

Matrox Odyssey eCL/XCL

Camera Interface Application Note

DALSA DS-21-01M60

November 7, 2007

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: $1024 \times 1024 \times 12\text{-bit}$ @ 60 fps.
- Camera Link BASE interface (Dual taps).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 40 MHz pixel clock rate.

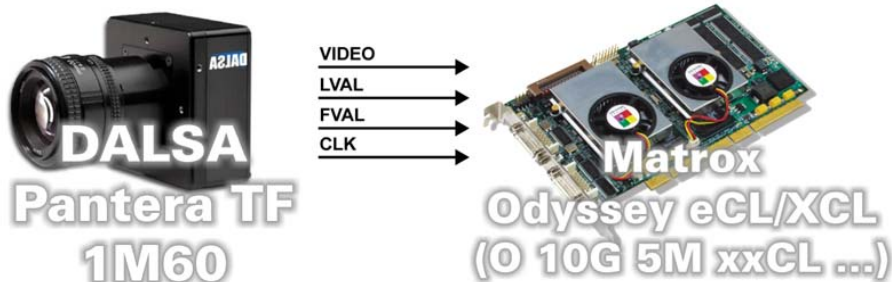
Interface Modes

- Continuous (free running)
- Asynchronous reset (smart EXSYNC)

Camera Interface Briefs

Mode 1: Continuous

- $1024 \times 1024 \times 12\text{-bit}$ @ 60 fps.
- Camera Link BASE interface (Dual taps).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PIXEL CLOCK and video signals from camera.
- DCF: [1M60P1024x1024_12bitCon.DCF](#)



Mode 2: Asynchronous reset

- $1024 \times 1024 \times 82\text{-bit}$.
- Camera Link BASE interface (Dual taps).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving external OPTO trigger signal.
- Matrox Odyssey eCL/XCL sending periodic EXPOSURE1 (CC1) signal to camera to initiate and control exposure time.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PIXEL CLOCK and video signals from camera.

Continued...

Matrox Odyssey eCL/XCL

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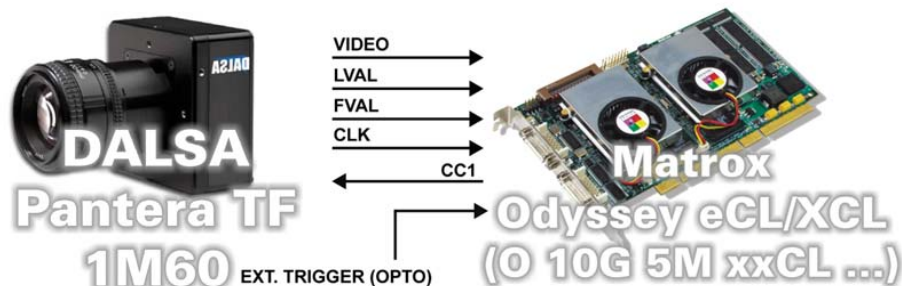
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Basics about the
interface modes

Camera Interface Briefs (continued)

Mode 2: Asynchronous reset

- DCF used: [1M60P1024x1024_12bitAsync.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 60 frames per second.
- **Exposure time:** Exposure time is determined by the camera's internal exposure setting. Refer to the camera manual for more information.
- **Camera Control:** The camera mode is set using Windows HyperTerminal. Type **sem 1** at the prompt to set the camera to **free running** mode. Refer to the camera manual for the serial command descriptions.

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 EXPOSURE2 (CC1) signal is the exposure time. The exposure time can be modified in the DCF using Matrox Intellicam, with the ONL imCamControl() or imDigControl() function, or with the MIL MdigControl() function. Refer to the respective manual for more information.
- **Camera Control:** The camera mode is set using Windows HyperTerminal. Type **sem 4** at the prompt to set the camera to **smart EXSYNC** mode. Refer to the camera manual for the serial command descriptions.

Matrox Odyssey XCL

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DALSA 1M60P (DS-21-01M60)

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*Cabling details for the
interface modes*

Cabling Requirements

Mode 1: Continuous

- **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	--	

The DCFs mentioned in this application note are also attached (embedded) to this PDF file – use the Adobe Reader's View File Attachment to access the DCF files. 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, 2007-2011.

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