



16X Max DVD-ROM Drive

User's Guide

OPTIONS
by IBM

Note: Before using this information and the product it supports, read the information under “Appendix C. Product warranties and notices” on page C-1.

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Contents

About this book	v
Safety information	vii
Installation and user's guide.	1-1
Appendix A. Problem solving	A-1
Appendix B. Help and service information.	B-1
Appendix C. Product warranties and notices	C-1

About this book

This manual contains instructions for installing and using the IBM® 16X Max DVD-ROM Drive with Software MPEG-2 Option Kit. The manual is divided into the following parts:

Part 1: Installation and user's guide

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

- English
- French
- Spanish
- Italian
- Brazilian Portuguese
- Traditional Chinese
- Japanese

Part 2: Appendixes

This section contains device-driver, problem-solving, help and service, warranty, and notice information.

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

Registering your option

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

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

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

Safety information

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」。

Installation and user's guide

This section contains the product description, hardware and software installation instructions, and operating information for the IBM® 16X Max DVD-ROM Drive.

Product description

This option package is intended for multimedia applications. The drive comes with a CD containing MPEG-2 decoder software for Microsoft® Windows® 98, Windows 95, Microsoft Windows 2000 Professional, Microsoft Windows NT® 4.0 Workstation, and Microsoft Windows Millennium Edition (Me).

In addition to this guide, your option package includes the following:

- IBM 16X Max DVD-ROM Drive
- Four mounting screws (M3 x 5-mm, slotted)
- IDE cable for connecting two IDE devices
- One black or two white bezels, depending on your option, for use on specific IBM systems
- Internal audio "Y" cable
- MPEG-2 software CD
- Safety information manual
- *Laser safety guide*

Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase; it might be required to receive warranty service. See "Appendix B. Help and service information" on page B-1 for technical support information.

Your drive can read many DVD and CD formats, including DVD video, video CD, and audio CD formats. However, you must install the included MPEG-2 software to play video files. The drive also reads multiple-session, extended architecture (XA) discs, such as the Kodak Photo CD. This drive delivers data at up to 40 times the standard CD-ROM drive speed (40X), and is designed for installation in a personal computer that uses integrated drive electronics (IDE) or enhanced IDE (EIDE) architecture.

Installation requirements

Be sure that your computer meets the following system requirements before installing the drive:

- Minimum microprocessor: Intel® Pentium® II 233MHz
- Minimum RAM: 32 MB

- Windows 98, Windows 95 OSR2, Windows 2000, or Windows NT 4.0 operating system if you will be using the MPEG-2 software CD
- An available drive bay
- An available IDE connection
- 40 MB available hard disk space
- Audio adapter supporting 44.1 or 48 kHz sampling rate
- Optional stereo speakers
- AGP 2X video with overlay support

Before you begin

Before you install the DVD-ROM drive, read the information in this section on handling precautions and on using the drive controls and connectors.

Handling precautions

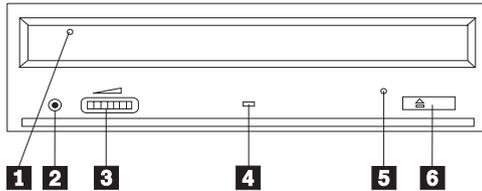
Use the following handling precautions to protect your drive.

- Keep the DVD-ROM drive in the antistatic bag until you are ready to install the drive. Limit your movement when installing; movement can cause static electricity buildup.
- Handle the drive with care. Dropping or jarring the drive can damage the components inside the drive housing.
- Do not force insertion of the IDE or power cables. Doing so might damage the connector or the drive.

Drive controls and connectors

The following diagrams show the location and functions of the drive controls and connectors.

Front view of the drive



1 Disc drawer

This drawer is where you load and unload a disc.

2 Headphone jack

This jack provides audio output to the headphones.

3 Volume control

This dial controls the headphone volume.

4 Busy indicator

This light comes on when the drive reads from, writes to, or plays a disc.

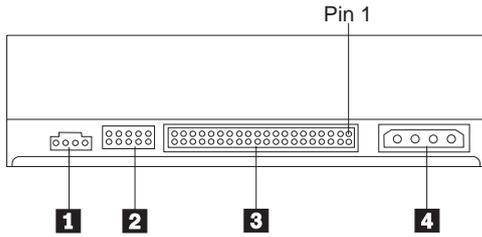
5 Emergency eject hole

This hole provides access to the eject mechanism to remove a disc from the drive.

6 Open/Close button

This button opens and closes the disc drawer when you push it.

Rear view of the drive



1 Audio-out connector

This connector transmits the analog audio signals to an audio adapter.

2 Configuration pins

These pins are used to set the drive configuration.

3 IDE port

This connects the DVD-ROM drive to the IDE cable.

4 Power connector

This connects the DVD-ROM drive to the power cable.

Installing the drive

Follow these steps to install the DVD-ROM drive:

Step 1. Opening the computer

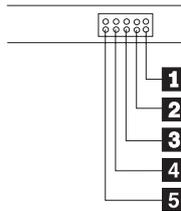
1. Turn off the computer and all attached devices.
2. Unplug all power cords from the computer and all attached devices.
3. Remove the cover from the computer. Refer to your computer documentation for instructions on removing the computer cover.

Step 2. Unpacking the drive

1. Before opening the antistatic bag that the drive is packed in, touch the bag to an unpainted metal surface for at least two seconds. This drains the static electricity from the package and your body.
2. Remove the drive from the bag.

If you must put the drive down, place the antistatic bag on a flat, padded surface, such as a magazine, and place the drive on the antistatic bag.

Step 3. Setting the configuration jumpers



You can configure your drive as master **1**, slave **2**, or cable-select **3**, as shown. **4** and **5** are reserved.

Use the following guidelines to determine the correct configuration for your DVD-ROM drive.

- Configure the DVD-ROM drive as a master if it will be the only device that is connected to an IDE cable. This is the preset configuration.
- Configure the DVD-ROM drive as a slave if it will be the second device on an IDE cable. Be sure to configure the other device as a master. In some cases, a hard disk drive might require a "master with slave present" jumper setting when another device on the same cable is configured as a slave. For more information on setting configuration jumpers on other devices, refer to the documentation that comes with your computer device.
- Some non-IBM computers use special ATA cables with two wires reversed in the device connectors so that the drives can be configured by the cable instead of by jumper position. Use the cable-select position only for computers that are equipped with these special cables. See the documentation that comes with your computer to determine if your ATA adapter requires that you place the jumpers in the cable-select position.

If you place the jumpers in the cable-select position, the IDE cable automatically assigns the master and slave settings based on the position of the drive on the cable. You must use the cable-select setting for this cabling system whether the DVD-ROM drive is the only device or the second device connected to the cable. The drive closest to the IDE controller is automatically the master drive. Any other devices on the IDE cable must also be set to cable-select.

Step 4. Mounting the drive in the bay

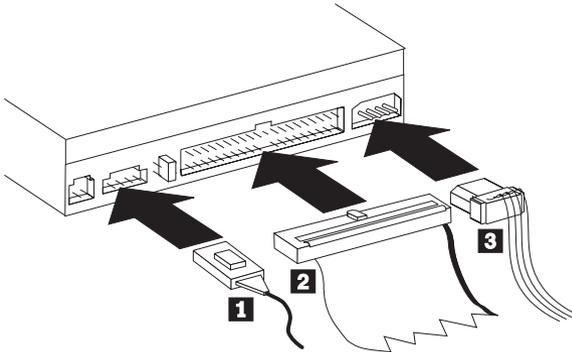
Attention: Be sure to use the M3 x 5-mm mounting screws in the option package when you are driving screws directly into the drive. Using screws that are too long might damage the drive.

You can mount the DVD-ROM drive horizontally or vertically in the computer. If you mount the drive vertically, you must secure any discs that you place into the drive before the drive tray is closed, or the DVD-ROM drive will not be able to read the disc properly.

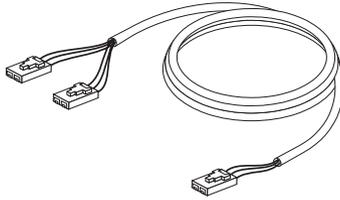
1. Slide the drive into the bay. Your computer might have specific required procedures for installing storage devices. For more information on storage devices, refer to the documentation that comes with your computer.
2. Align the drive-bay screw holes with the threaded holes in the drive housing or mounting bracket.
3. Thread the screws in loosely to check their position. Two screws are usually used on each side. Verify that the alignment is correct; then tighten the screws to secure the drive. Do not overtighten.

Step 5. Attaching the cables to the drive

The following diagram shows where to connect the cables to the drive.



The following is an illustration of the internal audio cable that comes with your option package.



1. Connect the single-connector end of the included internal audio cable **1** to the audio-out connector on the DVD-ROM drive.
2. Attach a 40-pin IDE-cable connector **2** to the IDE connector on the drive. Align the cable so that the color-coded edge is closest to the power cable connector **3**. Use the IDE cable that is provided with this option if there is no cable attached to the IDE port. The IDE cable can have up to three connectors. For the best signal quality when you are connecting only one device to the IDE cable, connect one end of the cable to the IDE port, and connect the other end of the cable to the device. Do not use the middle connector. Use the IDE cable that is provided with this option if there is no cable attached to the computer IDE port, or if there is only one device connector on the computer IDE cable.

If you are connecting two devices to the IDE cable, connect one end of the cable to the IDE port, and connect the master and slave devices to the remaining connectors on the other end. Many computers have two cables for attaching up to four ATA devices. For best performance, attach fast devices (hard disk drives) to the cable that is connected to the primary IDE port, and connect the DVD-ROM drive or other slower devices (CD-ROM drives, tape drives, removable media) to the cable that is connected to the secondary IDE port.

3. Attach a four-pin power cable **3** to the power connector on the DVD-ROM drive.

Be sure that the cables will not be pinched or crowded by the computer cover and that all other cable and power connections are secure.

Step 6. Completing the hardware installation

1. Be sure that the DVD-ROM drive is securely mounted and that the connectors are firmly attached.
2. Be sure that the cables do not interfere with the computer cover, and that they do not block the power-supply fan blades or airflow paths.
3. Reinstall the computer cover.
4. Reconnect all external devices.
5. Plug all power cords into the wall outlets.

Step 7. Attaching the faceplates

This option package includes up to two faceplates that conform to the curved design of specific IBM systems. If your computer has a curved design, you can attach one of the included faceplates so that the front of the drive matches the exterior cabinet. Choose the faceplate that best fits your computer, and attach it after you have mounted the DVD-ROM drive in the appropriate bay.

What to do next

If you will be using the drive as a data-only DVD-ROM drive, or as a CD-ROM drive, you have completed the installation and do not need to install support software. For more information on maintaining your drive, see “Care and maintenance” on page 1-11.

If you will be using the drive to play DVDs, follow the instructions under “Step 8. Setting up your computer for DVD video playback” on page 1-8.

Step 8. Setting up your computer for DVD video playback

This section provides instructions on enabling DMA settings so you can play DVD movies with your DVD-ROM drive.

Enabling the DMA settings

Check the operating system for your computer. If your computer is using Windows NT, see “Step 9. Verifying software for Windows NT 4.0” on page 1-9.

1. Click **Start**, then click **Settings**, and then click **Control Panel**.
2. Double-click **System**.

Read the version number under System.

- If your version number is 4.00.950B, or 4.00.95C, follow the instructions under “Setting the DMA mode for Windows 95, Windows 95, or Windows Millennium”.
- If your version number is 5.00.2195, follow the instructions under “Setting the DMA mode for Windows 2000” on page 1-9.

Setting the DMA mode for Windows 95, Windows 95, or Windows Millennium

1. Click **Start**, then click **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. Select **Device Manager**.
4. Double-click the CDROM icon. The DVD-ROM drive name appears under the CDROM icon.
5. Double-click the DVD drive name.
6. Click the **Settings** tab.
7. Place a check in the **DMA** and **Auto insert notification** check boxes. If an alert dialog appears, click **OK** to close it.
8. Click **OK**.

9. Click **Close**.
10. Click **OK** to restart your computer.

Setting the DMA mode for Windows 2000

1. Click **Start**, then click **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. Select **Hardware**.
4. Click **Device Manager**.
5. Click **IDE ATA/ATAPI controller**.
6. Double-click **Secondary IDE**.
7. Click **Advanced Settings**.
8. Click **Transfer Mode**, and select **DMA if available**.
9. Click **OK**.
10. Click **Close**.
11. Click **OK** to restart your computer.

Installing the DVD-viewing software

To install DVD-Express, follow these instructions:

1. Insert the DVD Software CD into the DVD-ROM drive.
2. Click **Start**, and then click **Run**.
3. Type `X:\DVDPLAYR\S TUP.X` where *X* represents the drive-letter of your DVD-ROM drive.
4. Click **OK**. Follow the instructions on your screen.

Step 9. Verifying software for Windows NT 4.0

If you are using Windows NT 4.0, refer to the documentation that comes with your computer to determine if the IDE controller on your computer supports DMA transfers.

Note: Be sure that your computer has an Intel chipset and that you are using the Service Pack 6a or the latest Service Pack for Windows NT that is provided by Microsoft. Refer to the documentation that comes with your computer to determine if there is an Intel chipset in your computer. For more information on installing Windows NT Service Packs, visit the Microsoft Web site at <http://www.microsoft.com>.

If your computer IDE controller supports DMA transfers, continue with "Step 15. Installing the MPEG-2 Decoding software for Windows NT 4.0."

If your computer IDE controller does not support DMA transfers, you must go to the Web site for the manufacturer of the system board in your computer, and download and install the Windows NT 4.0 DMA device driver, using instructions that are provided on the Web site.

The following is a list of manufacturer Web sites that contain Windows NT 4.0 DMA device drivers for system boards:

- IBM: <http://www.ibm.com>
- Intel: <http://www.intel.com>
- VIA: <http://via.com.tw>
- ALi: <http://ali.com.tw>

Refer to the documentation that comes with your computer for information on other system-board manufacturers.

Viewing a DVD movie

After you install the DVD-ROM drive, configure DMA, and install DVD-viewing software, you can view a DVD movie.

DVD Express will start automatically when you insert a DVD. If you want to start DVD Express manually, follow these instructions:

1. Click **Start**, then click **Programs**, and then click **Mediamatics DVD Express**.
2. Click **Mediamatics DVD Player**.

The DVD movie player window appears. For more information on how to use the DVD movie player, refer to the DVD Express online help by pressing F1.

DVD region codes

Regional coding helps protect the contents of a DVD. The world is divided into six regions. Specific content can be viewed only in the region where it is appropriate. For example, the content for Region 1 (U.S. and Canada) can be viewed only in the U.S. and Canada. You can verify the region code of the DVD by looking at the region code symbol on the back of the content packaging.

Region code	Region
1	U.S., Canada
2	Europe, Middle East, South Africa, Japan
3	Southeast Asia, Taiwan, Korea
4	Latin America, Australia, New Zealand
5	Former Soviet Union, the rest of Africa, India
6	People's Republic of China

The initial DVD Express region code will be the same as the region code of the first DVD used with DVD Express. If you insert a DVD with a different region code than the initial region code, DVD Express will ask if you want to change the region code setting. You can change the region code from your initial

setting up to four times after setting the initial region code. After the region code has been changed from its initial setting four times, it is fixed and can no longer be changed. To change the region code, an encrypted DVD of the new region must be in the DVD-ROM drive.

To display the region code status, follow these instructions:

1. In the DVD Express windows, click **DVD Options**.
2. Click **DVD Region**.

Care and maintenance

This section includes information on taking care of your DVD-ROM drive and the CDs and DVDs that you use with the drive.

Caring for a CD or DVD

Digital discs are high-density media that must be handled with care and kept clean to ensure that they remain readable. The following precautions help to prolong the life of your discs.

Attention: Wiping a disc using a circular motion can damage the disc and cause data loss.

- Handle the disc by the edges or the center hole. Do not touch the surface of the disc.
- To remove dust or fingerprints, wipe the disc from the center to the edge with a soft, lint-free cloth.
- Do not write on the surface.
- Do not place the disc in direct sunlight.
- Do not use commercial cleaners to clean the disc.
- Do not bend the disc.

Caring for the DVD-ROM drive

To protect your DVD-ROM drive during operation, observe the following precautions:

- Do not move the drive when it is in use. Doing so might cause data error or damage the drive.
- Avoid exposing the drive to the following conditions:
 - High humidity
 - High temperature
 - Excessive dust
 - Mechanical vibration
 - Sudden shock or dropping
 - Placement on an inclined surface
 - Direct sunlight
 - Sudden temperature changes

- Do not insert foreign objects into the drive.
- Do not stack objects on the drive.
- Do not remove the drive cover or attempt to service the drive.
- Remove any discs from the disc drawer and make sure that the drawer is closed before moving the drive unit.
- Keep the original packing materials. If you need to ship the drive unit to a different location, use the original packing materials to ensure that the drive is transported safely.

Manually ejecting a disc

If a drive becomes defective and will not allow the disc to eject, turn off the computer and straighten a large paper clip to form a tool. The straightened end must extend at least 45 mm (1.8 in.). Insert the extended end into the emergency eject hole on the front of the drive (see "Front view of the drive" on page 1-3). Push the paper clip until the tray opens. Gently pull out the tray until you can remove the disc.