

MS 4415

3D VSP Graphics Accelerator

USER'S GUIDE

VERSION 1.02
1997/12/19 ROC





FCC-B Radio Frequency Interference Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1

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

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



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Chapter 1

MS-4415 Cirrus Logic 5465 2D & 3D AGP Graphics Accelerator

1. Overview

The MS-4415 3D AGP Graphics Accelerator uses CL-GD5465 2D/3D graphics accelerators. It is designed to deliver the next level of acceleration required by advanced 3D gaming and high-quality MPEG/video playback to users. In addition to superior 3D capabilities, the CL-GD5465 also offers a high level of 2D performance and video quality.

The advanced CL-GD5465 offers a highly efficient hardware texture-map management. An AGP interface further enhances the texture management by providing high bandwidth between the system memory and the graphics subsystem. It is also designed to optimize Microsoft Direct3D performance.

2. Features

Chip List:

- **Cirrus Logic 5465:** 2D & 3D accelerator processor.

64-bit graphics engine with integrated 3D game acceleration

- Perspective textures mapping
- FilterJet™ fast bilinear filtering
- Lit, copy, decal, and blend textures
- Palettized textures (compressed textures)
- Mono rasterization (single-pass lighting)
- Stipple transparency
- Rendering of points, lines, and triangles
- 16-bit Z-buffer
- Gouraud shading
- Alpha blending, fog, and transparency
- Display list processing for maximum performance



- Texture mirroring and clamping
- 3D-clipping support
- Texture composition
- Full RGB specular lighting

High-performance 64-bit GUI accelerator

- Hardware clipping
- Three-operand BitBLT (bit boundary block transfer)
- Color expansion for 8-, 16-, 24-, and 32-bpp modes
- Stretch BitBLT

AGP 1.0 compliant 66-MHz bus master

- DMA maximizes system performance
- Host-rendered/cached texture maps

TV output

- Digital output to support next generation of TV encoders

Integrated VGA controller

Video playback acceleration

- Single-pass X, Y interpolated scaling
- Hardware occlusion for three video windows
- YUV-to-RGB conversion
- Color and chroma key
- Single overlay window

Rambus® memory architecture

- Concurrent and low-latency devices supported
- Single memory for color-buffer, video, Z-buffer, and texture store
- 600Mbytes/sec.

MPEG-2/DVD acceleration

- DMA Bursting
- Support for planar YUV 4:2:0 frees CPU of conversion burden
- Advanced hardware de-interlacing

V-Port™ for peripheral expansion

- MPEG-2 decoder
- TV tuner
- Teleconferencing

Integrated 230-MHz palette DAC and clock synthesizer

- True-color operation up to 1024x768
- Hardware cursor

Resolution

- 640x480x16.7 M colors(32 bit)
- 800x600x16.7 M colors(32 bit)
- 1024x768x16.7 M colors(32 bit)
- 1280x1024x64K colors(16 bit)

Software Support

- Windows™ 95
- Windows™ 98
- Windows™ NT
- 3D studio
- OS/2® v3.X (Warp)
- VPM™ (video port manager)



3. System Requirements

To install MS-4415 VGA card, your computer system needs to meet the following requirements:

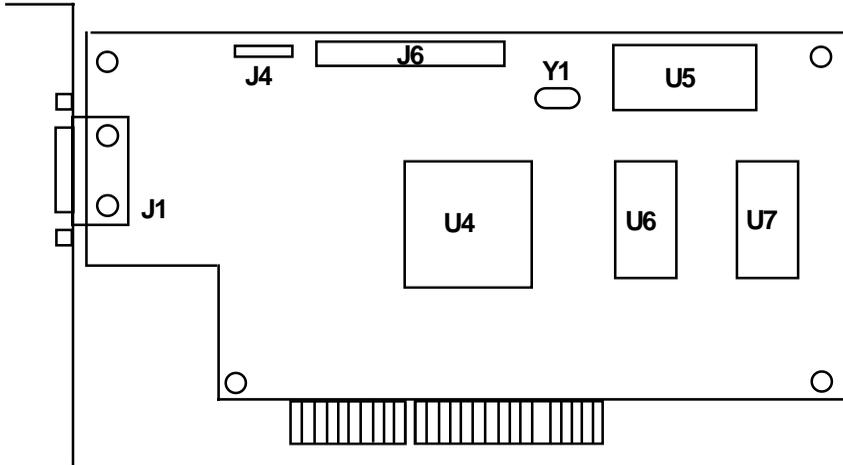
Computer	Pentium® II processor or compatible system
Expansion Slot	AGP slot
Monitor	VGA Support, minimum 640x480 resolution
Operating system	Windows™ 95, Windows™ 98, Windows™ NT 3.51 or 4.0, IBM® OS/2
CD-ROM	Double Speed or Higher

4. Package Contents

Before installing the MS-4415 VGA card, please check to make sure that your package is complete:

- VGA card
- CD-ROM
 - drivers and applications on CD-ROM
 - documentation on CD-ROM
- User's Guide

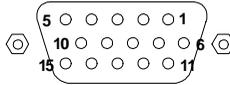
5. Card Layout



Components Description:

- | | |
|-----------|------------------------|
| 1. J1 | VGA connector |
| 2. Y1 | Crystal 14.3181MHz |
| 3. U5 | VGABIOS |
| 4. U4 | Cirrus Logic 5465 Chip |
| 5. U6, U7 | RAMBUS DRAM |
| 6. J6 | VMI Port |

6. DB 15 Pin Connector



Analog Video Display Connector(DB15-S)	
Pin	Signal Description
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Not used
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

7. Vertical Refresh Rate

Resolution	Color	Vertical Refresh
1600x1200	8bit	48, 60, 65, 70
1280x1024	8bit, 16bit, 24bit	56, 60, 72, 75, 85
1024x768	8bit, 16bit, 32bit	56, 60, 72, 75, 85
800x600	8bit, 16bit, 32bit	56, 60, 72, 75, 85
640x480	8bit, 16bit, 32bit	56, 60, 72, 75, 85

Chapter 2

Installation of MS-4415 VGA Drivers

1. Driver

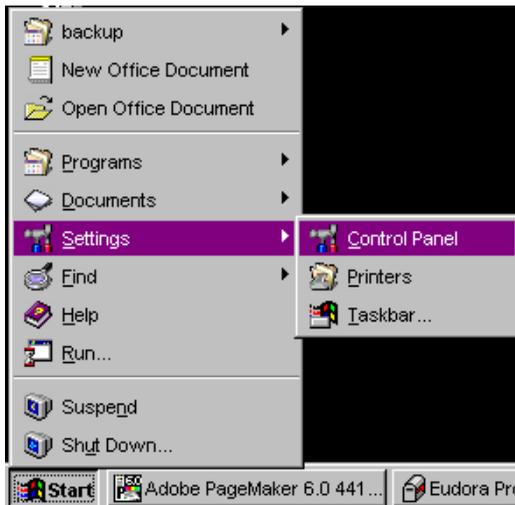
1.1 Install Enhance Drivers for Windows® 95

After installing MS-4415 card in the mainboard, Windows™ will auto-detect the changes in your hardware configuration, and will install the Standard VGA Driver. To get a higher resolution and performance, you need to install the MS-4415 Driver.

To install MS-4415 Enhance Drivers, follow the steps below:

Step 1: Insert the CLAGP_DRV CD into your CD-ROM drive.

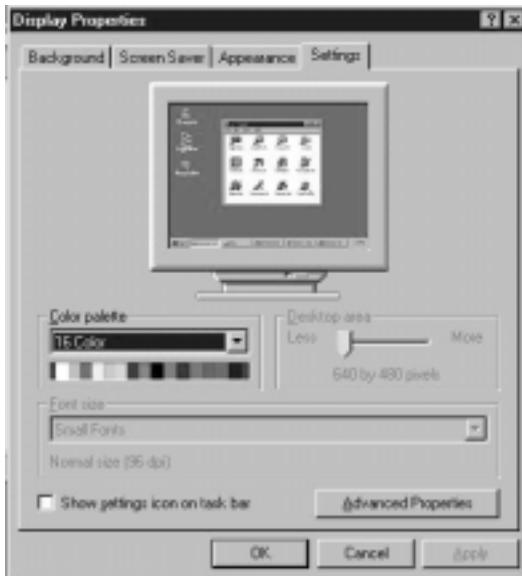
Step 2: In Windows™ 95, click on the **Start** Menu.



Step 3: Choose **Settings**, then open **Control Panel**.



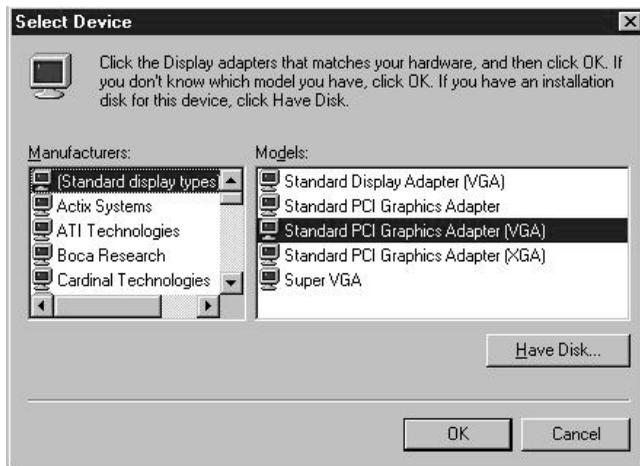
Step 4: Double click on **Display** Icon.



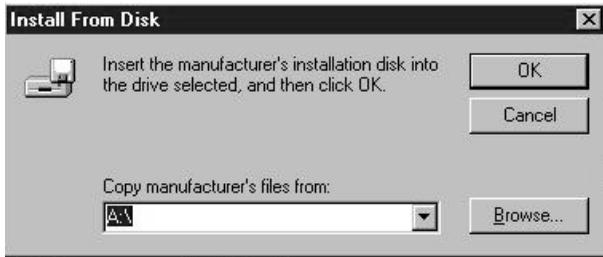
Step 5: Choose **Settings**. Then, click on the **Advance Properties**.



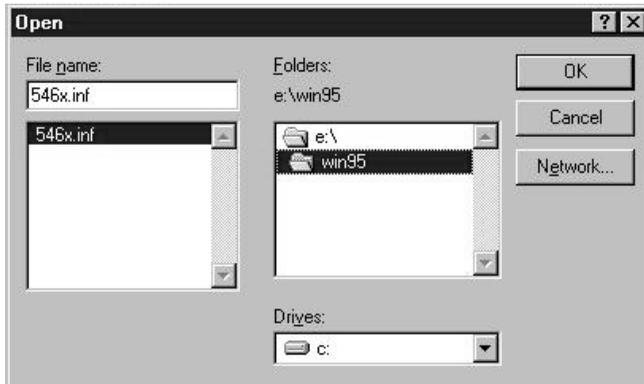
Step 6: Look for **Adapter Type**, then click on **Change**.



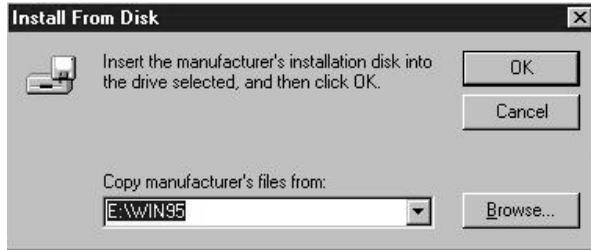
Step 7: Click on **Have Disk**.



Step 8: Click **Browse**.



Step 9: Look for the CD-ROM drive and search for **E:\Win95** Directory. Then, click **OK**.



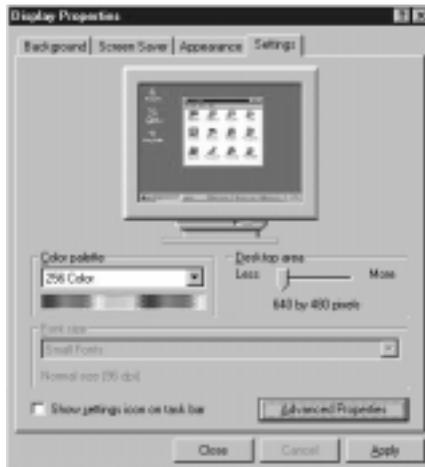
Step 10: Choose **OK**.



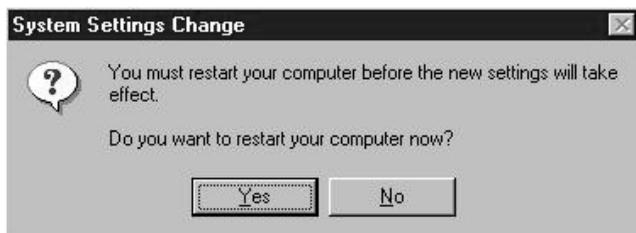
Step 11: Select **Cirrus Logic 546X**, then click **OK**.
This will start copying the necessary files.



Step 12: Click on the **Apply** button, then **OK**.



Step 13: Click on the **Apply** button.



It will then prompt you to restart Windows™.

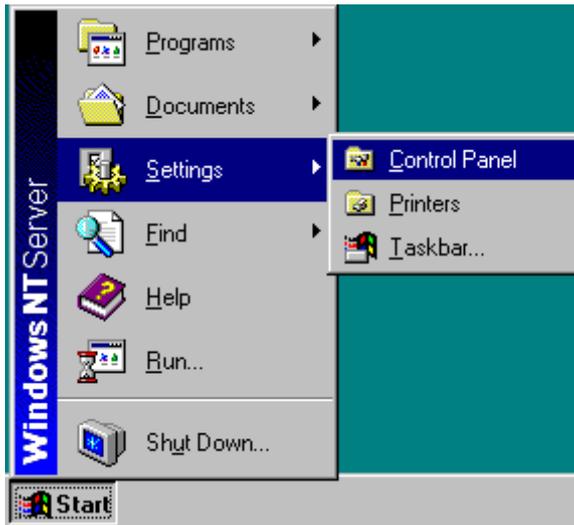
Step 14: Click on the **Yes** button.

1.2 Install Enhance Drivers For Windows™ NT

After installing MS-4415 Card, Windows™ NT will default to Standard VGA mode 640x480x16 colors. Follow the steps below to install the VGA driver.

Step 1: Insert the CLAGP_DRV CD into your CD-ROM.

Step 2: In Windows™ NT, click on the **Start** Menu.



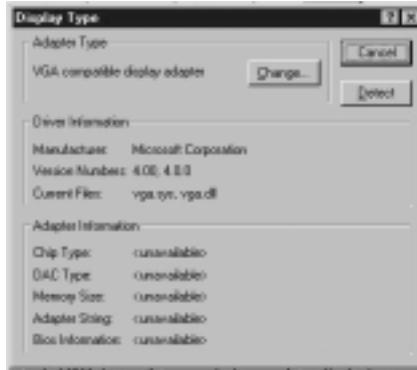
Choose **Settings**, then click on the **Control Panel**.



Step 3: Double Click the **Display** Icon.



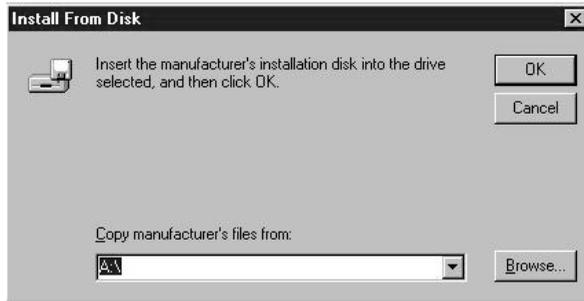
Step 4: Choose **Settings**, then click on the **Display Type**.



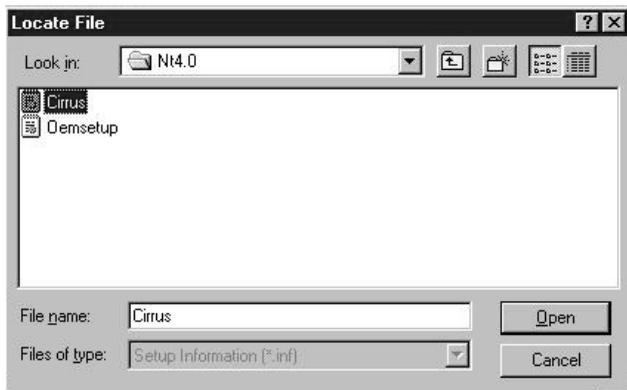
Step 5: Click on the **Change** button.



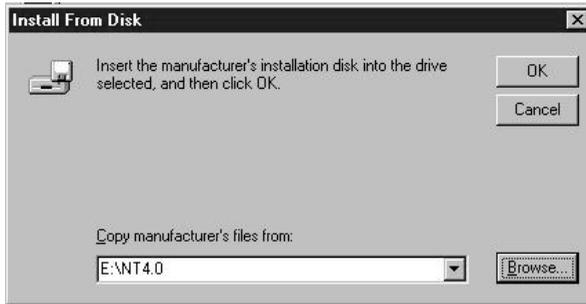
Step 6: Click on the **Have Disk** button.



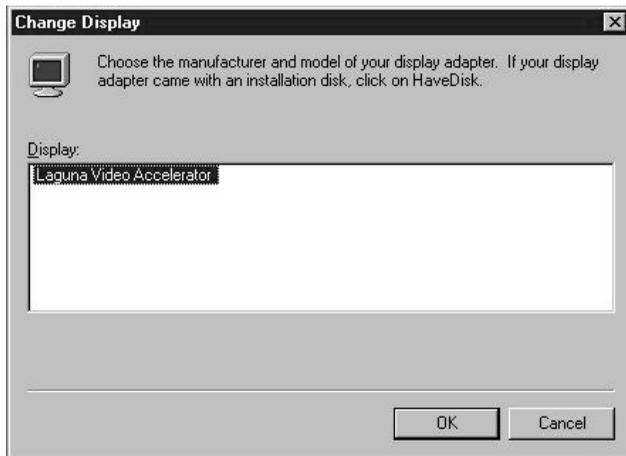
Step 7: Click on the **Browse** button.



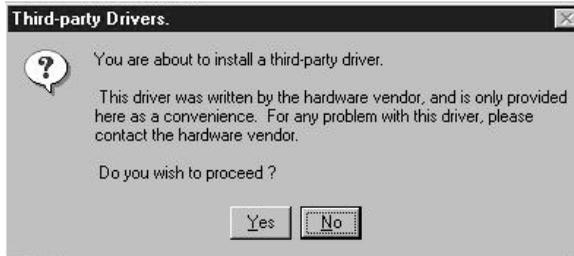
Step 8: Go to the **CD-ROM drive**, then look for the **NT4.0** folder. Choose **Cirrus**, then click the **Open** Button.



Step 9: Click the **OK** button.

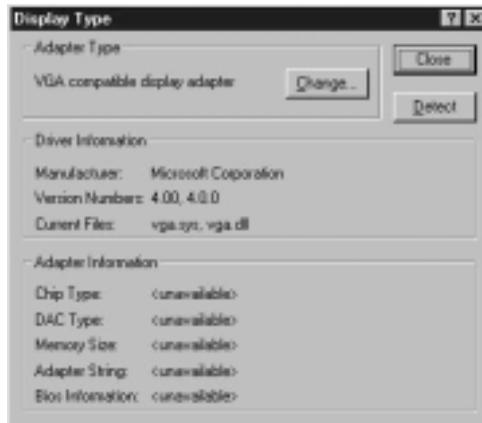


Step 10: Choose **Laguna Video Accelerator**, then click **OK**.



This will prompt you about a Third Party Driver.

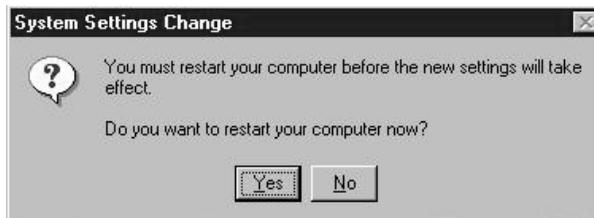
Step 11: Click the **Yes** button.



Step 12: Click the **Close** button.



Step 13: Click the **Close** button.



It will then prompt you to restart Windows™.

Step 14: Click on the **Yes** button.

1.3 Install Enhance Drivers For Windows™ 98 (Memphis)

After installing MS-4415 card in the mainboard, Windows™ will auto-detect the changes in your hardware configuration, and will automatically install the Standard VGA Driver. To get a higher resolution and performance, you need to install the MS-4415 Driver.

To install MS-4415 Enhance Drivers, follow the steps below:

Step 1: Insert the CLAGP_DRV CD into your CD-ROM.

Step 2: In Windows™ 98, click on the **Start** Menu.

Step 3: Choose **Settings**, then open **Control Panel**.

Step 4: Double click on **Display** Icon.

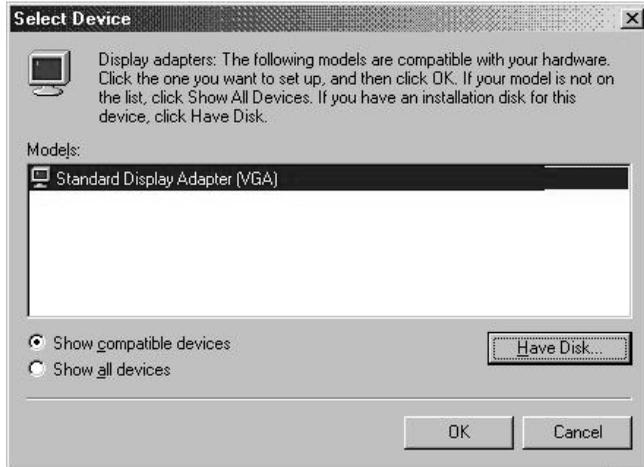




Step 5: Choose **Settings** and then click on the **Advanced Properties**.



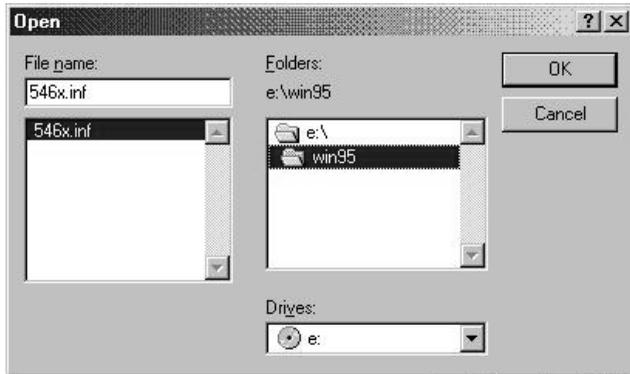
Step 6: Choose **Change**.



Step 7: Choose **Have Disk**.



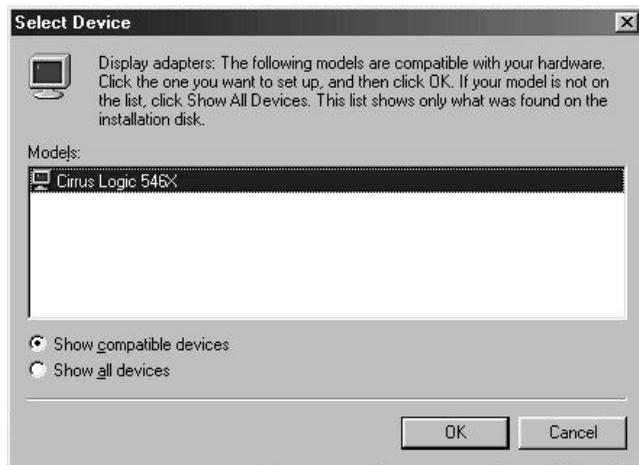
Step 8: Choose **Browse**.



Step 9: Look for CD-ROM drive and search for **E:\Win95**.
Then, click **OK**.



Step 10: Choose **OK**.



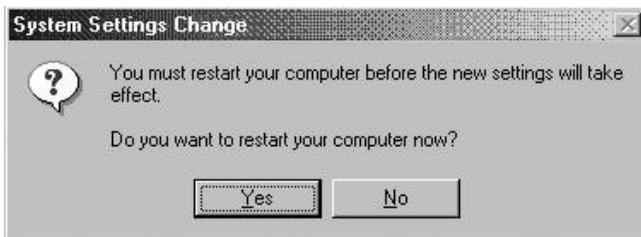
Step 11: Select **Cirrus Logic 546X**, then click **OK**.
It will start copying the necessary files.



Step 12: Click on the **Apply** button, then **OK**.



Step 13: Click on the **Apply** button.



It will then prompt you to restart Windows™.

Step 14: Click on the **Yes** button.



1.4 Install Enhance Drivers For IBM® OS/2

Follow the procedure listed below to install the OS/2 display driver. If you are installing OS/2 for the first time, install the OS/2 for VGA first and reconfigure the driver later.

To install MS-4415 Enhance Drivers, follow the steps below:

Step 1: Open an OS/2 Window.

Step 2: Insert the CLAGP_DRV CD into CD-ROM drive: and click OK.

Step 3: Change to the CD-ROM drive.

Step 4: At the CD-ROM prompt type

OS/2\SETUP C

where 'C' signifies your boot drive, then press[Enter].

Step 5: From the Display Driver Install dialogue box, check Primary Display and click OK.

Step 6: Next, verify the correct Source Directory and click Install to begin the installation process.

Step 7: From the Display Driver Install information box, click OK to proceed.

Step 8: The Setup Program will take you back to the OS/2 Window once the driver has been copied to your bootable drive.

Type

EXIT

at the prompt and click OK.

Step 9: Remove the driver form the CD-ROM drive:

Step 10: Shutdown to restart OS/2 with your newly installed OS/2 driver.

Configuring the OS/2 Driver:

To configure your OS/2 driver once it is installed, follow the procedure listed below.

Step 1: Click on the System icon in the System Setup folder.

Step 2: Select the Screen tab to display resolutions and screen refresh rates on page one of the System Settings dialog box.

Step 3: Select the resolution and refresh rate you want and follow the on-screen prompts.

Step 4: Shutdown and restart your system for these changes to take effect.



MAIN OFFICE

MICRO-STAR INTERNATIONAL

No. 69, Li-De St., Jung-He City,
Taipei Hsien, Taiwan
Tel: 886-2-3234-5599
Fax: 886-2-3234-5488
[http:// www.msi.com.tw](http://www.msi.com.tw)

BRANCH OFFICES

**ACHME COMPUTER INC.
(USA)**

4059 Clipper Court, Fremont
CA 94538, U.S.A.
Tel: 1-510-623-8818
Fax: 1-510-623-8585
BBS: 1-510-623-7398
[http:// www.achme.com](http://www.achme.com)

**MSI COMPUTER SARL
(FRANCE)**

19 Boulevard Georges Bidault
77183 Croissy-Beaubourg, France
Tel: 33-1-60370011
Fax: 33-1-60370066
[http:// www.msi-computer.fr](http://www.msi-computer.fr)
Email: msi-info@msi-computer.fr

**MSI COMPUTER GMBH
(GERMANY)**

Waldstrasse 23
63128 Dietzenbach 2, Germany
Tel: 49-6074-42057
Fax: 49-6074-29143
BBS: 49-6074-35554
Email: msi@ipf.de

MSI JAPAN (JAPAN)

3F, Hiura Bldg., 4-8-8, Sotokanda
Chiyoda-Ku, Tokyo 101, Japan
Tel: 81-3-3251-0494
Fax: 81-3-3251-0601

MSI SHANGHAI (CHINA)

10F, No. 400, Zhe Jiang Rd.
Shanghai, P.R.C.
Tel: 86-21-63518210
Fax: 86-21-63518211
