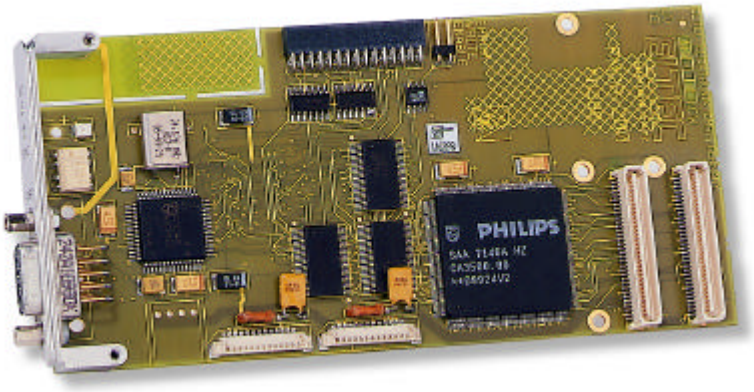
PMGrabber_2



Hardware Manual

Revision 1A

ELTEC
elektronik mainz

Revision History

Revision	Changes	Date
1A	First Edition, valid for Hardware revision 1A,	27.04.2000 CW

WARNING ! This equipment generates and can radiate radio frequencies. If not installed in accordance with the instruction manual, it may cause interference to radio communications. The equipment has not been tested for compliance with the limits for class A computing devices, pursuant to subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference, but temporary usage is permitted as per regulations. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense is required to take whatever measures may be required to shield the interference.

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1 Specification

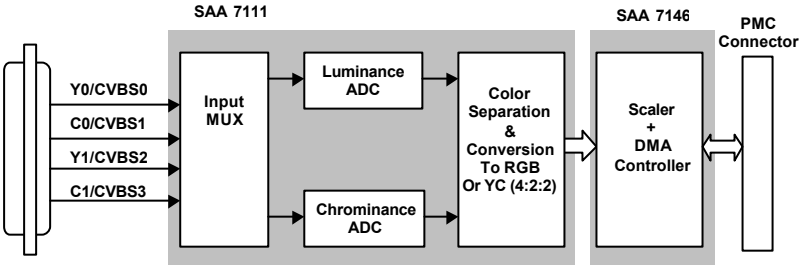
1.1 Main Features

- Up to two color camera inputs for SVHS (Y/C)-or up to four input's for CVBS cameras
- Real- time acquisition of images or image sequences directly into main memory of host computer
- Single size PMC module
- Power supply for cameras (12V)
- PCI 2.1 compliant

1.2 Technical Details

The PMGrabber_2 is a frame grabber PCI mezzanine card with two color-video inputs for use with SVHS (Y/C) cameras or four color video inputs for use with CVBS cameras. Based on the PC_EYE® 4 PC frame grabber it provides for the basic features of standard color video frame grabbing.

Figure 1—1: Block Diagram



The cameras are connected via the 15 pol. MIN-D (high density) at the front of the module. With its video decoder (SAA7111) the PMGrabber_2 digitizes and processes the incoming video signals one at a time. Its four inputs may be configured to function as four separate CVBS inputs or two pairs of Y/C inputs. After digitization the image data is transferred to the PCI DMA controller (SAA 7146). This controller is capable of rescaling the image data and transferring it into the hosts main memory or graphics card. It does this using selecable data formats such as RGB32, -24, -16, -15 (bit), YUV4:2:2, -4:4:4 (24-bit/pixel), or monochrome 8-bit. There is no additional image memory onboard the module.

1.3 Ordering Information

Hardware:

PMGrabber_2 V-PMGR-200x

Documentation: V-PMGR-992x

Related products:

PMGrabber_1 Order No. V-PMGR-100x

Flexible PMC framegrabber module for standard monochrome cameras.

PMGrabber_3 Order No. V-PMGR-300x

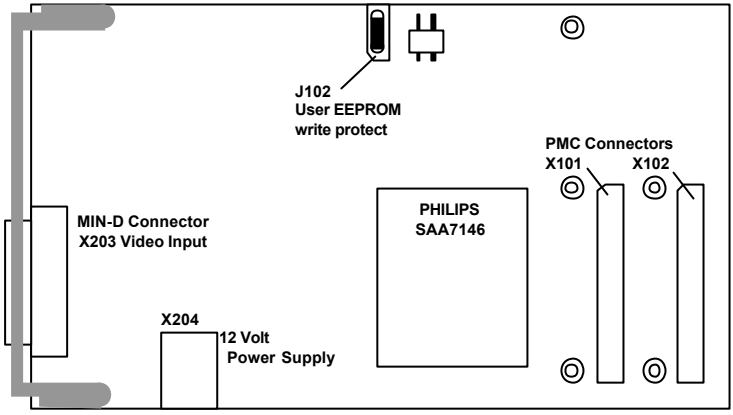
PMC frame grabber for security applications with up to eight CVBS inputs.

Appropriate CPU boards from ELTEC

EUROCOM®138, BAB740, HiPerCam®_2

2 Connector Assignments

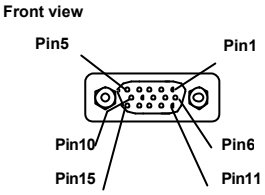
Figure 2—1: **Connector Locations**



2.1 Frontpanel Connector

The connector X203 located at the frontpanel is intended for analog video input. It has the same mechanical appearance as a VGA video output connector and should not be confused with the latter. To avoid damage to the hardware, do not connect a VGA monitor to X203! On pin 14 and 15 of X203 a voltage of +12V is delivered to power the camera(s).The current that can be drawn from each pin is limited by a PTC resistor (Imax ca. 500mA). It is recommended to power different cameras from different pins, to avoid to much load on one pin.

Table 2—1: MIN-D Connector X203



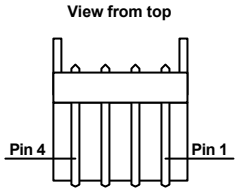
Pin #	Signal		
1	video input 0 (Y0)	SVHS camera 1	CVBS camera 1
2	Video input 1 (C0)		CVBS camera 2
3	video input 2 (Y1)	SVHS camera 2	CVBS camera 3
4	video input 3 (C1)		CVBS camera 4
5	signal ground		
6	signal ground		
7	signal ground		
8	signal ground		
9	reserved		do not connect
10	signal ground		
11	reserved		do not connect
12	signal ground		
13	signal ground		
14	power 0		+12V, 500mA max.
15	power 1		+12V, 500mA max.

2.2 Power Supply Connector X204

If you intend to power your camera from the PMGrabber_2, the internal floppy type connector X204 has to be used. Use the cable 'H-PMGR-800A' coming with the module to establish a connection to the appropriate connector on the PMC carrier.

Table 2—2: Power Supply Connector X204

Pin#	Signal
1	nc
2	signal ground
3	signal ground
4	+12V



2.3 PMC Connectors (PCIBus Connectors)

Table 2—3: Pinout of PMC Connectors (PCIBus)

X101		
Pin#	PMGR-200	spec.
1	nc	+12V
2	nc	TRST#
3	nc	TMS
4	Conn. to TDI	TDO
5	Conn. to TDO	TDI
6	Ground	Ground
7	Ground	Ground
8	nc	PCI-RSVD
9	nc	PCI-RSVD
10	nc	PCI-RSVD
11	nc	BUSMODE2#
12	+3.3V	+3.3V
13	RST#	RST#
14	nc	BUSMODE3#
15	+3.3V	+3.3V
16	nc	BUSMODE4#
17	nc	PCI-RSVD
18	Ground	Ground
19	AD(30)	AD(30)
20	AD(29)	AD(29)
21	Ground	Ground
22	AD(26)	AD(26)
23	AD(24)	AD(24)
24	+3.3V	+3.3V
25	IDSEL	IDSEL
26	AD(23)	AD(23)
27	+3.3V	+3.3V
28	AD(20)	AD(20)
29	AD(18)	AD(18)
30	Ground	Ground
31	AD(16)	AD(16)
32	C/BE(2)#	C/BE(2)#
33	Ground	Ground
34	nc	PMC-RSVD
35	TRDY	TRDY#
36	+3.3V	+3.3V
37	Ground	Ground
38	STOP#	STOP#
39	PERR	PERR
40	Ground	Ground
41	+3.3V	+3.3V
42	nc	SERR#
43	C/BE(1)#	C/BE(1)#

Pin#	PMGR-200	spec.
44	Ground	Ground
45	AD(14)	AD(14)
46	AD(13)	AD(13)
47	Ground	Ground
48	AD(10)	AD(10)
49	AD(8)	AD(8)
50	+3.3V	+3.3V
51	AD(7)	AD(7)
52	nc	PMC-RSVD
53	+3.3V	+3.3V
54	nc	PMC-RSVD
55	nc	PMC-RSVD
56	Ground	Ground
57	nc	PMC-RSVD
58	nc	PMC-RSVD
59	Ground	Ground
60	nc	PMC-RSVD
61	nc	ACK64#
62	+3.3V	+3.3V
63	Ground	Ground
64	nc	PMC-RSVD

PMC Connectors (PCIBus connectors)

X102		
Pin#	PMGR-200	spec.
1	nc	TCK
2	Testpoint 101	-12V
3	Ground	Ground
4	INTA#	INTA#
5	nc	INTB#
6	nc	INTC#
7	nc	BUSMODE1#
8	+5V	+5V
9	nc	INTD#
10	nc	PCI-RSVD
11	Ground	Ground
12	nc	PCI-RSVD
13	CLK	CLK
14	Ground	Ground
15	Ground	Ground
16	GNT#	GNT#
17	REQ#	REQ#
18	+5V	+5V
19	nc	V(I/O)
20	AD(31)	AD(31)
21	AD(28)	AD(28)
22	AD(27)	AD(27)
23	AD(25)	AD(25)
24	Ground	Ground
25	Ground	Ground

26	C/BE(3)#	C/BE(3)#
27	AD(22)	AD(22)
28	AD(21)	AD(21)
29	AD(19)	AD(19)
30	+5V	+5V
31	nc	V(I/O)
32	AD(17)	AD(17)
33	FRAME#	FRAME#
34	Ground	Ground
35	Ground	Ground
36	IRDY#	IRDY#
37	DEVSEL#	DEVSEL#
38	+5V	+5V
39	Ground	Ground
40	nc	LOCK#
41	nc	SDONE#
42	nc	SBO#
43	PAR	PAR
44	Ground	Ground
45	nc	V(I/O)
46	AD(15)	AD(15)
47	AD(12)	AD(12)
48	AD(11)	AD(11)
49	AD(9)	AD(9)
50	+5V	+5V
51	Ground	Ground
52	C/BE(0)#	C/BE(0)#
53	AD(6)	AD(6)
54	AD(5)	AD(5)
55	AD(4)	AD(4)
56	Ground	Ground
57	nc	V(I/O)
58	AD(3)	AD(3)
59	AD(2)	AD(29
60	AD(1)	AD(1)
61	AD(0)	AD(0)
62	+5V	+5V
63	Ground	Ground
64	nc	REQ64#

3 Jumpers

There is only one jumper which may be utilized by the user: J102. Setting this jumper will activate write protection of the user portion within the modules revision EEPROM. If you intend to write your own user data into this device make sure J102 not be set.

4 Technical Data

PMC:

32-bit, 33MHz - interface, PCI 2.2 - compliant

Single slot module

3.3V operation of PCI - interface, 5V needed for internal circuits

Connectors:

Video inputs 2 x Y/C or 4 x CVBS on a 3-row 15-pin MIN-D, 1Vpp nom.

2 x 12V camera power supply with 500mA max. current each

Environmental Conditions:

Storage temperature -20°C to +70°C

Operating temperature 0°C to +45°C (2m/s forced air cooling)

Maximum operating humidity 85% rel.

Power requirements:

0.5A max., 0.3A typ. at +5VDC +-5%

1.0A max., 0.4A typ. at +3.3VDC +-5%

ELTEC Elektronik AG
Support, Mainz/Germany
Phone: +49 (6131) 918-520
Fax: +49 (6131) 918-196
E-Mail: support@eltec.de
Web: http://www.eltec.com