

Matrox Meteor-II/Camera Link

Camera Interface Application Note

BASLER A102K

November 8, 2002

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: $1392 \times 1040 \times 10\text{-bit}$ @ 14.8 fps (maximum).
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 28 MHz pixel clock rate.

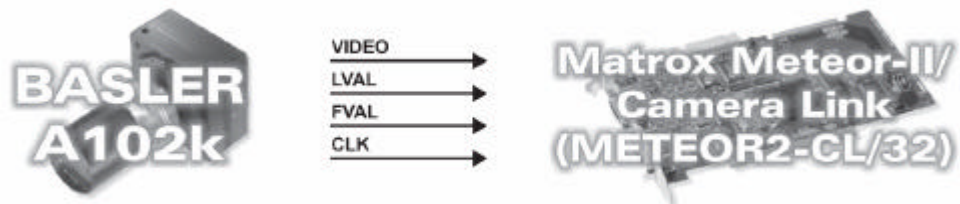
Interface Mode

- Continuous (Free-run)
- Asynchronous reset (ExSync, Level Controlled)

Camera Interface Briefs

Mode 1: Continuous (Free-run)

- $1392 \times 1040 \times 10\text{-bit}$ @ 14.8 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving LVAL, FVAL, CLK and video signal from camera.
- DCF used: [BA102KDC.DCF](#)



Mode 2: Asynchronous reset (ExSync, Level Controlled)

- $1392 \times 1040 \times 10\text{-bit}$.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Meteor-II/Camera Link receiving external trigger signal.
- Matrox Meteor-II/Camera Link I 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.

Continued...

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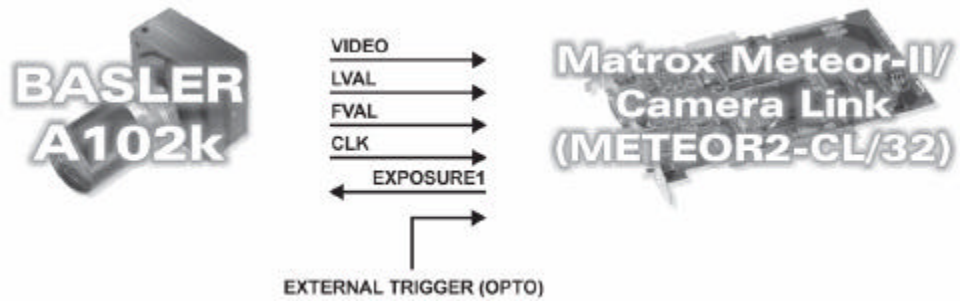
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset (ExSync, Level Controlled)

- DCF used: [BA102KDA.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 **14.8** 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.
- **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 (ExSync, Level Controlled)

- **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 **302 ms** 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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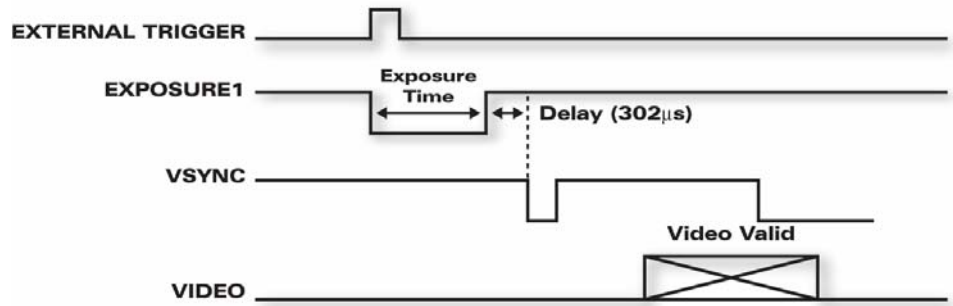
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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 2: Asynchronous reset (ExSync, Level Controlled)

■ 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 (ExSync, Level Controlled)

- **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.

Matrox Electronic Systems Ltd.

1055 St. Regis Blvd.
Dorval, Quebec H9P 2T4
Canada
Tel: (514) 685-2630
Fax: (514) 822-6273

MET2-CID-127

