

Matrox Helios eCL/XCL

Camera Interface Application Note

JVC KY-F760

January 9, 2008

Basics about the
camera

Camera Descriptions

- Effective resolution: 1600 × 1200 × 12-bit @ 15 fps.
- Camera Link MEDIUM interface (Single tap RGB).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 36 MHz pixel clock rate.

Interface Mode

- Continuous (Vertical scan)
- Pseudo-continuous (Random)
- Asynchronous reset (Random)

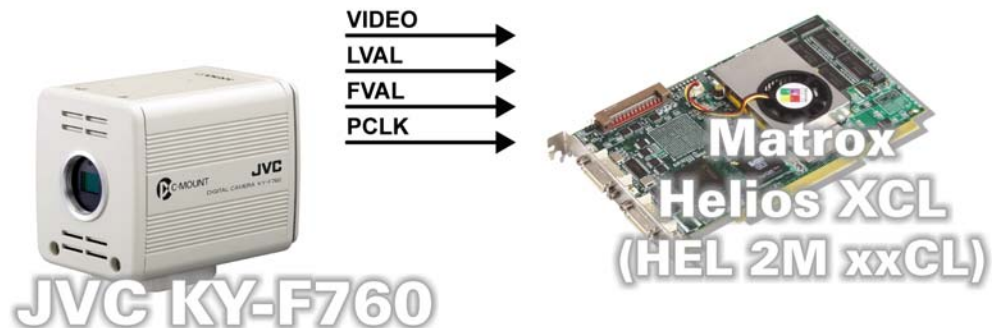
Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)

Basics about the
interface modes

Camera Interface Briefs

Mode 1: Continuous

- 1600 × 1200 × 12-bit @ 15 fps.
- Camera Link MEDIUM interface (Single tap RGB).
- Progressive scan.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [KYF760_1600x1200_12bitRGBCon.DCF](#)



Mode 2: Pseudo-Continuous

- 1600 × 1200 × 12-bit.
- Camera Link MEDIUM interface (Single tap).
- Progressive scan.
- Matrox Helios eCL/XCL sending TIMER1 OUT (CC1) signal to camera to initiate the exposure.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [KYF760_1600x1200_12bitRGBPcon.DCF](#)

Continued...

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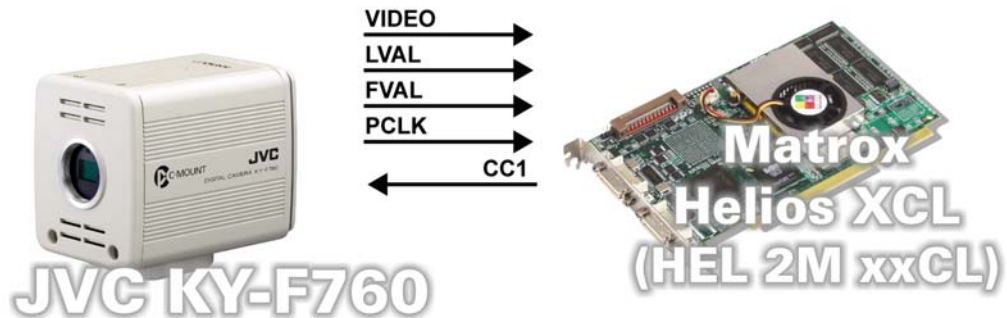
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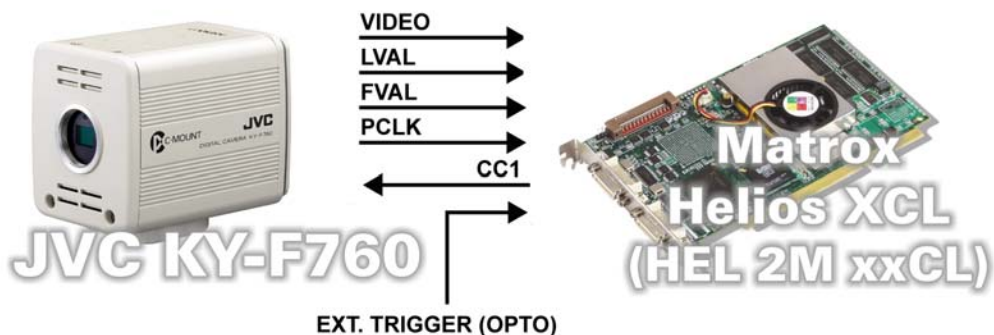
Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous



Mode 3: Asynchronous reset

- 1600 × 1200 × 12-bit.
- Camera Link MEDIUM 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.
- Matrox Helios eCL/XCL receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [KYF760_1600x1200_12bitRGBAsync.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 15 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.

Continued.....

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Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 1: Continuous

- **Camera control settings:** Using the JVC Adj760 camera configuration utility (via the Matrox Helios COM port), set the camera controls as follows:

Control	Setting
Shutter Mode Select	V.Scan
Output mode	12BIT

Mode 2: Pseudo-Continuous

- **Frame rate:** The frame rate is determined by the frequency of the TIMER1 OUT (CC1) signal.
- **Exposure time:** The exposure time is set. Consult the camera manual for more information.
- **Camera control settings:** Using the JVC Adj760 camera configuration utility (via the Matrox Helios COM port), set the camera controls as follows:

Control	Setting
Shutter Mode Select	Random
Output mode	12BIT
CL TRIG	Enable

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.

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Cabling details for the
interface modes

Cabling details for the
interface modes

Cabling Requirements

Modes 1 and 2: Continuous, Pseudo-continuous

- **Cable and Connection:** Two mini Camera Link cables.

Mode 3: Asynchronous reset

- **Cable and Connection:** Two mini Camera Link cables.
- **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, 2008-2011.

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