**High Performance
V.90/V.34+/V.42bis
56K BPS
PCI Internal
Voice/FAX/Data/
Speakerphone
Modem**

User's Manual

Contents

Part #MAN152 Rev. 1.0   V.90-CL

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Section One - Introduction

The MaxTech XPVS56P/C PCI Plug and Play Data, Fax, Voice Speakerphone Modem connects your computer to all popular high speed modems available today. The modem utilizes *V.90 (56Kbps)* technology to provide increased download speeds using regular telephone lines. The modem incorporates Plug and Play for ease of installation.

This manual describes the hardware installation procedures for your new modem. Additional information on AT commands and S-registers is provided so that your system can be customized for a particular operating environment.

*Note: V.90 is capable of downloading at 56Kbps. However, current FCC regulations limit its speeds to 53Kbps.

Section Two - Installation

This section will provide step by step instructions on how to install your new 56 Kbps Data, Fax, Voice, Speakerphone modem. Installation of this modem is a two-step process consisting of: 1) hardware installation and 2) communication software installation.

2.1   Unpacking Your Modem

Be certain that you have all the items listed below. This package contains:

- A modem
- A telephone cable
- User's manual
- Software for the modem
- Software user's manual

2.2   What You Need

You will need:

1. A phillips-head screw driver.
2. A computer running Microsoft Windows 95 or later.
3. An available PCI slot in your PC.

Proceed to Section 2.3 now if you have everything required.

2.3   Hardware Installation

Installation of this modem requires opening and manipulating your PC. Exercise caution at all times when working with AC powered and static-sensitive equipment. Turn off and unplug your PC before installation. Discharge any static electricity from your body by touching any grounded metal surface of the PC system, such as its power supply cover.

1. Turn off and unplug your computer from the AC outlet.

2. Remove your computer's cover (refer to your computer's owner's manual).

3. Select any available 32-bit PCI card slot and remove the slot cover (refer to Figure 2-3).

Figure 2-3 PCI Expansion Slots
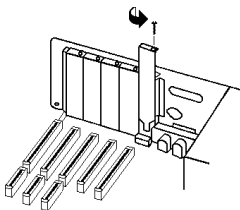
4. Carefully slide the PCI internal modem into the slot you have chosen, applying even pressure until the modem is completely seated in the slot.

5. Fasten the retaining bracket with the screw from the slot cover. Make sure the modem is properly aligned. Store the slot cover for future use.

6. Replace the computer cover and plug in your computer.

7. Connect the telephone cable from the modem's **LINE** connector to the telephone wall jack.

8. Optionally, connect your telephone to the modem's **PHONE** connector, a microphone to the **MIC** connector and a speaker to the **SPK** connector.

9. Turn your computer on. Your modem is now installed.

2.4 Hardware Configuration

The version of Windows 9x you have will determine which set of dialog boxes is presented to you when installing the modem in Windows 9x. Proceed to one of the following sections, depending on your Windows 9x's diaglog box:

- **Section 2.4.1** when Windows 95 starts for the first time after card installation, it detects the modem and it displays the **New Hardware Found** dialog box
- **Section 2.4.1.1** when Windows 95 starts for the first time after card installation, it detects the modem and it displays the **Update Device Driver Wizard**.
- **Section 2.4.1.2** When Windows 98 starts for the first time after card installation, it detects the adapter and displays the **Add New Hardware Wizard.**

2.4.1 Windows 95 Release 4.00.950

When Windows 95 starts for the first time after card installation, it detects the modem and displays the **New Hardware Found** dialog box.

Under **New Hardware Found**, when asked to "Select which driver you want to install for your new hardware," click on "Driver from disk provided by hardware manufacturer." Click "OK."

The **Install From Disk** dialog box now instructs you to "Insert the manufacturer's installation disk into the drive selected, and then click OK." Insert the modem's driver diskette into the disk drive and type **A:** (or **B:** if inserted in drive B) in the "Copy manufacturer's files from:" box. Click "OK."

Windows 95 may request its own installation disks or CD-ROM for some files. Insert the Windows 95 disks or CD-ROM as required. When all necessary files are copied, the modem is configured. Windows 95 will assign the modem a COM port and IRQ line. **Proceed to Section 2.5**.

2.4.1.1 Windows 95 Release 4.00.950 B

When Windows 95 starts for the first time after card installation, it detects the modem and displays the **Update Device Driver Wizard**. Insert the driver disk into the disk drive and click "Next." Windows will find the driver on the driver disk. Click "Finish. Windows 95 may request its own installation disks or CD for some files. Insert the Windows 95 disks or CD as required.

Windows will now find a second device on the modem. Make sure that the driver disk is still in the disk drive and click "Next." Windows will find the second driver. Click "Finish" to complete the installation.

When all necessary files are copied, the modem is configured. Windows 95 will assign the modem a COM port and IRQ line. **Proceed to Section 2.5**.

2.4.1.2 Windows 98

When Windows 98 starts for the first time after card installation, it detects the adapter and displays the **Add New Hardware Wizard.**

Insert the disk that contains your modem drivers into the appropriate drive and click "Next. Windows 98 will ask you "What do you want Windows to do" Select "Search for the best driver for your device". Click "Next". Windows 98 will find the driver on the driver disk. Click "Next". Windows will now find a second device on the modem. Make sure that the driver disk is still in the disk drive and click "Next." Windows will find the second driver. Click "Finish" to complete the installation.

When all necessary files are copied, the modem is configured. Windows 98 will assign the modem a COM port and IRQ line. **Proceed to Section 2.5**.

2.5 Software Installation and Configuration

You are now ready to install and configure the communication software. Refer to your software manual for installation procedures.

We suggest the following communication parameters when you first use your data communication

software. Consult the software manual for information on using these and other parameters/features.

115,200 bps; 8 data bits; no parity; 1 stop bit; RTS/CTS flow control set to "on;" initialization string: AT&F

Select a "**Generic Class 1**" modem type in your fax software

Note that your software must be configured to communicate with the modem on the same COM port and IRQ line used by the modem.

2.6   Testing Your Modem After Installation

In order to test your modem you should be familiar with your communication software. Load and set up your communication software and enter into "terminal mode." Make sure that the COM Port and IRQ settings of the modem match the software. Type **AT** on your terminal screen and press **ENTER**. You may see "AT", "AATT" or nothing on the screen. In all cases, the modem should respond with an **OK** or **0**. If it does not, either the modem has not been installed properly or the software has not been properly configured. Review Sections 2.2 -2.5 and be certain that the modem and the software have been properly installed. If required, refer to Section 6 for additional troubleshooting information.

2.7   Using Your Modem

The software included with your modem product provides a user friendly interface to access the fax, data and voice/speakerphone functions of your modem. **This software should be sufficient for all of your communication needs**. There may be times when you need to access the modem manually via modem commands. Read Section 3 for a summary description of the modem command set before manually accessing the modem. You may want to read the software manual first, however, as the software may already provide a user friendly method of accessing the functions you need (i.e. dialing or answering calls).

2.8 Where To Go From Here

You should familiarize yourself with the functions available from the included software by reading its manual. You will be accessing most, if not all, of the modem's functions from this software. You may also use any other commercially available communication software with the modem. Read Section 3 only if you are interested in accessing the modem manually, and not through the included software. Section 4 and 5 contain reference material, and can be skipped. If you have difficulties getting your modem to work, read Section 6 *Troubleshooting,* to find answers to commonly asked questions and problems.

Section Three - AT Command Set

3.1 Executing Commands

Commands are accepted by the modem while it is in Command Mode. Your modem is automatically in Command Mode until you dial a number and establish a connection. Commands may be sent to your modem from a PC running communication software or any other terminal devices.

Your modem is capable of data communication at rates of: **300, 1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600** and **115200** bps. Make sure your COM port baud rate settings in your communications software is set to one of the above speeds.

3.2 Command Structure

All commands sent to the modem must begin with **AT** and end with **ENTER.** All commands may be typed in either upper or lower case, but not mixed. To make the command line more readable, spaces may be inserted between commands. If you omit a parameter from a command that requires one, it is just like specifying a parameter of **0**.

Example:
　　ATH[ENTER]

This command causes your modem to hang up.

3.3 Basic AT Commands

In the following listings, all default settings are printed in **bold text**.

Command Function

A		Manually answer incoming call
A/		Repeat last command executed. **Do not** precede **A/** with AT or follow with **ENTER**
AT		Appears at the beginning of every command line
B_	B0	CCITT mode
	B1	**Bell mode**
	B2	V.23 at 1200/75
	B3	V.23 at 75/1200
C_	C0	Carrier always off
	C1	Normal transmit carrier
D_		0 - 9, A-D, # and *
	P	pulse dialing
	R	originate calls in answer mode
	T	touch-tone dialing
	W	wait for second dial tone
	,	pause
	@	wait for five seconds of silence
	!	flash
	;	return to Command Mode after dialing
DS=n		Dial one of the four telephone numbers (n=0-3) stored in the modem's non-volatile memory
E_	E0	Commands are not echoed
	E1	**Commands are echoed**
F_	F0	Enables online echo
	F1	Disables online echo
+++		TIES Escape Characters - Switch from Data Mode to Command Mode
H_	H0	Force modem on-hook (hang up)
	H1	Force modem off-hook (make busy)
I_	I0	Display product-identification code
	I1	Factory ROM ID
	I2	Internal memory test
	I3	Device ID
	I4	Reserved

	I5	Modem chip hardware configuration
	I6	Country code
	I7	Board manufacturer firmware version
	I8	Modem firmware version
	I10	Modem board configuration
L_	L0	Low speaker volume
	L1	Low speaker volume
	L2	**Medium speaker volume**
	L3	High speaker volume
M_	M0	Internal speaker off
	M1	**Internal speaker on until carrier detected**
	M2	Internal speaker always on
	M3	Internal speaker on until carrier detected and off while dialing
N_	N0	Connect only at DTE rate
	N1	**Automatic rate negotiation**
O_	O0	Return to Data Mode
	O1	Return to Data Mode and initiate an equalizer retrain
	O3	Renegotiates rate and then returns to data mode
P		Set Pulse dial as default
Q_	**Q0**	**Modem sends responses**
	Q1	Modem does not send responses
S*n*?	*n=0-33*	Read and display value in register n
S*n=x*		Set register *n* (n=0-33; x=0-255)
T		Set Tone Dial as default
V_	V0	Numeric responses
	V1	**Word responses**
W_	**W0**	**Modem reports DTE response codes**
	W1	Modem reports DTE response codes
	W2	Modem reports DCE response codes
	W3	Modem reports DTE speed, modulation mode, error control, data compression, DCE transmit and receive speed
	W4	Modem reports protocol, data compression and DTE data rate
X_	X0	Hayes Smartmodem 300 compatible responses/blind dialing

	X1	Same as X0 plus all CONNECT responses/ blind dialing
	X2	Same as X1 plus dial tone detection
	X3	Same as X1 plus busy signal detection/ blind dialing
	X4	**All responses and dial tone and busy signal detection**
Y_	**Y0**	**Modem does not send or respond to break signals**
	Y1	Modem sends break signal for four seconds before disconnecting
Z_	**Z0**	**Reset and retrieve active configuration profile 0**
	Z1	Reset and retrieve active configuration profile 1

3.4 Extended AT Commands

&C_	&C0	Force Carrier Detect Signal High (ON)
	&C1	**Turn on Carrier Detect signal when remote carrier signal is present**
&D_	&D0	Modem ignores the Data Terminal Ready signal
	&D1	Modem returns to Command Mode after DTR toggle
	&D2	**Modem hangs up, returns to the Command Mode after DTR toggle**
	&D3	Resets modem after DTR toggle
&F	&F	Recall factory default configuration
&G_	**&G0**	**Guard tone disabled**
	&G1	550 Hz guard tone
	&G2	1800 Hz guard tone
&J_	**&J0**	**Auxiliary relay never operated**
	&J1	Activates auxiliary relay when modem is off-hook
&K_	&K0	Disable flow control
	&K3	**Enable hardware flow control**
	&K4	Enable software flow control
&M_	&M0	Asynchronous operation
&P_	**&P0**	**United States setting for off-hook-(make) to-on-hook (break) ratio**
	&P1	UK and Hong Kong off-hook-(make) to-on-hook (break) ratio

&Q_	&Q0	Modem in asynchronous mode
&S_	**&S0**	**Force DSR Signal High (ON)**
	&S1	DSR is off in command mode, on in on-line mode
&T_	**&T0**	**Ends test in progress**
	&T1	Perform Local Analog Loopback Test
&U_	**&U0**	**Enable Trellis Coding @ V.32**
	&U1	Disable Trellis Coding @ V.32
&V_	&V0	Displays Active and Stored Profile 0
	&V1	Displays Active and Stored Profile 1
	&V3	Displays relay and general-purpose I/O status
&W_	&W0	Stores the active profile as Configuration Profile 0
	&W1	Stores the active profile as Configuration Profile 1
&Y_	**&Y0**	**Configuration Profile 0 active upon Power on or reset**
	&Y1	Configuration Profile 1 active upon Power on or reset
&Z_n_=x		_n_=0-3 Store telephone number **x** into non-volatile RAM
+MS?		Displays the current Select Modulation settings
+MS=?		Displays a list of supported Select Modulation options
+MS=a,b,c,d		Select modulation where: **a**=V21, V22, V22B, V23C, V32, V.32B, V34, V.34S, V34B, V34BS, V90; **b**=0-1; **c**=0-33600; and **d**=0-33600. **A, b, c, d** default=V90, 1, 300, 0. Parameter "**a**" specifies the modulation protocol desired. Parameter "**b**" specifies automode operations where: 0=automode disabled, 1= automode enabled. Parameter "**c**" specifies the minimum connection data rate (0-56600). Parameter "**d**" specifies the maximum connection rate (0-56600), where a 0 specifies highest possible data rate, depending on the current DTE rate.
%E_	%E0	V.22bis auto-retrain disabled

	%E1	**V.22bis auto-retrain enabled**
	%E2	Enable line signal quality monitor and fallback/fallforward
%G_	**%G0**	**Enable Auto Fall Forward/Back**
	%G1	Disable Auto Fall Forward/Back
-C_	**-C0**	**Calling tone disabled**
	-C1	1300hz calling tone
	-C2	V.8 and 1300hz calling tones enabled

3.5 MNP/V.42/V.42bis Commands

%A*n*		Set auto-reliable fallback character to n (where n = 0 to 127, ASCII). Requires the **\C2** setting. **Default=13**
%C_	%C0	Disable MNP Class 5 data compression
	%C1	**Enable MNP Class 5 data compression**
\A_	\A0	64-character maximum MNP block size
	\A1	128-character maximum MNP block size
	\A2	192-character maximum MNP block size
	\A3	**256-character maximum MNP block size**
\B*n*		Send a 1/10 second line break to the modem, where n = 1 to 9. At normal connect, the default is **0**
\C_	**\C0**	**Do not buffer data during LAPM/ MNP handshaking**
	\C1	Buffer all data for 4 seconds, until receiving 200 characters or until a packet is detected
	\C2	Do not buffer data; switch to normal mode when fallback character is detected
\G_	**\G0**	**Disable DCE flow control**
	\G1	Enable DCE flow control
\J_	**\J0**	**Disable serial port data rate adjustment (keep high data rate between DTE and modem, regardless of modem-to-modem data rate)**
	\J1	Enable serial port data rate adjustment so serial data rate automatically adjusts to match the modem-to-modem data rate
\K*n*		Set break control, where n= 0 to 5.

		Default is **5**
\N_	\N0	Normal data-link only
	\N1	Normal data-link only
	\N2	MNP data link only
	\N3	**V.42/MNP/Normal data link**
	\N4	V.42 data link only
\O		Initiate reliable link during a normal link
\Q_	\Q0	Turn off flow control
	\Q1	XON/XOFF software flow control
	\Q2	CTS signal unidirectional hardware flow control
	\Q3	**RTS/CTS signal bi-directional hardware flow control**
\T*n*		Inactivity timer, where n = 0 to 90 minutes. Default is **0**
\U		Accept reliable link during a normal link
\X_	**\X0**	**Process XON/XOFF but don't pass through**
	\X1	Process XON/XOFF and pass through
\Y		Switch to reliable link from normal link
\Z		End the reliable connection and switch to normal operation
-J	-J0	Disable error control detection phase
	-J1	**Enable error control detection phase**
"H	"H0	V.42bis data compression disabled
	"H1	Can send but not receive V.42bis data compression
	"H2	Can receive but not send V.42bis data compression
	"H3	**Bidirectional V.42bis data compression enabled**
"O*n*		Set maximum V.42bis data block size to n (n=6-250). Default is **32**

3.6 Fax Class 1 Commands

+FAE=n	Data/Fax auto answer enable. Default is 0
+FCLASS=1	Sets FAX operating mode
+FRH=n	Receive HDLC data
+FRM=n	Receive data
+FRS=n	Wait for silence

+FTH=n	Transmit HDLC data
+FTM=n	Transmit data
+FTS=n	Stop transmission and pause

3.7   ISO 101 Voice Mode Commands

+FCLASS=8	Voice modem select
+FLO	Flow control select
+VBT=n	Buffwe threshold setting
+VCID=n	Caller ID selection
+VCSD=n	Voice command mode silence detection
+VDR=n	Distinctive ring selection
+VEM=n	Event reporting and masking
+VGM=n	Speakerphone microphone gain
+VGR=n	Receive gain selection
+VGS=n	Speakerphone speaker gain
+VGT=n	Volume selection
+VIP	Initialize parameter
+VIT=n	DTE/DCE inactivity timer
+VLS=n	Relay/speaker control
+VNH=n	Automatic hang-up control
+VRA=n	Ringback-goes-away timer
+VRN=n	Ringback-never-appeared timer
+VRX	Record mode
+VSD=n	Silence detection (quiet and silence)
+VSM=n	Compression method selection
+VSP=n	Speakerphone on/off control
+VTD=n	Beep tone duration timer
+VTS=n	DTMF and tone generation
+VTX	Play mode

Section Four - S Registers

Your modem has 24 registers, designated S0 through S33. Table 4-1 shows the registers, their functions, and their default values. Some registers can have their values changed by commands. If you use a command to change a register value, the command remains in effect until you turn off or reset your modem. Your modem then reverts to the operating characteristics specified in its non-volatile memory. Refer to Section 3 for information on how to use the AT commands to manipulate the S registers.

Table 4-1 S - Registers

Register	Function	Range/units	Default
S0	Auto-answer Ring	0-255/rings	0
S1	Ring counter	0-255/rings	0
S2	Escape code character	0-127/ASCII	43
S3	Carriage return character	0-127/ASCII	13
S4	Line feed character	0-127/ASCII	10
S5	Backspace character	0-32, 127/ASCII	8
S6	Dial tone wait time	0-255/seconds	2
S7	Remote carrier wait time	1-255/seconds	60
S8	Comma pause time	0-255/seconds	2
S9	Carrier detect time	0-255/0.1 second	6
S10	Carrier loss time	0-255/0.1 second	7
S11	Touch-tone dialing speed	50-255/0.001 second	70
S12	Esc. character detect time	0-255/0.02 second	50
S14	Echo, response, dialing, originate/answer	Bit-mapped	
S16	Modem test options	Bit-mapped	
S18	Modem test timer	0-255/seconds	0
S21	DTR, DCD, DSR, and Long Space Disconnect	Bit-mapped	
S22	Speaker and response	Bit-mapped	
S23	RDL, DTE data rate, parity, and guard tone	Bit-mapped	
S25	DTR delay	0-100/seconds	5
S27	Async operation, CCITT/Bell mode	Bit-mapped	
S30	Disconnect timer	0-255/seconds	0
S31	Automode, Trellis coding, calling tone, auto-retrain, rate renegotiation	Bit-mapped	
S33	Sleep mode time	0-90/seconds	10

Section Five - Result Codes

BASIC RESPONSE CODES

OK	0	CONNECT	1
RING	2	NO CARRIER	3
ERROR	4	CONNECT 1200	5
NO DIALTONE	6	BUSY	7
NO ANSWER	8	CONNECT 1200/75	22
CONNECT 75/1200	23	CONNECT 2400	10
CONNECT 4800	11	CONNECT 7200	24
CONNECT 9600	12	CONNECT 12000	25
CONNECT 14400	13	CONNECT 16800	59
CONNECT 19200	14	CONNECT 21600	61
CONNECT 24000	62	CONNECT 26400	63
CONNECT 28800	64	CONNECT 31200	65

CONNECT 33600	66	CONNECT 37333	34
CONNECT 38400	28	CONNECT 41333	35
CONNECT 42666	36	CONNECT 44000	37
CONNECT 45333	38	CONNECT 46666	39
CONNECT 48000	42	CONNECT 49333	43
CONNECT 50666	53	CONNECT 52000	54
CONNECT 53333	55	CONNECT 54666	56
CONNECT 56000	57	CONNECT 57333	58
CONNECT 57600	18	CONNECT 115200	31
DATA	35	FAX	33
RINGBACK	45		

Section Six - Troubleshooting

This section describes some of the common problems you may encounter while using your modem. If you can not resolve your difficulty after reading this chapter, contact your dealer or vendor for assistance.

Modem does not respond to commands.

1. Make sure the modem is not configured with a conflicting COM port and IRQ setting (see Sections 2.2-2.5). As an example, your modem can not be configured as COM1 if another device in your system is also configured as COM1.
2. Make sure the communication software is configured to "talk" to the modem on the correct COM port and IRQ setting (same COM port and IRQ setting as the modem). Your communication software must know which address your modem is using in the system in order to pass data to it. Similarly, IRQ settings must be set correctly to receive data from the modem.
3. Make sure that your modem is initialized correctly. Your modem may have been initialized to not display responses. You may factory-reset the modem by issuing **AT&F** and pressing **ENTER**. The factory default allows the modem to display responses after a command has been executed.
4. Make sure the baud rate setting in your software is set to 115200, 57600, 38400, 19200, 14400, 9600, 2400, 1200, or 300 bps. An incorrect baud rate prevents the modem from operating properly.

Modem does not dial.

1. Make sure the modem is connected to a working phone line. Replace the modem with a working phone to ensure that the phone line is working.

Modem dials but does not connect.

1. Make sure the IRQ setting is identical on both the modem AND the software. Modem and software must be configured identically.
2. Make sure the phone line is working properly. Replace the modem with a regular phone and dial the number. If the line sounds noisy, you may have difficulty connecting to the remote device.

Modem makes a connection but no data appears on your screen.

1. The remote system may be waiting to receive your data before it begins. Try pressing the **ENTER** key a few times.
2. Make sure the correct data format (data bits, stop bits, and parity bits) and flow control (RTS/CTS) are being used.
3. Make sure the correct terminal emulation mode is being used.

High pitch tone is heard whenever you answer the phone.

1. Make sure Auto-Answer is turned off. Your modem is factory configured to NOT auto-answer. Issue **AT&F** to factory reset your modem.

Modem experiences errors while communicating with a remote modem.

1. Make sure the DTE speed is the same as the modem connection speed when in Direct Mode.
2. Make sure the remote system and your modem use the same communication parameters (speed, parity, etc.).
3. Make sure RTS/CTS hardware flow control is enabled and XON/XOFF software flow control is disabled in the communication software.

Modem experiences bursts of errors or suddenly disconnects while communicating with a remote modem.

1. Make sure Call Waiting is turned off.
2. Make sure the phone line does not exhibit excess noise.

Section Seven - Support and Service

In the unlikely event you experience difficulty in the use of this product, we suggest you: (1) consult the Troubleshooting section of this guide and (2) consult with your dealer. To obtain service for this product, follow the Return Merchandise Authorization Procedure as outlined in the Warranty card.

Appendix A - Specifications

Communication Std.	V.90, x2, V.34+ , V.34, V.32bis, V.32, V.29, V.27ter, V.22bis, V.23, V.22, V.21, V.17, Bell212/103
Data Compression:	V.42bis/MNP5
Error Correction:	V.42/MNP2-4
Host Interface:	PCI
FAX Group:	Group III Send/Receive Standard
FAX Command set:	EIA/TIA-578 Service Class 1
Speakerphone:	Full-Duplex
Transmit level:	-10dBm
Receiver sensitivity:	-36dBm
UART:	16550 compatible
Data format:	300-115200 bps (8N1, 7E1, 7E2, 7O1, 7O2)
Power:	0.75 W
Temperature:	0-55 degrees C (operating); -20 to 80 degrees C (non-operating)

Appendix B - Notices

FCC Compliance

This equipment complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice isn't 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 in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits this equipment to be connected to party lines or coin-telephone service.

In the event that this equipment should fail to operate properly, disconnect the equipment from the phone line to determine if it is causing the problem. If the problem is with the equipment, discontinue use and contact your dealer or vendor.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)).

FCC Class B Statement

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 in a residential installation. This equipment generates, uses and can radiate 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 the 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

Notice: 1) Shielded cables, if any, must be used in order to comply with the emission limits. 2) Any change or modification not expressly approved by the Grantee of the equipment authorization could void the user's authority to operate the equipment.

DOC Compliance Information

NOTICE: The Canadian Department of Communications 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 operate to the user's satisfaction.

Before installing this equipment, users 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. 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 to 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 such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: 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 sum of the Load Numbers of all the devices does not exceed 100.

UL Notice

Caution: This internal modem adapter is to be installed in UL Listed computers only. Always disconnect the modem adapter from the telephone system during installation or when the covers are removed from the computer.

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