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P2-VIDEO

General Purpose CRT Video Graphics Controller for PC•MIP

User Manual

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P2-Video
General Purpose CRT Video
Graphics Controller for PC•MIP

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Product Description

The P2-Video provides a high quality, high performance graphics adapter solution PC•MIP mezzanine card. It supports a variety of SVGA/CRT monitors in single display configurations.

The P2-Video features the Silicon Motion LynxEM4 accelerator. Four Mbytes of high performance on-chip SGRAM handles high resolution graphics displays. Its comprehensive display mode control supports many standard screen resolutions. 24 bpp is supported at a screen resolution of 1024 x 768 at 75 Hz.

Features include a BitBLT engine, MPEG-1, MPEG-2, 2D graphics acceleration, and double-buffered video.

The P2-Video module includes a front panel-mounted standard high-density DB15 for SVGA/CRT output.

Windows device drivers are available for P2-Video. P2-Video is PC99 and ACPI compliant. The P2-Video is compatible with the PC•MIP draft specification (ANSI/VITA-29).

Features

Resolutions up to 1024 x 768 at 75 Hz with 24 bpp on a single display device
4 Mbytes of embedded SGRAM memory 128 bits wide
High density DB15 CRT connector on front panel
Hardware acceleration and BitBlt

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Block Diagram

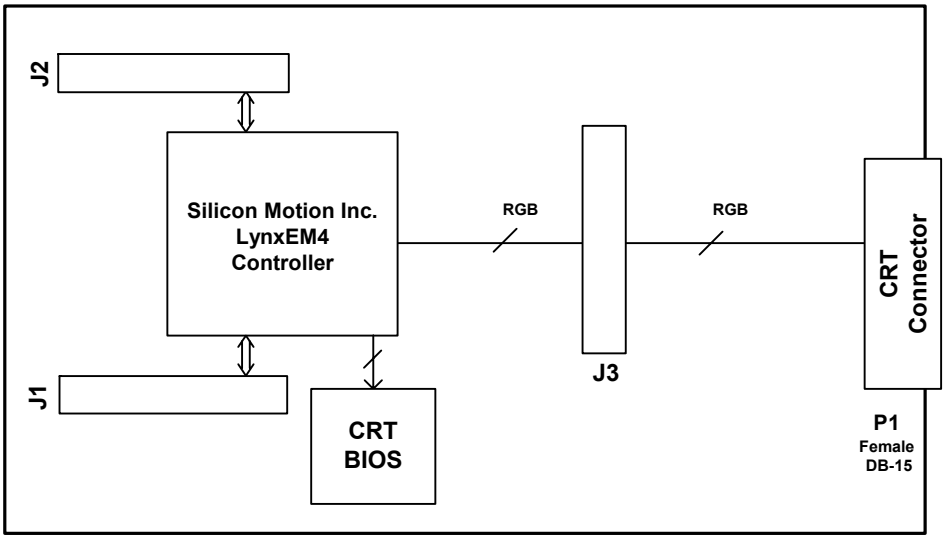


Figure 1. Block Diagram

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PCI Interface

The P2-Video is compliant with PCI 2.1 specifications.

PCI Configuration Space

LynxEM4 Device ID is 0710h with Vendor ID 126Fh.

PCI Interrupts

The P2-Video supports interrupts on the INTA# pin only.

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BIOS

BIOS installed in the P2-Video is CRT mode only for a standard Intel PC.

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I/O Pin Assignments

P1

Connector P1 is a standard high-density Female DB15 CRT connector on the front panel. The figure below lists the pin assignment.

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 2. Connector P1 Pin Assignments

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J1

Connector J1 carries part of the PCI bus to the module. Connector J2 carries the rest of the signals.

J1 Pin	Signal	J1 Pin	Signal
1	Reserved-r	2	Reserved-r
3	Reserved-r	4	Reserved-r
5	–12V	6	TRST#
7	TCK	8	+12V
9	Ground	10	TMS
11	TDO	12	TDI
13	+5V	14	+5V
15	+5V	16	INTA#
17	INTB#	18	INTC#
19	INTD#	20	+5V
21	PRSNT1#	22	Reserved-q
23	Reserved-q	24	+3.3V
25	PRSNT#2	26	Reserved-q
27	Ground	28	Ground
29	Reserved-q	30	Reserved-q
31	Ground	32	RST#
33	CLK	34	+3.3V
35	Ground	36	GNT#
37	REQ#	38	Ground
39	+3.3V	40	Reserved-q
41	AD[31]	42	AD[30]
43	AD[29]	44	+3.3V
45	Ground	46	AD[28]
47	AD[27]	48	AD[26]
49	AD[25]	50	Ground
51	+3.3V	52	AD[24]
53	C/BE[3]#	54	IDSEL
55	AD[23]	56	+3.3V
57	Ground	58	AD[22]
59	AD[21]	60	AD[20]
61	AD[19]	62	Ground
63	+3.3V	64	AD[18]

Figure 3. Connector J1 Pin Assignments

J2

Connector J2 carries part of the PCI bus to the module. Connector J1 carries the rest of the signals.

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J2 Pin	Signal	J2 Pin	Signal
64	AD[17]	63	AD[16]
62	C/BE[2]#	61	+3.3V
60	Ground	59	FRAME#
58	IRDY#	57	Ground
56	+3.3V	55	TRDY#
54	DEVSEL#	53	Ground
52	Ground	51	STOP#
50	LOCK#	49	+3.3V
48	PERR#	47	SDONE
46	+3.3V	45	SBO#
44	SERR#	43	Ground
42	+3.3V	41	PAR
40	C/BE[1]#	39	AD[15]
38	AD[14]	37	+3.3V
36	Ground	35	AD[13]
34	AD[12]	33	AD[11]
32	AD[10]	31	Ground
30	M66EN	29	AD[09]
28	Ground	27	Ground
26	AD[08]	25	C/BE[0]#
24	AD[07]	23	+3.3V
22	+3.3V	21	AD[06]
20	AD[05]	19	AD[04]
18	AD[03]	17	Ground
16	Ground	15	AD[02]
14	AD[01]	13	AD[00]
12	+3.3V	11	+3.3V
10	ACK64#	9	REQ64#
8	+5V	7	+5V
6	+5V	5	+5V
4	Reserved-r	3	Reserved-r
2	Reserved-r	1	Reserved-r

Figure 4. Connector J2 Pin Assignments

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Specifications

Form Factor	PC•MIP Type II single wide
PC•MIP Interface	PC•MIP draft specification, Revision 0.9
PCI Interface	33 MHz, 32-bit, slave and master
PMC Conformance	PCI Protocol and Electrical Rev 2.1
PCI Interface/GraphicsController	Silicon Motion LynxEM4
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 16, 24bpp @ 60, 75 Hz
Front panel I/O	Standard Female DB15 CRT Connector
Rear panel I/O	No rear panel access
Dimensions	47.0 mm x 99.0 mm
Weight	0.0385 kg (0.085 lb.)
Power Requirements	+3.3 VDC at 150 mA max +5.0 VDC at 10 mA max
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 well 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 this is available, and ship prepaid and insured with the RMA number clearly written on the outside of the package. Include a return address and the 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 SBS Technologies products not purchased directly from SBS Technologies contact your reseller. Products returned to SBS Technologies for repair by other than the original customer will be treated as out-of-warranty.

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