

# Matrox Odyssey Xpro

## Camera Interface Application Note

### JAI CV-A11

July 31, 2006

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:  $648 \times 492 \times 8\text{-bit}$  @ 30 fps.
- Single channel analog video output.
- Progressive scan.
- External or internal sync.
- External or internal exposure control.
- 12.27 MHz pixel clock rate.

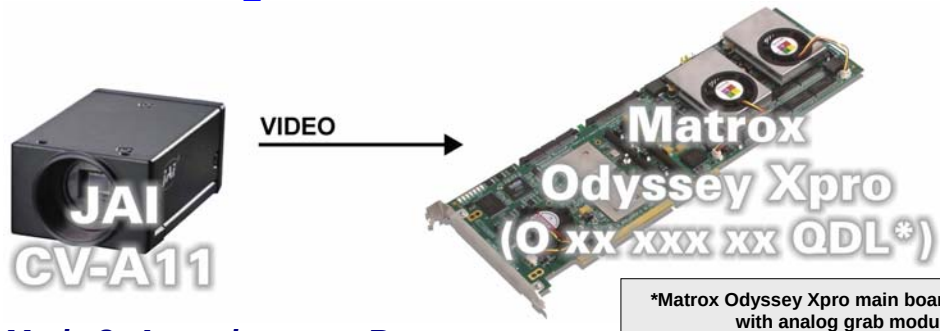
#### Interface Modes

- Continuous
- Asynchronous reset (Pulse width control)

#### Camera Interface Briefs

##### Mode 1: Continuous

- $648 \times 492 \times 8\text{-bit}$  @ 30 fps.
- Single channel analog video.
- Progressive scan.
- Matrox Odyssey Xpro receiving video from camera.
- DCF used: [CVA11\\_648x492Con.DCF](#)



##### Mode 2: Asynchronous Reset

- $648 \times 492 \times 8\text{-bit}$ .
- Single channel analog video.
- Progressive scan.
- Matrox Odyssey Xpro receiving external trigger signal.
- Matrox Odyssey Xpro sending TIMER1 (TRIGGER INPUT) signal to camera to initiate and control the exposure.
- Matrox Odyssey Xpro receiving video from camera.
- DCF used: [CVA11\\_648x492Async.DCF](#)

Continued...

# Matrox Odyssey Xpro

## Camera Interface Application Note

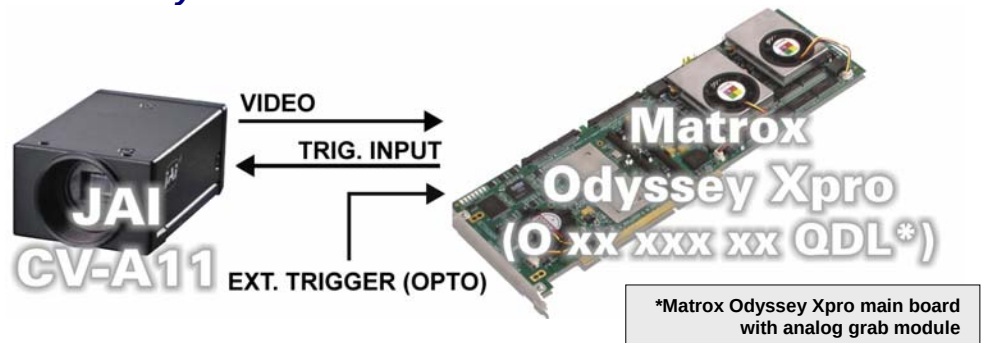
### JAI CV-A11

July 31, 2006

Basics about the  
interface modes

#### Camera Interface Briefs (continued)

##### Mode 2: Asynchronous Reset



Specifics about the  
interface modes

#### Camera Interface Details

##### Mode 1: Continuous

- **Frame Rate:** Matrox Odyssey Xpro receives the continuous video from the camera at 30 frames per second.
- **Exposure time:** Exposure time is inversely proportionate to the frame rate.
- **Camera control:** Use default settings in the CV-A11 Camera Control Tool or if using Windows HyperTerminal, set the Camera Status request **ST=0** and Trigger Mode **TR=0**. Refer to the camera manual for more information about the Camera Control Tool or the RS-232C command list.
- **Important notice:** Users will need to use the PC's COM port in order to perform serial communication with the camera.

##### Mode 2: Asynchronous Reset

- **Frame rate:** The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The time between the falling edge and the rising edge of the TIMER1 (TRIGGER INPUT) signal is the exposure time, which can be changed in the DCF by modifying Timer1 in Matrox Intellicam, with the ONL imCamControl() or imDigControl() function, or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera control:** **Trigger Mode** set to **Pulse Width Control** (Shutter and Sync Signals menu) in the CV-A11 Camera Control Tool or if using Windows HyperTerminal, set the Trigger mode **TR=2** and Trigger polarity **TP=0**. Refer to the camera manual for more information about the Camera Control Tool or the RS-232C command list.
- **Important notice:** Users will need to use the PC's COM port in order to perform serial communication with the camera.

# Matrox Odyssey Xpro

## Camera Interface Application Note

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Cabling details for the  
interface modes

#### Cabling Requirements

##### Mode 1: Continuous

- **Cable and Connection:** DVI-TO-8BNC/O (open end) cable required for video signal. The connection between the 12-pin connector of the camera and the Matrox Odyssey are as follow:

##### Matrox Odyssey

##### (DVI analog input connector-0)

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|            |    |
|------------|----|
| CH0_INPUTA | C1 |
|------------|----|

##### JAI CV-A11

##### (12-pin connector)

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|       |    |
|-------|----|
| VIDEO | 04 |
|-------|----|

←

##### Mode 2: Asynchronous reset

- **Cable and Connection:** DVI-TO-8BNC/O (open end) cable required for video signal. The connection between the 12-pin connector of the camera and the Matrox Odyssey are as follow:

##### Matrox Odyssey

##### (DVI analog input connector-0)

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|            |    |
|------------|----|
| CH0_INPUTA | C1 |
|------------|----|

##### JAI CV-A11

##### (12-pin connector)

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|       |    |
|-------|----|
| VIDEO | 04 |
|-------|----|

←

|              |    |
|--------------|----|
| CH0_EXPOSURE | 23 |
|--------------|----|

→

|               |    |
|---------------|----|
| TRIGGER INPUT | 11 |
|---------------|----|

- **External trigger:** External trigger should be connected to the OPTO TRIG input of the 9-pin connector (pins 2 and 7) on the external trigger input connector 1 (cable adapter board).

##### External trigger input

##### (9-pin connector)

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|            |    |
|------------|----|
| OPTO TRIG+ | 07 |
|------------|----|

##### External Trigger Source

| Pin name | Pin no. |
|----------|---------|
|----------|---------|

|        |    |
|--------|----|
| SIGNAL | -- |
|--------|----|

←

|            |    |
|------------|----|
| OPTO TRIG- | 02 |
|------------|----|

←

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, 2006-2011.

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ODY-CID-007

