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PMC-VIDEOPLUS

High Resolution CRT Video Graphics
Controller for PMC

User Manual

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PMC-VIDEOPLUS
High Resolution CRT Video Graphics Controller for PMC

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Table of Contents

PRODUCT DESCRIPTION **1**

KEY FEATURES 1

BLOCK DIAGRAM **2**

PMC/PCI INTERFACE **3**

INTRODUCTION 3
PCI CONFIGURATION SPACE 3
PCI INTERRUPTS 3
PMC CONNECTORS 4
PMC PIN ASSIGNMENTS 5

BIOS **6**

I/O CONNECTORS **7**

SPECIFICATIONS **8**

REPAIR **9**

SERVICE POLICY 9

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List of Figures

FIGURE 1. BLOCK DIAGRAM 2
FIGURE 2. FRONT PANEL I/O CONFIGURATION 4
FIGURE 3. PMC CONNECTOR PIN ASSIGNMENTS 5
FIGURE 4. CONNECTOR J1 PIN ASSIGNMENTS 7

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Product Description

The PMC-VIDEOPLUS provides a high-quality, high-performance graphics adapter for a PMC carrier board. It supports a variety of SVGA/CRT monitors in single-display configurations.

The PMC-Video features the Silicon Motion Lynx3DM4 accelerator. Four Mbytes of high performance on-chip SGRAM handle high-resolution graphics displays. Its comprehensive display mode supports many standard screen resolutions, up to 1280 x 1024 at 60 Hz with 24 bpp.

Features include a complete 3D rendering feature set, hardware support for MPEG/DVD playback, a robust 2D Drawing Engine that supports ROPs, BitBLTs, transparent BLT, color expansion, and line draw.

The PMC module includes a front panel-mounted standard high-density Female DB15 for SVGA/CRT output.

A Windows NT 4.0 device driver is available for PMC-VIDEOPLUS. The Windows NT 4.0 Service Pack 4 is recommended for use with this device driver. Although the device driver will run under an earlier service pack, the control panel help file can only be viewed under Service Pack 4.

The module is compliant with standard single-wide PMC specifications IEEE P1386.1 and PCI 2.1 specifications.

Key Features

- Resolutions up to 1280 x 1024 at 60 Hz with 24 bpp on a single display device
- 4 Mbytes of embedded SGRAM memory 128 bits wide
- Standard high-density Female DB15 CRT connector on front panel
- 3D and 2D hardware acceleration and BitBLT

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Block Diagram

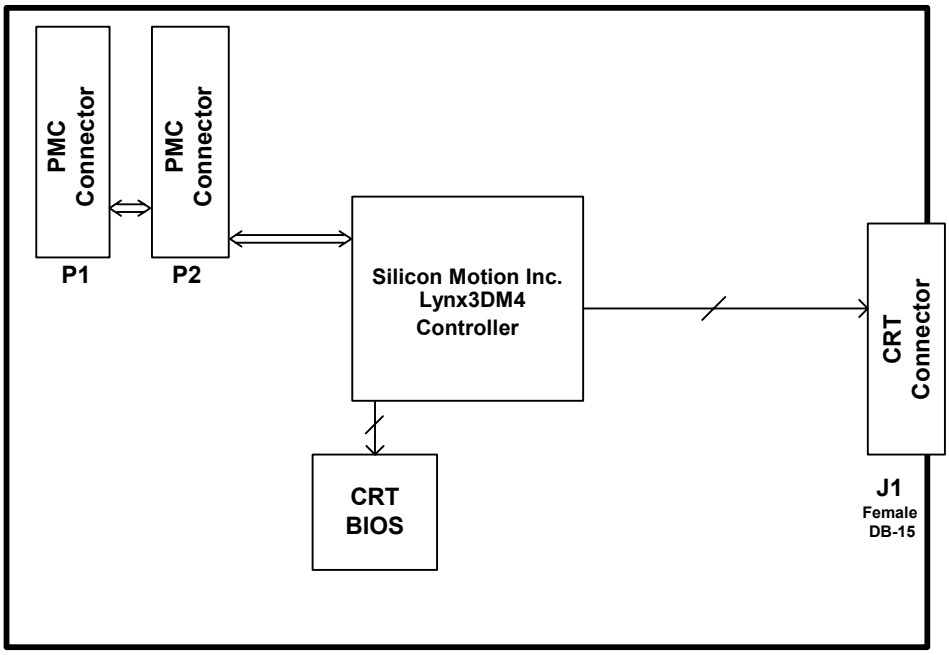


Figure 1. Block Diagram

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PMC/PCI Interface

Introduction

The PMC-VIDEOPLUS conforms to the PMC Interface specification, which is based on the PCI bus interface standard.

The PMC interface standard defines the physical and environmental aspects of the PCI mezzanine card interface. The PMC-VIDEOPLUS implements a single width module that can provide I/O through a 15-pin Female DB front panel connector.

PCI Configuration Space

Lynx3DM4 Device ID is 0720h with Vendor ID 126Fh.

PCI Interrupts

The PMC-VIDEOPLUS supports interrupts on the INTA# pin only.

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PMC Connectors

The PMC-VIDEOPLUS provides the two required connectors (P1 and P2) which implement the 32-bit PCI interface. The figure below illustrates this configuration.

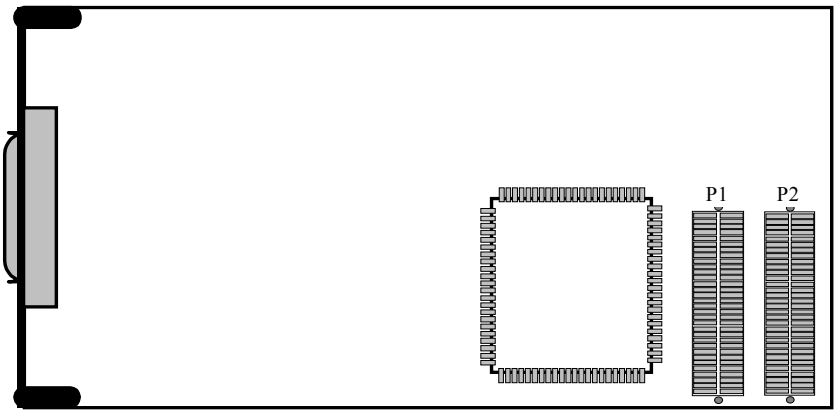


Figure 2. PMC Connectors

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PMC Pin Assignments

The PMC-VIDEOPLUS requires support of the PCI signal connections (P1 and P2). The table below lists the PMC connector pin assignments.

Pin	P1	P2	Pin	P1	P2
1	-	+12V	**2**	-12V	-
3	GROUND	-	**4**	INTA*	-
5	INTB* (NC)	-	**6**	INTC* (NC)	GROUND
7	BMODE1*	GROUND	**8**	+5V	-
9	INTD* (NC)	-	**10**	-	-
11	GROUND	BMODE2*	**12**	-	-
13	CLK	RST*	**14**	GROUND	BMODE3*
15	GROUND	-	**16**	GNT*	BMODE4*
17	REQ*	-	**18**	+5V	GROUND
19	-	AD30	**20**	AD31	AD29
21	AD28	GROUND	**22**	AD27	AD26
23	AD25	AD24	**24**	GROUND	-
25	GROUND	IDSEL	**26**	C/BE3*	AD23
27	AD22	-	**28**	AD21	AD20
29	AD19	AD18	**30**	+5V	GROUND
31	-	AD16	**32**	AD17	C/BE2*
33	FRAME*	GROUND	**34**	GROUND	-
35	GROUND	TRDY*	**36**	IRDY*	-
37	DEVSEL*	GROUND	**38**	+5V	STOP*
39	GROUND	PERR*	**40**	LOCK*	GROUND
41	-	-	**42**	-	SERR*
43	PAR	C/BE1*	**44**	GROUND	GROUND
45	-	AD14	**46**	AD15	AD13
47	AD12	GROUND	**48**	AD11	AD10
49	AD09	AD08	**50**	+5V	-
51	GROUND	AD07	**52**	C/BE0*	-
53	AD06	-	**54**	AD05	-
55	AD04	-	**56**	GROUND	GROUND
57	-	-	**58**	AD03	-
59	AD02	GROUND	**60**	AD01	-
61	AD00	-	**62**	+5V	-
63	GROUND	GROUND	**64**	-	-

Figure 3. PMC Connector Pin Assignments

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BIOS

The BIOS installed in the PMC-VIDEOPLUS is CRT mode only for a standard Intel PC.

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I/O Connectors

Connector J1 carries the PCI bus to the module.

Pin Number	Signal	Description
1	Red	Analog Red Signal
2	Green	Analog Green Signal
3	Blue	Analog Blue Signal
4	N/C	No Connect
5	DGND	Digital Ground
6	AGND	Analog Ground
7	AGND	Analog Ground
8	AGND	Analog Ground
9	N/C	No Connect
10	DGND	Digital Ground
11	N/C	No Connect
12	USR1	Please refer to the LynxEM4 data sheet for a description of these signals used for monitor controls (e.g., power down, sleep mode).
13	HSYNC	Horizontal Sync Signal
14	VSYNC	Vertical Sync Signal
15	USR0	Please refer to the LynxEM4 data sheet for a description of these signals used for monitor controls (e.g., power down, sleep mode).

Figure 4. Connector J1 Pin Assignments

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Specifications

Form Factor	Single PMC
PCI Interface	33 MHz, 32 bit, slave and master, 3.3 and 5 V signaling
PMC Conformance	PCI Protocol and Electrical Rev 2.1
PCI Interface/GraphicsController	Silicon Motion Lynx3DM4
Graphics Memory	4 Mbytes SGRAM 128 bits wide
Standard CRT Resolutions Supported	640 x 480 x 8, 16, 24bpp @ 60, 75, 85 Hz 800 x 600 x 8, 16, 24bpp @ 60, 75, 85 Hz 1024 x 768 x 8, 16, 24bpp @ 60, 75, 85 Hz 1280 x 1024 x 8, 16, 24bpp @ 60 Hz
Front panel I/O	Standard Female DB15 CRT Connector
Rear panel I/O	No rear panel access
Dimensions	75.0 mm x 150.0 mm
Weight	0.058 kg (0.13 lb.)
Power Requirements	+5.0 VDC at 110 mA typical
Environmental	Operating temperature: 0 to 70°C Humidity: 5 to 95% non-condensing Storage: -40 to +85°C

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Repair

Service Policy

Before returning a product for repair, verify as soon as possible that the suspected unit is at fault; then call the Customer Service Department for a RETURN MATERIAL AUTHORIZATION (RMA) number. Carefully package the unit, in the original shipping carton if it is available, and ship prepaid and insured with the RMA number clearly written on the outside of the package. Include the return address and telephone number of a technical contact. For out-of-warranty repairs, a purchase order for repair charges must accompany the return. SBS Technologies will not be responsible for damages due to improper packaging of returned items. For service of SBS products not purchased directly from SBS, contact your reseller. Products returned to SBS for repair by other than the original customer will be treated as out-of-warranty.

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