

Matrox Corona-II

Camera Interface Application Note

TOSHIBA IK-TF5

June 1, 2005

Basics about the
camera

Camera Descriptions

- Effective resolution: 646×494 @ 60 fps.
- Analog RGB video output.
- Progressive scan.
- Internal or external sync.
- Internal or external exposure control.
- 24.5459 MHz pixel clock rate.

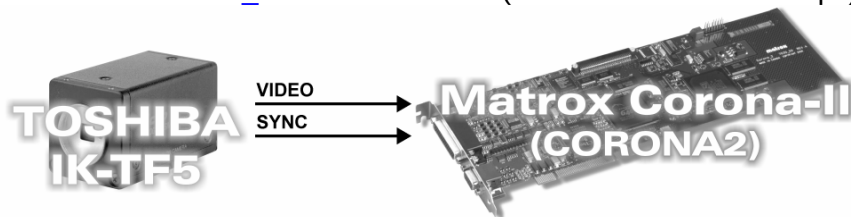
Interface Mode

- Continuous
- Asynchronous reset (Trigger Sync – Reset PW SR)

Camera Interface Briefs

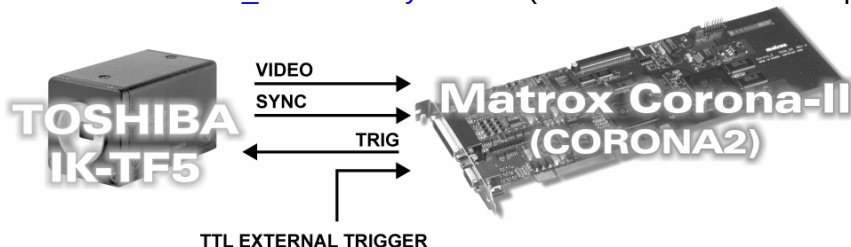
Mode 1: Continuous

- Up to 646×494 @ 60 fps.
- Analog RGB video.
- Matrox Corona-II receiving Sync and video signals from camera.
- DCF used: [IKTF5_648x494Con.DCF](#) (Partial Read Off – 60 fps)
- DCF used: [IKTF5_648x234Con.DCF](#) (Partial Read On – 120 fps)



Mode 2: Asynchronous reset

- Up to $646 \times 494 \times 8$ -bit.
- Analog RGB video
- Matrox Corona-II receiving external trigger signal.
- Matrox Corona-II sending EXPOSURE2 (TRIG) signal to camera to initiate and control the exposure.
- Matrox Corona-II receiving Sync and video signals from camera.
- DCF used: [IKTF5_648x494Async.DCF](#) (Partial Read Off – 60 fps)
- DCF used: [IKTF5_648x234Async.DCF](#) (Partial Read On – 120 fps)



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

Basics about the
interface modes

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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 60/120 frames per second (Partial Scanning Off/On respectively).
- **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:** Use the on-screen display menu to set the following parameters:

Settings	...x494Con.DCF	...x234Con.DCF
MODE	Manual	Manual
MANU	OFF	OFF
PART	OFF	ON

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 width (rising edge to falling edge) of the EXPOSURE2 (TRIG) signal (plus a 6 μ s internal camera delay) is the exposure time, which can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. The minimum EXPOSURE2 period is 2 μ s. Consult the respective manual for more information.
- **Camera settings:** Use the on-screen display menu to set the following parameters:

Settings	...x494Con.DCF	...x234Con.DCF
MODE	E, TRIG	E, TRIG
→ E, TRIG	PW SR	PW SR
TRIG. P		
PART	OFF	ON

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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 DB-15 connector (RGB terminal) of the camera and the 44-pin connector of the Matrox Corona-II are as follows:

TOSHIBA IK-TF5 (15-pin connector)			METEOR2-MC/4 (44-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
R (RED)	01	→	VID1_IN1	15
GND	05	--	--	--
G (GREEN)	02	→	VID1_IN2	44
GND	06	--	--	--
B (BLUE)	03	→	VID1_IN3	13
GND	07	--	--	--
SYNC	08	→	SYNC_IN	43
TRIG	12*	←	EXP(2)	23*

* 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/pub/imaging/>). 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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COR2-CID-017

