IBM

V.90 PCI Data/Fax Modem

User's Guide

OPTIONS
by IBM

> **Note:** Before using this information and the product is supports, be sure to read the information in "Appendix D. Product warranty and notices" on page D-1.

Contents

Safety: Read first

Before installing this product, read the Safety Information.

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Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information
(安全信息)。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

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Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

安裝本產品之前，請先閱讀「安全資訊」。

Modem safety information

To reduce the risk of fire, electrical shock, or injury when using telephone equipment, always follow basic safety precautions, such as:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

Consignes de sécurité relatives au modem

Lors de l'utilisation de votre matériel téléphonique, il est important de respecter les consignes ci-après afin de réduire les risques d'incendie, d'électrocution et d'autres blessures :

- N'installez jamais de cordons téléphoniques durant un orage.
- Les prises téléphoniques ne doivent pas être installées dans des endroits humides, excepté si le modèle a été conçu à cet effet.
- Ne touchez jamais un cordon téléphonique ou un terminal non isolé avant que la ligne ait été déconnectée du réseau téléphonique.
- Soyez toujours prudent lorsque vous procédez à l'installation ou à la modification de lignes téléphoniques.
- Si vous devez téléphoner pendant un orage, pour éviter tout risque de choc électrique, utilisez toujours un téléphone sans fil.
- En cas de fuite de gaz, n'utilisez jamais un téléphone situé à proximité de la fuite.

About this book

This manual contains instructions for installing and using the IBM® V.90 PCI Data/Fax Modem. The manual is divided into two parts:

Part 1: Installation and user's guide:

This guide contains the product description, hardware and software installation in the following languages:
- English
- French
- Spanish
- Italian
- Brazilian Portuguese
- Traditional Chinese
- Japanese

Part 2: Appendixes

This section contains problem solving, help and service information, and warranty and notices.

Registering your option

Thank you for purchasing OPTIONS by IBM®. Please take a few moments to register your product and provide us with information that will help IBM to better serve you in the future. Your feedback is valuable to us in developing products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the IBM Web site at

http://www.ibm.com/pc/register

IBM will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

Installation guide

This guide contains the product description and installation instructions for the IBM V.90 PCI Data/Fax Modem.

Product description

The IBM V.90 PCI Data/Fax Modem is an industry-standard data and fax modem that supports both a 5-volt and a 3.3-volt power supply. The modem works with Microsoft® Windows® 95, Windows 98, Microsoft Windows NT® 4.0 Workstation, Microsoft Windows 2000 Professional, and Windows Millennium Edition (Me).

This product has the following features:
- Support for download speeds up to 56 Kbps and uploads data at up to 33.6 Kbps

  Note: Although this modem is capable of data download rates of up to 56 Kbps, the actual connect rate will depend upon the physical characteristics of your telephone line.
- 32-bit PCI 2.2 interface
- International Telecommunication Union (ITU-T) V.90 data/fax/voice standard
- Advanced Power Management
- Wake on Ring through the PCI bus
- Data mode features:
  - 56-Kbps Internet connectivity using the ITU-T V.90 standard
  - Backward-compatibility to K56Flex, V.34, and earlier standards
  - Line-quality monitoring and retraining
  - Auto-dialing and auto-answering
  - Tone or Pulse dialing option

    Note: The pulse dialing option is available only if you are using the product in the United States or Japan.

In addition to this manual, the option package includes the following:
- IBM V.90 PCI Data/Fax Modem
- *V.90 PCI Data/Fax Modem* CD
- Safety manual
- Low-profile PCI bracket
- Standard telephone line

> **Note:** You will need to replace the existing PCI bracket with this bracket if you are installing your modem in a computer that requires a low-profile PCI bracket.

Installing the modem

This section contains instructions for installing the modem. For information on uninstalling the modem, go to "Uninstalling the modem" on page 1-3.

Installing the modem in Windows 95, Windows 98 or Windows Me

To install the modem in any of these operating systems, follow these steps. The only difference is in step 10 for Windows Me, in which you type `e:\winMe\setup.exe` (where *e* is the letter of your CD-ROM drive).

1. Turn off the computer and all attached devices.
2. Remove the computer cover.
3. Install the modem in an available PCI slot.

   > **Note:** You might need to attach the low-profile PCI bracket that is included with this option.
4. Replace the computer cover.
5. Turn on the computer and start Windows.
6. When the Add New Hardware Wizard window opens, click **Cancel.**
7. After Windows starts, click **Start.**
8. Click **Run.**
9. Insert the *V.90 PCI Data/Fax Modem Device Drivers and User's Guide CD* into the CD-ROM drive.
10. Type `e:\win9x\setup.exe` (where *e* is the letter of your CD-ROM drive).
11. Click **Next.**
12. Click **Finish.**

Installing the modem in Windows NT 4.0

To install the modem in Windows NT 4.0, do the following:

1. Turn off the computer and all attached devices.
2. Remove the computer cover.
3. Install the modem in an available PCI slot.

   > **Note:** You might need to attach the low-profile PCI bracket that is included with this option.
4. Replace the computer cover.
5. Turn on the computer.
6. After Windows NT starts, click **Start**.
7. Click **Run**.
8. Insert the *V.90 PCI Data/Fax Modem Device Drivers and User's Guide CD* into the CD-ROM drive.

9. Type e:\NT4\setup.exe (where *e* is the letter of the CD-ROM drive) and press **Enter.**
10. Click **Next**.
11. Click **Next**.
12. Click **Finish**.

Installing the modem in Windows 2000

To install the modem in Windows 2000, do the following:
1. Turn off the computer and all attached devices.
2. Remove the computer cover.
3. Install the modem in an available PCI slot.

   Note: You might need to attach the low-profile PCI bracket that is included with this option.
4. Replace the computer cover.
5. Turn on the computer.
6. In the Found New Hardware Wizard window, click **Next**.
7. Select **Search for a suitable driver**, and then click **Next.**
8. Select **Specify a Location**.
9. Click **Next**.
10. Insert the *V.90 PCI Data/Fax Modem Device Drivers and User's Guide CD* into the CD-ROM drive.
11. Enter e:\Win2k\setup.exe (where *e* is the letter of the CD-ROM drive).
12. Click **OK**.
13. Click **Next.**
14. Click **Next.**
15. Click **Finish**.

Uninstalling the modem

This section contains instructions for uninstalling the modem. For information on installing the modem, see "Installing the modem" on page 1-2.

Uninstalling the modem in Windows 95, Windows 98 or Windows Me

To uninstall the modem in these operating systems, do the following:
1. Click **Start**, click **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **Conexant HCF V.90 56K PCI Modem**.
4. Click **Add/Remove**.
5. In Add/Remove Program window, click **OK.**
6. Shut down the computer. Turn off the computer and all attached devices.
7. Remove the computer cover.
8. Remove the modem from the PCI slot.
9. Replace the computer cover.

Uninstalling the modem in Windows NT 4.0

To uninstall the modem in Windows NT 4.0, do the following:
1. Click **Start**, click **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **Conexant HCF V.90 56K PCI Modem**.
4. Click **Add/Remove**.
5. Click **Next**.
6. Click **Finish**.
7. Click **Yes**.
8. Shut down the computer. Turn off the computer and all attached devices.
9. Remove the computer cover.
10. Remove the modem from the PCI slot.
11. Replace the computer cover.

Uninstalling the modem in Windows 2000

To uninstall the modem in Windows 2000, do the following:
1. Click **Start**, click **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **Conexant HCF V.90 56K PCI Modem**.
4. Click **Add/Remove**.
5. Click **Next**.
6. Click **Uninstall a device**.
7. Click **Next**.
8. Select **Conexant HCF V.90 56K PCI Modem**.
9. Click **Next.**
10. Click **Yes, I want to uninstall this device.**
11. Click **Next.**
12. Click **Finish.**
13. Shut down the computer. Turn off the computer and all attached devices.
14. Remove the computer cover.
15. Remove the modem from the PCI slot.
16. Replace the computer cover.

Appendix A. Manual modem commands

The following section lists commands for manually programming your modem.

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.

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.

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.
B_	B0	CCITT mode
	B1	**Bell mode**
D_		**0 - 9, A-D, # and ***
	L	last number redial
	P	pulse dialing
		Note: Pulse dialling is not supported for U.K., Netherlands, Sweden, Norway, Denmark, Finland, Switzerland, Germany, Italy, France.
	T	**touch-tone dialing**
	W	wait for second dial tone
	,	pause

Command		Function
	@	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 non-volatile memory.
E_	E0	Commands are not echoed
	E1	**Commands are echoed**
+++		Escape Characters - Switch from Data Mode to Command Mode (T.I.E.S. Command)
H_	H0	Force modem on-hook (hang up)
	H1	Force modem off-hook (make busy)
		Note: H1 command is not supported for Italy
I_	I0	Display product-identification code
	I1	Factory ROM checksum test
	I2	Internal memory test
	I3	Firmware ID
	I4	Reserved ID
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	Disable Autoscan mode
	N1	**Enable Autoscan mode**
O_	O0	Return to Data Mode
	O1	Return to Data Mode and initiate an equalizer retrain
P		**Set Pulse dial as default**
Q_	Q0	Modem sends responses
	Q1	Modem does not send responses
Sr?		Read and display value in register r.
Sr=n		Set register r to value n (n = 0-255).
T		**Set Tone Dial as default**

Command		Function
V_	V0	**Numeric responses**
	V1	**Word responses**
W_	W0	**Report DTE speed only**
	W1	Report line speed, error correction protocol, and DTE speed.
	W2	Report DCE speed only
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 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 profile 0
	Z1	Reset and retrieve active profile 1

Extended AT commands

Command		Function
&C_	&C0	Force Carrier Detect Signal High (ON)
	&C1	**Turn on CD when remote carrier is present**
&D_	&D0	**Modem ignores the DTR 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	Guard tone disabled
	&G2	1800 Hz guard tone
&K_	&K0	Disable flow control
	&K3	**Enable RTS/CTS hardware flow control**
	&K4	Enable XON/XOFF software flow control
	&K5	Enable transparent XON/XOFF flow control
	&K6	Enable both RTS/CTS and XON/XOFF flow control
&L_	&L0	Modem is set up for dial-up operation

Command		Function
&M_	**&M0**	Asynchronous operation
&P_	**&P0**	**US setting for off-hook-to-on-hook ratio**
	&P1	UK and Hong Kong off-hook-to-on-hook ratio
	&P2	Same as &P0 setting but at 20 pulses per minute
	&P3	Same as &P1 setting but at 20 pulses per minute
&R_	&R0	Reserved
	&R1	**CTS operates per flow control requirements**
&S_	**&S0**	**Force DSR Signal High (ON)**
	&S1	DSR off in command mode, on in on-line mode
&T_	&T0	Ends test in progress
	&T1	Perform Local Analog Loopback Test
	&T3	Perform Local Digital Loopback Test
	&T4	**Grant Remote Digital Loopback Test request by remote modem**
	&T5	Deny Remote Digital Loopback Test request
	&T6	Perform a Remote Digital Loopback Test
	&T7	Perform a Remote Digital Loopback Test and Self-Test
	&T8	Perform Local Analog Loopback Test and Self-Test
&V	&V0	Displays Active and Stored Profiles
	&V1	Display Last Connection Statistics
&W_	&W0	Stores the active profile as Profile 0
	&W1	Stores the active profile as Profile 1
&Y_	**&Y0**	**Configuration Profile 0 active upon Power on or reset**
	&Y1	Configuration Profile 1 active upon Power on or reset
&Zn=x	n=0-3	Store phone number x into non-volatile RAM
%E_	**%E0**	**Disable auto-retrain**
	%E1	Enable auto-retrain
+MS?		Displays the current Select Modulation settings
+MS=?		Displays a list of supported Select Modulation options

Command		Function
+MS=a,b,c,d,e,f		Select modulation where: **a**=0, 1, 2, 3, 9, 10, 11, 12, 56, 64, 69; **b**=0-1; **c**=300-56000; **d**=300- 56000; **e**=0-1; and **f**=0-1. **A, b, c, d, e, f** default=**12, 1, 300, 56000, 0, 0.** Parameter ″**a**″ specifies the modulation protocol desired where: 0=V.21, 1=V.22, 2=V.22bis, 3=V.23, 9=V.32, 10=V.32bis, 11=V.34, 12=V.90,K56Flex,V.34......,56=K 56Flex, V.90,V.34......, 64=Bell 103, and 69=Bell 212. Parameter ″b″ specifies automode operations where: 0=automode disabled, 1= automode enabled with V.8/V.32 Annex A. Parameter ″c″ specifies the minimum connection data rate (300- 56000). Parameter ″**d**″ specifies the maximum connection rate (300-56000); Parameter ″**e**″ specifies the codec type (0= Law, and 1=A-Law). Parameter ″**f**″ specifies ″robbed bit″ signaling detection (0=detection disabled 1=detection enabled)

MNP/V.42/V.42bis commands

Command		Function
%C_	%C0	Disable MNP Class 5 and V.42bis data compression
	%C1	Enable MNP Class 5 data compression only
	%C2	Enable V.42bis data compression only
	%C3	**Enable MNP Class 5 and V.42bis data compression**
&Q_	&Q0	Direct data link only (same as \N1)
	&Q5	**V.42 data link with fallback options**
	&Q6	Normal data link only (same as \N0)
\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
\Bn		Send a 1/10 second line break to the modem, where n = 1 to 9. At normal connect, the default is **3**
\Kn		Set break control, where n= 0 to 2. The effect of this command depends on the modem operating condition. **Default is 1.**
\N_	\N0	Normal data-link only
	\N1	Direct data-link only
	\N2	V.42 or MNP data link only
	\N3	**V.42/MNP/Normal data link**
	\N4	V.42 data link only
	\N5	MNP data link only

Fax Class 1 commands

+FAE=n	Data/Fax Auto Answer
+FCLASS=n	Service Class
+FRH=n	Receive data with HDLC framing
+FRM=n	Receive data
+FRS=n	Receive silence
+FTH=n	Transmit data with HDLC framing
+FTM=n	Transmit data
+FTS=n	Stop transmission and wait

Fax Class 2 commands

+FCLASS=n	Services class.
+FAA=n	Adaptive answer.
+FAXERR	Fax error value.
+FBOR	Phase C data bit order.
+FBUF?	Buffer size (read only).
+FCFR	Indicate confirmation to receive.
+FCLASS=	Service class.
+FCON	Facsimile connection response.
+FCIG	Set the polled station identification.
+FCIG:	Report the polled station identification.
+FCR	Capability to receive.
+FCR=	Capability to receive.
+FCSI:	Report the called station ID.
+FDCC=	DCE capabilities parameters.
+FDCS:	Report current session.
+FDCS=	Current session results.
+FDIS:	Report remote capabilities.
+FDIS=	Current sessions parameters.
+FDR	Begin or continue phase C receive data.
+FDT=	Data transmission.
+FDTC:	Report the polled station capabilities.
+FET:	Post page message response.
+FET=N	Transmit page punctuation.

+FHNG	Call termination with status.
+FK	Session termination.
+FLID=	Local ID string.
+FLPL	Document for polling.
+FMDL?	Identify model.
+FMFR?	Identify manufacturer.
+FPHCTO	Phase C time out.
+FPOLL	Indicates polling request.
+FPTS:	Page transfer status.
+FPTS=	Page transfer status.
+FREV?	Identify revision.
+FSPT	Enable polling.
+FTSI:	Report the transmit station ID.

Voice commands

#BDR	Select Baud Rate
#CID	Enable Caller ID detection and reporting format
#CLS	Select Data, Fax or Voice/Audio
#MDL?	Identify Model
#MFR?	Identify Manufacturer
#REV?	Identify Revision Level
#TL	Audio output transmit level
#VBQ?	Query Buffer Size
#VBS	Bits per sample (ADPCM or PCM)
#VBT	Beep Tone Timer
#VCI?	Identify Compression Method
#VLS	Voice line select
#VRA	Ringback goes away timer
#VRN	Ringback never came timer
#VRX	Voice Receive Mode
#VSDB	Silence deletion tuner
#VSK	Buffer skid setting
#VSP	Silence detection period
#VSR	Sampling rate selection
#VSS	Silence deletion tuner

#VTD	DTMF tone reporting capability
#VTM	Enable timing mark placement
#VTS	Generate tone signals
#VTX	Voice transmit mode

Appendix B. Technical specifications

This section contains the technical specifications for the IBM V.90 Data/Fax Modem.

Data modem function

- Full duplex transmission
- Asynchronous communication data mode
- ITU-T V.90, K56flex, V.34(33.6 Kbps), V.32bis, V.32, V.22 bis, V.22 V.23 and V.21; Bell 212A and 103
- V.42 LAPM and MNP 2-4 error correction
- V.42 bis and MNP 5 data compression
- V.25 ter (Annex A) and EIA/TIA 602 command set
- Data Length: 10 bits, including start, stop, parity
- Modulation Format
  - V.34 TCM at 2400/2800/3000/3429 baud
  - V.32bis, 128 points TCM at 2400 baud
  - V.22bis, 16 points QAM at 600 baud
  - V.22 and 212A, 4 points PSK at 600 baud
  - V.23, V.21 and 103, binary phase coherent FSK
- Transmit Level less than -11 dBm
- Guard Tone: 550 20 Hz Or 1800 20 Hz
- Answer Tone: CCITT (2100 Hz 15 Hz) or BELL (2225 Hz 10 Hz)
- Receive Sensitivity: (V.34) -34dBm
- Carrier Response Level: -42 dBm
- Data Format
  - 1 Start bit, 7 data bit, even or odd parity, 1 stop bit.
  - 1 Start bit, 7 data bit, no parity, 2 stop bit.
  - 1 Start bit, 7 data bit, mark or space parity, 1 stop bit.
  - 1 Start bit, 8 data bit, none parity, 1 stop bit.
- DTE to Modem Data Rate: Up to 300, 1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200 bps.
- Normal Mode Line Data Rate: 300, 1200, 2400, 4800, 9600, 14400, 16800, 19200, 21600, 24000, 26400, 28800, 33600 ... 56000 and 1200/75 bps.

Fax function

- Half duplex transmission
- G3 Fax modes
  - V.17 (14400bps) send / receive
  - V.29 (9600 / 7200bps) send / receive
  - V.27 ter (4800 / 2400bps) send / receive
  - V.21 channel 2 (300bps) only for signaling
- Modulation format
  - V.17 TCM at 2400 baud
  - V.29 QAM at 2400 baud
  - V.27 ter DPSK at 1600/1200 baud
- Carrier frequencies
  - V.17 transmit carrier 1700 or 1800 Hz
  - V.29 transmit carrier 1700 Hz
  - V.27 ter transmit carrier 1800 Hz
- EIA / TIA 578 Class 1 and T.31 Class 1.0 commands

Other function

- Multiple country support
- Call progress, Blacklisting options
- Single profile stored in host
- Wake up on ring capable using either ACPI PME# signal or two-pin connector
- 32-bit PCI Local Bus interface
- Windows 95, Windows 95 OSR2, Windows 98, Windows Me, Windows NT 4.0, Windows 2000 operating systems
- Microsoft's PC99 design initiative compliant
- Conforms to the PCI Local Bus Specification, Revision 2.2
- Supports PCI Bus Power Management
  - Vaux auto detection
  - ACPI Power Management Registers
  - PME# and APM support
- One RJ11 phone jacks for line

Appendix C. Help and service information

This section contains information on how to obtain warranty information on the World Wide Web and online and telephone technical support.

Warranty information on the World Wide Web

The IBM Machine Warranties Web site at http://www.ibm.com/servers/support/machine_warranties/ contains a worldwide overview of the IBM Limited Warranty for IBM Machines, a glossary of terms used in the Statement of Limited Warranty, Frequently Asked Questions (FAQ), and links to Product Support Web pages. The IBM Statement of Limited Warranty is available from this Web site in 29 languages in Portable Document Format (PDF).

Online technical support

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site and the IBM Automated Fax System.

Online technical support	
IBM Personal Computing Support Web site	http://www.ibm.com/pc/support
IBM Automated Fax System	1-800-426-3395 (U.S. and Canada)

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Telephone technical support

Installation and configuration support through the HelpCenter will be withdrawn or made available for a fee, at IBM's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

- Option name
- Option number
- Proof of purchase

- Computer manufacturer, model, serial number (if IBM), and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

For the support telephone number and support hours by country, refer to the following table or to the enclosed technical support insert. If the number is not provided, contact your IBM reseller or IBM marketing representative. Response time may vary depending on the number and nature of the calls received.

Support 24 hours a day, 7 days a week	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A. and Puerto Rico	1-800-772-2227
All other countries	Go to http://www.ibm.com/pc/support/, and click **HelpCenter Phone List**.

Appendix D. Product warranty and notices

This section contains the warranty period for your product and the IBM Statement of Limited Warranty.

Machine - V.90 PCI Data/Fax Modem **Warranty period*** - One Year

* Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country where service is performed.

IBM Statement of Limited Warranty

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications"). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating

environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.

During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will 1) either repair or exchange the failing Machine and 2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Some parts of IBM Machines are designated as Customer Replaceable Units (called "CRUs"), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for

downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to
1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
    a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
    b. secure all programs, data, and funds contained in a Machine;
    c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
    d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract

or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

   This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Governing Law

Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

AMERICAS

BRAZIL

Governing Law: *The following is added after the first sentence:*Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro.

NORTH AMERICA

Warranty Service: *The following is added to this Section:* To obtain warranty service from IBM in Canada or the United States, call 1-800-IBM-SERV (426-7378).

CANADA

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws in the Province of Ontario.

UNITED STATES

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State of New York.

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:* The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: *The following is added to this Section:* Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State or Territory.

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*laws of the State of New York.

The following is added to this Section: Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC). The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own competence and on the validity of the Agreement to submit to arbitration. The

arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of Hong Kong Special Administrative Region.

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*
1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section:*Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:*
The warranties specified in this Section are in addition to any rights you may
have under the Consumer Guarantees Act 1993 or other legislation which
cannot be excluded or limited. The Consumer Guarantees Act 1993 will not
apply in respect of any goods which IBM provides, if you require the goods
for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section:* Where Machines
are not acquired for the purposes of a business as defined in the Consumer
Guarantees Act 1993, the limitations in this Section are subject to the
limitations in that Act.

TAIWAN

Governing Law: *The following replaces this Section:* Both you and IBM consent to
the application of the laws of the State of New York (except when local law
requires otherwise) to govern, interpret, and enforce all your and IBM's rights,
duties, and obligations arising from, or relating in any manner to, the subject
matter of this Agreement, without regard to conflict of law principles.

Any disputes arising from or in connection with this Agreement will first be
resolved by friendly negotiations, failing which either of us has the right to
submit the dispute to the China International Economic and Trade Arbitration
Commission in Beijing, the PRC, for arbitration in accordance with its
arbitration rules in force at the time. The arbitration tribunal will consist of
three arbitrators. The language to be used therein will be English and Chinese.
An arbitral award will be final and binding on all the parties, and will be
enforceable under the Convention on the Recognition and Enforcement of
Foreign Arbitral Awards (1958).

The arbitration fee will be borne by the losing party unless otherwise
determined by the arbitral award.

During the course of arbitration, this Agreement will continue to be performed
except for the part which the parties are disputing and which is undergoing
arbitration.

<u>**EUROPE, MIDDLE EAST, AFRICA (EMEA)**</u>

THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES: The terms of
this Statement of Limited Warranty apply to Machines purchased from IBM or
an IBM reseller.

Warranty Service:

If you purchase an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM. If you purchase an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase an IBM Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM authorized service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM authorized service provider.

Governing Law:

The applicable laws that govern, interpret and enforce rights, duties, and obligations of each of us arising from, or relating in any manner to, the subject matter of this Statement, without regard to conflict of laws principles, as well as Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided, except that in 1) Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan, the laws of Austria apply; 2) Estonia, Latvia, and Lithuania, the laws of Finland apply; 3) Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Mali, Mauritania, Morocco, Niger, Senegal, Togo, and Tunisia, this Agreement will be construed and the legal relations between the parties will be determined in accordance with the French laws and all disputes arising out of this Agreement or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 4) Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe, this Agreement will be governed by English Law and disputes relating to it

will be submitted to the exclusive jurisdiction of the English courts; and 5) in Greece, Israel, Italy, Portugal, and Spain any legal claim arising out of this Statement will be brought before, and finally settled by, the competent court of Athens, Tel Aviv, Milan, Lisbon, and Madrid, respectively.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA AND GERMANY

The IBM Warranty for Machines: *The following replaces the first sentence of the first paragraph of this Section:* The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:

The minimum warranty period for Machines is six months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: *The second paragraph does not apply.*

Warranty Service: *The following is added to this Section:* During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Limitation of Liability: *The following paragraph is added to this Section:* The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT

Limitation of Liability: *The following replaces item 2 in this Section:* as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

Applicability of suppliers and resellers (unchanged).

FRANCE

Limitation of Liability: *The following replaces the second sentence of the first paragraph of this Section:*In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: *(items 1 and 2 unchanged).*

IRELAND

Extent of Warranty: *The following is added to this Section:* Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: *The following replaces items one and two of the first paragraph of this Section:*1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY

Limitation of Liability: *The following replaces the second sentence in the first paragraph:*In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: 1. *(unchanged)* 2. as to any other actual damage arising in all situations involving nonperformance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim. *Applicability of suppliers and resellers (unchanged).*

The following replaces the third paragraph of this Section: Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: *(items 1 and 2 unchanged)* 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND

Limitation of Liability: *The following is added to this Section:* IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

UNITED KINGDOM

Limitation of Liability: *The following replaces items 1 and 2 of the first paragraph of this Section:*
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim;

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages. This publication was developed for products and services offered in the U.S.A.

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IBM Director of Licensing
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Armonk, NY 10504-1785
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Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

IBM

HelpCenter

Microsoft, Windows, and Windows NT are trademarks or registered trademarks of Microsoft in the United States or other countries or both.

Other company, product, and service names may be trademarks or service marks of others.

Federal Communications Commission (FCC) statement

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 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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.

Responsible party:
   International Business Machines Corporation
   New Orchard Road
   Armonk, NY 10504
   Telephone: 1-919-543-2193

FC Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformite a la reglementation d'Industrie Canada

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22/Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte

résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad électromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le le apparecchiature di informatica Classe B ai sensi del CISPR 22/Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

Korean B급 규격 증명서
이 장치는 옥내용으로 보증되었으며 모든 환경에서 사용할 수 있습니다.

Japanese statement of compliance for products less than or equal to 20 A per phase

高調波ガイドライン適合品

Notice to New Zealand users

General

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services. In particular the higher speeds which this modem is capable of can only be achieved in ideal conditions.

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 Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specification:-

For repeat calls to the same number:

There shall be no more than 10 call attempts to the same number in any 30-minute period for any single manual call initiation, and

The equipment shall go off-line for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

For automatic calls to different numbers:

The equipment shall go on-hook for a period of not less than 5 seconds between the end of one attempt and the beginning of the next attempt.

For automatically answered incoming calls: Incoming calls shall be answered between 3 and 30 seconds from the start of applied ringing.

IBM®

Part Number: 22P6546

(1P) P/N: 22P6546