Matrox Solios eV-CL
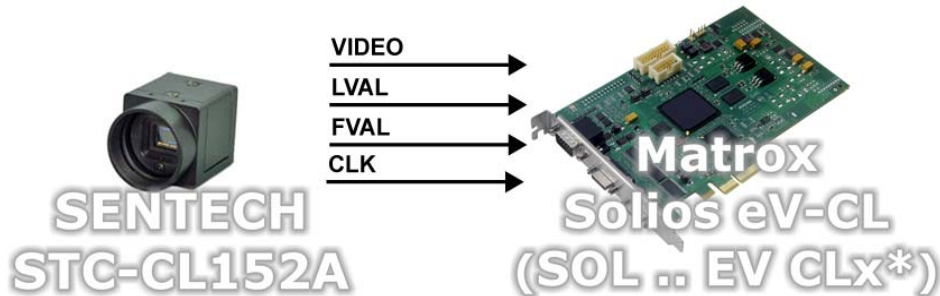
Camera Interface Application Note

Sentech STC-CL152A   March 16, 2011

| *Basics about the camera* | **Camera Descriptions** |

- Effective resolution: 1360 × 1040 × 10-bit @ 20 fps.
- Camera Link BASE interface (Single tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 28.6363 MHz pixel clock rate.

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

- Continuous (Continuous Mode)
- Pseudo-continuous (Pulse Width Trigger Mode)
- Asynchronous reset (Pulse Width Trigger Mode)

| *Basics about the interface modes* | **Camera Interface Briefs** |

Mode 1: Continuous

- 1360 × 1040 × 10-bit @ 20 fps.
- Camera Link BASE interface (Single tap).
- Matrox Solios eV-CL receiving LVAL, FVAL, PIXEL CLOCK (CLK @ 28.6363 MHz) and video from camera.
- DCF used: STCCL152A_1360x1040_10bitCon.DCF

Mode 2: Pseudo-continuous

- 1360 × 1040 × 10-bit.
- Camera Link BASE interface (Single tap).
- Matrox Solios eV-CL sending TIMER 1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Solios eV-CL receiving LVAL, FVAL, PIXEL CLOCK (CLK @ 28.6363 MHz) and video from camera.
- DCF used: STCCL152A_1360x1040_10bitPcon.DCF

Basics about the interface modes	**Camera Interface Briefs (cont.)**

Mode 2: Pseudo-continuous
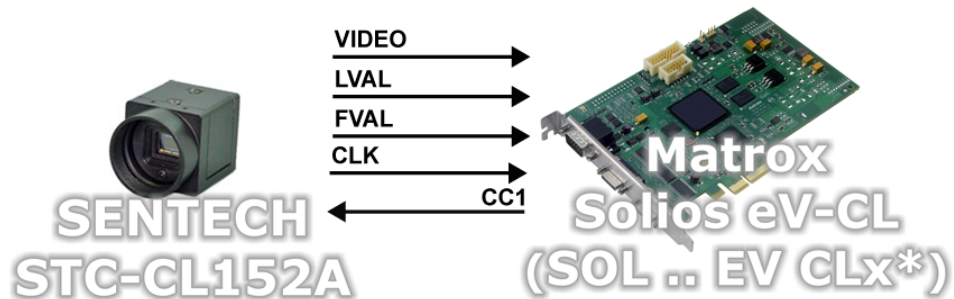
Mode 3: Asynchronous reset

- $1360 \times 1040 \times 10$-bit.
- Camera Link BASE interface (Single tap).
- Matrox Solios eV-CL receiving external trigger signal.
- Matrox Solios eV-CL sending TIMER 1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Solios eV-CL receiving LVAL, FVAL, PIXEL CLOCK (CLK @ 28.6363 MHz) and video from camera.
- DCF used: STCCL152A_1360x1040_10bitAsync.DCF
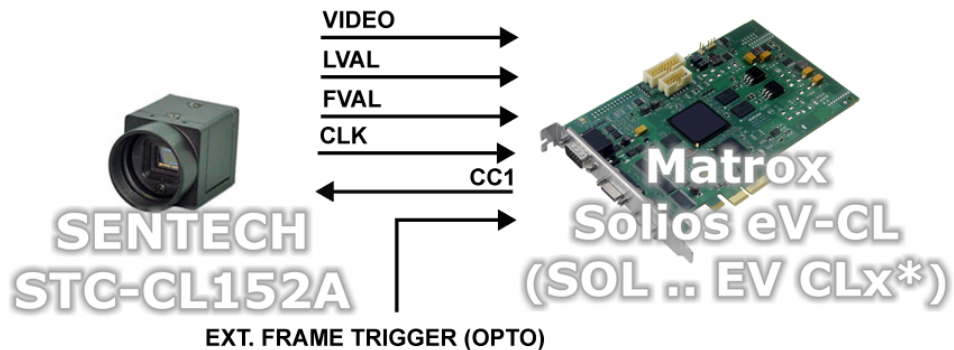
Specifics about the interface modes	**Camera Interface Details**

Mode 1: Continuous

- **Frame rate:** Matrox Solios eV-CL receives the continuous video from the camera at 20 frames per second.
- **Exposure time:** Exposure time is set using the integration time setting in the Camera Configuration utility. Refer to the camera manual for more information.

Specifics about the interface modes	**Camera Interface Details (cont.)**

Mode 1: Continuous

- **Camera control settings:** Set the camera using the Sentech SOF-Cube Camera Configuration Utility as follows: Trigger Mode = Normal | Output Mode = 10-bit

Mode 2: Pseudo-continuous

- **Frame rate:** The frame rate is determined by the frequency of the TIMER1 OUT (CC1) signal.

- **Exposure time**: The TIMER1 OUT (CC1) signal's active duration initiates and controls the exposure time, which can be modified in the DCF using Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.

- **Camera control settings:** Set the camera using the Sentech SOF-Cube Camera Configuration Utility as follows: Trigger Mode = Pulse Width Trigger | Output Mode = 10-bit | Trigger Reset Mode = V-Reset

Mode 3: Asynchronous Reset

- **Frame rate**: The frame rate is determined by the frequency of the external trigger signal. The period between the external trigger signals must be larger than the frame readout period plus the exposure time.

- **Exposure time:** Refer to Mode 2: Pseudo-continuous.

- **Camera settings:** Refer to Mode 2: Pseudo-continuous.

Cabling details for the interface modes	**Cabling Requirements**

Mode 1 and 2: Continuous and Pseudo-continuous

- **Cable and Connection:** One Mini-To-Mini Camera Link cable.

Matrox Solios eV-CL

Camera Interface Application Note

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Cabling details for the interface modes	**Cabling Requirements (cont.)**

Mode 3: Asynchronous Reset

- **Cable and Connection:** One Mini-To-Mini Camera Link cable.
- **External trigger:** External trigger should be connected to the external auxiliary I/O (connector 0 on Matrox Solios eV-CL bracket).

EXTERNAL AUX. I/O
(connector 0)   **External Trigger Source**

PIN NAME	PIN NO.		PIN NAME	PIN NO.
P0_OPTO_AUX_IN0 +	15	←	SIGNAL	--
P0_OPTO_AUX_IN0 -	09	←	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, 2010-2011.

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