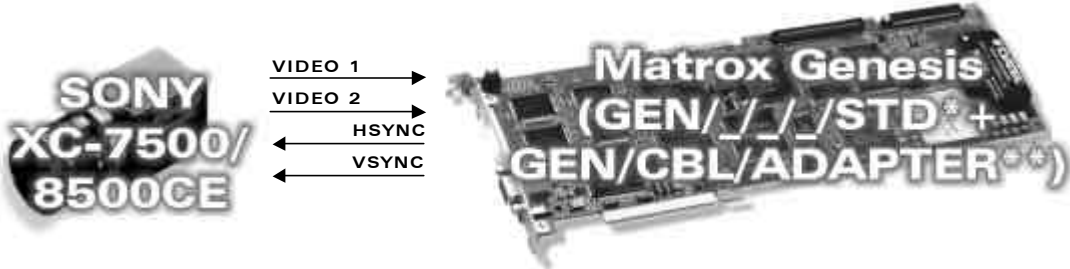
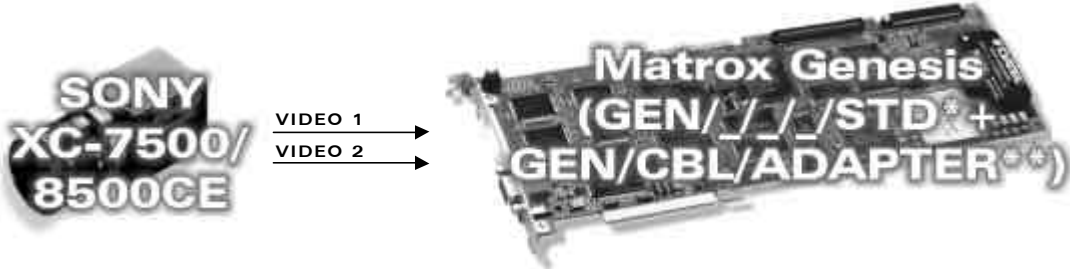


Application Note:

Interfacing non-standard cameras to Matrox Genesis

SONY XC-7500/8500CE

February 28, 2000

Camera Descriptions	• 659 x 494 (7500) and 782 x 582 (8500CE). • Two channel analog video output. • Interlaced or progressive scan. • Internal (composite) or external sync. • Internal or external exposure control.
Interface modes	• Continuous (master or slave), Asynchronous reset
Camera Interface Briefs	Mode 1: Continuous (Genesis Master)  • 644 x 486 @ 60 fps (7500) • 763 x 576 @ 50 fps (8500CE). • Two channel analog video. • Progressive scan. • Matrox Genesis sending HSYNC and VSYNC signals to camera. • Matrox Genesis receiving video signals from camera. • DCF can support two cameras simultaneously. • DCF used: 7500BM.DCF • DCF used: 8500BM.DCF Mode 2: Continuous (Genesis Slave)  • 644 x 484 @ 60 fps (7500) • 763 x 574 @ 50 fps (8500CE). • Two channel analog video. • Progressive scan. • Matrox Genesis receiving video signals from camera. • DCF used: 7500B.DCF • DCF used: 8500B.DCF * Matrox Genesis main board with grab module ** Matrox cable adapter module

Application Note:

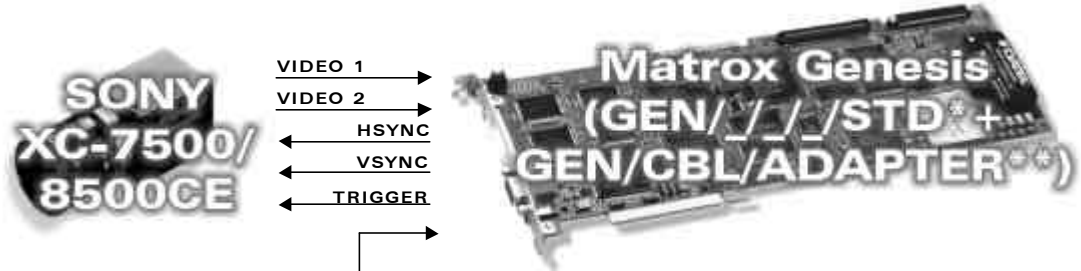
Interfacing non-standard cameras to Matrox Genesis

SONY XC-7500/8500CE

February 28, 2000

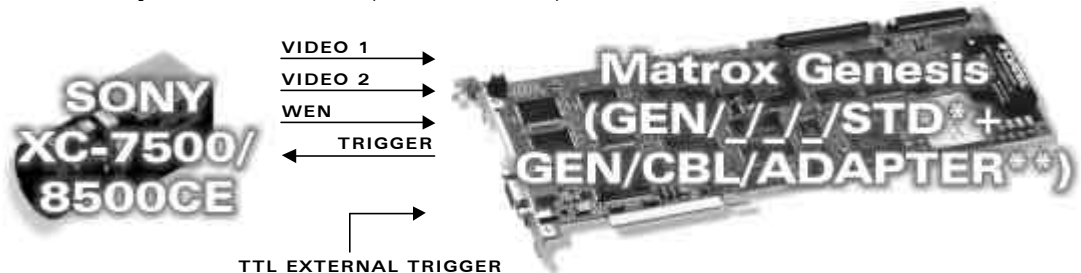
Camera Interface Briefs (continued)

Mode 3 : Asynchronous Reset (S-DONPISHA)



- 644 x 486 (7500) TTL EXTERNAL TRIGGER
 - 763 x 576 (8500CE).
 - Two channel analog video.
 - Progressive scan.
 - External exposure control (S-DONPISHA).
 - Matrox Genesis receiving TTL external trigger.
 - Matrox Genesis sending HSYNC, VSYNC, and EXPOSURE1 (TRIGGER) signals to camera; the EXPOSURE1 (TRIGGER) signal initiates exposure.
 - Matrox Genesis receiving video signals from camera.
 - DCF can support two cameras simultaneously.
 - DCF used: [7500BAEM.DCF](#)
 - DCF used: [8500BAEM.DCF](#)
- * Matrox Genesis main board with grab module
** Matrox cable adapter module

Mode 4 : Asynchronous Reset (E-DONPISHA)



- 644 x 242 (7500)
 - 763 x 576 (8500CE).
 - Two channel analog video.
 - Progressive scan.
 - External exposure control (E-DONPISHA).
 - Matrox Genesis receiving TTL external trigger and WEN pulse.
 - Matrox Genesis sending HSYNC, VSYNC, and EXPOSURE1 (TRIGGER) signals to camera; the EXPOSURE1 (TRIGGER) signal initiates exposure.
 - Matrox Genesis receiving video signals from camera.
 - DCF can support two cameras simultaneously.
 - DCF used: [7500_ED.DCF](#)
 - DCF used: [8500_ED.DCF](#)
- * Matrox Genesis main board with grab module
** Matrox cable adapter module

Application Note:

Interfacing non-standard cameras to Matrox Genesis

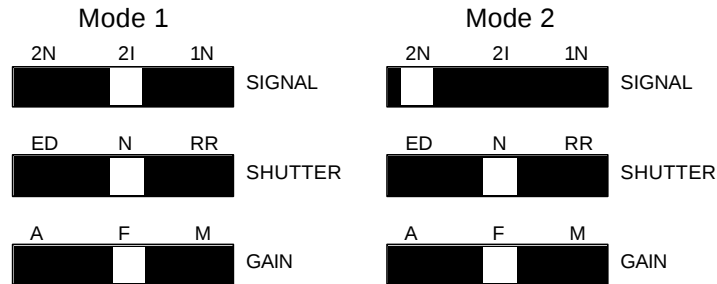
SONY XC-7500/8500CE

February 28, 2000

Camera Interface Details

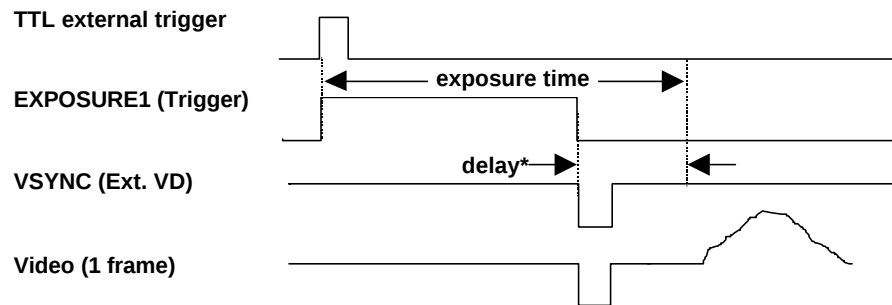
Mode 1 and 2: Continuous (Genesis Master and Slave)

External Switch Settings: switches located on rear panel of camera should be set as follows:



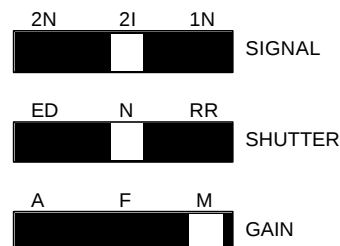
Mode 3: Asynchronous Reset (S-DONPISHA)

- The frame scan rate is determined by the period of the TTL external trigger.
- The external trigger is input on the Matrox Genesis via the video input connector trigger input.
- Once this external trigger is received, the Matrox Genesis generates a trigger pulse EXPOSURE1 (TRIGGER), which in turn initiates the camera exposure. A single vertical pulse (Ext. VD) is also generated by the Matrox Genesis to initiate the camera's CCD readout.
- The exposure time is the EXPOSURE1 (TRIGGER) signal period plus a fixed camera delay (internal) of 10.5H for the 7500 and 15.5H for the 8500CE.
- The default exposure time for this DCF is **65 ms** for the 7500 and **66.5 ms** for the 8500CE.



*10H for 7500, 15.5H for 8500

External Switch Settings: switches located on rear panel of camera should be set as follows:



Application Note:

Interfacing non-standard cameras to Matrox Genesis

SONY XC-7500/8500CE

February 28, 2000

Camera Interface Details (continued)	Mode 4: Asynchronous Reset (E-DONPISHA) 2N 2I 1N SIGNAL ED N RR SHUTTER A F M GAIN Internal Switch Settings: switches located on SG-235 board should be set as follows: S4-1, -2 OFF S6-1, -2, -7, -9, -0 ON, all others OFF (shutter speed) S7-3 ON, all others OFF For information on internal switch locations and settings, refer to the camera manual.																								
Cabling Requirements	Mode 1: Continuous (Genesis Master) IMG-7W2-TO-5BNC and DBH68-TO-OPEN cables required for video output of camera and sync signals. Video input of IMG-7W2-TO-5BNC cable should be connected to video out BNC connector of camera: Video Output 1 → Green Cable Video Output 2 → Red Cable The connections between the Digital Cable Adapter board and the 12-pin lens connector of the camera are as follows: <table><tr><td colspan="2">Matrox Genesis (68-pin connector)</td><td colspan="2">SONY XC-7500/8500CE (12-pin lens connector)</td></tr><tr><td>Pin name</td><td>Pin no.</td><td>Pin name</td><td>Pin no.</td></tr><tr><td>HSYNC, OUTPUT, TTL</td><td>62</td><td>HD INPUT (signal)</td><td>6</td></tr><tr><td>GROUND</td><td>60</td><td>HD INPUT (ground)</td><td>5</td></tr><tr><td>VSYNC, OUTPUT, TTL</td><td>26</td><td>VD INPUT (signal)</td><td>7</td></tr><tr><td>GROUND</td><td>28</td><td>VD INPUT (ground)</td><td>12</td></tr></table> Mode 2: Continuous Mode (Genesis Slave) IMG-7W2-TO-5BNC required for video output of camera. Video input of IMG-7W2-TO-5BNC cable should be connected to video out BNC connector of camera: Video Output 1 → Green Cable Video Output 1 → Red Cable	Matrox Genesis (68-pin connector)		SONY XC-7500/8500CE (12-pin lens connector)		Pin name	Pin no.	Pin name	Pin no.	HSYNC, OUTPUT, TTL	62	HD INPUT (signal)	6	GROUND	60	HD INPUT (ground)	5	VSYNC, OUTPUT, TTL	26	VD INPUT (signal)	7	GROUND	28	VD INPUT (ground)	12
Matrox Genesis (68-pin connector)		SONY XC-7500/8500CE (12-pin lens connector)																							
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M A T R O X
G E N E S I S

February 28, 2000

The DCF(s) mentioned in this application note can be found on the MIL and Native Library CD, or our FTP site ([ftp.matrox.com](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 Imaging Applications at 514-822-6061 for assistance.

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