Kelvin Video64 On-Line Manual

For information on how to use Help, press F1.

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Appendix A: Technical Specifications

APPENDIX B: POWER MANAGEMENT

Orchid stays on the cutting edge of technology while maintaining compatibility. With the Kelvin Video64, we use 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 Kelvin Video64 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 Kelvin Video64 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
This is a full operation state with both the HSYNC Active and VSYNC Active.

Standby Mode
This is an optional state of minimal power reduction with the HSYNC Inactive and VSYNC Active.

Suspend Mode
This is a significant reduction of power consumption with the HSYNC Active and VSYNC Inactive.

Off Mode
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 Kelvin Video64 a complete cost-effective solution for the energy conscious.

APPENDIX C: DIGITAL VIDEO SCALING

With Kelvin Video64, 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.

Kelvin Video64 features both horizontal and vertical digital video scaling. The accelerated video hardware allows Kelvin Video64 to display AVI files to full screen while maintaining smooth motion and improving image quality.

By incorporating the new DCI standard, Kelvin Video64 can take on many of the tasks generally shared with the Windows display software. The DCI standard allows Kelvin Video64'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 high-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.

With Kelvin Video64 you can view MPEG, AVI and other digital video formats at up to 30 frames per second. Kelvin Video64 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 Kelvin Video64 uses your computer's CPU for MPEG decoding. MPEG playback performance is directly related to processor speed, the current screen resolution and color depth. We recommend a true 75MHz MPC III (Multimedia Personal Computer) system for optimum MPEG and AVI performance. The MPEG decoding software can be used in all resolutions except 16 color modes and 1600x1200 resolutions.

MPEG Video files can be played using the XingMPEG Player or any Windows MCI (Media Control Device) application. MCI is a standard control device for multimedia devices and files.

NOTE: The Kelvin Video64's MPEG feature is not compatible with CD titles written exclusively for the Sigma Designs RealMagic products.

FCC NOTICE

FCC ID: JYBPCI32OD
Kelvin Video64
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.

SPECIFICATIONS

This section covers the technical specifications for Kelvin Video64.

Configuration
Kelvin Video64 - 1024K
- 2048K

Video Chipset:
Alliance 6410

BIOS:
8-bit

CPU Requirements:
80486 and Pentium-based Compatibles
32-bit Bus - PCI

Connectors:
15-pin D-Shell VGA
VESA 8-bit Feature Connector

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%

Memory Address Setting

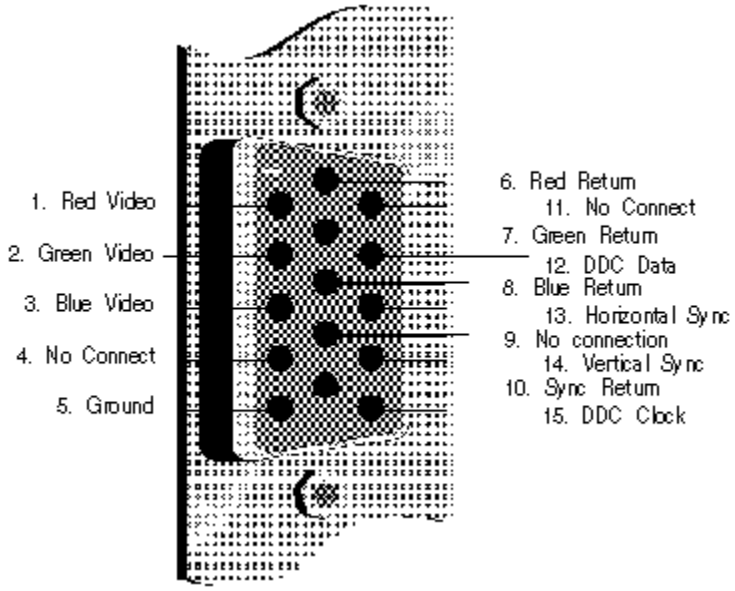
Kelvin Video64 uses the A000-C7FF memory address segment. Some memory manager programs may try to use this address segment. If you encounter a conflict, add an exclusion statement in your CONFIG.SYS file, to exclude the Kelvin Video64 address segment from being used. Refer to your memory manager user's manual for details on using a memory exclusion statement.

VESA Support

Kelvin Video64 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.

CONNECTOR PIN-OUT SPECIFICATIONS

Kelvin Video64 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		



15-pin Connector Pin-Outs

FEATURES

Virtual Desktop
Digital Video Scaling
DCI (Display Control Interface) Support
DDI (Direct Draw Interface) Support
MPEG Software Decode
Up to 90Hz Vertical Scan Refresh Rate
High resolutions:
- 1600 x 1200 x 256 colors**
- 1152 x 864 x 65,536 colors **
- 800 x 600 x 16.8 million colors
- 640 x 480 x 16.8 million colors

** Requires 2MB DRAM Memory

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	-	+

Video Text 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	-	+

VGA Video Graphics Modes

Resolution	Colors	Memory	43.5Hz	60Hz	72Hz	75Hz
640x400	16.7Mil	1MB		X	X	X
640x480	16	1MB		X	X	X
640x480	256	1MB		X	X	X
640X480	32K	1MB		X	X	X
640X480	64K	1MB		X	X	X
640X480	16.7Mil	1MB		X	X	X
800X600	16	1MB		X	X	X
800X600	256	1MB		X	X	X
800X600	32K	1MB		X	X	X
800X600	64K	1MB		X	X	X
800X600	16.7Mil	2MB		X	X	X
1024X768	256	1MB	X	X	70	X
1024X768	32K	2MB	X	X	70	X
1024X768	64K	2MB	X	X	70	X
1152X864	256	1MB		X	X	X
1152X864	32K	2MB		X	X	X
1152X864	64K	2MB		X	X	X
1280X1024	256	2MB	X	X	X	
1600X1200	256	2MB		X		

Enhanced Video Graphics Modes

BEFORE YOU BEGIN

This manual will familiarize you with the features, installation and use of your Kelvin Video64. Please refer to the list below for common names used throughout the manual.

Common Names

AVI	Audio Video/Interleaved
CD-i	Compact Disk Interactive
DPMS	Display Power Management Signaling
DRAM	Dynamic Random Access Memory
MPEG	Motion Picture Experts Group
PCI	Peripheral Component Interconnect
VESA	Video Electronics Standards Association
VFC	VESA Feature Connector
VGA	Video Graphics Array