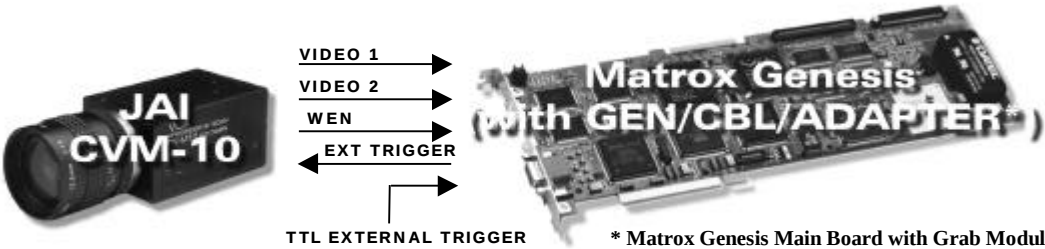
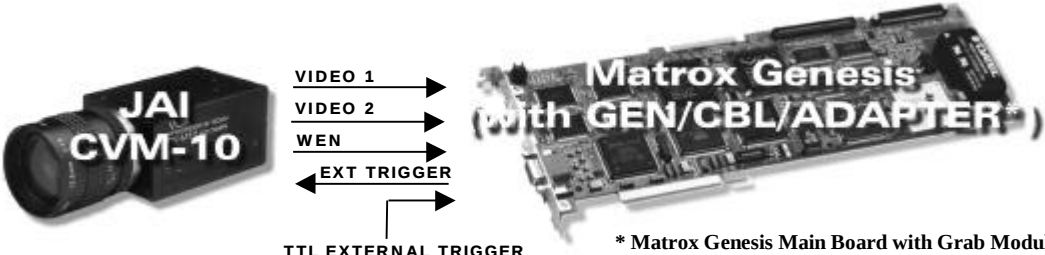


Application Note:

Interfacing non-standard cameras to Matrox Genesis

JAI CV-M10

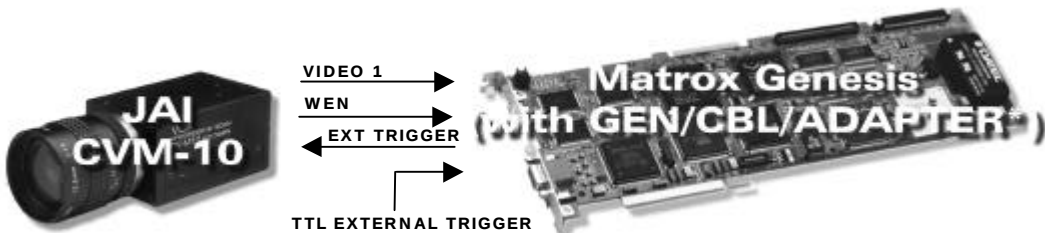
November 23, 1998

Camera Descriptions	• 640 x 480 @ 30 fps (RS-170) & 768 x 494 @ 25 fps (CCIR). • Single or dual channel analog video output. • Progressive scan. • Internal (composite) or external sync. • Internal exposure control.
Interface Mode	• Trigger (dual and single tap).
Camera Interface Briefs	Mode 1: Trigger (RS-170-dual tap)  * Matrox Genesis Main Board with Grab Module ** Matrox Digital Cable Adapter Board • 640 x 480 x 8-bit. • Dual channel analog (composite) video. • Progressive scan. • Pixel clock: 12.27 MHz • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending TTL EXPOSURE1 (EXT TRIGGER) signal to camera. • Matrox Genesis receiving TTL DIGTRIG (WEN) and video signals from camera. • DCF used: CVM10AB.DCF Mode 2: Trigger (CCIR-dual tap)  * Matrox Genesis Main Board with Grab Module ** Matrox Digital Cable Adapter Board • 768 x 576 x 8-bit. • Dual channel analog (composite) video. • Progressive scan. • Pixel clock: 14.75 MHz • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending TTL EXPOSURE1 (EXT TRIGGER) signal to camera. • Matrox Genesis receiving TTL DIGTRIG (WEN) and video signals from camera. • DCF used: CVM10CAB.DCF

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Camera Interface Briefs (continued)	Mode 3: Trigger (CCIR-single tap)  * Matrox Genesis Main Board with Grab Module ** Matrox Digital Cable Adapter Board • 768 x 576 x 8-bit. • Single channel analog (composite) video. • Progressive scan. • Pixel clock: 14.75 MHz • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending TTL EXPOSURE1 (EXT TRIGGER) signal to camera. • Matrox Genesis receiving TTL DIGTRIG (WEN) and video signals from camera. • DCF used: CVM10CA.DCF																																				
Camera Interface Details	Switch settings (switches on rear panel of camera) : Mode 1, 2: Trigger (dual tap) <table border="1" data-bbox="592 1102 738 1407"> <thead> <tr> <th>OFF</th> <th>ON</th> </tr> </thead> <tbody> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> </tbody> </table> 1 Shutter speed 2 shutter speed 3 shutter speed 4 trigger mode 5 interlace mode 6 gamma mode 7 gain setting 8 gain setting Switches 4 and 5 set to OFF, all others can be set by the user to desired position Mode 3: Trigger (CCIR-single tap) <table border="1" data-bbox="592 1512 738 1816"> <thead> <tr> <th>OFF</th> <th>ON</th> </tr> </thead> <tbody> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td></td><td>•</td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> <tr><td>•</td><td></td></tr> </tbody> </table> 1 Shutter speed 2 shutter speed 3 shutter speed 4 trigger mode 5 interlace mode 6 gamma mode 7 gain setting 8 gain setting Switch 4 set to OFF, 5 set to ON, all others can be set by the user to desired position	OFF	ON	•		•		•		•		•		•		•		•		OFF	ON	•		•		•		•			•	•		•		•	
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Cabling Requirements	Mode 1, 2, : Trigger (dual tap)			
	• IMG-7W2-TO-5BNC cable required for video output of camera. • Red BNC connected to Video2 OUT, Green BNC connected to Video1 OUT. • Digital cable adapter board required. • Gray BNC connected to External Trigger source. • The connections between the Matrox Genesis and the camera are as follows:			
	PLS/CBL/CABLE		JAI CVM-10	
	(68-pin connector)		(6-pin male HIROSE connector)	
	Pin name	Pin no.	Pin name	Pin no.
	EXPOSURE1, OUTPUT	24	→ TRIGGER IN	5
	DIG TRIG, INPUT	67	→ VALID OUT	6
Mode 3, : Trigger (single tap)				
• IMG-7W2-TO-5BNC cable required for video output of camera. • Red BNC connected to Video1 OUT. • Digital cable adapter board required. • Gray BNC connected to External Trigger source.				
• For all modes: The connections between the 12-pin lens connector of the camera and the power supply are as follows:				
	POWER SUPPLY		JAI CV-M10	
			(12-pin connector)	
			Pin name	Pin no.
	12 Volts		DC+12V in	2
	GROUND		GND	1

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>). 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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