

Matrox Odyssey eCL/XCL

Camera Interface Application Note

DALSA 1M150-SA (DS-21-001M0150)

August 18, 2006

*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: $1024 \times 1024 \times 8\text{-bit}$ @ 150 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 80 MHz pixel clock rate.

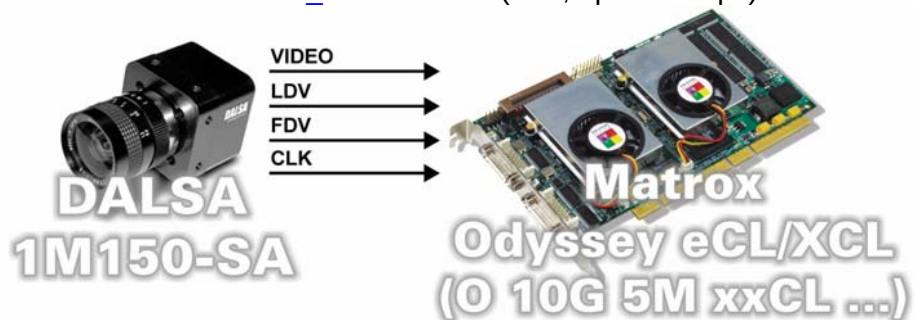
Interface Modes

- Continuous (Free Running)
- Asynchronous reset (Trigger mode with external edge triggered exposure control)

Camera Interface Briefs

Mode 1: Continuous

- $1024 \times 1024 \times 8\text{-bit}$ @ 150 fps (full resolution).
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving LDV, FDV, CLK and video signals from camera.
- DCF: [1M150SA1024x1024_8bitCon.DCF](#) (Full Resolution)
- DCF: [1M150SA512x512_8bitCon.DCF](#) (ROI, up to 600 fps)



Mode 2: Asynchronous reset

- $1024 \times 1024 \times 8\text{-bit}$.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving external OPTO trigger signal.
- Matrox Odyssey eCL/XCL sending CC1 signal to camera to initiate and control exposure time.
- Matrox Odyssey eCL/XCL receiving LDV, FDV, CLK and video signals from camera.

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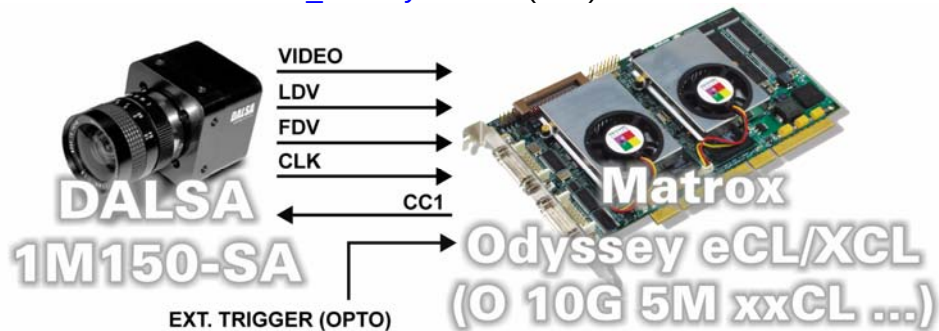
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Basics about the
interface modes

Camera Interface Briefs (continued)

Mode 2: Asynchronous reset

- DCF: [1M150SA1024x1024_8bitAsync.DCF](#) (Full Resolution)
- DCF: [1M150SA512x512_8bitAsync.DCF](#) (ROI)



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 150 frames per second (Full resolution) or higher depending on the ROI mode used. To increase the frame rate, **uncheck** the **constant frame rate** checkbox in the PFRemote Camera Configuration utility (PFRemote.EXE).
- **Exposure time:** Exposure time is determined by the **Exposure Time Field** setting in the PFRemote utility. Refer to the camera manual for more information.
- **Camera Control:** The camera mode is set to **Default** (Free Running) for both DCFs. The ROI resolution (for 1M150SA512x512_8bitCon.DCF only) is set to **512x512** using the window applet of PFRemote utility. Refer to the utility 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 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 **Trigger Mode with external edge trigger exposure control** for both DCFs. The ROI resolution (for 1M150SA512x512_8bitAsync.DCF only) is set to **512x512** using the window applet of the PFRemote utility. Furthermore, check the **Advanced, Sync Pulse High Active** and **Combined Trigger/Exposure** checkboxes. Refer to the PFRemote manual for more information.

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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

- **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, 2006-2011.

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