



# TR-7 Tape Drive

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*User's Guide*

OPTIONS  
*by IBM*

**Note:** Before using this information and the product it supports, read the information under the appendixes.

**First Edition (April 2002)**

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## Safety

Before installing this product, read the Safety Information.

مج، يجب قراءة دات السلامة

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).

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

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítajte 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」。

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## About this book

This manual contains instructions for installing the IBM® TR-7 Tape Drive. The manual is divided into the following sections:

### Installation and user's guide

This CD contains the product description and installation instructions in the following languages:

- English
- French
- Korean
- Italian
- German
- Spanish
- Simplified Chinese
- Traditional Chinese
- Japanese

### Appendixes

The appendixes contain device-driver special configuration settings and help and service information. They also contain the product warranties and notices.

**Note:** The illustrations in this manual might be slightly different from your hardware.





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## Before you begin

Please read all instructions before installation.

In addition to this documentation CD, this option package contains:

- Quick installation guide
- Internal model of the tape drive
- 5.25-inch mounting kit
- One Imation or IBM TR-7 formatted data cartridge
- One Imation or IBM TR-7 Cleaning Cartridge
- Trial software CDs
- Mounting screws

Contact your reseller if any item is missing or damaged. Be sure to retain your proof of purchase; it might be required to receive warranty service.

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## Tools required

To install the TR-7 tape drive in your computer, you will need a flat-blade screwdriver and a Phillips screwdriver.

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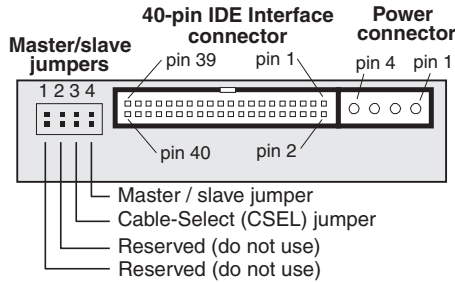
## Installing the TR-7 tape drive

Follow these instructions to install the TR-7 tape drive:

1. Turn off the computer and disconnect all power cords and external cables of the computer and all attached devices.
2. Be sure to follow normal ESD protection procedures when installing the TR-7 tape drive. For optimal performance use ESD Straps.
3. Open the computer.

4. Configure the TR-7 tape drive as shown in figure 1-1.

Figure 1-1.



**Jumper settings for Travan 40 tape drive**

	Tape drive set as "slave"
	Tape drive set as "master"
	Tape drive set for "Cable Select" (tape drive is master or slave depending on its location on the interface cable)

5. Cabling the TR-7 tape drive.

If your computer has two IDE ports:

- Most modern computers come with two IDE ports, each of which can support one or two devices on a hard disk drive, as shown in Figure 1-2 on page 1-3. After setting the master-slave jumpers, you can attach the tape drive to the secondary IDE port as a master.

**Note:** If no devices or cables are already attached to the secondary IDE port, you will need to obtain a second IDE cable for your tape drive.

If your CD-ROM drive is attached to a cable on the secondary IDE port as shown in Figure 1-3 on page 1-3, you can install the tape drive on

the same cable as the CD-ROM drive. However, you must first set the master-slave jumpers to a slave configuration.

Figure 1-2.

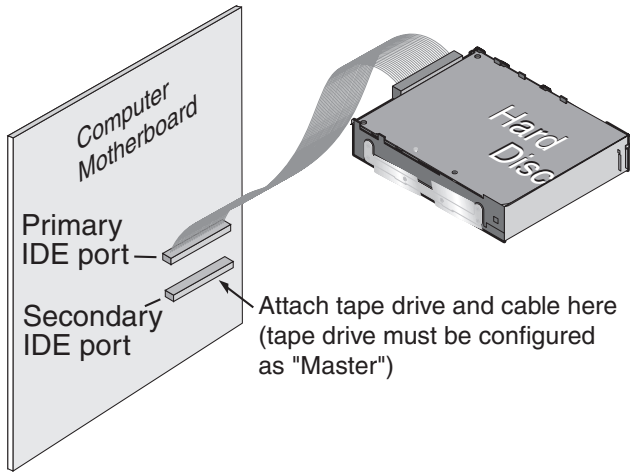
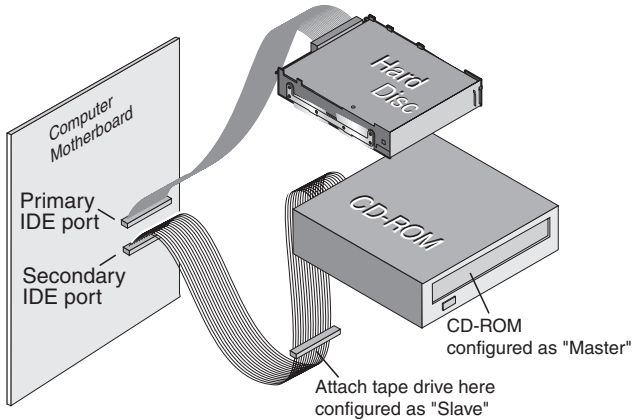


Figure 1-3.

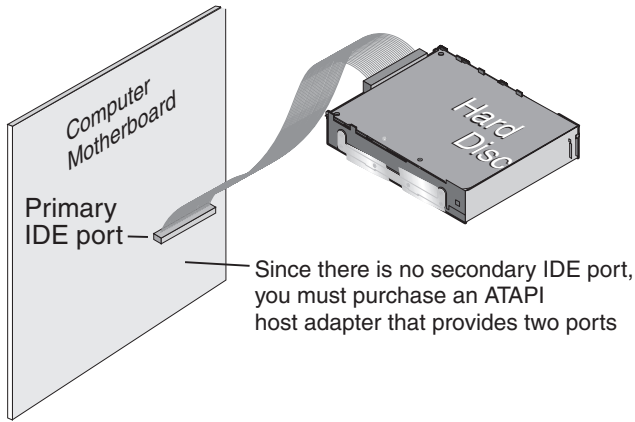


- If your computer has only one IDE port, as shown in figure 1-4 on page 1-4, it is probably being used by the hard disk drive. Do not attach your tape drive to an IDE port that is being used by a hard disk drive or a sound card.

In this situation you must purchase an ATAPI host adapter that provides a second IDE port. You will also need a second IDE cable for

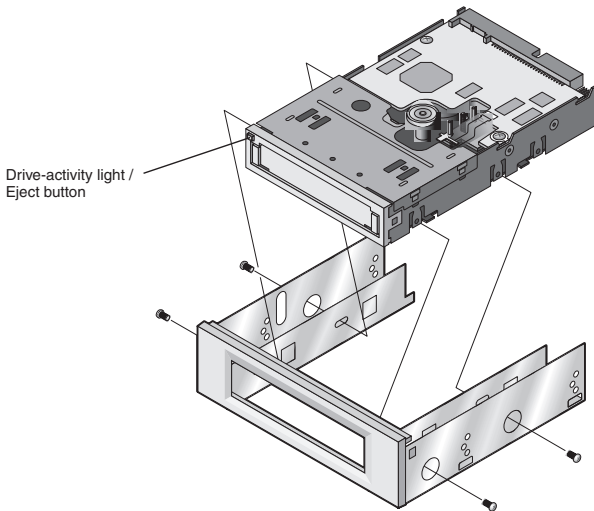
the tape drive. After installing the host adapter, set the master/slave jumpers accordingly.

Figure 1-4.



6. Locate an available bay or space in your computer to mount the tape drive. The drive can be mounted either horizontally or vertically. The drive fits in a 3.5-inch (1-inch high) standard bay. You can also mount the drive in a 5.25-inch (1.6-inch high) bay using the included 5.25-inch mounting kit as shown figure 1-5.

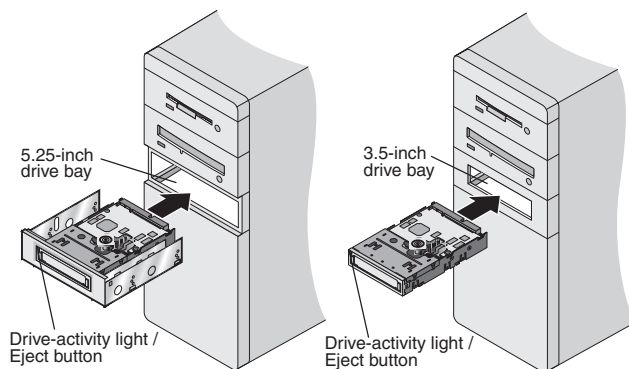
Figure 1-5.



7. Remove the bay cover, if necessary. Slide the tape drive into the bay, as shown in figure 1-6, and secure it with the mounting screws provided in

the option package. Do not use any other screws to secure the drive. Using screws that are too long might damage the drive.

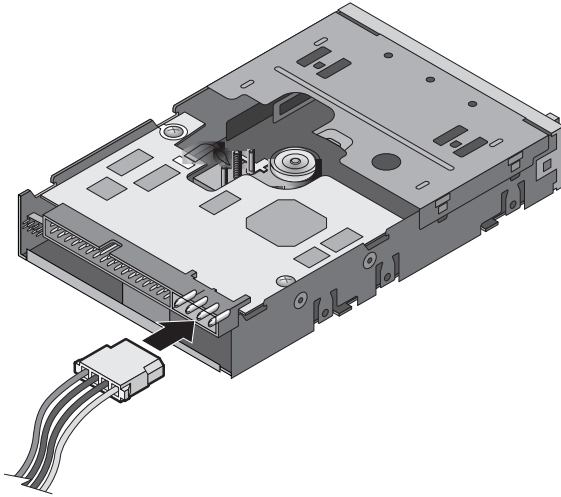
Figure 1-6.



8. Locate the IDE bus cable (usually a 50-pin ribbon cable) inside your computer, and attach one of the connectors on the cable to the tape drive. Ensure that pin 1 of the cable (usually color-coded) aligns with pin 1 of the IDE connector on the tape drive.

9. Locate an available power cable inside your computer, and connect it to the four-pin power connector on the tape drive as shown in figure 1-7.

Figure 1-7.



10. Replace the computer cover.
11. Reconnect the signal cables and ac power cord and any other signal cables to the outside of your computer, and plug the power cord into an available power outlet. Turn on all attached devices; then turn on the computer.

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## Installing for native Windows backup applet

### Installing for Windows NT 4.0

To install the backup-and-restore software for Microsoft® Windows NT®, take the following actions:

1. From the Windows NT Server desktop, select **Start-> Settings -> Control Panel**.
2. Open the **Tape Drive** applet.
3. Select the **Drives** tab.
4. Click **Add**.
5. Insert the IBM User Guide CD.
6. Select **Have Disk**.
7. Enter the path = `x:\Device Driver\TR7\NT4\`, where *x* is the drive letter where IBM User Guide CD is located.
8. Select **OK**.

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## Installing for Windows 2000

To install the backup-and-restore software for Microsoft Windows® 2000 Professional, take the following actions:

1. From the Windows 2000 Server Desktop, select **Start-> Settings->Control Panel->System->Seagate ST3401A**.
2. Right-click **Properties**.
3. From the Driver tab, select **Update Driver**.
4. Insert the IBM User's Guide CD.
5. Click **Next**.
6. Select **Search for a suitable driver for my device**.
7. Click **Next**.
8. Select **Specify a location**.
9. Enter the path = `x:\Device Driver\TR7\Win2K\`, where *x* is the drive letter where IBM User Guide CD is located.
10. Select **Finish**.

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## Installing the trial server software

You can install any of the applications from the trial software CDs by following the instructions given in the startup menu that is displayed when you insert any of the CDs from the trial software package.

You can use the trial software for 30 days to determine the best application for you specific needs. At the end of the 30-day trial period, it will be necessary to purchase an unlock key to make the application permanent. To purchase an unlock key, go to the tape drive Web site at <http://www.pc.ibm.com/ww/eserver/xseries/tape>. and follow the software links.

**Note:** The trial software CDs contain backup applications that are used with other products, but do not apply for this tape drive The complete list of supported configurations are available on the compatibility Web site at <http://serverproven.raleigh.ibm.com/compat/storage/tmatrix.html>.





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## Operating and maintaining the drive

This section describes typical activities involved in operating and maintaining the TR-7 tape drive. For instructions on using your backup software, see the online manual that comes with your software.

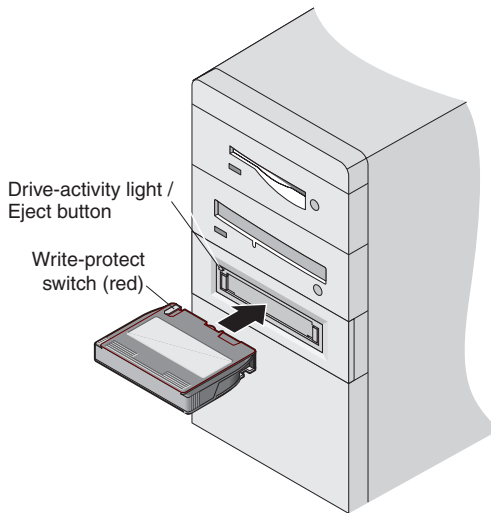
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### Loading and unloading cartridges

On the front of your drive is an opening for inserting Travan cartridges. A protective door covers the opening. Above and to the left of the door is the drive-activity light that can also be used as a cartridge Eject button.

**To load a cartridge:** Insert the cartridge in the drive with the metal base plate facing down and the red write-protect tab on the left, as shown in Figure 2-1. The cartridge only fits in one orientation. Push the cartridge gently into the drive until it is grabbed by the drive mechanism and pulled into the drive.

Figure 2-1.



**To unload a cartridge:** Wait until the Eject button/Drive-activity light is OFF. Then push the Eject button. When the cartridge has been ejected by the drive, grasp the exposed sides of the cartridge and pull the cartridge straight out. If the drive-activity light has gone out, but you believe your backup or restore operation did not complete, repeat the backup or restore.

**Attention:** Do not remove a tape cartridge while the drive-activity light is on.

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## Handling Travan cartridges

Although Travan tape cartridges are ruggedly built, they must be handled with care. Observe the following precautions:

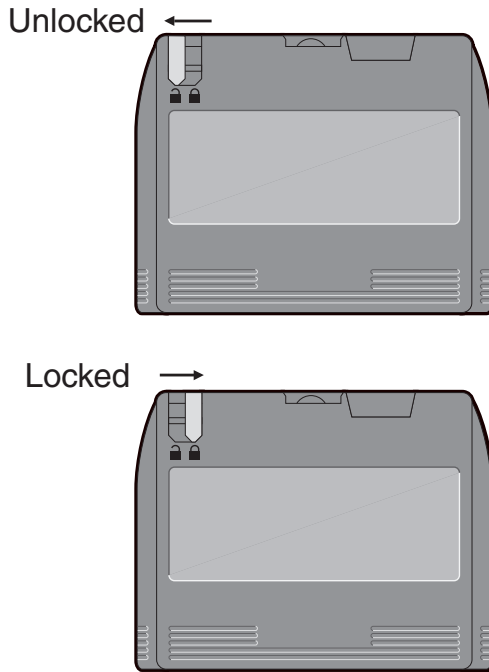
- Store cartridges in their protective cases when you are not using them.
- Keep cartridges away from dust, dirt and moisture.
- Keep cartridges away from direct sunlight and heat sources, such as radiators or warm air ducts.
- Do not expose cartridges to temperature extremes or rapid changes in temperature.
- Keep cartridges away from sources of electro-magnetic fields, such as telephones, computer monitors, printers, dictation equipment, mechanical or printing calculators, motors or bulk erasers.
- Do not open the tape access door of a cartridge or touch the tape itself. One fingerprint can prevent the drive from reading information on the tape.

## Setting the write-protect switch

As shown in Figure 2-2 on page 2-3, Travan cartridges feature a write-protect or “lock” switch near the upper left corner of the cartridge. When the write-protect switch is in the “unlocked” position, the cartridge is ready for normal writing and reading. When the write-protect switch is in the “locked” position, the drive can read data from the cartridge, but cannot write to the

cartridge. Cartridges are shipped from the factory with the write-protect switch set to the “unlocked” position.

Figure 2-2.



## Retensioning tapes

Travan tapes must be retensioned frequently to ensure data integrity and optimize drive performance. If you ever have a problem reading a tape, retensioning may solve the problem. Some backup software automatically retensions Travan media before a backup or restore. See your software manual for tape retensioning instructions.

For optimal performance, retension the tape when:

- A cartridge is being used for the first time
- A cartridge has not been used for over a month
- A cartridge has been dropped
- A cartridge has been shipped from one location to another
- A cartridge has been exposed to a significant change in temperature

For optimum performance, cartridges should be retensioned prior to each use if your backup software does not retension them automatically. See the documentation that comes with your tape cartridge for additional cartridge operating instructions.

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## **Cleaning the tape drive mechanism**

Under typical conditions, the tape heads should be cleaned after each 24-hours of use. However, in adverse conditions or when error rates become high, the tape drive recording mechanism should be cleaned after every eight hours of use.

Only use the dry-process cleaning-cartridge method. When you insert a cleaning cartridge in the drive, the drive recognizes the cleaning cartridge and automatically starts the cleaning process. After about 10 seconds, when the cleaning process is complete, the drive LED stops flashing, and the cleaning cartridge is ejected. To order Travan cleaning cartridges call 1-888-IBM-Media.

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## Appendix A. Product specifications

TR-7 1/4-inch tape cartridge technology offers fast, efficient, high capacity storage in a compact, easy-to-remove hard-shell package. This mass-storage technology evolved from the original reel-to-reel 1/2-inch tape storage medium. Storage capacities increased from 60 MB<sup>1</sup> 5 on 9 tracks (QIC-24, 1982) to the 40 GB<sup>2</sup> capacity achievable with the tape option data cartridge, when using software data compression.

This appendix includes the following specifications and requirements<sup>3</sup>:

- Physical specifications
- Drive performance
- Environmental requirements

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### Physical specifications

The following table lists the physical specifications for the tape drive.

*Table A-1. Product Specifications*

Type of drive	3.5-Inch Mount	5.25 Inch Mount
Height	25 mm (1.0 in.)	42 mm (1.6 in.)
Width	102 mm (4.0 in.)	147 mm (5.8 in.)
Length	163 mm (6.4 in.)	163 mm (6.4 in.)
Weight	0.5 kg (1.0 lb)	0.7 kg (1.5 lb)

---

1. 1 MB is approximately 1 000 000 bytes of data.

2. GB is approximately 1 000 000 000 bytes of data.

3. Product description data represents IBM's design objectives and is provided for comparative purposes; actual results might vary, based on a variety of factors. This product data does not constitute a warranty. Data is subject to change without notice.

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## Environmental requirements

The following table lists the environmental specifications for the tape drive.

*Table A-2.*

Specification	Operational	Nonoperational
Temperature	+41° to +113°F (+5 to +45°C)	-40° to +149°F (-40° to +65°C)
Thermal gradient	1° C per minute (no condensation)	20°C per hour
Relative humidity	20% to 80% noncondensing	5% to 95% noncondensing
Max wet bulb temperature	78.8°F (26°C)	No condensation
Altitude	-1000 to +15 000 feet	-1000 to +50 000 feet
Vibration Peak to peak displacement	0.005 in. max (5 to 44.3 Hz)	0.1 in. max (5 to 17 Hz)
Peak acceleration	0.50 g max (44.3 to 500 Hz)	1.5 g max (17 to 500 Hz)

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## Appendix B. Troubleshooting

If you have problems installing or operating your drive, please read through this section and try the proposed solutions.

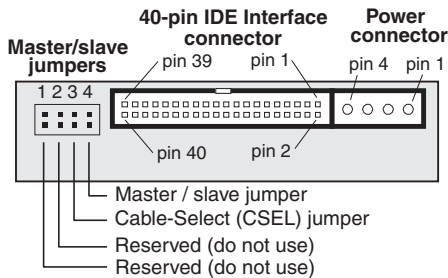
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### Installation troubleshooting

If, after installing an ATAPI tape drive, your computer does not recognize your tape drive or CD-ROM drive:

- Make sure all cables are attached firmly.
- Check with the manufacturer of your ATAPI controller chip set to make sure that you have the latest drivers for your operating system. Outdated or incorrect device drivers provide limited hardware support and can result in Windows being unable to detect your tape drive.
- You may need to reconfigure your tape drive as a “master” or “slave” using the master/slave jumpers. As shown in Figure A-1, the master/slave jumpers are located on the bottom of the drive, next to the interface connector.

Figure B-1.



#### Jumper settings for Travan 40 tape drive

■ ■ ■ ■	Tape drive set as "slave"
■ ■ ■ ■	Tape drive set as "master"
■ ■ ■ ■	Tape drive set for "Cable Select" (tape drive is master or slave depending on its location on the interface cable)

- If the tape drive is the only device on the IDE cable, set the jumper to configure it as a “master.”
- If there are two ATAPI devices on a single cable, make sure that the tape drive is configured as a “slave.” Set the other device as a “master.”

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## Tape operations troubleshooting

If, after a period of successful operation, the tape drive appears to fail during a backup or restore.

- Check to make sure all cables are securely connected and jumpers are set appropriately.
- Retension the tape, as described in your backup software manual.
- Turn off the computer. Wait for the computer to power down and then restart the system. Rerun the backup software, making sure that no other programs (such as virus scanners) are running.
- Remove the cartridge and then reinsert it into the drive.
- Try a different cartridge — preferably an unused one.
- Make sure you are using the correct type of tape cartridge. You cannot use TR-1, TR-2, TR-3, TR-4, or QIC-80 tapes with this drive. Clean the tape mechanism, as described in “Cleaning the tape drive mechanism” on page 2-4.



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## Appendix C. Product warranty and support information

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### Warranty period

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

<b>Machine</b> - TR-7 Tape Drive
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<b>Warranty period</b> - Three Years
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### Service and support

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of the product. Refer to your IBM Statement of Limited Warranty for a full explanation of IBM warranty terms.

### Warranty information on the World Wide Web

The IBM Machine Warranties Web site at [http://www.ibm.com/servers/support/machine\\_warranties/](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.

<b>Online technical support</b>	
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IBM Personal Computing Support Web site	<a href="http://www.ibm.com/pc/support/">http://www.ibm.com/pc/support/</a>
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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 IBM HelpCenter<sup>®</sup> 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. If the number for your country or region is not listed, 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 and regions	Go to <a href="http://www.ibm.com/pc/support/">http://www.ibm.com/pc/support/</a> , and click <b>Support Phone List</b> .

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## **IBM Statement of Limited Warranty Z125-4753-06 8/2000**

This warranty statement consists of two parts: Part 1 and Part 2. Be sure to read Part 1 and the country-unique terms in Part 2 that apply to your country or region.

### **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.

## **PEOPLE'S REPUBLIC OF CHINA (PRC)**

**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.

## **EUROPE, MIDDLE EAST, AFRICA (EMEA)**

**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 unrepaid 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 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.



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## Appendix D. Notices

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## Electronic emission notices

### Federal Communications Commission (FCC) statement

TR-7 Tape Drive

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. 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.

### **Industry Canada Class A emission compliance statement**

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

### **Avis de conformité a la réglementation d'Industrie Canada**

Cet appareil numérique de la classe A 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 A. Für diese Klasse von Geräten gilt folgende Bestimmung nach dem EMVG:

Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministers für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.

(Auszug aus dem EMVG vom 9.Nov.92, Para.3. Abs.4)

<p><b>Hinweis:</b> Dieses Genehmigungsverfahren ist von der Deutschen Bundespost noch nicht veröffentlicht worden.</p>
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### **European Union - EMC directive**

This product is in conformity with the protection requirements of EU Council Directive 89/336/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM cannot 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 A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

**Warning:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### 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 A en vertu de CISPR22/Standard européen EN 55022. Les conditions pour l'équipement de Classe A ont été définies en fonction d'un contexte d'utilisation commercial et industriel afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

**Avertissement :** Ceci est un produit de Classe A. Dans un contexte résidentiel, ce produit peut causer une interférence radio exigeant que l'utilisateur prenne des mesures adéquates.

### 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 apparecchiature di informatica Classe A ai sensi del CISPR 22/Norma Europea EN 55022. I limiti delle apparecchiature della Classe A sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti commerciali ed industriali.

**Avvertimento:** Questo è un prodotto appartenente alla Classe A. In ambiente domestico, tale prodotto può essere causa di interferenze radio, nel qual caso l'utente deve prendere misure adeguate.

## Unione Europea - Directiva EMC (Conformidad electromagnética)

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 A de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase A se han establecido para entornos comerciales e industriales a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

**Advertencia:** Este es un producto de Clase A. En un entorno doméstico este producto podría causar radiointerferencias en cuyo caso el usuario deberá tomar las medidas adecuadas.

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