

Application Note:

Interfacing non-standard cameras to Matrox Pulsar

Xillix Mi 1400-10S

June 20, 1997

Camera Descriptions	• 1318 x 1037 X 10-bits @ 5 fps (max) • Digital video output (RS-422). • Non-interlaced. • External exposure control. • Internal hsync, vsync and pixel clock signals (RS-422) supplied externally. • 8 MHz pixel clock rate.
Interface Mode	• Trigger (software, external)
Camera Interface Briefs	Mode 1: Trigger mode (Software) • 1318 x 1037 x 10-bit. • Digital video (RS-422). • Non-interlaced. • Matrox Pulsar sending exposure signals to camera. • Matrox Pulsar receiving RS-422 HSYNC, VSYNC, Pixel clock, and line clock signals from camera. • DCFs used: MI1400DS.DCF Mode 2: Trigger mode (external) • 1318 x 1037 x 10-bit • Digital video (RS-422). • Non-interlaced • Matrox Pulsar receiving RS-422/TTL external trigger signal • Matrox Pulsar sending exposure signal to camera • Matrox Pulsar receiving RS-422 hsync, vsync, pixel clock, and line clock signals from camera • DCFs used: MI1400D.DCF

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Cabling Requirements	Mode 1: Trigger mode (Software)			
	- PULSAR/DIG/MOD required for digital data and syncs in RS-422 format. - The following connections should be made between the 50-pin RS-422 PCB connector of the camera and the 68-pin connector of the PLS/CBL/OPEN:			
	PLS/CBL/OPEN (PULSAR) (68-pin connector)		Xillix Mi1400-10S (50-pin PCB connector)	
	<i>Pin name</i>	<i>Pin no.</i>	<i>Pin name</i>	<i>Pin no.</i>
	GROUND	12	GND	1
	DATA0+	20 ←	DATA 1	2
	DATA1+	19 ←	DATA 2	3
	DATA2+	16 ←	DATA 3	4
	DATA3+	15 ←	DATA 4	5
	DATA4+	14 ←	DATA 5	6
	DATA5+	13 ←	DATA 6	7
	DATA6+	11 ←	DATA 7	8
	DATA7+	10 ←	DATA 8	9
	DATA8+	9 ←	DATA 9	10
	DATA9+	8 ←	DATA 10	11
	DATA10+	7 ←	DATA 11	12
	DATA11+	6 ←	DATA 12	13
	GROUND	46	GND	26
	DATA0-	54 ←	<u>DATA 1</u>	27
	DATA1-	53 ←	<u>DATA 2</u>	28
	DATA2-	50 ←	<u>DATA 3</u>	29
	DATA3-	49 ←	<u>DATA 4</u>	30
	DATA4-	48 ←	<u>DATA 5</u>	31
	DATA5-	47 ←	<u>DATA 6</u>	32
	DATA6-	45 ←	<u>DATA 7</u>	33
	DATA7-	44 ←	<u>DATA 8</u>	34
	DATA8-	43 ←	<u>DATA 9</u>	35
	DATA9-	42 ←	<u>DATA 10</u>	36
	DATA10-	41 ←	<u>DATA 11</u>	37
	DATA11-	40 ←	DATA 12	38
	GND	1	<u>MODE</u>	17
	TTL_USER0	31 →	MODE	42
	TTL_USER0	31 →	FREQ 1	15
	TTL_USER0	31 →	FREQ 2	16
	GND	68	<u>FREQ 1</u>	40
	GND	68	<u>FREQ 2</u>	41
	HSYNC+	26 ←	<u>LINE CLOCK</u>	19
	HSYNC-	60 ←	LINE CLOCK	44
	CLKIN+	29 ←	<u>PIXEL CLOCK</u>	22
	CLKIN-	63 ←	PIXEL CLOCK	47
	EXPOSURE1+	30 →	<u>EXPOSURE</u>	24
	EXPOSURE1-	64 →	EXPOSURE	49
	(continued)			

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Cabling Requirements (continued)	GROUND	34		GND	18
	GROUND	35		GND	43
	DATA 12+	5		GND	18
	DATA13+	4	←	GND	18
	DATA 14+	3	←	GND	43
	DATA 15+	2	←	GND	43
	DATA 12-	39	←		
	DATA 13-	38	←		
	DATA 14-	37	←		
	DATA 15-	36	←		
	TTL_USR1	32	→		
	Mode 2: Trigger mode (external)				

All connections are the same as in Mode 1: (Trigger mode -software) except that IMG-7W2-TO-5BNC required for TTL external trigger source and TTL external trigger source should be connected to the TTL Trigger Input of the IMG-7W2-TO-5BNC cable.

The DCF(s) mentioned in this application note can be found on the MIL and MIL-Lite CD, or our FTP site ([ftp.matrox.com](ftp: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.

Corporate Headquarters:
Canada and U.S.A.
Matrox Electronic Systems Ltd.
1055 St.Regis Blvd.
Dorval, Quebec, Canada
H9P 2T4
Tel: (514) 685-7230
Fax: (514) 822-6273

