

Matrox Meteor-II/Multi-Channel

Camera Interface Application Note

JAI CV-M77

December 19, 2002

Basics about the
camera

Camera Descriptions

- Effective resolution: 1024 × 768 @ 25 fps.
- RGB analog video output.
- Progressive scan.
- Internal or external sync.
- Internal or external exposure control.
- 25 MHz pixel clock rate.

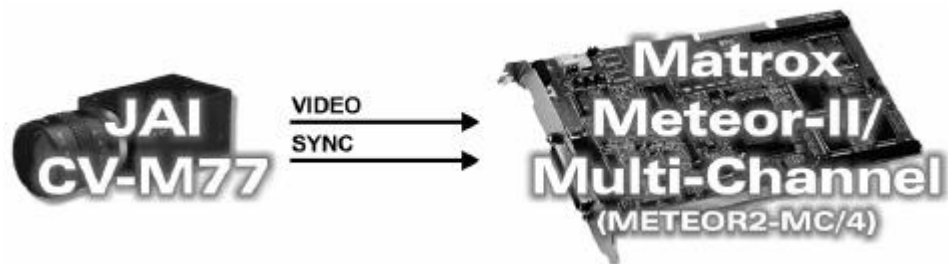
Interface Modes

- Continuous
- Asynchronous reset (Pulse Width Control Trigger Mode)

Camera Interface Briefs

Mode 1: Continuous

- 1024 × 768 @ 25 fps.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving video signals from camera.
- DCF used: [M2CVM77C.DCF](#)



Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- 1016 × 768 @ 25 fps.
- RGB analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving external trigger signal.
- Matrox Meteor-II/Multi-Channel sending EXPOSURE2 (EXT. TRIGGER INPUT) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Multi-Channel receiving SYNC (SYNC OUTPUT) and video signals from camera.

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Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)

Basics about the
interface modes

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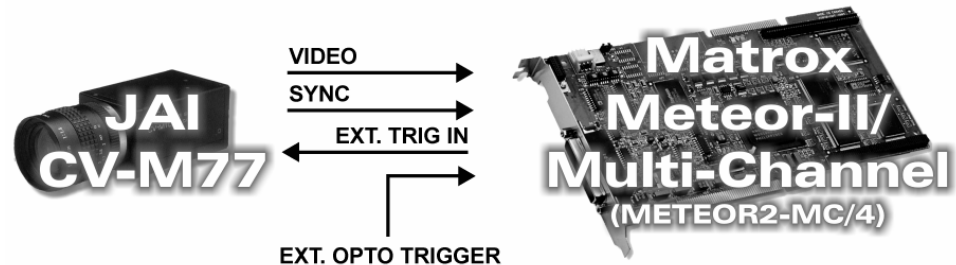
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Basics about the
interface modes

Camera Interface Briefs

Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- DCF used: [M2CVM77A.DCF](#)



Specifics about the
interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Meteor-II/Multi-Channel receives the continuous video from the camera at 25 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:

SW-1 Switch (camera rear)	Setting
1 - Shutter	As desired
2 - Shutter	As desired
3 - Shutter	As desired
4 - Shutter	As desired
5 - Ext. Trigger	OFF
6 - Ext. Trigger	OFF
7 - Frame Delay	OFF
8 - Gamma	N/A
9 - Gain	N/A
10 - Control	N/A

Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal. The maximum possible frame rate is dependent on the exposure time as well as the frame readout period.
- **Exposure time:** The width (falling edge to rising edge) of the EXPOSURE2 (EXT. TRIGGER INPUT) signal is the exposure time. The default exposure time is equal to **1 ms**. The exposure time can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.

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Specifics about the
interface modes

Camera Interface Details (continued)

Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- **Camera switch settings:** Refer to the camera manual for additional information. Switches for this mode should be set as follows:

SW-1 Switch (camera rear)	Setting
1 - Shutter	N/A
2 - Shutter	N/A
3 - Shutter	N/A
4 - Shutter	N/A
5 - Ext. Trigger	ON
6 - Ext. Trigger	ON
7 - Frame Delay	N/A
8 - Gamma	N/A
9 - Gain	N/A
10 - Control	N/A

Cabling Requirements

Mode 1: Continuous

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals
- **Connection:** 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-M77 (9-pin connector)			METEOR2-MC/4 (44-pin connector)		
Pin name	Pin no.		Pin name	Pin no.	
R OUTPUT	03	←	VID1_IN1	15	
G OUTPUT	04	→	VID1_IN2	44	
B OUTPUT	05	→	VID1_IN3	13	
SYNC OUTPUT	07	→	SYNC_IN	43	

Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- **Cable:** Cable: DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections between the 9-pin connectors (RGB/SYNC.) of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

JAI CV-M77 (9-pin RGB/SYNC. connector)			METEOR2-MC/4 (44-pin connector)		
Pin name	Pin no.		Pin name	Pin no.	
R OUTPUT	03	→	VID1_IN1	15	
G OUTPUT	04	→	VID1_IN2	44	
B OUTPUT	05	→	VID1_IN3	13	
SYNC OUTPUT	07	→	SYNC_IN	43	

Cabling details for the
interface modes

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Cabling details for the
interface modes

Cabling Requirements (continued)

Mode 2: Asynchronous Reset (Pulse Width Control Trigger Mode)

- **Connection:** Connections between the 12-pin connectors (**DC-IN/SYNC.**) of the camera and the 44-pin connector of the Matrox Meteor-II/Multi-Channel are as follows:

JAI CV-M77 (12-pin DC-IN/SYNC. connector)			METEOR2-MC/4 (44-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
EXT. TRIGGER	11	←	EXP(2)	23

- **Connection:** 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/4 (44-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
H/W TRIG Cable	--	→	OPTOTRIG +	35
GND	--	→	OPTOTRIG -	34

The DCF(s) mentioned in this application note can be found on the MIL 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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MET2-CID-128

