Matrox Odyssey Xpro
Camera Interface Application Note
ADIMEC 2000m/D April 16, 2008

Basics about the camera

Camera Descriptions

- Effective resolution: 1920 × 1080 × 10-bit @ 32 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 40 MHz pixel clock rate.

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

Interface Mode

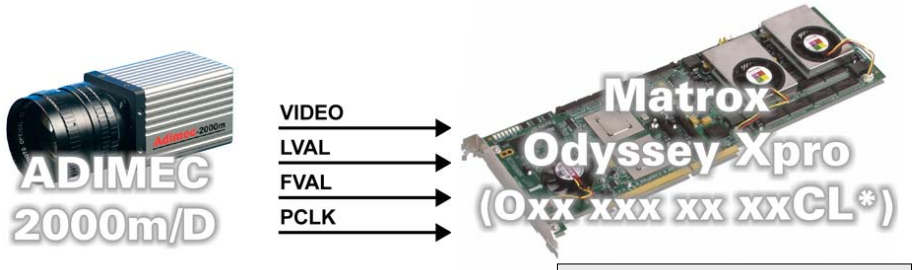
- Continuous
- Asynchronous reset (Control mode)

Basics about the interface modes

Camera Interface Briefs

Mode 1: Continuous

- 1920 × 1080 × 10-bit @ 32 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey Xpro receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: 2000mD1920x1080_10bitCon.DCF



***Matrox Odyssey Xpro main board with Camera Link grab module**

Mode 2: Asynchronous reset

- 1920 × 1080 × 10-bit.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey Xpro receiving external trigger signal.
- Matrox Odyssey Xpro sending TIMER2 OUT (CC1) signal to camera to initiate the exposure.
- Matrox Odyssey Xpro receiving LVAL, FVAL, PCLK and video from camera.

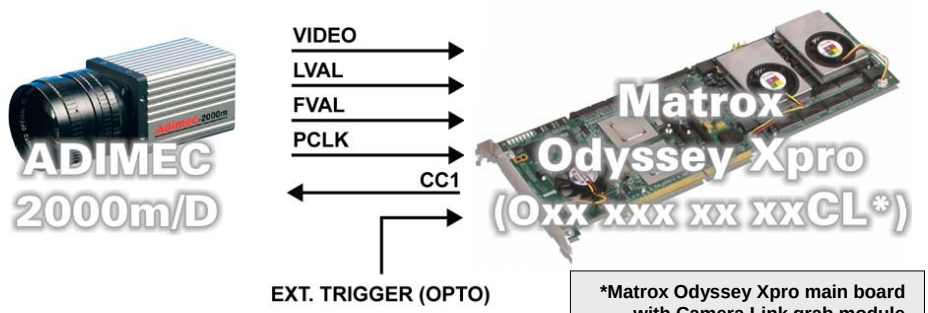
Matrox Odyssey Xpro
Camera Interface Application Note
ADIMEC 2000m/D April 16, 2008

Basics about the interface modes

Camera Interface Briefs (cont.)

Mode 2: Asynchronous reset

- DCF used: 2000mD1920x1080_10bitAsync.DCF



*Matrox Odyssey Xpro main board with Camera Link grab module

Specifics about the interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Odyssey Xpro receives the continuous video from the camera at 32 frames per second (full resolution).
- **Exposure time:** Exposure time is determined by the camera integration time. Refer to the camera manual for more information.

Mode 2: Asynchronous Reset

- **Frame rate**: The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The width (rising edge to falling edge) of the TIMER2 OUT (CC1) signal is the exposure time, which can be modified in the DCF using Matrox Intellicam, with the ONL imCamControl() or imDigControl() function, or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera Control:** Use ONL's imCamControl() or imDigControl() function, MIL's MdigControl() function, Adimec's configuration tool or Windows HyperTerminal to set the camera controls as follows:

Setting	Command
56kbps	57600:8:N:1
Control mode 5	@MO5

Cabling details for the interface modes

Cabling Requirements

Mode 1: Continuous

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

Matrox Odyssey Xpro
Camera Interface Application Note
ADIMEC 2000m/D April 16, 2008

Cabling details for the interface modes

Cabling Requirements

Mode 2: 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	--

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.

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