FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

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

A shielded transceiver cable is required to be used in order to ensure compliance with FCC Part 15, and it is the responsibility of the user to provide such cable.

Changes or modifications not expressly approved by the parties responsible for compliance could void the user's authority to operate the equipment.

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About this manual

This is an user's guide for your EPC-0100TB 10Mbps Ethernet PCMCIA Adapter. Please read it before you attempt to install the product. All information in this manual include the following topics:

* Product description, feature and specification.
* Hardware description, cable with connectors.
* Hardware installation procedure.
* Software installation procedure.

Chapter 1 Introduction

1.1 Product description

The EPC-0100TB is compliant with the PCMCIA TYPE II standard. Two types of media couplers are available for users to choose from. They are:

*An unshielded twisted-pair (UTP) cable with RJ-45 connector. Or
*A MAU with RJ-45 and BNC connectors (optional)

The card is switchless, software configurable, and provides full support for the PCMCIA card information structure (CIS).

An enabler program can successfully drive the EPC-0100TB.

1.2 Features

* Complies with IEEE802.3.
* Fits into TYPE II PCMCIA slot.
* PCMCIA standard 68-pin connector for attachment to PC and 15-pin flat connector to media coupler.
* 10 Mbps transfer rate at transmission media.
* Supports coaxial (BNC) or 10BASE-T UTP cable.
* Switchless design, hardware settings are software configurable.
* Minimal power consumption.
* No external power supply required.
* Extensive driver support including Novell NetWare 3.X, 4.X ODI Driver, NDIS Driver and Packet Driver.
* NE-2000 driver compatible

1.3 Specifications

Version:	EPC-0100TB (V2)
Connector Supported:	UTP RJ45, BNC RG58
Standard:	IEEE802.3 10Base-T, 10Base-2
Bus:	16-bit interface and 16KB network data packet buffer
IRQ:	3, 4, 5, 9, 10, 12, and 15
I/O Address:	300, 320, 340, 360
Dimension:	850 x 55 x 5 mm
Temperature:	0 °C to 55 °C
Humidity:	10% to 90% (Non-condensing)

1.4 Quick installation

This section outline the steps needed to install the EPC-0100TB, install the software, and connect the card to the network.

1. Install the EPC-0100TB (Refer to chapter 2).
   Connect the media coupler to the EPC-0100TB, then insert the card into the PCMCIA slot.
2. Install the PCMCIA software (Refer to Chapter 3).
3. Install the network software (Refer to Chapter 3).

Chapter 2 Hardware Installation

2.1 Package contents

Please check whether the following items are in your package:
(a) EPC-0100TB 10Mbps Ethernet PCMCIA Adapter.
(b) Media coupler (An UTP cable with RJ-45 connector or a MAU with RJ-45 and BNC connectors).
(c) Driver diskette.
(d) Installation manual.
(e) T-Connector(Optional, for Model with MAU cable)

2.2 Hardware description

The EPC-0100TB's main PCB board is encased in a stainless compact frame that is easily transportable. It is a 68-pin connector and a 15-pin flat connector for attaching to the PC and media coupler, respectively.

2.2.1 Media coupler

A media coupler with a RJ-45 connector or a MAU with both RJ-45 and BNC connectors is available for attaching the card to the Ethernet network and the other side is a 15 pin flat connector for connecting to the PC card.

2.2.2 LED indicators

If the MAU with RJ-45 and BNC connectors is used then the LEDs shown on the cover of the MAU will be:

(1) Activity LED:
It can monitor signals transmitted to the network. Its color is green. The green LED labeled Activity lights up to indicate that the EPC-0100TB is transmitting signals to the network. This LED is normally off. It will become steady ON when the card transmits signals to the network.

(2) Link LED:
It can monitor link status of card's twisted-pair connection. Its color is green. The EPC-0100TB supports the link integrity test function. This function is enabled automatically when the unit is configured for twisted-pair cabling. The green link LED labeled LINK lights up to indicate that a valid 10BASE-T link is established. It is on under normal operating condition. If the LED remains off after power is applied, check the RJ-45 port's cable connection.

2.3 Installing the EPC-0100TB

The following is the procedure to install the EPC-0100TB:

1. Turn off the host computer.
2. With the 68-pin connector on the base unit facing the PCMCIA slot, slide the base unit all the way into the PCMCIA slot.
3. Plug the 15-pin connector of the cable into the PC card.
4. Connect the RJ-45 media coupler to the Ethernet network equipment, For example, a 10BASE-T hub If your network uses the unshielded twisted-pair (UTP) system or connect the BNC media coupler via a T-connector (optional). If there is any open end on the T-connector, terminate it with a 50 -ohm terminator.
5. Power on the computer.

Chapter 3 Software Installation

3.1 Introduction

The EPC-0100TB is a feature-packed credit card-sized adapter for PCMCIA-compliant personal computers. It plugs into a TYPE II PCMCIA slot, providing a 16-bit bus interface and 16KB network data packet buffer. Two media couplers are available for users to choose from. One has a single connector for unshielded twisted-pair connection and the other has 10BASE-T and BNC connectors. The card is switchless, software configurable, and provides full support for the PCMCIA Card Information Structure (CIS).

A Card Service Client Driver program that can recognize previously installed Card and Socket Services. You will be able to use the EPC-0100TB by running the enabler program. This makes it highly compatible with most computer systems.

3.1.1 System Requirements

To use your PCMCIA card, it is necessary that you have a computer with a PCMCIA Type II slot. You must also be running DOS Version 5.0 or higher. The supported PCMCIA environments for this adapter are as follows:

- ◆PCMCIA Card Services Version 2.0
- ◆PCMCIA Socket Services Version 1.01
- ◆Client Driver (Enabler)

3.1.2 Default and Setup Options

The EPC-0100TB option setting depends on which software is used to enable the adapter. The EPC-0100TB can be enabled by the ecardcs.exe, Card Services Client Driver.

When using ecardcs.exe Card Service Client Driver, only two option settings are available: Interrupt and Base I/O Port. The default settings are IRQ 5 and Base I/O Port 300. Other available settings are illustrated in the following table:

Option	Settings	Default
Interrupt (IRQ)	3, 4, **5**, 9, 10, 12, 15	IRQ 5
I/O Port	**300**, 320, 340, 360	I/O 300

Table 3-1.2.1 ***Client Driver Option Settings***

3.2 Installation

Before your computer system can recognize the EPC-0100TB, it is necessary to run some software to enable it. This section gives a brief overview of the installation process.

3.2.1 Installation Program

The EPC-0100TB comes with an installation program that allows you to automate the installation task. We recommend using the install.exe program to make installation as painless as possible. The install.exe program allows you to do auto configuration, where the program automatically selects the most suitable option settings, or do a custom configuration, where you individually select each option setting.

3.2.2 Quick Installation

1. Install your Card and Socket Services software to your computer. System with Card and Socket Services allow the EPC-0100TB to configure itself automatically by detecting available system resources and insert or remove the card while the system is on. We call this feature “hot swappable”, thus inserting or removing it while the host is on will not affect the system.

2. You can run the install.exe program found on your Installation Disk. The install program guides you through the installation process and help install the network drivers needed to run the card on your network operating system.

3. If you successfully run the install program you can go on to step 5. If you are unsuccessful then go on to next step.

4. Use the Card Service client driver, ecardcs.exe, found on your Installation Disk, to enable your card. You can install the client driver by typing ECARDCS at the DOS prompt or including it as a line on your CONFIG.SYS or AUTOEXEC.BAT file. When installing the client driver, it is important to note that the driver should be loaded after Card and Socket Services are loaded.

5. Turn your computer off and insert the EPC-0100TB into the slot. The card is keyed to go in one way only. Then attach the network cable to the PC card.

6. Turn your computer on and connect to your network. If you cannot connect to the network, refer to the README.TXT file in the Installation Disk.

3.3 Using the INSTALL Program

Before you can use your PCMCIA, you need to install and modify some files in your computer system. You can make these changes manually, or you can let the install.exe program make them. This chapter explains how you can use install program to install the enablers and all of the necessary files where the network operating system needs.

3.3.1 The INSTALL Program

To run the install program, type “install” <Enter> at the DOS prompt. You should see an opening screen that welcomes you to the program and asks if you wish to continue.

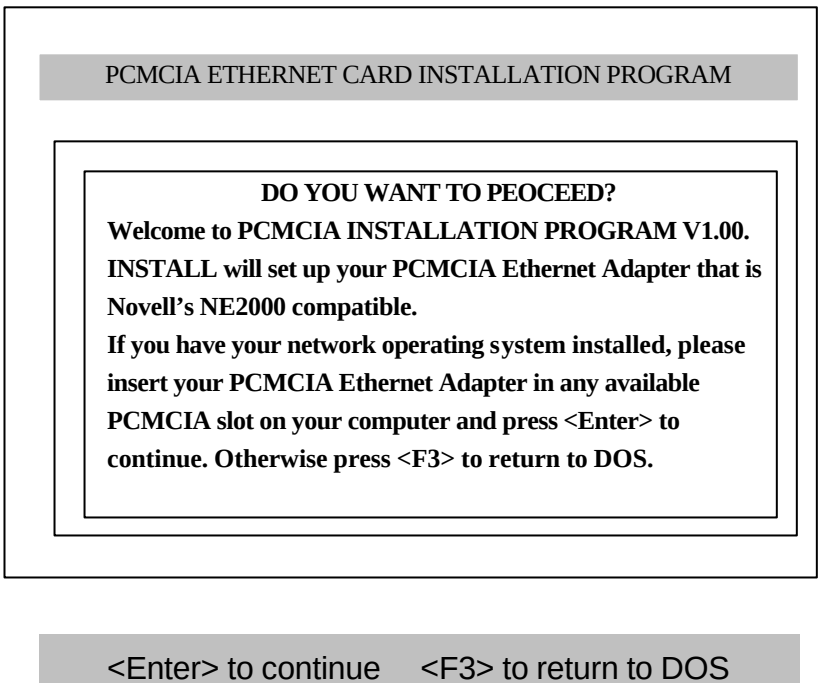

Figure 3.3.1-1 ***Opening Screen***

Press <Enter> to continue running the install program. The program will then ask for the directory name where it can install driver files. You can press <Enter> to accept the default directory name, or enter a new name and press <Enter> to continue with installation.

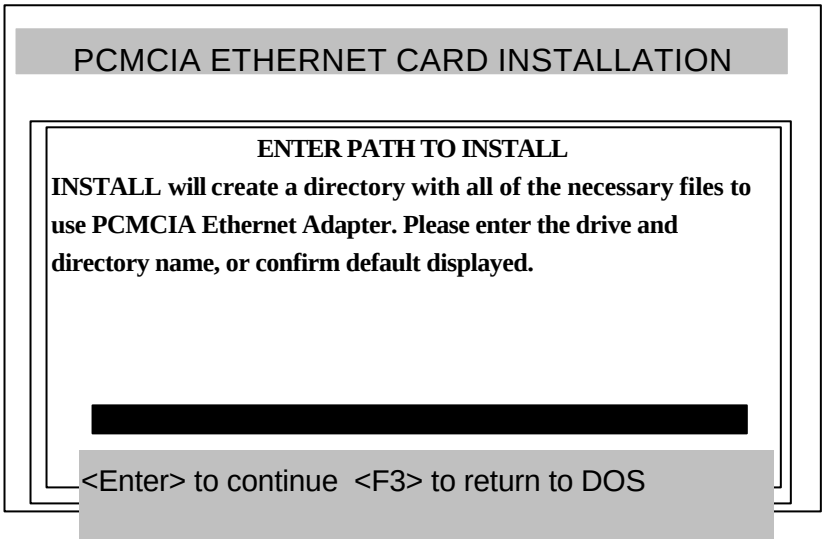

Figure 3.3.1-2 ***Install directory path***

The next screen asks if you want to do an Auto Configuration or a Custom Configuration. Select **Auto Configuration** if you want to do a quick installation and can use the default configuration settings. If you wish to individually set any of the settings, then select **Custom Configuration**.

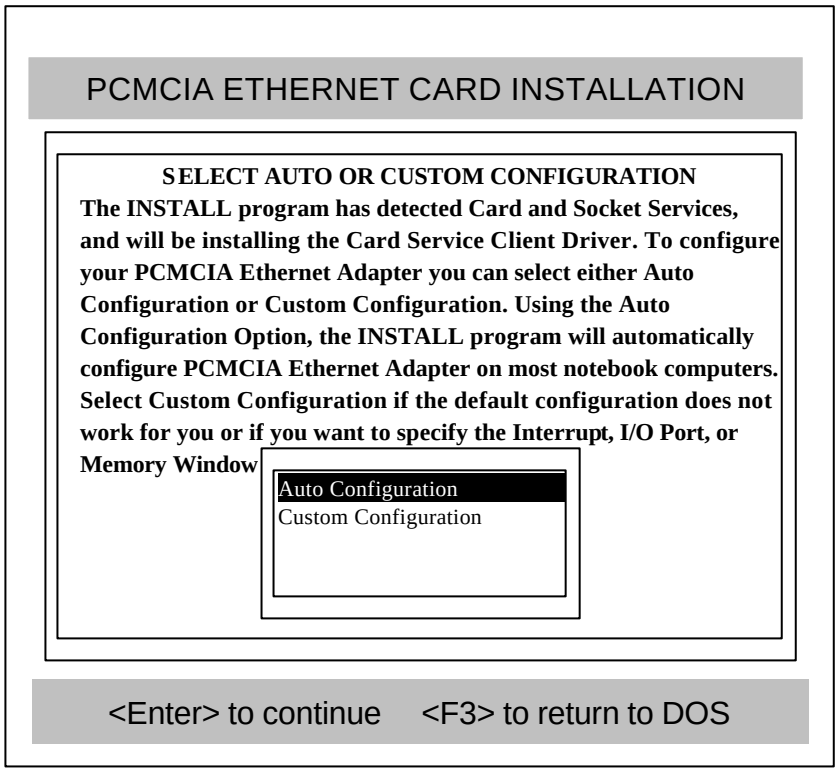

Figure 3.3.1-3 ***Select Auto or Custom Installation***

3.3.2 Auto Configuration

If you selected the Auto Configuration, the program will auto detect what the IRQ and I/O Port the EPC-0100TB can use. After detecting the configuration successfully, the program will show the following screen.

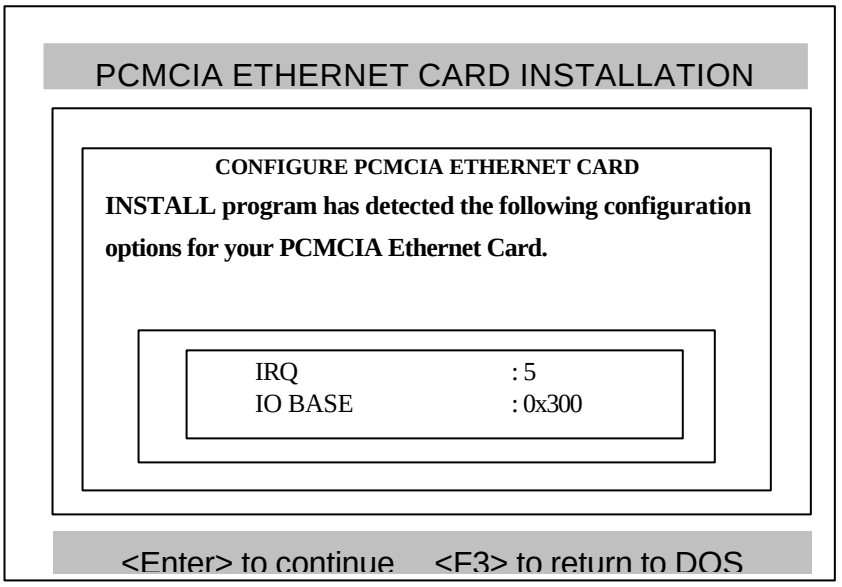

Figure 3.3.2-1 ***Configuration Information***

After running the configuration process, you will be prompted to select the type of network that you are installing drivers to. Select a Network Operating System from the list by moving the cursor keys and pressing <Enter> at your selection.

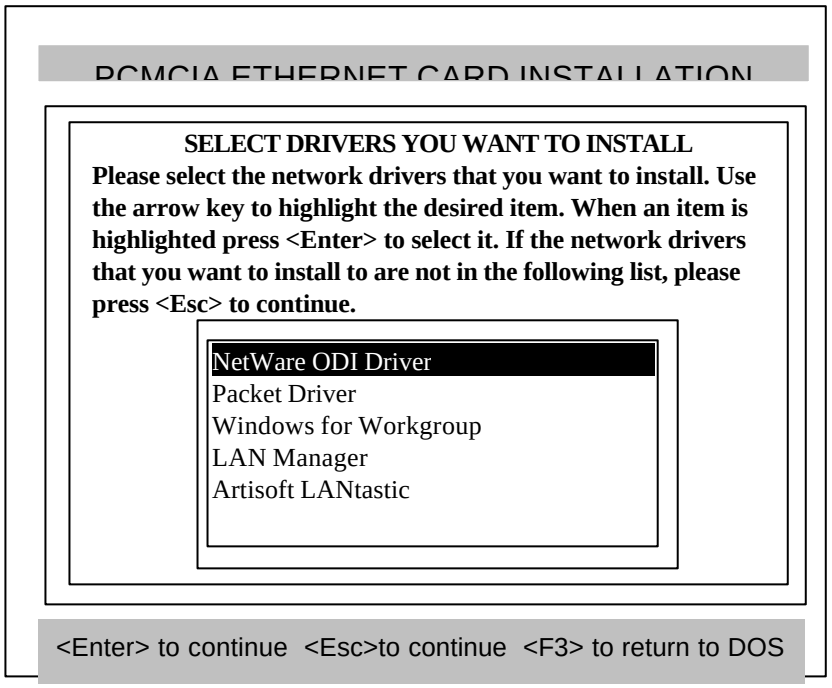

Figure 3.3.2-2 ***Network OS Selection***

After selected the Network Operating System, the install program will copy and /or modify some files on your boot drive. Your CONFIG.SYS file will also be modified to include the Client Driver (ECARDCS.EXE). You should see the following message for a successful installation.

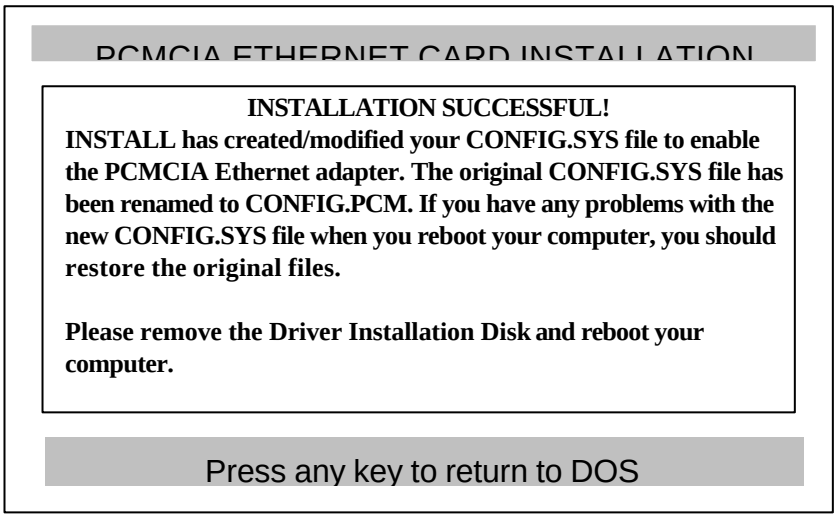

Figure 3.3.2-3 ***Successful Installation Screen***

[Note] INSTALL will modify your NET.CFG or PROTOCOL.INI files to make sure the IRQ and I/O port setting is the same as your selected in Figure 3.3.2-1 or Figure 3.3.3-1.

3.3.3 Custom Configuration

To do a custom installation, you need to select the Custom Configuration Menu after you begin the install program. After selecting the Custom Installation Menu, you will see a series of submenu prompting you to select an IRQ, I/O Port and Memory Window Address.

Interrupt Select

The first submenu to appear is the Interrupt submenu. To select an interrupt, move the cursor key to the interrupt of your choice and select it by pressing <Enter>. Interrupts available to EPC-0100TB are 3, 4, 5, 9, 10, 12 and 15.

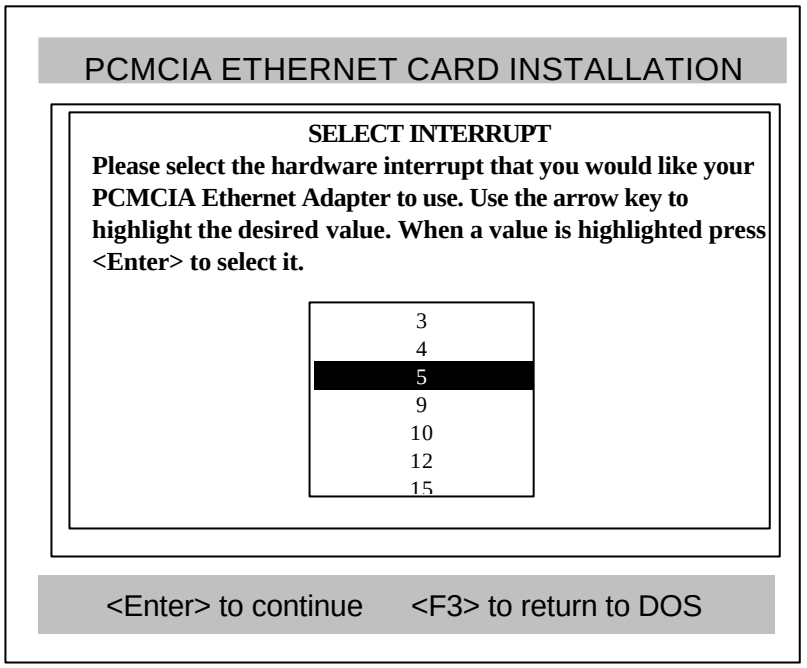

Figure 3.3.3-1 ***Select Interrupt***

I/O Port Select

To select an I/O Port, move the cursor key to your selected I/O address and press <Enter> to select. Available I/O Port are 300H, 320H, 340H and 360H.

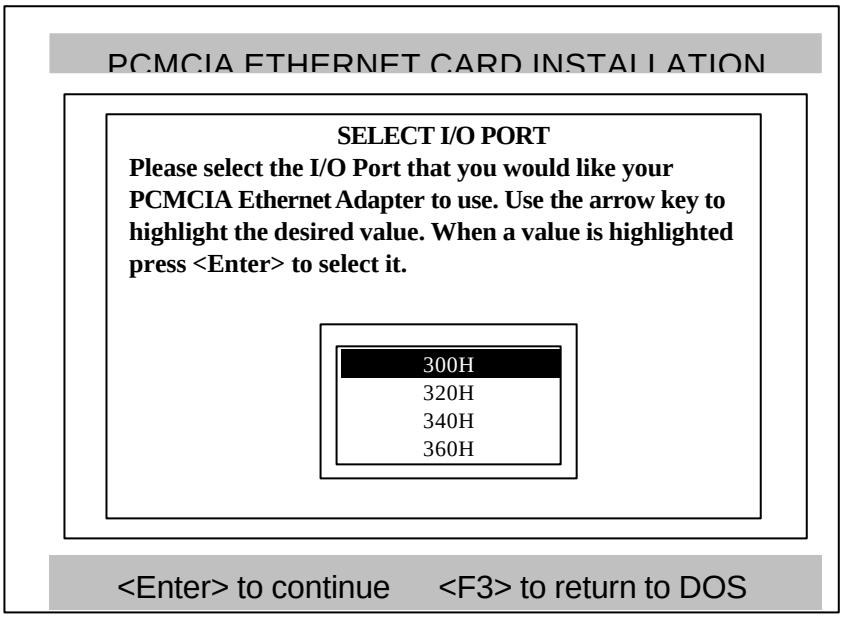

Figure 3.3.3-2 ***Select I/O Port***

After making your selection, you will see the NETWORK OS SELECTION screen shown in

Figure ***3.3.2-2 Network OS Selection***. You should follow the same directions until you see the **Figure 3.3.2-3** ***Successful Installation Screen***.

3.4 Manual Installation

In most case, the install program can make all of the changes to your system necessary for using the EPC-0100TB. However, in some case you may wish to make the change manually. This section explains the drivers and files modifications needed to enable the EPC-0100TB.

3.4.1 Enabler

A Card Services client driver can enable the EPC-0100TB.

Ecardcs.exe

The Card Service client driver, ecardcs.exe, communicates with your computer 's PCMCIA controller. The install program will automatically add a line in your CONFIG.SYS file using the following syntax and format:

DEVICE=[path]\ecardcs.exe [/IRQ=x] [IO=mmm] [/?]
Valid options:
x= Interrupt number (3, 4, **5**, 9, 10, 12, 15)
mmm= Hex I/O Port(**300**, 320, 340, 360)
Where:
/? = Display a list of options

If you load the ECARDCS.EXE without any switches, then the default settings are as follow:

INT:	5
PORT:	300

You can install the ECARDCS.EXE by typing "ECARDCS" at the DOS prompt or including it as a line on your CONFIG.SYS or AUTOEXEC.BAT file.

Examples of CONFIG.SYS

For those who installed EMM386.EXE in your config.sys, please exclude memory address D400-D7FF from your system. EPC-0100TB will use this space to read Ethernet ID and CIS from on-board flash memory.

[Example]

```
DEVICE=EMM386.EXE NOEMS X=D400-D7FF
                    Or
DEVICE=EMM386.EXE NOEMS X=D000-DFFF
```

For those who installed Card and Socket Services device driver in your config.sys, please run ECARDCS.EXE after those device drivers.

[Examples]

[Phoenix PCM+ V3.X]

```
DEVICE=C:\PCM3\CNFIGNAM.EXE /SETUP-DEFAULT
DEVICE=C:\PCM3\PCMSS.EXE
DEVICE=C:\PCM3\PCMCS.EXE
DEVICE=C:\PCM3\PCMRMAN.SYS
DEVICE=C:\PCM3\PCMSCD.EXE
DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300
```

[SystemSoft CardSoft V3.1]

```
DEVICE=C:\CARDSOFT\SS365SL.EXE
      /* Socket Service for Intel */
DEVICE=C:\CARDSOFT\CS.EXE
DEVICE=C:\CARDSOFT\CSALLOC.EXE
DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300
```

[Award CardWare V2.0]

```
DEVICE=C:\CARDWARE\SSPCIC.EXE


DEVICE=C:\CARDWARE\PCCS.EXE
DEVICE=C:\CARDWARE\PCRM.EXE /AUTODETECT
DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300
```

[AMI AMICARDZ]

```
DEVICE=C:\AMI\SSSL.SYS
DEVICE=C:\AMI\AMICS.SYS
```

DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300

[Databook CardTalk V3.02]
DEVICE=C:\CARDTALK\TMB250.SYS /io: 240
DEVICE=C:\CARDTALK\CTALKCS.EXE

DEVICE=C:\CARDTALK\CARDTALK.SYS /A /IOW=300-31F
/MEMW=D000-D7FF
DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300

[IBM ThinkPad Socket and Card Services V2.12]
DEVICE=C\EMM386.EXE NOEMS I=B000-B7FF X=C800-CFFF
X=D000-DFFF
DEVICE=C:\THINKPAD\IBMDSS01.SYS /D
DEVICE=C:\THINKPAD\IBMDOSCS.SYS
DEVICE=C:\THINKPAD\DICRMU01.SYS /MA=C800-DFFF
DEVICE=C:\THINKPAD\$ICPMDOS.SYS
DEVICE=C:\ECARDCS.EXE /IRQ=5 /IO=300

Appendix A Troubleshooting

These guidelines give you tips on how to deal with notebook computer that is unable to communicate with the network. If the problems remain unsolved, contact your dealer for assistance.

1. Unshielded twisted-pair connection results in card failure, LINK LED indicator is off. The possible reason for this symptom is invalid Twisted-pair link.

   Solving (1) Check the RJ-45 connection for loose cabling.
   (2) Check for wrong RJ-45 pin assignments.

2. Coaxial connection results in card failure, TX/RX LED indicator flashing on and off. The possible reason for this symptom is a bad coaxial cable link.
   Solving (1) Check the BNC connection for loose cabling.
   (2) Check that both ends of the network segment are properly terminated. Terminate open end of the network segment with a 50-ohm terminator.

3. The EPC-0100TB failure can't log into network. The possible reasons for this symptom may be a bad connection, or the EPC-0100TB is not properly installed in PCMCIA slot, or host PC's slot defective.
   Solving (1) Check cabling for loose connection or wrong pin assignment if you are using the RJ-45 connection.
   (2) Check if the card is properly inserted in the PCMCIA slot; it may have been accidentally loosened.
   (3) Install the EPC-0100TB in another PC, or install it on another slot. If problem is eliminated, then the original PC's slot is defective. Contact your PC vendor for assistance.

4. Card failure after configuration. The possible reason for this symptom is the configuration conflict.

   Solving (1) Check I/O and IRQ for possible setting conflicts. Make sure they do not conflict with other devices.