

Appendix 5. User Manual

Refer to the following pages



Online Manual

Choose one of the following categories:

- **Getting Started Guide**
- **Software User's Guides**
- **Technical Specifications**
- **Compliance Information**



User's Guides

Click on your product:

- **ALL-IN-WONDER 128**
- **ALL-IN-WONDER PRO**
- **ATI MULTIMEDIA CENTER**
Some ATI Graphics cards will not support all of the features and functionality in the ATI Multimedia Center
- **ATI-TELETEXT MANUAL**
- **ATI-TV**
- **ATI-TV WONDER**
- **USING VIDEO IN/OUT**



Technical Information

Click on your product:

- 3D CHARGER
- ALL-IN-WONDER
- ALL-IN-WONDER 128
- ALL-IN-WONDER 128 PRO
- ALL-IN-WONDER PRO
- RAGE FURY
- RAGE FURY MAXX
- RAGE FURY PRO
- RAGE MAGNUM
- XPERT 98
- XPERT 99
- XPERT 128
- XPERT 2000
- XPERT LCD
- XPERT@WORK
- XPERT@PLAY

Getting Started...



- Installing Your ATI Graphics Accelerator Card
- Installing Enhanced Drivers for Windows® 95 and Windows® 98
- Installing Enhanced Drivers for Windows® NT
- Multiple Display Support in Windows® 98
- Troubleshooting Tips
- Using the Online Manual

ATI's graphics accelerators are the most advanced on the market today. They improve the performance of your system and display exceptional graphics.

Your ATI graphics accelerator comes complete with enhanced drivers and comprehensive award-winning software utilities designed to make you more productive. Please read this guide before attempting to install your card.

Preparing Your Computer



Turn off the power to your system and discharge your body's static electric charge by touching a grounded surface—for example, the metal surface of the power supply—before performing any hardware procedure.

The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of any components by unauthorized service personnel. If you do not feel comfortable performing the installation, consult a qualified computer technician.

Damage to system components, the accelerator card, and injury to yourself may result if power is applied during installation.

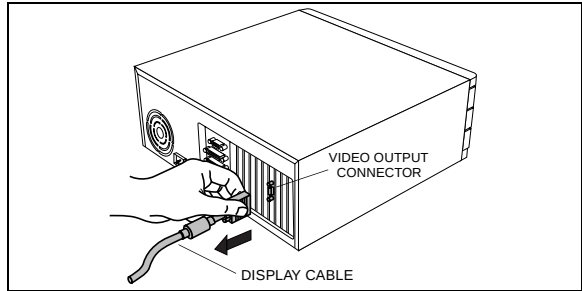
If you are using **Windows® NT**, you need to update your operating system to **Service Pack 3 (SP3)** or later before installing your ATI graphics accelerator. Additionally, if your current system configuration uses special drivers that are not **640x480 VGA**, you may encounter conflicts with the card. We recommend that you first reconfigure your operating system to use a **VGA** driver supplied with your operating system before installing the card. For more information about changing your operating system configuration, see your operating system documentation.

Installing Your ATI Graphics Accelerator Card

Now that you have prepared your computer, you are ready to install your graphics accelerator card.

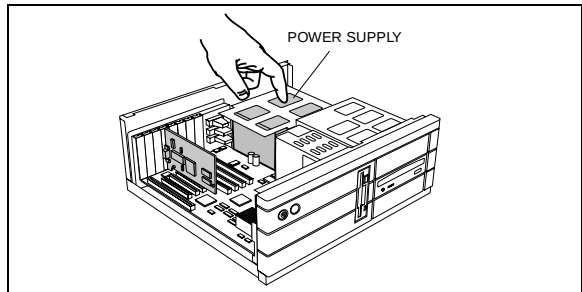
To install your graphics accelerator card

- 1** Power off the computer and monitor, then disconnect the display cable from the back of your computer.



- 2** Remove the computer cover. If necessary, consult your computer's manual for help in removing the cover.

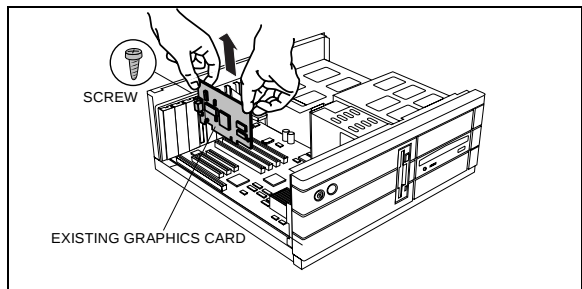
Remember to discharge your body's static electricity by touching the metal surface of the computer chassis.



- 3** If you intend to run multiple displays with Windows® 98 (see [page 6](#)), then proceed to step 4. **Otherwise, remove any existing graphics card from your computer.**

If the old graphics card sticks, rock it gently from end to end.

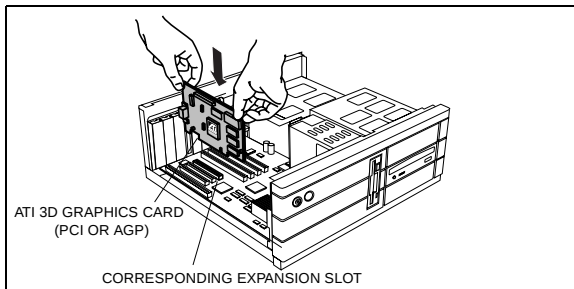
Remember to save the screw.



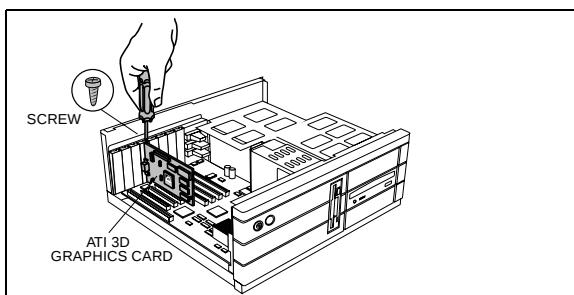
Or, if your computer has any **on-board graphics capability**, you may need to **disable** it on the motherboard. For more information, see your computer documentation.

- 4** If necessary, remove the metal cover from the empty expansion slot that you select (PCI card use a PCI slot; AGP cards use an AGP slot); then **align your new card with the expansion slot, and press it in firmly until the card is fully seated.**

*Grasp the new card by the top edge and carefully seat it into the appropriate expansion slot (PCI or AGP). Ensure that the metal contacts are **completely** pushed into the slot.*

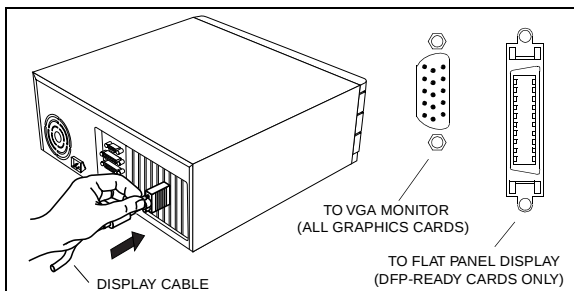


- 5** Replace the screw to fasten the card in place, and replace the computer cover.



- 6** Plug the display cable into your card; then turn on the computer and display device. For cards with a Digital Flat Panel (DFP) connector, connect your monitor or flat panel display (or both) to the appropriate connector, as shown. Next, **reboot your system.**

Make sure all cables are securely connected.



You are now ready to proceed with the installation of ATI's enhanced drivers. For detailed instructions, select your operating system from the list below:

- Windows® 95/98, see **Windows® “New Hardware Found”** on [page 4](#).
- Windows® NT, see [page 6](#).

Windows® “New Hardware Found”

If you are running Windows® 95 or Windows® 98, new hardware may be detected after you restart your computer. Follow the step-by-step instructions below to allow Windows® to correctly identify your new hardware.

To identify new hardware in Windows® 95

- 1 Windows® 95 briefly displays the “New Hardware Found” dialog before launching the “Update Device Driver Wizard”.

If the wizard does not appear, proceed directly to [Installing Enhanced Drivers for Windows® 95 and Windows® 98](#) on [page 5](#).

- 2 Click **Next**.
- 3 Click **Finish**.
- 4 Insert your Windows® 95 CD-ROM into your CD-ROM drive.
- 5 Click **OK**.
- 6 Type the following:
D:\WIN95
(If **D** is not your CD-ROM drive, substitute **D** with the correct drive letter.)
- 7 Click **OK**.
- 8 Click **Yes** to restart your computer.

You are now ready to install your ATI enhanced drivers. Proceed to [Installing Enhanced Drivers for Windows® 95 and Windows® 98](#) on [page 5](#), and follow the step-by-step instructions to complete the installation.

To identify new hardware in Windows® 98

After restarting your system, Windows® 98 will briefly display the “New Hardware Found” dialog. Depending on your new hardware, you will either be prompted to insert your Windows® 98 CD-ROM or Windows® 98 will launch the “Add New Hardware Wizard”.

If Windows® 98 automatically begins installing drivers for your new hardware, click **Yes** to restart your computer when prompted; then proceed to [Installing Enhanced Drivers for Windows® 95 and Windows® 98](#) on [page 5](#).

To identify new hardware using Windows® 98 CD-ROM

- 1 Insert your Windows® 98 CD-ROM.
- 2 Click **OK**.
- 3 Type the following:
D:\WIN98
(If **D** is not your CD-ROM drive, substitute **D** with the correct drive letter.)
- 4 Click **OK**.
- 5 Click **Yes** to restart your computer.

You are now ready to install your ATI enhanced drivers. Proceed to [Installing Enhanced Drivers for Windows® 95 and Windows® 98](#) on page 5, and follow the step-by-step instructions to complete the installation.

To identify new hardware using “Add New Hardware Wizard”

- 1 Windows® 98 launches the “Add New Hardware Wizard” which prompts you to search for the Standard PCI Graphics Adapter (VGA).
- 2 Click **Next** to continue.
- 3 Select **Search for the best driver for your device**.
- 4 Click **Next** to continue.
- 5 Click **Next** to start the driver search.
- 6 Click **Next** to install the Standard PCI Graphics Adapter (VGA).
- 7 Click **Finish**.
- 8 Click **Yes** to restart your computer.

You are now ready to install your ATI enhanced drivers. Proceed to [Installing Enhanced Drivers for Windows® 95 and Windows® 98](#) on page 5, and follow the step-by-step instructions to complete the installation.

Installing Enhanced Drivers for Windows® 95 and Windows® 98

With Windows® 95 or Windows® 98 running on your computer, you need to install the enhanced ATI drivers to take advantage of your card’s higher performance, resolutions, and special features.

To ensure that you install the latest drivers, install the ATI enhanced drivers located on the CD-ROM shipped with your graphics accelerator card.

To install the ATI enhanced drivers for Windows® 95 or Windows® 98

- 1 Insert the ATI INSTALLATION CD-ROM into your CD-ROM drive.
If Windows® runs the CD-ROM automatically, proceed to step 6.
- 2 Click **Start**.
- 3 Select **Run**.
- 4 Type the following:
D:\ATISSETUP
(If **D** is not your CD-ROM drive, substitute **D** with the correct drive letter.)
- 5 Click **OK**.
- 6 Click on **ATI Easy Install** to begin the Installation Wizard.
- 7 Click **Next**.
- 8 Click **Yes**.

- 9 Follow the Wizard's on-screen instructions to complete the installation.

*The **Express** installation option is recommended. If your ATI product includes a multimedia component, the software for that component will automatically be installed, along with the ATI enhanced drivers, by selecting this option.*

Installing Enhanced Drivers for Windows® NT

Make sure that your operating system has been updated to Service Pack 3 (SP3) or later before attempting to install your ATI graphics accelerator card. After installing your card, Windows® NT will default to standard VGA mode (640 x 480, 16 colors).

To install the ATI enhanced drivers for Windows® NT 4.0

- 1 Insert the ATI INSTALLATION CD-ROM into your CD-ROM drive.

If Windows® NT runs the CD-ROM automatically, proceed to step 6.

- 2 Click **Start**.

- 3 Select **Run**.

- 4 Type the following:

D:\ATISSETUP

(If **D** is not your CD-ROM drive, substitute **D** with the correct drive letter.)

- 5 Click **OK**.

- 6 Click on **ATI Easy Install** to begin the Installation Wizard.

- 7 Follow the Wizard's on-screen instructions to complete the installation.

Multiple Display Support in Windows® 98

IMPORTANT: Please read the **Readme** file on the ATI Installation CD-ROM for the latest information regarding Multiple Display Support in Windows® 98.

Windows® 98 provides support for using more than one display device at a time – you simply install a separate PCI or AGP graphics card for each additional display you intend to use. With multiple displays, you can expand your desktop, run different programs on separate displays, even play some newer games with multiple views. And each display can have a different resolution and color depth!

Note that, under Windows® 98, one graphics card is automatically designated by the system as the **primary** graphics card. Each additional graphics card is designated by the system as a **secondary** graphics card. Certain 3D and multimedia features are only available on the **primary** graphics card. The primary graphics card is the one that displays the POST information during startup. If you are installing more than one graphics card, you need to consider the following:

- If you install both a PCI and an AGP graphics card in the same system, the AGP graphics card will become the secondary graphics card, in most systems. Some manufacturers offer an upgraded BIOS that allows an AGP card to be designated as the primary graphics card. Contact your system vendor for details.
- If you install two or more PCI graphics cards in the same system, the primary graphics card is typically the one installed in the PCI slot with the *lowest* number. This is typically the PCI slot *furthest* from the computer's ISA slots. Consult your computer system manual for help in selecting a slot.

Troubleshooting Tips

The following troubleshooting tips may help if you experience problems. Contact your dealer for more advanced troubleshooting information.

- Check that the card is seated properly in its expansion slot.
- Ensure the display cable is securely fastened to the card's display connector.
- Make sure that the display and computer are plugged in and receiving power.
- If necessary, disable any built-in graphics capabilities on your motherboard. For more information, see your computer's manual.
- Make sure you selected the appropriate display device and graphics card when you installed your enhanced driver.
- For more troubleshooting tips, right-click the ATI icon in the taskbar and select **Troubleshooting**.
- If you have problems during start-up, start your computer in **Safe Mode**. In Windows® 95, press the F8 key when "Starting Windows 95" appears; or, in Windows® 98, press and hold the CTRL key until the Windows® 98 Startup Menu appears on the screen. Then select the number for Safe Mode, and press **Enter**.

Using the Online Manual

Your graphics accelerator comes with an online manual that describes the extensive features of your graphics card. The **Online Manual** provides reference, specification, disclaimer, legal, and compliance information that is not contained in this paper guide.

To open the Online Manual

- 1 Insert the ATI INSTALLATION CD-ROM into your CD-ROM drive.
If Windows[®] runs the ATI INSTALLATION CD-ROM automatically, proceed to step 6.
- 2 Click **Start**.
- 3 Select **Run**.
- 4 Type the following:
D:\ATISETUP
(If **D** is not your CD-ROM drive, substitute **D** with the correct drive letter.)
- 5 Click **OK**.
- 6 Click on **Online User Manual..**



XPERT™ 2000

Technical Information

System Requirements

Pentium® II/III microprocessor-based, Celeron or compatible system with Accelerated Graphics Port (AGP) slot.

AGP 1.0 compliant.

CD-ROM drive required for software.

DVD drive required for DVD playback. (Windows® 95b, Windows® 98)

Specifications

Operating System Windows® 95, Windows® 98, Windows® NT 4.0

Memory Configuration 32 MB, non-upgradeable.

Sync Signals Separate horizontal and vertical sync at TTL levels.

Video BIOS AGP 1.0 compliant (AGP 2X compliant).

Video Output Connector CRT monitor, 15-pin D shell (female), IBM standard.

Display support DDC1/2b/2b+ monitor support; VESA Display Power Management support.

Video interrupt IRQ 11 is requested, although the actual IRQ number is automatically assigned by the Plug & Play system BIOS.

Power +5V ±5% @ 0.4 A typical.
+3.3V ±5% @ 1.4 A typical.
+12V ±5% @ 0.3 A typical.



Ambient Temperature

Operating 50° to 122° F (10° to 50° C).

Storage 32° to 162° F (0° to 70° C).

Relative Humidity

Operating 5% to 90% non-condensing.

Storage 0% to 95%.

MTBF >300,000 hours.

EMC Certification FCC Class B.

Video Mode Table

XPERT 2000 Video Mode Table							
Display Screen Resolution	Refresh Rate (Hz)	Hor. Scan (kHz)	Pixel Clock (MHz)	Colors (Bits Per Pixel)			
				32 MB			
				8	16	24	*32
640x480	60	31.5	25.2	•	•	•	•
640x480	72	37.9	31.5	•	•	•	•
640x480	75	37.5	31.5	•	•	•	•
640x480	85	43.3	36.0	•	•	•	•
640x480	90	45.4	37.8	•	•	•	•
640x480	100	50.9	43.1	•	•	•	•
640x480	120	61.8	52.4	•	•	•	•
640x480	160	84.3	72.8	•	•	•	•
640x480	200	108.0	95.0	•	•	•	•
800x600	48	26.4	29.3	•	•	•	•
800x600	56	35.1	36.0	•	•	•	•
800x600	60	37.9	39.9	•	•	•	•
800x600	70	43.7	45.5	•	•	•	•
800x600	72	48.1	50.0	•	•	•	•
800x600	75	46.9	49.5	•	•	•	•
800x600	85	53.7	56.3	•	•	•	•
800x600	90	56.8	60.0	•	•	•	•
800x600	100	63.6	68.1	•	•	•	•
800x600	120	77.1	83.9	•	•	•	•
800x600	160	105.4	116.4	•	•	•	•
800x600	180	120.0	132.5	•	•	•	•
800x600	200	135.0	149.0	•	•	•	•
1024x768	43	35.5	44.9	•	•	•	•
1024x768	60	48.4	65.0	•	•	•	•
1024x768	70	56.5	75.0	•	•	•	•



XPERT 2000 Video Mode Table							
Display Screen Resolution	Refresh Rate (Hz)	Hor. Scan (kHz)	Pixel Clock (MHz)	Colors (Bits Per Pixel)			
				32 MB			
				8	16	24	*32
1024x768	72	57.6	78.4	•	•	•	•
1024x768	75	60.0	78.8	•	•	•	•
1024x768	85	68.7	94.5	•	•	•	•
1024x768	90	72.8	100.1	•	•	•	•
1024x768	100	81.4	113.3	•	•	•	•
1024x768	120	98.7	139.0	•	•	•	•
1024x768	140	116.6	164.2	•	•	•	•
1024x768	150	125.7	176.9	•	•	•	•
1024x768	160	134.8	192.0	•	•	•	•
1024x768	180	153.5	218.6	•	•	•	•
1024x768	200	172.8	264.1	•	•	•	•
1152x864	43	38.0	56.0	•	•	•	•
1152x864	47	41.7	62.1	•	•	•	•
1152x864	60	53.7	81.6	•	•	•	•
1152x864	70	63.0	96.7	•	•	•	•
1152x864	75	67.5	108.0	•	•	•	•
1152x864	80	72.4	112.3	•	•	•	•
1152x864	85	77.0	119.6	•	•	•	•
1152x864	100	91.5	143.4	•	•	•	•
1152x864	120	111.1	176.0	•	•	•	•
1152x864	150	141.4	226.3	•	•	•	•
1152x864	160	151.6	242.6	•	•	•	•
1280x1024	43	45.1	75.1	•	•	•	•
1280x1024	47	49.4	83.0	•	•	•	•
1280x1024	60	64.0	108.0	•	•	•	•
1280x1024	70	74.6	128.9	•	•	•	•
1280x1024	74	79.0	138.5	•	•	•	•
1280x1024	75	80.0	135.0	•	•	•	•
1280x1024	85	91.1	157.5	•	•	•	•
1280x1024	90	97.0	169.2	•	•	•	•
1280x1024	100	108.5	190.9	•	•	•	•
1280x1024	120	131.6	233.7	•	•	•	•
1280x1024	125	137.6	244.4	•	•	•	•
1280x1024	130	143.5	254.9	•	•	•	•
1600x1200	52	64.2	137.7	•	•	•	•
1600x1200	58	71.9	155.4	•	•	•	•
1600x1200	60	75.0	162.0	•	•	•	•
1600x1200	66	82.2	178.9	•	•	•	•
1600x1200	72	90.0	195.9	•	•	•	•
1600x1200	75	93.8	202.5	•	•	•	•
1600x1200	76	95.2	208.7	•	•	•	•



XPERT 2000 Video Mode Table							
Display Screen Resolution	Refresh Rate (Hz)	Hor. Scan (kHz)	Pixel Clock (MHz)	Colors (Bits Per Pixel)			
				32 MB			
				8	16	24	*32
1600x1200	85	106.3	229.5	•	•	•	•
1600x1200	90	113.8	251.2	•	•	•	•
1792x1344	60	83.5	203.0	•	•	•	
1792x1344	75	105.2	259.3	•	•	•	
1800x1440	60	89.4	219.5	•	•	•	•
1800x1440	65	97.1	238.5	•	•	•	
1800x1440	70	104.9	249.9	•	•	•	
1800x1440	75	112.7	278.7	•	•	•	
1856x1392	60	86.5	218.6	•	•	•	
1856x1392	75	109.0	277.2	•	•	•	
1920x1080	60	67.0	172.7	•	•	•	•
1920x1080	70	78.6	205.1	•	•	•	•
1920x1080	75	84.6	220.6	•	•	•	•
1920x1080	80	90.4	237.4	•	•	•	•
1920x1200	60	74.5	193.1	•	•	•	
1920x1200	72	90.0	222.2	•	•	•	•
1920x1200	75	93.9	231.4	•	•	•	•
1920x1200	76	95.2	245.0	•	•	•	
1920x1200	80	100.5	263.7	•	•	•	
1920x1200	85	107.1	282.7	•	•	•	
*32 - 24bpp color data is processed using a 32bpp data format. 2D and 3D resolutions and refresh rates are subject to change.							



Compliance Information

FCC Compliance Information

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

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 manufacturer's 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 to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to ensure compliance with FCC regulations.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.



Industry Canada Compliance Statement

ICES-003 This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B Respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

CE Compliance Information

EMC Directive 89/336/EEC and Amendment 92/31/EEC, Class B Digital Device

EN 50081-1, Generic Emissions Standard for Residential, Commercial and Light Industrial Products

(EN 55022/CISPR 22, Limits and Methods of Measurement of Radio Interference Characteristics Information Technology Equipment)

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

EN 50082-1, Generic Immunity Standard for Residential, Commercial and Light Industrial Products

(IEC 801-2, IEC 801-3, IEC 801-4)

Directive EMC 89/336/CEE et amendement 92/31/CEE, dispositif numérique de Classe B

EN 50081-1, Norme sur les émissions génériques pour les produits domestiques, commerciaux et industriels légers

(EN 55022/CISPR 22, Limites et méthodes de mesure des caractéristiques d'interférences radiophoniques, Matériel des technologies de l'information) *Mise en garde: ceci est un produit de Classe B. Il risque produire des interférences radiophoniques dans un environnement domestique auquel cas l'utilisateur peut se voir demandé de prendre des mesures adéquates.*

EN 50082-1, Norme sur l'immunité générique pour produits domestiques, commerciaux et industriels légers.

(CEI 801-2, CEI 801-3, CEI 801-4)

EMC Richtlinie 89/336/EEC und Änderung 92/31/EEC, Digitales Gerät der Klasse B

EN 50081-1, Allgemeiner Emissions-Standard für Haushalt- und kommerzielle Produkte sowie Erzeugnisse der Leichtindustrie



Compliance Information

(EN 55022/CISPR 22, Beschränkungen und Verfahren der Messung von informationstechnischen Ausrüstungen mit Funkstörmerkmalen)

Warnung: Dies ist ein Erzeugnis der Klasse B. Dieses Erzeugnis kann Funkstörungen im Wohnbereich verursachen; in diesem Fall können entsprechende Maßnahmen seitens des Benutzers erforderlich sein.

EN 50082-1. Allgemeiner Unempfindlichkeits-Standard für Haushalt- und kommerzielle Produkte sowie Erzeugnisse der Leichtindustrie (IEC 801-2, IEC 801-3, IEC 801-4)

Product Notices

Macrovision Corporation

This device is protected by U.S. Patent numbers 4,631,603; 4,577,216; and 4,819,098 and other intellectual property rights. The use of Macrovision's Copy Protection technology in the device must be authorized by Macrovision and is intended for home and other limited pay-per-view uses only, unless otherwise authorized in writing by Macrovision. Reverse engineering or disassembly is prohibited.

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