

Matrox Meteor-II/Camera Link

Camera Interface Application Note

ATMEL AVIIVA M2CL2014

October 20, 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

- Effective resolution: up to 2048 pixels/line $\times$ 12-bit @ 9.76k lines per second.
- Camera Link BASE interface (dual channel).
- Internal or external exposure control.
- 20 MHz pixel clock rate.

Interface Mode

- Fixed line scan (Free Running Mode with Integration Time Setting)
- Variable line scan (Triggered and Integration Time Controlled)

Camera Interface Briefs

Mode 1: Fixed line scan

- 2048 $\times$ 12-bit @ 9.76k lines per second.
- Camera Link BASE interface (dual channel).
- Matrox Meteor-II/Camera Link receiving LDV, CLK and video signal from camera.
- DCF used: [AV2TCCL.DCF](#)



Mode 2: Variable line scan

- 2048 $\times$ 12-bit.
- Camera Link BASE interface (dual channel).
- Matrox Meteor-II/Camera Link receiving external trigger signal.
- Matrox Meteor-II/Camera Link sending EXPOSURE1 (CC1) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Camera Link receiving LDV, CLK and video signal from camera.
- DCF used: [AV2TLTCL.DCF](#)

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Matrox Meteor-II/Camera Link

Camera Interface Application Note

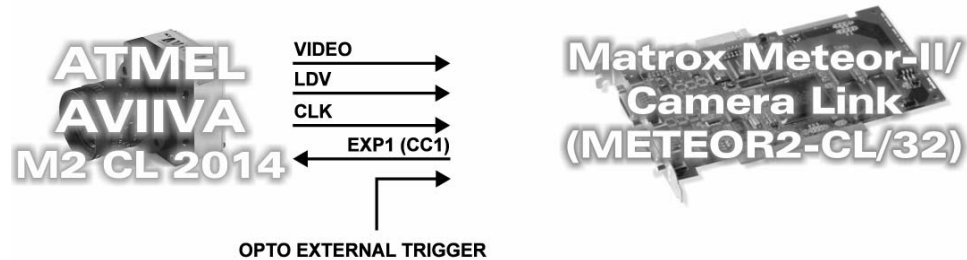
ATMEL AVIIVA M2CL2014

October 20, 2004

Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Variable line scan



Specifics about the
interface modes

Camera Interface Details

Mode 1: Fixed line scan

- **Line rate:** Matrox Meteor-II/Camera Link receives the continuous video from the camera at 9.76k lines per second.
- **Exposure time:** The width (falling edge to rising edge) of the EXPOSURE1 (CC1) signal is the exposure time. An internal delay (introduced by the camera) of $1 \mu\text{s}$ is present between the end of exposure and the start of the valid data. 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.
- **Camera settings:** Refer to the camera manual for additional information. Camera settings are as follows:

External switch settings									
E	G	I	M	O	T	H	P	Y	S
1	0	200	3	8	0	6	8	0	0

Mode 2: Variable line scan

- **Line rate:** The line rate is determined by the frequency of the external trigger signal and the exposure time period.
- **Exposure time:** The width (falling edge to rising edge) of the EXPOSURE1 (CC1) signal is the exposure time. An internal delay (introduced by the camera) of $1 \mu\text{s}$ is present between the end of exposure and the start of the valid data. 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.
- **Camera settings:** Refer to the camera manual for additional information. Camera settings are as in Mode 1: Fixed line scan.

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Camera Interface Application Note

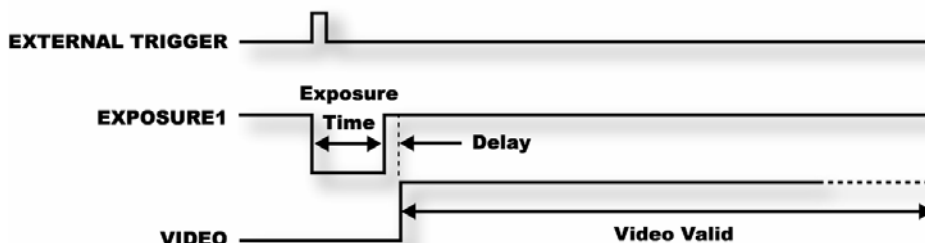
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Basics about the
interface modes

Camera Interface Details

Mode 2: Variable line scan



Specifics about
the interface
modes

Cabling Requirements

Modes 1: Continuous

- **Cable and Connection:** Standard Camera Link cable.

Mode 2: Asynchronous reset

- **Cable and Connection:** Standard Camera Link.
- **External trigger:** External trigger should be connected to the OPTO TRIG input of the 9-pin connector (pins 7 and 2) on the Expanded I/O adapter bracket.

EXPANDED I/O BRACKET (9-pin connector)

		External Trigger Source	
OPTOTRIG +	07	←	SIGNAL --
OPTOTRIG -	02	←	GROUND --

The DCF(s) mentioned in this application note can be found on our FTP site ([ftp.matrox.com/pub/imaging/](ftp://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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MET2-CID-105

