Matrox Meteor-II/Camera Link
Camera Interface Application Note
BASLER A202K January 25, 2002

Basics about the camera

Camera Descriptions

- Effective resolution: 1004 × 1004 × 10-bit @ 48 fps (maximum).
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 40 MHz pixel clock rate.

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

Interface Mode

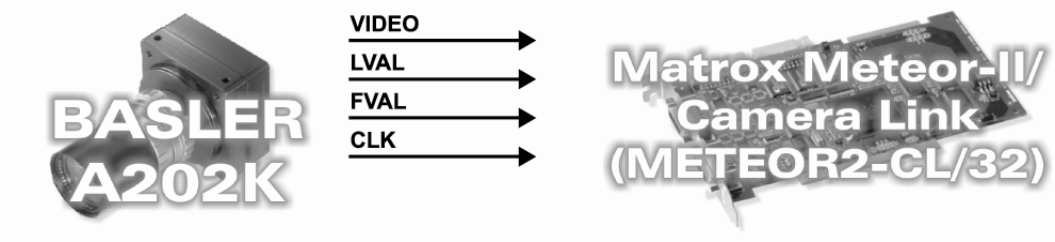
- Continuous (Free-run)
- Asynchronous reset (Pulse width control)

Basics about the interface modes

Camera Interface Briefs

Mode 1: Continuous (Free-run)

- 1004 × 1000 × 10-bit @ 48 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, CLK and video signal from camera.
- DCF used: BA202KDC.DCF



Mode 2: Asynchronous reset (Pulse width control)

- 1004 × 1004 × 10-bit.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving external trigger signal.
- Matrox Meteor-II/Camera Link l sending EXPOSURE1 (CC1) signal to camera to initiate and control exposure time.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, CLK and video signal from camera.

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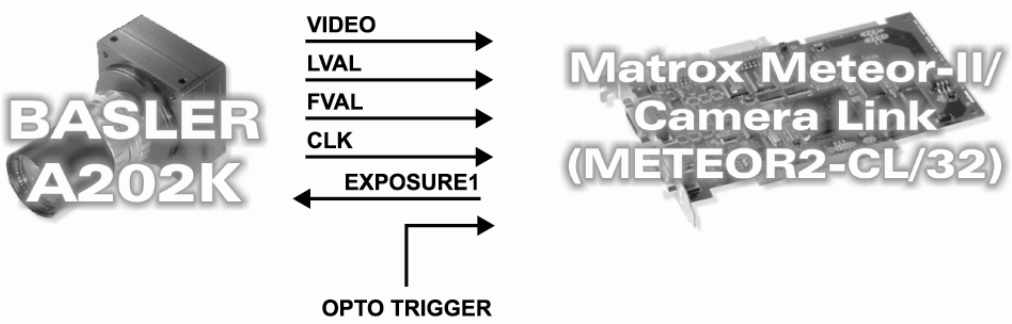
Basics about the interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset (Pulse width control)

- DCF used: BA202KDA.DCF



Specifics about the interface modes

Camera Interface Details

Mode 1: Continuous (Free-run)

- **Frame Rate:** Matrox Meteor-II/Camera Link receives the continuous video from the camera at 48 frames per second (Full resolution). This frame rate is dependent of Timer1 and Timer2 values in camera. Refer to the camera manual for additional information.

	Setting (Decimal)
Video Data Output (for 10-bits)	3
Timer1	21000
Timer2	35

- **Exposure time:** Exposure time is determined by the Timer1 settings on camera. Refer to the camera manual for more information.
- **Camera settings:** Refer to the camera manual for additional information.

Mode 2: Asynchronous reset (Pulse width control)

- **Frame Rate:** The frame 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 and a fixed internal (camera) delay is the exposure time. An internal delay (introduced by the camera) of **1** m**s** is present between the end of exposure and the start of the frame. 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.

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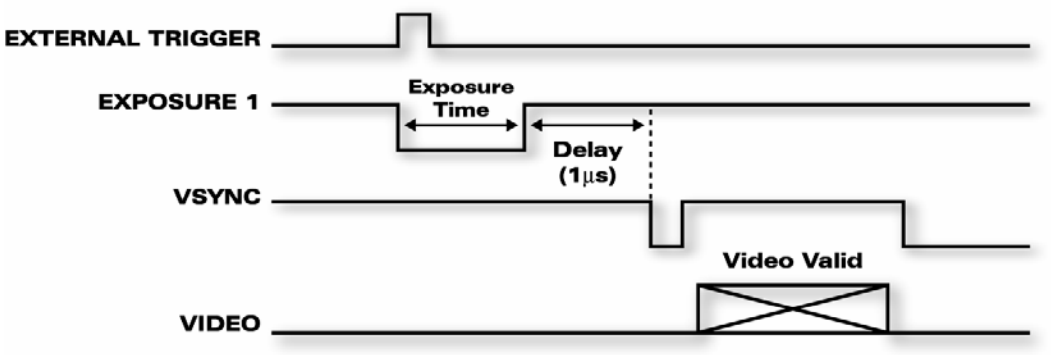
Specifics about the interface modes

Camera Interface Details (cont.)

Mode 2: Asynchronous reset (Pulse width control)

- **Timing diagram:**



Cabling details for the interface modes

Cabling Requirements

Mode 1: Continuous (Free-run)

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

Mode 2: Asynchronous reset (Pulse width control)

- **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	--

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