

Matrox Odyssey eD/XD

Camera Interface Application Note

FLIR SYSTEMS ThermoCAM Phoenix September 18, 2006

Basics about the
camera

Camera Descriptions

- Effective resolution: $320 \times 256 \times 14\text{-bit}$ @ 60 fps.
- Single channel LVDS digital video output.
- Progressive or interlaced scan.
- Internal (separate) sync.
- External and internal exposure control.
- Up to 12.2727 MHz pixel clock rate.

Interface Mode

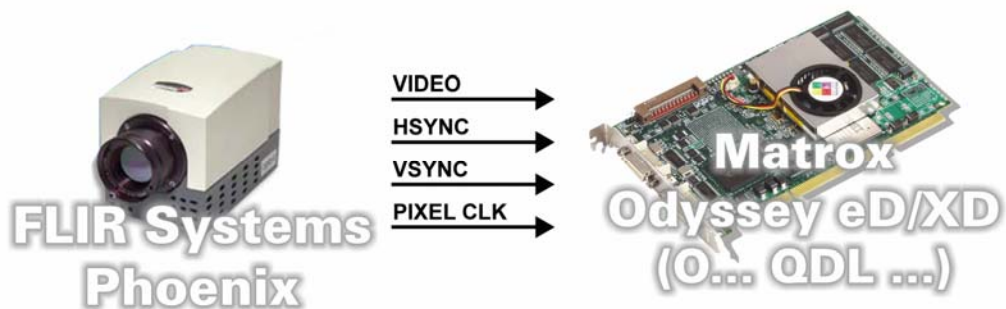
- Continuous

Camera Interface Briefs

Mode 1: Continuous

- $320 \times 256 \times 14\text{-bit}$ @ 60 fps.
- Single channel LVDS digital video.
- Progressive scan.
- Matrox Odyssey eD/XD receiving HSYNC (LineSYNC) VSYNC (FrameSYNC), PIXEL CLOCK (PixelCLK) and video from camera.
- DCF used: [Phoenix320x256_14bitCon1.DCF](#) (6.1364 MHz)
- DCF used: [Phoenix320x256_14bitCon2.DCF](#) (12.2727 MHz)

Mode of operations as
per Matrox Imaging (in
parentheses as per
camera manufacturer)
Basics about the
interface modes



Specifics about
the interface modes

Camera Interface Details

Mode 1: Continuous

- **Frame Rate:** Matrox Odyssey eD/XD receives the continuous video from the camera at 60 frames per second.
- **Exposure time:** Exposure time is inversely proportionate to the frame rate or determined by the camera's shutter setting. Refer to the camera manual for more information.
- **Camera Control:** The camera mode is set to **Continuous mode** in the camera control software. Refer to the camera manual for more information.

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*Cabling details for this
interface mode*

Cabling Requirements

Mode 1: Continuous

- **Cable:** DBHD100-TO-OPEN (open ended) cable required for video, synchronization and control signals.
- **Connection:** Connections between the 37-pin connector of the camera and the 100-pin connector of the Matrox Odyssey eD/XD are as follows:

FLIR ThermaCAM Phoenix (37-pin connector – DB37M)			Matrox Odyssey eD/XD (100-pin connector)	
Pin name	Pin no.		Pin name	Pin no.
DATA 13+	32	→	P0_LVDS_DATA_IN13+	27
DATA 13-	14	→	P0_LVDS_DATA_IN13-	28
DATA 12+	31	→	P0_LVDS_DATA_IN12+	25
DATA 12-	13	→	P0_LVDS_DATA_IN12-	26
DATA 11+	30	→	P0_LVDS_DATA_IN11+	23
DATA 11-	12	→	P0_LVDS_DATA_IN11-	24
DATA 10+	29	→	P0_LVDS_DATA_IN10+	21
DATA 10-	11	→	P0_LVDS_DATA_IN10-	22
DATA 9+	28	→	P0_LVDS_DATA_IN9+	19
DATA 9-	10	→	P0_LVDS_DATA_IN9-	20
DATA 8+	27	→	P0_LVDS_DATA_IN8+	17
DATA 8-	9	→	P0_LVDS_DATA_IN8-	18
DATA 7+	26	→	P0_LVDS_DATA_IN7+	15
DATA 7-	8	→	P0_LVDS_DATA_IN7-	16
DATA 6+	25	→	P0_LVDS_DATA_IN6+	13
DATA 6-	7	→	P0_LVDS_DATA_IN6-	14
DATA 5+	24	→	P0_LVDS_DATA_IN5+	11
DATA 5-	6	→	P0_LVDS_DATA_IN5-	12
DATA 4+	23	→	P0_LVDS_DATA_IN4+	9
DATA 4-	5	→	P0_LVDS_DATA_IN4-	10
DATA 3+	22	→	P0_LVDS_DATA_IN3+	7
DATA 3-	4	→	P0_LVDS_DATA_IN3-	8
DATA 2+	21	→	P0_LVDS_DATA_IN2+	5
DATA 2-	3	→	P0_LVDS_DATA_IN2-	6
DATA 1+	34	→	P0_LVDS_DATA_IN1+	3
DATA 1-	16	→	P0_LVDS_DATA_IN1-	4
DATA 0+	33	→	P0_LVDS_DATA_IN0+	1
DATA 0-	15	→	P0_LVDS_DATA_IN0-	2
PixelCLK+	37	→	P0_LVDS_CLK, IN+	39
PixelCLK-	19	→	P0_LVDS_CLK, IN-	40
Continued...				

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Camera Interface Application Note

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*Cabling details for this
interface mode*

Cabling Requirements (continued)

Mode 1: Continuous

**ThermaCAM Phoenix
(37-pin connector – DB37M)**

Pin name Pin no.

LineSYNC+	36	→
LineSYNC-	18	→
FrameSYNC+	35	→
FrameSYNC-	17	→
GND	1	—

**Matrox Odyssey eD/XD
(100-pin connector)**

Pin name Pin no.

P0_LVDS_HSYNC_IN+	33
P0_LVDS_HSYNC_IN-	34
P0_LVDS_VSYNC_IN+	35
P0_LVDS_VSYNC_IN-	36
GROUND	50

**ThermaCAM Phoenix
(37-pin connector – DB37M)**

FieldSYNC+	20	→
FieldSYNC -	02	→

**Matrox Odyssey eD/XD
(44-pin connector – HD44M)**

LVDS/TTL_AUX(TRIG)_IN1 +	06
LVDS/TTL_AUX(TRIG)_IN1 -	05

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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