

Matrox Helios eCL/XCL

Camera Interface Application Note

REDLAKE MASD ES-11000

October 6, 2006

Basics about the
camera

Camera Descriptions

- Effective resolution: $4008 \times 2672 \times 12\text{-bit}$ @ 4.6 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 30 MHz pixel clock rate.

Interface Mode

- Continuous (Free run)
- Pseudo-continuous (Edge triggering with Pulse Width Controlled Integration)
- Asynchronous reset (Edge triggering with Pulse Width Controlled Integration)

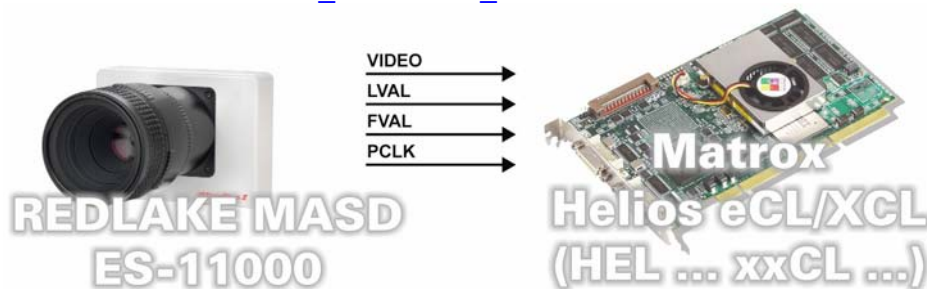
Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)

Camera Interface Briefs

Mode 1: Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 4.6 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitCon.DCF](#)

Basics about the
interface modes



Mode 2: Pseudo-Continuous

- $4008 \times 2672 \times 12\text{-bit}$.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Helios eCL/XCL sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitPcont.DCF](#)

Continued...

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Camera Interface Application Note

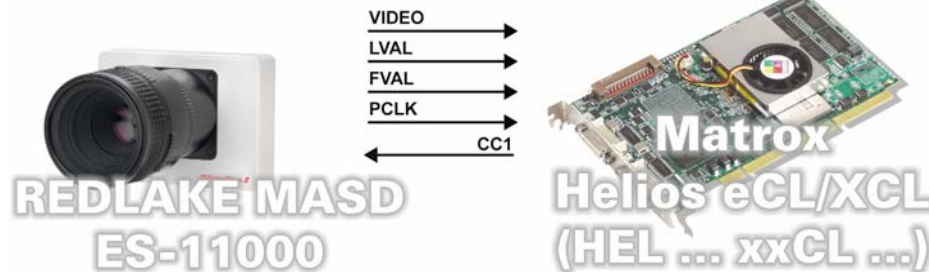
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Basics about the
interface modes

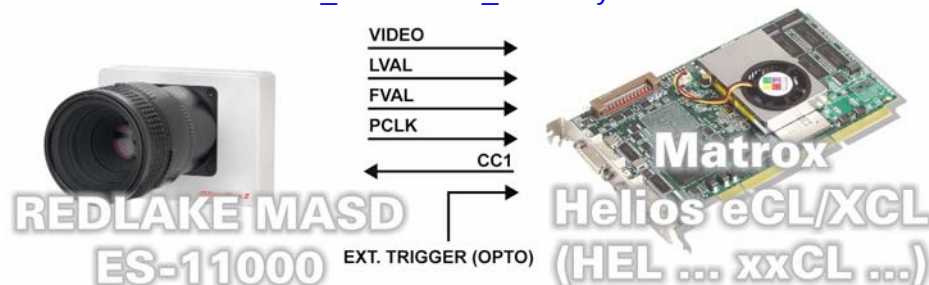
Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous



Mode 3: Asynchronous reset

- 4008 × 2672 × 12-bit.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Matrox Helios eCL/XCL receiving external trigger signal.
- Matrox Helios eCL/XCL sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [ES11000_4008x2672_12bitAsync.DCF](#)



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 4.6 frames per second.
- **Exposure time:** Exposure time is set using the shutter speed setting in the Camera Configuration Utility. Refer to the camera manual for more information.
- **Camera control settings:** Using the MegaPlus II Central software, set the camera controls as follows:

Control	Setting
Output Data / Bit Depth	12 Bits
Mode selection	Trigger off – Free run

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Cabling details for the
interface modes

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	←	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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