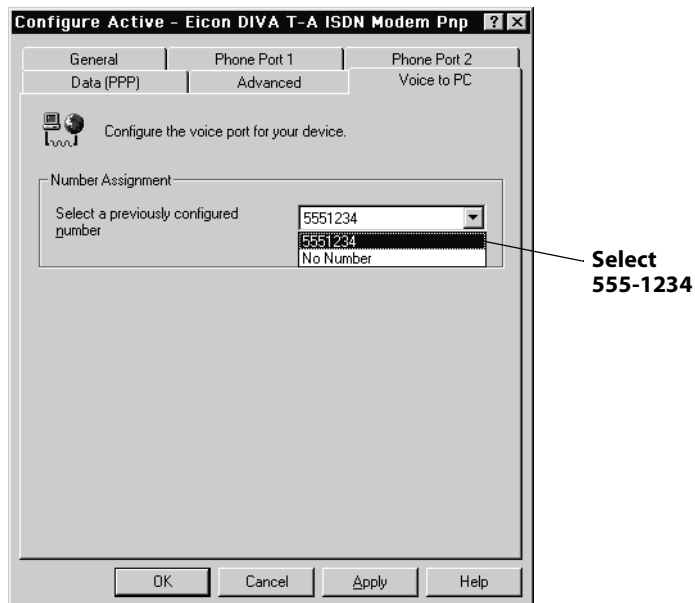
- 1 Enter 555-1234 as the primary number in either the 'Phone Port 1' or 'Phone Port 2' tab.



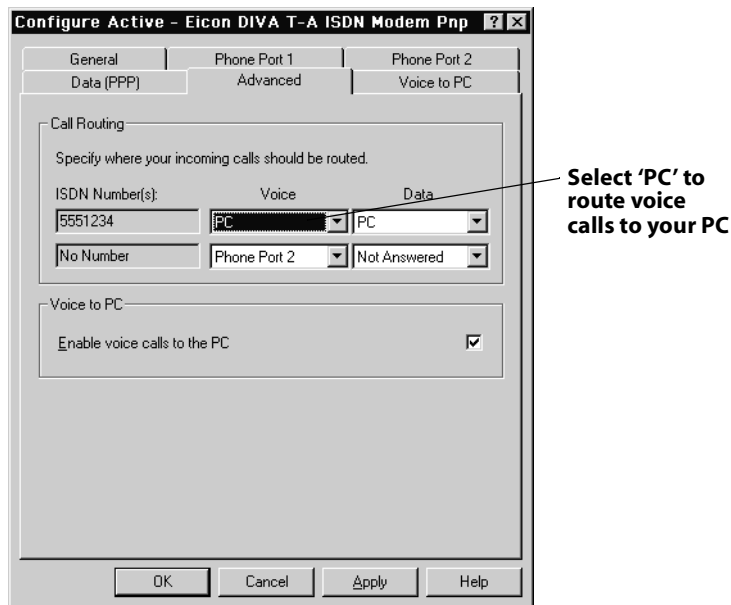
- Click the 'Advanced' tab and enable the option 'Enable voice calls to the PC'.



- Go to the 'Voice to PC' tab and choose 555-1234 as the number to be answered.



- Click on the 'Advanced' tab. In the 'Call Routing' group, under the column 'Voice', select 'PC' for the directory number 555-111.



- Click 'OK'. The changes will be saved to the device.

You can also use the AT command AT!An to set these options (see the DIV AT/A Reference Guide for more information).

Note: Once voice calls for a primary directory number have been configured to be sent to your computer, voice calls to the secondary number associated with the primary number will also be sent to the computer. For example, suppose you configure Phone Port 1 to answer on 555-1234, then configure a secondary number of 555-1235. If you route voice calls placed to 555-1234 to your computer, voice calls placed to 555-1235 will also be directed to your computer.

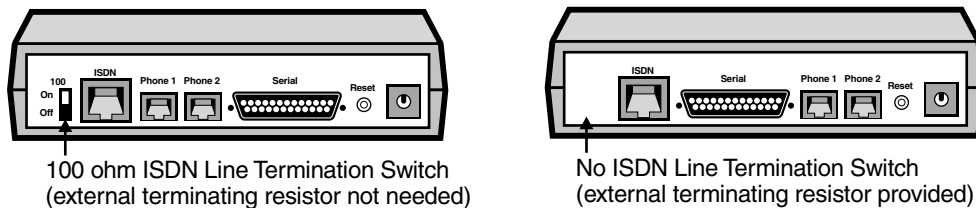
ISDN Line Termination

In Australia, if you are installing a DIVA T/A with an S/T interface, you must correctly set up ISDN line termination to ensure the proper operation of your equipment.

To determine your termination requirements, see [page 130](#).

About Setting ISDN Line Termination

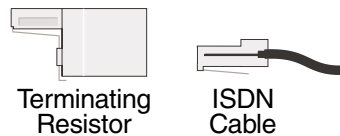
To set ISDN line termination, you may have to install a terminating resistor or set a switch on the back of the DIVA T/A, depending on the model. To learn how to set ISDN line termination for your particular device, refer to the diagram below.



Installing the resistor

If termination is required and your DIVA T/A does not have a 100 ohm ISDN Line Termination Switch, install the 100 ohm terminating resistor that is included in your package as follows:

- 1 Insert the RJ-45 end of the ISDN cable into the resistor.



- 2 Insert the resistor into the ISDN port on the back of your DIVA T/A.
- 3 Insert the other end of your ISDN cable into your NT1.



Note: The terminating resistor can also be plugged into the other end of the ISDN cable, then plugged into the NT1 (instead of into the back of the DIVA T/A). The resistor will work as long as it is between the DIVA T/A and the NT1; do not place the resistor between the NT1 and the U interface.

Determining Termination Requirements

Termination requirements vary depending on the number of devices connected to an external NT1 and the distance between these devices and the NT1.

Single ISDN device

If the DIVA T/A is the only device connected to the external NT1, determine the length of the cable linking the two devices then follow the instructions below.

If the cable is longer than 75 meters (250 feet):

- Connect the included terminating resistor; or, set the DIV AT/A 100 ohm switch to the ON position.
- Set the NT1 to provide 100 ohms of resistance. Consult the manual provided with the NT1 for more detailed instructions. Note that some NT1s do not support connections over 75 meters (250 feet). Check your user documentation to determine the distance supported.

If the cable is shorter than 75 meters (250 feet):

- Do not connect the included terminating resistor; or set the DIV AT/A 100 ohm switch to the OFF position (this is the default).
- Set the NT1 to provide 50 ohms of resistance. Consult the manual provided with the NT1 for more detailed instructions.

Multiple ISDN devices

If the NT1 is connected to more than one ISDN device, determine the length of cable connecting the DIVA T/A to the NT1 then follow the instructions below.

If the cable is longer than 75 meters (250 feet):

- Connect the included terminating resistor; or, set the DIV AT/A 100 ohm switch to the ON position.
- Set the other ISDN devices to 100 ohms of resistance. Consult the manuals provided with these devices for more detailed instructions.
- Set the NT1 to no termination. Consult the manual provided with the NT1 for more detailed instructions. Note that some NT1s do not support connections over 75 meters (250 feet). Check your user documentation to determine the distance supported.

If the cable is shorter than 75 meters (250 feet):

- Do not connect the included terminating resistor; or, set the DIV AT/A 100 ohm switch to the OFF position (this is the default).
- Set the other ISDN devices to no termination. Consult the manuals provided with these devices for more detailed instructions.
- Set the NT1 to provide 50 ohms of resistance. Consult the manual provided with the NT1 for more detailed instructions.

Troubleshooting the DIVA T/A

This section provides information that will help you to troubleshoot DIVA T/A problems.

- For information on the DIVA T/A's LED status indicators, see [page 132](#).
- To read about common problems and their solutions, see [page 134](#).
- To capture a memory dump of the DIVA T/A, see [page 136](#).

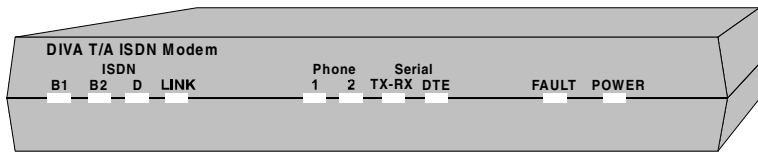
When Isolating Problems

When isolating problems, consider the following questions:

- Were any changes recently made to the configuration or setup that might affect the DIVA T/A's performance?
- Does the problem occur while attempting to connect to a remote device for the first time?
- Is this a consistent problem that you can duplicate?

LED Status Indicators on the DIVA T/A

The LED status indicators on the DIVA T/A display the state of the ISDN switch (D-channel) connection to the remote device (B-channel), and the connection to analog devices.



B1, B2 LEDs

LED	Description
Off	No call activity on the specified B-channel.
Flashing	An outgoing or incoming connection is being established on the specified B-channel.
Steady	There is a successful connection on the specified B channel.

D LED

LED	Description
Off	The ISDN physical interface is not activated. The LINK LED might provide additional status information.
Flashing	<p>Flashing indicates that the DIVA T/A has automatically disabled Always On / Dynamic ISDN due to a failure to dial and bring up the X.25 datalink on the D-channel. You can still use the DIVA T/A, but without the features of AO/DI.</p> <p>Some ISDN service providers do not yet support AO/DI. If you know your ISDN line does not support this feature, disable this option. If you are using Windows, choose a protocol other than 'MultiLink PPP with AO/DI' (see "General Tab" on page 38). If you are using a Macintosh, disable the AO/DI option (see "Advanced Tab" on page 70).</p> <p>If you are unsure if your ISDN line supports AO/DI, check with your service provider before enabling this option.</p> <p>If AO/DI is supported and you have subscribed to it, verify that you have correctly configured your AO/DI settings (see page 48 if you are using Windows, or see page 68 for Macintosh).</p>
Steady	The ISDN physical interface is initialized and ready to place calls.

Link LED

LED	Description
Off	The ISDN physical interface is not synchronized, or is improperly connected. Note: In Europe, this indicates an idle condition.
Flashing	The ISDN physical interface is synchronizing.
Steady	The ISDN physical interface is activated. The D, B1, and B2 LEDs might provide additional status information.

Phone LEDs

LED	Description
Off	No call activity on the specified voice channel.
Flashing	An outgoing or incoming connection is being established on the specified voice channel.
Steady	There is a connection on the specified voice channel.

TX-RX LED

LED	Description
Off	There is no data being transferred on the serial port.
On	(intermittent) Data is being transferred on the serial port.

DTE LED

LED	Description
Off	There is no call activity on the specified serial port.
Flashing	An outgoing or incoming connection is being established on the serial port.
Steady	There is a connection on the serial port.

Fault LED

LED	Description
Off	The unit is operating within normal parameters.
Flashing	Indicates a hardware fault condition.
Steady	Indicates a software fault condition.

Power LED

LED	Description
Off	The unit is powered down.
Steady	The unit is powered up.

Common Problems

Listed below are possible solutions to common problems.

SecurID is not working with the DIVA T/A.

Depending on the server type, the DIVA T/A might support SecurID. For more information see ["SecurID Connectivity"](#) on page 85.

The Windows Configuration Tool does not detect the DIVA T/A.

If you are running RAS or the Dial-Up Networking Server, or if other software is using the DIVA T/A, shut them down and restart the Configuration Tool. Make sure that the COM port is free by trying to open it with software such as Hyperterminal.

If you are using Windows 95/98, open Device Manager and verify if there are any conflicts. You might also want to try the diagnostic tool found in 'Start', 'Settings', 'Control Panel', 'Modems'.

After installation, the modem speed cannot be set higher than 115,200 bps (Windows 95/98/NT 4.0)

Remove and re-install the INF file as described in ["Windows 95/98/NT Installation and Setup"](#) on page 9.

When I set my modem speed to 230,400 bps, Dial-up networking reports 'Error 630: modem not responding...'

You are using a PC equipped with UART 16550, which only supports a maximum speed of 115,200. Change the speed of your modem to 115,200 bps or install a fast COM port card.

Under Windows 95/98, you can determine your PC's maximum com port speed by selecting 'Start', 'Settings', 'Control Panel', 'Modems', 'Diagnostics', 'More Info'.

Dial-up Networking fails. The DTE LED does not flash during a dialing attempt.

Verify that Flow Control settings are correct for your modem. Under Windows 95/98 you can determine your modem settings by selecting 'Start', 'Settings', 'Control Panel', 'Modems', 'Properties', 'Connection Tab', 'Advanced'. On the 'Advanced' panel verify that 'Use Flow Control' is checked and 'Hardware RTS/CTS' is selected.

The 'Fault' LED goes on.

Contact Eicon Technology and follow the instructions in ["Dumping the DIVA T/A Memory"](#) on page 136.

When using V.120 you cannot connect to a Bit Surfer Pro modem.

Use the command `AT!E4=10`.

When using V.120 over a Bit Surfer Pro modem, you can connect but cannot transfer data.

Use a different packet size by entering the command `AT!E0=256`.

When you pick up the phone you do not get a dial tone.

Make sure the ISDN line has voice capability. If you are using the S/T version, try removing other ISDN equipment on the line. Try using a different Directory Number on the phone port. If the problem persists, contact Eicon Technology.

The 'Link' LED does not go on.

Make certain that the cable in the ISDN connection has the right interface: 'U' or 'S/T'.

Characters are missing when displaying VT100 screens or AT command status.

Refresh the screen by escaping the VT100 screen or re-executing the AT command. If the problem persists, lower the COM port line speed.

Answering machine or fax has problems.

If an analog device is having automatic answering problems, try turning off the distinctive ring. Open the Configuration Tool and disable 'Distinctive Ring' in the 'Phone Lines' panel.

My Casio PhoneMate answering machine doesn't answer calls when plugged into the DIVA T/A.

The DIVA T/A provides a ring signal which differs from a real analog phone line but is compatible with most devices. The Casio is not compatible.

Dumping the DIVA T/A Memory

If a software fault condition occurs while you are using the DIVA T/A ('Fault' LED is on), you may need to capture a memory dump to a file. This file can be used by Eicon support to determine what caused this condition.

Follow the steps below to obtain a DIVA T/A dump:

- 1 Exit your dialer program (for example, Dial-Up Networking for Win95/98) and start a terminal-emulation program such as HyperTerminal.
- 2 Type `at` then press Enter. The mini-monitor menu appears.

Note: If the DIVA T/A does not respond to AT commands, even if you exit and restart your terminal-emulation program, close all applications, shut down your computer, and turn it on again. Repeat steps 1 and 2.

If the DIVA T/A still doesn't respond to commands, hold down the reset button (located on the back of the DIVA T/A) for at least five seconds; this forces the DIVA T/A to enter a sub-layer monitor mode. Start a terminal-emulation program and type `at`. The sub-layer mini-monitor menu should appear. Type `at@quit`, and proceed to step 3.

- 3 Type `at@dump` (this command is case sensitive) and press Enter. The system responds with the following display:

```
Please start XMODEM reception of dump file
```

- 4 Use the XMODEM transfer protocol built into your terminal-emulation program to receive the dump file. After the transfer is complete, a message similar to the following is displayed:

```
Dump completed (539104 bytes sent)
```

If the transfer appears complete but no message is displayed, press Enter until the message is displayed.

- 5 Type `AT` and press Enter, then type `at@quit` (case sensitive) and press Enter again to restart your DIVA T/A.

Billing Interval Example

Suppose a user is charged a flat fee of \$.08 each time a connection is established, plus \$.01 per minute of B-channel usage.

Since the flat fee of \$.08 is quite high relative to the per minute charge of \$.01, the user should be careful not to disconnect and reconnect too often. A good solution would be to set the initial billing interval to 480 (8 minutes), and the billing interval to 60 (1 minute).

With these settings, the minimum time the second B-channel remains connected is 8 minutes (as specified by the initial billing interval). If the second B-channel is needed longer than 8 minutes, the extra connection time will always occur in increments of 1 minute (as specified by the billing interval), e.g. for a total time of 9 minutes, 10 minutes, 11 minutes etc.

How the interval settings effect costs can best be seen with a usage scenario. Take a sample time period of 10 minutes in which the second B-channel is first needed for 2 minutes, is not needed for the next 5 minutes, and is then needed for another 2.5 minutes. Compare the costs when the initial billing interval is set to 240 and 480, as shown below.

Initial Billing Interval = 240 (4 minutes)

In this case the second B-channel would need to connect twice (since it is dropped after 4 minutes). The total cost would be:

Connection cost	\$.08 x 2 connections	= \$.16
Call # 1	\$.01 x 4 minutes	= \$.04
Call # 2	\$.01 x 4 minute	= \$.04
Total		= \$.24

Initial Billing Interval = 480 (8 minutes)

The second B-channel would only need to connect once (since the first connection is not dropped). The total cost would be:

Connection cost	\$.08 x 1 connections	= \$.08
Call	\$.01 x 10 minutes	= \$.10
Total		= \$.18

Note that there is no 'one' solution for setting the parameters, the key is to find a balance between the variables.

DIVA T/A ISDN Modem Specifications

Firmware Specifications

Feature	Supported on DIVA T/A
WAN Protocols	<ul style="list-style-type: none">• PPP (Point-to-Point Protocol)• Multilink PPP• ISDN (Q.921/Q.931: EuroISDN, TPH1962/TS.013, and INS-Net64)• V.110 Rate Adaption• V.120 Rate Adaption
Voice Call Support	<ul style="list-style-type: none">• Call Bumping (DBA)• μ-law or A-law Encoding• Internal Ring Generation• DTMF and Pulse Dialing• Caller ID Delivery (country dependant)• Calling Features: Call Hold, Call Waiting, Caller ID (country dependant), Call Forwarding (country dependant), Malicious Caller ID (country dependant), Call Redirection
Async-to-Sync Conversion	<ul style="list-style-type: none">• Single- and multi-link PPP async-to-sync conversion
Bandwidth Optimization	<ul style="list-style-type: none">• Multilink PPP• Bandwidth Allocation Control Protocol (BACP)/Bandwidth on Demand (BOD)• Data Compression (MPPC, STAC, Ascend compression)
Authentication	<ul style="list-style-type: none">• PAP/CHAP• MS-CHAP compatible• SPAP (Shiva Password Authentication Protocol) compatible in PPP and Multilink PPP modes.• SecurID
Management and Configuration	<ul style="list-style-type: none">• Windows Configuration Tool• Macintosh Configuration Tool• VT-100 Terminal Emulation• AT Commands• Firmware upgrades using XModem Download or the Configuration Tool
Plug and Play	<ul style="list-style-type: none">• Windows Plug and Play External COM Device Compliant

Hardware Specifications

Feature	Supported on DIVA T/A
ISDN Interface	<ul style="list-style-type: none"> • 1 ISDN BRI U or ISDN BRI S/T (RJ45)
Analog device Interface (selected models only)	<ul style="list-style-type: none"> • 2 Analog Ports (RJ11) • Ringer Equivalence Number (REN) per POTS line: 3
Console Port	<ul style="list-style-type: none"> • RS-232 Asynchronous • 1200 bps to 230.4 kbps • Automatic Baud Rate Detection
Non-Volatile Configuration	<ul style="list-style-type: none"> • 4 KB non-volatile memory for storing configuration profiles
Physical Dimensions	<ul style="list-style-type: none"> • Size: 1.5H x 6.0D x 8.5W inches (4.0H x 15.4D x 21.7W cm) • Weight: 1.3 lbs (0.59 kg)
Environmental Requirements	<ul style="list-style-type: none"> • Operating Temperature: 32° F to 104° F (0° C to 40° C) • Operating Humidity: 0 to 90% non-condensing
Power Requirements	<ul style="list-style-type: none"> • AC Voltage: 100-120 VAC or 220-240 VAC (wall transformer) • Frequency: 50/60 Hz • Power Consumption: 10 Watts maximum
Approvals	<ul style="list-style-type: none"> • CE 168 X • FCC Part 15 Class B and Part 68 • Industry Canada CS03 issue 8 • CSA-C22.2N0 950-95 • BZT • Austel • China • Malaysia • Singapore • India • New Zealand

Technical Support

Support via the World Wide Web

To obtain technical support, visit the Eicon Technology HelpWeb at:

- <http://www.eicon.com/support/>

Customer Service

For customer service, contact your local Eicon Technology supplier.

Other Eicon Technology Web Sites

You can find ISDN-related information and general information about Eicon Technology products and services from the following web site:

- <http://www.eicon.com>

Regulatory Information and Conditions of Use

Regulatory Information for Europe

This equipment displays the CE 168 X mark to show that it has been tested and found to be in full compliance with the requirements of the Terminal Equipment, EMC and Low Voltage Directives (98/13/EC, 89/336/EEC and 72/23/EEC, as amended by Directive 93/68/EEC).

The CE 168 X mark signifies that this product is approved for connection to ISDN within the EU and EEA.

Safety Status: TNV-1

No voltages within this equipment exceed SELV voltages. The ISDN port has TNV-1 Safety Status and all other interconnection points and ports are SELV.

This equipment draws power from an external power supply which has been separately approved. It does not draw power from the ISDN network.

Power Consumption

Check that power supply will not be overloaded. Maximum power consumption of the unit is stated in "Hardware Specifications" on page 139. The user must ensure that the total power drawn by the host computer, the DIVA T/A, and any other peripherals, does not exceed the capability of the host power supply unit.

Limited Warranty

Eicon Technology Corporation warrants to the original purchaser of this Eicon Technology Product that it is to be in good working order for a period of five (5) years from the date of purchase from Eicon Technology or an authorized Eicon Technology dealer. Should this Product, in Eicon Technology's opinion, fail to be in good working order at any time during this five year warranty period, Eicon Technology will, at its option, repair or replace this Product at no additional charge except as set forth below. Repair parts and replacement Products will be furnished on an exchange basis and will be either reconditioned or new. All replaced parts and products become property of Eicon Technology. This Limited Warranty does not include service to repair damage to the Product resulting from accident, disaster, misuse, abuse, or non-authorized alterations, modifications, and/or repairs.

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Product Comment Form

DIVA T/A ISDN Modem User's Guide - International 206-269-03

We value your comments. Please use the tables below to rate this product.

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DIVA T/A ISDN Modem

Packaging	<i>Poor</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Excellent</i>
Configuration	<i>Difficult</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Easy</i>
Performance	<i>Poor</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Excellent</i>
Workmanship	<i>Poor</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Excellent</i>

DIVA T/A ISDN Modem User's Guide

Accuracy	<i>Low</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>High</i>
Organization	<i>Confusing</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Clear</i>
Readability	<i>Difficult</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Easy</i>
Presentation	<i>Poor</i>	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	<i>Excellent</i>

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