# DIVA Mobile PC Card

## *Second Edition (February 1998)*  *206-153-02*

## DIVA Mobile
## Model Number: 800-241

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*Chapter 1*

# Getting Started

# Introduction

DIVA Mobile is the ideal hardware platform for high-speed connectivity under almost any condition. With an ISDN BRI port, a V.34 modem port, and the ability to transmit analog data via ISDN, it provides the best possible dial-up access from just about any location. And with full Plug & Play support, DIVA Mobile is easy to install and easy to use.

This guide shows you how to install DIVA Mobile PC Card and the DIVA for Windows 95 software. As soon as you complete the installation, you will be able to use your favorite data, fax, or voice messaging software. (For instructions on using DIVA Mobile with specific applications, consult the documentation provided with the application software.)

Several appendices follow the installation and operating instructions. They include technical information about DIVA Mobile.

# Packaging

Before installing the DIVA Mobile verify the contents of your package. Your package should include the following:

- a DIVA Mobile PC Card
- an ISDN RJ 45 cable
- an ISDN dongle for connecting the RJ 45 cable to the DIVA Mobile
- a modem RJ 11 cable
- this manual
- DIVA for Windows 95 software (three 3.5" disks)

For European users, the package also includes:

- an RVS-COM Lite CD-ROM
- teleadapters for the analog connection, depending on the country

# Requirements

To use DIVA Mobile, you need the following:

- An 80386, 80486, Pentium, or compatible notebook
- A type II or III PC Card (also called PCMCIA) slot
- Windows 95
- At least 4 MB of free hard disk space
- At least 8 MB of RAM
- A 3.5 inch disk drive (to install the DIVA Mobile support software)

If you want to make modem connections, you will need access to a regular telephone jack.

If you want to make ISDN connections, you will need access to a Basic Rate Interface line.

# Installation

If you have installed a former version (only 1.0 or 1.1), or a former beta version of DIVA for Windows 95, or if you use a former version of the Microsoft ISDN Accelerator Pack, you may encounter conflicts due to different versions. To avoid such conflicts, follow these steps before you install the DIVA for Windows 95 software for the DIVA Mobile PC Card.

1   Close all applications. From the Control Panel start the System applet.

2   Go to the "Device Manager" tab and select "Network adapters".

3   Remove the following two components:
    "EICON ISDN Adapter"
    "EICON WAN Miniport"

4   Click "OK".

5   When you are asked to restart your computer, click "No".

6   Run the DIVADEL.BAT program. Put the setup disk of DIVA for Windows 95 into your disk drive and enter the following path: "A:\DIVADEL.BAT".

7   When prompted, click "OK" and restart your PC.

*Note:* To un-install versions later than 1.1, refer to the online help.

The steps in the following section show you how to install the DIVA Mobile PC Card and DIVA for Windows 95 software. During the software setup, the Windows 95 Setup Wizard will appear; follow the on screen instructions to select and configure the ISDN options you need.

*Note:* The installation program may require access to Windows 95 *.cab files; make sure these files are available either from the Windows 95 CD or on your hard disk drive. Just enter the path to the files. You should also read your Notebook documentation and the readme file on the *DIVA for Windows 95 - Setup* disk.

## Installation of the DIVA Mobile PC Card

1 Close all applications on your notebook.

2 Connect the ISDN S/T dongle to the DIVA Mobile's ISDN socket (the larger one); connect the modem cable into the DIVA Mobile's analog socket (the smaller one which has only 4 poles).
See the schema below for that:

Analog
Modem
Cable

ISDN S/T Dongle

ISDN Cable
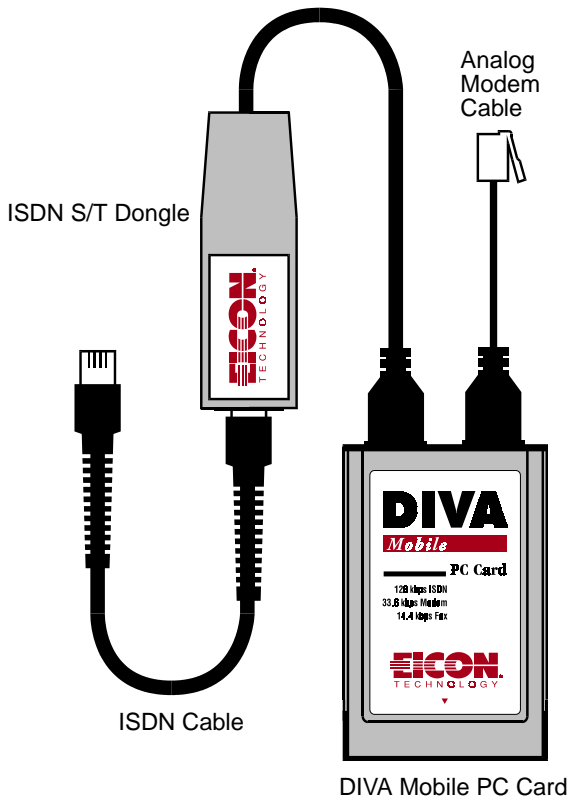
DIVA Mobile PC Card

*Note:* If you prefer, you can attach the cables after the DIVA Mobile has been inserted into the Notebook. However, it is easier to connect the cables prior to insertion.

3 Insert the DIVA Mobile into your system's PC Card slot (type II or III).

## Software Installation under Windows 95

*Note:* If you are using Windows 95 OEM Software Release 2 (OSR2) please refer to the section "Software Installation under Windows 95 OEM Software Release 2 (OSR2)" on page 12.

*Note:* After you have inserted the DIVA Mobile into your notebook, Windows 95 detects the new hardware and recognizes it as *EICON DIVA Mobile*.

1  From the Install *New Hardwar*e dialog box, select "*Driver from disk provided by hardware manufacturer.*" Click *OK*.

2  Insert the *DIVA for Windows 95 - Setup* Disk. Enter the following path (where A is your floppy drive letter):

```
A:\
```

3  Click *OK*. If this is the first time you are installing a modem on your notebook, the *Location Information* dialog box will appear. The dialog box asks you to enter information about your location (country code, regional code, ...) Follow the instructions displayed on the screen. When finished click *OK*.

4  Windows 95 will automatically detect the *EICON DIVA Mobile V.34 modem* and install the necessary software.

5  Windows 95 will automatically detect the *DIVA Mobile ISDN adapter* and start installing the necessary software. When prompted, follow the instructions displayed on the screen; when the Setup Wizard appears go to the section "Using the ISDN Setup Wizard" on page 13 of this guide and continue.

6  The Setup Wizard will copy all necessary files to your system. When finished, it will prompt you to reboot your system.

## *Software Installation under Windows 95 OEM Software Release 2 (OSR2)*

After you have inserted the DIVA Mobile into your notebook, Windows 95 detects the new hardware and recognizes it as *EICON DIVA Mobile*.

1 Windows 95 prompts you to install a *Standard PCMCIA Card Modem*. Click *Next*.

2 Windows 95 prompts again for the Standard PCMCIA Card Modem. Select *Other Location* (this allows you to enter the path to the DIVA for Windows 95 installation files; otherwise the DIVA Mobile would be installed as Standard PCMCIA Modem).

3 Insert the *DIVA for Windows 95 - Setup* Disk.

4 Enter the following path (where A is your floppy drive letter) in the *Select Other Location* dialog box:

```
A:\
```

5 Click *OK,* then in the dialog box that follows, click *Finish*. You will be prompted to insert the disk (even if you have already entered the correct disk and path in steps 3 and 4).

6 Click *OK*. The *Copying File*s dialog box appears.

7 In the *Copying Files* dialog box enter the path to the installation files and click *OK*.

8 Windows 95 automatically detects the *EICON DIVA Mobile ISDN-V.34 combo adapter.*

9 Windows 95 automatically detects the *EICON DIVA Mobile ISDN V.30 modem* and installs the modem software.

10 If this is the first time you are installing a modem on your notebook, the *Location Information* dialog box will appear. The dialog box prompts you to enter information about your location (country code, regional code, ...). Follow the on screen instructions. When finished click *OK*.

11 Windows 95 automatically detects the *DIVA Mobile ISDN adapter* and starts to install the software for the ISDN adapter. Follow the instructions displayed on the screen; when the DIVA for Windows 95 Setup Wizard appears go to the section "Using the ISDN Setup Wizard" below, and continue.

12 The Setup Wizard will copy all necessary files to your system. When finished, it will prompt you to reboot your system.

## *Using the ISDN Setup Wizard*

The DIVA for Windows 95 Setup Wizard helps you to quickly and easily configure your software for ISDN transmissions. The Setup Wizard runs automatically when you first install DIVA for Windows 95. After DIVA Mobile has been installed, you can use it to change your installation and setup options.

When you install DIVA for Windows 95 for the first time, you have the option of performing either an Express setup or a Custom setup.

### Express Setup

The Express setup requires only basic information. It sets up your DIVA Mobile with a working ISDN configuration which is suitable for most applications.

### Custom Setup

The Custom setup provides access to all configuration screens. This enables you to fine-tune your configuration for your particular needs. You can select different virtual ISDN modems as well as the CAPI 2.0. The Setup Wizard will prompt you to install the different components one after the other.

Select either the Express or the Custom Setup and follow the on screen instructions.

*Note:* If you have a pre-installed ISDN line or have already ordered your ISDN line, you will need information from your telephone company or corporate system administrator about the type of ISDN telephone switching equipment that you are connected to.

The following table lists the ISDN components currently available with the DIVA Mobile:

| Option | Function | Supports |
|---|---|---|
| Eicon ISDN channel 0 and 1 | Channels of the WAN Miniport driver for connections via the Windows 95 Dial-Up Network with channel bundling | Remote access to company networks, Internet, MSN, CompuServe and multi-link PPP (MLPPP). *This option is automatically installed.* |
| RNA Modem | Logic modem for connections via the Windows 95 Dial-Up Network | Remote access to company networks, Internet, MSN, CompuServe, special cases |
| X.75 Modem | Logic modem for access to ISDN mailboxes with X.75 | ISDN mailboxes, NetMeeting |
| V.120 Modem | Logic modem for access to ISDN mailboxes with V.120 | Special case (some ISDN mailboxes) and CompuServe ISDN |
| ISDN Port | Virtual COM-Port for applications directly accessing the COM Port via AT commands | All Win 3.*x* based applications such as AOL. |
| CAPI 2.0 | Common ISDN API 2.0: ISDN programming interface used by many ISDN applications | ISDN-applications (RVS-COM etc.) |

The Setup Wizard allows you to enter a separate ISDN number for each preconfigured ISDN modem. These numbers can be, for example, an MSN with a DSS1 connection or the extension after a PBX.

*Note:* In addition to requiring a listing of the ISDN phone numbers, switchtypes in the US and Canada may require a SPID number for each phone number. Your telephone service provider can provide this information.

If you are traveling and need to use a different ISDN line, you may need to reselect the Switchtype, ISDN phone numbers, and (in North America only) SPID numbers. If you want to change any of the setup parameters in the future, simply restart the setup wizard by clicking Start on the Windows 95 Taskbar, go to Programs/DIVA for Windows 95 and select Setup Wizard. Online Help is available for all parameters.

## V.34 Modem Country Selector

After you reboot your system, you must use the Modem Country Selector to specify the country where you are located. This will configure the DIVA Mobile for the local phone system.

This country selector software is automatically installed during the DIVA Mobile installation (a Country Selector Logo will appear in the Task Bar on your Windows 95 screen).

To start the Country Selector, double-click on the Country Selector icon (on the Task Bar). Alternatively you can go to *Start*, *Programs*, *DIVA for Windows 95*, and then click the *Country Selector* menu option.

When the *Country Selector* dialog box appears, click the menu arrow; the Country Selector displays a list of countries where the DIVA Mobile is certified for use. Select the country where you are located.



Each time you reboot your notebook, a screen appears indicating the country for which the V.34 modem has been configured.

You can change the country at any time (first you must close all applications that use the V.34 modem).

## Checking the configured components

After you reboot your computer you can check which modems are installed.

1 From the Taskbar choose *Start*, *Settings*, *Control Panel* and double-click on *System*.

2 Select the *Device-Manager* and double-click on *Modem*. The EICON DIVA Mobile V.34 modem for voice, fax and analog data is listed, as well as any other modems you have installed
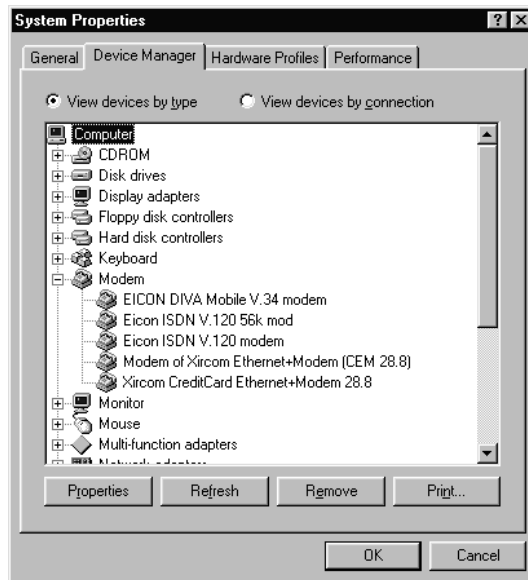


## Connecting to the ISDN / analog Network

The following procedure shows you how to connect the DIVA Mobile to the available transmission network (ISDN or analog telephone lines):

1 Connect the supplied ISDN RJ 45 cable to the ISDN S/T dongle and to the ISDN wall jack.

*North American users only.* If you are using the S/T version of DIVA Mobile, you must install an NT1 between the ISDN wall jack and the card (connect the DIVA Mobile to the NT1, and the NT1 to the ISDN wall jack). You can obtain an NT1 from your Eicon Technology supplier or from a third party.

2   And/Or connect the modem's RJ 11 cable to an analog wall jack either directly (North America only) or via a corresponding teleadapter.

## Changing SPIDs and ISDN Numbers

To enter or modify your ISDN telephone number and/or SPID (Service Profile Identifiers) follow these steps:

1   Click Start on the Windows 95 Taskbar. Go to Programs/DIVA for Windows 95 and select *Setup Wizard*.

2   Follow the Setup Wizard instructions, adjusting the ISDN numbers as necessary. Note that SPIDs are used only in North America (if required).

3   You must Shutdown and reboot your system for the new settings to take effect.

## Removing

*Note:* If you want to remove the DIVA Mobile and the DIVA Mobile Windows 95 drivers, you must use the Device Manager. You can only remove the DIVA Mobile software if the DIVA Mobile PC Card is inserted in your Notebook.

1   From Taskbar select *Start*, *Settings* and then *Control Panel*.

2   Double-click the *System* icon in the Control Panel window.

3   Select the *Device Manager* tab.

4   Double-click the *Multifunction adapter* entry; (if not found, double-click the *Modem* entry).

5   Select the *DIVA Mobile ISDN-V.34 combo card* and click *Remove*.

6   Click *OK* to close the Device Manager tab.

7   You can now remove the DIVA Mobile from the notebook.

8   Restart your Computer.

*Chapter 2*

# Applications

# Introduction

You can use the DIVA Mobile for the following tasks:

- Sending and receiving electronic mail or faxes
- Accessing other Internet resources, such as newsgroups and the World Wide Web
- Accessing private commercial services, such as CompuServe forums
- Logging on to a corporate network to transfer files and use LAN-based electronic mail
- Connecting to a host computer to perform client/server transactions

Once configured, the DIVA Mobile can be used by all your communications applications. Occasionally some additional setup may be required.

For information on how to use the application software, consult its documentation.

*Note:* For analog applications (data, fax, voice) always select the V.34 modem (regardless of whether transmission is via an analog or an ISDN line).

If your DIVA Mobile PC Card is connected to the analog network via a PBX, complete the following steps to enable the DIVA Mobile to dial out.

1 From the Taskbar go to *Start* and select *Settings*, *Control Panel* and double-click *System*.

2 Select the *Device Manager* tab, double-click *Modem* and select the *EICON DIVA Mobile V.34 Modem*.

3 Click *Properties*.

4 Click the *Settings* tab and deactivate the option "Wait for dial tone".

5 Click *OK*.

# Common Windows 95 Applications

DIVA Mobile provides ISDN support for many common Windows 95 applications, such as:

- Microsoft Internet Explorer
- Dial-Up Networking
- Microsoft Fax
- Microsoft Exchange Client (sending and receiving electronic mail)
- Microsoft NetMeeting

For information on setting up these Windows 95 applications, consult the DIVA for Windows 95 online help (to access online help click Start on the Taskbar, and go to Programs/DIVA for Windows 95; select Support for 3rd party products).

# Voice Functions

DIVA Mobile provides the necessary hardware to support voice applications. When combined with voice software, and a built-in soundsystem, it allows your PC to function as a digital answering machine supporting voice mail, remote message retrieval, and more.

The specific features available to you depend on the voice application software that you purchase, but features typically include: recording a greeting, listening to (retrieving) messages, remote message retrieval, and multiple voice mail boxes.

# UltraPort® (V.34 Modem)

UltraPort technology can double the throughput capabilities of DIVA Mobile. When the computer-to-modem (DTE) speed is set to 115,200 in your communication program, UltraPort automatically transmits at up to 230,400 bps with average 8:1 compression (using LAPM and V.42bis). However, overall throughput is limited by phone line quality and the performance capabilities of the remote modem.

If you are repeatedly disconnected, or see numerous file transmission errors (excessive errors can abort a file transfer), your computer may not be fast enough to handle the incoming data. Disconnect and disable the UltraPort.

1  Go to *Start* and select *Settings*, *Control Panel* and double-click *System*.

2  Select the *Device Manager* Tab, double-click *Modem* and select the *EICON DIVA Mobile V.34 Modem*.

3  Click *Properties*.

4  Select the *Connections Tab*, and click *Advanced...*

5  In the field Extra Settings enter the command `AT*TJ0` and click *OK*.

UltraPort will remain off until you:

- re-enable it by entering `AT*TJ1`
- reset the modem by entering `AT&F`
- remove and reinsert DIVA Mobile.

*Note:* TAPI-applications do not require you to enter the AT commands directly in the application.

*Chapter 3*

# Solving Problems

# Readme Files

Before attempting to troubleshoot a problem with your DIVA Mobile, read the Readme file on the DIVA for Windows 95 setup disk. This will assure you are kept up to date on all known problems.

# DIVA Mobile not detected

After inserting DIVA Mobile into your PC Card slot, Windows 95 does not detect the adapter.

This could be due to the fact that the Card and Socket Services on your notebook (which are installed by default with Windows 95) are either not installed or incorrectly installed. Check the installation of the Card and Socket Services in the Device Manager:

1   From the Taskbar go to *Start*, *Settings*, *Control Panel* and double-click *System*.

2   Select the *Device Manager* tab.

3   Double-click *PCMCIA socket*.

4   Select the PCMCIA controller and click *Properties*.

    If the controller is not ready for operation or marked with a yellow exclamation mark the services are not correctly installed. Check your Windows 95 installation or ask the supplier of your notebook.

# Start Up Problems

With a few notebooks the Plug&Play installation of DIVA Mobile may result in resource conflicts or malfunctioning. This might be due to the Plug&Play hardware and software of the devices, or an improper installation of other hardware or software components.

The DIVA for Windows 95 software does not influence the assignment of system resources. These problems can only be solved by the user.

1  Deinstall DIVA Mobile.

2  Deinstall all hardware components which are not used anymore.

3  Reinstall DIVA Mobile.

If the problem is not solved, you must modify the configuration manually. See the following examples:

### Incomplete installation because of resource conflicts

DIVA Mobile has been successfully installed and detected, but the software installation stops (after installation of *Eicon DIVA Mobile V.34 Modem)* without any error messages.

In most cases this results from the wrong assignment of resources by the system. For example, resources already in use are assigned rather than ones that are available.

1  From the Taskbar go to *Start*, *Settings*, *Control Panel* and double-click *System*.

2  On the *Device Manager* tab double-click *Multifunction adapter*. The *Eicon DIVA Mobile ISDN-V.34 combo card* is listed; a yellow exclamation mark indicates it is not correctly installed.

3  Click *Eicon DIVA Mobile ISDN-V.34 combo card* and select *Properties*. A dialog box appears that shows you a conflict of resources.

4  Modify the resources manually on the *Resources* tab.

As soon as the resource conflict is solved, the installation restarts automatically.

**Malfunctioning due to a covered resource conflict**

The DIVA Mobile hardware and software is installed, but after rebooting the PC the DIVA Mobile does not function.

This usually occurs when a malfunctioning driver uses resources without signaling the system.

To solve this problem modify the resources assigned to the DIVA Mobile.

1   From the Taskbar go to *Start*, *Settings*, *Control Panel* and double-click *System*.

2   On the *Device Manager* tab double-click *Multifunction adapter*.

3   Select the *Eicon DIVA Mobile ISDN-V.34 combo card* and click *Properties*.

4   Modify the resources manually on the *Resources* tab.

**Malfunctioning due to "unfavorable" resource assignment**

The DIVA Mobile hardware and software is installed, but after rebooting the PC or removing and reinserting DIVA Mobile, the system freezes for about 1 to 2 minutes (then functions normally).

The reason of this error is still under investigation. You can solve it by modifying the DIVA Mobile resources which have been assigned to the COM Port.

1   From the Taskbar go to *Start*, *Settings*, *Control Panel* and double-click *System*.

2   On the *Device Manager* tab double-click *Multifunction adapter*.

3   Select *Eicon DIVA Mobile ISDN-V.34 combo card* and click *Properties*.

4   Modify the I/O range manually on the *Resources* tab.

**System crash on 32-Bit-CardBus Controller PCs (from Windows 95 OSR2)**

DIVA Mobile has been successfully installed and detected, but after the first installation step (installation of the multifunction adapter) the PC freezes or shows a black or blue screen.

This problem is usually caused by a combination of two factors: a shared interrupt and a PC hardware (BIOS) error. It may also occur if the Card and Socket Service drivers are old or not correct.

Two devices can share an interrupt only if there are no free interrupts available.

To solve the problem, deinstall all unused hardware components (e. g. an infrared port). Assign the DIVA Mobile an exclusive interrupt. Reinstall the DIVA Mobile.

The original error can only be solved by the supplier/producer of your notebook (BIOS Update, current drivers).

# Hot Swapping (Modem Removal) Problems

In general, you can remove and reinsert DIVA Mobile while the PC is on. Some applications, however, do not support "hot swapping"; problems may occur if you remove the DIVA Mobile while the PC is on.

*Note:* Before removing DIVA Mobile close all applications which are using the adapter.

In order to correctly remove DIVA Mobile during operation follow these steps:

1 Click the PC Card icon on the Taskbar next to the Windows 95 clock. The PC Card (PCMCIA) Properties dialog box opens; it displays a list of PCMCIA devices (in the Socket Status tab).

2 Select Eicon DIVA Mobile ISDN-V.34 combo card from the list of PCMCIA devices.

3 Click Stop. The following message will appear:
"You may safely remove this device".

4 Click OK. You can now remove the device.

If DIVA Mobile is not immediately detected after reinserting it into the PC Card slot, reboot your system.

# Troubleshooting

The DIVA for Windows 95 driver includes a debugging tool called DITRACE. Refer to the online help chapter *Debugging* for more information on DITRACE. The online help is accessed by clicking Start on the Taskbar, going to Programs/DIVA for Windows 95, and selecting DIVA for Windows 95 help.

# Commands, Codes, and Protocols

# AT Commands and Result Codes

*Note:* The AT commands for the V.34 modem are standard modem commands which are realised via the hardware of DIVA Mobile.

Factory default settings are stored in permanent memory. Italicized *n* or *x* denotes options to be supplied by user or software.

| Command | Function | Default |
|---|---|---|
| A | Go off-hook and attempt to answer a call. | — |
| B*n* | Modulation Standard for 0 - 1200 bps | B1 |
| D*n* | Dial telephone number | — |
| E*n* | Turn off command echo | E1 |
| H*n* | On/off-hook | — |
| I*n* | Identification commands | — |
| M*n* | Speaker control | M1 |
| N*n* | Automode detection off/on | N1 |
| O*n* | On-line and retrain control | — |
| P | Pulse dial | — |
| Q*n* | Result codes enable/disable | Q0 |
| S*n*=*x* | Set register *n* to decimal value *x* | — |
| S*n*? | Get decimal value in register *n* | — |
| T | Tone (DTMF) dial | — |
| V*n* | Result codes format: verbose/terse | V1 |
| W*n* | Extended result code format *n* | W0 |
| X*n* | Result code reporting options | X4 |
| Y*n* | Long space disconnect | Y0 |
| Z*n* | Recall stored profile *n* | — |
| &C*n* | Carrier detect control | &C1 |
| &D*n* | DTR options | &D2 |
| &F*n* | Return all settings to factory default *n* | — |
| &G*n* | Guard tone disable/enable | &G0 |
| &K*n* | Flow control settings | &K3 |
| &P0 | Set pps pulse dial with 39%/61% make/break | &P0 |
| &Q*n* | Connection mode | &Q5 |
| &R*n* | CTS control options | &R1 |

| Command | Function | Default |
| --- | --- | --- |
| &S*n* | DSR control options | &S0 |
| &T*n* | Diagnostic test control | &T5 |
| &V | Display current configurations | — |
| &W*n* | Save current profile in memory | — |
| &Y*n* | Recall stored profile on power up | &Y0 |
| &Z*n=x* | Store dial string *n* (to 34) to location *x* (0 - 3). | — |
| %E*n* | Control line quality monitor and auto retrain. | %E2 |
| %L | Return received line signal level. | — |
| %Q | Report the line signal quality. | — |
| \K*n* | Controls break handling. | \K5 |
| \N*n* | Mode selection. | \N3 |
| \V*n* | Connect message format control. | \V0 |
| +MS | Select modulation. | — |

## *Error Correction Commands*

Italicized n or x denotes options to be supplied by user or software.

| Command | Function | Default |
| --- | --- | --- |
| %C*n* | Enable/disable data compression. | %C3 |
| \A*n* | Set maximum block size | \A1 |
| \B*n* | Send break of *n* x 100 ms. | — |
| )M*n* | Cellular power level | )M0 |
| *H*n* | MNP 10 link negotiation selection | H0 |
| -K*n* | Enable/disable MNP 10 extended services | -K0 |
| -Q*n* | Fall back to V.22 *bis*/V.22 | -Q1 |
| -SEC=*n* | Enable/Disable MNP10-EC | -SEC=0 |
| @M*n* | Select initial transmit level | @M0 |
| :E*n* | Enable/disable the compromise equalizer | :E1 |

# Caller ID Commands

Italicized *n* or *x* denotes options to be supplied by user or software.

| Command | Function | Default |
|---|---|---|
| #CID=*n* | Enable/disable Caller ID and format | #CID=*n* |

# S-Register Summary

Default values are in decimal format.

| Register | Function | Default |
|---|---|---|
| S0 | Rings to Auto-Answer | 0 |
| S1 | Ring Counter | 0 |
| S2 | Escape Character | 43 |
| S3 | Carriage Return Character | 13 |
| S4 | Line Feed Character | 10 |
| S5 | Backspace Character | 8 |
| S6 | Wait Time for Dial Tone | 2 |
| S7 | Wait Time for Carrier | 50 |
| S8 | Pause Time for Dial Delay Modifier | 2 |
| S9 | Carrier Detect Response Time | 6 |
| S10 | Carrier Loss Disconnect Time | 14 |
| S11 | DTMF Tone Duration | 95 |
| S12 | Escape Prompt Delay | 50 |
| S14 | General Bit Mapped Options Status | 138 (8Ah) |
| S16 | Test Mode Bit Mapped Options Status (&T) | 0 |
| S18 | Test Timer | 0 |
| S19 | AutoSync Options | 0 |
| S20 | AutoSync HDLC Address or BSC Sync Character | 0 |
| S21 | V.24/General Bit Mapped Options Status | 52 (34h) |
| S22 | Speaker/Results Bit Mapped Options Status | 117 (75h) |
| S23 | General Bit Mapped Options Status | 62 (36h) |
| S24 | Sleep Inactivity Timer | 10 |
| S25 | Delay to DTR Off | 5 |
| S26 | RTS-to-CTS Delay | 1 |

| Register | Function | Default |
|----------|----------|---------|
| S27 | General Bit Mapped Options Status | 73 (49h) |
| S28 | General Bit-Mapped Options Status | 0 |
| S30 | Disconnect Inactivity Timer | 0 |
| S31 | General Bit-Mapped Options Status | 194 |
| S32 | XON Character | 17 (11h) |
| S33 | XOFF Character | 19 (13h) |
| S36 | LAPM Failure Control | 7 |
| S37 | Line Connection Speed | 0 |
| S38 | Delay Before Forced Hangup | 20 |
| S39 | Flow Control Bit Mapped Options Status | 3 |
| S40 | General Bit-Mapped Options Status | 104 (68h) |
| S41 | General Bit-Mapped Options Status | 195 |
| S46 | Data Compression Control | 138 |
| S48 | V.42 Negotiation Control | 7 |
| S82 | LAPM Break Control | 128(40h) |
| S86 | Call Failure Reason Code | - |
| S91 | PSTN Transmit Attenuation Level | 10 |
| S92 | Fax Transmit Attenuation Level | 10 |
| S95 | Result Code Messages Control | 0 |
| S201 | Cellular Transmit Level | 58 |

## Result Codes

| Code | Long Form | Meaning |
|------|-----------|---------|
| 0 | OK | Command executed OK |
| 1 | CONNECT | Connection at 0 to 300 bps |
| 2 | RING | Ringing detected |
| 3 | NO CARRIER | Carrier lost or not detected |
| 4 | ERROR | Improper command or checksum |
| 5 | CONNECT 1200 | Connection at 1200 bps |
| 6 | NO DIALTONE | No dial tone detected |
| 7 | BUSY | Busy signal detected |
| 8 | NO ANSWER | Period of silence not detected |

| Code | Long Form | Meaning |
|---|---|---|
| 9 | CONNECT 0600 | Connection at 600 bps |
| 10 | CONNECT 2400 | Connection at 2400 bps |
| 11 | CONNECT 4800 | Connection at 4800 bps |
| 12 | CONNECT 9600 | Connection at 9600 bps |
| 13 | CONNECT 7200 | Connection at 7200 bps |
| 14 | CONNECT 12000 | Connection at 12,000 bps |
| 15 | CONNECT 14400 | Connection at 14,400 bps |
| 16 | CONNECT 19200 | Connection at 19,200 bps |
| 17 | CONNECT 38400 | Connection at 38,400 bps |
| 18 | CONNECT 57600 | Connection at 57,600 bps |
| 19 | CONNECT 115200 | Connection at 115,200 bps |
| 33 | FAX | Fax connection established |
| 35 | DATA | Data connection established in fax mode |
| 40 | CARRIER 300 | 0-300 bps data rate detected |
| 46 | CARRIER 1200 | 1200 bps data rate detected |
| 47 | CARRIER 2400 | 2400 bps data rate detected |
| 48 | CARRIER 4800 | 4800 bps data rate detected |
| 49 | CARRIER 7200 | 7200 bps data rate detected |
| 50 | CARRIER 9600 | 9600 bps data rate detected |
| 51 | CARRIER 12000 | 12,000 bps data rate detected |
| 52 | CARRIER 14400 | 14,400 bps data rate detected |
| 53 | CARRIER 16800 | 16,800 bps data rate detected |
| 54 | CARRIER 19200 | 19,200 bps data rate detected |
| 55 | CARRIER 21600 | 21,600 bps data rate detected |
| 56 | CARRIER 24000 | 24,000 bps data rate detected |
| 57 | CARRIER 26400 | 26,400 bps data rate detected |
| 58 | CARRIER 28800 | 28,000 bps data rate detected |
| 59 | CONNECT 16800 | Connection at 16,800 bps |
| 61 | CONNECT 21600 | Connection at 21,600 bps |
| 62 | CONNECT 24000 | Connection at 24,000 bps |
| 63 | CONNECT 26400 | Connection at 26,400 bps |
| 64 | CONNECT 28800 | Connection at 28,800 bps |
| 66 | COMPRESSION: CLASS 5 | Connection using MNP Class 5 compression |

| Code | Long Form | Meaning |
|------|-----------|---------|
| 67 | COMPRESSION: V.42 *bis* | Connection using V.42 *bis* compression |
| 69 | COMPRESSION: NONE | Connection without compression |
| 76 | PROTOCOL: NONE | Connection without error correction |
| 77 | PROTOCOL: LAPM | Connection in V.42 LAPM error correction mode |
| 80 | PROTOCOL: ALT | Connection in MNP error correction mode |
| 81 | PROTOCOL: ALT-CELLULAR | Connection in MNP 10 error correction mode with power level adjustment enabled |
| 102 | DIGITAL LINE | Over-current condition during attempted call or answer. Modem aborted call and is in "safe" state. |

# ISDN Protocols

| Region | Protocol |
|---|---|
| Australia | national |
| Belgium | DSS1 and national |
| Europe | DSS1 |
| France | DSS1 and national |
| Germany | DSS1 and 1TR6 (1TR6 only behind a PBX) |
| Japan | national |
| North America | national NI1 and AT&T 5ESS |
| Sweden | national |

# Technical and Regulatory Information

# Technical Specifications

## Technical Data

- UART Rates: 300 to 115,200 bps
- Signal Output: -10±1 dBm
- Receiver Range: -10 dBm to -43 dBm
- PCMCIA Rel. 2.1 Type II (68 Pin)
- Non-volatile memory for four 35-digit phone numbers
- Digital line/PBX over-voltage protection

## External Interface

- ISDN RJ 45 cable
- ISDN dongle for connecting the RJ 45 cable to the DIVA Mobile
- Modem RJ 11 cable

## ISDN Performance

- ISDN Basic Rate Interface (up to 2 bearer channels @ 64 kbps each and one data channel @ 16 kbps each)

## V.34 Modem Data Performance

- Asynchronous, full-duplex
- Hayes-compatible AT command set with EIA-578 fax extensions
- Automatic dialing and answering
- Serial DTE-to-modem port rates up to 250,000 bps when utilizing Ultraport$^{TM}$
- Automatic rate translation
- Full-duplex asynchronous modem operating modes: CCITT V.34, V.32 bis, V.32, V.22 bis, V.22, V.23, V.21, Bell 212A, 103J, and Rockwell V.FC, supporting transmission speeds from 300 to 33,600 bps

## V.34 Modem Fax Performance

- Class 1, Group 3, half-duplex synchronous fax modes: CCITT V.17, V.29, V.27*ter*, and V.21, supporting transmission speeds from 300 to 14,400 bps
- Fax classifications EIA 578, Class 1

## V.34 Modem Voice Performance

- Caller ID
- Voice answering machine
- Play or record messages
  Remote message retrieval
- Multiple voice mailbox capability

## Special Features

- MNP 2 to 4 error correction
- CCITT· V.42· LAP-M· error correction
- MNP 5 data compression
- CCITT V.42 bis· data compression

## Typical Power Requirements

- ISDN with S/T interface: 181 mA @ +5 V
- Modem: 196 mA @ +5 V
- Modem over ISDN: 275 mA @ +5 V
- Auto sleep mode: 48.2 mA @ +5 V

## Environmental Requirements

- Operating temperature: 15°C to 55°C
- Operating humidity: 10 to 85% (non-condensing)
- Barometric operating pressure: 86 to 106 kPascals

# International Regulatory Information

## *Regulatory Information for the USA*
## *FCC Warning*

FC

## *Declaration of Conformity*

We:

Eicon Technology Inc.
2155 Chenault Drive
Suite 503
Carrollton, Texas
USA  75006
1-800-80-EICON
(972) 417-5515
Fax: (972) 417-5610

Declare under our sole legal responsibility that the product listed below to which this declaration relates, are in conformity with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2)  this device must accept any interference received, including interference that may cause undesired operation.

### FCC Part 15 Notice

The Eicon Technology DIVA Mobile PC Card is classified by the Federal Communications Commission (FCC) as Class B computing device. However, the inclusion of certain options changes the rating of some configurations to Class A. To determine which classification applies to your equipment, examine all FCC registration labels located on the underside of your equipment. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A computing device. If all labels carry the Class B rating, your system is considered a Class B computing device.

#### Class B

This equipment generates and uses radio-frequency energy and, if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a

particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient the receiving antenna
• Relocate the computer with respect to the receiver
• Move the computer away from the receiver
• Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. Any changes made by the user not approved by Eicon Technology can void the user's authority to operate the equipment. The user may find the following booklet prepared by the Federal Communications Commission helpful: How to Identify and Resolve Radio-TV Interference Problems, available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

## FCC Part 68 Notice Modem Requirements

This equipment operates in compliance with Part 68 of the FCC Rules. In accordance with this regulation, the following requirements should be observed:

**Type of Service.** Your Eicon Technology DIVA Mobile PC Card is designed to be used on standard device telephone lines. The modem connects to the telephone line by means of a standard jack called the USOC RJ-11C. Connection to a telephone-company-provided coin service (central-office-implemented systems) is prohibited. Connection to party-line service is subject to state tariffs.

**Telephone Company Procedures.** The goal of the telephone company is to provide you with the best service it can. To this end, the company may need to occasionally make changes in its equipment, operations, or procedures. If these changes might affect your service or the operation of your equipment, the telephone company will give you notice, in writing, to allow you to make any changes necessary to maintain uninterrupted service.

If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, the telephone company will provide this information. In certain circumstances, the telephone company may request information concerning the equipment you have connected to your telephone line. If they do, provide the FCC registration number and the ringer equivalence number (REN) of the equipment connected to your line; this information is listed on the equipment label. The sum of all the REN's on your telephone line should be less than five to ensure proper service from the telephone company.

### ISDN Interface

Facility Interface code: 02IS5
Digital Reg.code: XD
Service order code: 6.0F

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone facsimile machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

To program this information into your facsimile, refer to the instructions in your facsimile software manual.

**If Problems Arise**

If your telephone equipment is not operating properly, immediately remove it from the telephone line, as it may harm the telephone network. If the telephone company notes a problem, it may temporarily discontinue service. When practical, it will notify you in advance of this disconnection. If advance notice is not feasible, you will be notified as soon as possible. When you are notified, you will be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC.

If repairs are needed on your DIVA Mobile PC Card they should be performed by Eicon Technology. For information, contact Eicon Technology at the address or phone number listed for the Customer Service Hotline listed in the Warranty section of this manual.

**Installation**

The Eicon Technology products provide all the connections necessary for proper operation. Connection to the telephone network should be made with standard RJ-11C modular cords that connect to the jacks or the product. Please see the instructions in the installation section for your system.

## Regulatory Information for Canada

**NOTICE:** The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user disconnect the equipment.

For their own protection, users should ensure that any electrical ground connections of the power utility, telephone lines and internal metallic water pipe system are connected together. This precaution is particularly important in rural areas.

**CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Réglement sur le brouillage radioélectrique édicté par le ministére des Communications du Canada.

**Canadian Modem Requirements**

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request that the user disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas **Caution**: Users should not attempt to make connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

**NOTICE:** The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.

The REN for the Diva Mobile PC Card is 0.4

The authorized maintenance facility in Canada is:

Eicon Technology Corporation
9800 Cavendish
Montreal, Quebec
Canada H4M 2V9

## Regulatory Information for Europe

This equipment displays the CE 168✗ mark to show that it has been tested and found to fully comply with the Terminal Equipment, EMC and Low Voltage Directives (91/263/EEC, 89/336/EEC and 72/23/EEC, as amended by Directive 93/68/EEC).

### Notice regarding the use of the analog modem in the Federal Republic of Germany

The analog modem has been approved by the responsible agency of the Federal Republic of Germany, BAPT, as <u>only terminal equipment</u>. Thus, it may be used as the only analog terminal equipment at an analog circuit switched connection. The connection of the analog modem of the DIVA Mobile PC Card is only allowed via the F coded socket of the telephone socket, so you have to unplug your telephone in order to plug the modem teleadapter in. If you use the N coded socket for your modem, the functionality of your telephone may not be guaranteed.

# 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.

Products requiring Limited Warranty service during the warranty period should be delivered to Eicon Technology with proof of purchase. If the delivery is by mail, you agree to insure the Product or assume the risk of loss or damage in transit. You also agree to prepay shipping charges to Eicon Technology and to use the original shipping container or equivalent.

EICON TECHNOLOGY HEREBY DISCLAIMS ALL OTHER EXPRESSED AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING, BUT NOT LIMITED TO, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow the exclusion of implied warranties, so the above limitations may not apply to you.

IN NO EVENT WILL EICON TECHNOLOGY BE LIABLE IN ANY WAY TO THE USER FOR DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, SUCH PRODUCT. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages for consumer products, so the above limitations or exclusions may not apply to you.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM ONE JURISDICTION TO ANOTHER.

This Limited Warranty applies to hardware products only.

# Product Comment Form

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

Name

Title

Company

Address

## DIVA Mobile PC Card

| | | | |
|---|---|---|---|
| **Packaging** | *Poor* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Excellent* |
| **Configuration** | *Difficult* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Easy* |
| **Performance** | *Poor* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Excellent* |
| **Workmanship** | *Poor* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Excellent* |

## User's Guide

| | | | |
|---|---|---|---|
| **Accuracy** | *Low* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *High* |
| **Organization** | *Confusing* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Clear* |
| **Readability** | *Difficult* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Easy* |
| **Presentation** | *Poor* | ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ | *Excellent* |

**Please return this form to:** **Eicon Technology Corporation**
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