MEGA 3D Graphics Card

Before installing this MEGA 3D 5464 VGA display card, please read this manual carefully and retain it for future reference.

NOTE : For most updated information regarding software driver installation, please refer to the related " Readme" files provided in relevant the MMCD driver information section.

NOTE : If any, the prints of screen dumps used in this manual were prepared and printed based on the software drivers available at time of printing.   Since the nature of software drivers for VGA cards is that they change frequently, it should be noted that some screens may appear slightly different on your computer to those printed in this manual.

NOTE : LOADING SOFTWARE FROM YOUR CD-ROM DRIVE..

You will notice in the instructions concerning installation of software drivers contained in this manual, references to the CD-ROM drive letter **'d'** (i.e. **d:\eng\5464vga\win95**)   If this drive letter is not correct according to your system configuration, then please change as necessary.

FCC Compliance Statement

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 properly, in strict accordance with the 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 and correct the interference by one of 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 experienced radio/TV technician for help and additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." It is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE : In order for the installation of this product to maintain compliance with the limits for a class B device, shielded cables and power cord must be used.

Trademark Acknowledgments

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Display List Driver - VGA, TurboDLD *Classic*, *pana*Station Classic and CustomColors are trademarks of Spacetec IMC Corp.

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SECTION 1. INTRODUCTION

Congratulations, you are going to enjoy the exceptional visual quality and thundering speed **MEGA 3D** will bring you.   **MEGA 3D** has adapted the Cirrus Logic 5464 chipset which works with your IBM or compatibles, 486 or Pentium Peripheral Component Interconnect (PCI) Local Bus system.   It has incorporated with the latest memory technology - **RAMBUS DRAM**, providing enhancement in hardware 3D acceleration, video playback with vertical & horizontal hardware interpolation, Direct 3D graphics acceleration, GUI accelerator for color expansion, and more. These features allow you to experience a new dimension on VGA visual display quality and speed performance.

1.1   What is in your package?

You should have the following items in your   package :
. 	MEGA 3D Graphics Accelerator
. 	MMCD CD-ROM (with all drivers on) or Standard Driver Diskettes containing…
- Diskette # 1 = Windows 3.1
- Diskette # 2 = Windows 95, Windows NT 3.5x/4.0
- Diskette # 3 = Compcore for software MPEG (for both Windows 3.1/95)
. 	Optional Driver Diskettes
- Diskette # 4 = Autodesk ADI 4.2, and MicroStation, DOS Utilities
- Diskette # 5 = OS/2
. 	MEGA 3D Display Card User Manual
. 	Microsoft CD Games Sampler - Preview to the latest Direct 3D games
                                        - DirectX driver 2.0 included

1.2   Supplied Driver & Utilities

<mark>NOTE :</mark> Please note that all   the Installation Procedures for all of the Software & Utilities Programs listed below, are stored on the MMCD CD-ROM or diskette drivers provided with this product.

The **MEGA 3D** package includes software drivers, which support the following applications: ('Optional' refers to diskette versions only – MEGA3D sold with MMCD CD-ROM includes all drivers as standard)

- MS Windows 3.x/95	- Windows NT 3.5x/4.0
- CompCore for software MPEG	- Microsoft Direct 3D
- Direct Draw	- MicroStation v4.0/5.0 (optional)
- 3D Studio v1 ,v2 (optional)	- OS/2 (optional)
- AutoCAD v11/12/13 (optional)	- AutoShade with Renderman v2.0 (optional)

Optional Utility Programs provided are:

- CLMode   : To define type of monitor and set video modes
- TSRFONT   : To load 8x14 font not included in VGA BIOS image

SECTION 2. FEATURES

2.1 - General Features
- Accelerates the most frequently used GUI/video operations
- Supports a wide variety of resolutions, color depths, and refresh rate

2.2 - Advanced Features
- **RAMBUS memory - providing upto 600 MHz/sec bandwidth**
- Hardware occlusion with 3 video windows
- Vertical & horizontal interpolation scaling
- YUV-to-RGB conversion
- Upgraded graphic performance with Three- oprand BitBLT
- MPEG support

2.3 - Hardware 3D Acceleration
- High-speed texture mapping through " Texturejet Architecture"
- Gouraud shading
- Perspective correction, & Z-buffering
- Texture map filtering & Alpha blending
- Fogging & Texture decompression

2.4 - Compatibility
- Complies with Open GL & Microsoft Direct 3D Standards
- Fully compliant PCI rev. 2.1 specification
- 100% IBM VGA on BIOS, register and hardware levels
- Non-interlaced monitor support
- Supports VESA Display Power Management Signaling (DPMS) which decreases energy consumption when used with a compatible monitor
- Can configure automatically by communicating with VESA DDC2B monitors
- Contains drivers for the most popular operating systems and software available today

2.5 - Resolution and Color Selection
- Supports 640x480 in 16, 256, 64k and 16M colors non-interlaced
- Supports 800x600 in 16, 256, 64k and 16M colors non-interlaced
- Supports 1024x768 in 16, 256, 64k and 16M colors non-interlaced
- Supports 1280x1024 in 16, 256 and 64k colors non-interlaced
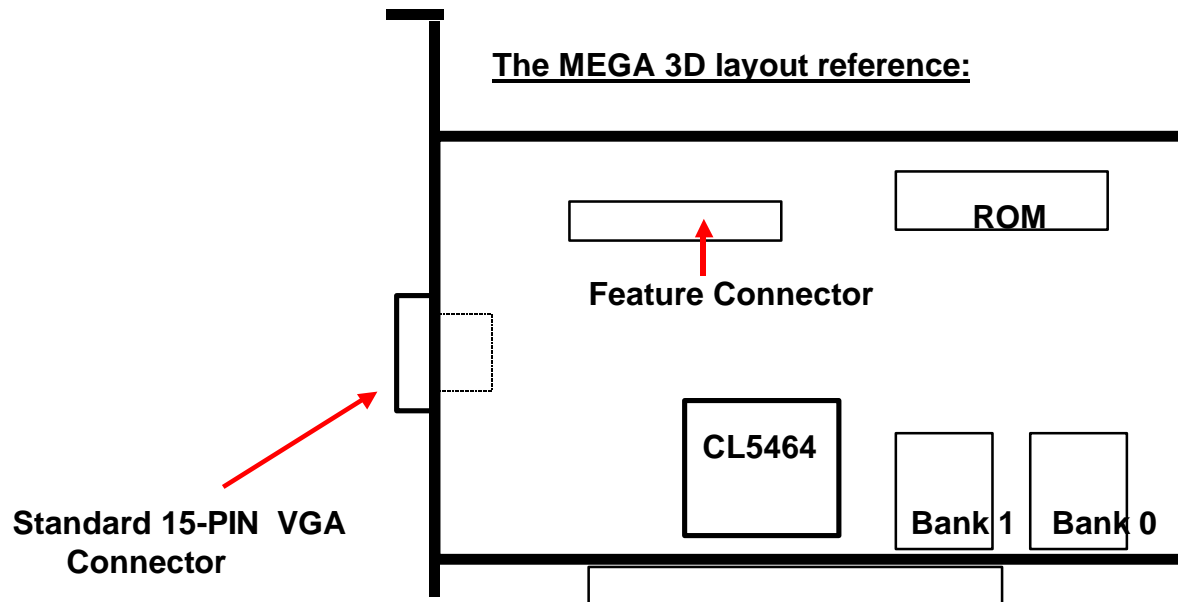- Supports 1600x1280 in 16 and 256 colors non interlaced

2.6 - GUI Accelerator

. Accelerates the most frequently used functions in today's graphics intensive environment in :

- BitBLT
- Image and Text Transfer
- Line Draw & Area Draw
- Short Stroke Vector Draw, & Hardware Cursor
- Color expansion for 8-, 16-, 24-, 32-bpp modes

SECTION 3. HARDWARE INSTALLATION PROCEDURE

3.1 - Hardware Configuration

The MEGA 3D layout reference:

ROM

Feature Connector

CL5464

Bank 1   Bank 0

Standard 15-PIN VGA
Connector

3.2 - Card Installation

Please follow the following steps to install the **MEGA 3D Graphics Accelerator Display Card** into your system.

1. <u>TURN OFF</u> all POWER connected to your system, including any peripherals (printer, external drives, modem, etc.).
2. <u>OPEN</u> the system cover by unfastening the cover mounting screws. Refer your system user manual for instructions on how to remove the system cover.
3. <u>SELECT</u> an appropriate (unoccupied) PCI Bus expansion slot for inserting the **MEGA 3D Graphics Accelerator.** Please refer to your system user manual for the location of the PCI Bus expansion slot. <u>REMOVE</u> the retaining screw that

holds the slot cover in place. SLIDE the slot cover out and keep this screw handy.

4. Alternatively, if you are REPLACING AN EXISTING VGA DISPLAY CARD   with **MEGA 3D**, carefully remove the existing VGA card from you system.

5. INSTALL the card. To install the **MEGA 3D** into the selected PCI Bus expansion slot, align the gold-fingered edge-connector of the card directly above the selected expansion slot on the motherboard, then gently but firmly insert the card fully into the slot. (note: to avoid possible static damage to the card, touch a metal surface while holding the card for installation.)

6. SECURE the newly installed card. Re-fasten the screw removed from the expansion slot in Step 3 to secure the card in place.

7. CLOSE the computer cover. Secure the cover with the mounting screws removed in Step 2.

3.3 - Connection to a VGA Monitor

When you connect your monitor to the VGA Card, please ensure that you have the right cable and cable connector. If you are using a multi-frequency monitor, you may need a special 15 pin PS/2 compatible adapter cable. Check your monitor user manual for additional configuration information.

SECTION 4. SOFTWARE INSTALLATION OVERVIEW

Your **MEGA 3D** comes with a range of software drivers and utilities, which enable you to configure your card to suit most of today's popular applications. These software drivers offer performance and quality improvements over the standard graphics software drivers supplied with the computer system, and extend the graphics capability in a number of applications. We will highlight some of the driver installations here, however, please note that all the installation procedures for all the software programs included in the package are stored in the diskette drivers provided.

IMPORTANT NOTE : Due to the nature of drivers for VGA graphic cards   there may be times where your package includes diskettes as well as the MMCD CD-ROM. In this case please use the diskette versions of the   drivers as these will be the most updated.

4.1 - Windows 95 Display Driver Installation

The Microsoft Windows 95 display driver works with Windows 95 and supports 3D DirectDraw. Before installing the Windows 95 driver, you need to install DirectX 2.0 from the Microsoft CD Games Sampler under directory [directx] by:

1. Making sure Windows 95 has been installed in your system.
2. Inserting the CD into the CD-ROM, and let it run automatically.
3. Follow on-screen instructions to complete DirectX installation.

After installing DirectX 2.0, follow the steps below to install the Windows 95 display driver.

1. Click on the right mouse button on the Windows 95 desktop (i.e., at the background where no windows or icons are displayed, a menu will be shown), then select **"Properties"**, a dialog box should appear.
2. Click on the **"Settings"** button.
3. Click on the **"Change Display Type"** button at the bottom of the Settings display screen.
4. Click on the **"Change"** button next to the Adapter Type box.
5. Click on the **"Have Disk"** button in the Select Device display screen.
6. Insert the Windows 95 driver diskette or MMCD CD-ROM
7. **For diskette driver installation** type **A:\Win95**
8. **For MMCD driver installation** type **d:\eng\5464vga\win95**   under **"Copy Manufacturer's files"** at the **"Install From Disk"** display screen, then Click **"OK".**
9. Follow on-screen instructions, the Windows 95 driver will be installed in the Windows 95 system directory accordingly.

Follow the steps below to **configure** the Windows 95 driver:

1. Click the right mouse button on the Windows 95 desktop (the Windows background where no windows or icons are displayed, a menu will be shown), then select **"Properties"**.
2. Change your driver and monitor configurations from the **"Display Properties"** dialog box by:
   . Click on the **"Refresh"** button and adjust the settings to change your Windows 95 configuration.
   . Click on the **"Settings"** button and adjust the settings to change your Windows 95 monitor configuration.
3. Follow on-screen instructions to complete the Windows 95 driver or monitor configuration.

4.2 - Windows 3.1 Driver Installation

The Windows 3.1 installation utility copies all of the graphics driver and utility files to your hard disk. To run the installation program follow the steps below:

1. Ensure Windows 3.1 is up and running properly.
2. Insert the "**Windows 3.1 Driver**" diskette into your disk drive, or if you're using the MMCD only then <u>Go To</u> the **MEGA 3D 5464 Graphics Card Page** in the MMCD (under the group "Product Gallery')
3. **For diskette driver installation** first select "**Run**" by clicking from the File menu (or press ALT+F, then R).
4. Type in the correct drive name, follow by the word **INSTALL** (e.g., **A:\INSTALL**) in the Command Line, and then click **"OK".**
5. **For MMCD driver installation** in the MEGA 3D Graphic Card page you will see an 'Install' button for the **Windows 3.1 Driver**. Simply click once on this.
6. Click **"Continue"** for default directory installation. Or, you can set the path where you would like the utility programs to be installed at the first dialog box displayed. To use another directory for installation, type the path name or you can click on the "Down Arrow" and select a directory for installation; click **"Continue"** after selecting the directory.

After the driver has been copied to your hard disk, the Install program will automatically execute the WinMode utility. You can reconfigure the Windows driver at any time by running the WinMode Utility by following the on-screen instructions.

The WinMode utility helps you to configure the Windows 3.1 driver. It facilitates the setting up of monitor, allowing you to choose the number of color, the resolution, and refresh rate in running Windows. Please refer to the   Readme File - "winmode.txt." in the driver diskette or MMCD ..

4.3 - CompCore Driver Installation

Compcore drivers and utilities are necessary for .AVI, .DAT, and .MPG files playback for MPEG and Video CD. The latest Compcore software for Windows 3.1x, and Windows 95 is included with MEGA 3D. Follow the steps below for   Compcore driver installation.

1. Ensure Window 3.1 or Window 95 is up and running properly.
2. **For diskette versions** Insert the Compcore diskette to drive A.   Then select **"Run"** from "File" in "Program Manager" for Window 3.1,   **or** select **"Run"** from **"Start"** for Windows 95.
3. Type: **A:\SETUP** in the dialog box under "Command Line", then select   **"OK".**
4. **For MMCD installation** Go To to **MEGA 3D 5464 Graphic Card Page** and simply click once on the **CompCore** 'Install' button
5. Follow on-screen instructions to complete installation.

4.4 - Windows NT 3.5x Driver Installation

Once Windows NT 3.5x has been installed into your system, follow the steps listed below to install the Microsoft Windows NT 3.5x display driver.

1. Ensure Windows NT 3.5x is up and running properly.
2. Select **"Control Panel"** from the Main group , then select the **"Display"** icon and the **"Change Display Type"** button respectively.
3. Select the **"Change"** button from the Display Type dialog box.
4. Select the **"Other"** button at the Select Device dialog box.
5. **For diskette driver installation** Insert the Windows NT 3.5x driver diskette into drive A, then type **A:\NT35**   or select any other drive and type with respective drive name, then click **"OK"**.
6. **For MMCD driver installation** Insert the MMCD into your CD-ROM drive and type **d:\eng\5464vga\winnt35** into the command line and click **'OK'**
7. Select the **"Install"** button and click **"Yes"** to begin the driver installation.
8. Select   **"Drive   A:\NT35"**   (for   diskette   installation)   or **"Drive d:\eng\5464vga\winnt35\"**   (for MMCD installation) when the Windows NT Setup dialog box appears, then click " **Continue"**.
9. Click **"OK"** when the Installing Driver dialog box appears, then click   **"OK"** again at the next dialog box.

Select **"Restart Windows NT 3.5x"** to use the updated Windows NT 3.5x display driver. If "Don't Restart Now" option is selected, the Windows NT driver will not be installed until you shut down the system.

Follow the steps below to configure the Windows NT 3.5x driver after it has been installed:

1. Click the right mouse button at the Windows NT desktop (i.e., at the Windows background where no windows or icons are displayed, a menu will be shown), then select **"Properties".**
2. Click **"Settings"** button at the " **Display Properties**" dialog box, and adjust the settings to change your driver and monitor configurations.
3. Follow on-screen instructions to complete the Windows NT 4.0 driver or monitor configuration.

4.5 - Windows NT 4.0 Driver Installation

Follow the steps below to install the Microsoft Windows NT 4.0 display driver:

1. Click on the right mouse button at the Windows NT desktop (i.e., at the background where no windows or icons are displayed), then select **"Properties"**, a dialog box should appear.
2. Click on the **"Settings"** button.
3. Click on **the "Change Display Type"** button at the bottom of the Settings display screen.
4. Click on the " **Change**" button next to the Adapter Type box.
5. Click on the **"Have Disk**" button in the Select Device display screen.
6. **For diskette driver installation** Insert the Windows NT Drivers diskette to A Drive, then follow on screen instructions.
7. Type **A:\ NT40** when Windows NT asks where the driver is located. The Windows NT Driver will be installed in the Windows NT system directory.
8. **For MMCD driver installation** Insert the MMCD in to your CD-ROM drive.
9. Type **d:\eng\5464vga\winnt4** when Windows NT asks where the driver is located. The Windows NT Driver will be installed in the Windows NT system directory.

For Windows NT 4.0 driver configuration, please refer to driver configuration steps for Windows NT 3.5x in Section 4.3 above.

4.6 - Installation & Configuration for Other Drivers & Utilities

The installation and configuration procedures for the following software drivers and utilities are kept in their Readme files stored in related diskettes provided in the   **MEGA 3D** package.

Other Software Drivers & Installations included are as follow, please insert the relevant diskette or MMCD into your drive and locate & type in the access path provided to reach their Readme files:

.	AutoCAD (Autodesk ADI 4.2 Driver)	-[a:\adi42\autodesk.txt.] -[d:\eng\5464vga\oth\adi42\autodesk.txt]
.	MicroStation Driver	-[a:\mstn\mstation.txt.] -[d:\eng\5464vga\oth\mstn\mstation.txt]
.	OS/2 3.0 (Warp) Driver	-[a:\os2.txt.] -[d:\eng\5464vga\os2\os2.text]
.	DOS Utilities (CLMode/TSRFONT)	-[a:\util\utility.txt.] -[d:\eng\5464vga\dos\utility.txt]

     (CLMode & TSRFONT use the same installation program)

> **NOTE :** Please note that all   the Installation Procedures for all of the Software & Utilities Programs, are stored on the diskette or MMCD provided with this product :

SECTION 5. TROUBLE-SHOOTING

5.1 - Hardware Trouble-shooting

The followings are some of the possible remedies to take if the GUI accelerator Cirrus 5464 will not boot or operate properly in your system:

NOTE : Please turn off the system before adjusting the MEGA 3D Card

1. Check to see if the card is firmly inserted in its PCI Bus expansion slot, and it should not be making contact with any other cards in the system.
2. Check if the gold-finger (the connected part with the PCI Bus expansion slot) of the display card is clean, if not, you can use a rubber to clean the gold-finger.
3. Check to see if your monitor is properly connected to the card, and be sure your monitor's pin definitions match with those of your GUI accelerator card.
4. Check if the system's power supply is operating properly by turning your system on.

5.2 - Commonly Asked Questions Related To Monitor

Q1. **Why does the display shift or change sizes when I switch modes?**
Some monitors lack auto-sizing features or just do not synchronize properly to the video board output. In some cases, horizontal and vertical display adjustments may be necessary.

Q2. **What kind of monitor do I need to display 800x600 or 1024x768 resolution?**
To display 800x600 resolution at 52 Hz refresh rate, your monitor must be capable of a 35.2 KHz horizontal scan rate (e.g., NEC 2A, 3D). At 72 Hz refresh rate, your monitor must be capable of a 48.0 KHz scan rate (e.g., Sony HG 1304, NEC 4D/5D, Seiko 1450).

To display 1024x768 interlaced, your monitor must be capable of a 35.5 KHz horizontal scan rate (e.g., NEC 3D, Seiko 1430 or 1440). To display 1024x768 non-interlaced (60 Hz), your monitor must be capable of a 48.7 KHz scan rate (e.g., Sony HG 1304, NEC 4D/5D, Seiko 1450). To display 1024x768 non-interlaced (70 Hz), your monitor must be capable of a 56.4 KHz scan rate (e.g., NEC 4FG).
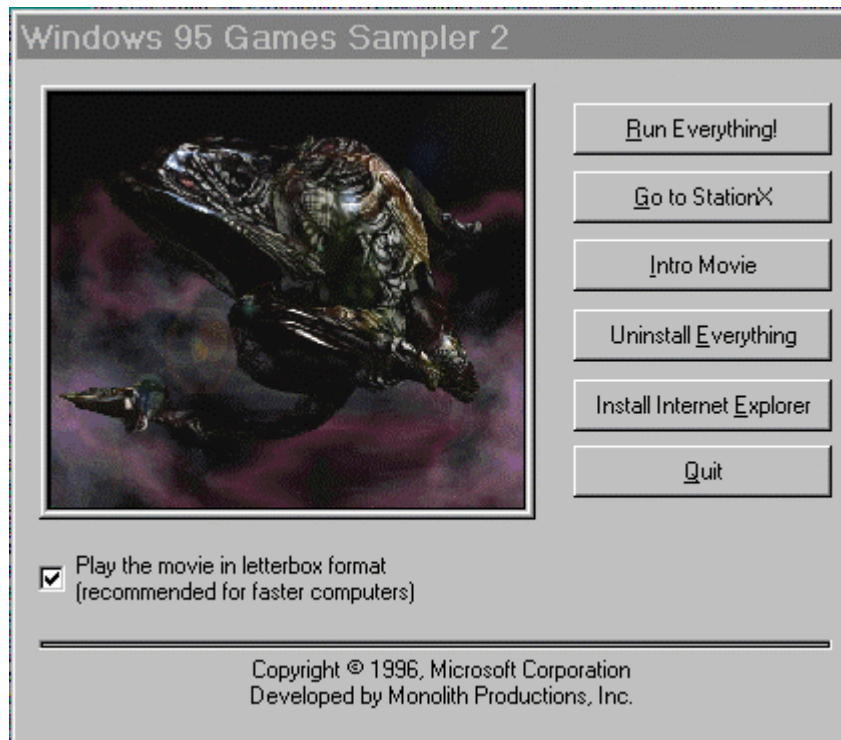
Q3. **What kind of monitor do I need to display 1280x1024 resolution?**
A 19-inch or larger size monitor is recommended to display 1280x1024 (e.g., NEC 4FG). The monitor must also be capable of a 47.5 KHz scan rate.
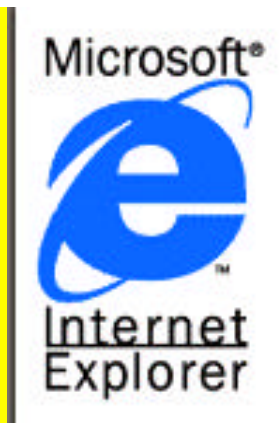
Microsoft Games Sampler CD for Windows 95

An optional item for your MEGA 3D 5464 3D VGA card is the Microsoft Sampler CD with a selection of the latest developments in 3D games.

This CD-ROM runs automatically when inserted to your CD-ROM drive and includes DirectX drivers and an intuitive user interface guiding you through 'StationX' !!

Games included

        Microsoft Games Sampler 2 for Windows 95
        The 3DO Company - **Captain Quazar™, Decathlon**™
        Berkeley Systems - **You Don't Know Jack**™
        Blizzard Enter tainment - **Diablo**™
        DreamWorks Interactive - **The Neverhood**™
        Electronic Arts - **Road Rash**™
        Epic MegaGames, Inc. - **Fire Flight**™
        Inscape - **(Hold Onto Your) Nuts**! ™, **Drowned God**™, **Ravage D.C.X**. ™
        Looking Glass Technologies, Inc. - **Flight Unlimited**™
        Microsoft - **Hellbender**™, **Monster Truck Madness**™
        Strategic Simulations Incorporated - **War Wind**
        Tsunami - **Free Enterprise**™
        Viacom New Media - **DeathDrome**™

Useful E-Mail Addresses

If you find that the installation driver for your particular operating system is not included on this MMCD CD-ROM then please visit one of the following web sites for further information..

www.cirrus.com

Cirrus Logic Home Page

www.mmcd.com

MMCD Home Page

Thank you