

Matrox Odyssey eCL/XCL

Camera Interface Application Note

ATMEL ATMOS 1M60

August 3, 2006

Basics about the
camera

Camera Descriptions

- Effective resolution: $1312 \times 1024 \times 12\text{-bit}$ @ 48 fps.
- Camera Link BASE compatible interface (Dual tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 75 MHz pixel clock rate*.

*Note: Single tap 75 MHz mode is not supported. The available DCFs are using a 37.5 MHz/two tap method.

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

Interface Mode

- Continuous (Free Run)
- Pseudo-continuous (Triggered)
- Asynchronous reset (Triggered)

Basics about the
interface modes

Camera Interface Briefs

Mode 1: Continuous

- $1312 \times 1024 \times 12\text{-bit}$ @ 48 fps.
- Camera Link BASE compatible interface (Dual tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [1M60_1312x1024_12bitCon.DCF](#)



Mode 2: Pseudo-Continuous

- $1312 \times 1024 \times 12\text{-bit}$.
- Camera Link BASE compatible interface (Dual tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL sending TIMER1 OUT (CC1) signal to camera to initiate the exposure.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [1M60_1312x1024_12bitPcont.DCF](#)

Matrox Odyssey eCL/XCL

Camera Interface Application Note

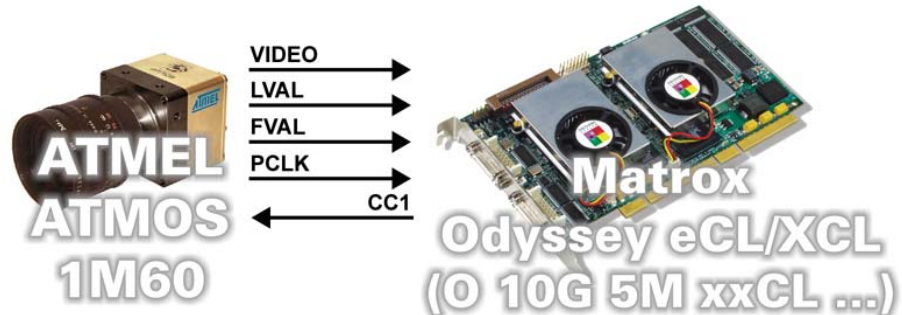
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Basics about the
interface modes

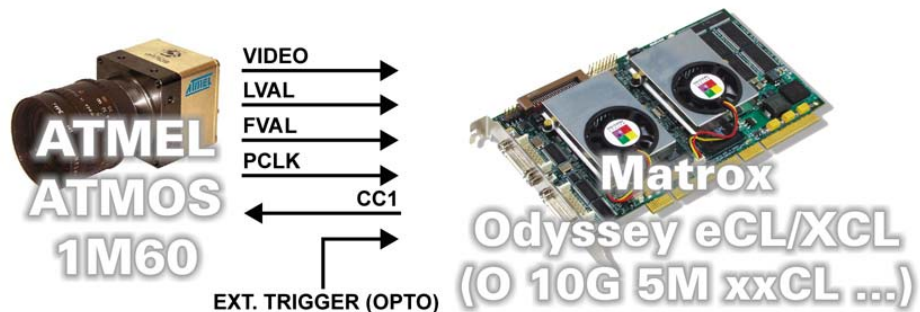
Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous



Mode 3: Asynchronous reset

- 1312 × 1024 × 12-bit.
- Camera Link BASE compatible interface (Dual tap).
- Progressive scan.
- Matrox Odyssey eCL/XCL receiving external trigger signal.
- Matrox Odyssey eCL/XCL sending TIMER1 OUT (CC1) signal to camera to initiate the exposure.
- Matrox Odyssey eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [1M60_1312x1024_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 48 frames per second.
- **Exposure time:** Exposure time is set using the shutter speed setting in the ATMEL CommCam utility. Refer to the camera manual for more information.
- **Camera Configuration:** The camera is set to **FREE RUN** and **2 TAPS 37.5 MHz** in the ATMEL CommCam utility. Refer to the camera manual for more information.

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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 2: Pseudo-Continuous

- **Frame rate:** The frame rate is determined by the frequency of the TIMER1 OUT (CC1) signal.
- **Exposure time:** exposure time is set using the ATMEL CommCam utility. Consult the camera manual for more information.
- **Camera Configuration:** The camera's trigger mode is set to **Triggered** and **2 TAPS 37.5 MHz** in the ATMEL Camera Configuration Utility. Refer to the camera manual for more information.

Mode 3: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** Refer to Mode 2: Pseudo-Continuous.
- **Camera Configuration:** Refer to Mode 2: Pseudo-Continuous.

Cabling details for the
interface modes

Cabling Requirements

Modes 1 and 2: Continuous, Pseudo-continuous

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

Cabling details for the
interface modes

Mode 3: Asynchronous reset

- **Cable and Connection:** Standard Camera Link cable.
- **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	←	LINE SIGNAL --
OPTOTRIG -	02	←	LINE 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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