

Matrox Odyssey Xpro

Camera Interface Application Note

ILLUNIS XMV-11000

April 13, 2004

Basics about the
camera

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

Basics about the
interface modes

Camera Descriptions

- Effective resolution: $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Internal sync.
- Internal or external exposure control.
- 30 MHz pixel clock rate.

Interface Mode

- Continuous
- Pseudo-continuous
- Asynchronous reset (Trigger Manual Exposure)

Camera Interface Briefs

Mode 1: Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey Xpro receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672_12bitCon.DCF](#)



VIDEO
LDV
FDV
CLK



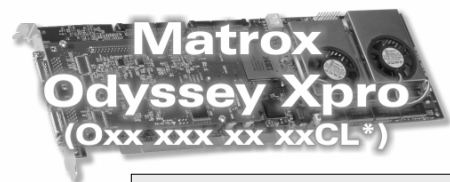
*Matrox Odyssey Xpro main board
with Camera Link grab module

Mode 2: Pseudo-Continuous

- $4008 \times 2672 \times 12\text{-bit}$ @ 5 fps.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey Xpro sending EXPOSURE2 (CC1) signal to camera to initiate and control exposure time.
- Matrox Odyssey Xpro receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672_12bitPcon.DCF](#)



VIDEO
LDV
FDV
CLK
EXP2 (CC1)



*Matrox Odyssey Xpro main board
with Camera Link grab module

Matrox Odyssey Xpro

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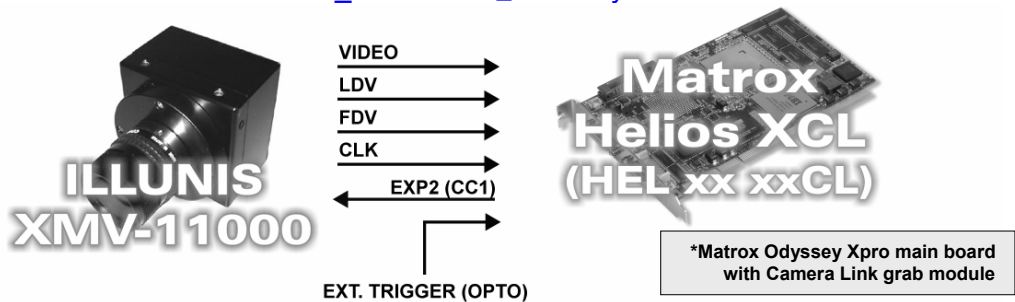
April 13, 2004

Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 3: Asynchronous reset

- 4008 × 2672 × 12-bit.
- Camera Link BASE interface (Dual tap).
- Progressive scan.
- Matrox Odyssey Xpro receiving external trigger signal.
- Matrox Odyssey Xpro sending EXPOSURE2 (CC1) signal to camera to initiate and control exposure time.
- Matrox Odyssey Xpro receiving LDV, FDV, CLK and video signal from camera.
- DCF used: [XMV11000_4008x2672_12bitAsync.DCF](#)



Specifics about the
interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Odyssey Xpro receives the continuous video from the camera at 5 frames per second.
- **Exposure time:** Exposure time is determined by the camera's exposure setting. Refer to the camera manual for more information.
- **Camera control settings:** Set camera to **Free Run** mode using `MdigControl(MilDigitizer, M_UART_WRITE_STRING, (long) &string);` where string equals "{W0403000000}".

Mode 2: Pseudo-continuous

- **Frame Rate:** The frame rate is determined by the frequency and width (rising edge to falling edge) of the EXPOSURE2 (CC1) signal.
- **Exposure time:** The width (rising edge to falling edge) of the EXPOSURE2 (CC1) signal is the exposure time. The exposure time can be modified using Matrox Intellicam, `ONL imCamControl()` or `imDigControl()` function, or with the MIL `MdigControl()` function. Refer to the respective manual for more information.
- **Camera control settings:** Set camera to **Trigger Manual Exposure** mode using `MdigControl(MilDigitizer, M_UART_WRITE_STRING, (long) &string);` where string equals "{W04030002FE}".

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Basics about the
interface modes

Specifics about the
interface modes

Camera Interface Details (cont.)

Mode 3: 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 EXPOSURE2 (CC1) signal is the exposure time. The exposure time can be modified using Matrox Intellicam or with the MIL MdigControl() function. Refer to the respective manual for more information.
- **Camera control settings:** Set camera to **Trigger Manual Exposure** mode using MdigControl(MilDigitizer, M_UART_WRITE_STRING, (long) &string); where string equals "{W04030002FE}".

Cabling Requirements

Modes 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 --

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, 2004-2011.

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