

40X/12X/40X Max CD-RW 驱动器



用户指南

OPTIONS
by 

40X/12X/40X Max CD-RW 驱动器



用户指南

注: 使用本信息及其支持的产品前, 请阅读附录下的信息。

安全: 请先阅读

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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关于本书

本手册包含对 IBM® 40X/12X/40X CD-RW Max 驱动器进行安装、配置和故障诊断的指示信息。本手册分成以下部分：

安装与用户指南

本指南包含以下列语言提供的产品描述和安装指示信息：

- 英语
- 法语
- 德语
- 西班牙语
- 意大利语
- 巴西葡萄牙语
- 简体中文
- 繁体中文
- 日语

附录

附录包含设备驱动程序的特殊配置设置和帮助及服务信息。它们也包含产品保证和声明。

注： 本手册中的插图可能与您的硬件稍有不同。

注册您的选件

感谢您购买 OPTIONS by IBM。请花点时间注册您的产品，并向我们提供有助于 IBM 将来更好地为您服务的信息。您的反馈对于我们在开发对您相当重要的产品和服务，以及寻找更好的方式以便与您沟通方面具有重要价值。请在以下 IBM Web 站点注册您的选件：

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

IBM 将向您发送有关您所注册的产品信息和更新，除非您在 Web 站点的调查表中表明您不希望接收进一步的信息。

安装与用户指南

这一部分提供产品描述、安装指示信息以及使用和维护 IBM 40X/12X/40X Max CD-ReWritable (CD-RW) 驱动器的指示信息。

介绍

这一部分描述本选件及其附带的软件。这一部分也包含您安装本选件前所需的一些信息。

产品描述

IBM 40X/12X/40X Max CD-RW 驱动器可以读写 CD-RW 和 CD-Recordable (CD-R) 光盘，并且可以读批量生产的压模 CD。由本驱动器创建的 CD 与能读 CD-RW 光盘和其它介质的 Multi-Read CD-ROM 和 DVD-ROM 驱动器兼容，并且与只能读 CD-R 和 CD-ROM 光盘的早期的非 MR CD-ROM 驱动器兼容。

该驱动器可以高达标准 CD-ROM 速度的 40 倍写入 CD-R 光盘，每秒刻录数据达 6000 KB¹⁾ 写 CD-R 光盘。在此速率下，该驱动器可以在大约四分钟内刻录一张 80 分钟 CD-R 光盘。该驱动器以不同速度写 CD-RW 和 CD-R 光盘。该驱动器可以高达标准 CD-ROM 速度的十二倍写入高速 CD-RW 光盘，每秒刻录数据达 1800 KB。在此速率下，该驱动器可以在不到七分半钟的时间内刻录一张 80 分钟 CD-RW 光盘。该驱动器也可以高达标准 CD-ROM 速度的 40 倍读数据，或每秒刻录数据达 6000 KB。

该驱动器结合了 Mount Rainier 技术。Mount Rainier 是为了使 CD-RW 更方便使用而创建的开放行业标准。其有利之处包括由驱动器进行后台格式化和物理缺陷管理。有关更多信息，请访问 www.mt-rainier.org。

该 CD-RW 驱动器只可以安装在使用电子集成驱动器 (IDE) 或增强型 IDE (EIDE) 体系结构的计算机中。

除了本手册之外，选件工具包还包含：

- CD-RW 驱动器
- 一根音频电缆
- 四个安装螺钉
- 一根 IDE 电缆
- 用户指南和软件 CD
- 《激光安全指南》

若有任何物品缺少或损坏，请与购买处联系。请务必保留购买凭证。可能会需要它来接受保修服务。请参阅第 23 页的附录 D，『Product warranty and support information』获取保证信息。

软件描述

用户指南和软件 CD 中包含以下软件：

1. 当谈及数据传输速度时，KB 近似等于 1024 字节。

- IBM RecordNow: 通过 RecordNow, 可以用多种方式刻录您自己的 CD。可以使用 CD 复制器功能来制作 CD 的备份副本, 或者可以由硬盘驱动器上的文件制作数据 CD。也可以由 MP3 文件或由其它音频 CD 创建音频 CD。
- IBM Drive Letter Access (DLA): 可以使用 DLA 通过驱动器盘符来访问 CD-RW 驱动器。可以使用 Windows 命令行或使用拖放方法将文件复制到可刻录的介质。
- UDF Reader: 可以使用 UDF Reader 来读您通过 DLA 在其它 PC 中写的 CD。
- StorageGuard: 可以使用该程序来监视您已经备份了多少数据。该程序也提供刻录软件的轻松 Web 更新。

开始前

开始安装前, 请阅读以下信息。必须完成以下步骤来安装该驱动器:

1. 确定使用哪个 IDE 端口和相应的配置设置。
2. 在驱动器上放置或更改配置跳线 (您可能需要对其它设备的配置跳线进行更改)。
3. 在驱动器托架中安装驱动器。
4. 配置系统。
5. 安装软件。

如果您不理解这些步骤或不确定您执行描述的所有步骤的能力, 请联系有资格的计算机技术人员来为您安装 CD-RW 驱动器。

系统需求

开始安装该驱动器前, 请确保您的计算机符合以下系统需求。

- 最小微处理器: Intel® Pentium® 处理器 (或同等的处理器)
- 最小 RAM: 32 MB²
- 可用的 IDE 连接
- 可用的内部电源连接
- 可用的 5.25 英寸驱动器托架
- 以下操作系统之一:
 - Microsoft® Windows® Millennium Edition (Me)
 - Microsoft Windows 2000 Professional
 - Microsoft Windows XP

可能需要一把平头螺丝刀或十字螺丝刀来完成安装。可能也需要参考计算机附带的文档。请确保该文档可用。

操作指示信息

要在安装过程中保护 CD-RW 驱动器, 请遵循以下预防措施:

- 小心操作驱动器。跌落或震动驱动器可能会损坏驱动器外壳内的组件。
- 在您准备把驱动器安装在计算机中前, 请将 CD-RW 驱动器保存在其防静电包中。尽量减少运动。运动可能导致静电累积。
- 不要强行插入电源电缆。这样做可能会损坏接口或驱动器。

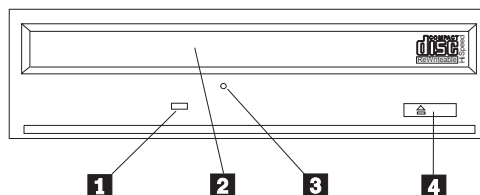
2. 当谈及内存存储容量时, MB 意味着近似 1 000 000 字节; 用户可访问的总容量可能根据操作环境的不同而不同。

产品视图

以下部分以插图显示了 CD-RW 驱动器的前视图和后视图。

驱动器前视图

请参考以下插图来识别在安装指示信息中可能提及的部件。



注：前边框设计可能不同（随供应商而不同）。

1 忙指示灯：当驱动器读、写或播放 CD 时，此指示灯打开。

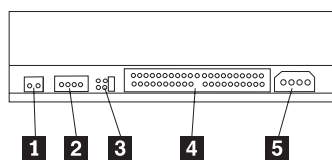
2 CD 托盘：使用此托盘来装入和卸装 CD。

3 手动弹出孔：此孔提供对弹出机构的访问，以在正常弹出过程不起作用时从驱动器中除去 CD。

4 弹出 / 装入按钮：按此按钮时，打开或关闭 CD 托盘。

驱动器后视图

请参考下图来识别在安装指示信息中可能提及的部件。



1 保留

2 音频输出接口：使用此接口将 CD-RW 驱动器连接到声音适配器。

3 配置插针：这些插针用于设置驱动器配置。

4 IDE 接口：使用此接口将 CD-RW 驱动器连接到 IDE 电缆。

5 DC 电源接口：使用此接口将 CD-RW 驱动器连接到计算机电源电缆。

安装驱动器

要将驱动器安装到计算机中，请执行以下操作：

步骤 1. 打开计算机

要打开计算机，请执行以下操作：

1. 关闭计算机和所有连接的设备。
2. 拔出计算机和所有连接的设备电源线。
3. 从计算机上卸下外盖。请参阅计算机的文档以获取有关卸下外盖的指示信息。

步骤 2. 除去驱动器的包装

要除去驱动器的包装，请执行以下操作：

1. 为了释放任何累积的静电，请接触未上漆的金属表面至少二秒钟。拿住包装驱动器的包并用该包接触未上漆的金属表面至少二秒钟。
2. 从包中取出驱动器。

如果必须将驱动器放下，请将防静电包放置在垫平的表面上，并将驱动器组件一侧面朝上放置在包上。

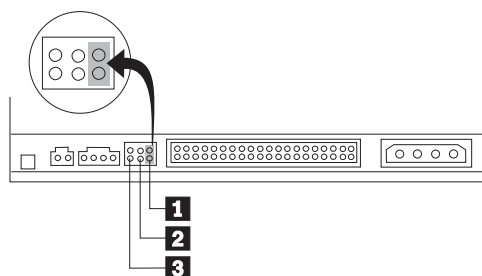
步骤 3. 选择 IDE 端口

较新的计算机通常有两个 IDE 端口。如果计算机有两个 IDE 端口，请使用辅助 IDE 端口来连接 CD-RW 驱动器。通常辅助 IDE 端口邻近连接到硬盘驱动器的主 IDE 端口。您选择的 IDE 端口和您选择的电缆位置决定了驱动器使用哪个配置跳线设置。请参阅第 5 页的『步骤 4. 设置配置跳线』获取有关设置配置跳线的指示信息。

- 如果您有两个 IDE 端口，请用驱动器附带的 IDE 电缆将 CD-RW 驱动器连接到辅助 IDE 端口。如果 CD-RW 驱动器是辅助 IDE 端口上仅有的设备，您将使用主配置设置。如果辅助端口上除了 CD-RW 驱动器外还有另一个设备，您将使用从配置设置。
- 如果必须将 CD-RW 驱动器连接到与更快的设备（例如硬盘驱动器）相同的 IDE 端口，请将从设置用于 CD-RW 驱动器并将主设置用于更快的设备。在一些实例中，当同一电缆上的另一个设备配置为从时，硬盘驱动器可能需要存在从设备之下的主设备设置。有关在其它设备上设置配置跳线的更多信息，请参阅计算机或所讨论的设备附带的文档。
- 一些非 IBM 计算机支持电缆选择设置，设备在电缆上的位置决定了设备是主设备还是从设备。请参阅计算机附带的文档来确定您的计算机是否支持此设置。

步骤 4. 设置配置跳线

下图显示了主 **1** 设置、从 **2** 设置和电缆选择 **3** 设置。请通过将跳线放置在与步骤 3 中所选择设置相应的一对插针上来配置 CD-RW 驱动器。



- 如果将驱动器配置为主设备，请将跳线设置为主 **1** 设备设置。（这是驱动器在装运时的设置方式。）如果 IDE 端口上有第二个设备，请检查该设备是否配置为从设备。
- 如果将驱动器配置为从，请将跳线设置为从 **2** 设备设置。请检查 IDE 端口上的另一个设备是否配置为主设备（或存在从设备之下的主设备）。
- 如果将驱动器配置为电缆选择，请将跳线设置为电缆选择 **3** 设备设置。如果 IDE 端口上有另一个设备，请检查该设备是否也配置为电缆选择。

步骤 5. 将驱动器安装在托架中

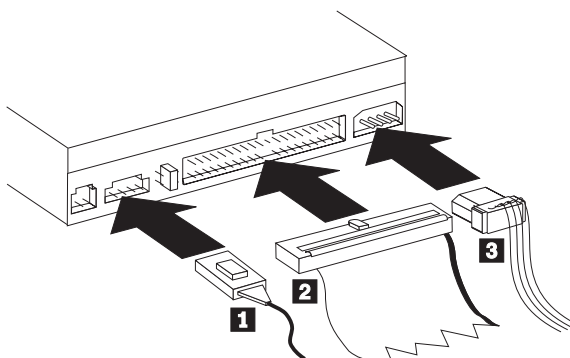
警告： 当您直接将螺钉拧进驱动器时，请务必使用选件包中的安装螺钉。使用过长的螺钉可能会损坏驱动器。

可以将 CD-RW 驱动器水平或垂直安装在计算机中。如果垂直安装该驱动器，必须在关闭驱动器托盘前固定放入驱动器中的任何 CD，否则 CD-RW 驱动器无法正确读 CD。有关在垂直安装的驱动器中固定 CD 的更多指示信息，请参阅第 9 页的『装入 CD』。

1. 将驱动器滑入托架中。您的计算机可能对安装存储设备有特殊要求的过程。请参考计算机附带的文档获取更多指示信息。
2. 将驱动器托架螺钉孔与驱动器外壳或安装支架中的螺纹孔对准。请务必使用随此驱动器提供的安装螺钉。使用大小错误的螺钉可能会损坏驱动器。请先不要旋紧螺钉，以检查它们的位置。通常每一侧使用两个螺钉。
3. 检查以确保正确对准，然后拧紧螺钉以固定驱动器。不要拧得过紧。

步骤 6. 将电缆连接到驱动器

请按下图将电缆连接到 CD-RW 驱动器：



1. 如果想将 CD-RW 驱动器连接到声音适配器或系统板上的声音功能部件，请找到所包含的音频电缆并确定哪根电缆最适合您的声音适配器上的 CD 音频输入端口。请将所选择的音频电缆的一端连接到 CD-RW 驱动器音频输出接口 **1**，并将该电缆的另一端连接到您的声音适配器 CD 音频输入端口。请保存其它电缆以备将来您使用不同的声音适配器时使用。

注：一些计算机具有的接口较小，与所包含的音频电缆不兼容。如果您的计算机有这种接口，则必须购买一根新的音频电缆。

2. 将 40 针 IDE 电缆接口 **2** 连接到驱动器上的 IDE 接口。调整电缆，以致有颜色编码的一边离电源电缆接口 **3** 最近。如果没有电缆连接到 IDE 端口或 IDE 电缆上只有一个设备接口，请使用随此选件提供的 IDE 电缆。如果使用所包含的 IDE 电缆，请将该电缆的一端连接到您的系统板 IDE 端口或 IDE 适配器，并将该 IDE 电缆的另一端连接到 CD-RW 驱动器。
3. 找到与计算机电源连接的可用电源电缆之一。将四针电源电缆 **3** 连接到 CD-RW 驱动器直流电源接口。

步骤 7. 完成硬件安装

要完成硬件安装，请执行以下操作：

1. 确保驱动器妥善安装并且接口牢牢连接。
2. 确保电缆不妨碍计算机外盖并且不阻塞任何风扇叶片或气流通路。
3. 重新安装计算机外盖。
4. 重新连接所有设备并检查任何可能已经断开连接的设备，例如键盘、鼠标和监视器。
5. 将所有电源线连接到电源插座。

步骤 8. 更新计算机配置

完成硬件安装后，请重新启动计算机。通常，打开计算机时，显示配置设置信息屏幕。如果没有看见此屏幕，请检查您的计算机文档获取有关访问配置或设置实用程序的信息。

要察看大多数 IBM 计算机的配置信息，请在启动期间，IBM 图形显示在屏幕右上角时按下 F1。完成信息浏览后，请保存更改并退出。

步骤 9. 安装 CD-RW 驱动器软件

用户指南和软件 CD 包含两个软件应用程序，以同 CD-RW 驱动器的 CD 写功能一起使用。

- IBM RecordNow
- IBM Drive Letter Access (DLA)

另两个应用程序将用于某些情况中。

- UDF Reader
- StorageGuard

有关这些应用程序的更多信息，请参阅第 1 页的『软件描述』。

要安装这些应用程序，请执行以下操作：

1. 将用户指南和软件 CD 插入 CD-RW 驱动器。
2. 如果该 CD 自动启动，请按屏幕上的指示信息进行操作。如果它不自动启动，请执行以下操作：
 - a. 单击**开始** -> **运行**并输入 `e:\engage.bat`，此处 `e:` 是 CD-ROM 驱动器的盘符。
 - b. 单击**确定**。
3. 选择语言。
4. 选择您想要安装的应用程序。
5. 按屏幕上的指示信息进行操作。




使用 CD-R 和 CD-RW 光盘

CD-RW 驱动器既可以写 CD-R 光盘，又可以写 CD-RW 光盘。CD-RW 光盘可以多次擦除并重新使用，而 CD-R 光盘只能写一次。

注：

1. CD-R 光盘在音频 CD 播放器上可播放。CD-RW 光盘仅在某些音频 CD 播放器上可播放。
2. CD-R 介质速率由写速度来设定。对于 40x 写方式，需要 40x 介质。要获得最佳效果，请将写速度限制为介质额定速度。包含在选件工具包中的 **Record Now** 软件允许您限制最大刻录速度。有关更多信息，请转到第 11 页的『限制刻录速度』。
3. CD-RW 介质速率也由写速度设定。IBM 40X/12X/40X 驱动器仅对额定速率为 4x 或更高的 CD-RW 光盘支持写操作。最大写速度将印在介质包装或介质光盘上。

4. 下表显示了高速和低速 CD-RW 介质的兼容性矩阵:

介质等级	写
无等级, 2x 	不支持
多速, 1x2x4x, 4x, 1x-4x 	是
高速, 4x-10x, 4x-12x, 8-10x 	是

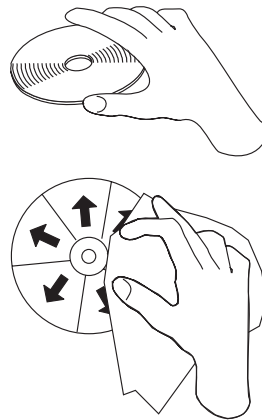
使用驱动器

这一部分提供了有关如何操作及保养 CD 和 CD-RW 驱动器, 以及如何将 CD 装入 CD-RW 驱动器的信息。

操作和保养 CD

CD 是精密介质, 必须小心操作并保持清洁以确保它们保持可读。这些预防措施将有助于您延长 CD 的使用期限。

警告: 以圆周运动擦拭 CD 可能引起数据丢失。



- 握住 CD 的边缘或中心孔。不要触摸 CD 表面。
- 要除去灰尘或指纹, 请用柔软、不起毛的布从中心往边缘擦拭 CD。
- 不要在表面上书写。
- 不要将 CD 放置于直接日照中。
- 不要使用商用清洗剂清洁 CD。
- 不要弯曲 CD。

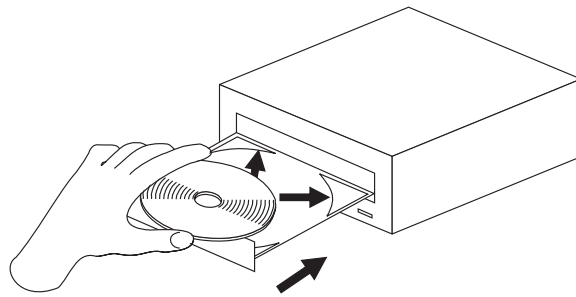
保养 CD-RW 驱动器

要在操作过程中保护 CD-RW 驱动器，请遵守以下预防措施进行操作：

- 移动驱动器前请除去该驱动器中的任何 CD。
- 不要将不相关的物体插入驱动器中。
- 不要卸下驱动器盖或试图维修驱动器。
- 不要在以下任何情况下对驱动器进行操作：
 - 高温、高湿度或直接日照
 - 过度震动、意外撞击或斜面
 - 过多灰尘

装入 CD

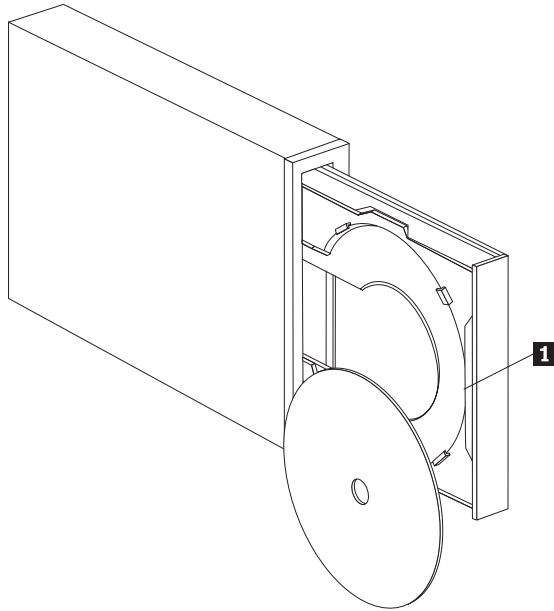
要将 CD 装入水平安装的 CD-RW 驱动器中，请执行以下操作：



1. 按下弹出 / 装入按钮。托盘滑出驱动器。
2. 将 CD 插入装入托盘中。
3. 通过按下弹出 / 装入按钮或轻轻推送托盘来关闭装入托盘。

警告： 不要强行打开托盘；不要将物体插入 CD 托盘中。如果按下弹出 / 装入按钮时托盘不打开，请参阅第 10 页的『手动弹出 CD』。

要将 CD 装入垂直安装的 CD-RW 驱动器中，请执行以下操作：

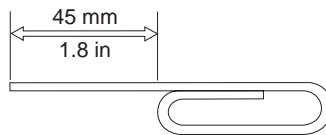


注：驱动器 CD 托盘形状可能与图示不同（随供应商而不同）。

1. 按下弹出 / 装入按钮 **1**。
2. 将 CD 插入托盘中，确保该光盘妥善地放置在垂直安装卡口后。
3. 通过按下弹出 / 装入按钮或轻轻推送托盘来关闭装入托盘。

手动弹出 CD

如果按下了弹出 / 装入按钮而托盘不滑出，请关闭计算机。将大回形针拉直以形成一个工具，如图所示。伸直端必须延伸至少 45 mm (1.8 in.)。将延伸端插入驱动器前部的手动弹出孔中（请参阅第 3 页的『驱动器前视图』）。将回形针推送入孔中直至托盘打开。轻轻拉出托盘直至您可以除去 CD。



与 CD-RW 驱动器一起使用 Windows XP 本地刻录

CD-RW 驱动器与内建于 Windows XP 中的刻录功能完全兼容。如果您运行的是 Windows XP，则可以不添加任何附加软件就刻录数据 CD。如果安装 CD-RW 驱动器附带的 DLA 软件，Windows 本地刻录将禁用并且 DLA 将执行格式化和写功能。您通过 Windows 本地刻录创建的 CD 可以在大多数版本的 Windows 中使用而无需任何特殊阅读器。

要使用 Windows XP 本地刻录将文件复制到 CD，请使用资源管理器将文件拖动到驱动器盘符上。Windows 将把这些文件登台在临时位置中。当您准备将文件复制到 CD 时，请打开驱动器盘符并单击**将这些文件写入 CD**。

注：试图弹出光盘时将会提示您刻录这些文件。

使用 IBM Drive Letter Access (DLA)

IBM Drive Letter Access (DLA) 包含在用户指南和软件 CD 中, 因此您可以向 CD-RW 和 CD-R 介质写数据。

注: CD-RW 介质可以写多次; CD-R 介质只能写一次。

CD-RW 光盘可以两种方式格式化。第一种方式是标准的 UDF, 第二种方式是带 Mount Rainier 扩展的 UDF。当向光盘写数据时, Mount Rainier 扩展允许光盘在后台格式化。虽然这更方便, 但是 Mount Rainier 所写的光盘不能在其它不带 UDF 阅读器的计算机中读。

要格式化一张空白 CD-R 或 CD-RW, 请执行以下操作:

1. 将一张空白光盘插入 CD-RW 驱动器。
2. 打开我的电脑。
3. 右键单击驱动器图标并选择**格式化**。

要写已格式化的介质, 请执行以下操作:

1. 将先前格式化的光盘插入 CD-RW 驱动器。该光盘将安装用于写访问。
2. 将文件拖放到 CD-RW/CD-R 驱动器盘符图标上, 或者使用在 Windows 资源管理器中移动文件的方法。

要让 CD-R 介质在其它计算机中兼容, 请执行以下操作:

1. 在我的电脑中右键单击驱动器盘符。
2. 单击**使兼容**。

使用用于 Windows 98、Windows NT 4.0 或 Windows Me 的 UDF Reader 软件

UDF Reader 软件是为了读没有安装 DLA 的 PC 中 DLA 所写的光盘而提供的。将 DLA 安装到系统中时, UDF Reader 安装程序的副本也被复制到系统中。您可以在其它 PC 中安装 UDF Reader 以读您自己的 UDF 所创建的光盘。

注: UDF Reader 并非在任何安装了 DLA 的计算机中是必需的。它仅用于与通过 DLA 写的计算机共享介质的计算机中。

注: Mount Rainier 所格式化的介质不能在任何没有安装 DLA 的计算机中读。

注: 要在没有 CD-RW 驱动器的计算机中读通过 DLA 格式化的 CD-R 光盘, 请使用列在驱动器属性菜单中的**使兼容**功能。

使用 StorageGuard

StorageGuard 是一个可选程序，它将监视在硬盘驱动器上没有备份的数据的总量并提醒您将其备份。第一次运行它时，您可以选择检查更新、设置 StorageGuard 以监视数据，并设置定时器来提醒您稍后检查更新。如果检查更新，它将连接到由 Veritas 维护的 Web 站点以下载最新的 RecordNow 和 DLA 程序版本。如果设置 StorageGuard 来监视数据，当您的数据超过 15% 没有备份时，它将在系统引导时提醒您。您可以通过选择 Options 从 StorageGuard 通知屏幕更改数据监视的百分比和监视的频率。

注：StorageGuard 在使用 CD-RW 的驱动器中不是必需的。StorageGuard 的主要用途是便于对 RecordNow 和 DLA 更新。RecordNow 和 DLA 的 IBM 服务发布也可从 <http://www.ibm.com> 的 Support 部分获得。

注：StorageGuard 需要因特网连接。

注：虽然 StorageGuard 大多与 Veritas 品牌备份产品一起使用，但是它也与包含在许多版本的 Windows 中的备份程序一起作用。

使用 RecordNow 软件

RecordNow 允许您刻录音频 CD、数据 CD 并复制现有的 CD。有关使用 RecordNow 的详细信息包含在 RecordNow 帮助中。您可以通过在 RecordNow 菜单内按下 F1 来访问 RecordNow 帮助。

要在 Windows Me 或 Windows 2000 中启动 RecordNow，请选择开始 -> 程序 -> **IBM RecordNow**。

要在 Windows XP 中启动 RecordNow，请选择开始 -> 所有程序 -> **RecordNow**。

一旦 RecordNow 启动，请选择以下三种过程之一：

- **Make an exact copy:** 请选择此选项来备份您自己的 CD 或制作先前创建的 CD 的副本。选择了此选项后，RecordNow 将提示您插入要被复制的光盘，然后将提示您何时插入一张空白光盘。
- **Make a music disc:** 选择此选项来创建音频 CD。第二个屏幕将询问您是否想由硬盘上的 MP3 和 Wave 文件或由其它音频 CD 制作一张音频 CD。也可以选择制作用于 MP3 播放器的光盘，该光盘是特别格式化的数据光盘，可以在独立 MP3 播放器中播放。
- **Make a data disc:** 选择此选项来创建包含来自硬盘的数据文件的光盘。RecordNow 将提示您首先插入一张空白光盘。然后会显示一个屏幕，让您可以拖放文件或浏览以查找硬盘上的文件。

注：要限制刻录速度，请在 RecordNow 中选择 Options，并在 Advanced 选项卡窗口中，从名为 *Limit the Maximum recorder speed* 的下拉框中挑选您选择的速度。

附录 A. Product specifications

This appendix includes the following information:

- Physical specifications
- Power requirements
- Environmental requirements
- Drive write/read speeds
- Drive performance
- Format capabilities

Physical specifications

The physical specifications³ of the 40X/12X/40X Max CD-RW drive are listed in the following table.

<i>Physical specifications:</i>	
Height	42 mm (1.7 in.)
Width	149 mm (5.9 in.)
Length	197 mm (7.7 in.)
Weight	1.0 kg (2.2 lb.)

Power requirements

The following table lists the power specifications by voltage level for the 40X/12X/40X Max CD-RW drive. The power specifications are measured at the drive power connector and are nominal values.

<i>Power specifications:</i>		
At Voltage	+12 V dc	+5 V dc
Operational current rating is	1.5 A	0.8 A

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.

The following table lists the environmental specifications for the CD-RW drive. You can mount the drive vertically or horizontally.

Environmental requirements

<i>Environmental Requirements:</i>		
Specification	Operational	Nonoperational
Temperature (noncondensing)	+5° C to +45° C (+41° F to +113° F)	-40° C to +60° C (-40° F to + 140° F)
Relative humidity (noncondensing)	8% to 80%	5% to 90%

Write/Read speeds

The following table lists the write/read speeds for the CD-RW drive.

<i>Drive Write/Read Speeds:</i>	
Function	Supported Speed
Read (CD-ROM/CD-R disc)	17-40x (CAV)
Read (CD-RW/Audio disc)	14-32x (CAV)
Write (CD-R disc)	17-40x (PCAV)
Write (CD-RW disc)	4x, 10x, 12x

Media Speed Compatibility

The following table lists the media speed compatibility for the CD-RW drive.

Function	CD-R Media Compatibility	CD-RW Media Compatibility
Reads	ALL	ALL
Writes	4x, 8x, 12x, 16x, 24x, 32x, 40x	Multispeed (1x2x4x, 4x, 1x-4x) High Speed
注: Media or drive speed must support the listed write speed of the media.		

Drive-performance specifications

The following table lists the performance specifications of the CD-RW drive.

<i>Drive performance:</i>	
Feature	Specification
Burst data transfer rate	16.7 MB (1 MB is approximately 1 000 000 bytes of data) per second (ATA PIO Mode 4) 16.7 MB per second (ATA multi-word DMA Mode 2), 33.3 MB per second (Ultra DMA Mode 2)
Average access time (including latency)	100 ms (17-40x, CAV)
Cache memory (Read/Write)	2 MB

Disc diameter	12 cm (4.7 in.) (8cm [3 in.]
Rotational speed (CD-ROM/CD-R)	8200 rpm
Mean time between failures (MTBF)	100 000 POH (duty 10%)
Buffer underrun protection	SuperLink® or SmartBurn®

The following table summarizes the CD format capabilities of the RecordNow program. Refer to the Veritas software online user's guide for the most recent information on CD format capabilities.

Format	Copy capability	Create capability
CD-DA (Red Book)	Yes	Yes
CD+G	Yes	No
CD TEXT	Yes	Yes
CD-ROM (Yellow Book)	Yes	Yes
CD-ROM XA (Mode 2)	Yes	No
CD-I (Green Book)	Yes	No
CD-I Bridge	No	No
Video CD (White Book)	Yes	No
CD-R (Orange Book P II)	Yes	Yes
CD-RW (Orange Book P III)	Yes	Yes
Multisession CD	Yes	Yes
CD Extra (Blue Book)	Yes	No
Photo CD	Yes	No
Mixed-Mode CD	Yes	No
Bootable CD	Yes	No
Disc at Once	Yes	No
Track at Once	Yes	Yes
Session at Once	Yes	No

The CD-RW drive uses the following methods to write files to CDs:

- **Disc at Once:** The drive writes to the entire disc in a single pass; data cannot be added at a later time.
- **Track at Once:** The drive copies one track at a time to the disc.
- **Multisession:** The drive writes several sessions to a disc; each session has at least one track.

Listed below are descriptions of different CD formats that appear in the table.

CD-Digital Audio: This format records audio CDs that can be played on audio CD players.

CD Extra: This format records audio and data in a multisession format.

CD TEXT: This format records audio CDs with the album names and song titles encoded.

CD-ROM (Mode 1): This format is used for most CD-ROM applications.

CD-ROM XA (Mode 2 Form 1 and Mode 2 Form 2) or CD-ROM Extended Architecture: This standard was created for playback of multimedia content.

CD-I (Mode 2 Form 1 and Mode 2 Form 2) and CD-I Ready⁴: This format is used for home entertainment systems.

CD-I Bridge: This format records a combination of Kodak Photo CDs and Video CDs that can be played on TV set-top players and personal computers.

Photo CD (single and multisession): This format records CDs that are playable on TV set-top video CD players and most DVD systems.

4. The CD-RW drive does not have the necessary audio circuitry and decoding functions for CD-I playback, but it can be read from and write to CDs in this format.

附录 B. Problem solving

Computer problems can be caused by hardware, software, or user error. You might be able to use the information in this section to solve problems yourself, or gather helpful information you can pass on to a service technician.

Review the following list for any problem descriptions that might fit your situation.

Troubleshooting

Your computer or CD-RW drive does not operate correctly or the busy indicator light does not come on.

Take the following actions:

1. Check that the CD is loaded with the label side up.
2. Check that all devices are correctly connected to the computer and the electrical outlet. If all devices are correctly connected and you are still experiencing problems, go to step 3.
3. Turn off the computer, unplug the cables from the electrical outlets for your computer and all attached devices, and remove the computer cover.
4. Check that all power and IDE cables are securely attached. Disconnect the IDE cable and check for bent or misaligned pins. If you do not find any problems, reconnect the IDE cable. Reattach all cables and power cords, and replace the computer cover. Turn on the computer, restart the system, and then attempt to open the CD tray by pressing the **Eject/Load** button. If the tray fails to open and the busy indicator light does not come on, turn off the computer and try using another 4-pin dc power cable.
5. Check that the color-coded edge on the IDE cable aligns with pin 1 on the IDE port and is closest to the power cable on the 40X/12X/40X Max CD-ReWritable drive See 第 4 页的『步骤 3. 选择 IDE 端口』.
6. Check that the IDE cable is connected to the proper IDE port connection. See 第 4 页的『步骤 3. 选择 IDE 端口』 for more information.
7. Check the CD-RW drive and any other device on the IDE cable for the proper master/slave jumper settings. See 第 5 页的『步骤 4. 设置配置跳线』 for more information.
8. If the middle connector on the IDE cable is attached to the IDE port on the system board, remove the connector and reattach the cable. If there is only one device on the IDE port, attach the connector at one end of the cable to the IDE port and the connector at the other end to the device, leaving the middle connector (if there is one) open. If there are two devices on the IDE port, attach the connector at one end of the cable to the IDE port. If there is a hard disk drive, attach it to the connector at the other end of the cable and attach the CD-RW drive to the middle connector.

You cannot format a CD-RW disc

Take the following actions:

1. Check your media. This CD-RW drive cannot format 1X or 2X speed media.
2. Erase the CD-RW with the following procedure, then try formatting again.
 - Remove all discs from drives.
 - Start RecordNow.
 - Select **Make a Data Disc**.
 - Insert your media when prompted.
 - At the prompt "The disc you have inserted is not blank, would you like to erase it now?", select **Yes**.
 - After the media erase completes, Select the **Cancel** button in RecordNow
 - Exit RecordNow.
 - Eject the media.
3. If you are using a third party bus-master driver, check with the driver manufacturer to ensure it supports CD-RW drives.

You cannot create a multi-session disc.

Be sure that there is enough space left on the media for another session. Writing a session requires about 15 MB in addition to the data that is recorded.

You cannot successfully write to a CD-R or CD-RW disc.

Take the following action:

1. Verify that the process is not being interrupted by a screen saver, an antivirus program, an Internet or e-mail program, or other software. Disable the functions that might interrupt the write operation.
2. Verify that your computer has the minimum processor listed in the system requirements for this option. See 第 2 页的『系统需求』 for more information.
3. Verify that the hard disk drive has been defragmented.
4. Replace the disc if it is damaged or scratched.
5. Verify that the write-speed is correct for this disc.

You cannot eject a CD.

Take the following actions after ensuring that the drive is not in the process of writing:

1. Close all applications.
2. Eject the CD with the software application. Double-click **My Computer**. Click the **CD/RW** icon. Click **Eject**.
3. Use the **Eject/Load** button.
4. Turn off the computer. Wait 45 seconds; then turn on the computer and try using the **Eject/Load** button again.
5. If other methods do not work, use the manual-eject hole, using instructions given in 第 10 页的『手动弹出 CD』.

You cannot read from the CD after successfully writing to it.

Take the following actions:

1. If you can read the CD in another CD player or you can see previous sessions, the directory information might be damaged on the volume, making it unreadable. Check the Veritas software online user's guide for more troubleshooting ideas.
2. You might have a damaged CD-R or CD-RW disc. Try a new CD-R disc or CD-RW disc, or another brand of disc.
3. If you can read from a CD-RW disc in the CD-RW drive, but not in another optical drive, be sure that a UDF Reader program is installed on the computer that contains the other optical drive. For more information on the UDF Reader program, see 第 11 页的『使用用于 Windows 98、Windows NT 4.0 或 Windows Me 的 UDF Reader 软件』.
4. Verify that you are not attempting to write the disc under extreme environmental conditions such as the following:
 - low temperature: 5° C (41° F) or below
 - high temperature: 45° C (113 °F) or above
 - excessive shock: >0.5 G
 - excessive vibration: >0.1 G
5. Make sure the CD-R session is closed. See 第 12 页的『使用 RecordNow 软件』 for help. A non-closed audio disc cannot be played in your car or home CD player.

You cannot access the CD-RW drive, or the drive icon does not display (Windows XP)

If the CD-RW drive has been properly installed, there will be an icon for the drive in the My Computer window. If you double-click the **My Computer** icon and there is no drive icon present in the displayed window, check to see that the drive has been properly installed, and that the configuration jumper has been correctly set. For more information, see 第 5 页的『步骤 4. 设置配置跳线』. Next, restart your computer. If a drive icon is still not found, continue with the following steps.

1. Click **Start** → **Settings** → **Control Panel**.
2. Click **System**.
3. Click the **Device Manager** tab.
4. Double-click **View Devices by Type**.
 - a. Click **Hard Disk Controllers** on the Device Manager list. Ensure that there are no conflicts with the controller. Ensure that the device status indicates that the controller is working properly.
 - b. Select **CD-RW** from the **Device Manager** list. Verify that there is a CD-RW device and that no conflicts exist. The device status will indicate that the device is working properly.
5. Click **OK**.
6. Restart the computer.

If the device icon is still not present, check cable connections, device jumper settings, and resolve any existing conflicts.

The CD cannot be read.

Take the following actions:

1. The CD might be dirty; clean it as described in 第 8 页的『操作和保养 CD』.
2. The CD might be defective; try another CD.
3. The CD is not ISO-9660 or High Sierra Group-compatible. Check with your place of purchase.

There is no sound from the CD.

Take the following actions:

1. Check that you are using an audio CD and not a data CD.
2. Adjust the sound-adapter volume control. See the documentation that comes with your sound adapter and audio-CD player program.
3. Turn off the computer, unplug the cables from the electrical outlets for your computer and all attached devices, and remove the computer cover. Check that the audio-signal cable connects the 40X/12X/40X Max CD-RW drive to the sound adapter.

The connectors on the audio cables provided do not fit the connector on your audio adapter.

Some audio adapters might require a special cable. See the documentation that comes with your sound adapter.

You might have to purchase a separate audio cable for the 40X/12X/40X Max CD-RW drive. The audio-out connector on the 40X/12X/40X Max CD-RW drive requires a MPC-2 compliant Molex 70553 or equivalent connector. (To locate the drive audio connector, see 第 3 页的『驱动器后视图』.) If you are using an IBM computer or IBM sound adapter, see 第 23 页的『Service and Support』 for assistance.

You receive "buffer underrun" error messages when copying CDs or making data CDs.

Take the following actions:

- If the file source is a network or removable device, copy the files to the local hard disk first.
- If using CD copier, select **Advanced** and check the **Copy to Hard Disk** option.
- If using RecordNow, select **Options->Advanced**, and make sure that Burn-Proof is checked.
- Try reducing the write speed.
- Make sure the source and target drives are being operated in DMA mode. See 第 21 页的附录 C, 『Customizing the device-driver configuration settings』 for more information.

Appendix C. Customizing the device-driver configuration settings

Windows XP and Windows Me have two device-driver configuration parameters: Auto Insert Notify and DMA.

The Auto Insert Notify parameter enables the computer to start audio CD software as soon as a CD is inserted into the CD-RW drive.

The DMA parameter improves computer performance by having the computer DMA controller handle data transfers from the CD to memory, freeing the computer microprocessor to perform more important tasks. For example, activating DMA might make movies and games run more smoothly because the microprocessor is allocating more processing time to video.

Changing the Auto Insert Notify and DMA parameters for Windows Me

To change the Auto Insert Notify and DMA parameter settings in Windows Me do the following:

1. Click **Start** → **Settings** → **Control Panel**.
2. Click on **view all control panel options**.
3. Double-click **System**.
4. Click the **Device Manager** tab.
5. Double-click **CD-ROM**.
6. Click on the drive that you want to modify.
7. Click the **Settings** tab.
8. Click to select or to clear the **Auto Insert Notification** check box and the **DMA** check box, depending on which parameters you want to enable or disable.
9. Click **OK**.

Changing the DMA parameter setting from the Windows XP desktop

To change the DMA parameter setting from the Windows XP desktop do the following:

1. Click **Start** → **Control Panel**.
2. Click **Switch to classic view**.
3. Double-click **System**.
4. Click the **Hardware** tab.
5. Click **Device Manager** button.
6. Click on the **IDE ATA/ATAPI controllers** to expand the tree.
7. Double-click on the controller that corresponds to where your CD-RW is located (**Primary IDE** or **Secondary IDE**).
8. Click the **Advanced Settings** tab.
9. Select the appropriate **Transfer Mode** pull-down that corresponds to the CD-RW location (**Device 0** for Master, **Device 1** for Slave).
10. Select **DMA if Available**.
11. Click **OK**.

Enabling DMA for Windows 2000 Professional

To change the parameter setting for Windows 2000, do the following:

1. Click **Start** → **Settings** → **Control Panel**.
2. Double-click **System**.
3. Click the **Hardware** tab.
4. Click **Device Manager**.
5. Click the **IDE ATA/ATAPI** controller to expand the tree.
6. Click the device that corresponds to the controller where your CD-RW Drive is located (**Primary IDE** or **Secondary IDE**).
7. Click the **Advanced Settings** tab.
8. Click **Transfer Mode**, and select **DMA** if it is available.
9. Click **OK**.
10. Click **Close** to close the System Properties window. A message is displayed informing you that the system settings have changed.
11. Click **OK** to restart your computer.

附录 D. Product warranty and support information

Warranty information

This section contains the warranty period for your product, information about obtaining warranty service and support, and the IBM Statement of Limited Warranty.

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.

Machine - 40X/12X/40X Max CD-RW Drive
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Warranty period: One year

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/ 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.

Online technical support	
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IBM Personal Computing Support Web site	http://www.ibm.com/pc/support/
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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® 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 http://www.ibm.com/pc/support/ , and click Support Phone List .

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 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.

附录 E. Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.*

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Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore,

some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM
HelpCenter

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

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

Electronic emission notices

Federal Communications Commission (FCC) statement

40X/12X/40X Max CD-RW 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)

Hinweis: Dieses Genehmigungsverfahren ist von der Deutschen Bundespost noch nicht veröffentlicht worden.

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.
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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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警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

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