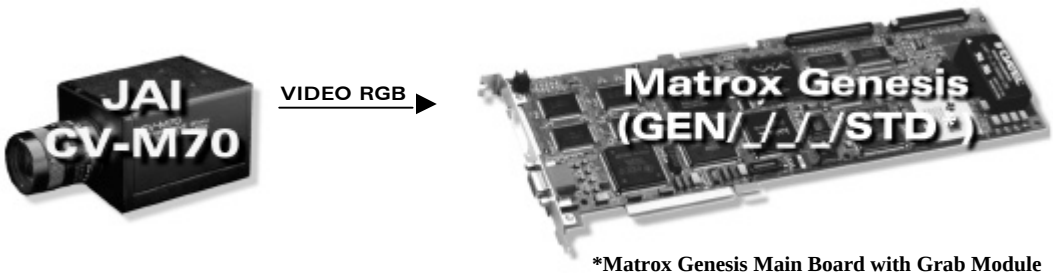
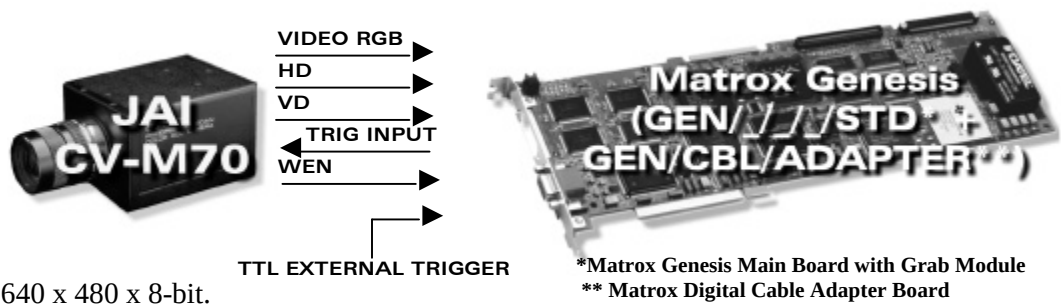


Application Note:

Interfacing non-standard cameras to Matrox Genesis

JAI CV-M70

November 9, 1998

Camera Descriptions	• 640 x 480 x 8-bit @ 30 fps. • Single channel analog video output. • Progressive scan. • External sync. • Internal exposure control. • Pixel clock: 12.637 MHz
Interface modes	• Continuous, asynchronous reset
Camera Interface Briefs	Mode 1: Continuous  *Matrox Genesis Main Board with Grab Module • 640 x 480 x 8-bit @ 30 fps. • Analog RGB video output. • Progressive scan. • Matrox Genesis receiving RGB video signals from camera. • DCF used: CVM70AC.DCF Mode 2: Asynchronous Reset  *Matrox Genesis Main Board with Grab Module ** Matrox Digital Cable Adapter Board • 640 x 480 x 8-bit. • Analog RGB video output. • Progressive scan. • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending EXPOSURE1 (TRIGGER INPUT) signal to camera. • Matrox Genesis receiving HSYNC (HD), VSYNC (VD), TRIGGER (WEN) and RGB video signals from camera. • DCF used: CVM70AT.DCF

Application Note:

Interfacing non-standard cameras to Matrox Genesis

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Camera Interface Details	Switch settings (SW1 on rear panel of camera) : Mode 1 : Continuous mode <table><tr><th>OFF</th><th>ON</th><th></th></tr><tr><td>•</td><td></td><td>1 shutter data 2SB</td></tr><tr><td>•</td><td></td><td>2 shutter data 1SB</td></tr><tr><td>•</td><td></td><td>3 shutter data LSB</td></tr><tr><td></td><td>•</td><td>4 electronic shutter</td></tr><tr><td></td><td>•</td><td>5 scanning system</td></tr><tr><td>•</td><td></td><td>6 gamma correction</td></tr><tr><td>•</td><td></td><td>7 master gain</td></tr><tr><td>•</td><td></td><td>8 local/remote</td></tr></table> Switches 4 and 5 set to ON, all others are set to OFF Mode 2 : Asynchronous reset mode <table><tr><th>OFF</th><th>ON</th><th></th></tr><tr><td>•</td><td></td><td>1 shutter data 2SB</td></tr><tr><td>•</td><td></td><td>2 shutter data 1SB</td></tr><tr><td>•</td><td></td><td>3 shutter data LSB</td></tr><tr><td>•</td><td></td><td>4 electronic shutter</td></tr><tr><td></td><td>•</td><td>5 Scanning system</td></tr><tr><td>•</td><td></td><td>6 gamma correction</td></tr><tr><td>•</td><td></td><td>7 master gain</td></tr><tr><td>•</td><td></td><td>8 local/remote</td></tr></table> Switch 5 set to ON, all others are set to OFF	OFF	ON		•		1 shutter data 2SB	•		2 shutter data 1SB	•		3 shutter data LSB		•	4 electronic shutter		•	5 scanning system	•		6 gamma correction	•		7 master gain	•		8 local/remote	OFF	ON		•		1 shutter data 2SB	•		2 shutter data 1SB	•		3 shutter data LSB	•		4 electronic shutter		•	5 Scanning system	•		6 gamma correction	•		7 master gain	•		8 local/remote
OFF	ON																																																						
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•		8 local/remote																																																					
Cabling Requirements	Mode 1: Continuous • IMG-7W2-TO-5BNC cable required for video output of camera. • Red BNC connected to pin #3 (9-pin D-SUB connector-Red Video Source), Green BNC connected to pin #4 (9-pin D-SUB connector-Green Video Source), Blue BNC connected to pin #5 (9-pin D-SUB connector-Blue Video Source) and Black BNC connected to pin #7 (9-pin D-SUB connector-Black Int. Sync Out). Mode 2: Asynchronous Reset • IMG-7W2-TO-5BNC and DBHD68-TO-OPEN cables required for video output of camera, and sync and control output. • Red, Green, Blue and Black BNC connections as in Mode 1: Continuous. • Connections between the 6-pin multi connector (RS-232C) of the camera and the 68-pin connector of the Matrox Genesis are as follows: JAI CV-M70 (6-pin multi connector) <table><tr><th>Pin name</th><th>Pin no.</th><th></th><th>Pin name</th><th>Pin no.</th></tr><tr><td>TRIGGER INPUT</td><td>05</td><td>←</td><td>EXPOSURE1, OUTPUT, TTL</td><td>24</td></tr><tr><td>WEN OUTPUT</td><td>06</td><td>→</td><td>TRIGGER, INPUT, TTL</td><td>67</td></tr></table> GEN/_/_/_STD (DBHD68-TO-OPEN) (68-pin digital interface connector)	Pin name	Pin no.		Pin name	Pin no.	TRIGGER INPUT	05	←	EXPOSURE1, OUTPUT, TTL	24	WEN OUTPUT	06	→	TRIGGER, INPUT, TTL	67																																							
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Application Note:

Interfacing non-standard cameras to Matrox Genesis

JAI CV-M70

November 9, 1998

Cabling Requirements (continued)	Connections between the 12-pin multi connector (DC/Ext. Sync) of the camera and the 68-pin connector of the Matrox Genesis are as follows:			
	JAI CV-M70 (12-pin multi connector)		GEN/_/_/_/STD (DBHD68-TO-OPEN) (44-pin digital interface connector)	
	<i>Pin name</i>	<i>Pin no.</i>	<i>Pin name</i>	<i>Pin no.</i>
	HD	06	→ HSYNC, INPUT, TTL	34
	VD	07	← EXPOSURE2, OUTPUT, TTL	58

The DCF(s) mentioned in this application note can be found on the MIL and Native Library CD, or our FTP site ([ftp.matrox.com](ftp:matrox.com)). The information furnished by Matrox Electronics System, Ltd. is believed to be accurate and reliable. Please verify all interface connections with camera documentation or manual. Contact your local sales representative or Matrox Sales office or Matrox Imaging Applications at 514-822-6061 for assistance.

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