Matrox Corona-II

Camera Interface Application Note

TOSHIBA IK-53V

August 9, 2004

Basics about the camera

Camera Descriptions

- Effective resolution: 646 × 494 @ 60 fps.
- Analog RGB video output.
- Progressive scan.
- Internal or external sync and exposure control.
- Internal (composite) sync.
- 24.5 MHz pixel clock rate.

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

Interface Mode

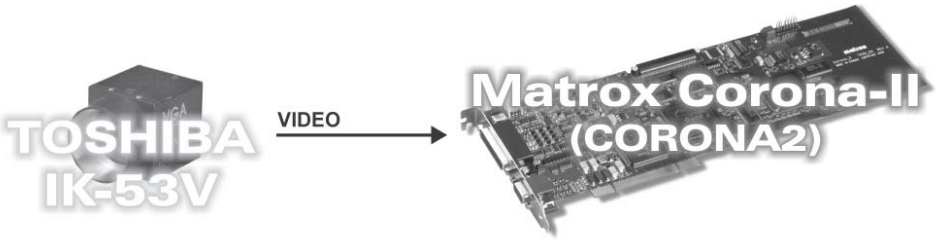
- Continuous
- Asynchronous reset (External Trigger Mode SYNC-RESET)

Basics about the interface modes

Camera Interface Briefs

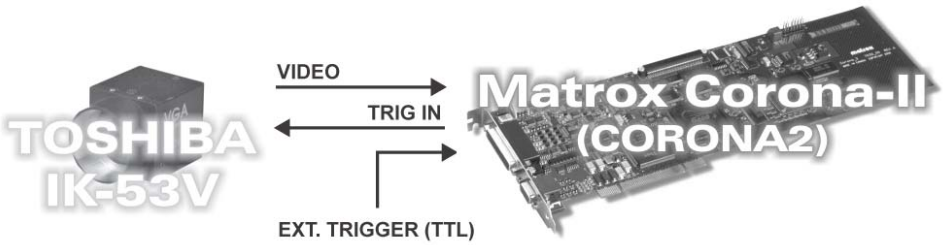
Mode 1: Continuous

- 646 × 494 @ 60 fps.
- Analog RGB video.
- Matrox Corona-II receiving video signals from camera.
- DCF used: IK53V_646x494Con.DCF



Mode 2: Asynchronous reset

- 646 × 494 × 8-bit.
- Analog RGB video
- Matrox Corona-II receiving external trigger signal.
- Matrox Corona-II sending EXPOSURE1 (TRIG IN) signal to camera to initiate and control the exposure.
- Matrox Corona-II receiving video signals from camera.
- DCF used: IK53V_646x494Async.DCF



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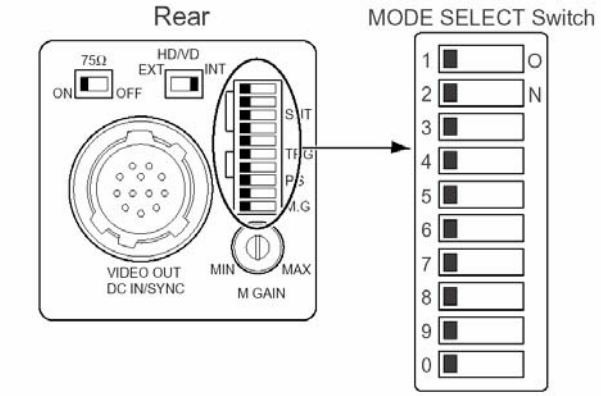
Specifics about the interface modes

Camera Interface Details

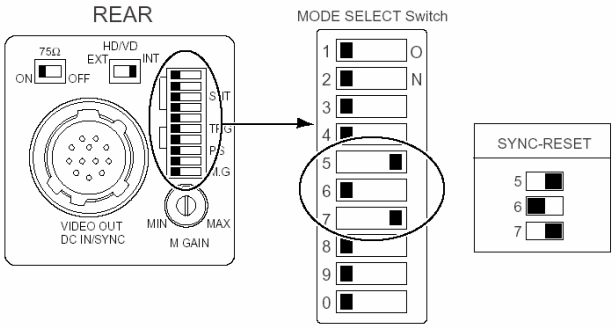
Mode 1: Continuous

- **Frame rate:** Matrox Corona-II receives the continuous video from the camera at 60 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 settings:** Switches are located on camera's rear, set all MODE SELECT switches to OFF. HD/VD switch set to INT.



Mode 2: Asynchronous Reset

- **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 camera's frame readout period.
- **Exposure time:** The falling edge of the EXPOSURE1 (TRIG IN) signal initiates the exposure time. The exposure time, which can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function, equals the active period of the EXPOSURE1 (TRIG IN) signal and includes a **6 µs** internal camera delay. The minimum EXPOSURE1 period is **2 µs**. Consult the respective manual for more information.
- **Camera settings:** Switches are located on camera's rear, set MODE SELECT switches 5 and 7 to ON, all other switches to OFF. HD/VD switch set to INT.



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Cabling details for the interface modes

Cabling Requirements

Mode 1: Continuous

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video and synchronization signals.
- **Connection:** Connections between the VIDEO OUT (12-pin connector) of the camera and the 44-pin connector of the Matrox Corona-II are as follows:

TOSHIBA IK-53V (12-pin connector)			**METEOR2-MC/4 (44-pin connector)**	
Pin name	**Pin no.**		**Pin name**	**Pin no.**
VIDEO1 OUT	04	→	VID1_IN1	15
TRIG IN	11*	←	EXP(1)	38*

* This connection is not necessary for this mode however allows the same cable to be used with both modes.

Mode 2: Asynchronous reset

- **Cable:** DH44-TO-8BNC/O (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections are as in Mode 1: Continuous including the following:

H/ 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 our FTP site (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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