

Matrox Radiant eCL

Camera Interface Application Note

Toshiba TELI CSCQS15BC23

November 15, 2010

Basics about the camera

Camera Descriptions

- Effective resolution: $2456 \times 2058 \times 12\text{-bit}$ @ 15 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 60 MHz pixel clock rate.

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

Interface Mode

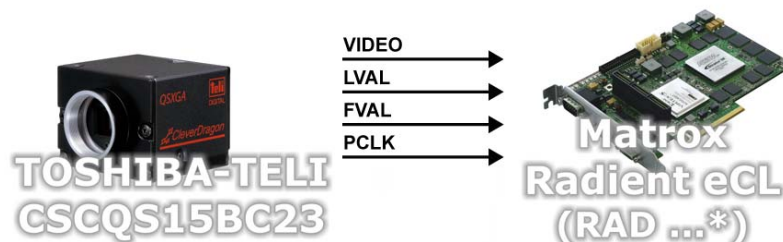
- Continuous
- Pseudo-continuous (Random Shutter Mode with Pulse)
- Asynchronous reset (Random Shutter Mode with Pulse)

Basics about the interface modes

Camera Interface Briefs

Mode 1: Continuous

- $2456 \times 2058 \times 12\text{-bit}$ @ 15 fps.
- Camera Link BASE interface (Dual tap).
- Matrox Radiant eCL receiving LVAL, FVAL, PCLK (CLK @ 60 MHz) and video from camera.
- DCF used: [CSCQS15BC23_2456x2058_12bit2TapCon.DCF](#)



Mode 2: Pseudo-continuous

- $2456 \times 2058 \times 12\text{-bit}$.
- Camera Link BASE interface (Dual tap).
- Matrox Radiant eCL sending TIMER 1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Radiant eCL receiving LVAL, FVAL, PCLK (CLK @ 60 MHz) and video from camera.
- DCF used: [CSCQS15BC23_2456x2058_12bit2TapPcon.DCF](#)

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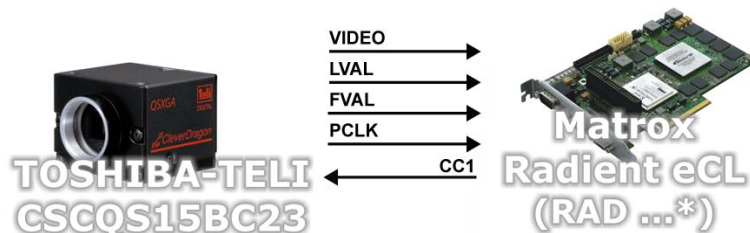
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Basics about the interface modes

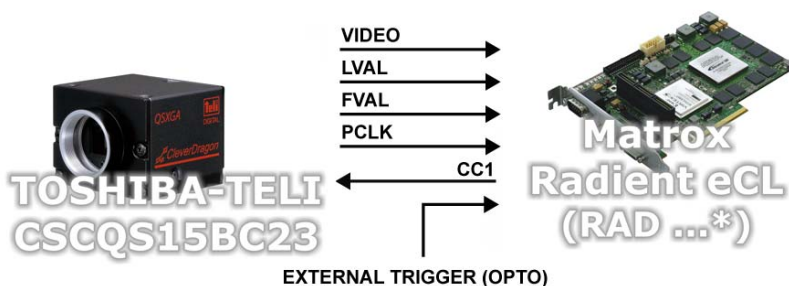
Camera Interface Briefs (cont.)

Mode 2: Pseudo-continuous



Mode 3: Asynchronous reset

- 2456 × 2058 × 12-bit.
- Camera Link BASE interface (Dual tap).
- Matrox Radiant eCL receiving external trigger signal.
- Matrox Radiant eCL sending TIMER 1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Radiant eCL receiving LVAL, FVAL, PCLK (CLK @ 60 MHz) and video from camera.
- DCF used: [CSCQS15BC23_2456x2058_12bit2TapAsync.DCF](#)



Specifics about the interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame rate:** Matrox Radiant eCL receives the continuous video from the camera at 15 frames per second.
- **Exposure time:** Exposure time is set using the Toshiba TELI Configuration utility. Refer to the camera manual for more information.
- **Camera settings:** Set the camera using the Camera Configuration Utility as follows: Shutter = Normal

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Specifics about the interface modes

Camera Interface Details (cont.)

Mode 2: Pseudo-continuous

- **Frame rate:** The frame rate is determined by the frequency of the TIMER 1 OUT (CC1) signal.
- **Exposure time:** The exposure time is determined by the active duration of the TIMER 1 OUT (CC1) signal, which can be modified in the DCF by changing the Timer 1 active duration in Matrox Intellicam or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera control settings:** Set the camera using the Camera Configuration Utility as follows: Shutter = Random | RTS = Pulse | Trigger Polarity = Negative

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 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-Standard Camera Link cable.

Mode 3: Asynchronous Reset

- **Cable and Connection:** One Mini-To-Standard Camera Link cable.
- **External trigger:** External trigger should be connected to the external auxiliary I/O (connector A on Matrox Radiant eCL bracket).

EXTERNAL AUX. I/O

(connector A)

PIN NAME	PIN NO.		PIN NAME	PIN NO.
OPTO_AUX_IN0 +	15	←	SIGNAL	--
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.

Matrox Electronic Systems Ltd.
1055 St. Regis Blvd.
Dorval, Quebec H9P 2T4
Canada
Tel: (514) 685-2630
Fax: (514) 822-6273