

User's Guide for Dell Computer Corporation
Intense 3D Pro 3410 (AGP)
Intense 3D Pro 3400 (PCI)

Installation Guide

April 1998



INTERGRAPH
COMPUTER SYSTEMS

Copyright

© 1998 Intergraph Computer Systems. All rights reserved. This document contains information protected by copyright, trade secret, and trademark law. This document may not, in whole or in part, be reproduced in any form or by any means, or be used to make any derivative work, without written consent from Intergraph Computer Systems.

Use, duplication, or disclosure by the United States Government is subject to restrictions as set forth in subdivision (c)(1)(ii) of the rights in technical data and computer software clause at DFARS 252.227-7013. Unpublished rights are reserved under the copyright laws of the United States.

Intergraph Computer Systems, Huntsville AL 35894-0001

Notice

Information in this document is subject to change without notice and should not be considered a commitment by Intergraph Computer Systems. Intergraph Computer Systems shall not be liable for technical or editorial errors in, or omissions from, this document. Intergraph Computer Systems shall not be liable for incidental or consequential damages resulting from the furnishing or use of this document.

Trademarks

Intergraph Computer Systems ® and the Intergraph Computer Systems logo are registered trademarks of Intergraph Computer Systems. Intense 3D™ is a trademark of Intergraph Corporation.

Other brands and product names are trademarks of their respective owners.

FCC/DOC Compliance

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. If the equipment is not installed and used in accordance with the instruction manual, it 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.

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.

Warnings

Changes or modifications made to the system that are not approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notes

This device is designed and manufactured to comply with approved safety standards for information processing and business equipment.

Read all operating instructions before using this device. Keep these instructions for future reference. Follow all warnings on the device or in the operating instructions.



Technical Support

For information on how to contact Dell Computer Corporation's technical support, refer to the Getting Help chapter in the Diagnostics and Troubleshooting Guide that shipped with your system. You can also contact Dell's technical support via the World Wide Web at www.dell.com.

1 Introduction

Congratulations! In choosing Intense 3D Pro Graphics, you are equipping your personal computer or personal workstation with powerful and professional 3D graphics capability. Intense 3D Pro Graphics infuses Intel® Pentium II® computers running the Microsoft® Windows NT® operating system with workstation-class 3D graphics features and performance.

In addition to the high performance of the graphics accelerator there is an optional Geometry Accelerator that can be used with Intense 3D Pro Graphics. The Geometry Accelerator is a single PCI card that provides increased performance for 3D geometry manipulations, lighting calculations, and shading calculations.

In order to make the reading of this manual easier, the table below defines the terminology of the Intense 3D Pro Graphics Series.

<u>Terminology</u>	<u>Definition</u>
Intense 3D Pro	Product name of Professional Workstation graphics available from Intergraph Computer Systems.
3410	Graphics accelerator made for an AGP slot.
3400	Graphics accelerator made for a PCI slot.
3410T or 3400T	Identifies the graphics accelerator has 16 MB of texture memory.
3410GT or 3400GT	Identifies the graphics accelerator has 16 MB of texture memory and the optional Geometry Accelerator is installed.
3410G	Optional Geometry Accelerator. Can be purchased later for 3410T or 3400T upgrade to 3410GT or 3400GT.

Using the terminology from this table there can be total of 4 possible combinations. Each combination is shown below.

Intense 3D Pro 3410T is an AGP accelerator with 16 MB of texture memory.

Intense 3D Pro 3410GT is an AGP accelerator with 16 MB of texture memory and an optional Geometry Accelerator.

Intense 3D Pro 3400T is a PCI accelerator with 16 MB of texture memory.

Intense 3D Pro 3400GT is a PCI accelerator with 16 MB of texture memory and an optional Geometry Accelerator.

To simplify the reading of this manual the term '**Intense 3D Pro Graphics**' will be a generic referral to any of the 4 possible combinations of graphics accelerators and optional Geometry Accelerator defined in this introduction. Where specific instructions are presented for a certain accelerator it will be presented with the exact accelerator clearly defined.

Intense 3D Pro Graphics Features

Intense 3D Pro Graphics offers these high-end 3D graphics features:

- ◆ Performance up to 2.6 million triangles per second (3D, Z-buffered, 25 pixel, Gouraud shaded, lit).
- ◆ Support for Windows NT® graphics -- Graphic Device Interface (GDI) and OpenGL.

Note: This graphics accelerator does not support the DirectX/Direct3D APIs. Applications that require these APIs will not run.

- ◆ Support for resolutions up to 1.3 Megapixels (1280 x 1024).
- ◆ Support for Heidi graphics libraries.
- ◆ Hardware support for graphics features such as Gouraud shading, 2D and 3D vectors and triangles, texture processing, rectangle fills, antialiased vectors, clipping, alpha blending, fog, and stenciling.
- ◆ 16 MB of Synchronous Dynamic RAM (SDRAM) frame buffer memory.
- ◆ 16 MB of SDRAM texture memory.
- ◆ Video plane sets of 128 bits per pixel (up to 1024 x 768), 100 bits per pixel (at 1280 x 1024) and four video color lookup tables.
- ◆ 10-bit gamma correction.
- ◆ 32- or 24-bit double-buffering and 24-bit Z-buffering.
- ◆ Advanced Graphics Port (AGP) interface with direct memory access (DMA) for Intense 3D Pro 3410.
- ◆ Integrated VGA video support.

- ◆ Support for industry standard and Dell multi-sync monitors.
- ◆ Hardware support for Display Data Channel (DDC).
- ◆ Support for optional hardware geometry acceleration

Intense 3D Pro Graphics Hardware Requirements

This section will define the hardware requirements necessary to install and use the Intense 3D Pro Graphics Series.

Intense 3D Pro Graphics hardware requires the following expansion slots based on the specific graphics accelerator:

Name	Includes	Expansion Slots Needed
Intense 3D Pro 3410T	Graphics Accelerator	One AGP slot
Intense 3D Pro 3410GT	Graphics Accelerator + Geometry Accelerator	One AGP slot + One PCI slot adjacent to the AGP slot
Intense 3D Pro 3400T	Graphics Accelerator	One PCI slot
Intense 3D Pro 3400GT	Graphics Accelerator + Geometry Accelerator	One PCI slot + One PCI slot adjacent to the PCI slot
Intense 3D Pro 3410G (Optional Upgrade for 3410T and 3400T only)	Geometry Accelerator	One PCI slot adjacent to the Graphics Accelerator

Upgrading Later With the Intense 3D Pro 3410G Geometry Accelerator

If the Intense 3D Pro Graphics designation does not have the letter 'G' in it then it doesn't include the optional Intense 3D Pro 3410G Geometry Accelerator. It is possible to purchase the Geometry Accelerator at a later time and thereby increase the performance of your graphics system.

The Geometry Accelerator is a Dell Installed graphics option. Contact Dell for more information on purchasing. Refer to Intense 3D Pro 3410G when inquiring.

Intense 3D Pro Graphics Software

Intense 3D Pro Graphics use the Intense 3D Pro Video Display driver. The video display driver installs as a standard Windows NT® driver and provides both GDI and OpenGL graphics compatibility.

Intense 3D Pro Graphics can also use Intergraph Computer System's optional Heidi Device Driver which works with the video display driver to support software applications based on the Heidi graphics library.

2 Preparing for Installation

Your Intense 3D Pro Graphics was factory installed by Dell. Hardware installation is necessary only if you purchased a customer kit from Dell Computer Corporation. If you plan to install the Optional Geometry Accelerator upgrade kit (Intense 3D Pro 3410G) make sure there is a PCI slot available next to the Graphics Accelerator. Follow the instructions below to prepare your computer for Intense 3D Pro Graphics.

Make Sure Your Computer Is Ready

Make sure your computer has the following:

- ◆ A Pentium Pro® or Pentium II® processor.
- ◆ A high-resolution multi-sync analog RGB monitor.
- ◆ Windows NT® 4.0 operating system.
- ◆ 3 MB of free space on the computer's hard disk.
- ◆ Identify which Graphics option you are installing:
 - ◆ Intense 3D Pro 3410T requires an AGP slot.
 - ◆ Intense 3D Pro 3410 GT requires an AGP slot and a PCI slot adjacent to the AGP slot.
 - ◆ Intense 3D Pro 3400T requires a PCI slot.
 - ◆ Intense 3D Pro 3400GT requires 2 PCI slots adjacent to each other.
- ◆ Any Intense 3D Pro Graphics option using a PCI slot must have +3.3 volts present on the PCI slots. All Dell Precision Workstations meet this requirement.

Take Antistatic Precautions

Static electricity can damage the components inside a computer or on a printed circuit card. To keep the possibility of electrostatic discharge to a minimum, do the following:

- ◆ Turn off power to the computer.

Note: Physically remove the power chord from the system and wait 15-30 seconds for Flea Power to dissipate. Damage can occur to add-in components if power is not physically removed from the system during installation procedures.

- ◆ Touch the metal chassis of the computer to drain off any static electricity before touching a card.
- ◆ Wear a properly connected grounding wrist strap when handling a card or working in a computer.
- ◆ Do not wear wool or polyester clothing.
- ◆ Work in an area with a relative humidity of at least 50 percent.
- ◆ Do not remove a card from its antistatic bag until you are ready to install it.
- ◆ Handle a card as little as possible and by the edges only.

Collect Materials and Tools

Collect the following materials and tools:

- ◆ One Intense 3D Pro Graphics accelerator. Either the Intense 3D Pro 3410T accelerator or the Intense 3D Pro 3400T accelerator.
- ◆ If the graphics is the Intense 3D Pro 3410GT or Intense 3D Pro 3400GT then also include one Intense 3D Pro 3410G Geometry Accelerator. It includes a wide ribbon cable identified as the Vertex Bus cable that connects the Graphics and Geometry accelerators together.
- ◆ Diskette containing the Intense 3D Pro Graphics Video display driver.
- ◆ Phillips screwdriver to prepare your computer's expansion slot(s) for installation of the Graphics accelerator and possibly the optional Geometry Accelerator card.
- ◆ Monitor cable supplied with your computer or with the monitor.
- ◆ Your computer's documentation.

Retain all packaging materials. You must return your Intense 3D Pro Graphics hardware in its original packaging to obtain warranty service.

Make a Copy of the Video Display Driver Diskettes

Make a copy of the diskettes containing the Intense 3D Pro Graphics Video display driver as a precaution. Should anything happen to the copy, you will still have the original diskettes.

See your computer's documentation to make a backup copy of the video display driver diskettes. Store the original video display driver diskettes in a safe place, and use the backup video display driver diskettes during the installation.

Read the Instructions

Before installing Intense 3D Pro Graphics, read Chapter 3 "Installing the Hardware" and Chapter 4 "Installing the Software" completely. You may want to review the README.TXT file on the video display driver diskettes as well.

Review your computer's documentation for instructions on opening and closing the computer, identifying the AGP slot, PCI expansion slots, and adding expansion cards.

Review the Microsoft Windows NT® documentation and online Help for information on using the Display application and for instructions on installing drivers and software application programs.

3 Installing the Hardware

Refer to your *Dell Computer User's Guide* documentation for instructions on opening and closing the computer, identifying the AGP and PCI slots, and adding expansion cards.

Start the Installation

To start the installation:

1. Turn off power to the computer and to the monitor. Physically remove the power cord from the system and allow the Flea Power to dissipate for 15-30 seconds before proceeding.
2. Open the computer to gain access to the AGP and PCI slots.
3. If your computer has an installed graphics adapter, remove it.
4. Remove the slot cover from the selected slot(s). Retain the screw from the slot covers; you will use them to secure the cards to the computer's chassis.

Install the Intense 3D Pro Graphics Accelerator

Follow the instructions that pertain to the specific graphics accelerator you are installing.

To install an Intense 3D Pro 3410T Accelerator:

1. Align the card with the **AGP** slot, making sure the gold-fingered connectors on the card's edge are aligned properly with the slot connector.
2. Push the card into the slot firmly and evenly until it is fully seated in the slot connector.
3. Visually inspect the connection. If it does not appear to be correct, remove and reinstall the card.
4. Use the screw you removed previously to secure the card to the computer's chassis.

To install an Intense 3D Pro 3400T Accelerator:

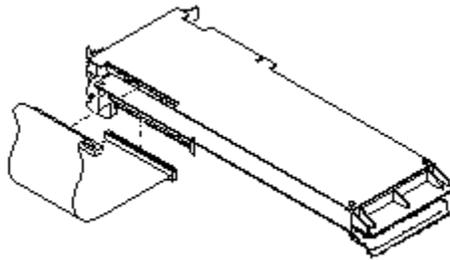
1. Align the card with the **PCI** slot, making sure the gold-fingered connectors on the card's edge are aligned properly with the slot connector.

2. Push the card into the slot firmly and evenly until it is fully seated in the slot connector.
3. Visually inspect the connection. If it does not appear to be correct, remove and reinstall the card.
4. Use the screw you removed previously to secure the card to the computer's chassis.

Follow this procedure only if you are installing the optional Geometry Accelerator for Intense 3D Pro 3410GT or Intense 3D Pro 3400GT.

To install an Intense 3D Pro 3410G Accelerator:

1. Align the card with the **PCI** slot next to the graphics accelerator, making sure the gold-fingered connectors on the card's edge are aligned properly with the slot connector.
2. Push the card into the slot firmly and evenly until it is fully seated in the slot connector.
3. Visually inspect the connection. If it does not appear to be correct, remove and reinstall the card.
4. Use the screw you removed previously to secure the card to the computer's chassis.
5. Connect the vertex data bus cable between the Geometry Accelerator and the Intense 3D Pro Graphics card. Refer to the figure below.

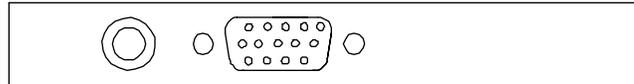


NOTE The connector of the vertex data bus cable can be installed in only one orientation.

Finish the Installation

To finish the installation:

1. Close the computer.
2. Connect the computer monitor's video cable to the blue video output port on the Intense 3D Pro 3410 card. See the following figure.



If a computer monitor has no built-in video cable, use a shielded video cable with a 15-pin (D-sub) video connector at one end for the video output port on the card and the appropriate connectors at the other end for the video input port on the computer monitor.

NOTE

Monitor input ports are usually D-sub or Bayonet Nut Connect (BNC) connectors. Shielded cables usually have a ferrite core (a box- or cylinder-shaped attachment) near each end to reduce interference with radio frequencies.

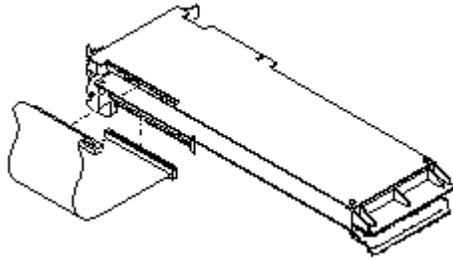
3. Turn on the computer. The video display starts in VGA mode.
4. Install the Intense 3D Pro Graphics video display driver as instructed in Chapter 4, "Installing the Software."

Optional Upgrade: Intense 3D Pro 3410G Geometry Accelerator

This procedure describes how you install the Geometry Accelerator if the Intense 3D Pro Graphics accelerator is already in the system. To install an optional Geometry Accelerator into an existing system requires one PCI slot adjacent to the Graphics Accelerator slot.

To install the optional Geometry Accelerator upgrade:

1. Shut down the system and turn off system power. Physically remove the power cord from the system and allow the Flea Power to dissipate for 15-30 seconds before proceeding.
2. Open the system base unit as required to gain access to the PCI option card slots.
3. Use a Phillips screwdriver to remove the blanking plate from the PCI slot adjacent to the Intense 3D Pro Graphics accelerator.
4. Install the new Geometry Accelerator card in the PCI slot as follows:
 - a) Align the card with the PCI slot, making sure the gold-fingered connectors on the card's edge are aligned properly with the slot connector.
 - b) Push the card into the slot firmly and evenly until it is fully seated in the slot connector.
 - c) Visually inspect the connection. If it does not appear to be correct, remove and reinstall the card.
 - d) Use the screw you removed previously to secure the card to the computer's chassis.
5. Connect the vertex data bus cable between the Geometry Accelerator and the Intense 3D Pro 3410 Accelerator.

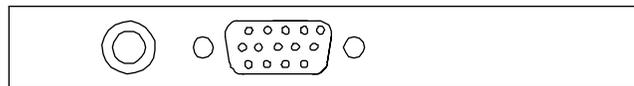


NOTE The connector of the vertex data bus cable can be installed in only one orientation.

Finish the Installation

To finish the installation:

1. Close the computer.
2. Connect the computer monitor's video cable to the blue video output port on the Intense 3D Pro 3410 card. See the following figure.



If a computer monitor has no built-in video cable, use a shielded video cable with a 15-pin (D-sub) video connector at one end for the video output port on the card, and the appropriate connectors at the other end for the video input port on the computer monitor.

NOTE Monitor input ports are usually D-sub or Bayonet Nut Connect (BNC) connectors. Shielded cables usually have a ferrite core (a box- or cylinder-shaped attachment) near each end to reduce interference with radio frequencies.

3. Turn on the computer. The video display starts in VGA mode.
4. There is no need to install the Intense 3D Pro Video device driver if it is already installed. The system will automatically recognize the Geometry Accelerator.

4 Installing the Software

If you received your Intense 3D Pro Graphics pre-installed from Dell, the graphics drivers for Microsoft Windows NT® are pre-installed by Dell. The following section only applies if you have purchased your Intense 3D Pro Graphics as a customer kit, or upgrade.

Install the Intense 3D Video Display Driver

Refer to the Microsoft Windows NT® documentation and online Help for more information on installing drivers and software application programs, and configuring your computer's video display.

To install the Intense 3D video display driver:

1. Insert the first diskette containing the Intense 3D video display driver into the computer's floppy disk drive.

- CAUTION** Make sure you have the correct driver to use with the Windows NT® 4.0 operating system. If you are unsure, refer to the README.TXT file on the driver diskette for this information.
2. From the operating system *Start* menu, go to *Settings/Control Panel* and click on the *Control Panel* icons.
 3. Click the *Display* icon in *Control Panel*. The *Display Properties* menu appears.
 4. Click the *Settings* tab.
 5. Click the *Display Type* button and bring up the *Display Type* panel.
 6. Click the *Change* button and bring up the *Change Display* panel.
 7. Click *Have Disk* and bring up the *Install From Disk* panel.
 8. In the *Install From Disk* panel, make sure the *Copy manufacturer's files from:* is set to *A:*. Click *OK*.
 9. Verify that the *Intergraph Intense 3D Pro* driver is highlighted in the *Change Display* dialog, and click *OK*.
 10. Click *Yes* when asked if you want to install a third-party driver.
 11. The driver files from Disk 1 are copied from the diskette to your computer's primary hard disk drive. You will be asked to insert Disk 2 and click *OK*. The installation will continue copying files.
 12. After the driver files are successfully copied, a message that the driver successfully installed displays. Click *OK*.
 13. Click *Close* to exit the *Display Type* dialog.

14. Click *Close* to exit the *Display Properties* dialog.
15. When informed that the computer must be restarted for the new settings to take effect, remove the diskette from the computer's floppy disk drive and click *Yes* to restart the computer.
16. After the system restarts and you log in, a message displays. The message states that a new graphic driver has been installed, and that you should use the *Display* option in the *Control Panel* to select the preferred display resolution. Click *OK*.
17. The *Display Properties/Settings* panel is brought up. Click *OK* to have the current settings applied.
18. If you want to change the display resolution or other display settings, see the following section, "Configure the Video Display."

CAUTION When you select *Display* in the *Windows NT Control Panel*, a message displays. Click *OK* to close the message. This message displays every time you select *Display* unless you clear the *Show warning at startup* check box.

For more detailed installation information, refer to the *README.TXT* file delivered on the diskette containing the video display driver.

Configure the Video Display

1. From the operating system *Start* menu, go to *Settings/Control Panel* and click on the *Control Panel* icons.
2. Open *Display* in the *Control Panel* to view the *Display Properties* dialog. Use the dialog tabs to configure the operation of the computer's video display when it is controlled by the *Intense 3D Pro Graphics*. For example, click the *Settings* tab to change the screen resolution.

For more detailed configuration information, refer to the *README.TXT* file delivered on the diskette containing the video display driver.

Verify Intense 3D Pro is the Default Video Display Driver

After you configure the video display as desired, verify that the *Intense 3D Pro Graphics* video display driver is the default video display driver that runs automatically when you start the computer.

To verify the default video display driver:

1. From the operating system *Start* menu, go to *Settings/Control Panel/System*.
2. On the *Startup/Shutdown* tab, verify that Windows NT Workstation Version 4.0 is selected in the Startup list. If it is not, select it from the list and click *Apply*.

NOTE Do not select the VGA version of the operating system. The video display runs in VGA mode when the Intense 3D Pro driver is not running.

3. Click *OK* to close the *System* dialog.
4. Click *Display* in the *Control Panel*.
5. Click the *Settings* tab.
6. Click the *Display Type* button.
7. Under *Adapter Type* verify *Intense 3D Pro* is present. This indicates the driver is installed for Intense 3D Pro Graphics.
8. Click the *Cancel* button. No changes will occur.
9. Click the *Cancel* button to close the *Display Properties* menu.

5 Technical Information

The following information is subject to change without notice.

Intense 3D Pro 3410T Hardware Specifications

Item	Specification
System	AGP Bus Standard
Card Size	12.25 in x 3.875 in; full-length AGP card
Power Requirements	25W maximum +12V 250 mA maximum +5V 2.0 A maximum +3.3V 4.5A maximum

Intense 3D Pro 3400T Hardware Specifications

Item	Specification
System	PCI Bus Standard
Card Size	12.25 in x 3.875 in; full-length PCI card
Power Requirements	25W maximum +12V 250 mA maximum -12V 35 mA maximum +5V 2.0 A maximum +3.3V 4.5A maximum

Intense 3D Pro 3410G Hardware Specifications

Item	Specification
System	PCI Bus Standard
Card Size	12.25 in x 3.875 in; full-length PCI card
Power Requirements	24W maximum +12V 0.083 A maximum +5V 1.200 A maximum +3.3V 5.150 A maximum

Monitor Resolutions

Intense 3D Pro Graphics supports Dell monitors and standard multi-sync monitors at the following resolutions and maximum refresh rates (Hz).

<u>Resolution</u>	<u>Aspect Ratio</u>	<u>Bits Per Pixel</u>	<u>Vertical Refresh Rates (Hz)</u>
640 x 480	4 x 3	128	60, 75, 85
800 x 600	4 x 3	128	60, 75, 85
1024 x 768	4 x 3	128	60, 75, 85
1280 x 1024	5 x 4	100	60, 75, 85

VGA Video Display Support

The Intense 3D Pro Graphics accelerator provides onboard VGA video display support. **The maximum resolution supported in VGA mode is 800 x 600, 4 bits per pixel, at 60 Hz vertical refresh.**

Texture Processing

Texture processing is provided by the onboard graphics and texture processing engine. Full texture processing is supported, including trilinear interpolation of MIP-mapped images.

The 16 MB texture memory provides texture acceleration up to 4 Mtexels at 32 bits per texel (RGBA) and supports a single map size up to 1K x 1K (MIP-mapped or non-MIP-mapped).

Z Buffering

The system supports hardware Z buffering at a depth of 32 bits with any resolution up to 1024x768. At 1280x1024 the Z Buffer resolution is 24 bits.

DDC and DPMS Support

The Intense 3D Pro Graphics Accelerator provides hardware support for the Display Data Channel (DDC) standard for communication between a host computer and its monitor. Intense 3D Pro 3410 supports the DDC2B standard, which allows for bidirectional communication.

The Intense 3D Pro 3410G Graphics Accelerator provides hardware support for the Display Power Management Signaling (DPMS) standard. DPMS allows for a host computer to send its monitor a signal to enter a power-saving mode.

Interfaces

The Intense 3D Pro 3410 Graphics Accelerator has a video output and a Stereo Sync Output Port described in the following sections.

Video Output Port

The video output port is a blue, female, 15-pin, D-Sub connector. The port provides connection to a computer monitor. The recommended cable length is less than three meters.

<u>Pin</u>	<u>Signal Name</u>	<u>Pin</u>	<u>Signal Name</u>
1	Red Analog Video	9	+5V Supply
2	Green Analog Video	10	Ground
3	Blue Analog Video	11	Monitor ID (bit 0)
4	Monitor ID (bit 2)	12	Monitor ID (bit 1) *
5	Ground	13	Horizontal Sync
6	Ground	14	Vertical Sync
7	Ground	15	Monitor ID (bit 3) **
8	Ground		

* Bidirectional Data (SDA) for DDC

** Data Clock (SCL) for DDC

Stereo Sync Output Port

The stereo sync output port is a female, 5-pin, mini-DIN connector. The port provides connection to the emitter module of a pair of LCD shutter glasses.

<u>Pin</u>	<u>Signal Name</u>
1	Ground
2	Ground
3	+12V
4	Stereo Sync
5	No Connect

DECLARATION OF CONFORMITY

Manufacturer's Name: Intergraph Computer Systems
Manufacturer's Address: Huntsville, Alabama USA
35894-0001

declares that the product

Product Name: REALISM II VX113 AGP (Intense 3D PRO 3410)
with 16MB Texture Memory
Model Number: MSMT496XX

conforms to the following product specifications:

SAFETY: Low Voltage Directive 73/23/EEC
IEC 950:1991 / EN 60950 (1992), A1, A2, A3

EMC: EMC Directive 89/336/EEC
CISPR22: 1993-12/ EN55022 (Class B)
CFR47 Part 15 Subpart B (FCC Class B)
C108.8-M1983 (Class B) Canadian Standards Council
IEC 1000-4-2: 1991 (Electrostatic Discharge Requirements)
IEC 1000-4-3: 1984 (Radiated Electromagnetic Field Requirements)
IEC 1000-4-4: 1984 (Electrical Fast Transient/Burst Requirements)
IEC 1000-4-5: 1990 (Surge Immunity Requirements)

Date of Declaration: 4/16/98

Issued By: 
Todd Jenkins - Senior Manager
Product Engineering
Intergraph Computer Systems
Phone (205) 730-6233

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

DECLARATION OF CONFORMITY

Manufacturer's Name: Intergraph Computer Systems
Manufacturer's Address: Huntsville, Alabama USA
35894-0001

declares that the product

Product Name: REALISM II VX113 AGP (Intense 3D PRO 3410)
with 16MB Texture Memory
Model Number: MSMT496XX

conforms to the following product specifications:

SAFETY: Low Voltage Directive 73/23/EEC
IEC 950:1991 / EN 60950 (1992), A1, A2, A3

EMC: EMC Directive 89/336/EEC
CISPR22: 1993-12/ EN55022 (Class B)
CFR47 Part 15 Subpart B (FCC Class B)
C108.8-M1983 (Class B) Canadian Standards Council
IEC 1000-4-2: 1991 (Electrostatic Discharge Requirements)
IEC 1000-4-3: 1984 (Radiated Electromagnetic Field Requirements)
IEC 1000-4-4: 1984 (Electrical Fast Transient/Burst Requirements)
IEC 1000-4-5: 1990 (Surge Immunity Requirements)

Date of Declaration: 4/16/98

Issued By: 
Todd Jenkins - Senior Manager
Product Engineering
Intergraph Computer Systems
Phone (205) 730-6233

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