

Matrox Helios eCL/XCL

Camera Interface Application Note

ILLUNIS XMV-11000

September 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: $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 30 MHz pixel clock rate.

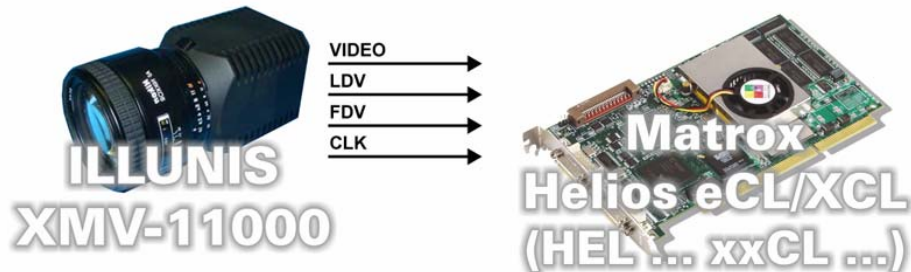
Interface Mode

- Continuous
- Pseudo-continuous
- Asynchronous reset (Trigger Manual Exposure)

Camera Interface Briefs

Mode 1: Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672x12bitCon.DCF](#)



Mode 2: Pseudo-Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Helios eCL/XCL sending EXPOSURE2 (CC1) signal to camera to initiate and control exposure time.
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672x12bitPcon.DCF](#)

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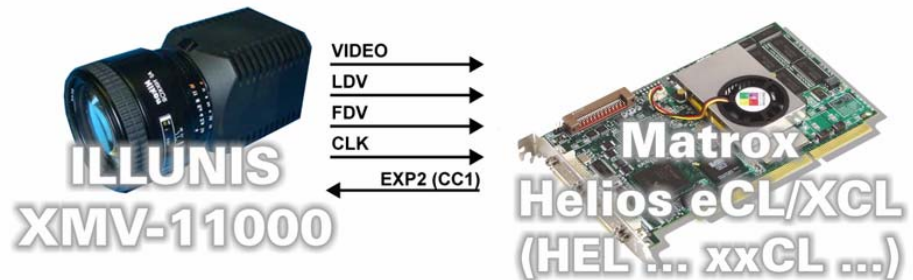
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Basics about the
interface modes

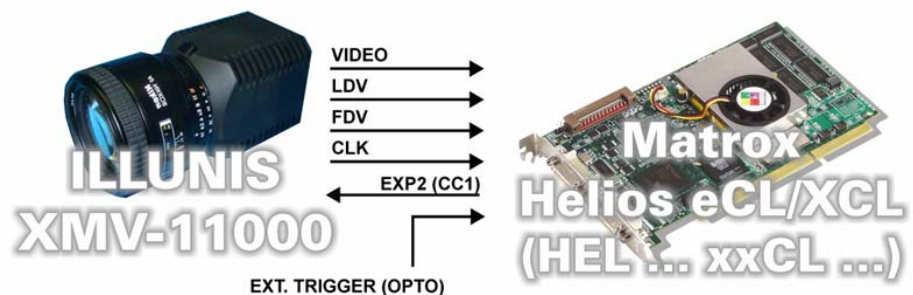
Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous



Mode 3: Asynchronous reset

- $4008 \times 2672 \times 12\text{-bit}$.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Helios eCL/XCL receiving external trigger signal.
- Matrox Helios eCL/XCL sending EXPOSURE2 (CC1) signal to camera to initiate and control exposure time.
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672x12bitAsync.DCF](#)



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*Specifics about the
interface modes*

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Helios eCL/XCL receives the continuous video from the camera at 5 frames per second.
- **Exposure time:** Exposure time is determined by the camera's exposure setting. Refer to the camera manual for more information.
- **Camera control settings:** Set camera to **Free Run** mode using the ILLUNIS camera control software.

Mode 2: Pseudo-continuous

- **Frame Rate:** The frame rate is determined by the frequency and width (rising edge to falling edge) of the EXPOSURE2 (CC1) 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 using Matrox Intellicam or with the MIL MdigControl() function. Refer to the respective manual for more information.
- **Camera control settings:** Set camera to **Trigger Manual Exposure** mode using the ILLUNIS camera control software.

Mode 3: 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 using Matrox Intellicam or with the MIL MdigControl() function. Refer to the respective manual for more information.
- **Camera control settings:** Set camera to **Trigger Manual Exposure** mode using the ILLUNIS camera control software.

Cabling Requirements (cont.)

Modes 1 and 2: Continuous and Pseudo-continuous

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

*Cabling details for the
interface modes*

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Mode 3: 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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