

EUT : SOHOwareTM PCMCIA

FCC ID : IOUND5100ES01

National Datacomm Corporation

USER'S MANUAL

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communication functions of the LAN/modem card will enable you to successfully access to the servers on LAN and hook up to the Internet, transmit E-Mail, send and receive information and communicate with other PCs, Bulletin Board Services (BBS) or on-line computer networks such as CompuServe and America On line.

1.2.1. Specifications

PC Card Interface

PCMCIA Type II.

Dimension

3.37" X 2.128" X 0.197" or
85.6 mm X 54 mm X 5 mm

Weight

35 g

Power

+5V $\pm 5\%$, @220mA

Cable and Connector

Single 15 pins detachable connector to PC card combine with two UTP cables terminated with a RJ-11 plug for Modem and a RJ-45 plug for LAN

Network

IEEE 802.3 10BaseT, 10Mbps.
NE2000 compatible.

Modem

V.34bis 33600bps, V.34 28800bps, V.32bis 14400bps.
V.42 bis & MNP 2-5 data compression and error correction.
AT command set.
ETC (Enhance Throughput Cellular) protocol for mobile cellular connections.

Fax

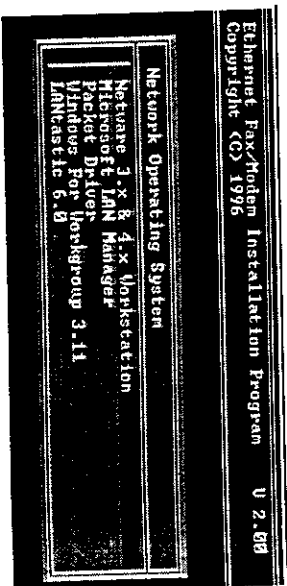
Group 3, V.17 14400bps, V.29 9600bps
Fax Service Class 1 and Class 2 compliant.

1.2.2. Features

1. Compatible with most notebook computers and card/socket services.
2. High degree reliability to get you far away from trouble.
3. Easy to install and play.
4. Support popular Network O.S., for examples, Lantastic, Netware, LAN Manager, Windows 3.x, Windows for Workgroup, Windows NT, and Windows 95.
5. Support popular Fax/Modem communication programs.
6. Card is hot swappable.
7. Multifunction can really work concurrently for LAN and Modem.
8. Multifunction CIS.
9. NE2000 compatible.

1.3. SYSTEM REQUIREMENTS

- . An IBM compatible PC or notebook computer with 386SX or faster processor
- . At least one type II PCMCIA socket
- . PCMCIA release 2.1 compliant Card Services and Socket Services
- . Drivers and utilities provided with this product
- . RJ11 jack for connecting to a phone receptacle
- . RJ45 jack for 10BaseT connectivity to your network resources



2.2.1. NOVELL NETWORK

INSTALLATION

There are two methods to install the multi-function card under Netware, menu installation and Novell Client installation (for NW 3.12 & 4.x).

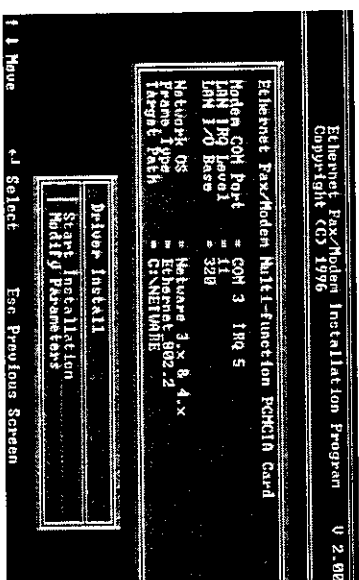
Menu Installation

1. Run INSTALL.EXE from driver diskette's root directory.
2. Select **Netware 3.x and 4.x Workstation** item from the installation menu.
3. If current settings are acceptable, select **Start Installation** and go to step 5. Otherwise, select **Modify Parameters** to make setting changes.
4. Move cursor to focus on the settings you want to change and press **Enter** to select an appropriate value. When the configurations are set completely, press **Enter** on the **OK** field to exit the screen.
5. Installation program starts copying related files from diskette to the destination directory and

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modifies AUTOEXEC.BAT and NET.CFG under user's agreement.

6. Now, the installation is completed. Reboot the computer to make Netware connections.



If you wanted to install the ODI driver manually, you may follow the following instructions:

1. Copy the files LM28ODI.COM and NET.CFG from the directory \NETWARE and the file CARDEN.EXE and LMVXD386 from the directory \ENABLER in the driver diskette
2. Using a text editor to edit the NET.CFG for setting the frame type. In the Netware server, the frame type default is 802.3 for Netware 3.11 and 802.2 for Netware 3.12 and 4.x. The frame type set in NET.CFG must match frame type set in Netware server or the client could not attach to the server.
3. Follow Novell's instructions on using ODI programs. You can substitute the LM28ODI.COM whenever a reference is made to the Hardware Specific Module.

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```

CARDEN /IOF=mm /IRQ=n /COM=n /MIR=n
SET NWLANGUAGE=ENGLISH
--Set NetWare 4.X to English language
LSL
--Link Support Layer Module
provided by Novell
LM28ODI
--Hardware Specific Module
IPXODI
--IPX Protocol Stack Module
provided by Novell
VLM
--DOS Support Module
provided by Novell
F:
--Change to connected device
LOGIN ADMIN --Login to file server as user
ADMIN

```

17. Run STARTNET to access the Novell network.

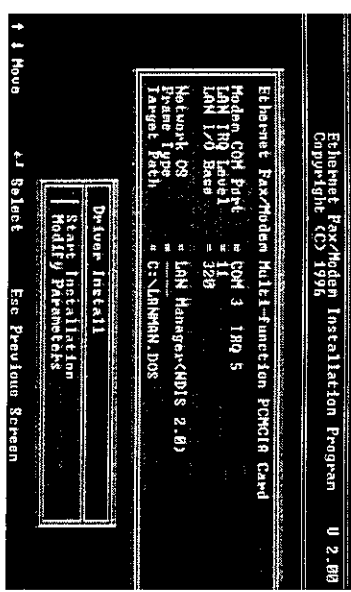
2.2.2. MS LAN Manager Installation

1. View the README.TXT on the installation diskette in the INDIS2 directory. Before installing the drivers, please ensure that the Microsoft LAN Manager has been installed in the target path. The installation program will check and modify the PROTOCOL.INI file for LAN Manager.
2. Run INSTALL.EXE from root directory of driver diskette.
3. Select Microsoft LAN Manager item on the menu screen.
4. If current settings are acceptable, select Start Installation and go to step 6. Otherwise, select Modify Parameters to make setting changed.
5. Move cursor to each field you want to make a change and press Enter to select a fit value. When the configuration are set completely, press Enter

on the OK field to exit the screen and go back to step 4.

6. Installation program starts to copy related files from driver diskette to the destination directory and modify CONFIG.SYS and PROTOCOL.INI under user's agreement.

7. Reboot the computer to load driver and start LAN Manager in batch.



Example of PROTOCOL.INI: used by LAN Manager

```

[PROTMAN]
DRIVERNAME = PROTMANS
DYNAMIC = YES
PRIORITY = NETBEUI

[NETBEUI XIF]
Drivername = netbeui$
SESSIONS = 6
NCBS = 12
BINDINGS = "1.M28NDS2_NIP"

```

14. Installation program starts to copy related files to the destination directory and modifies AUTOEXEC.BAT and under user's agreement.
15. Reboot the computer to have the driver take effect.

NDIS2 Driver for Workgroup

1. Run Windows for Workgroups and click **Network Setup** icon in **Network** group.
2. In **Network Settings** dialog box, click **Networks...** button to select the network operating system.
3. In **Networks** dialog box, check the radio button before **Install Microsoft Windows Network and No Additional Network**. Press **OK** to go back the **Network Settings** screen.
4. Click **Drivers...** button to select network driver.
5. In **Network Drivers** dialog box, press **Add Adapter...** button to enter **Add Network Adapter** dialog box. Select **Unlisted or Updated Network Adapter** and press **OK**.
6. Windows will prompt a **Install Driver** dialog box. In this time, put the driver diskette into floppy drive and press **OK**.
7. Select the **Real mode NDIS2** for... string and press **OK**.
8. Follow Windows instructions to complete the installation and exit Windows.
9. Run INSTALL.EXE from root directory of driver diskette.
10. Select **Windows for Workgroup** in **Network Operating System** screen.

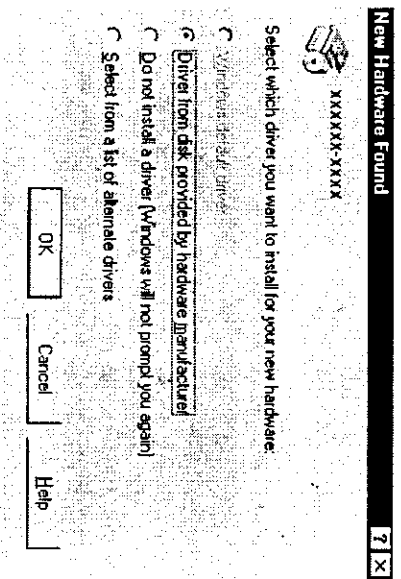
11. If current settings are acceptable, select **Start Installation** and go to step 13. Otherwise, select **Modify Parameters** to make settings changed.
12. Move cursor to setting you want to make a change and press **Enter** to select a fit value. When the configuration is set completely, press **Enter** on the **OK** field to exit the screen and go back to step 11.
13. Select **NDIS Server(LAN Manager...)** as the network server that you will attach to and press **Enter** key.
14. Installation program starts to copy related files to the destination directory and modifies AUTOEXEC.BAT and under user's agreement.
15. Reboot the computer to have the driver take effect.

ODI Driver for Workgroups

1. Run Windows for workgroups and click **Network Setup** icon in **Network** group.
2. In **Network Settings** dialog box, click **Networks...** button to select the network operating system.
3. In **Networks** dialog box, check the radio button before **Install Microsoft Windows Network and Others**. Select **Netware Shell, 3.X or 4.0** and above, and press **OK** to go back the **Network Settings** screen.
4. Click on **Drivers...** button to select network driver.
5. In **Network Drivers** dialog box, press **Add Adapter...** button to enter **Add Network Adapter** dialog box. Select **Unlisted or Updated Network Adapter** and press **OK**.

questions on this layer needs to be taken up with the computer's manufacturer.

2. Insert LAN/Modem Card into PCMCIA slot. The Win 95 will prompt New Hardware Found dialog box. In New Hardware Found dialog box, select Driver from disk provided by hardware manufacturer.



3. Input the full path, i.e. "A:\", and insert LAN/Modem card installation disk. The driver will install and it may ask for the installation CD/disks. After installation it will reboot, and the card will be fully functional.
4. For first time installation of LAN card, click Network icon in Control Panel of Main Group to add Protocols, Client and Service which you wanted.
5. Reboot the machine and the card will be fully functional.

2.2.7. Artisoft Lantastic 6.0 Installation

1. Install LANTASTIC 6.0 first.
2. Run install.exe from driver diskette's root directory.
3. Select LANTASTIC 6.0 in Network Operating System screen and enter Driver Install screen.
4. If current settings are acceptable, select Start Installation and go to step 6. Otherwise, select Modify Parameters to make settings changed.
5. Move cursor to focus on each field you want to make change and press Enter to select a fit value. Then press Enter on the OK field to go back the step 4.
6. Installation program starts copying related files from diskette to the destination directory and modifies CONFIG.SYS, PROTOCOL.INI, and STARTNET.BAT under user's agreement.
7. Installation is complete. Please reboot the computer to have the driver take effect.

LM28NDS2.NIF
DRIVERNAME - LM28NDS\$

This line must always be present

LOADADDRESS - value

where value is one of the following address:

0x300, 0x320, 0x340, 0x360.

The leading 0x for the hex notation is required.

To have Card Services select the address base from its pool of available address then use a value of 0.

INTERRUPT - value

where values is one of the following interrupts:

3, 4, 5, 7, 9, 10, 11, 12, 15.

To have Card Services select an available interrupt resource then place a value of 0 at this location.

3.2. Notes for Packet Driver

The following are examples of partial CONFIG.SYS file for loading System Soft's Card Services and packet driver:

Examples of partial CONFIG.SYS file:

```
device=c:\cardsoft\ss365sl.exe
device=c:\cardsoft\ss.exe
device=c:\cardsoft\csalloc.exe c:\cardsoft\csalloc.ini
device=c:\tcpip\carden.exe /iop=nmn /irq=n /com=n /mtr=n
device=c:\cardsoft\cardid.exe
device=c:\tcpip\ln28pd.com
```

3.3. Notes for Windows For Workgroup

After installation of the multi-function PCMCIA card drivers, the system will automatically update both CONFIG.SYS and AUTOEXEC.BAT for you so that the driver will be loaded upon system start up. When modifying the two files, the system will make a dual copy named CONFIG.ABO and AUTOEXEC.ABO in the system's directory. If the driver of card is not successfully loaded, replace the two *.ABO file for related file and try to start the system again.

The following are examples of partial CONFIG.SYS file and AUTOEXEC.BAT for loading System Soft's Card Services and drivers for Windows for Workgroup:

Examples of partial CONFIG.SYS file:

```
device=c:\cardsoft\ss365sl.exe
device=c:\cardsoft\ss.exe
device=c:\cardsoft\csalloc.exe c:\cardsoft\csalloc.ini
device=c:\win31\carden.exe /iop=nmn /irq=n /com=n
/mtr=n
device=c:\cardsoft\cardid.exe
device=c:\win31\lshlp.sys
```

Examples of partial AUTOEXEC.BAT file:
C:\WIN31\NFI\START

3. GENERAL INFORMATION

3.1. Notes for NDIS Driver

The following are examples of partial CONFIG.SYS file and AUTOEXEC.BAT for loading System Soft's Card Services and NDIS2 driver:

Examples of partial CONFIG.SYS file:

```
device=c:\cardsoft\ss365sl.exe
device=c:\cardsoft\vs.exe
device=c:\cardsoft\vsalloc.exe c:\cardsoft\vsalloc.ini \
device=c:\lanman\dos\drivers\ethernet\ln28\carden.exe
/iop=nmn /irq=n /com=n /init=n
device=c:\cardsoft\cardid.exe
device=c:\lanman\dos\drivers\protman.dos /i:c:\lanman.dos
device=c:\lanman.dos\drivers\ethernet\ln28\ln28nds.dos
```

Examples of partial AUTOEXEC.BAT file:

```
set path=c:\lanman.dos\nciprog;%path%
net start workstation
load netbeui
```

The Ethernet function configuration information for the DOS NDIS driver is contained in the PROTOCOL.INI file. To make allowances for passing the requested modem COM port(1,2,3,4) to the driver, there has been another field added. The section of the PROTOCOL.INI file that contains configuration information for this card must begin with **LM28NDS2_NIF1**. The valid entries in the file are listed below:

6. Windows will prompt a **Install Driver** dialog box. In this time, put the driver diskette into floppy drive and press **OK**.
7. Select the **Netware ODI Driver ...** string and press **OK**.
8. Follow Windows' instructions to complete the installation and exit Windows.
9. Run **INSTALL.EXE** from root directory of driver diskette.
10. Select **Windows for Workgroup** in Network Operating System screen.
11. If current settings are acceptable, select **Start Installation** and go to step 13. Otherwise, select **Modify Parameters** to make settings changed.
12. Move cursor to the setting you want to make a change and press **Enter** to select a fit value. When the configuration is set completely, press **Enter** on the **OK** field to exit the screen.
13. Select **Novell Netware Server** as the network server that you will attach to and press **Enter** key.
14. Installation program starts to copy related files to the destination directory and modifies **AUTOEXEC.BAT** and **NET.CFG** under user's agreement.
15. Reboot the computer to have the driver take effect.

2.2.5. Windows NT 3.51 NT 4.0 Installation

1. Install the PCMCIA support for your laptop from the Service Packs
- These must be verified to be working properly before continuing

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- Support for this level of driver is from the Laptop manufacture only
2. From the **Main** window, select **Control Panel**
 3. In the **Control Panel**, select **Network Icon**
 4. In the **Network Setup**, select **Add Adapter**
 - Windows NT will display a list of all available drivers.
 5. Select **OTHERS** for third-party adapters not included in the list. The program prompts for the directory containing the Ethernet drivers.
 6. Insert the driver diskette in Drive A, and then type the following A:\
 7. Windows NT will attempt to locate the **OEMSETUP.INF** file in the specified path. If it exists there, Windows NT will then copy the appropriate drivers to the Windows NT system.
 8. The drivers are now properly installed. The installation procedure will then proceed to the next steps. Please refer to your Windows NT installation guide for information on these steps.
 9. Windows NT will pop up one window to ask the values of some keywords. Such as **IO Port**, **IRQ Number**, **Memory Base**.
 10. After the initial installation, the drivers will be permanently installed to the Windows NT system. Subsequent accesses to the network driver list will include these drivers as options.

2.2.6. Windows 95 Installation

1. We assume that the PCMCIA Chipset drivers are loaded and functioning. The System Icon in the control panel can report on its functionality. Any

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LANABASE = 0

[LM28NDS2.NIF]

; protocol.ini session for multifunction
LAN/MODEM driver.

IOADDRESS = 0x320

INTERRUPT = 11

DRIVERNAME = LM28NDS\$

2.2.3. PACKET DRIVER Installation

1. Run INSTALL.EXE from root directory of driver diskette.
2. Select **Packet Driver** item on the menu screen.
3. If current settings are acceptable, select **Start Installation** and go to step 5. Otherwise, select **Modify Parameters** to make setting changed.
4. Move cursor to the field you want to make a change and press **Enter** to select a fit value. When the configuration are set completely, press **Enter** on the **OK** field to exit the screen and go back to step 3.
5. Installation program starts to copy related files from diskette to the destination directory and modifies AUTOEXEC.BAT under user's agreement.
6. Reboot the computer to load the driver.

2.2.4. Windows for Workgroups

Installation

NDIS3 Driver for Workgroup

1. Run Windows for Workgroups and click **Network Setup** icon in **Network group**.
2. In **Network Settings** dialog box, click **Networks...** button to select the network operating system.
3. In **Networks** dialog box, check the radio button before **Install Microsoft Windows Network** and **No Additional Network**. Press **OK** to go back the **Network Settings** screen.
4. Click **Drivers...** button to select network driver.
5. In **Network Drivers** dialog box, press **Add Adapter...** button to enter **Add Network Adapter** dialog box. Select **Unlisted or Updated Network Adapter** and press **OK**.
6. Windows will prompt a **Install Driver** dialog box. In this time, put the driver diskette into floppy drive and press **OK**.
7. Select the **Enhanced mode NDIS3 for...** string and press **OK**.
8. Follow Windows instructions to complete the installation and exit Windows.
9. Run INSTALL.EXE from root directory of driver diskette.
10. Select **Windows for Workgroup** in **Network Operating System** screen.
11. If current settings are acceptable, select **Start Installation** and go to step 13. Otherwise, select **Modify Parameters** to make settings changed.
12. Move cursor to the setting you want to make a change and press **Enter** to select a fit value. When the configuration is accepted, press **Enter** on the **OK** field to exit the screen and go back to step 11.
13. Select **NDIS Server(LAN Manager,...)** as the network server that you will attach to and press **Enter** key.

4.A typical ODI workstation startup batch file includes:

```
>CARDEN /IOP=nmn /IRQ=nmn /COM=n
/MIR=n
>LSL ;Link Support Layer Module
provided by Novell
>LM28ODI ;Hardware Specific Module
>IPXODI ;IPX Protocol Stack Module
provided by Novell
>NETx ;Shell Support Module provided by
Novell
>LOGIN
```

Novell Client Installation

1. Run the NetWare Client Install V1.21
 - Get the 4 Client disks from the network administrator, or
 - Run the \NWCLIENT\INSTALL.EXE in a previous installation
2. A message appears on the screen asking you whether or not you want the program to perform modifications on your AUTOEXEC.BAT and CONFIG.SYS files.
3. Answer Yes. The program then modifies your AUTOEXEC.BAT and CONFIG.SYS files accordingly and creates backup copies.
4. The following message appears:
 - Install support for MS Windows? (Y/N):
5. Answer accordingly and provide a path if necessary.
6. The program displays the following:

- Configure your workstation for backup by a NetWare server running software such as BACKUP? (Y/N): No
7. Answer accordingly and provide a path if necessary.
 8. Select a driver for your network board.
 9. From the driver list, select **Other Drivers**.
 10. Go to the Insert the Driver Disk dialog box and specify the path where the ODI driver and INS files reside. For example: C:\ODI.DOS.
 11. Press Enter and select the target ODI driver.
 12. Specify the driver's optional settings.
 13. Press F10 to save to new configuration.
 14. Highlight **Install** press here and press <Enter> to install.

The program copies the necessary files for NetWare Client. Continue the installation procedure to completion. Upon completion, a new NET.CFG file will be created in your DOS directory. Typically, this file contains the following lines:

```
Link Driver LM28ODI
FRAME Ethernet_802.3
#FRAME Ethernet_802.2
```

15. Copy the file CARDEN.EXE and LMVXD.386 from the directory \ENABLER in the driver diskette to Netware Client directory.
16. Using a text editor to edit the STARTNET.BAT for adding an running CARDEN command at the beginning of the file. An STARTNET.BAT for the ODI workstation performs as the following

.Driver software loaded on your PC
.Data and/or Fax communications software.

1.4. CONTENTS INCLUDED IN THE PACKAGE

.PCMCIA multifunction Ethernet/Fax/Modem Card
.Phone and Ethernet cord with RJ-11 and RJ-45 plug
.A 3-1/2" driver diskette
.User's Manual
.Fax/Modem application program
.RJ-45 connector for LAN
.RJ-11 connector for Fax/Modem

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2. INSTALLATION

2.1. INSTALL THE PCMCIA CARD

1. Insert the card into the computer's PCMCIA slot with the 68 pin connector facing the PCMCIA slot and the label facing up. Then slide the card into the slot.
2. Plug the 15 pin connector with both the RJ-45 network cable and RJ-11 telephone cable into the 15 pin socket of the PC card, now the hardware installation is completed. The PCMCIA Card is powered directly from the PC.
3. Connect to the network system (LAN) using the RJ-45 (8 pin) plug and the telephone system using the RJ-11 (6 pin) plug.

2.2. INSTALLING THE SOFTWARE

Plug the driver diskette into the floppy drive and set the current drive to the floppy drive. Then run **INSTALL** to install the drivers such as ODI or NDIS 2.x or Packet Drivers into the target disk.

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1. INTRODUCTION

1.1. ABOUT THIS MANUAL

This book will explain how to install and use your multi-function PCMCIA Ethernet/Fax/Modem card

1.2. ABOUT THIS PRODUCT

The Ethernet/Fax/Modem adapter is a multifunction communication device that lets you perform multiple communication tasks at the same time:

- .transmit and receive data up to 28,800/33,600 bps
- .send and receive FAXes from computers or FAX machines

- .connect to an Ethernet 10BaseT LAN

And it uses only one PCMCIA socket while it can provide the functions listed above.

This PC card is a credit-card-size Type II PCMCIA card that complies with the PCMCIA 2.1 and JEIDA 4.1 standards and works with computers that incorporate a compatible interface.

It is Bell, ITU-T (formerly CCITT) and Hayes AT commands compatible, allowing it to be used worldwide with today's popular communication software programs. You will be able to send and receive faxes with any Group 3 fax machine. Using standard phone lines and 10BaseT Ethernet, the data

FEDERAL COMMUNICATIONS COMMISSION

NOTE

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. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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 or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables (except TP data cable) must be used in order to comply with emission limits.

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

I

ATTN: Please be advised that this PCMCIA card,
is certified for use by the Federal Communications Commission
for the FCC ID: IOJUND5100ES01.
The user should disregard any information about MODEM function
in this user's manual