

Application Note:

Interfacing non-standard cameras to Matrox Meteor-II



XILLIX PMI 1400

April 9, 1999

Camera Descriptions	• $1317 \times 1037 \times 12$-bits @ 5 fps (max) • Single channel RS-422 digital video output. • Progressive scan. • External exposure control. • Maximum pixel clock rate: 8 MHz.
Interface mode	• Control (high resolution mode-software reset)
Camera Interface Briefs	Mode: Control (high resolution mode-software reset) • $1308 \times 1024 \times 12$-bit @ 2fps. • Single channel RS-422 digital video. • Progressive scan • Matrox Meteor-II sending EXPOSURE (EXPOSE) signal to camera. • Matrox Meteor-II receiving HSYNC (LINE ENABLE), VSYNC (FRAME ENABLE), PIXEL CLOCK (PIXEL STROBE), and video signals from camera. • DCF used: PMI1400.DCF
Camera Interface Details	Mode: Control (high resolution mode-software reset) • Matrox Meteor-II sends the periodic EXPOSURE (EXPOSE) signal to the camera. The camera initiates exposure upon receipt of the rising edge of the signal, and exposes for as long as the exposure signal is high. • Frame Rate: for this dcf, the frame rate is 2 frames per second. • Exposure Time: exposure time can be adjusted and controlled by adjusting the width of the EXPOSURE (EXPOSE) signal in Matrox Intellicam. Consult the Matrox Intellicam User Guide for more information. The default exposure time for this DCF is 0.41 second.

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Cabling Requirements	Mode: Control (high resolution mode-software reset)			
	- DBHD100-TO-OPEN cable required for digital data, synchronization and control signals in RS-422 format. - Connections between the 50-pin connector of the camera and the 100-pin connector of the Matrox Meteor-II/Digital are as follows:			
	XILLIX PMI 1400		METEOR2-DIG/4/R	
	(50-pin connector)		(100-pin connector)	
	Pin name	Pin no.	Pin name	Pin no.
	EXPOSE +	02	← EXPOSURE1, OUTPUT, +	95
	EXPOSE -	27	← EXPOSURE1, OUTPUT, -	96
	PIXEL STROBE +	04	→ CLOCK, INPUT, +	39
	PIXEL STROBE -	29	→ CLOCK, INPUT, -	40
	FRAME ENABLE +	06	→ VSYNC, INPUT, +	35
	FRAME ENABLE -	31	→ VSYNC, INPUT, -	36
	LINE ENABLE +	07	→ HSYNC, INPUT, +	33
	LINE ENABLE -	32	→ HSYNC, INPUT, -	34
	GND	08	→ GROUND	37
	GND	33	→ GROUND	38
	MODE CONTROL 3 +	09	← USER, OUTPUT, 0 +	91
	MODE CONTROL 3 -	34	← USER, OUTPUT, 0 -	92
	MODE CONTROL 1 +	11	← USER, OUTPUT, 1 +	93
	MODE CONTROL 1 -	36	← USER, OUTPUT, 1 -	94
	DATA 12 (MSB) +	13	→ DATA, INPUT, 11+	23
	DATA 12 -	38	→ DATA, INPUT, 11-	24
	DATA 11 +	14	→ DATA, INPUT, 10+	21
	DATA 11 -	39	→ DATA, INPUT, 10-	22
	DATA 10 +	15	→ DATA, INPUT, 9+	19
	DATA 10 -	40	→ DATA, INPUT, 9-	20
	DATA 9 +	16	→ DATA, INPUT, 8+	17
	DATA 9 -	41	→ DATA, INPUT, 8-	18
	DATA 8 +	17	→ DATA, INPUT, 7+	15
	DATA 8 -	42	→ DATA, INPUT, 7-	16
	DATA 7 +	18	→ DATA, INPUT, 6+	13
	DATA 7 -	43	→ DATA, INPUT, 6-	14
	DATA 6 +	19	→ DATA, INPUT, 5+	11
	DATA 6 -	44	→ DATA, INPUT, 5-	12
	DATA 5 +	20	→ DATA, INPUT, 4+	09
	DATA 5 -	45	→ DATA, INPUT, 4-	10
	continued			

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Cabling Requirements (cont.)	XILLIX PMI 1400 (50-pin connector)		METEOR2-DIG/4/R (100-pin connector)	
	Pin name	Pin no.	Pin name	Pin no.
	DATA 4 +	21	→	DATA, INPUT, 3+ 07
	DATA 4 -	46	→	DATA, INPUT, 3- 08
	DATA 3 +	22	→	DATA, INPUT, 2+ 05
	DATA 3 -	47	→	DATA, INPUT, 2- 06
	DATA 2 +	23	→	DATA, INPUT, 1+ 03
	DATA 2 -	48	→	DATA, INPUT, 1- 04
	DATA 1 (LSB) +	24	→	DATA, INPUT, 0+ 01
	DATA 1 (LSB) -	49	→	DATA, INPUT, 0- 02
	GND	25	→	GROUND 37

The DCF(s) mentioned in this application note can be found on the MIL/MIL-Lite 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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