

Matrox Odyssey Xpro

Camera Interface Application Note

ADIMEC 4050m

May 18, 2007

*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: $2352 \times 1728 \times 10\text{-bit}$ @ 144 fps.
- Camera Link MEDIUM interface (Four taps).
- Progressive scan.
- Internal sync.
- External or internal exposure control.
- 85 MHz pixel clock rate.

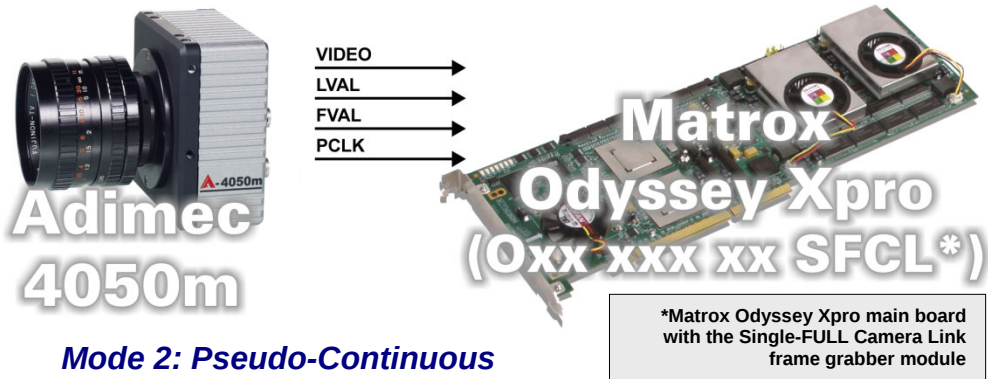
Interface Mode

- Continuous (Free run)
- Pseudo-continuous (Control mode)
- Asynchronous reset (Control mode)

Camera Interface Briefs

Mode 1: Continuous

- $2352 \times 1728 \times 10\text{-bit}$ @ 53 fps.
- Camera Link MEDIUM interface (Four taps).
- Progressive scan.
- Matrox Odyssey Xpro receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [A4050m_2352x1728_10bitCon.DCF](#)



Mode 2: Pseudo-Continuous

- $2352 \times 1728 \times 10\text{-bit}$.
- Camera Link MEDIUM interface (Four taps).
- Progressive scan.
- Matrox Odyssey Xpro sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Odyssey Xpro receiving LVAL, FVAL, PCLK and video from camera.

Continued...

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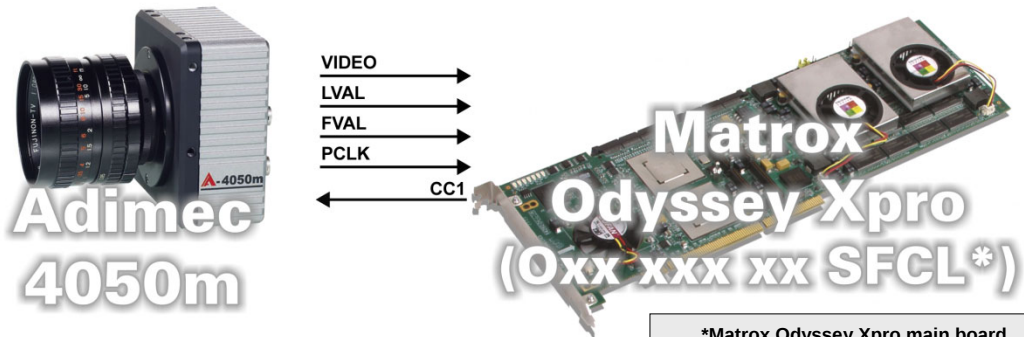
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Basics about the
interface modes

Camera Interface Briefs (cont.)

Mode 2: Pseudo-Continuous

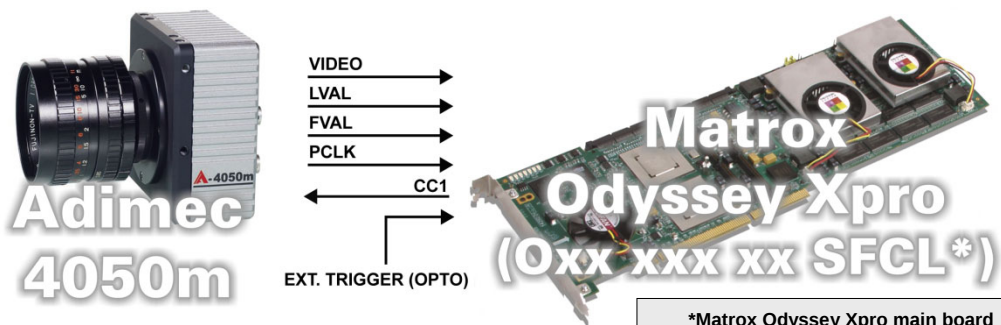
- DCF used: [A4050m_2352x1728_10bitPcon.DCF](#)



*Matrox Odyssey Xpro main board
with the Single-FULL Camera Link
frame grabber module

Mode 3: Asynchronous reset

- 2352 × 1728 × 10-bit.
- Camera Link MEDIUM interface (Four taps).
- Progressive scan.
- Matrox Odyssey Xpro receiving external trigger signal.
- Matrox Odyssey Xpro sending TIMER1 OUT (CC1) signal to camera to initiate and control the exposure.
- Matrox Odyssey Xpro receiving LVAL, FVAL, PCLK and video from camera.
- DCF used: [A4050m_2352x1728_10bitAsync.DCF](#)



*Matrox Odyssey Xpro main board
with the Single-FULL Camera Link
frame grabber 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 53 frames per second.
- **Exposure time:** Exposure time is set using the shutter speed setting in the Adimec Windows-based Control Application software. 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 Adimec Windows-based Control Application software, set the camera controls as follows:

Control	Setting
Mode	Continuous
Taps	4 taps
Digital Resolution	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 width of the TIMER1 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 settings:** Using the Adimec Windows-based Control Application software, set the camera controls as follows:

Control	Setting
Mode	Control
Taps	4 taps
Digital Resolution	10-bit

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.

Cabling Requirements

Modes 1 and 2: Continuous, Pseudo-continuous

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

*Cabling details for the
interface modes*

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*Cabling details for the
interface modes*

Cabling Requirements

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	←	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, 2007-2011.

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