Video-67Pro-3D

Multimedia Accelerator

User's Manual

version 2.00

NOTICE

The information in this document is subject to change in order to improve reliability, design, or function without prior notice and does not represent a commitment on the part of the company. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or the inability to use the product or documentation, even if advised of the possibility of such damages. No part of this manual may be reproduced or transmitted in any form or by any means without the prior written permission of the company.

May 1999, Rev A

Table of Contents

1. Introduction

Congratulation on your purchase of the Jaton 2D and 3D Graphics & Video Accelerator Video-67Pro.
The Video-67Pro uses advanced 3DImàge975x 3D/2D Graphical User Interface (GUI) accelerator with built-in high-speed 24-bit True Color DAC and video acceleration circuitry and Synchronous Graphics RAM and PCI Bus design. It accelerates graphics display up to 16.7 Million True Color at 1024x768 at up to 85Hz vertical refresh rate. Video-67Pro is Windows®9x Plug and Play compatible. It supports MS DirectX and Active Movie. Free MPEG player software is also included in the Video-67Pro software CD. It allows all MPEG-1 files and Video CD and other titles to be played back at up to 30 frame-per-second without expensive video hardware. It is bundled with most popular arcade games and 3D graphics application.

1.1 Compatibility

- ☑ PCI Local Bus v 2.0 and v 2.1
- ☑ Interlace or non-interlace analog monitor
- ☑ Multi-sync or PS/2 monitors
- ☑ VESA DDC1 and DDC2B monitors
- ☑ PC97 Graphics Compliant

1.2 Check List

The package you have purchased should contain the following:

- ☑ Video-67Pro Multimedia Accelerator
- ☑ Software and Document CD
- ☑ Video-67Pro *Quick Start Guide*

If any of these items are missing or damaged, contact your dealer.

Important: Keep all packaging materials that accompany your adapter in the event you need to return the product.

1.3 Features

- ☑ “Deep Green PC” power management: VBE/PM and DAC power down

- ☑ PCI Specification V2.1 compliant I/O Bus
- ☑ VESA Super VGA BIOS Extension Standard, VBE Version 2.0
- ☑ Integrated VESA feature connector

2D Graphics Acceleration

Optimized single cycle 2D graphics engine with a complete feature set in all 8, 16 and True Color modes:

- ☑ 256 Raster operation (ROPs)
- ☑ 16 bit overlay with scaling
- ☑ Trapezoidal fill, solid or pattern
- ☑ Polygon fill, solid or pattern
- ☑ Line drawing and Clipping
- ☑ Stretch and Transparent BLT
- ☑ Internal hardware cursor (64x64x2 or 32x32x2)
- ☑ Built-in 64x32 pattern register

Direct Draw Support:

- ☑ Hardware Page Flipping
- ☑ Fast system memory to screen memory BLT
- ☑ Color and Chroma key support
- ☑ Transparent and stretch BLTs
- ☑ Overlay support for YUV and RGB

3D Graphics Acceleration

- ☑ Balanced the 3D pipeline
- ☑ Complete 3D primitive support
- ☑ Texture Mapping
- ☑ letized Texture
- ☑ Bi-linear filtering
- ☑ Mip-Mapping up to 8 levels
- ☑ Video texture mapping
- ☑ Lighted texturing
- ☑ Gouraud Shading for smooth shading
- ☑ Alpha blending for transparency effects

- ☑ Fog
- ☑ Z-buffering at 16/32 bpp

MPEG and Video Acceleration

- ☑ On-chip Color Space Conversion (CSC), horizontal and vertical interpolated scaling, and overlay control for 30 fps software MPEG/video CODEC acceleration
- ☑ Anti-tear support
- ☑ Direct Draw /DCI/ENDIVE acceleration with independent x and y minimization/zoom and color space conversion

Graphic Display Colors, Refresh rates and Resolutions*

- ☑ 640x480 16, 256, 64K, and 16M colors,
- ☑ 800x600 256, 64K, and 16M colors,
- ☑ 1024x768 256, 64K, and 16M**,
- ☑ 1280xl024 256, 64K** colors,
- ☑ 1600x1200 256 colors,

Resolution	Colors	87i	96i	60	70	72	75	85
640x480	16			●				
	256			●		●	●	●
	64K			●		●	●	●
	16M			●		●	●	●
800x600	256			●			●	●
	64K			●			●	●
	16M			●			●	●
1024x768	256	●		●	●		●	●
	64K	●		●	●		●	●
	16M**	●		●	●		●	●
1280x1024	256	●	●	●			●	●
	64K**	●		●				
1600x1200	256		●	●				
	64K**		●	●				

*The display resolution and refresh rates available depends on the display mode and monitor capacity.
**4 mega bytes of display memory required.

Compatibility

- ☑ Pentium® or compatible system with PCI slot
- ☑ Interlace or non-interlace analog monitor
- ☑ Multi-sync or PS/2 monitors
- ☑ VESA DDC1 and DDC2B monitors detection
- ☑ PC97 Graphics Compliant

Software Driver

- ☑ MS Windows®95/98
- ☑ MS Windows NT® 4.0

Software drivers will be updated from time to time. Drivers not on the CD may be downloaded from Web site or BBS.

1.3.1 Resolution and Color Selection

640x480	16, 256, 64K(Hi-color), 16M(True-color),
800x600	256, 64K(Hi-color), 16M(True-color),
1024x768	256, 64K(Hi-color), 16M(True-color),
1028x1024	256, 64(Hi-color),
1600x1200	256, 64(Hi-color),

1.3.2 3D and 2D GUI Accelerator

Accelerates the most frequently used 2D functions in today's graphics-intensive environments plus complete 3D GUI acceleration:

- ☑ Complete 3D primitive support
- ☑ Texture mapping
- ☑ Gouraud Shading for smooth shading
- ☑ Alpha blending for transparency effects
- ☑ Fog
- ☑ Z-buffering at 16/32 bit-per-pixel
- ☑ Page flipping for double and triple buffering for smooth animation effects

1.3.3 VESA DPMS AND VESA DDC2B SUPPORTED

Supports VESA Display Power management Signaling (DPMS) which decreases energy consumption when used with a monitor that meets the VESA standards for power management. Supports VESA DDC 2b standards for automatically selecting the correct display setup on a monitor that meets the VESA DDC standard.

1.3.4 DIRECTDRAW SUPPORTED

DirectDraw for Windows® 95/98 are memory manger for video memory. Using such memory manager for video manger, a program can manipulate video memory with ease, taking full advantage of the blitting and color decompressing capabilities of Video-67Pro video hardware.

1.3.5 GEOMETRY PROCESSOR

The optional Geometry Processor off loads the intensive Geometry Calculations from the CPU, thus triples the transform rate during 3D graphics applications to 700K triangles per second.

2. Adapter Installation

2.1.1 Adapters Layouts

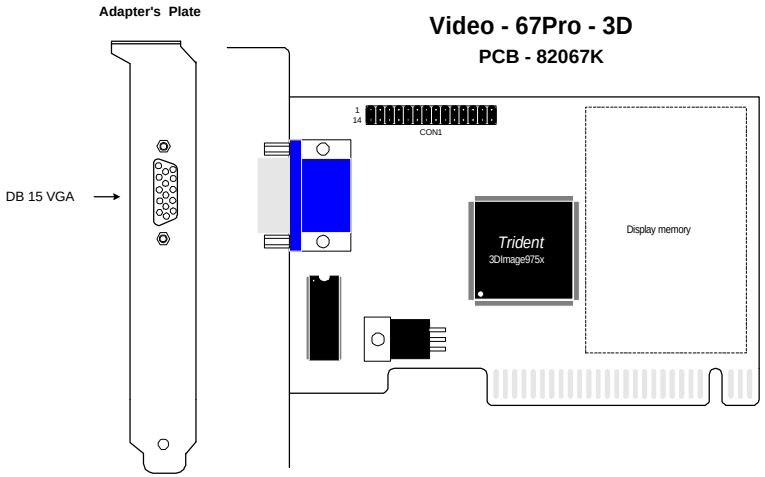
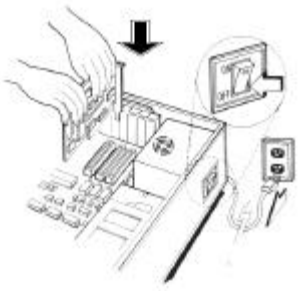


Figure 2-1 8267K Board Layout

2.1.2 Hardware Installation



!! WARNING !!

Discharge static electricity by touching the **GROUND** such as metal part of your case connected with good power ground before you handle the electronic circuit boards.

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 with a qualified computer technician.

To install the adapter into your system, follow these steps:

1. Turn OFF all power to your system, including any peripherals (printer, external drives, modem, etc.).
2. Disconnect the power cord and the monitor cable from the back of the computer.
3. Unfasten the cover mounting screws on your system and remove the system cover. Refer to your system user manual for instructions and to determine the location of the mounting screws.
4. Remove any graphics adapter that already exists on your motherboard. Start by removing the screw that holds the adapter retaining bracket in place (keep this screw, you will need it later). Then, gently pull straight up on the adapter card itself, and remove it from the motherboard.
5. If appropriate, you can use the expansion slot left vacant by the existing graphics adapter you just removed. Otherwise, select an appropriate unused PCI bus expansion slot for the new adapter. Refer to your computer system manual for the location of the PCI bus expansion slots. Remove the retaining screw that holds the slot cover in place. Slide the slot cover out and put the screw aside (you will need it to secure the adapter).
   If you just removed an existing graphics adapter and are not going to use that expansion slot, you can install the slot cover you just removed from the unused expansion slot to cover the open hole.
6. Install the adapter. To install the adapter in the selected expansion slot, carefully line up the gold-fingered edge connector on the adapter directly above the expansion slot connector on the motherboard. Then press the adapter into place, completely, using only as much pressure as is safely necessary. DO NOT USE excessive force. Use the (remaining) screw you removed to secure the adapter retaining bracket in place.
7. Replace the computer cover. Secure the cover with the mounting screws you removed in Step 3.

You have now completed the installation of your new graphics adapter on your system.

3. Drivers Installation

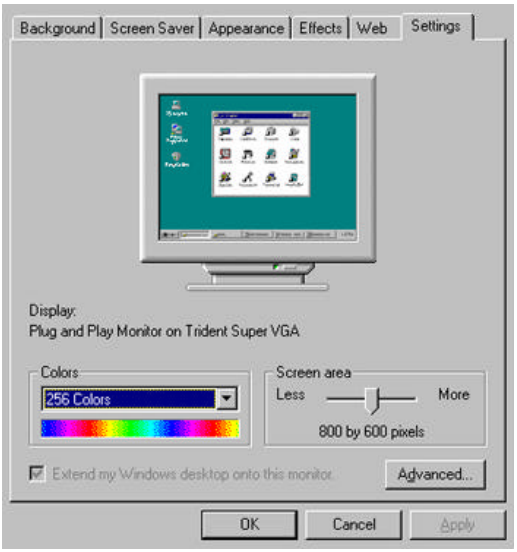
3.1 Microsoft Windows®95

3.1.1 WELCOME SCREEN FROM VIDEO-67PRO' CD

This CD supports Windows®95 autorun feature. "Welcome" menu will appear automatically on the screen after the CD is inserted to the CD-ROM drive.

Steps:

1. Start Windows® 95 with VGA or SVGA drive detected.
2. Insert the display Driver CD into your CD-ROM drive (e.g. X:).
3. Autorun file pops up "Welcome" screen from Jaton' CD.
4. Click on the "Display Driver" selection bar.
5. Tab to the "Settings" then click on " Advance" button.



6. Click on “Change”, then “Have Disk”.
7. Path into “X: \V-67Pro\WIN95\Video67P.INF” (X is the letter of your CD-ROM drive), and click OK.
8. The display device selected “Video-67Pro, 3DImàge975 PCI/AGP (vXXXXXX), then press on OK button.
9. Close and apply to finish PCI’s display driver installation.
10. Restart Windows to complete installation.

3.1.2 MICROSOFT WINDOWS®98

The steps are as same as Windows®95’s installation, but the path for subdirectory \V-67Pro\Win98\ is instead.

3.1.3 MICROSOFT WINDOWS NT™4.0

Steps:

1. SELECT the “Display” icon in control panel and then SELECT the “Settings” page.
2. SELECT “Display Type...” button in the “Settings” page.
3. SELECT “Change...” button from the Adapter type section.
4. SELECT “Have Disk...” button from the Change Display page.
5. Microsoft Windows NT 4.0 will prompt you for the correct path where the video drivers are located. ENTER the path “X:\V-67Pro\Winnt4\” where X: is the CD ROM drive where the Video-67Pro Software & Documents CD has been inserted.
6. If the driver “**Trident Windows NT 4.0 Display Driver for 9397\975\985\9397DVD**” is listed under the Display list, SELECT the “OK” button to continue.
7. Once the driver files are copied, RESTART Microsoft Windows NT 4.0 for the changes to take effect.
8. SELECT the desired color palette (the number of colors), desktop area (resolution), and refresh frequency in the settings page of Display Properties and then SELECT the “Test” button in the same page to determine whether your selection works properly. SELECT “Apply” to active the selected mode.

Note: The procedure of display driver installation it required setup with service pack3 (Microsoft® Windows NT™4.0) first.

4. Frequently Asked Questions (FAQ)

Q1 *Why do we need 3D graphics capability in our PC?*

Answer
3D technology is becoming increasingly important (and common) not only in games, but also in other applications such as VRML, which allows 3D scene descriptions in Web applications. 3D technology is used for image editing, modeling, and an increasing number of in home and business applications. In games, as well as other applications, 3D acceleration not only allows better visual qualities and more realistic scenery attributes than software alone, but it also allows a higher frame rate, which translates into a more interactive experience for the enduser.

Q2 *What does "Rendering Engine" mean?*

Answer
"Rendering Engine" generically applies to the part of the graphics engine that draws 3D primitives, usually triangles. In most implementations, the rendering engine is responsible for interpolation of edges and "filling in" the triangle.

Q3 *What does the set-up engine do in a graphics controller?*

Answer
A set-up engine allows drivers to pass triangles in the form of raw vertex information; whereas, most common designs force triangles to be pre-processed for the rendering engine in terms of delta values for edges, color, and texture.

Q4 *Why does a 3D graphics chip need to have both a rendering engine and a setup engine?*

Answer
Any "3D application", a game, VRML, or modeling package, can benefit from 3D rendering. This is especially true of applications that use texturing extensively, because texturing and texture

filtering are very intensive operations at the pixel level in terms of CPU operations and demands for memory bandwidth. Without a set-up engine in a graphics controller, the CPU has to calculate the delta values for edges, color, and textures; the drivers need to handle ten (10) times more extensive data. This results in slower 3D pipeline operations between the CPU and the graphics controller.

Q5 *If we use powerful CPUs, such as a Pentium™ 200, can a standard 2D graphics card achieve 3D performance?*

Answer
Yes and no. Software rendering can take advantage of "tricks" learned by force of necessity through years of trial and error. With such stratagems, the speed of software rendering for simple scenes can approach that of low-level hardware 3D rendering. On the other hand, as scenes become more complex (or frame sizes become larger), there are conflicts between using the CPU for high-level game logic, geometry, lighting, and rendering, all of which increase their demands. No current CPU or system can perform advanced quality-enhancements (bilinear filtering and alpha blending) in real time. Even general case texture mapping with RGB lighting is too much for the current CPU generation.

Q6 *What does "software 3D" mean ?*

Answer
Software 3D is generally used to mean using non-specific (2D) hardware in conjunction with the CPU to render for 3D applications. Some of these techniques allow usable 3D applications when high-powered and/or MMX™-equipped CPU's are employed along with special-case software optimization techniques. As stated above, SW 3D can achieve credible results with today's (software optimized) applications, but the rising popularity of good 3D hardware at the consumer price level is inexorably compelling the public to expect hardware level scene enhancements and frame rates.

Q7 *What is “SGRAM”?*

Answer
Synchronous Graphics Random Access memory (SGRAM) is a new and improved type of memory, custom-designed for graphics use.

Q8 *What is the advantage of SGRAM as compared to ordinary DRAM?*

Answer
SGRAM is now capable of running at much higher speeds than Fast Page Mode or EDO DRAM. Also, SGRAM is able to execute a small number of frequently executed operations, such as buffer clears, specific to graphics applications, independently of the controller.

5. Troubleshooting

The following are some recommended steps to take if the GUI accelerator adapter will not boot or operate properly in your system:

1. Ensure that the monitor or TV brightness and contrast controls are properly adjusted.
2. Check to see if your monitor or TV is properly connected to the card. Be sure your monitor's pin definitions match those of your GUI accelerator card (See Appendix B). For TV out, ensure that the composite signal is connected to a "Video Input" RCA jack on the TV (or check the S-video connection). Read the TV owner's manual to select the proper signal jack for the display.
3. Turn the system on and confirm that the power supply is operating properly; i.e., that the fan operates and the system power light turns on.
4. Check to see if the card is firmly seated in its PCI bus expansion slot. It should not be making contact with any other cards in the system.

Note: Turn the system off before adjusting the card.

Problem: ***Windows hangs up during or after installing a driver.***
Solution A: Reread installation procedures to be sure you have installed the drivers correctly.

Problem: ***Windows color palette does not look right or colors changing.***
Solution: Most likely a defective RAMDAC, memory chip, clock chip, or crystal. Contact your dealer to have the problem repaired.

Problem: ***Can't display certain modes.***

Solution A: Run the SVM program (See the User's Guide for more information on the SVM program). If the SVM program fails, go to Solutions B, and C.

Solution B: Check to see that there is enough memory on the GUI accelerator to run this mode. For example, to run display mode 79H (1024x768-64K colors, refer to the tables in Section 2), 2 MB of display memory is required.

Solution C: If Solutions A, or B do not resolve this problem, it may be hardware related. Check the specifications of the monitor.

6. Appendix A: Video Mode Table

The adapter's video modes include all of the following:

TABLE 6-1: STANDARD VGA MODE SUPPORT

Mode #	Resolution -Colors	Horz KHz	Vert Hz	Mem Req	Text Res.	Mode Type
0h,1h	320x200-16	31.4	70	512K	40x25	Text
2h,3h	640x400-16	31.4	70	512K	80x25	Text
4h,5h	320x200-4	31.4	70	512K	40x25	Graph
6h	640x200-2	31.4	70	512K	80x25	Graph
7h	720x350-Mono	31.5	70	512K	80x25	Text
Dh	320x200-16	31.4	70	512K	40x25	Graph
Eh	640x200-16	31.4	70	512K	80x25	Graph
Fh	640x350-2	31.4	70	512K	80x25	Graph
10h	640x350-16	31.4	70	512K	80x25	Graph
11h	640x480-2	31.4	60	512K	80x30	Graph
12h	640x480-16	31.4	60	512K	80x30	Graph
13h	320x200-256	31.4	70	512K	40x25	Graph

TABLE 6-2: EXTENDED VGA MODE SUPPORT

Mode #	Resolution -Colors	Horz KHz	Vert Hz	Mem Req	Text Res.	Mode Type
2Ch	320x200-256	31.6	70	512K	40x12	Graph
2Dh_4	320x240-256	43.3	85	512K	40x15	Graph
2Dh_3	320x240-256	37.5	75	512K	40x15	Graph
2Dh_2	320x240-256	37.9	72	512K	40x15	Graph
2Dh_1	320x240-256	31.5	60	512K	40x15	Graph
2Eh_3	400x300-256	53.7	85	512K	50x18	Graph
2Eh_2	400x300-256	46.9	75	512K	50x18	Graph
2Eh_1	400x300-256	37.9	60	512K	50x18	Graph
3Bh	320x200-16M	31.6	70	512K	40x12	Graph
3Ch_4	320x240-16M	43.3	85	512K	40x15	Graph
3Ch_3	320x240-16M	37.5	75	512K	40x15	Graph
3Ch_2	320x240-16M	37.9	72	512K	40x15	Graph
3Ch_0	320x240-16M	31.5	60	512K	40x15	Graph
3Dh_3	400x300-16M	53.7	85	512K	50x18	Graph
3Dh_2	400x300-16M	46.9	75	512K	50x18	Graph
3Dh_1	400x300-16M	37.9	60	512K	50x18	Graph
42/3h	320x200-32K/64K	31.6	70	512K	40x12	Graph
44/5h_4	320x240-32K/64K	43.3	85	512K	40x15	Graph
44/5h_3	320x240-32K/64K	37.5	75	512K	40x15	Graph
44/5h_2	320x240-32K/64K	37.9	72	512K	40x15	Graph
44/5h_1	320x240-32K/64K	31.5	60	512K	40x15	Graph
46/7h_4	400x300-32K/64K	53.7	85	512K	50x18	Graph
46/7h_3	400x300-32K/64K	46.9	75	512K	50x18	Graph
46/7h_2	400x300-32K/64K	37.9	60	512K	50x18	Graph
50h	640x480-16	31.5	60	512K	80x43	Text
51h	640x473-16	31.5	60	512K	80x43	Text
52h	640x480-16	31.5	60	512K	80x60	Text
53h	1056x350-16	31.3	70	512K	132x25	Text
54h	1056x480-16	31.3	60	512K	132x30	Text
55h	1056x473-16	31.3	60	512K	132x43	Text
56h	1056x480-16	31.3	60	512K	132x60	Text
57h	1188x350-16	31.3	70	512K	132x25	Text
58h	1188x480-16	31.3	60	512K	132x30	Text
59h	1188x473-16	31.3	60	512K	132x43	Text
5Ah	1188x480-16	31.3	60	512K	132x60	Text
5Bh_3	800x600-16	53.7	85	512K	100x75	Graph
5Bh_2	800x600-16	46.8	75	512K	100x75	Graph
5Bh_1	800x600-16	37.8	60	512K	100x75	Graph
5Ch	640x400-256	31.6	70	512K	80x25	Graph
5Dh_4	640x480-256	43.2	85	512K	80x30	Graph
5Dh_3	640x480-256	37.5	75	512K	80x30	Graph

Mode #	Resolution -Colors	Horz KHz	Vert Hz	Mem Req	Text Res.	Mode Type
5Dh_2	640x480-256	37.8	72	512K	80x30	Graph
5Dh_1	640x480-256	31.4	60	512K	80x30	Graph
5Eh_3	800x600-256	53.7	85	512K	100x37	Graph
5Eh_2	800x600-256	46.8	75	512K	100x37	Graph
5Eh_1	800x600-256	37.8	60	512K	100x37	Graph
5Fh_5	1024x768-16	68.7	85	512K	128x48	Graph
5Fh_4	1024x768-16	60.4	75	512K	128x48	Graph
5Fh_3	1024x768-16	56.4	70	512K	128x48	Graph
5Fh_2	1024x768-16	48.5	60	512K	128x48	Graph
5Fh_1	1024x768-16	35.5	87i	512K	128x48	Graph
62h_5	1024x768-256	68.7	85	1M	128x48	Graph
62h_4	1024x768-256	60.0	75	1M	128x48	Graph
62h_3	1024x768-256	56.4	70	1M	128x48	Graph
62h_2	1024x768-256	48.3	60	1M	128x48	Graph
62h_1	1024x768-256	35.5	87i	1M	128x48	Graph
63h_3	1280x1024-16	80.0	75	1M	160x64	Graph
63h_2	1280x1024-16	63.9	60	1M	160x64	Graph
63h_1	1280x1024-16	46.4	87i	1M	160x64	Graph
64h_4	1280x1024-256	91.1	85	2M	160x64	Graph
64h_3	1280x1024-256	80.0	75	2M	160x64	Graph
64h_2	1280x1024-256	63.9	60	2M	160x64	Graph
64h_1	1280x1024-256	46.4	87i	2M	160x64	Graph
65h_2	1600x1200-16	75	60	1M	200x75	Graph
65h_1	1600x1200-16	62.5	96i	1M	200x75	Graph
66h_4	1600x1200-256	106.3	85	2M	200x75	Graph
66h_3	1600x1200-256	93.8	75	2M	200x75	Graph
66h_2	1600x1200-256	75	60	2M	200x75	Graph
66h_1	1600x1200-256	62.5	96i	2M	200x75	Graph
6Ah_1[1]	800x600-16	37.8	60	512K	100x75	Graph
6Bh	640x400-16M	31.6	70	2M	80x25	Graph
6Ch_4	640x480-16M	43.2	85	2M	80x30	Graph
6Ch_3	640x480-16M	37.5	75	2M	80x30	Graph
6Ch_2	640x480-16M	37.8	72	2M	80x30	Graph
6Ch_0	640x480-16M	31.4	60	2M	80x30	Graph
6Dh_3	800x600-16M	53.7	85	2M	100x37	Graph
6Dh_2	800x600-16M	46.8	75	2M	100x37	Graph
6Dh_1	800x600-16M	37.8	60	2M	100x37	Graph
66h_2	1600x1200-256	75	60	2M	200x75	Graph
6Eh_5	1024x768-16M	68.7	85	4M	128x48	Graph
6Eh_4	1024x768-16M	60.0	75	4M	128x48	Graph
6Eh_3	1024x768-16M	56.4	70	4M	128x48	Graph
6Eh_2	1024x768-16M	48.3	60	4M	128x48	Graph

Mode #	Resolution -Colors	Horz KHz	Vert Hz	Mem Req	Text Res.	Mode Type
6Eh_1	1024x768-16M	35.5	87i	4M	128x48	Graph
72/3h	640x400-32K/64K	31.6	70	1M	80x25	Graph
74/5h_4	640x480-32K/64K	43.2	85	1M	80x30	Graph
74/5h_3	640x480-32K/64K	37.5	75	1M	80x30	Graph
74/5h_2	640x480-32K/64K	37.8	72	1M	80x30	Graph
74/5h_1	640x480-32K/64K	31.4	60	1M	80x30	Graph
76/7h _4	800x600-32K/64K	53.7	85	1M	100x37	Graph
76/7h_3	800x600-32K/64K	46.8	75	1M	100x37	Graph
76/7h_2	800x600-32K/64K	37.8	60	1M	100x37	Graph
78/9h_5	1024x768-32K/64K	68.7	85	2M	128x48	Graph
78/9h_4	1024x768-32K/64K	60.0	75	2M	128x48	Graph
78/9h_3	1024x768-32K/64K	56.4	70	2M	128x48	Graph
78/9h_2	1024x768-32K/64K	48.3	60	2M	128x48	Graph
78/9h_1	1024x768-32K/64K	35.5	87i	2M	128x48	Graph
7A/Bh_3	1280x1024-32K/64K	80	75	4M	160x64	Graph
7A/Bh_2	1280x1024-32K/64K	63.9	60	4M	160x64	Graph
7A/Bh_1	1280x1024-32K/64K	46.4	87i	4M	160x64	Graph
7C/Dh_4	1600x1200-32K/64K	106.3	85	4M	160x64	Graph
7C/Dh_3	1600x1200-32K/64K	93.8	75	4M	160x64	Graph
7C/Dh_2	1600x1200-32K/64K	75.0	60	4M	160x64	Graph
7C/Dh_1	1600x1200-32K/64K	62.5	96i	4M	160x64	Graph

NOTES:

1. VESA mode. Same as 5Bh_1.
2. The "i" in the vertical frequency column denotes "interlaced". The "N" and "P" in the TV Out column denote "NTSC" and "", respectively.

7. Appendix B: Pinout and Sync Frequencies

7.1 Analog Color Display Pinouts (DB 15)

PIN	FUNCTION
1	Red Video[1]
2	Green Video[1]
3	Blue Video[1]
4	Not Used
5	Ground
6	Red Return (ground)
7	Green Return (ground)
8	Blue Return (ground)
9	Vcc (+5v DDC Power)
10	Sync Return (ground)
11	Monitor ID (not used)
12	SDA (DDC support)
13	Horizontal Sync
14	Vertical Sync
15	SCL (DDC support)

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

7.2 Conversion Table: Pin Adapters

If you will be using a 9-to-15 pin adapter cable to link your 9 pin monitor connector to the 15 pin accelerator card connector, check Table 7-2 carefully before you install the cable. The 9-to-15 pin adapter cables are available from a variety of sources, but they need to match the specifications in Table 7-2 to work properly with your new card.

The adapter cable requires a D-shaped 9 pin female connector and a D-shaped 15 pin male connector.

TABLE 7-2. 9-TO-15 PIN CONVERSION TABLE

9 PIN SIGNALS	PIN NO.	15 PIN SIGNALS	PIN NO.
Red	1	Red	1
Green	2	Green	2
Blue	3	Blue	3
Horz Sync	4	Horz Sync	13
Vert Sync	5	Vert Sync	14
Red Ground	6	Return Red	6
Green Ground	7	Return Green	7
Blue Ground	8	Return Blue	8
Sync Ground	9	Digital Ground	10
		Ground	5

7.3 Analog Video Signals

Black Level = 0 V
Full Intensity (White) Level = +0.7 V

8. SHIELDED CABLE WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the 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 interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or re-locate the receiving antenna.

Increase the separation between the equipment and the 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.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio/TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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,

"SHIELD INTERFERENCE CABLE(S) MUST BE USED ACCORDING TO FCC 15.27©."

CAUTION: Changes or modifications not expressly approved by the Manufacturer could void your authority to operate this equipment in accordance with FCC rules and regulations.

8.1 TRADEMARK ACKNOWLEDGMENTS

Trident Microsystems, Inc. 3DImàge975x™ User's Guide

Trident Microsystems, Inc. assumes no responsibility for the use of any circuit other than circuits embodied in an Trident Microsystems, Inc. product. No other circuit patent licenses are implied.

IBM is a registered trademark and PS/2 and OS/2 are trademarks of International Business Machines Corp.

Microsoft, Microsoft Windows, and Microsoft Word are registered trademarks of Microsoft Corp.

Pentium is a trademark of Intel Corp.

RAMDAC is a trademark of Brooktree Corporation.

3DImàge9750, 3DImàge9753 and TVGA are registered trademarks of Trident Microsystems, Inc.

VESA is a trademark of Video Electronics Standards Association.

All other product names or trademarks are property of their respective owners.

8.2 Technical Support

In the event you have a technical problem with this product, please read the README files in the driver disks. Updated drivers are available through Jaton BBS and Web site. Have following information handy when you contact technical support:

- ☑ Name of the product.
- ☑ Software Driver and Version.
- ☑ System Information, such as CPU speed, BIOS version, Monitor Specification, etc.
- ☑ Description of the problems including any error messages.

Telephone:	(408)934-9369 9-5 PST Mon. - Fri.
BBS modem dial-up:	(408)263-8529 (8N1)
FAX :	(408)942-6699
Internet:	http://www.jaton.com
email :	vgasupport@jaton.com

9. Limited Warranty.

Manufacturer warrants that the products sold hereunder are free from defects in material and workmanship for a period of two (2) years from manufacturing date. This limited warranty applies only to the original purchaser of Jaton Product and is not transferable. This limited warranty does not apply if failure to the Product Registration, or over thirty (30) days from purchase (original invoice date). This Limited Warranty does not cover any incompatibilities due to the user's computer, hardware, software or any related system configuration in which the Jaton Products interfaces. Proof of purchase will be require before any consideration by Manufacturer occurs.

9.1 Other Limits.

The forgoing is in lieu of all other warranties, expressed or implied. Including but not limited to the implied warranties of

merchantability and fitness for a particular purpose. Manufacturer does not warrant against damages or defects arising out of improper or abnormal use of handling of the products; against defects or damages arising from improper installation (where installation is by persons other than Manufacturer), against defects in products or components not manufactured or installed by Manufacturer, or against damages result from non-manufacturer made products or components. This warranty does not apply if the Product has been damaged by accident, abuse, nor misuse. This warranty also does not apply to products upon which repairs have been effected or attempted by persons other than pursuant to written authorization by Manufacturer.

9.2 Exclusive Obligation.

This warranty is exclusive. The sole and exclusive obligation of Manufacturer shall repair or replace the defective products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, Manufacturer shall not be liable for incidental, special, or consequential damage.

9.3 Other Statements.

Manufacturer's employees or representatives' **ORAL OR OTHER WRITTEN STATEMENTS DO NOT CONSTITUE WARRANTIES**, shall not be relied upon by Buyer, and are not a part of the contract for sale or this Limited Warranty.

9.4 Terms and Conditions.

Direct Jaton Customer:	This warranty applies only for a period of two (2) years from purchase date of Jaton original invoice.
Reseller/ Vendor:	This warranty applies only for a period of two (2) years from manufacturing date.
Registered User:	This warranty applies only for a period of two (2) years from purchase date and register within 30 days of purchase date from legal reseller.

Others: If the products do not conform to this Limited Warranty (as herein above described), Manufacturer should charge services such as repair, replacement whether based on its costs. Shipping and installation of the replacement Products or replacement parts shall be at User's expanse.

9.5 Services agreement:

(1) All applicants shall completed service request form from Manufacturer.
(2) All returned checks will be charged a $20.00 fee by Manufacturer.
(3) All repair and replacement services allow 4-6 weeks from the date of receiving by Manufacturer.
(4) All products without warranties require service processing fee $20 (payment in advance), which is not refundable.

9.6 Entire Obligation.

This Limited Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in force and effect. Some states do not allow limitation of implied warranties, or exclusive or limitation on product incidental or consequential damages, so above limitation may not apply to you. This warranty gives you specific legal rights. You may have other rights which may vary from state to state.
This warranty applies only to this product, and is governed by the law of the State of California.

10. Reducing Warranty Claim Rejections.

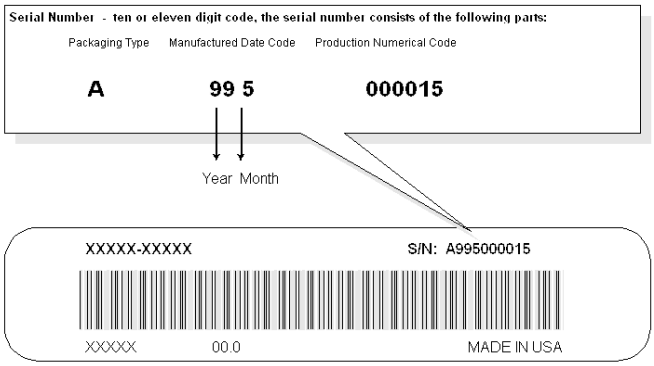
To reduce the potential of incurring damages not covered by Manufacturers warranties, we strongly recommend the following:

- read your manuals before installing peripherals and/or before making changes to the machine's configuration;
- ask your dealer if there are any known problems with the system requirements or installation procedures for any add-on products that your are purchasing;
- buy industry standard products where compatibility issue are more likely to surface;
- If you are unsure about installation for a new product, contact your dealer's service department.

We believe it is important for you to know and understand what your warranty coverage provides and what it does not.

We also want you to be aware that most hardware warranties only relate to the function of the hardware. In most cases, no assurances are given by the manufacturer that the hardware item will work in conjunction with any other hardware item. If a computer product is not working because it is not compatible with another product, or because it has not been properly installed and set-up, the manufacturer does not pay for the service time. To help avoid these inconveniences, contact a professional consultant that one can help you determine the possibility of incompatibility issue before you purchase add-on or accessories.

For Reseller / Vendor Use Only



Product Label and Manufactured Date Code