

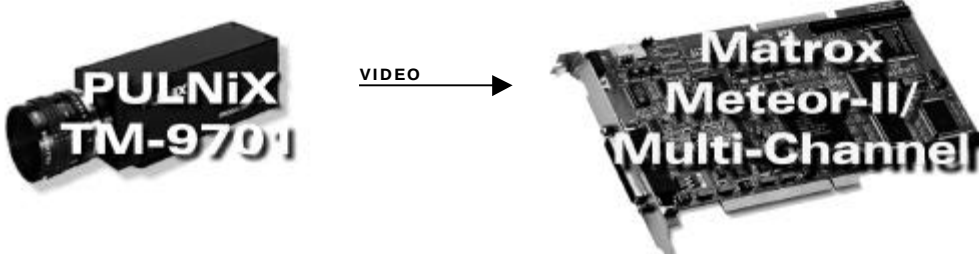
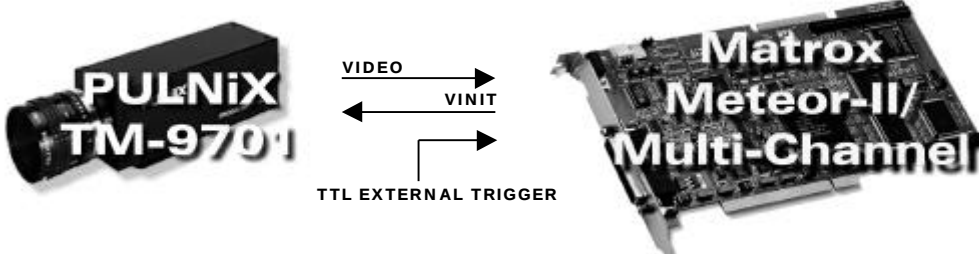
Application Note:

Interfacing non-standard cameras to Matrox Meteor-II



PULNiX TM-9701

March 19, 1999

Camera Descriptions	• 768 x 484 x 8-bit @ 30fps (interlaced) or 60fps (progressive scan). • Analog or RS-422 digital video output. • Interlaced or progressive scan. • External or internal exposure control. • Internal sync. • 14.5467 MHz pixel clock rate.
Interface modes	• Continuous, Asynchronous reset (Double pulse)
Camera Interface Briefs	Mode 1 : Continuous  • 768 x 484 x 8-bit @ 30fps (interlaced) or 60fps (progressive scan) • Analog. • Interlaced or progressive scan. • Matrox Meteor-II receiving continuous video signals from camera. • DCF used: 9701N.DCF (Progressive scan-Analog) • DCF used: 9701.DCF (Interlaced-Analog) Mode 2 : Asynchronous Reset (Double pulse)  • 752 x 484 x 8-bit. • 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: 9701NA2E.DCF

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Camera Interface Details

Mode 1 : Continuous

- **Frame rate:** Matrox Meteor-II is in SLAVE mode and receives the continuous video from the camera. The frame rate is determined by the frequency of the HSYNC signal of the camera.
- **Exposure time:** Exposure time is inversely proportionate to the frame rate.
- **Camera switch settings:** External settings are as follows:

Mode 1: Continuous

Switch	9701.dcf Settings	9701n.dcf Settings	9701dn.dcf Settings
Shutter Speed	0	0	0
NRM/ASY	NRM	NRM	NRM
INT/NON	INT	NON	NON

Mode 2 : Asynchronous Reset (Double pulse)

- 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.
- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The active period of EXPOSURE1 (VINIT) signals is the exposure time. 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 Reset

Switch	9701na2e.dcf Settings
Shutter Speed	9
NRM/ASY	ASY
INT/NON	NON

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Cabling Requirements	Modes 1 : Continuous			
	• DBHD44-TO-8BNC/O 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:			
	METEOR2-MC/2 (44-pin connector)		PULNiX TM-9701 (12-pin connector)	
	Pin name	Pin no.	Pin name	Pin no.
	VID_IN1	15	← VIDEO OUT	04
	Modes 2 : Asynchronous Reset (Double pulse)			
	• DBHD44-TO-8BNC/O 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:			
	METEOR2-MC/2 (44-pin connector)		PULNiX TM-9701 (12-pin connector)	
	Pin name	Pin no.	Pin name	Pin no.
	VID_IN1	15	← VIDEO OUT	04
	EXP(1)	38	→ VINIT	06
	METEOR2-MC/2 (44-pin connector)		External Trigger Source	
	Pin name	Pin no.		
	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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