IGS PCI VGA CARD

IGA1682 PCI Bus VGA Card
User's Manual

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CHAPTER 1

Introduction

Congratulations !! You have just purchased the fastest and latest graphics and multimedia accelerator card available on the market -- the IGS PCI VGA CARD. Under DOS, Windows and OS/2, it features up to 16.7 million colors at resolutions up to 1600 x 1280, and screen refresh rates up to 75Hz.

The IGS PCI VGA CARD is a true 64-bit PCI accelerators. It incorporates IGS's IGA1682 graphics and multimedia single chip, to perform high speed fills, line draws, BitBlts, masking, and scissoring functions in accelerated modes.

The IGS PCI VGA CARD also support high quality video playback in true color modes with up to 30 frames/sec.

This product is more than just a hardware accelerator card. It comes complete with extensive drivers and comprehensive software utilities designed to enhance your productivity.

These cards have:

- High performance acceleration VGA card in PCI bus.
- High screen refresh rates up to 75Hz. Provide Flicker-Free environment for healthy eyes.
- High resolution modes include 1024 x 768 x 64K colors in 75Hz, and 1600 x 1200 x 256 colors in 60Hz.
- Integrated high performance graphics engine with high quality video playback.
- High quality video playback in true color modes with up to 30 frame/sec.
- Software MPEG video playback from CD-ROM.

- 100% VGA compatible in both hardware and software.

- Support all the VGA, super VGA, and multi-sync monitors.

- Easy installation for both hardware and software.

What should you have inside the package ?

Your IGS PCI VGA CARD package includes the following hardware, software, and documentation:

- IGS PCI VGA card

- Software diskettes which include drivers and utilities

- This user's manual

What you'll need ?

- **Computer System** - Intel 486, Pentium, or compatible.

- **Expansion Slot** - Require at least one PCI bus slot.

- **Operating System** - DOS 5.0 or higher, Windows 3.1, OS/2 2.1 or higher.

- **Monitor** - VGA, supporting minimum 640 x 480 resolution.

- **Display Drivers** - Any standard VGA or VESA drivers. For best performance, use the IGA1682 drivers supplied with these cards.

IGS PCI VGA Card/2MB Version Layout

2nd Megabyte
Memory Location

Feature
Connector

J7

U8   U9

VGA 15pin
D Type
Connector

14.3MHz

U7 256K x 16

1st Megabyte
Memory Location

IGS
IGA 1682_A

U6 256K x 16

U2

J6

VGA BIOS

VGA BIOS

IGA1682 VGA Chip
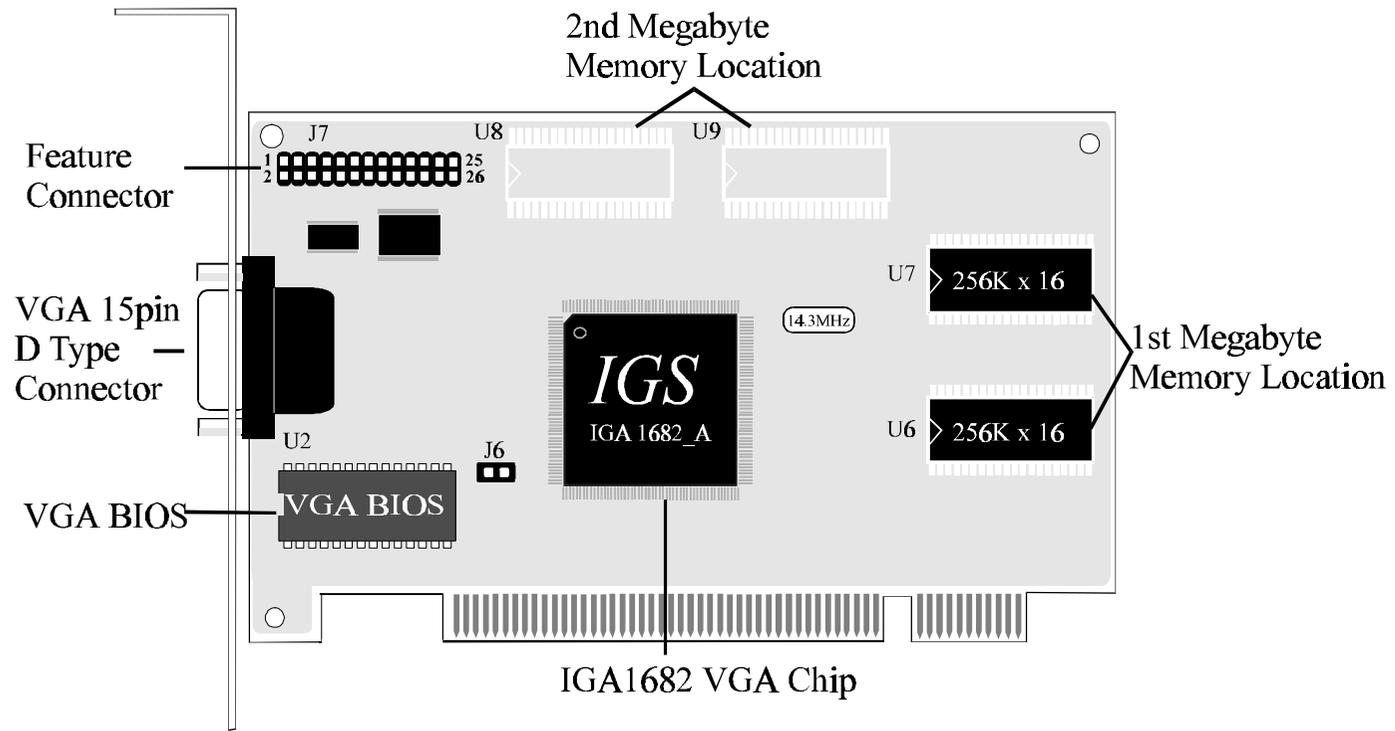
IGS PCI VGA Card/4MB Version Layout

Feature Connector

1st 2Megabyte Memory Location

2nd 2Megabyte Memory Location

J7 1 2 25 26

U8 256K x 16   U9 256K x 16   U12   U13

VGA 15pin D Type Connector

14.3MHz

IGS IGA 1682_A

U6 256K x 16   U7 256K x 16   U10   U11

J6

VGA BIOS

IGA 1628 VGA Chip
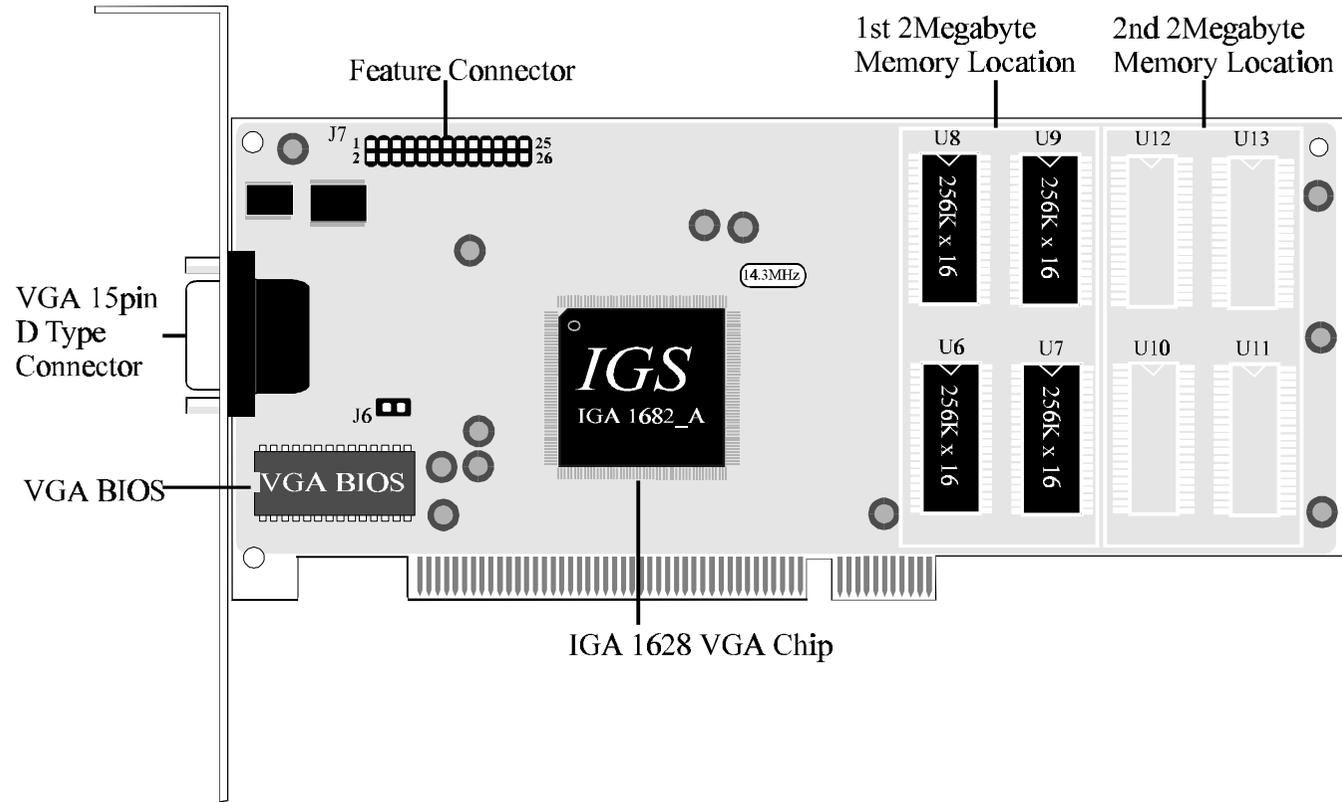
CHAPTER **2**

Hardware Installation

IGS PCI VGA card automatically detects whether you are using a monochrome or color monitor. Therefore, the monitor must be turned on before the computer, or an incorrect monitor type may be detected. This card supports most analog monitors on the market. If monitor type is not detected during power-up, the card will default to support monochrome VGA.

These cards should be configured for the best resolution and refresh rate your monitor can support. Check the specifications of your monitor for signal compatibility with this card and find an optimum setting to suit your applications.

WARNING !!

■   Static electricity can damage sensitive electronic components. Discharge your body's static electric charge by touching a grounded surface. e.g., the metal area of the computer chassis 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.

Installing the Hardware

Jumper Setting

The IGS PCI VGA CARD has one jumper to determine the IRQ9 setting. The jumper is preset at the factory and in most cases you will not need to change it. The jumper at location J6 enables or disables IRQ9. This allows support for existing video standards that require an IRQ present for some software applications. This IRQ is not used or required for normal VGA operation. There is no performance gained by either enabling or disabling this jumper.

     J6 = Close, IRQ9 enabled
     J6 = Open, IRQ9 disabled

Memory Configuration on IGS PCI VGA CARD

Card Type	IGS PCI VGA Card / 4MB Version			
	IGS PCI VGA Card/2MB Version		U10 & U11	U12 & U13
Memory Size	U6 & U7	U8 & U9		
1MB Memory	Install	Empty	Empty	Empty
2MB Memory	Install	Install	Empty	Empty
4MB Memory	Install	Install	Install	Install

Procedure

1 .   Power off the computer and disconnect the monitor cable.

2 .   Remove the computer cover. If necessary, consult your system manual for removal instructions.

3 .   Make sure the jumper setting and memory configuration are correct.

4 .   Select an empty PCI expansion slot for the IGS PCI VGA CARD. With the slot cover removed, grasp the card by the top edgeand carefully seat it firmly into the slot. Fasten the retaining bracket with a screw.

5 .   Reinstall the computer cover.

6 .   Connect the monitor cable to the Video Output connector of the PCI VGA card.

If the system successfully powers up and the normal DOS boot-up message appears on the screen, the IGS PCI VGA CARD is installed properly. If the system does not boot, there are a few things you can check in the following "Hardware Troubleshooting" section.

WARNING !!

■   Damage to system components, the display adapter, and injury to yourself may result if power is on during installation.

Hardware Troubleshooting

1.   Make sure the PCI bus connector gold-fingers are clean and installing in PCI slot properly.

2.   After power up the system, if the system's power supply vent does not work or does not hear any sound from the system, there may be a short bridge on the card. Turn off the system and take out the card. Check on back of the card (solder side). To see if there is any small piece of metal attached on the card and cause the short.

3.   Check BIOS at location U2. Make sure all the pin and pin #1 location are installed properly.

4.   Check display memory DRAM at locations U6 and U7 on IGS PCI VGA CARD. Make sure all the pins are installed or mounted properly.

5.   Make sure turn on your monitor power when you power up the system. Adjust the screen brightness may also help to see display.

CHAPTER **3**

Software Installation

Software Driver Support

The "Software Installation Diskette" supplies drivers for the following operating systems and programs.

- Windows 3.1
- AutoCAD
- WordPerfect
- Windows 95

- Windows NT
- PCAD 6.0
- Lotus 1-2-3 V3.x
- OS/2 2.1 & Warp

Making Backup Disks

Please make working copies from these installation disks and store the original disks for backup purposes.

How To Install IGA1682 Drivers ?

To begin installation, insert the "DOS Utilities & Drivers " or "Windows 3.x Drivers " in drive A: (or drive B:). This will initiate the installation process for the Windows 3.1, Windows NT, OS/2 2.1 & Warp, AutoCAD, PCAD, WordPerfect, Lotus 1-2-3 V3.x, and IGA168X Utilities.

If you are installing drivers for Windows 3.1, Windows NT, Windows 95 and OS/2 2.1 & Warp, please make sure that you change your display setting back to VGA mode (640 x 480 x 16 colors) before beginning installation.

Please refer to the following sections for installation of specific drivers.

Microsoft Windows 3.1 Drivers

To make installation more user friendly, the installation disk provides an easy ways for Windows 3.1 driver installation. Before you install the windows 3.1 drivers, make sure that you change your display setting to standard VGA mode.

Installing the Windows 3.1 Drivers from Windows

Step 1. Start Windows using the standard VGA driver.

Step 2. Insert "IGA1682 Windows 3.1 Drivers Diskette" into drive A: or drive B:. From the File Manager or using the "File" "Run..." pull-down command to execute the **SETUPWIN** program from the floppy drive containing the IGA1682 Win dows driver disk. The dialog box similar to the one in Figure 3-1.

Step 3. After you've done with step 2. The IGS Windows 3.1 driver installation menu will appear on screen. Then click on the "Start" icon to begin driver installation. The installation program will complete installing IGA1682 windows 3.1 driver for you.

Figure 3-1

Installing Windows NT 3.51 & NT 3.1 Display Drivers

To install the drivers under Windows NT 3.51:

Step 1. Run Windows NT (Assume Windows NT 3.51 has been installed in your hard drive).

Step 2. Double Click on DISPLAY icon in Control Panel.

Step 3. Select "Changing Display Type".

Step 4. Select "Change. . ." button.

Step 5. Select "Other. . ." button.
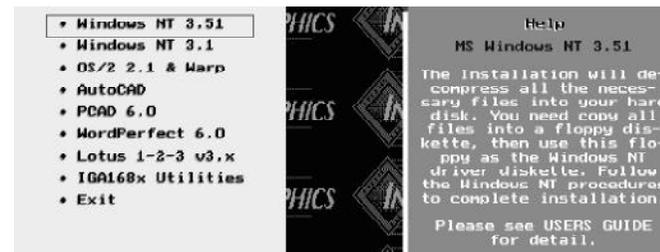
Step 6. Insert DOS Utilities & Drivers Disk and select "OK".

Step 7. Select "IGA168x" and click on "Install" button.

Step 8. Follow the instructions to complete the setup.

Step 9. Restart Windows NT.

Step 10. After system comes back, select proper resolution, Color and Refresh rate (Click on "Test" button to see whether your monitor works for the selection.

To install the drivers under Windows NT 3.1:

Step 1. Run Windows NT (Assume Windows NT 3.1 has been installed in your hard drive).

Step 2. Run Windows NT SETUP program in MAIN window.
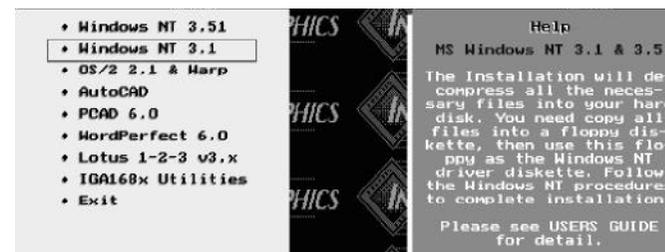
Step 3. Select "Changing System Settings..." from OPTIONS pop-up menu.

Step 4. Click on the down-arrow of Display and select "Other".

Step 5. Follow the instructions to select an InteGraphics IGA1682 display driver which fits your monitor type.

Step 6. Continue the setup and finally close the SETUP windows.

Step 7. Shut down Windows NT and reboot the system.

OS/2 2.1 & Warp Driver Installation

IGA1682 OS/2 2.1 & Warp Display Driver Installation:

Step 1. Install InteGraphics IGA1682 Graphics Card in your system.

Step 2. Install OS/2 Operating System in normal VGA mode.

Step 3. Open a DOS full screen session. Insert "DOS Utilities & Drivers" into driver A and run the installation program inside the full screen DOS session by typing:

    A:\SETUPDOS

Step 4. Select "OS/2 2.1 & Warp" to extract OS/2 driver files into your h ard drive (default under the directory "OS2_DRV").

Step 5. Exit from the full screen DOS. Open a OS/2 session (Window or full screen). Move your working directory to OS2_DRV" by typing:

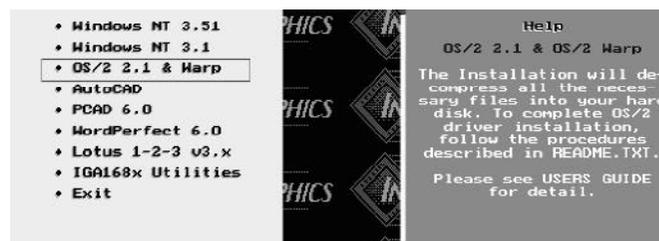   **CD \OS2_DRV**

Step 6. Run OS/2 driver installation program by typing:

    OS2INST . C:

The command means to install OS/2 driver from the current working directory to the hard drive C

Step 7. Follow the instruction to proceed installation. When 'Display Driver Install' dialog box appears,select 'Primary Display' and then click on the **O.K.** button.

Step 8. When 'Primary Display Adapter Type' dialog box appears, select "InteGraphics Systems, Inc. IGA1682" and then click on the **O.K.** button.

Step 9. When 'Select Display Resolution' dialog box appears, select the resolution which best fits your needs, and then click on the **O.K.** button.

Step10. When 'Source Directory' dialog box appears, click the button "Change" to set your source directory to c:\os2_drv b   e   f   o   r   e you push the button "Install..." (This is a very important procedure to follow, when installing from a directory instead of a diskette).

Step11. After the installation completed, perform a shutdown and restart the system so that the changes can take effects.

> **Note:** In the case that the display loses sync after the system restarts, f ollow the procedures below:
> 1) Reboot the system with a bootable floppy (DOS).
> 2) Run InteGraphics provided utility - SetFreq.Exe. Select a low refresh rate for your monitor. If you have an interlaced monitor and you are going to use it in 1024x768 resolution, you must select 1024x768 interlaced mode. Then, choose not to save the selection into Autoexec.bat file.
> 3) Change to directory C:\OS2.
> 4) Type **SVGA ON DOS** and <Enter>, which will generate SVGADATA.DOS file under the directory \OS2.
> 5) Type **Copy SVGADATA.DOS SVGADATA.PMI** and <Enter>.
> 6) Remove floppy diskette and reboot your system.

If you have a high quality monitor and you want to run it at a higher refresh rate, you could do it by following the above procedure to select a higher refresh rate. But, remember to run the command "svga on dos" immediately following the utility program setFreq.exe.

By doing this, the svga.exe will record the change you have made into a file — svgadata.dos. Then, after copying svgadata.dos to svgadata.pmi, a new svgadata.pmi file with the new refresh rate information will be ready for OS/2.

Installing AutoCAD R12/R13 Drivers

Driver File: RCP_IGS.EXP To install the driver:

Step 1. Insert the "DOS Utilities & Drivers" in drive A:

Step 2. Go to drive A:

Step 3. Type **A:\SETUPDOS** <Enter>

Step 4. The IGS installation menu will be displayed on screen select "AutoCAD",and double click.

Step 5. After you've done with step 4. The installation program will ask you if all the utilities will be O. K. to install in C:\ACAD directory. To continue by pressing <Enter> key.

Step 6. Copy RCP_IGS.EXP to main AutoCAD directory.

> **Note:** For AutoCAD R13, the directory is C:\ACADR13\DOS\DRV. For AutoCAD R12, the directory is C:\ACADR12\DRV.

Step 7. Run AutoCAD.

Step 8. Issue AutoCAD's CONFIG command, then change display driver and select a desired IGA1682 driver from the list of drivers.
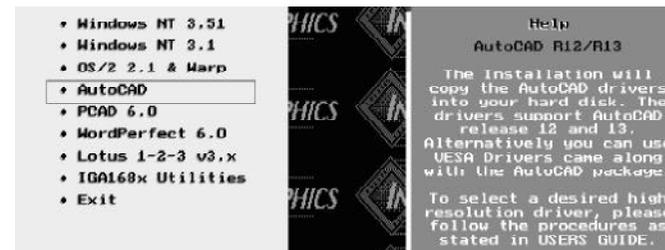
Installing the Lotus 1-2-3 Drivers

Driver Files:
>   1) LIGS1024.DLD - 1024x768 16 colors
>   2) LIGS800.DLD - 800x600 16 colors

Configuration Files:
>   a. VGA831CC.VBD ─┐
>   b. VGA843CC.VBD ─┼─ for 800x600x4
>   c. VGA875CC.VBD ─┘
>
>   d. VGA140CC.VBD ─┐
>   e. VGA154CC.VBD ─┼─ for 1024x768x4
>   f. VGA196CC.VBD ─┘

To install the drivers:

Step 1. Insert the "DOS Utilities & Drivers " in drive A:

Step 2. Go to drive A:

Step 3. Type **A:\SETUPDOS** <Enter>

Step 4. The IGA installation menu will be displayed on screen Select "Lotus 1-2-3 V3.x", and double click.
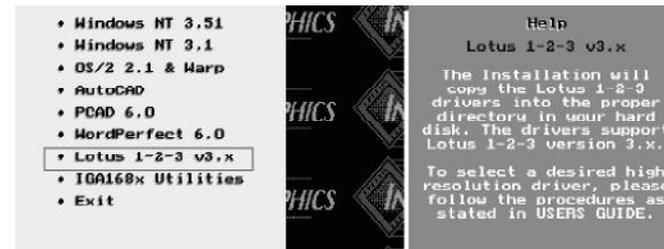
Step 5. After you've done with step 4. The installation program will ask you if all the utilities will be O. K. to install in C:\LOTUS directory. To continue by pressing <Enter> key.

Step 6. Directly copy LIGS1024.VRS, LIGS800.VRS and *.VBD configuration files into Lotus123 directory.

Step 7. Run Install from Lotus123 Directory.

Step 8. Select "First time installation" or "Change selected equipment".

Step 9. Select "modify current DCF"

Step 10. Select "change selected display"

Step 11. Select "IGS Super VGA 800" for 800x600 16 colors driver, or select "IGS Super VGA 1024" for 1024x768 16 colors driver. Then follow the instructions to complete the installation.

Installing PCAD Drivers

Driver Files

PVGA800.DRV - 800x600 16 colors
PVGA1024.DRV - 1024x768 16 colors
PVGA1280.DRV - 1280x1024 16 colors

To install the drivers:

Step 1. Insert the "DOS Utilities & Drivers" in drive A:

Step 2. Go to drive A:

Step 3. Type **A:\SETUPDOS** <Enter>

Step 4. The IGA installation menu will be displayed on screen Select "PCAD", and double click.

Step 5. After you've done with step 4. The installation program will ask you if all the utilities will be O. K. to install in C:\PCAD directory. To continue by pressing <Enter> key.

Step 6. Copy PVGA800.DRV, PVGA1024.DRV and PVGA1280.DRV to PCAD 6.0 driver d i r e c - tory, e.g. if PCAD 6.0 is located in C:\PCAD, then copy all the drivers to c:\PCAD\DRV di- rectory.

Step 7. Modify PCADDRV.SYS (usually located in root directory, e.g. at c:\):
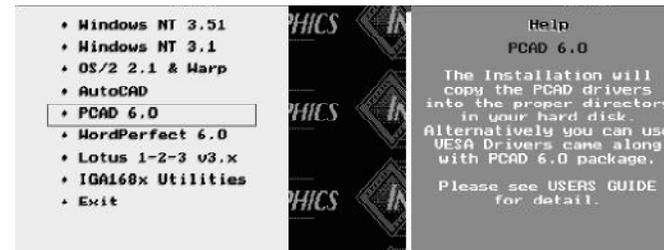
Use any text editor to change the following two lines:

      DISPLAY C:\PCAD\DRV\DIBMVGA.REX
      DISPLAY C:\PCAD\DRV\DTEXT.DRV

to one line below:

      DISPLAY C:\PCAD\DRV\PVGA1024.DRV

Note: The above change is for 1024x768 resolution and does similar changes for 800x600 or 1280x1024 resolution.

Installing WordPerfect 6.0 Drivers

Driver Files:

1) Graphics Drivers:

        IGS1024.VRS - 1024x768 16 colors

        IGS800.VRS - 800x600 16 colors

2) Text Drivers:

        TIGS.VRS -

        IGS 80x60 16 colors   IGS 132x25 16 colors

        IGS 132x43 16 colors IGS 132x50 16 colors

        IGS 132x60 16 colors

To install the drivers:

**Step 1.** Insert the "DOS Utilities & Drivers " in drive A:

Step 2. Go to drive A:

Step 3. Type **A:\SETUPDOS** <Enter>

Step 4. The IGA installation menu will be displayed on screen Select "WordPerfect 6.0", and double click.

Step 5. After you've done with step 4. The installation program will ask you if all the utilities will be O. K. to install in C:WP directory. To continue by

pressing <Enter> key.

Step 6. Directly copy IGS1024.VRS, IGS800.VRS and TIGS.VRS to WordPerfect 6.0 directory.

Step 7. Run "**WP**" (WordPerfect 6.0)

Step 8. Hit <Alt> + <F>, then select "setup".

Another way to run WordPerfect at high resolution mode is to run WordPerfect 6.0 Installation utility and select VESA.VRS driver (came with WordPerfect 6.0 package) as the graphics mode screen, since InteGraphics IGA1682 board has built-in VESA BIOS support.

Note: You still need InteGraphics Text Driver TIGS.VRS to run WordPerfect 6.0 at 132 column Text mode.

Installing IGA168x Utilities

The IGA168x utilities installation program is included inside the "Software Installation Diskette". The IGA168x utilities have included the following functions:

SETMODE.EXE	: Set VGA and SuperVGA mode utility.
SETFREQ.EXE	: Set monitor refresh rate utility.
FREQ.EXE	: Refresh rate read back utility.
IRQ2.EXE	: IRQ2 enable and disable.

How To Install IGA1682 Utilities

Step 1. Insert the "DOS Utilities & Drivers " in drive A:

Step 2. Go to drive A:

Step 3. Type **A:\SETUPDOS** <Enter>

Step 4. The IGA installation menu will be displayed on screen Select "IGA168x Utilities", and double click.

Step 5. After you've done with step 4. The installation program will ask you if all the utilities will be O. K. to install in C:\IGAUTIL directory. To continue by pressing <Enter> key.

CHAPTER 4

Windows Driver Setup

IGA Windows Driver Setup

The Integrated Graphics Accelerator (IGA) is a 64 bit high performance Windows Graphics User Interface Accelerator. Its powerful hardware graphics drawing engine provides the fastest speed for running Windows applications. The integrated RAMDAC provides 16.7 million colors at up to 1280x1024 resolution and 64 thousand colors at up to 1600x1200 resolution. But, you can not take advantage of all those features unless you install and setup IGA Windows Accelerated Drivers properly.

The IGA Accelerated Windows Driver supports virtual desktop. This new feature allows users to further explore the powerful capabilities of the IGA graphics accelerator even on a small, low resolution monitor. The Windows Driver Setup program can also be used to configure your virtual desktop environment.

There are two ways to use this setup program: 1. **Normal Setup**; 2. **Configure Virtual Desktop Environment**. Please refer to the corresponding sections of the help document to setup your graphics accelerator.

When you finish setting up, click the button "OK" to Accept Selection.

Normal Setup IGA
IGA Setup

To setup your IGA Graphics Accelerator without Virtual Desktop, you have to make sure that the check box "Virtual Desktop Enable" is unchecked. For normal setting up, you have four parameters to select for configuring your IGA Graphics Accelerator: resolutions, refresh rates, color depths and font sizes.

The highest resolution you can choose is 1600x1200. The highest color depth is 16.7 million (True Color). The refresh rate selections are: interlaced and non-interlaced 60 Hz, 72 Hz, 75 Hz. For font sizes, you can choose either "small" font or "large" font. But, some combinations are not available because they are either not feasible or due to hardware limitations, such as video memory size. The Setup Program works hard to help you. It has already eliminated all non-feasible situations and combinations that your Graphics Accelerator does not allow. But, there is one important factor the program can not predict -- your monitor. To help solve this problem, a specific function button -- "Refresh Text" is designed to verify whether your monitor works under the desired combination.

Please follow the procedure to do the setup:

Step 1. Use the combo box "Resolution" to choose a reso-lution. For 14 or 15 inch monitors, recommended resolution is 800x600 or below. For 17 inch or other large monitors, you may choose 1024x768 or above.

Step 2. Use the combo box "Color Depth" to choose a color depth. For most software and applications, 256 colors will be a good choice. If you need to display real life video or photo, you may need 64k or even 16.7 million colors.

Step 3. Use the combo box "Font Size" to choose either small font or large font for your system. For 640x480 resolution, you should use small font. For 1024x768 and above, you should choose large font. For 800x600 resolution, you can choose either fonts.

Step 4. Use the combo box "Refresh Rate" to choose a refresh frequency for your monitor. Normally, the higher refresh rate will give better display result. But, the refresh rate setting can not go beyond your monitor's ability. Otherwise, the display monitor may lose sync. The setup program provides an easy way to help users verify whether your monitor can work at the selected resolution and refresh rate. When you click on the "Refresh Test" button, the program will set the monitor to that resolution and refresh rate for a few seconds. If the text displayed in the middle of the screen is clear, you can select that resolution-frequency combination.

Step 5. Click the button "OK" to Accept Selection.

Cofigure Virtual Desktop Environment   ![IGA IGA Setup]

The IGA Graphics Accelerator is a powerful graphics interface card. A 2 Mb board can support as high as 1600x1200 resolution in 256 colors. But, a monitor running at that high resolution may cost a lot of money. The Virtual Desktop of the IGA Graphics Accelerator provides a practical solution for the problem. By setting up Virtual Desktop, you can set your Windows to work in a much higher resolution than your monitor can support while setting your monitor working at a low resolution.

In a Virtual Desktop environment, you can see only a portion of the Windows desktop at one time. You can either use the mouse to move the viewpoint -- your monitor screen, or you can freeze your viewpoint and use another program -- "Virtual Desk," provided together with this program, to control your viewpoint position in the Virtual Desktop environment. Next is the procedure to setup the Virtual Desktop Environment:

Step 1. Check the check box "Virtual Desktop Enable" first.

Step 2. Use the combo box "Virtual Desktop" to choose a resolution for your Virtual Desktop. This resolution is only limited by the memory on your Graphics Accel-erator board. The setup program is designed with this factor in mind. You can select any number provided by the program safely.

Step 3. Use the combo box "Viewport Size" to choose a display mode for your monitor -- a resolution and refresh rate combination. This is the actual resolution and refresh rate that your monitor will work on. The setup program has a few default display modes. If those default display modes do not satisfy your requirement, please refer to De-fine Viewport Mode for defini-ng your own Viewport modes.

Step 4. Use the combo box "Color Depth" to choose a color depth. For most software or applications, 256 colors will be a good choice. If you need to display real life video or photo, you may need 64k or even 16.7 million colors.

Step 5. Use the combo box "Font Size" to choose either small font or large font for your system. For 640x480 resolution, you should use small font. For 1024x768 above, you should choose large font. For 800x600 resolution, you can choose either small font or large font.

Step 6. Click the button "OK" to Accept Selection.

Accept Selection

When you finish your setup, you can simply click on the " **OK**" button to accept your selection. The setup program will modify system.ini and win.ini files in your Windows directory (the driver and other font files should already be copied to your system by the installation program).

If you are running virtual desktop, you can use the setup program to switch your Viewport from one resolution to another on the fly. You do not need to restart your Windows system.

If you are setting up your graphics accelerator without using virtual desktop, or changing colors, font sizes of your virtual desktop, the setup program may need to restart the Windows system.

Define Viewport Mode

The button "Define Viewport Mode" will bring you another dialog window to assist defining Viewport modes for your virtual desktop.

The left list box of the dialog window has all the modes available for IGA graphics accelerator. In the right list box are the modes you defined for your Viewport.

To add a mode to your Viewport modes, click on an available mode in the left list box. Then, click on the button "**Add >>**". If the same resolution has already been defined, the
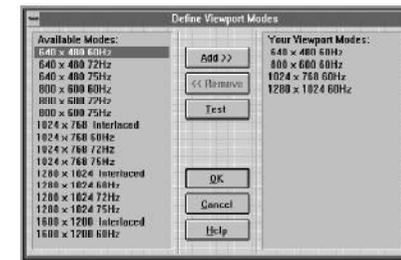
higher refresh rate will replace lower one. To remove a mode from your Viewport modes, click on a mode for your Viewport on the right list box. Then, click the button "**<< Remove**".

To make sure that your monitor works for a specific mode, you can click a mode either in Available Modes or in Your Viewport Modes list box. Then, click the button "Test". Your monitor will be set to that mode for a few seconds. In this way, you can easily verify that your monitor is working at the desired mode. When you finish defining Viewport modes, click the "OK" button to go back to the main dialog window. The defined modes will be available in the combo box "Viewport Size." But, only those Viewport resolutions that are less or equal to the Virtual Desktop resolution will be displayed in that combo box. If you want to choose a higher resolution for your Viewport, just increase the resolution of your Virtual Desktop.

Display Screen Centering

The Screen Centering provides an easy way to adjust the position of your screen on the monitor. The program not only centers the screen, it will also record the position you have set into a file. This is particularly useful when using virtual desktop to switch from one resolution to another resolution. If you preset all display modes for your virtual desktop Viewport, you do not need to physically adjust your monitor every time you switch resolutions.

To move the screen, you can click on either arrow buttons.

Clicking the center button will bring the screen back to the starting position before you enter the program.

Moving the screen beyond certain point might cause your monitor to lose sync. When this happens, you can either hit the <ESC> key to abort the program and bring back your screen, or simply wait for the time-out. The time out count down will start whenever you click an arrow button. The count down lasts for about 6 seconds. During the count down, if you click on any arrow buttons again, the count will restart from the beginning.
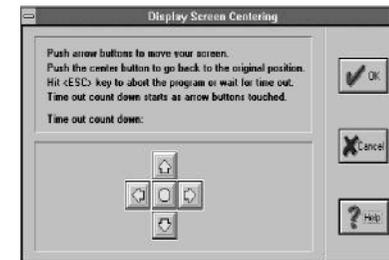
Virtual Desktop Control

The program "VD Control" (Virtual Desktop Control) is a convenient tool for virtual desktop users to do their daily work in virtual desktop environment.

When the program starts, it will freeze the Viewport even you did not set your Viewport to be freeze. By moving the small red rectangle in the program control panel, you can easily move your Viewport around the virtual desktop. In contract with regular way of using mouse to move the Viewport, this will provide more stabilized screens and an easy, rapid solution to move your screen viewport.

If you click on the system menu of the program control panel, you can get a menu of "Switch Resolution" and its sub menu. Using this menu, you can switch your Viewport from one resolution to another on the fly.

Please note that this program has to be running exclusively with the program "IGASetup". In other words, before you execute this program, you have to quit the IGASetup program. Before you run the "IGASetup" program, please quite "VD Control" first.

Color Calibration

The Color Calibration Program is a tool for fine tuning monitors. It helps users to adjust their monitors to match the environment, or to compensate the differentiation of monitors made by different manufacturers. Users can also use it to adjust monitors to suit their personal preference.

1. Brightness Adjustments

Use the Test Pattern drop down combo to select either Color Ramps, Color Ramps with Dithering, or Color Map as your test pattern.

Place the mouse cursor over the Brightness slider button. Press and hold the left mouse button and move the slider to the left or right to adjust brightness.

Adjust the Brightness slider to the point that there is a linear transition from light to dark across the Color Ramp test pattern.

Click on the "OK" button to preserve your setting. Or, continue to do Contract and Gamma Correction.

2. Contract Adjustments

Use the Test Pattern drop down combo to select either Color Ramps, Color Ramps with Dithering, or Color Map as your test pattern.

Place the mouse cursor over the Contract slider button. Press and hold the left mouse button and move the slider to the left or right to adjust contract together with Brightness to get the best result.

Click on the "OK" button to preserve your setting. Or, continue to do Gamma Correction.

3. Gamma Correction
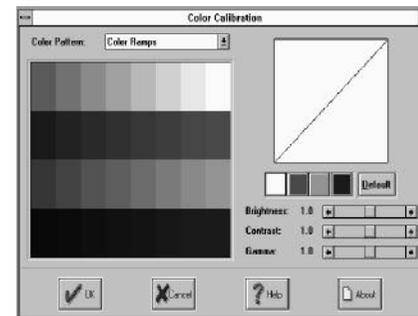
As we know, the characteristics of CRT monitors are not linear regarding to its signal voltage. Therefore, the video signals must be modified before transmission. This is the so called "gamma correction." Normally, the output of your display should already been corrected to roughly close to a linear characteristics. But, there are so many different makes of monitors that you may need a tool to fine tune your monitor's Gamma.

To adjust monitor Gamma, you need select the Color Ramps with Dithering test pattern first.

Then, place the mouse cursor over the Gamma slider button. Press and hold the left mouse button while moving the slider right or left to increase or reduce the monitor Gamma. From the curve above the color buttons, you can see that increasing Gamma will increase contrast in the dark tones of the display while decreasing contrast in the brightness tones.

Adjust the Gamma slider to the point that the small dithered area in the test pattern are closely matching the background color.

Click "OK" button to preserve your setting.

The Gamma of three color components -- red, green, blue, can be adjusted separately. The only thing you need is to push down a color button, and follow the above procedure to adjust Gamma for that individual color.

Windows 95 Driver Installation

After you have installed your IGS PCI VGA card, you can begin to install the software. The chapter guides you through the process of installing the IGS PCI VGA card's software in Windows 95 and comprises the following sections:

- ❑ Installing IGA1682 Drivers
- ❑ Installing IGA Tools.

Note: Before you start, make sure that you have installed Windows 95 on your system. If you don't have Windows 95 running before performing this installation, you will not be able to successfully complete the installation process outlined in this chapter.

Installing IGA1682 Driver

Note: Some of the following dialog boxes may not appear if you have previously installed the PCI VGA card in your Windows 95 system.

To install the drivers for the IGS PCI VGA card :

Step 1 Switch on your system to allow the operating system to detect the IGS PCI VGA card. The IGS PCI VGA card is detected. The dialog box similar to the one in Fig-ure 5-1.

Figure 5-1

Step 2 You will be prompted for selecting which driver you want to install for your new hardware. Select 'Drivers from disk provided by hardware manufacturer'.The dialog box similar to the one in Figure 5-2.

Step 3 Insert the attached diskette label "IGS Windows 95 Drivers" into the diskette drive (A or B) and click "OK".

Step 4 After reading the diskette. Win95 will find the installation information for the IGS PCI VGA CARD and the dialog box in Figure 5-3 will appear.

Step 5 With "IGA1682 PCI" highlighted, click "OK". Win95 will copy the driver file to your hard drive.

Step 6 After the files are copied. Win95 will ask you to restart your computer. Click "Yes" to restart the computer.

Installing IGA Drivers :

To install the IGA Tools from diskette :

Step 1 Insert the diskette label "IGS Windows 95 Drivers" into the diskette drive A.

Step 2 Click **Run** in the task bar. The dialog box similar to the one in Figure 5-4.

Step 3 Typing **A:\SETUP95.EXE**, then click "OK". The dialog box similar to the one in Figure 5-5.
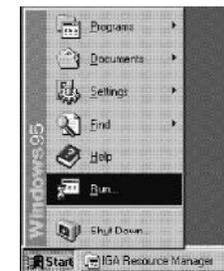

Figure 5-2

Figure 5-3

Figure 5-4

To install the IGA Tools from diskette :

Step 1 Insert the diskette label "IGS Windows 95 Drivers" into the diskette drive A.

Step 2 Click **Run** in the task bar. The dialog box similar to the one in Figure 5-4.

Step 3 Typing **A:\SETUP95.EXE**, then click "OK". The dialog box similar to the one in Figure 5-5.

Step 4 Follow the instructions on the screen to complete the installation. Driver will be automatically installed to WINDOWS 95, and the current resolution setting will be 640x480x256.

Step 5 After you've done with step 4. The IGS Windows 95 Media Tools group will appear on screen. Then click on the "Media Tools" icon , the Media Tool Bar will show up. Refer to Figure 5-6.
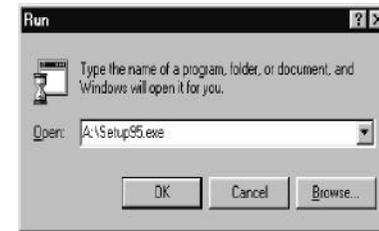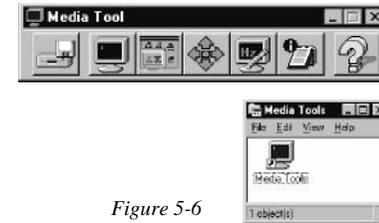

Figure 5-5

Figure 5-6

Media Tools

Display Setting :

1. Double click Display setting icon on Media Tools will enter IGA Tools utility. The dialog box similar to the one in Figure 5-7.

2. Use the combo box "Resolution" to choose a reso-lution. For 14 or 15 inch monitors, recommended resolution is 800x600 or below. For 17 inch or other large monitors, you may choose 1024x768 or above.

3. Use the combo box "Color" to choose a color depth. For most software and applications, 256 colors will be a good choice. If you need to display real life video or photo, you may need 64k or even 16.7 million colors.

4. Use the combo box "Refresh Rate" to choose a refresh frequency for your monitor. Normally, higher the refresh rate will give better display result. But, the refresh rate setting can not go beyond your monitor's ability. Otherwise, the display monitor may lose sync. The setup program provides an easy way to help users verify whether your monitor can work at the selected resolution and refresh rate.
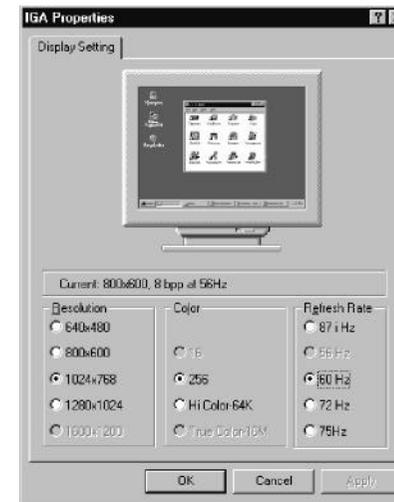
5. Click the button "Apply" to accept selection.

Figure 5-7

Virtualize Screen :

This feature can create a bigger desktop size in some monitors which can go to higher resolution (for instance, some monitors don't support resolution 1600 x 1200, or even 1280 x 1024). To enable this feature, user can open Virtual Screen module, click to enable this feature. Refer to Figure 5-8.

When this feature us on, the current resolution is a viewport of virtual desktop, and the maximum desktop size will be set. User can use mouse to panthis viewport.

When user change this viewport (by using another Set Resolution module, or from Microsoft's Display icon), virtual desktop will be temporary disable, and user must re-enabled after complete changing.

This module; however, conflicts with some software (for instance TDW.EXE, or CVW.EXE), so please disable this feature before using those software.
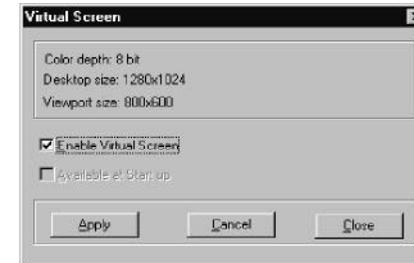

Figure 5-8

Adjust Screen :

For users who have a monitor which is not auto-sizing style, they can get problem when changing to higher resolution or higher refresh: the screen will be shifted to the left or right. To center their screen, user can activate this module, make an adjustment, and Save an adjustment for the next start. Please refer to Figure 5-9.
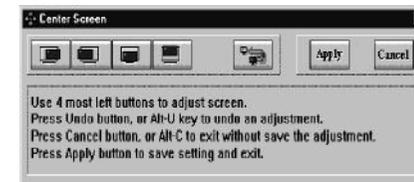

Figure 5-9

Refresh Rate :

This utility measure the refresh rate (both vertical and horizontal) of current mode. Sometimes, this utility is useful for user to double check the refresh rate after using Set Resolution utility. Please refer to Figure 5-10.

Figure 5-10

System and Display Configuration Information :

Media Tool reports the current setting of user's machine, include system settings and display settings. Those information is sometimes useful for user when they have to report to Tech-Support. Please refer to Figure 5-11.

Figure 5-11

Uninstall Media Tools :

User can uninstall either IGA driver or its utility, or both of them. To uninstall, user can open Uninstall option, choose part they want to remove and press Go. When user choose Uninstall Driver, System will be set to VGA standard mode, and utility will automatically removed. Please refer to Figure 5-12.

Figure 5-12

APPENDIX **A**

Video Mode Table

The Video mode table on the following page lists all the supported resolutions and refresh rates. Each row describes a single screen configuration.

When discussing color depth, 8 bits per pixel (8bpp) is the same as 256 colors, 16 bits per pixel (16bpp) is the same as 65,000colors, and 24 bits per pixel (24bpp) is the same as 16.7 million colors. IGS PCI VGA CARD also supports 15bpp (32000 colors). Any resolution and refresh settings that support 16bpp will support 15bpp.

IGS Mode (Hex)	Vesa Mode (Hex)	Resolution	Color	Refresh Rate(Hz)	Memory Size
30	108	80 x 60 Char	16	60	256KB
31	109	132 x 25 Char	16	70	256KB
32	10A	132 x 43 Char	16	70	256KB
33	10B	132 x 50 Char	16	60	256KB
34	10C	132 x 60 Char	16	60	256KB
43	106	1280 x 1024	16	60	1MB
43	106	1280 x 1024	16	87 (I)	1MB
44	104	1024 x 768	16	60	512KB
44	104	1024 x 768	16	72	512KB
44	104	1024 x 768	16	75	512KB
44	104	1024 x 768	16	87 (I)	512KB
45	102	800 x 600	16	60	512KB
45	102	800 x 600	16	72	512KB
45	102	800 x 600	16	75	512KB
46	101	640 x 480	256	60	512KB
46	101	640 x 480	256	72	512KB
46	101	640 x 480	256	75	512KB
47	103	800 x 600	256	60	512KB
47	103	800 x 600	256	72	512KB
47	103	800 x 600	256	75	512KB

IGS Mode (Hex)	Vesa Mode (Hex)	Resolution	Color	Refresh Rate(Hz)	Memory Size
48	105	1024 x 768	256	60	1MB
48	105	1024 x 768	256	72	1MB
48	105	1024 x 768	256	75	1MB
48	105	1024 x 768	256	87 (I)	1MB
49	107	1280 x 1024	256	60	2MB
49	107	1280 x 1024	256	87 (I)	2MB
4A	NA	1600 x 1200	256	47	2MB
4A	NA	1600 x 1200	256	87 (I)	2MB
50	111	640 x 480	64K	60	1MB
50	111	640 x 480	64K	72	1MB
50	111	640 x 480	64K	75	1MB
51	114	800 x 600	64K	60	1MB
51	114	800 x 600	64K	72	1MB
51	114	800 x 600	64K	75	1MB
52	117	1024 x 768	64K	60	2MB
52	117	1024 x 768	64K	72	2MB
52	117	1024 x 768	64K	75	2MB
52	117	1024 x 768	64K	87 (I)	2MB
55	112	640 x 480	16.8M	60	1MB
55	112	640 x 480	16.8M	72	1MB

Analog Color Display Pinouts

Table listed below shows the IGA1682 GUI accelerator analog color display pinouts.

Pin	Function
1	Red Video note1
2	Green Video note1
3	Blue Video note1
4	Not Used
5	Ground
6	Red Return (ground)
7	Green Return (ground)
8	Blue Return (ground)
9	Key (no pin)
10	Sync Return (ground)
11	Monitor ID (not used)
12	SDA (DDC support) note2
13	Horizontal Sync
14	Vertical Sync
15	SCL (DDC support)

Note 1: Analog monochrome type monitors use green video for all video input and ignore red video and blue video.

Note 2: Monochrome monitors connect Pin 12 to ground. Color monitors leave Pin 12 open. The adapter uses Pin 12 to detect the monitor type.