



Unidade ThinkPad  
CD-RW/DVD-ROM Combo IV  
Ultrabay 2000

Guia do Usuário





**Unidade ThinkPad  
CD-RW/DVD-ROM Combo IV  
Ultrabay 2000**

**Guia do Usuário**

**ATENÇÃO**

Antes de instalar este produto, leia o *Livreto de Segurança* do Sistema ThinkPad.

**Nota**

Guarde o comprovante de compra porque ele pode ser necessário para obter serviços de garantia. Consulte o Apêndice A, "Warranty Information", na página 15.

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## Segurança: Leia Primeiro

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

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

פני 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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## Capítulo 1. Sobre a Unidade de CD-RW/DVD

Este manual fornece informações sobre registro, instalação e utilização da Unidade IBM ThinkPad CD-RW/DVD-ROM Combo IV Ultrabay 2000 e está disponível no *CD do Software e Guia do Usuário* nos seguintes idiomas:

- Inglês
- Francês
- Alemão
- Italiano
- Japonês
- Espanhol
- Português do Brasil
- Chinês Simplificado
- Chinês Tradicional

Os apêndices deste guia contêm informações sobre garantia e avisos legais.

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### Registro do Produto

Obrigado por adquirir este produto IBM. Reserve alguns minutos para registrar seu produto e fornecer informações que nos ajude a atendê-lo melhor futuramente. Seu feedback nos ajudará a desenvolver produtos e serviços melhores, assim como melhores formas de nos comunicarmos com você. Registre seu opcional no site da IBM na Web, no endereço <http://www.ibm.com/pc/register/>.

Você receberá informações e atualizações sobre o produto registrado, a não ser que seja indicado no site da Web que você não deseja receber informações adicionais.

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### Descrição do Produto

A Unidade IBM ThinkPad CD-RW/DVD Combo IV Ultrabay 2000 pode gravar e ler discos CD-R (CD Gravável) e CD-RW (CD Regravável) e ler CDs e DVDs etiquetados produzidos em massa. Esta unidade também lê mídias formatadas em DVD-RAM, DVD-R e DVD-RW.

Além deste manual, você deve ter recebido:

- A unidade de CD-RW/DVD
- A caixa de transporte
- O *CD do Software e Guia do Usuário*
- O *Guia de Segurança de Laser*
- O *Guia de Referência Rápida*

**Nota:** Seu kit poderá conter também um disquete de atualização do software de DVD ou CD-RW da IBM.

Entre em contato com o fornecedor se algum item estiver faltando ou com defeito. Não esqueça de guardar o comprovante de compra. Ele poderá ser exigido para o recebimento do serviço de garantia. Consulte “Warranty service and support” na página 15 para obter informações sobre suporte técnico.

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## Requisitos de Instalação

Para instalar a Unidade de CD-RW/DVD, seu computador ThinkPad deve conter os seguintes requisitos:

- Um ThinkPad Dock, uma ThinkPad UltraBase X2 Media Slice, um IBM Portable Drive Bay 2000 ou um IBM ThinkPad X3 UltraBase
- Sistema operacional Windows XP ou Windows 2000

### Notas:

1. A IBM oferece suporte limitado para computadores com os sistemas operacionais Windows 95, 98, ME ou NT.
2. O computador ThinkPad A21e não suporta reprodução em DVD no Windows NT.

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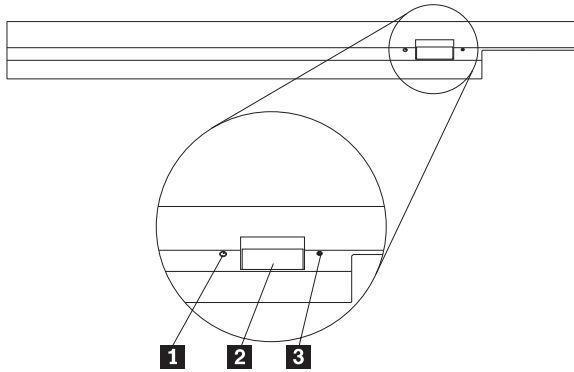
## Instalando a Unidade

Seu computador ThinkPad inclui um sistema de ajuda, Access ThinkPad, que fornece instruções de instalação da unidade específicas para seu computador. Para instalar da maneira correta a Unidade de CD-RW/DVD no compartimento de unidade Ultrabay 2000, siga as instruções fornecidas no sistema de ajuda Access ThinkPad.

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## Localizando os Controles da Unidade

O diagrama a seguir mostra a localização dos controles na parte frontal da unidade.



**1** Indicador de energia

Esse indicador fica visível quando a unidade está em uso.

**2** Botão de ejeção

Pressione esse botão para ejetar um DVD ou CD.

**3** Orifício de ejeção manual

Utilize esse liberador de emergência para ejetar um DVD ou CD quando o botão Ejetar não funcionar. Para obter mais informações sobre como ejetar manualmente um DVD ou CD, consulte “Ejetando um Disco Manualmente” na página 7.



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## Capítulo 2. Utilizando a Unidade de CD-RW/DVD

Esta seção fornece informações sobre como identificar, carregar e cuidar dos DVDs e CDs, e como cuidar da Unidade de CD-RW/DVD.

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### Antes de Começar

Para obter melhores resultados, revise as seguintes instruções antes de utilizar a unidade:

- Não mova o computador ThinkPad ao formatar ou gravar um disco porque isso pode causar erro de dados. Além disso, diminua a digitação durante a formatação ou gravação em um disco, pois isso também pode causar erros de dados.
- Mantenha o computador ThinkPad sobre uma superfície plana durante a gravação em um disco.
- Certifique-se de que o computador ThinkPad esteja ligado a uma tomada CA ao utilizar a unidade. O disco pode ser danificado se a bateria acabar durante a gravação em um disco.
- Desligue os protetores de tela. O uso de um protetor de tela pode interromper o processo de formatação e gravação.
- Não coloque o computador ThinkPad no modo de hibernação ou suspensão durante a gravação em um disco.

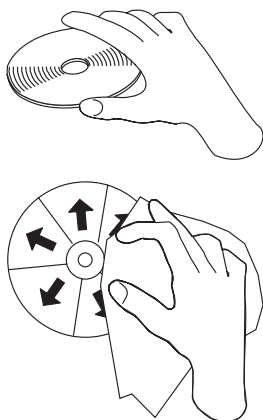
**Nota:** Os resultados de leitura e gravação da unidade dependem da qualidade e das características da mídia de DVD ou CD utilizada.

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### Manuseando e Cuidando de um Disco

Manuseie e limpe os discos com cuidado, especialmente tipos de mídia graváveis, como discos de CD-R e CD-RW, para que eles permaneçam legíveis. Você pode prolongar a vida útil dos discos, tomando as precauções a seguir.

<b>Atenção:</b> Limpar um disco fazendo movimentos circulares pode causar perda de dados.
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- Manuseie um disco pelas bordas ou pelo orifício central. Não toque na superfície de um disco.
- Para remover pó ou marcas de dedo, limpe o disco do centro para a borda com um pano macio, sem fiapos.
- Não escreva na superfície de um disco.
- Não deixe um disco exposto à luz direta do sol.
- Não use produtos de limpeza comerciais para limpar um disco.
- Não entorte um disco.

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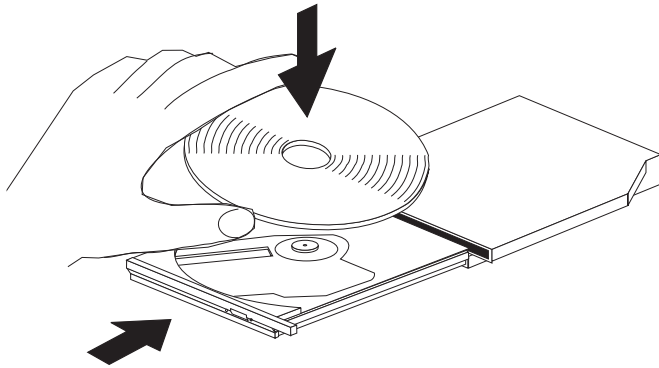
## Cuidando da Unidade de CD-RW/DVD

Para proteger a unidade durante a operação, tome as seguintes precauções:

- Remova o disco da unidade antes de movê-la.
- Não insira objetos estranhos na unidade.
- Não empilhe objetos na unidade.
- Não remova a tampa da unidade ou tente fazer reparos nela.
- Não opere a unidade sob quaisquer uma das seguintes condições:
  - Temperatura alta, umidade alta ou luz direta do sol
  - Vibração excessiva, choque repentino ou superfície inclinada
  - Poeira excessiva

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## Carregando um Disco



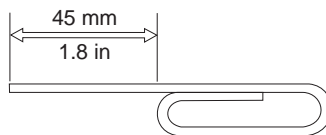
1. Pressione o botão de Ejeção. A bandeja desliza para fora da unidade.
2. Ponha o disco na bandeja com o rótulo voltado para cima.
3. Feche a bandeja com cuidado, empurrando-a até travar.

**Atenção:** Não force ou insira objetos estranhos na bandeja para abri-la. Se a bandeja não abrir quando o botão de ejeção for pressionado, consulte “Ejetando um Disco Manualmente” para obter mais informações.

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## Ejetando um Disco Manualmente

Se você pressionar o botão de Ejeção e a bandeja não deslizar, desligue o computador e endireite um clipe grande de papel para formar uma ferramenta, conforme mostrado na ilustração. A extremidade endireitada deve ter pelo menos 45 mm (1,8 pol.). Insira a extremidade estendida no orifício de ejeção manual na parte frontal da unidade. Empurre o clipe de papel até que a bandeja seja aberta. Cuidadosamente, puxe a bandeja para fora até que possa remover o disco.



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## Utilizando a Função de DVD

Para utilizar a função de DVD, você precisará configurar seu computador conforme descrito a seguir antes de instalar a Unidade de CD-RW/DVD no compartimento de unidade Ultrabay 2000:

1. Ative a definição DMA (somente para usuários Windows XP e Windows 2000).
2. Instale o WinDVD (o programa de reprodução de filmes em DVD).

**Nota:** Para o Windows 95, a reprodução de filmes em DVD é suportada pelo Windows 95 OSR2.0 ou versões posteriores. Você pode verificar qual versão do Windows 95 está utilizando fazendo o seguinte:

1. Clique em **Iniciar, Configuração** e, em seguida, clique em **Painel de controle**.
2. Dê um clique duplo em **Sistema**.

Leia os números em “Sistema”.

- 4.00.950B significa que sua versão é Windows 95 OSR2.0 ou OSR2.1.
- 4.00.950C significa que sua versão é Windows 95 OSR2.5.

## Ativando a Definição DMA

Esta seção explica como ativar a definição DMA com Windows 2000 e Windows XP:

### Para Windows 2000

1. Clique em **Iniciar, Configuração** e clique em **Painel de controle**.
2. Dê um clique duplo em **Sistema**.
3. Clique na guia **Hardware**.
4. Clique no botão **Gerenciador de Dispositivos**.
5. Clique em **Controlador IDE ATA/ATAPI** para expandir o submenu.
6. Dê um clique duplo em **IDE Secundário**. (Dê um clique duplo em **IDE Primário** se você estiver utilizando o computador ThinkPad A21e).
7. Selecione **DMA disponível** como Modo de Transferência.
8. Clique em **OK**.
9. Clique em **Fechar** para fechar a janela Propriedades do Sistema. Uma mensagem será exibida, informando que as configurações do sistema foram alteradas.
10. Clique em **OK** para reiniciar o sistema.

### Para Windows XP

1. Clique em **Iniciar**, mova o cursor para **Meu Computador** e dê um clique.
2. Clique em **Exibir informações do sistema** sob Tarefas do Sistema.
3. Clique na guia **Hardware**.
4. Clique no botão **Gerenciador de Dispositivos**.
5. Clique em **Controlador IDE ATA/ATAPI** para expandir o submenu.



6. Dê um clique duplo em **IDE Secundário**. (Dê um clique duplo em **IDE Primário** se estiver utilizando o computador ThinkPad A21e).
7. Clique na guia **Configurações Avançadas**.
8. Selecione **DMA se disponível** como Modo de Transferência.
9. Clique em **OK**.
10. Clique em **Fechar** para fechar a janela Propriedades do Sistema.

## Instalando o WinDVD e Exibindo um Filme de DVD

Para instalar o WinDVD, vá para a seção "Software" do *CD do Software e Guia do Usuário*.

Após instalar a Unidade de CD-RW/DVD e o WinDVD, você poderá exibir um filme em DVD. Mas primeiro você precisa definir o código de região do DVD de acordo com o conteúdo do DVD.

### Códigos de Região do DVD

Os códigos de região dos DVDs protegem seu conteúdo. O mundo é dividido em seis regiões e determinado conteúdo só pode ser exibido na região adequada. Por exemplo, o conteúdo da Região 1 só pode ser exibido nos EUA e Canadá. O WinDVD também é de região específica.

Verifique o código da região do conteúdo olhando no símbolo do código de região, na parte de trás da embalagem do conteúdo.

Código de região	Região
1	EUA e Canadá
2	Europa, Oriente Médio, África do Sul e Japão
3	Sudeste da Ásia, Taiwan, Coreia
4	América Latina, Austrália, Nova Zelândia
5	Antiga União Soviética, África do Norte, Índia
6	República Popular da China

Inicie o WinDVD inserindo o DVD na unidade. O código de região é automaticamente definido e você pode exibir o filme. Essa é a definição inicial.

Depois que o código de região tiver sido definido, se você inserir um DVD com um código de região diferente, a alteração será solicitada. O código de região da definição inicial pode ser alterado até quatro vezes.

Após o código ser alterado de sua definição inicial por quatro vezes, ele ficará fixo e não poderá mais ser alterado. Depois disso, você só poderá reproduzir o conteúdo do DVD nessa região.

Para exibir o status do código de região, clique no botão **WinDVD Properties**, na interface do usuário do WinDVD. A guia **General** contém essas informações.

## Iniciando o WinDVD

Para iniciar o WinDVD, conclua o seguinte procedimento:

1. Clique em **Iniciar**.
2. Clique em **Programas**.
3. Clique em **InterVideo WinDVD**.
4. Clique em **InterVideo WinDVD** para abrir a janela de reprodução de filmes em DVD.

Para obter mais informações sobre como executar a reprodução de filmes em DVD, consulte as informações de ajuda do WinDVD, no *CD do Software e Guia do Usuário*. Se quiser assistir a um filme em DVD na televisão, consulte a informações on-line fornecidas com o computador.

### Notas:

1. O computador foi configurado para fornecer reprodução de áudio e vídeo da mais alta qualidade obtida com os recursos de sistema disponíveis. Você pode alterar as definições padrão alterando a definição de resolução de vídeo dentro do Painel de Controle. Alguns sistemas não possuem recursos suficientes para fornecer reprodução de áudio e vídeo com qualidade total em todas as definições de resolução. Se o desempenho da reprodução for de má qualidade, ajuste a resolução para uma definição mais baixa.
2. As correntes de áudio ou vídeo são decodificadas por software. Os subsistemas de áudio e vídeo precisam estar totalmente funcionais e ativados.

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## Utilizando a Função de CD-R e CD-RW

A Unidade de CD-RW/DVD pode gravar nos discos de CD-R e CD-RW. Os discos de CD-R não podem ser apagados, mas podem ser utilizados com unidades de CD-ROM padrão e CD players.

Você pode utilizar discos de CD-R para gravar trilhas de áudio, armazenar dados, arquivar arquivos e copiar arquivos de um outro CD.

Os discos de CD-RW podem ser apagados e regravados, mas podem ser utilizados apenas com unidades de DVD-ROM e de CD-ROM compatíveis com CD-RW e MR mais novas. Você pode utilizar discos de CD-RW para fazer backup, armazenar e atualizar arquivos ou copiar arquivos de um outro CD.

### Notas:

1. Os discos de CD-R são reproduzíveis em CD players de áudio. Os discos de CD-RW não são reproduzidos na maioria dos CD players de áudio.

2. O software que acompanha esta unidade **não** ativa os recursos de gravação de CD com os sistemas operacionais DOS, Windows 3.x, ou IBM OS/2®.

Para obter mais informações sobre como utilizar o software, consulte as informações de ajuda do IBM RecordNow e IBM DLA no *CD do Software e Guia do Usuário*.

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## Fazendo Backup de um CD

Para copiar um CD comercial, você deve possuir o copyright ou obter permissão do proprietário do copyright. Se você não possui os direitos autorais ou não obteve a permissão do proprietário dos direitos autorais, você pode estar violando a lei de direitos autorais e pode estar sujeito ao pagamento de danos ou outros reparos. Para obter mais informações sobre a lei de copyright, consulte um consultor legal.

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## Resolução de Problemas

Problemas no computador podem ser causados por erros no hardware, no software ou por erro do usuário. As informações nesta seção podem ser úteis para ajudá-lo a resolver problemas ou a reunir informações úteis que podem ser passadas a um técnico de serviço. Talvez seja necessário consultar também as publicações do computador, do sistema operacional e da placa de som.

Releia a lista a seguir para obter descrições dos problemas que podem ocorrer com você.

### **Não é possível criar um disco de multissessão.**

Certifique-se de que haja espaço suficiente no disco para uma outra sessão. Gravar uma sessão requer espaço de entrada e de saída (aproximadamente 15 MB), além de dados que serão gravados.

### **Não é possível gravar com êxito em um disco de CD-R ou CD-RW.**

Execute as seguintes ações:

1. Verifique se o processo não está sendo interrompido por um protetor de tela, por um programa de antivírus ou de Internet ou de e-mail, ou por outro software. Desative as funções que possam estar interrompendo a operação de gravação.
2. Verifique se o disco rígido foi desfragmentado.
3. Consulte o fabricante ou o fornecedor da unidade de disco rígido se uma unidade de disco rígido mais antiga estiver conduzindo recalibração térmica durante a operação de gravação.
4. Substitua o CD se ele estiver com defeito ou riscado.

5. Desative a função Notificação de Inserção Automática do Windows nas unidades de CD-ROM e CD-RW.

### **Não é possível ejetar um CD.**

Execute as seguintes ações, após assegurar-se de que a unidade não esteja em processo de gravação em um disco:

1. Ejeite o CD utilizando o software.
2. Utilize o botão de Ejeção.
3. Desligue o computador. Aguarde 45 segundos; em seguida, ligue o computador e tente utilizar o botão de Ejeção novamente.
4. Se outros métodos não funcionarem, utilize o orifício de ejeção manual usando as instruções dadas em “Ejetando um Disco Manualmente” na página 7.

### **Não é possível ler o CD após gravá-lo com sucesso.**

Execute as seguintes ações:

1. Se você consegue ler o CD em outro CD player ou consegue ver as sessões anteriores, as informações do diretório podem estar danificadas no volume, tornando-o ilegível. Para obter idéias sobre detecção de problemas, verifique a documentação que acompanha o software.
2. Você pode ter um disco de CD-R ou CD-RW danificado. Tente um novo disco de CD-R ou de CD-RW, ou uma outra marca de CD.
3. Se você consegue ler um disco de CD-RW na unidade de gravação, mas não em uma outra unidade MR, certifique-se de que um programa da Leitora UDF esteja instalado no computador.
4. Evite gravar em uma velocidade 1X mais lenta, a menos que requerido pelo computador.



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## Apêndice A. 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.

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### Warranty period

Contact your place of purchase for warranty service information.

A warranty period of three years on parts and one year on labor means that IBM will provide warranty service without charge for:

1. parts and labor during the first year of the warranty period
2. parts only, on an exchange basis, in the second and third years of the warranty period. IBM will charge you for any labor it provides in performance of the repair or replacement.

**Machine** - IBM ThinkPad CD-RW/DVD-ROM Combo IV Ultrabay 2000 Drive

Warranty period	Service delivery method
Parts - 1 year, labor - 1 year	Customer carry-in or mail-in

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### Warranty service and support

With the original purchase of an IBM computer, you have access to extensive support. During the IBM Machine warranty period, you may call IBM or your reseller for problem-determination assistance under the terms of the IBM Statement of Limited Warranty.

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).

The following services are available during the warranty period:

- **Problem determination** - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.

- **IBM hardware repair** - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service, either on-site or at an IBM service center as determined by IBM.
- **Engineering Change management** - Occasionally, there might be changes that are required after a product has been shipped from IBM. In those instances, IBM will make Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered under warranty service:

- Replacement or use of non-IBM parts. All IBM parts contain a 7-character identification in the format IBM FRU XXXXXXXX.
- Identification of non-IBM software problem sources.
- Installation of customer replaceable units (CRUs).
- Installation and configuration of machine code or licensed internal code that is designated as customer installable.

If you do not register your computer with IBM, you might be required to present proof of purchase to obtain warranty service.

## Before you call for service

You can solve many computer problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the publications that are provided with your computer and software.

Most computers, operating systems, and application programs come with information that contains troubleshooting procedures and explanations of error messages and error codes. The information that comes with your computer also describes the diagnostic tests that you can perform.

If you suspect a software problem, refer to the information for the operating system or application program.

## Calling for service

If possible, be at your computer when you call. Please have the following information ready:

- Machine type, model, and serial number
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information

To find the telephone number for the HelpCenter nearest you, see “Telephone numbers” in the “Getting information, help, and service” chapter.



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

### 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.



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## Apêndice B. 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.

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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

Unidade IBM ThinkPad CD-RW/DVD-ROM Combo IV Ultrabay 2000

### Federal Communications Commission (FCC) statement

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible party:

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



Tested To Comply  
With FCC Standards

FOR HOME OR OFFICE USE

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

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

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

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

### **Deutsche EMV-Direktive (electromagnetische Verträglichkeit)**

Zulassungsbeseinigunglaut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336):

Dieses Gerät ist berechtigt in Übereinstimmungmit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die:

IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse B.
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EN 50082-1 Hinweis:

“Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 50082-2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem FA11 ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern.”

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

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

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

### **Union Européenne - Directive Conformité électromagnétique**

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

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

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



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

### **Unione Europea - Directiva EMC (Conformidad electromagnética)**

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

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

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

### **Union Europea - Normativa EMC**

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

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

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

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取扱説明書に従って正しい取り扱いをして下さい。

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

## 高調波ガイドライン適合品





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Impresso em Brazil

(1P) P/N: 22P7007

