

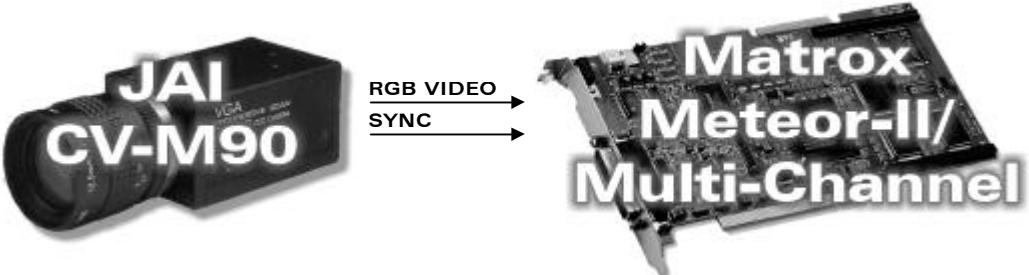
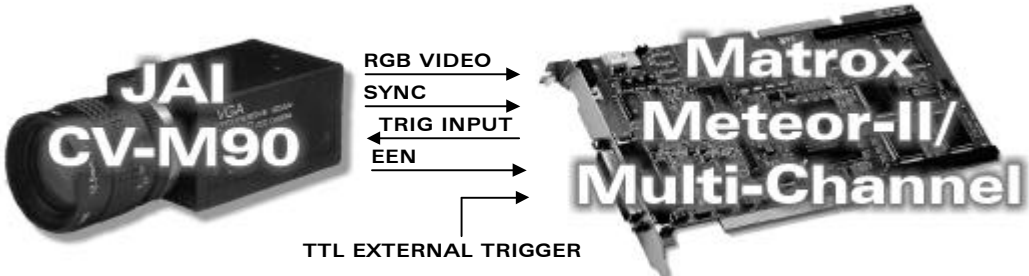
Application Note:

Interfacing non-standard cameras to Matrox Meteor-II



JAI CV-M90

September 25, 2000

Camera Descriptions	• $752 \times 582 \times 8\text{-bit}$ @ 25 fps (PAL version). • RGB analog video output. • Interlace or progressive scan. • External sync. • Internal exposure control. • Pixel clock: 14.75 MHz
Interface mode	• Continuous, asynchronous reset
Camera Interface Briefs	Mode 1: Continuous  • $768 \times 575 \times 8\text{-bit}$ @ 25 fps. • RGB analog video output • Interlace scan. • Continuous video. • Matrox Meteor-II receiving SYNC and video signals from camera. • DCF used: MCVM90C.DCF Mode 2: Asynchronous Reset (Random Trigger Mode 1)  • $768 \times 288 \times 8\text{-bit}$. • RGB analog video output • Progressive scan. • Matrox Meteor-II receiving TTL external trigger. • Matrox Meteor-II sending EXPOSURE1 (TRIGGER INPUT) signal to camera. • Matrox Meteor-II receiving TRIGGER (EEN), SYNC and video signals from camera. • DCF used: MCVM90A.DCF

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Camera Interface Details

Modes 1: Continuous

- **Frame rate:** Matrox Meteor-II receives the continuous video from the camera at 25 frames per second.
- **Exposure time:** Exposure time is inversely proportionate to the frame rate or determined by the shutter setting (SW1 switch). Refer to the camera manual for more information.
- **Camera Switch Settings:** External switch (SW1 on rear panel) should be set as follows:

OFF	ON		
•		1	Shutter data 2SB*
•		2	Shutter data 1SB*
•		3	Shutter data LSB*
•		4	Electronic shutter
•		5	Scanning system
•		6	Gamma correction
•		7	Master gain
•		8	N/C

*NOTE switches 1 – 3 can be set to desired shutter speed selection.

Mode 2: Asynchronous Reset (Random Trigger Mode 1)

- Once it has received the external trigger signal, Matrox Meteor-II sends the EXPOSURE1 (TRIGGER INPUT) signal to the camera to initiate exposure.
- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The falling edge of EXPOSURE1 (TRIGGER INPUT) signal initiates the exposure time for a period determined by the shutter speed setting (SW1 switch). In order to change the deployment time of the EXPOSURE1 (TRIGGER INPUT) use the Exposure Settings menu tab in Matrox Intellicam. Consult the Matrox Intellicam User Guide for more information.
- **Camera Switch Settings:** External switch (SW1 on rear panel) should be set as follows:

OFF	ON		
•		1	Shutter data 2SB*
•		2	Shutter data 1SB*
•		3	Shutter data LSB*
	•	4	Electronic shutter
•		5	Scanning system
•		6	Gamma correction
•		7	Master gain
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*NOTE switches 1 – 3 can be set to desired shutter speed selection.

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Cabling Requirements

Mode 1: Continuous

DBHD44-TO-8BNC cable required for video output of camera (DBHD44-TO-8BNC/O (open ended) cable recommended for use with both modes).

Connections between the 9-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4
(44-pin connector)

Pin name	Pin no.
VID1_IN1	15
GROUND	30
VID1_IN2	44
GROUND	29
VID1_IN3	13
GROUND	14
SYNC_IN	43
GROUND	03

JAI CV-M90
(9-pin D-SUB connector)

Pin name	Pin no.
R OUTPUT	03
GND	08
G OUTPUT	04
GND	08
B OUTPUT	05
GND	08
INT SYNC OUTPUT	07
GND	08

Mode 2: Asynchronous Reset (Random Trigger)

DBHD44-TO-8BNC/O cable required for video output of camera.

Connections between the 9-pin connector of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

JAI CV-M90
(9-pin D-SUB connector)

Pin name	Pin no.
R OUTPUT	03
G OUTPUT	04
B OUTPUT	05
INT SYNC OUTPUT	07

METEOR2-MC/2
(44-pin connector)

Pin name	Pin no.
VID1_IN1	15
VID1_IN2	44
VID1_IN3	13
SYNC_IN	43

Connections between the 6-pin multi connector (RS-232C) of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

JAI CV-M90
(6-pin multi connector)

Pin name	Pin no.
TRIGGER INPUT	05
EEN PULSE OUTPUT	04

METEOR2-MC/2
(44-pin connector)

Pin name	Pin no.
EXP(1)	38
VSYNC_TTL	32

CONTINUED

Application Note:

Interfacing non-standard cameras to Matrox Meteor-II

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Cabling Requirements (continued)	• Connections between the H/W Trigger source and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:			
	H/W Trigger Source		METEOR2-MC/2 (44-pin connector)	
	<i>Pin name</i>	<i>Pin no.</i>	<i>Pin name</i>	<i>Pin no.</i>
	H/W TRIG Cable	--	→ OPTOTRIG+	35
	GND	--	OPTOTRIG-	34

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 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 H9P 2T4
Canada
Tel: (514) 685-2630
Fax: (514) 822-6273

