

Matrox Meteor-II/Camera Link

Camera Interface Application Note

ADIMEC 1000m

March 18, 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: $1004 \times 1004 \times 8/10\text{-bit}$ @ up to 50 fps.
- Camera Link BASE interface (single or dual channel).
- Progressive scan.
- Internal or external sync.
- Internal or external exposure control.
- 40 MHz pixel clock rate.

Interface Modes

- Continuous
- Asynchronous reset (Control)

Camera Interface Briefs

Mode 1: Continuous

- Up to $1004 \times 1002 \times 8/10\text{-bit}$ @ up to 50 fps.
- Camera Link BASE interface (single or dual channel).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, STROBE and video signal from camera.
- DCF used: [1000MC1L.DCF](#) ($1004 \times 1002 \times 8\text{-bit}$ @ 30 fps – single channel)
- DCF used: [1000MC2L.DCF](#) ($992 \times 1000 \times 8\text{-bit}$ @ 50 fps – dual channel)
- DCF used: [1000MC1H.DCF](#) ($1004 \times 1002 \times 10\text{-bit}$ @ 30 fps – single channel)
- DCF used: [1000MC2H.DCF](#) ($992 \times 1000 \times 10\text{-bit}$ @ 50 fps – dual channel)



Mode 2: Asynchronous reset (Control)

- Up to $1004 \times 1002 \times 8\text{-bit}$.
 - Camera Link BASE interface (single or dual channel).
 - Progressive scan.
 - Matrox Meteor-II/Camera Link receiving external trigger signal.
 - Matrox Meteor-II/Camera Link sending EXPOSURE1 signal to camera to initiate and control exposure time.
 - Matrox Meteor-II/Camera Link receiving LVAL, FVAL, STROBE and video signal from camera.
 - DCF used: [1000MA1L.DCF](#) ($1004 \times 1002 \times 8\text{-bit}$ – single channel)
 - DCF used: [1000MA2L.DCF](#) ($992 \times 1000 \times 8\text{-bit}$ – dual channel)
- Continued....

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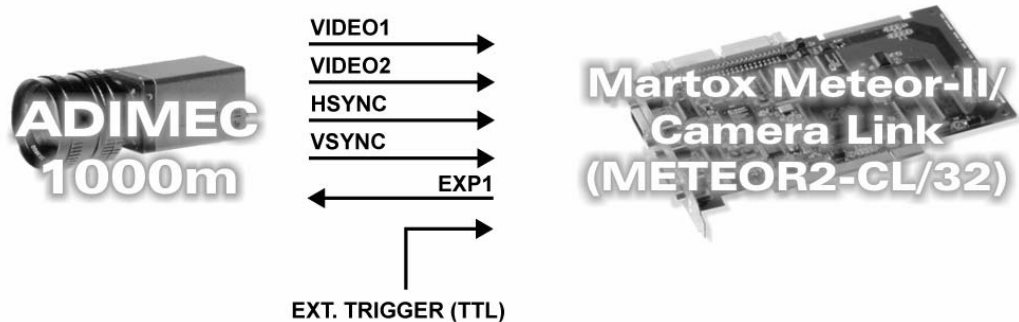
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Basics about the
interface modes

Camera Interface Briefs (continued)

Mode 2: Asynchronous reset (Control)

- DCF used: [1000MA1H.DCF](#) (1004 × 1002 × 10-bit – single channel)
- DCF used: [1000MA2H.DCF](#) (992 × 1000 × 10-bit – dual channel)



Specifics about the
interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Meteor-II/Camera Link receives the continuous video from the camera at 30/36 frames per second (single/dual channel).
- **Exposure time:** Exposure time is inversely proportionate to the frame rate.
- **Camera switch settings:** Refer to the camera manual for additional information. Switches for this mode should be set as follows:

Continuous	DCF	Settings	
		OR	MO
Single-channel, 8-bit	1000MC1L.DCF	8	0
Dual-channel, 8-bit	1000MC2L.DCF	8	0
Single-channel, 8-bit	1000MC1H.DCF	10	0
Dual-channel, 8-bit	1000MC2H.DCF	10	4

OR: Output Data Resolution MO: Camera Operating Mode

Mode 2: Asynchronous reset (Control)

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal. The period between external trigger signals must be greater than the duration of the desired exposure time plus the frame readout period. Refer to the camera manual for more information.
- **Exposure time:** The width (rising edge to falling edge) of the EXPOSURE1 signal is the exposure time. The default exposure time is equal to **25 ms**. The exposure time can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective Matrox Imaging manual for more information.

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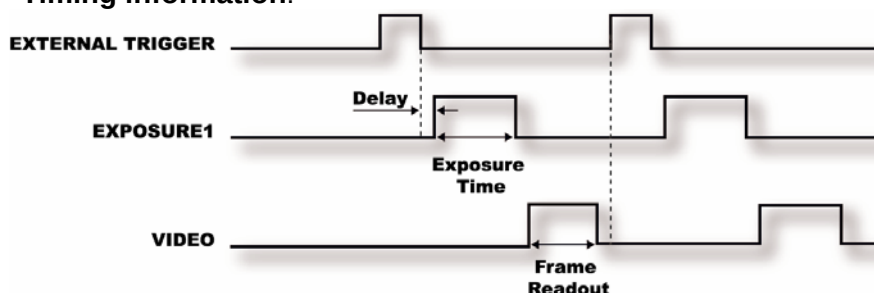
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Specifics about the
interface modes

Camera Interface Details (continued)

Mode 2: Asynchronous reset (Control)

▪ Timing information:



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

Asynchronous	DCF	Settings	
		OR	MO
Single-channel, 8-bit	1000MC1L.DCF	8	1
Dual-channel, 8-bit	1000MC2L.DCF	8	5
Single-channel, 8-bit	1000MC1H.DCF	10	1
Daul-channel, 8-bit	1000MC2H.DCF	10	5
OR: Output Data Resolution MO: Camera Operating Mode			

Cabling details for the
interface modes

Cabling Requirements

Mode 1: Continuous

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

Mode 2: Asynchronous reset (Control)

- **Cable and Connection:** Standard Camera Link cable. For TTL external trigger signal, connect to pin 2 and 7 (OPTO_TRIG +/-) on the Matrox Meteor-II/Camera Link Trigger Input connector (9-pin female located on second mounting bracket).

The DCF(s) mentioned in this application note can be found on our FTP site (<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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