Matrox Corona-II
Camera Interface Application Note
JAI CV-M77 December 20, 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.

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

Interface Modes

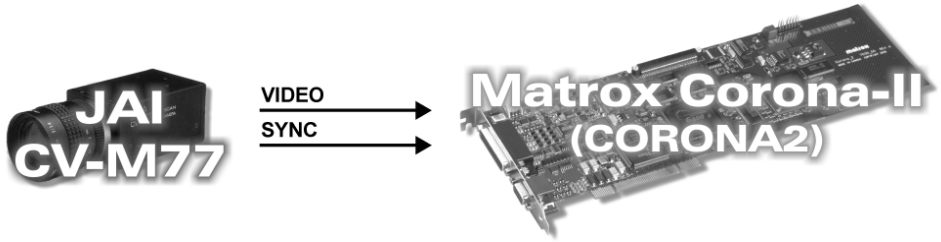
- Continuous
- Asynchronous reset (Pulse Width Control Trigger Mode)

Basics about the interface modes

Camera Interface Briefs

Mode 1: Continuous

- 1024 × 768 @ 25 fps.
- RGB analog video.
- Progressive scan.
- Matrox Corona-II receiving video signals from camera.
- DCF used: C2CVM77C.DCF



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

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

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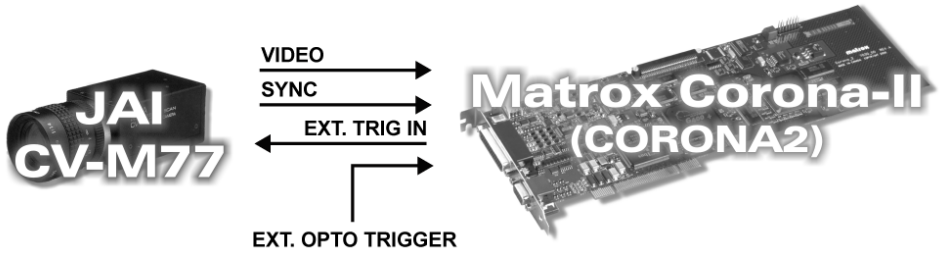
Basics about the interface modes

Camera Interface Briefs

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

- DCF used: C2CVM77A.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 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 details for the interface modes

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 Corona-II are as follows:

JAI CV-M77 (9-pin connector)			**CORONA2 (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 Corona-II are as follows:

JAI CV-M77 (9-pin RGB/SYNC. connector)			**CORONA2 (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

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 Corona-II are as follows:

JAI CV-M77 (12-pin DC-IN/SYNC. connector)			**CORONA2 (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 Corona-II are as follows:

H/W Trigger Source			**CORONA2 (44-pin connector)**	
Pin name	***Pin no.***		***Pin name***	***Pin no.***
H/W TRIG Cable	--	→	OPTOTRIG +	35
GND	--	→	OPTOTRIG -	34

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