Fahrenheit ProVideo 64

User's Manual

ORCHID

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INTRODUCTION

Fahrenheit ProVideo 64™ is a 64-bit graphics accelerator with digital video scaling and acceleration, *all on one card!* The merging of graphics and video acceleration provides smooth display of full-screen images, digital movie files or digital moving images. You can complement your high-speed graphics with high-fidelity audio by adding an Orchid sound card to your system.

With up to 4MB of VRAM memory, Fahrenheit ProVideo supports 386, 486, VL-Bus, PCI and Pentium systems. Operating at resolutions up to 1600x1200 and refresh rates up to 120Hz, Fahrenheit ProVideo 64 provides true high resolution graphics and full VESA compliance.

The video acceleration feature of Fahrenheit ProVideo 64 can perform horizontal and vertical digital video scaling, color space conversion and dithering. Fahrenheit ProVideo 64 also features the Xing Software MPEG codec for full-screen, full-motion playback of MPEG digital video.

The Fahrenheit ProVideo 64 uses your computer's CPU for MPEG decoding. MPEG playback performance is directly related to processor speed, the current screen resolution and color depth. The MPEG decoding software can be used in all resolutions except 16 color modes and 1600x1200 resolutions.

Other software enhancements include Orchid's customized Windows Hyperdriver that incorporates video scaling, SuperZoom™ , Virtual Desktop and Switch-on-the-fly Magnify. The Hyperdriver and SuperZoom features are always active while in Windows, providing transparent system and video acceleration. You can also save energy with your monitor by using the Green PC Power Management utility.

Thank you for purchasing Fahrenheit ProVideo 64. Care has been taken to ensure that it will provide you with years of trouble-free operation. We believe you will be pleased with your purchase.

ABOUT THIS MANUAL

This manual presumes that you are already familiar with your IBM PC compatible computer. While Fahrenheit ProVideo 64 has been designed to be easy to install, we recommend that you refer to your computer's reference manual when terminology or installation steps are unfamiliar to you. Each section is divided into short, easy to follow steps, to help you understand the installation and function of Fahrenheit ProVideo 64.

Section 1: Hardware Installation

Whether you are a beginner or an experienced user, this section will give you important information on the proper installation of Fahrenheit ProVideo 64.

Section 2: Software Installation

Here you will be given the information needed to install device drivers and utilities.

Appendix A: Technical Help and Information

If you are experiencing installation difficulties or require troubleshooting information, this appendix gives you checkpoints to look at to ensure that your Fahrenheit ProVideo 64 is operating properly. The technical specifications are also included.

Appendix B: Power Management

Appendix B provides details on the VESA DPMS Power Management technology.

Appendix C: Digital Video Scaling

This appendix gives you information on the digital video scaling feature of Fahrenheit ProVideo 64.

Appendix D: MPEG Video

Here you are given information on the playback of MPEG digital video files.

This manual will familiarize you with the features, installation and use of your Fahrenheit ProVideo 64. There are several symbols and conventions used throughout this manual which will help to draw your attention to a feature or to focus on important information:

When you see the Magnifying Glass, it means the text is referring to something you should take a closer look at before proceeding further.

When you see the Exclamation Mark, it gives important information on avoiding damage to property.

Common Names

AVI	Audio Video/Interleaved
CODEC	Compression/Decompression Algorithm
DCI	Display Control Interface
DPMS	Display Power Management Signaling
MPEG	Motion Picture Experts Group
PCI	Peripheral Component Interconnect
VAFC	VESA Advanced Feature Connector
VESA	Video Electronics Standards Association
VFC	VESA Feature Connector
VGA	Video Graphics Array
VL-Bus	VESA Local Bus
VRAM	Video Random Access Memory

Section

1

INSTALLING FAHRENHEIT PROVIDEO 64

Installation of Orchid's Fahrenheit ProVideo 64 is simplified by its innovative design, requiring no jumpers or switches to set. You can upgrade Fahrenheit ProVideo 64 from 2MB to 4MB of memory. If you want to add memory now or later, see "Adding Memory" in this section. Follow the simple installation steps below to install your Fahrenheit ProVideo 64 card.

STATIC!
Before handling the Fahrenheit ProVideo 64, be properly grounded by touching the power supply housing, or you may want to buy a Ground strap from your local computer store.

Hardware Installation

1. Turn off the power to your computer and disconnect all power cords and cables from the computer.

2. Remove the screws and slide the cover off.

3. Select an expansion slot for Fahrenheit ProVideo 64. *Depending on what card you have, select a PCI slot for the PCI version, or a VL-Bus slot for the VLB version.*

4. Remove the rear slot cover bracket if it is present and keep the screw for future use.

5. Carefully hold Fahrenheit ProVideo 64 by the top edges and lower it into its expansion slot. Ensure that Fahrenheit ProVideo 64 seats firmly into the slot.

6. Secure it in place by fastening its metal bracket to the computer backplane.

For pin-out information on the 15-pin VGA connector, see Appendix A.

7. Reconnect previously removed cables and power cords and replace the cover of the computer.

8. Connect your monitor cable to the 15-pin monitor connector on the Fahrenheit ProVideo 64 (see Figure 1.1).

The hardware installation is complete.
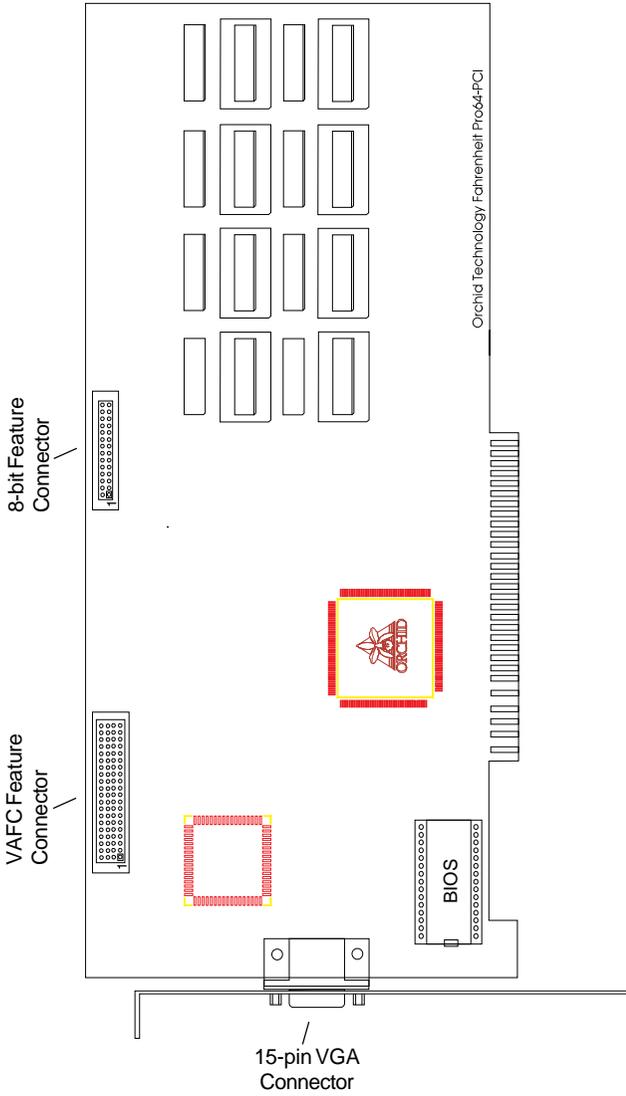
Figure 1.1: Fahrenheit ProVideo 64 PCI Diagram
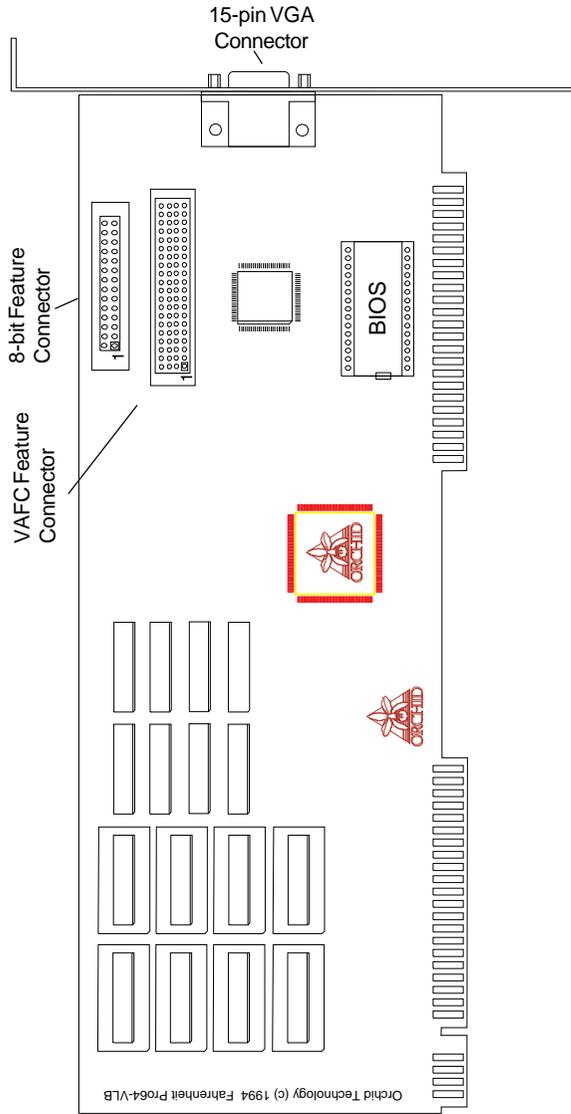
Figure 1.2: Fahrenheit ProVideo 64 VLB Diagram

Adding Memory

The Fahrenheit ProVideo 64 supports up to 4MB of VRAM memory. VRAM memory ensures higher color depths and high refresh rates without sacrificing speed.

The 2MB version of Fahrenheit ProVideo 64 is easily upgradeable to 4MB of VRAM memory. Install the new memory chips into the available memory sockets. The additional memory is automatically detected and must meet the following specifications:

Fahrenheit ProVideo 64

• 256K x 8 VRAM

• Recommended memory:

  Samsung KM428C256J-7

• Operate at 70 nanoseconds access time or faster.

  NOTE: The access time is indicated on the chip as follows:

        -7 = 70 nanoseconds access time

Section

2

SOFTWARE OVERVIEW

Fahrenheit ProVideo 64 comes with software device drivers for popular software applications and a comprehensive range of software enhancements. The Fahrenheit ProVideo 64 provides register-level VGA mode compatibility. Software programs can be operated in this mode using drivers supplied by the software manufacturer. The high resolution drivers that come with Fahrenheit ProVideo 64 are:

Some software programs may already include software drivers for Fahrenheit ProVideo 64. Check with the manufacturer for verification.

Windows 3.11	**Windows for Workgroups**
AutoCAD	**WordPerfect**
Microstation	**3D Studio**

Other drivers are available through Orchid Technical Support, or may be downloaded from the Orchid Bulletin Board System or CompuServe.

Software Installation

You can automatically install the Fahrenheit software drivers and utilities to your hard drive from the DOS command line. Follow the steps below:

1. Insert the Fahrenheit ProVideo 64 software disk into your floppy drive and type:

    A:**INSTALL**   Enter ←

    The following menu appears:

All references to Windows apply to both Windows 3.11 and Windows for Workgroups.

─	Please select an option or press [ESC] to Cancel.

Menu Choices

Windows / Windows for Workgroups drivers and utilities
MS-DOS utilities and Application drivers
Exit Installation

OK
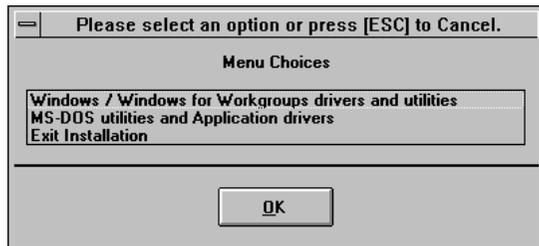
Figure 2.1: Main Menu Screen

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2. Select your option and proceed through the installation as prompted by the program.

3. Once you return to the main menu, you can make another selection or quit the installation program.

The Fahrenheit ProVideo 64 software is now installed. Once you launch Windows, the Fahrenheit Hyperdriver Control Panel icon is installed in the Orchid program group.

Network Considerations

The installation program offers standard and network installation options for Windows graphics drivers. When using Windows in a Novell (or compatible) network, select the Network Server Installation option.

The installer will ask for a directory name to install the drivers to. You must install the Fahrenheit ProVideo 64 Windows drivers to the *shared* Windows directory on the network server. Once the drivers are installed on the network server, the Orchid icon appears in the Windows Control Panel on each workstation, for individual driver customization.

The installer must have privileges to add drivers to the shared Windows subdirectory. Check with your System Administrator.

WINDOWS UTILITIES

Orchid Control Panel

This menu is easy to use and allows you to configure your Windows video display driver, configure your monitor, enable the power management feature and center the display. The Orchid Control Panel can be accessed from the Orchid program group or the Windows Control Panel.

1. Double-click on the Fahrenheit Hyperdriver Control Panel icon and the following menu appears:

Figure 2.2: Orchid Control Panel Menu

2. Make your desired selections. Use this utility for any future changes to the Fahrenheit ProVideo 64 configuration.

Display Setup

Use this utility to select the resolution, text font size, colors for your display and to enable or disable the 8-bit feature connector for digital video. When certain combinations of resolutions and colors are chosen, the menu displays the Virtual Desktop or Switch on-the-fly Magnify

features *(see the following sections for more information on these features).*

1. From the Orchid Control Panel click on Display Setup. The following screen appears:

```
┌─────────────────────────────────────┐
│ ▬        Display Setup               │
├─────────────────────────────────────┤
│  ☐ Enable 8-bit Feature Connector    │
│  ┌ Screen Resolution ┐ ┌ Font Size ┐ │
│  │ 1600×1200    ▼ │    │ Small   ▼ │ │
│  └──────────────┘    └──────────┘   │
│  ┌ Number of Colors ┐               │
│  │ 256        ▼ │                    │
│  └──────────────┘                    │
│      ┌────────┐   ┌────────┐         │
│      │  Save  │   │ Cancel │         │
│      └────────┘   └────────┘         │
└─────────────────────────────────────┘
```

Figure 2.3: Display Setup Screen
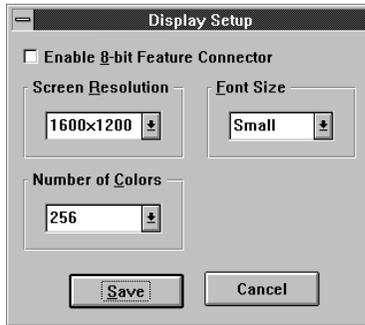
The "Enable 8-bit Feature Connector" selection must be disabled (unchecked) for digital video and scaling.

2. Make your desired selections and click on the Save button to store your new values.

Virtual Desktop Feature

You can use the Virtual desktop feature to create a larger desktop workspace. With Virtual Screen, your mouse movement automatically pans the desktop to give you access to any part of your document or window without resizing or using scroll bars.

It's an ideal solution for spreadsheet or desktop applications. A large area of display can be panned and viewed by simply moving your mouse. Virtual Desktop doubles your workspace by transforming your standard VGA monitor into a virtual display with the maximum resolution available.

Virtual Desktop supports the 640x480x256 and 800x600x256 resolutions. When these are selected, the Orchid Display Setup screen appears as follows:
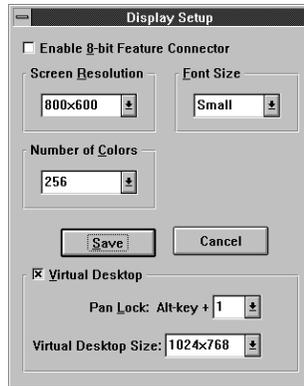
Figure 2.4: Virtual Desktop Screen

To enable Virtual Desktop:

1. Click on the Virtual Desktop box to enable the option *(the selections are grayed out until you do so).*

2. Choose a Pan Lock (Hot-Key) combination from the pull-down menu to lock the display (prevent it from moving when your mouse reaches the edge).

3. Choose a Desktop Size from the pull-down menu.

4. After making your selections click on the Save button to store your new values.

Switch-on-the-fly Magnify Feature

Switch-on-the-fly Magnify can enlarge a portion of your document to its maximum size. This is ideal when you need a closer view of your screen. It supports the 1024x768x256 resolution. When this resolution is selected, the Orchid Display Setup screen appears as follows:
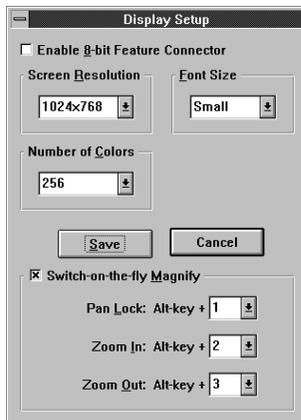
Figure 2.5: Switch-on-the-Fly Magnify Screen

You can also configure a Hot-Key sequence to activate the following options:

Pan Lock. Use the Pan Lock command to turn off panning, which prevents the Window from moving even if you move your mouse. You can unlock the Window by using the Hot-Key combination.

Zoom In. Use the Zoom In command to magnify a portion of your document.

Zoom Out. Use the Zoom Out command to see all of your document at one time.

To enable Switch-on-the-fly Magnify:

1. Click on the Switch-on-the-fly Magnify box to enable the option *(the selections are grayed out until you do so)*.

2. Choose a Hot-Key combination from the pull-down menus for the Pan Lock, Zoom In and Zoom Out options.

3. After making your selections, click on the Save button to store your new values.

Monitor Setup

Use the Monitor Setup utility to select the display parameters for your monitor. A list of video resolutions are displayed. The vertical refresh rates available are selectable from the drop-down menu of each resolution.

Make your monitor selection simply by clicking on the drop down list, or by selecting the Custom option and inserting your own values. *If your display appears distorted, it is likely that the values you selected are inappropriate for your monitor. Select other values.*

1. From the Orchid Control Panel click on Monitor Setup. The following screen appears:

WARNING!
Selecting the incorrect values may damage your monitor. Consult your monitor's reference guide for the vertical refresh rates available.

To correct a distorted display, exit Windows to the DOS prompt and run the MONSET utility program to reset your values.

Orchid Monitor Setup

Monitor Type

Custom

Refresh Rates

Resolution	Vertical (Hz)	Horizontal (KHz)
640×480	72.0	37.8
800×600	72.0	48.0
1024×768	70.0	56.2
1152×864	60.0	54.9
1280×1024	60.0	63.1

Save   Cancel

Figure 2.6: Monitor Setup Menu

2. Make your desired selections and click on the Save button to store your new values.

Power Management

For more information on the Power Management feature, refer to Appendix B.

Use this utility for power savings on your Green PC monitor while your monitor is inactive. When you use this utility with a Green PC monitor or other type of monitor, the screen saver will appear as a blank screen. You can access the Power Management utility from the Orchid Control Panel or from the Windows Control Panel Desktop utility.

To configure Power Management:

1. From the Orchid Control Panel click on Power Management. The following menu appears:

Figure 2.7: Power Management Menu

Make sure your monitor supports the Green PC standard before selecting the options. Consult your monitor's reference guide or monitor manufacturer.

2. From this menu you can configure your power management settings and test the settings selected. Click on Configure and the following screen appears:

Figure 2.8: Screen Saver Menu

3. Click on the Screen Saver box to enable the option *(the selections are grayed out until you do so).*

4. Set delays for the different Power Management modes. Select the delays by clicking on the arrows to increase or decrease the number.

5. Test the delays you set for each mode.

6. If you desire a password for the screen saver, click on the Password Protected box.

7. Click on Set Password and enter your password.Click on OK to save the settings.

Display Centering

This utility is designed to be used with monitors that do not have their own centering controls. If your monitor does have centering controls you do not need to use this utility. To use this utility follow the steps below:

1. From the Orchid Control Panel click on Display Centering. The following menu appears:

If you center the screen off the side of the display, press ESC to restore the screen back to normal.
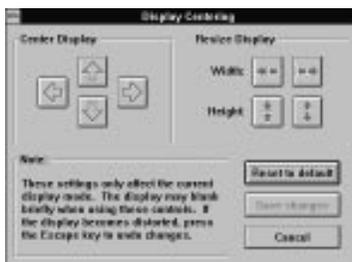
Figure 2.9: Display Centering Menu

2. Once you have made your selections, click on the Save button to store your new values. For other display modes, use the Display Centering utility again if required.

System Information

This option provides a visual way of obtaining relevant information about your system configuration. The information on this menu screen will be very helpful if you need to call Technical Support. You can access the System Information option from the Orchid Program group or from the Windows Control Panel window.

To access System Information:

1. From the Orchid Control Panel, click on the Help option and select System Information. The following menu appears:

Figure 2.10: System Information Menu

2. If you need to make any changes to the system information settings, click on Edit System Files to access the System Configuration Editor program.

DOS UTILITY

MONSET Monitor Setup

MONSET is the DOS version of the Windows Monitor Setup. You have the choice of using Monset or the Windows Monitor Setup program. There are two advantages to using the DOS version: (1) You can try all the modes available without exiting and reentering the program; (2) You can center the screen using the same utility program.

MONSET is automatically installed to your hard drive using the Fahrenheit ProVideo 64 installation program. Select MS-DOS Utilities and Application Drivers from the installation menu and install the Fahrenheit ProVideo 64 screen utilities (see Figure 2.1).

Because it is a DOS-based utility, do not run MONSET from inside other programs, such as Windows. From the DOS prompt, type:

C:**CD\FAHR64**   Enter ←

then

C:**MONSET**   Enter ←

If you do not have a mouse driver loaded in DOS, or if you prefer using the keyboard, use the TAB key to move around the menus.

The following menu appears:

Orchid Technology
Monitor Setup Utility

Your Monitor   [NEC MultiSync 5FGp   ]↓

	Horizontal (kHz)	Vertical (Hz)	
640x480	[ ]↓	[72]↓	‹Configure...›
800x600	[31.5]↓	[72]↓	‹Configure...›
1024x768	[31.5]↓	[43.5]↓	‹Configure...›
1280x1024	[n/a]↓	[n/a]↓	‹Configure...›
1600x1200	[n/a]↓	[n/a]↓	‹Configure...›

Save   Cancel   Help

Figure 2.10: MONSET Menu

The Monitor Setup utility displays a list of video resolutions. The refresh rates available are selectable from the

drop down menu of each resolution. The Configure buttons allow you to display and test the selected mode.

Your Monitor

You can select your monitor from the pull-down menu of this option. If you have a mouse driver loaded, you can use the mouse to make your selection, otherwise use the ↑↓ arrow keys to make your selection, and use the TAB or Shift+TAB keys to navigate.

If you choose the Custom configuration, you can manually select your desired values. Before you continue make sure you have the correct settings for your monitor. If you have a mouse driver loaded, use the mouse to select your desired values, otherwise use the ↑↓ arrow keys to make your selection, and use the TAB or Shift+TAB keys to navigate.

Testing Your Selection

Once the values have been defined, you can test the values and center the display.

1. To test the defined values, click on the Configure button. If the display appears distorted, press the ESC key to return to the main menu. If the display appears OK, use the ← → arrow keys to center horizontally and the ↑↓ arrow keys to center vertically.

2. When the selected mode is displayed, a test pattern appears with a description of the controls. Press ENTER to save the setting.

3. After making your selections, click on Save to save your settings. Your new configuration is available every time you power on your system. Run the MONSET program whenever you want to change your configuration.

WARNING!
Selecting the incorrect values may damage your monitor. Consult your monitor's reference guide for the vertical refresh rates available.

If your display appears distorted, it is likely that the values you selected are inappropriate for your monitor. Select other values.

Appendix

A

TECHNICAL HELP

Orchid Technology is known for its responsiveness to its customers. This section gives you helpful hints for trouble-shooting Fahrenheit ProVideo 64 and includes the technical specifications.

CompuServe

In addition to calling Orchid Technology, technical support is now available through the CompuServe Information Service (CIS). You can also download drivers and get new product information. To find us on CompuServe, follow the instructions below:

All commands can be typed in lower or upper case letters.

1. Log onto CompuServe.

2. You may type GO ORCHID to get immediate access to the Orchid section. . .

   or

   Type GO MULTIBVEN to get into the Multimedia Vendor Forum B. Once you are in this forum, select Message Section #10. The message and library sections are labeled Orchid.

Troubleshooting Fahrenheit ProVideo 64

The following information will help you diagnose problems you may have with the Fahrenheit ProVideo 64. Following these simple steps serves a twofold purpose:

You may be able to fix your problem. . .

   or

if these steps do not help you solve your problem, the results will most certainly give you a better handle on what to tell Technical Support once you contact them.

The information provided here is in symptom/response form. That is, a symptom is given, and a check point response is provided for you.

Symptom 1

The computer does not power-up or respond when powered on. The screen is completely blank. There is no familiar boot up (POST test) beep.

Check

1. Is the Fahrenheit ProVideo 64 properly installed in the slot? Is the edge connector inserted all the way into the expansion slot? Is the Fahrenheit ProVideo 64 properly aligned with the motherboard's backplane?

2. Is there another display adapter in your system? If it is an on-board video display adapter, make sure it is disabled. If the video display adapter is other than a standard monochrome video adapter, remove it from the system.

3. Is the computer set up correctly for the Fahrenheit ProVideo 64? Refer to your computer's reference manual for information on setting up your computer.

4. Are your computer and monitor plugged in? Check the power cables to your computer and monitor.

Symptom 2

The computer gives an error of 1 long beep and 2 short beeps at power up.

Check

1. Take a look at the check points for symptom 1, steps 1 through 4.

Symptom 3

The computer seems to boot up properly but there is no display.

Check

1. Is your monitor plugged in? Check the power cable to your monitor.

2. Is your monitor cable fastened securely and properly? Check both the connection at the monitor and at the Fahrenheit ProVideo 64 card.

3. Is your monitor cable the correct kind for the Fahrenheit ProVideo 64? Check Section 1 for the proper pin-out information to determine if your cable is correct.

4. Is there another display adapter in your system? If it is an on-board video display adapter, make sure it is disabled. If the video display adapter is other than a standard monochrome video adapter, remove it from the system.

Symptom 4

The display loses synchronization once it gets into a graphics program.

Check

1. Is the vertical hold on your monitor properly set? Is your software properly installed for your current application? Check Section 2 for device driver information.

2. Is your monitor able to display the graphics mode you are using? Double check your monitor specifications for the graphics modes supported.

3. Are you using the correct vertical refresh rate for your monitor? Double check your monitor specifications for the refresh rates supported. If a refresh rate is chosen that distorts the screen, use the DOS MONSET utility to reset and test your selections.

Symptom 5

The display is garbled or scrolling in Windows.

Check

1. The vertical refresh rate is set to high. Use the MONSET program to lower the refresh rate.

2. The resolution selected is too high for your monitor.
    - Run SETUP from the Windows subdirectory.
    - Select the VGA display driver.
    - Start Windows.
    - Double-click on the Fahrenheit Hyperdriver Control Panel icon and select a resolution your monitor is capable of supporting.

Symptom 6

The Fahrenheit ProVideo 64 works well in another brand computer, but not at all in mine.

Check

1. Take a look at the check points for symptom 1, steps 1 through 4. It is a pretty good guess that the problem is not the Fahrenheit ProVideo 64 if it is working properly in another system.

Symptom 7

The Orchid icon does not appear in the Windows Control Panel.

Check

1. Check to make sure that you installed the Fahrenheit ProVideo 64 Windows drivers into the correct directory.

2. Memory managers can prevent icons from appearing. Refer to your memory manager documentation for details on using a memory exclusion statement.

Symptom 8

MPEG appears slow or jerky and there is no audio sync.

Check

1. The MPEG playback performance is directly related to processor speed, the current screen resolution and color depth. On most Pentium 90MHz systems, the playback is fairly smooth. Slower systems may exhibit slow MPEG video.

Symptom 9

MPEG will not run or a "General Protection Fault" error is received.

Check

1. Make sure you are using a supported resolution. The MPEG decoding software can be used in all resolutions except 16 color modes and 1600x1200 resolutions.

Technical Specifications

This section covers the technical specifications and features for Fahrenheit ProVideo 64.

Configuration
Fahrenheit ProVideo 64 - 2048K
- 4096K

Video Chipset:
S3 Vision 968

Interfaces Supported
Up to 50MHz
VLB and PCI

BIOS:
8-bit

Connectors:
32-bit Bus - PCI
32-bit Bus - VLB
15-pin D-Shell VGA
VESA 8-bit Feature Connector
VESA2 Feature Connector (VAFC)

Memory Address Segments:
RAM: A000-BFFF
ROM: C000-C7FF
I/O Address: 3B0-3DF (IBM standard)

Temperature:
Operating: from 0 to 40 degrees C
Storage: from -30 to 60 degrees C

Humidity:
Operating: from 15% to 90%
Storage: from 10% to 95%

Features

Digital Video Scaling

DCI (Display Control Interface) Support

MPEG Software Decode

High resolutions and refresh rates:

   Up to 120Hz Vertical Scan Refresh Rate

   1600 x 1200 x 16 colors

   1280 x 1024 x 65,536 colors **

   1024 x 768 x 16.8 million colors **

   800 x 600 x 16.8 million colors

   640 x 480 x 16.8 million colors

** Requires 4MB VRAM Memory

Memory Address Setting

Fahrenheit ProVideo 64 uses the A000-C7FF memory address segment. Some memory manager programs may try to use this address segment. If you encounter a conflict, add an exclusion statement in your CONFIG.SYS file, to exclude the Fahrenheit ProVideo 64 address segment from being used. Refer to your memory manager user's manual for details on using a memory exclusion statement.

VESA Support

Fahrenheit ProVideo 64 is designed to support the VESA BIOS Extension (VBE) through its BIOS. Extended modes can be selected through the VESA option in the application you are running. The BIOS supports the VESA 1.2 specification.

In addition, the Fahrenheit ProVideo 64 VLB version supports the VESA VL-Bus hardware standard. The local bus design provides 32-bit data transfer between the video card and the CPU for incredibly fast graphics.

Resolutions and Refresh Rates

Mode #	Resolution	Colors	Horz.	Vert.	Polarity	
04	320 x 200	4	31.5	70	-	+
05	320 x 200	4	31.5	70	-	+
06	640 x 200	2	31.5	70	-	+
OD	320 x 200	16	31.5	70	-	+
OE	640 x 200	16	31.5	70	-	+
OF	640 x 350	Mono	31.5	70	+	-
10	640 x 350	16	31.5	70	+	-
11	640 x 480	2	31.5	60	-	-
12	640 x 480	16	31.5	60	-	-
13	320 x 200	256	31.5	70	-	+

Table A1: IBM VGA Video Graphics Modes

Mode #	Resolution	Colors	Horz.	Vert.	Polarity	
00	40 x 25	16	31.5	70	-	+
01	40 x 25	16	31.5	70	-	+
02	80 x 25	16	31.5	70	-	+
03	80 x 25	16	31.5	70	-	+
07	80 x 25	Mono	31.5	70	-	+
54	132 x 43	16	31.5	70	+	-
55	132 x 25	16	31.5	70	-	+

Table A2: Video Text Modes

NOTE: Horizontal frequencies are in kHz
Vertical frequencies are in Hz

Please see the Windows Control Panel Help file
for a complete table of refresh rates supported.

Feature Connector Pin Outs

The standard VESA Feature Connector is located at the top middle of the Fahrenheit ProVideo 64 PCI and at the top right of the Fahrenheit ProVideo 64 VLB (see Figures 1.1 and 1.2).

The feature connector permits third party add-on accessories to both share signals and share control of the VGA circuitry. The following table lists the feature connector's pin-out information.

Fahrenheit ProVideo 64 Feature Connector Pin-Outs							
Pin	Function	Pin	Function	Pin	Function	Pin	Function
Y1	Pixel Data 0	Y8	Pixel Data 7	Z2	Ground	Z9	Ground
Y2	Pixel Data 1	Y9	Pixel Clock	Z3	Ground	Z10	Ground
Y3	Pixel Data 2	Y10	Blanking	Z4	(See Note 1)	Z11	Ground
Y4	Pixel Data 3	Y11	Hor. Sync	Z5	(See Note 2)	Z12	No Connect
Y5	Pixel Data 4	Y12	Vert. Sync	Z6	(See Note 3)	Z13	No Pin (Key)
Y6	Pixel Data 5	Y13	Ground	Z7	No Connect		
Y7	Pixel Data 6	Z1	Ground	Z8	Ground		

Table A.3: VESA Feature Connector Pin-Outs

NOTES:
(1) Low Enable External Pixel Data Input to the motherboard DAC.
(2) Low Enable External Sync and Blanking Inputs to the motherboard DAC.
(3) Low Enable External Pixel Clock Input to the motherboard DAC.

VAFC Feature Connector Pin-Outs

Please contact the VESA Standards Committee for a complete description of the VAFC feature connector pin-outs and functions.

> VESA
> 2120 N. First St., Suite 440
> San Jose, CA. 95131

VGA Pin-Out Specifications

The 15-pin VGA connector on the Fahrenheit ProVideo 64 is the same as the standard 15-pin D-shell connector. The pin-outs are as follows:
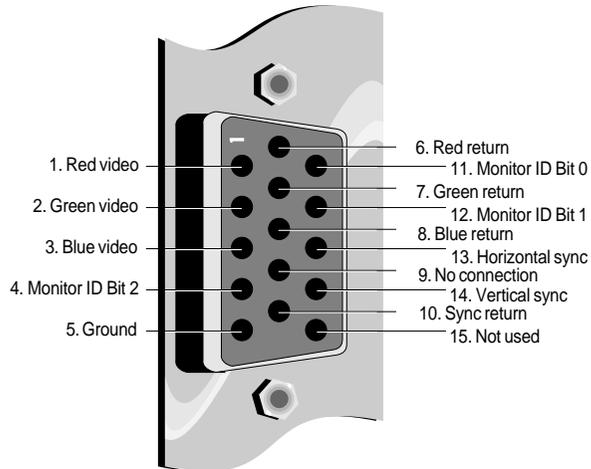
Figure A.1: Fahrenheit ProVideo 64 15-pin Connector

Appendix

B

POWER MANAGEMENT

Orchid stays on the cutting edge of technology while maintaining compatibility. With the Fahrenheit ProVideo 64, we took a power saving approach by incorporating VESA's Display Power Management Signaling (DPMS) technology.

Power Management Feature

The Power Management feature supports the Green PC specification and allows a computer system to be energy efficient. On computer desktop systems, monitors usually consume over 50% of the overall power used. Most monitors consume between 130-200 watts, even when idling.

Using a Green PC monitor and a Fahrenheit ProVideo 64 in conjunction, you can lower the power consumption to 30 watts when the monitor is idle. This power management feature is required by the EPA's Energy Star Program and is also required by all U. S. Government agencies.

A Green PC monitor and your Fahrenheit ProVideo 64 can be placed into one of four states: On, Standby, Suspend or Off. Here is an overview of VESA's DPMS signaling method:

Monitor State	Power Savings	Recovery Time
On	None	N/A
Standby	Minimal	Short
Suspend	Substantial	Longer
Off	Maximum	System-dependent

On Mode

Sets the amount of inactive time before the screen saver starts. This is a full operation state with both the HSYNC Active and VSYNC Active.

Standby Mode

Sets the amount of inactive time before the blank screen starts. This is an optional state of minimal power reduction with the HSYNC Inactive and VSYNC Active.

Suspend Mode

Sets the amount of inactive time before the blank screen starts. This is a significant reduction of power consumption with the HSYNC Active and VSYNC Inactive.

Off Mode

Set the amount of inactive time before the blank screen starts. This is the lowest level of power consumption with the HSYNC Inactive and VSYNC Inactive.

The VESA DPMS technology also implements the U. S. Governmental Protection Agency "Energy Star" and European Nutek standards. The Power Management feature makes Fahrenheit ProVideo 64 a complete cost-effective solution for the energy conscious.

Appendix

C DIGITAL VIDEO SCALING

With Fahrenheit ProVideo 64, a Windows digital video clip can be scaled and sized up to full screen. No longer will your video viewing be restricted to postage stamp-sized displays. You get smooth video playback without dropping frames. The scaling feature can be used in all resolutions except 640x480x16 colors and 800x600x16 colors.

Fahrenheit ProVideo 64 features both horizontal and vertical digital video scaling. The accelerated video hardware allows Fahrenheit ProVideo 64 to display .AVI files to full screen while maintaining smooth motion and improving image quality.

By incorporating the new DCI standard, Fahrenheit ProVideo 64 can take on many of the tasks generally shared with the Windows display software. The DCI standard allows Fahrenheit ProVideo 64's accelerator hardware to act independently during scaling and displaying operations, and for implementing color-space conversion. These tasks are accomplished much more quickly using hardware methods, and the resulting displays can then be scaled for full-screen playback.

Appendix

D

MPEG VIDEO

MPEG is a full-motion video compression technology that allows you to play back television-quality video. It records changes between frames of data. Rather than storing information about each individual frame, only the changed data is stored during recording and reassembled during playback.

Fahrenheit ProVideo 64 features the Xing Software MPEG codec for full-screen, full-motion playback of MPEG digital video. This codec algorithm attains the highest playback quality while optimizing file management. It also uses high-quality scaling and pixel interpolation algorithms.

The Fahrenheit ProVideo 64 uses your computer's CPU for MPEG decoding. MPEG playback performance is directly related to processor speed, the current screen resolution and color depth. As a reference, a Pentium 90MHz system will usually provide smooth video playback at 30 frames per second in resolutions up to 1024x768. Slower systems may provide less performance. The MPEG decoding software can be used in all resolutions except 16 color modes and 1600x1200 resolutions.

Playback of MPEG digital video is enhanced with Fahrenheit ProVideo 64's SuperZoom feature. With SuperZoom, video clips captured at small window sizes can be played back at full-screen full-frame rate. Video clips compressed in .AVI format can take advantage of SuperZoom. You get smooth video playback without dropping frames and continuous audio data.

MPEG Video will appear as an option on the device menu of any Windows MCI (Media Control Device) application. MCI is a standard control device for multimedia devices and files.

NOTE: The Fahrenheit ProVideo 64's MPEG feature is not compatible with CD titles written exclusively for the Sigma Designs RealMagic products.

FCC NOTICE

FCC ID: DDS7EFFP64964-VLB*

Fahrenheit ProVideo 64-VLB
Certified compliant with FCC Class B limits, part 15

To meet FCC requirements, shielded cables are required to
connect the unit to a Class B certified device

"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."

This equipment generates and uses radio frequency energy and, if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference to radio or television reception.

This device has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. Only equipment (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this product.

If this equipment causes interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient the receiving antenna.

2. Relocate the computer with respect to the receiver.

3. Move the computer away from the receiver.

4. Plug the computer into an outlet which resides on a different circuit breaker than the receiver.

5. If necessary, consult your dealer, or an experienced radio or television technician for additional suggestions.

You may find the booklet **How To Identify and Resolve Radio-TV Interference Problems** helpful. It was prepared by the Federal Communications Commission and is available from the U.S. Government Printing Office, Washington, DC 20402. Refer to stock number: 004-000-00345-4.

Orchid Technology is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

Operation with non-certified equipment is likely to result in interference to radio and TV reception. The user must use shielded interface cables in order to maintain the product within FCC compliance.

* For Fahrenheit ProVideo 64-VLB. Fahrenheit ProVideo 64-PCI - FCC ID: DDS7EFFP64964-PCI.

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