

MATROX METEOR-II/MULTI-CHANNEL CAMERA INTERFACE APPLICATION NOTE

JAI CV-A11

OCTOBER 4, 2001

*Basics about the
camera*

Camera Descriptions

- 648×492 @ 30 fps.
- Single channel analog video output.
- Progressive scan.
- Full or partial scan.
- Internal or external sync.
- Internal or external exposure control.
- 12.27 MHz pixel clock rate.

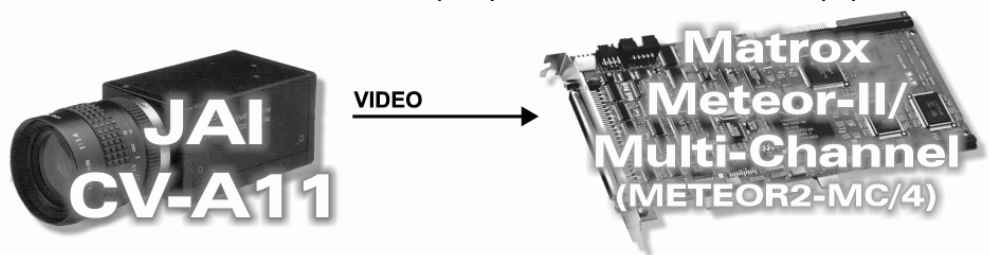
Interface Modes

- Continuous
- Asynchronous reset (pulse width control trigger mode)

Camera Interface Briefs

Mode 1: Continuous – full/partial scan

- $648 \times$ up to 492.
- Single channel analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving video signal (composite sync) from camera.
- DCF used: [CVA11C1.DCF](#) (full - 648×492 @ 30 fps)
- DCF used: [CVA11C2.DCF](#) (1/2 partial - 648×240 @ 56 fps)
- DCF used: [CVA11C3.DCF](#) (1/3 partial - 648×160 @ 80 fps)
- DCF used: [CVA11C6.DCF](#) (1/6 partial - 648×80 @ 134 fps)



Mode 2: Asynchronous Reset (pulse width control trig. mode)

- $648 \times$ up to 492.
- Single channel analog video.
- Progressive scan.
- Matrox Meteor-II/Multi-Channel receiving external trigger signal.
- Matrox Meteor-II/Multi-Channel sending EXPOSURE1 (EXT. TRIG IN) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Multi-Channel receiving video signal (composite sync) from camera.

Continued...

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

*Basics about the
interface modes*

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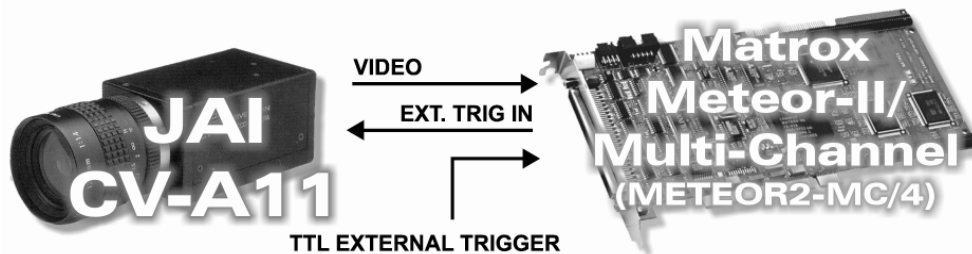
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Basics about the
interface modes

Camera Interface Briefs (Continued)

Mode 2: Asynchronous Reset (pulse width control trig. mode)

- DCF used: [CVA11A1.DCF](#) (full - 648×492)
- DCF used: [CVA11A2.DCF](#) (1/2 partial - 648×240)
- DCF used: [CVA11A3.DCF](#) (1/3 partial - 648×160)
- DCF used: [CVA11A6.DCF](#) (1/6 partial - 648×80)



Specifics about the
interface modes

Camera Interface Details

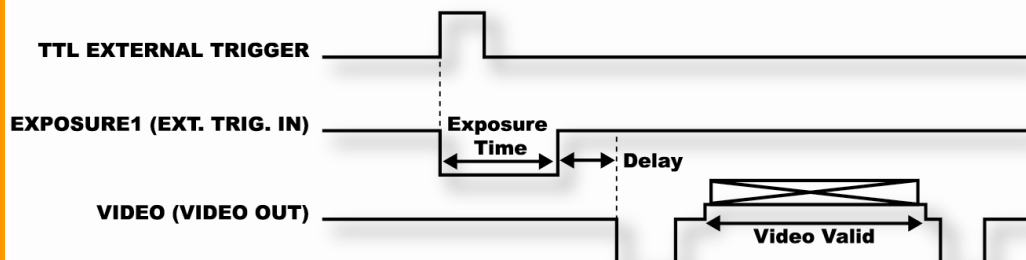
Mode 1: Continuous

- **Frame Rate:** Matrox Meteor-II/Multi-Channel receives the continuous video from the camera at 30 fps (full scan) or up to 134 frames per second (partial scan).
- **Exposure time:** Exposure time is determined by shutter setting on camera. Refer to the camera manual for more information.

Mode 2: Asynchronous Reset (pulse width control trig. mode)

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal and the period of the exposure time.
- **Exposure time:** The width (falling edge to rising edge) of the EXPOSURE1 (EXT. TRIG IN) signal equals the exposure time. An internal camera delay of **320 ms** is present before the video valid. The exposure time can be modified in the DCF using Matrox Intellicam or with the MIL digitizer control function **MdigControl()**. Refer to the appropriate manual or user guide for more information.

- **Timing diagram:**



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*Cabling details for this
interface mode*

Cabling Requirements

Mode 1: Continuous

- **Cable:** DBHD44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections between the 12-pin connector of the camera and the 44-pin connectors of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (100-pin connector)			JAI CV-A11 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
VID1_IN	15	←	VIDEO OUTPUT	04
GROUND	17	--	GROUND	03

Mode 2: Asynchronous Reset (pulse width control trig. mode)

- **Cable:** DBHD44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **External trigger:** TTL external trigger signal connected to the OptoCoupled Trigger input (pin 34, 35) of the DBHD44-TO-8BNC/O cable.
- **Connection:** Connections between the 12-pin connector of the camera and the 44-pin connectors of the Matrox Meteor-II/Multi-Channel are as follows:

METEOR2-MC/4 (100-pin connector)			JAI CV-A11 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
VID1_IN	15	←	VIDEO OUT	04
EXPOSURE1	38	→	EXT. TRIG IN	11
GROUND	17	--	GROUND	03
EXTERNAL TRIGGER SOURCE				
OPTOTRIG +	35	←	--	--
OPTOTRIG -	34	←	--	--

- **Power supply:** connections are as follows:

POWER SUPPLY			JAI CV-A11 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
DC OUT (+12 V)	--	--	+ 12 V	02
GROUND	--	--	GROUND	01

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.

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

MET2-CID-090

