

Matrox Odyssey eCL/XCL

Camera Interface Application Note

ADIMEC 2000m/D

April 16, 2008

*Basics about the
camera*

Camera Descriptions

- Effective resolution: $1920 \times 1080 \times 10\text{-bit}$ @ 32 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 40 MHz pixel clock rate.

Interface Mode

- Continuous
- Asynchronous reset (Control mode)

Camera Interface Briefs

Mode 1: Continuous

- $1920 \times 1080 \times 10\text{-bit}$ @ 32 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [2000mD1920x1080_10bitCon.DCF](#)



Mode 2: Asynchronous reset

- $1920 \times 1080 \times 10\text{-bit}$.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving external trigger signal.
- Matrox Odyssey eCL/XCL sending TIMER1 (CC1) signal to camera to initiate the exposure.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.

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

*Basics about the
interface modes*

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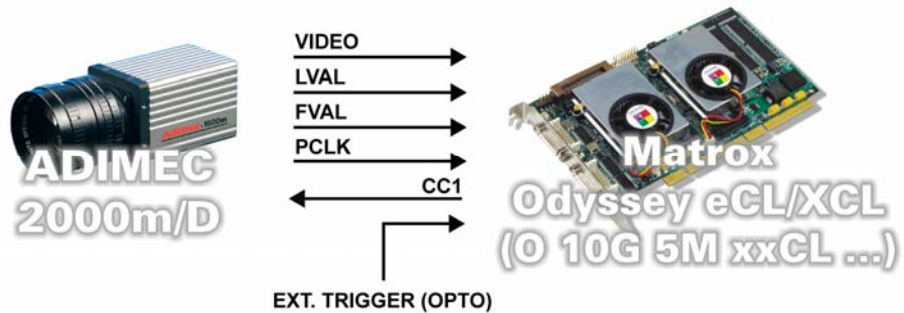
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset

- DCF used: 2000mD1920x1080_10bitAsync.DCF



Specifics about the
interface modes

Camera Interface Details

Mode 1: Continuous

- Frame Rate:** Matrox Odyssey eCL/XCL receives the continuous video from the camera at 32 frames per second (full resolution).
- Exposure time:** Exposure time is determined by the camera integration time. Refer to the camera manual for more information.

Mode 2: Asynchronous Reset

- Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- Exposure time:** The width (rising edge to falling edge) of the TIMER1 (CC1) signal is the exposure time, which can be modified in the DCF using Matrox Intellicam, with the ONL imCamControl() or imDigControl() function, or with the MIL MdigControl() function. Consult the respective manual for more information.
- Camera Control:** Use ONL's imCamControl() or imDigControl() function, MIL's MdigControl() function, Adimec's configuration tool or Windows HyperTerminal to set the camera controls as follows:

Setting	Command
56kbps	57600:8:N:1
Control mode 5	@MO5

Cabling details for the
interface modes

Cabling Requirements

Mode 1: Continuous

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

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*Cabling details for the
interface modes*

Cabling Requirements

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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