

Matrox Odyssey Xpro

Camera Interface Application Note

PULNiX TM-9701

March 10, 2003

*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: $768 \times 484 \times 8\text{-bit}$ @ 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

- $756 \times 484 \times 8\text{-bit}$ @ 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

- $757 \times 485 \times 8\text{-bit}$.
- 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...

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Camera Interface Application Note

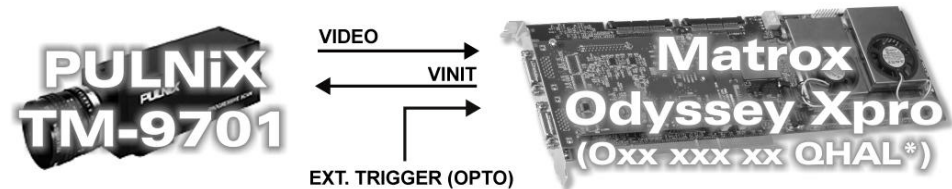
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Basics about the
interface modes

Camera Interface Briefs (continued)

Mode 2: Asynchronous Reset



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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 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

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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 connector-0)**

**PULNiX TM-9701
(12-pin connector)**

Pin name	Pin no.		Pin name	Pin no.
CHO_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.
CHO_INPUTA	C1	←	VIDEO	04
CHO_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

The DCF(s) mentioned in this application note can be found on the MIL/ONL CD or our FTP site ([ftp.matrox.com](ftp:ftp.matrox.com)). 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.

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ODXPRO-CID-001

