EUT:MODEM CARD

FCC ID:H52PT-3517

PURETEK INDUSTRIAL CO., LTD.

USER'S MANUAL

FEDERAL COMMUNICATIONS COMMISSION

This device complies 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.

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.

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

Pan-European Approval

The equipment has been approved in accordance with Council Decision 98/482/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

Warning Notice to Australian Users

All telecommunications devices are required to be labelled with a Telecommunications Compliance Label, ensuring their compliance with ACA Technical Standards. To ensure continuing compliance to ACA Technical Standards, please ensure the following AT commands are maintained:

ATB0	(ITU/CCITT operation)
AT&G	(No Guard tone)
AT&P1	(33/36 pulse dial make/break ratio)
ATS0=0	(No answer or answer greater than 1 ring) or ATS0>1
ATS6=N	(Blind dial delay - acceptable range is 2-5 seconds)
ATS11=95	(DTMF period between 70-

ATS11=95 (DTMF period between 70-255ms)

A total of 3 calls attempts are allowed to a telephone number, with a minimum period between calls of 2 seconds: if the call doesn't connect after 3 attempts, 30 minutes must expire before automatic redialling may be initiated.

Failure to set the modem (and any associated communications software) to the above setting may result in the modem being non-compliant with ACA Technical Standards. Under these circumstance a permit would no longer be valid, with the user subject to significant penalties under the Telecommunications Act.

The modem card must only be used in a data terminal equipment (DTE) e.g. computer, that has a screw down cover /lid. As unsafe voltages (TNV) exist on the modem card, disconnect the modem card from the telephone line while the cover (lid) of the DTE (computer) is removed.

Caution

1. While installing the internal modem card, please ensure there is at least 2mm of air gap between the PCB card and other components in the DTE.
2. For Safety reasons, only connect a Telephone marked with a Telecommunications Compliance Label to the phone port.

3. For Safety reasons, only connect equipment with a Telecommunications Compliance Label. This includes customer equipment previously labelled, permitted or certified.

4. To ensure continuing compliance with ACA Technical Standards, a Kitagawa SFC-4 ferrite or equivalant must be fitted to the cable of any exernal microphone and / or speaker connected to the external modem .

Notice for New Zealand Users

- The grant of a Telepermit for a device in no way indicates Telecom acceptance of responsibility for the correct operation of that device under all operating conditions. In particular the higher speeds at which this modem is capable of operating cannot always be expected on network designed to delivery voice telephony be customers. Failure to operate should not be reported as a fault to Telecom.
- In addition to satisfactory line conditions a modem can only work properly if:
  - It is compatible with the modem at the other end of the call and

- The application using the modem is compatible with the application at the other end of the call. E.g. accessing the Internet requires suitable software in addition to a modem.

- This equipment shall not be used in any manner which could constitute a nuisance to other Telecom customers.

- Some parameters required for compliance with Telecom's PTC Specifications are dependent on the equipment (PC) associated with this modem. The associated equipment shall be set to operate within the following limits for compliance with Telecom Specifications:

  - Not more than a total of 10 call attempts shall be made to the same number for any single manual call initiation within a 30 minutes period.

  - There shall be at least 60 seconds between call attempts to the same number.

  - Automatic calls to different numbers shall be not less than 5 seconds apart.

  Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal repair.

- The correct settings for use with this modem in New Zealand are as following:

AT80	(CCITT operation)
AT&G2	(1800 Hz guard tone)
AT&P1	(Decadic dialling make-break ratio=33% /67%)
ATS0=0	(not auto answer)
ATS11=65	(DTMF dialling on/off duration = 65 ms)
ATX2	(dial tone detect, but not (U.S.A) can progress detect)

- When used in the Auto Answer mode, the S0 register must be set with a value between 2 and 10. This ensures:
  - A person calling your modem will hear a short burst of ringing before the modem answers. This confirms that the call has been successfully switched through the network.
  - Caller identification information (which occurs between the first and second ring cadances) is not destroyed.
- This equipment does not fully meet Telecom's impedance requirements. Performance limitations may occur when used in conjunction with some parts of the network. Telecom will accept no responsibility should difficulties arise in such circumstances.
- It is recommended that this equipment be

disconnected from the Telecom line during electrical storms.

- When relocating the equipment, always disconnect the Telecom line connection before the power connection, and reconnect the power first.

Note Please note that fault callouts caused by any of the above causes may incur a charge from Telecom.

General Conditions

As required by PTC 100, please ensure that this office is advised of any changes to the specifications of these products which might affect compliance with the relevant PTC specifications. The grant of this Telepermit is specific to the above products with the marketing description as stated on the Telepermit label artwork. The Telepermit may not be assigned to other parties or other products without Telecom approval. A Telepermit artwork for each device is included from which you may prepare any number of Telepermit labels subject to the general instructions on formal size and colour quoted on the attached sheet. The Telepermit label must be displayed on the product at all times as proof to purchasers and service personal that the product is able to be legitimately connected to the Telecom network. The Telepermit label may also be shown on the packaging of the product and in the sales literature, as explained in PTC 100.

Canadian DOC Notice

The Canadian Department of Communication label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will work to the user satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunication company. The equipment must also be installed using an acceptable method of connection. In some cases, the company 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. Repair 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 to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections to the power utility, tel-

ephone lines, and internal metallic water pipe systems, if present, are connected together. This precaution may be 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.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

FCC Compliance

To comply with the applicable sections of FCC Rules and Regulations, Parts 68 and 15, please follow these instructions:

- Do not connect your modem to a party line or to a coin-operated telephone.
- If your modem should cause a problem on the telephone line, it should be disconnected from the line until it can be determined whether the modem or another device on the phone line caused the problem.

- Only the manufacturer can make repairs to the modem. Other repair methods will void your warranty.
- If you have an external modem, use a properly constructed shielded cable to connect it to your computer.
- If your telephone company asks for the following information, please make it available:
  - Modem manufacturer
  - Model of modem
  - FCC Registration Number
  - Ringer Equivalence Number (REN)

this information must be given to your telephone company.

The REN is used to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the total RENs, you should call your local telephone company to determine the maximum RENs for your calling area.

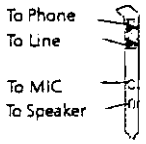
If the telephone company suspects a problem with your telephone line is related to an add-on electronic device, such as your modem, they have the right to temporarily suspend your service. It is your responsibility to remove from the telephone line any malfunctioning electronic communications equipment to avoid damage to the telephone system.

If your equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC. Your telephone company may make changes to its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an

Table of Contents

Introduction

The Voice/Fax/Data PCI Modem connects your computer to Internet, all kinds of BBS, and other fax modems. This manual describes the features, installation procedures and AT commands.



Phone : Phone jack
Line : Telephone line jack
MIC : Microphone jack
SPK : Speaker jack(for Stereo only) jack

Features

This modem supports the following communication standards. ITU-T is known as CCITT.

Data

- ITU-T V.90
- Rockwell K56flex
- ITU-T V.34, V.32bis, V.32, V.22bis, V.22
- Bell 103 & 212A
- V.42bis & MNP 5 (Data compression)
- V.42 & MNP2-4 (Error correction)
- V.80 (H.324 video conferencing interface)

Fax

- V.17 (14400bps FAX)
- V.29 (9600bps FAX)

- V.27ter (4800bps FAX)

Voice

- Voice/Audio mode
- Full-Duplex speakerphone
- ITU-T V.61 AudioSpan(Simultaneous Audio/Voice/Data;SAVD)

System Requirements

- Windows™ 95, Windows™ 98, Windows™ NT 4.0

Package Checklist

The package contains the following items:

- One fax modem
- One piece of phone cable
- One CD
- The fax modem user's manual

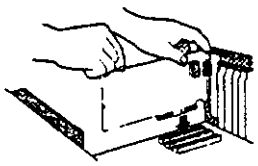
If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

Installations

This chapter describes how to install and power on you fax modem.

Hardware Installation

1. Make sure that your computer is switched off. Unplug the power cord from the wall socket. Also turn off all other peripherals you may have attached to your computer.
2. Select a free PCI slot. Remove the cover from the slot. Keep the screw. You will be using it in the next step.
3. Carefully slide the internal modem into the chosen slot. Press firmly on the top of the modem to seat it. Fasten the modem to your system with the screw you removed in the previous step. Replace the computer's cover.



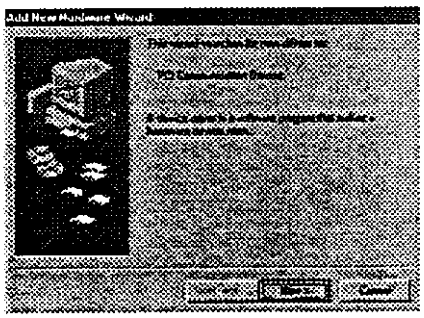
4. Plug one end of the phone cable into the Line jack on your fax modem. The other

end of the phone cable should be connected directly to the phone outlet.

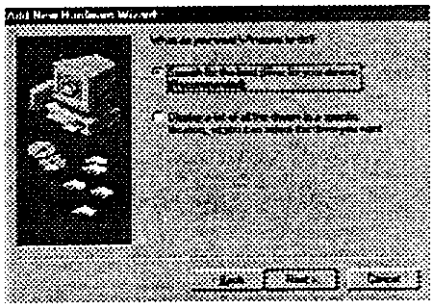
5. If you desire, you could connect your phone to the modem's Phone jack.
6. Turn on your computer.

Installation Procedures for Windows™ 98

1. Once you have completed the hardware installation, power on your computer. When running Win 98, your system will detect a new device and the following message will appear. Click " Next ".



2. Select the Search for the best driver for your device (Recommended) option, then click Next.



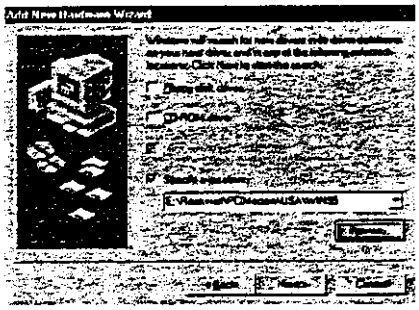
3. Place the CD containing driver for Win 9X into your CD ROM drive. Specify the location of the modem driver, e.g., E:\ROCKWELL\PCIMODEM \CE_COUNTRY\WIN95 (select the appropriate country). Click Next.

Note CE_COUNTRY stands for all the countries included in Pan-European Approval, i.e., Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Switzerland, Holland Sweden and UK .

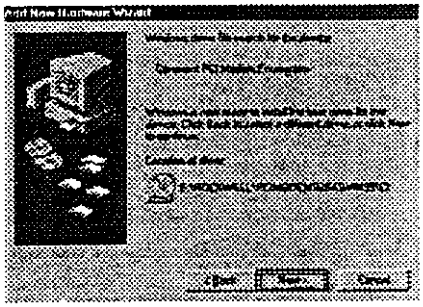
Note If rhe country you require is not listed, please select " OTHER " (i.e. E:\ ROCKWWLL \ PCIMODEM \ OTHER \ WIN95) .

Note Please note that the driver for Windows™ 95 and Windows™ 98 is contained under the \WIN95 directory.

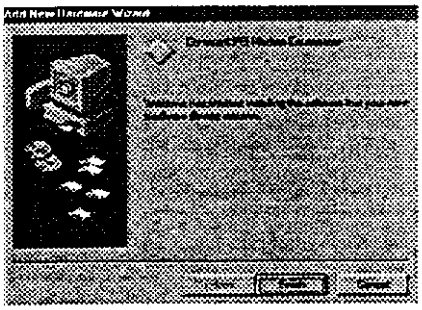
Note The driver for Windows NT™ 4.0 could be locared under rthe \ WINNT 40 directory .



4. Windows will locate your driver. Click Next.



5. The installation has been completed. Click Finish.



Installation Procedures for Windows NT4.0

1. Place the CD into your CD-ROM driver, Specify the location of the modem driver, e.g., E:\ROCKWELL \ PCIMODEM \ USA \ WINNT40 then run Setup.exe .
2. You should see a welcome screen . Click on the " Next " button . You should see " Conexant HCF 56K Speakerphone PCI Modem " in the display Windows . click on the " Next " button to install the driver .
3. You should see a few copy operations, followed by the next screen which says " the following drivers were installed.successfully ".
4. Then driver is now installed and running .

Communication Software Installation

To install the communication software, refer to the manual contained on the provided CD.

Note The configuration of your software must match the COM port and IRQ lineused by your fax modem . For more details, please refer to your software manual .

Commands

Most people use the communication software programs to tell modems what to do. Therefore, you may not use the commands in this chapter. However, if you prefer to communicate with your modem directly, you can type the commands described below.

This chapter describes how to work in the terminal mode.

Note The CD bundled in your fax modem package contains details on AT commands (file path: X:\ROCKWELL\PCIMODEM \AT_COMMAND.PDF).

Typing Commands

- Use the BACKSPACE key to delete typing errors.
- Every command (except **A/** and +++) must begin with the **AT** or **at** prefix and be entered by pressing the <Enter> key. For example, to execute the **V** command, you would type **ATV** and press the <Enter> key.
- When you see an ***n***, replace the ***n*** with one of the letter or numeric options listed for that command. For example, for the ***En*** command, you might type **ATE1**.

- All defaults are based on the **&F** Hardware Flow Control template load in **NVRAM** when the modem is shipped.

AT Commands

A/ Re-executes the last issued command. Used mainly to redial.

A Go off-hook and attempt to answer a call.

ATS? Read Selected S-Register.

This command reads and displays the selected S-Register. An S-Register can be selected by using the **ATS*n*** command.

D*n* Dial

0-9 DTMF digits 0 to 9

P Pulse (rotary) dial

T Tone dial

W Wait for second dial tone (X3 or higher); linked to S6 register.

^ Toggles calling tone enable/disable.

E*n* Command Echo

E0 Disable command echo

E1 Disable command echo

H*n* Disconnect (Hang-up)

H0 Hang up (goes on-hook)

H1 Go off-hook

I*n* Identification

I0 Report product code

I1 Report "OK"
I2 Report "OK" or "ERROR"
I3 Report firmware revision
I4 Report OEM defined identifier string
I6 Report modem data pump model and internal code revision

M*n* **Speaker Control**

M0 Speaker is always off
M1 Speaker ON until CONNECT
M2 Speaker is always on.
M3 Speaker off during dialing and receiving carrier and turn speaker on during answering.

O*n* **Return to On-Line Data Mode**
O0 Go on-line
O1 Go on-line and retrain

P **Set Pulse Dial**
(for phone line that does not support touch-tone dialing)

S*r*=*n* **Set Register *r* to *n***

S*n*? **Display contents of S-Register *n***

V*n* **Result Code Form**
V0 Numeric codes
V1 Verbal codes

Z*n* **Soft Reset and Restore Profile**
Z0 Restore stored profile 0 after warm reset.
Z1 Restore stored profile 1 after warm reset.

&C*n* **Control Carrier Detect (CD) Signal**

&C0 CD override

&C1 Normal CD operations

&D*n* **DTR Option**

&D0 Ignore an on-to-off transition of DTR.

&D1 Switch to on-line command mode without disconnection.

&D2 Normal DTR operations.

&D3 Modem re-initialized. &Y determines which profile is loaded.

&F*n* **Load Factory Configuration (Profile)**

&F0 Restore factory configuration 0

&F1 Restore factory configuration 1

&W*n* **Store Current Configuration**

&W0 Store the current configuration as profile 0.

&W1 Store the current configuration as profile 1.

+MS **Select Modulation**

This command selects the modulation, optionally enables or disables automode, and optionally specifies the lowest and highest connection rates using one to four subparameters.

The format is:

AT+MS=<carrier>,<automode>,<min_tx_rate>, <max_tx_rate>,<min_rx_rate>,<max_rx_rate>

Carrier	Modula-tion	Data Rates (bps)
V21	V.21	300
V22	V.22	1200
V22B	V.22bis	2400, 1200
V23C	V.23	1200
V32	V.32	9600, 4800
V32B	V.32bis	14400, 1200, 9600, 7200, 4800
V34	V.34	33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, 2400
V90	V.90	56000, 54667, 53333, 52000, 50667, 49333, 48000, 46667, 45333, 42667, 41333, 40000, 38667, 37333, 36000, 34667, 33333, 32000, 30667, 29333, 28000

K56	K56	56000, 54000, 52000, 50000, 48000, 46000, 44000, 42000, 40000, 38000, 36000,34000, 32000
B103	Bell 103	300
B212	Bell 212	1200

<automode>	Option Selected
0	Automode disabled
1	Automode enabled

Example : AT+MS=K56FLEX,1,300,56000,00

Where K56FLEX : select K56FLEX
1 : automode enable
300 : min_rate data speed 300 bps
56000 : max_rate data speed 56000 bps

If you want to select V.34 28800 bps only, please insure AT+MS=V34,0,28800,28800

S-Register Definitions

S0 Number of Rings to Auto-Answer
The number of rings the modem waits for before it auto answers.
Range: 0-255 (rings)
Default: 0

S6 Wait Time before Blind Dialing
The time to pause after off-hook before blind dialing.
Range: 2-255 (U.S.)
Default: 2 (Country dependent)

S7 Waiting Time before Carrier Detect
The time to wait for a carrier from the remote modem before hanging up.
Range: 1-255
Default: 50 (seconds)

S8 Pause Time For Dial Delay
The time to pause for the pause dial modifier, "Comma".
Range: 0-255
Default: 2 (seconds)

S9 Carrier Detect Response Time
The time a signal is detected an qualified as a carrier. This timing lets your modem ignore spurious signals that are the same frequency as the carrier. Higher S9 values reduce the chance of a carrier being detected.

Range: 1-255
Default: 6 (0.6 second)

S10 Lost Carrier To Hang Up Delay
The time the modem waits before hanging up for carrier loss.
Range: 1-255
Default: 14 (1.4 seconds)

S11 DTMF Tone Duration
The time for DTMF tone dialing and the time between the tone spacing.
Range: 50-255
Default: 95 (0.95 second, country dependent)