Matrox Odyssey Xpro
Camera Interface Application Note
PULNiX TM-9701   March 10, 2003

Camera Descriptions

- Effective resolution: $768 \times 484 \times$ 8-bit @ 30 fps.
- Single channel analog or RS-422 digital video output.
- Interlaced or progressive scan.
- External or internal sync.
- External or internal exposure control.
- 14.31818 MHz pixel clock rate.

Interface Modes

- Continuous
- Asynchronous reset (External VINIT with double pulse)

Camera Interface Briefs

Mode 1: Continuous

- $756 \times 484 \times$ 8-bit @ 30 fps.
- Single channel analog video.
- Interlaced or progressive scan.
- Matrox Odyssey Xpro receiving video from camera.
- DCF used: TM9701_756x484ProgConOdyA.DCF (Progressive scan)
- DCF used: TM9701_756x484IntConOdyA.DCF (Interlaced)

VIDEO

*Matrox Odyssey Xpro board with analog frame grabber module

Mode 2: Asynchronous Reset

- $757 \times 485 \times$ 8-bit.
- Single channel analog video.
- Progressive scan.
- Matrox Odyssey Xpro receiving external trigger signal.
- Matrox Odyssey Xpro sending EXPOSURE1 (VINIT) signal to camera to initiate and control the exposure.
- Matrox Odyssey Xpro receiving video from camera.
- DCF used: TM9701_757x485ProgAsyncOdyA.DCF

Continued…

PRELIMINARY

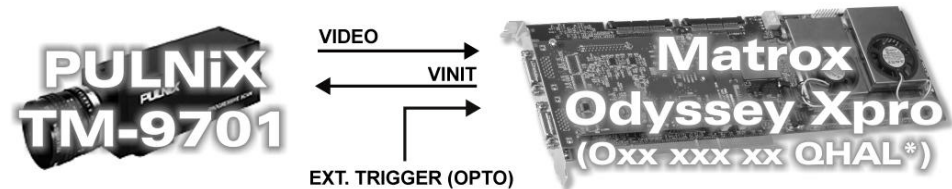# Matrox Odyssey Xpro
Camera Interface Application Note
PULNiX TM-9701   March 10, 2003

Camera Interface Briefs (continued)
Mode 2: Asynchronous Reset

VIDEO
VINIT
EXT. TRIGGER (OPTO)

*Matrox Odyssey Xpro board
with analog frame grabber module*

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 switch settings:** Refer to the camera manual for more information. External settings are as follows:

Switch	Settings	
	...Interlaced.DCF	...Progressive.DCF
Shutter Speed	0	0
NRM/ASY	NRM	NRM
INT/NON	INT	NON

Mode 2: Asynchronous Reset
- **Frame rate**: The frame rate is determined by the frequency of the external trigger signal.
- **Exposure time:** The time between two pulses of the EXPOSURE1 (VINIT) signal is the exposure time. The exposure time can be changed in the DCF by modifying Timer2 in Matrox Intellicam, with the ONL imCamControl() or imDigControl() function, or with the MIL MdigControl() function. Consult the respective manual for more information.
- **Camera switch settings:** Refer to the camera manual for more information. External settings are as follows:

Switch	Settings
	PulnixTM9701_757x485Async.DCF
Shutter Speed	9
NRM/ASY	ASY
INT/NON	NON

Matrox Odyssey Xpro
Camera Interface Application Note
PULNiX TM-9701   March 10, 2003

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 connector-0)			PULNiX TM-9701 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
CH0_INPUTA	C1	←	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 connector-0)			PULNiX TM-9701 (12-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
CH0_INPUTA	C1	←	VIDEO	04
CH0_EXPOSURE	23	→	VINIT	06

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

EXTERNAL AUX. I/O BRACKET (9-pin connector)			External Trigger Source	
OPTOTRIG +	07	←	SIGNAL	--
OPTOTRIG -	02	←	GROUND	--

PRELIMINARY

MATROX IMAGING