

Application Note:

Interfacing non-standard cameras to Matrox Meteor-II



PULNiX TM-6702

September 27, 1999

Camera Descriptions	• 648 x 484 x 8-bit @ 30fps or 60fps. • Single channel analog video output. • Progressive scan. • External or internal exposure control. • Internal or external sync. • 25.49 / 12.745 MHz pixel clock rate.
Interface modes	• Continuous, Asynchronous reset (External pulse width control)
Camera Interface Briefs	Mode 1 : Continuous *Matrox Meteor-II/Multi-Channel Board • 640 x 480 x 8-bit @ 60fps. • Single channel analog video. • Progressive scan. • Matrox Meteor-II receiving continuous video signals from camera. • DCF used: M2M6702C.DCF Mode 2 : Asynchronous Reset (External pulse width control) *Matrox Meteor-II/Multi-Channel Board • 640 x 480 x 8-bit. • Single channel analog video. • Progressive scan. • Matrox Meteor-II receiving TTL external trigger. • Matrox Meteor-II sending EXPOSURE1 (VINIT) signal to camera to initiate exposure and control exposure time. • Matrox Meteor-II receiving video signals from camera. • DCF used: M2M6702A.DCF

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Camera Interface Details	Mode 1 : Continuous • Frame rate: Matrox Meteor-II receives the continuous video from the camera at a frame rate equal to 60 frames per second. • Exposure time: Exposure time is inversely proportionate to the frame rate (no shutter) or determined by the shutter setting. Refer to the camera manual for more information. Camera switch settings: Refer to the camera manual for additional information. Switches for this mode should be set as follows: Mode 1: Continuous <table><tr><th>Switches</th><th>Settings</th></tr><tr><td>Shutter (Speed)</td><td>As desired</td></tr><tr><td>ASY / NORM</td><td>NORM</td></tr><tr><td>60 Hz / 30 Hz</td><td>60 Hz</td></tr></table> Mode 2 : Asynchronous Reset (External pulse width control) • Once it has received the external trigger signal, Matrox Meteor-II sends the EXPOSURE1 (VINIT) signal to the camera with a width equal to the desired exposure time (following a delay of 285.75ms (9H) from the leading edge of the EXPOSURE1 (VINIT) signal). • Frame rate: The frame rate is determined by the frequency of the external trigger signal. • Exposure time: The active and inactive period of the EXPOSURE1 (VINIT) signal is the exposure time. Default exposure time for this DCF is equal to 222.4 ms. In order to change the width and deployment time of EXPOSURE1 (VINIT) use the Exposure Settings menu tab in Matrox Intellicam. Consult the Matrox Intellicam User Guide for more information. • Minimum exposure width: minimum EXPOSURE1 (VINIT) pulse width is equal to 200ns. • Camera switch settings: Refer to the camera manual for additional information. Switches for this mode should be set as follows: Mode 2: Asynchronous <table><tr><th>Switches</th><th>Settings</th></tr><tr><td>Shutter (Speed)</td><td>9</td></tr><tr><td>ASY / NORM</td><td>ASY</td></tr><tr><td>60 Hz / 30 Hz</td><td>60 Hz</td></tr></table>	Switches	Settings	Shutter (Speed)	As desired	ASY / NORM	NORM	60 Hz / 30 Hz	60 Hz	Switches	Settings	Shutter (Speed)	9	ASY / NORM	ASY	60 Hz / 30 Hz	60 Hz
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Shutter (Speed)	9																
ASY / NORM	ASY																
60 Hz / 30 Hz	60 Hz																
Cabling Requirements	Mode 1 : Continuous • DBHD44-TO-8BNC/O (open ended) cable required for video output of camera. • The following connection should be made between the 12-pin connector of the camera and Matrox Meteor-II are as follows: METEOR2-MC/_ (44-pin connector) Pin name VID_IN1 Pin no. 15 ← PULNiX TM-6702 (12-pin connector) Pin name VIDEO OUT Pin no. 04																

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Cabling Requirements	Modes 2 : Asynchronous Reset (External pulse width control)			
	• DBHD44-TO-8BNC/O (open ended) cable required for TTL external trigger and video output of camera. • TTL external trigger source should be connected to DBHD44-TO-8BNC/O cable. • The following connections should be made between the 12-pin connector of the camera and Matrox Meteor-II are as follows:			
	METEOR2-MC/_ (44-pin connector)		PULNiX TM-6702 (12-pin connector)	
	Pin name	Pin no.	Pin name	Pin no.
	VID_IN1	15	← VIDEO OUT	04
	EXP(1)	38	→ VINIT	06
	METEOR2-MC/_ (44-pin connector)			
	Pin name	Pin no.	External Trigger Source	
	OPTO_TRIG	34, 35	←	

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: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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