

Matrox Helios eCL/XCL

Camera Interface Application Note

Photonfocus MV-D752-160-CL-8

October 6, 2006

*Basics about the
camera*

Camera Descriptions

- Effective resolution: $752 \times 582 \times 8\text{-bit}$ @ 340 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 80 MHz pixel clock rate.

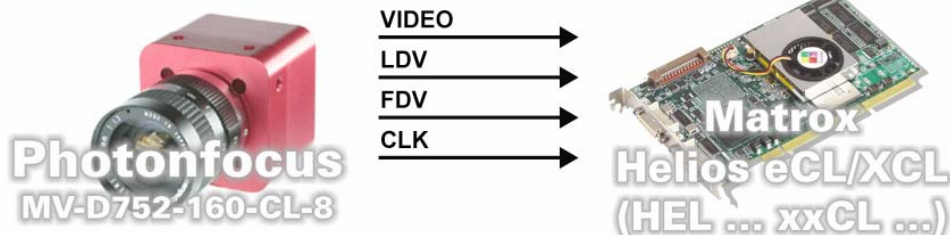
Interface Mode

- Continuous (Free Running)
- Pseudo-continuous (SYNC-EXPOSURE mode)
- Asynchronous reset (SYNC-EXPOSURE mode)

Camera Interface Briefs

Mode 1: Continuous

- $752 \times 582 \times 8\text{-bit}$ @ 340 fps.
- Camera Link BASE interface (Dual tap).
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video from camera.
- DCF used: [MVD752_752x580_8bitCon.DCF](#)



Mode 2: Pseudo-continuous

- $752 \times 582 \times 8\text{-bit}$.
- Camera Link BASE interface (Dual tap).
- Matrox Helios eCL/XCL sending EXSYNC (CC1) signal to camera to initiate and control the exposure.
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video from camera.
- DCF used: [MVD752_752x580_8bitPcon.DCF](#)

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

*Basics about the
interface modes*

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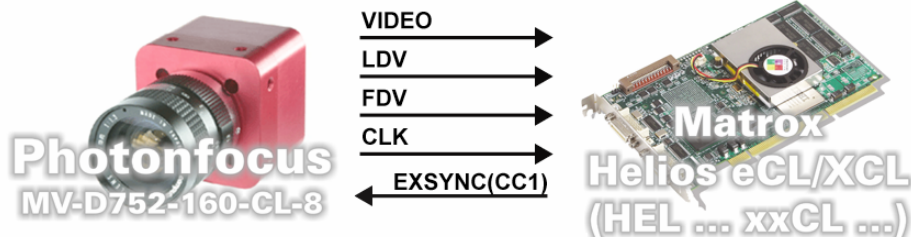
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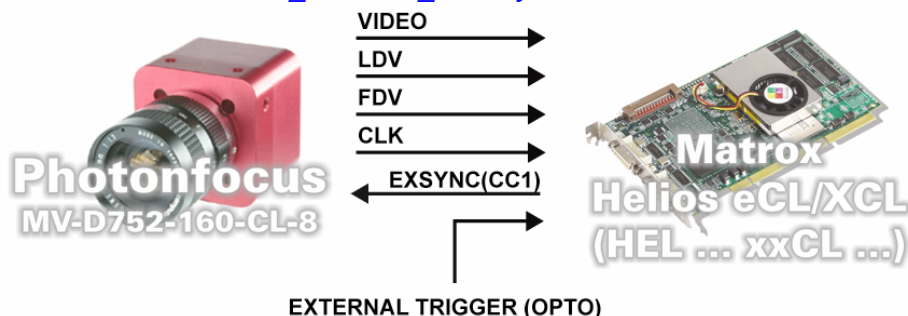
Camera Interface Briefs (cont.)

Mode 2: Pseudo-continuous



Mode 3: Asynchronous reset

- 752 × 582 × 8-bit.
- Camera Link BASE interface (Dual tap).
- Matrox Helios eCL/XCL receiving external trigger signal.
- Matrox Helios eCL/XCL sending EXSYNC (CC1) signal to camera to initiate and control the exposure.
- Matrox Helios eCL/XCL receiving LDV, FDV, CLK and video from camera.
- DCF used: [MVD752_752x580_8bitAsync.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 340 frames per second. To change the frame rate, uncheck the **constant frame rate** checkbox in the Photonfocus PFRemote Camera Configuration utility (PFRemote.EXE). Refer to the camera manual or Photonfocus for more information.
- **Exposure time:** Exposure time is determined by the **Exposure and Frame Time** field settings in the Photonfocus PFRemote utility. To change the exposure and frame time, uncheck the **constant frame rate** checkbox and then adjust the **Frame Time value** in the Photonfocus PFRemote utility.
- **Camera settings:** The camera mode is set to **Default** (Free Running). Refer to the camera manual or Photonfocus for more information.

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*Specifics about the
interface modes*

Camera Interface Details

Mode 2: Pseudo-continuous

- **Frame rate:** The frame rate is determined by the frequency of the EXSYNC (CC1) signal.
- **Exposure time:** The level of the EXSYNC (CC1) signal initiates and controls the exposure time, which can be modified in the DCF (active duration of Timer1) using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera settings:** The camera mode is set to **SYNC-EXPOSURE**. Moreover, check the **Advanced**, **Sync Pulse High Active** and **Combined Trigger/Exposure** checkboxes. Refer to the camera manual or Photonfocus for more information.

Mode 3: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The level of the EXSYNC (CC1) signal initiates and controls the exposure time, which can be modified in the DCF (active duration of Timer1) using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera settings:** Same as in Mode 2: Pseudo-continuous.

Cabling Requirements

Mode 1 and 2: Continuous and Pseudo-continuous

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

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 --

*Cabling details for the
interface modes*

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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