

Matrox Corona-II

Camera Interface Application Note

JAI CV-M1

April 19, 2004

*Basics about the
camera*

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

*Basics about the
interface modes*

Camera Descriptions

- $1300 \times 1030 \times 8\text{-bit}$ @ 12 fps.
- Single channel analog video output.
- Progressive scan.
- External sync.
- Internal exposure control.
- 20.2 MHz pixel clock rate.

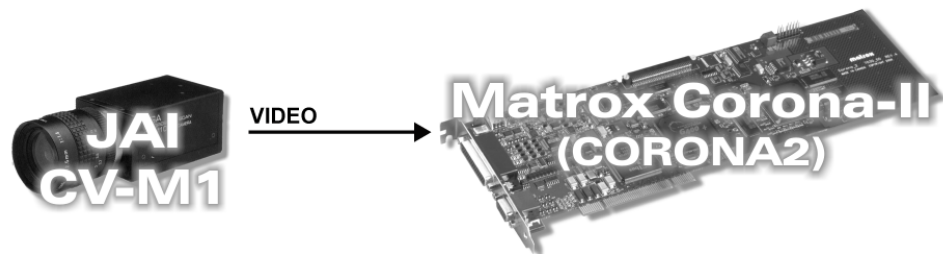
Interface Modes

- Continuous
- Asynchronous reset (Ext. trigger mode. single trigger mode)

Camera Interface Briefs

Mode 1: Continuous

- $1300 \times 1030 \times 8\text{-bit}$ @ 12 fps (normal speed readout).
- $1300 \times 509 \times 8\text{-bit}$ @ 24 fps (double speed readout).
- Single analog video.
- Progressive scan.
- Matrox Corona-II receiving video signals from camera.
- DCF used: [CVM1C.DCF](#) (normal speed readout)
- DCF used: [CVM1CDS.DCF](#) (double speed readout).



Mode 2: Asynchronous Reset

- $1300 \times 1025 \times 8\text{-bit}$.
- Single analog video.
- Progressive scan.
- Matrox Corona-II receiving TTL external trigger signal.
- Matrox Corona-II sending EXPOSURE1 (TRIGGER INPUT) signal to camera to reset camera.
- Matrox Corona-II receiving video signals from camera.

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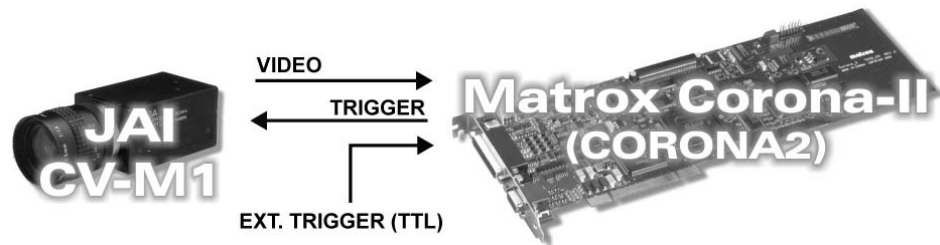
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous Reset

- DCF used: CVM1A.DCF



Specifics about the
interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Corona-II receives the continuous video from the camera at 12 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:

OFF	ON		
•		1	Shutter speed
•		2	Shutter speed
•		3	Shutter speed
•		4	Shutter speed
*	*	5	Readout mode
•		6	Ext. trigger mode
•		7	Ext. trigger mode
•		8	Interface

* Switch 5 setting depends on the readout mode used (normal or double speed), refer to camera manual for details.

Mode 2: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The falling edge of the EXPOSURE1 (TRIGGER INPUT) signal is used to initiate the camera's internal shutter. The exposure time can be modified by the shutter speed switch settings 1-4 on the camera. Consult the camera manual for more information.

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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 2: Asynchronous Reset

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

OFF	ON		
•		1	Shutter speed
•		2	Shutter speed
•		3	Shutter speed
•		4	Shutter speed
•		5	Readout mode
•		6	Ext. trigger mode
	•	7	Ext. trigger mode
•		8	Interface

Cabling details for the
interface modes

Cabling Requirements

Mode 1: Continuous

- **Cable:** DH44-TO-8BNC/O (open ended) cable recommended for video, synchronization and control signals.
- **Connection:** The connection between the VIDEO OUT BNC connector of the camera and the 44-pin connector of the Matrox Corona-II is as follows:

CORONA2
(44-pin connector)

Pin name	Pin no.
RED BNC	--

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(BNC connector)

Pin name	Pin no.
VIDEO OUT	--

Mode 2: Asynchronous Reset

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connections:** Connection between the VIDEO OUT BNC connector of the camera and the 44-pin connector of the Matrox Corona-II is as in *Mode 1: Continuous*. The connection between the 6-pin RS-232C/TRIGGER connector of the camera and the 44-pin connector of the Matrox Corona-II is as follows:

CORONA2
(44-pin connector)

Pin name	Pin no.
EXP(1)	38

JAI CV-M1
(6-pin connector)

Pin name	Pin no.
TRIGGER INPUT	05

The DCF(s) mentioned in this application note can be found on our FTP site ([ftp.matrox.com](ftp://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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