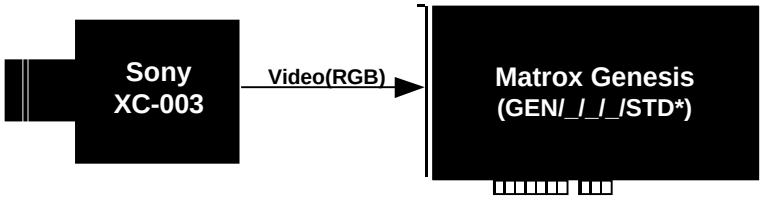
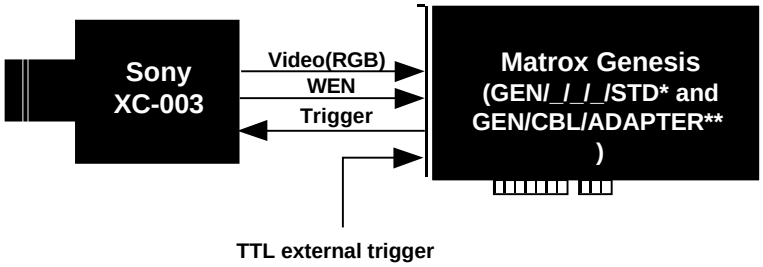
Application Note:
Interfacing non-standard cameras to Matrox Genesis

MATROX GENESIS

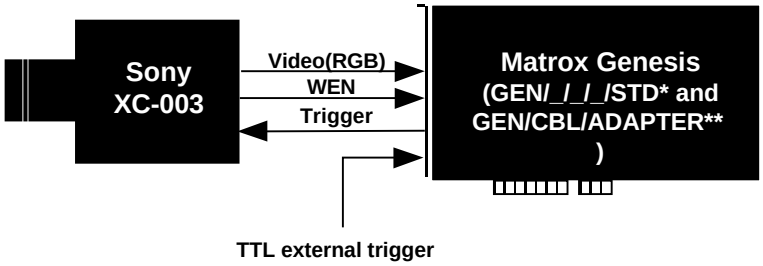
Sony XC-003

March 5, 1997

Camera Descriptions	• 768 (H) x 494 (V). • 3 CCD color video. • Analog video output. • Interlaced or non-interlaced. • Internal (composite) or external sync. • Internal or external exposure control.
Interface Modes	• Continuous, Asynchronous reset (one field, two fields).
Camera Interface Briefs	**Mode 1 : Continuous mode**  *** Matrox Genesis Main Board with Grab Module** • 757 (H) x 482 (V) @ 30fps. • Analog video (RGB) output (sync on green). • Interlaced. • Matrox Genesis receiving Video signals from camera. • DCF used: 003.DCF **Mode 2 : Asynchronous reset mode (R, R2)**  *** Matrox Genesis Main Board with Grab Module** **** Matrox Digital Cable Adapter Module** • 750 (H) x 243 (V). • Analog video (RGB) output (sync on green). • Genesis grabs and displays single field only. • Internal exposure control (via camera shutter menu). • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending TTL Exposure1 (Trigger) to camera. • Matrox Genesis receiving TTL Trigger Input (WEN) and Video (RGB) signals from camera. • DCF used: 003NR.DCF

Camera Interface Briefs (continued)

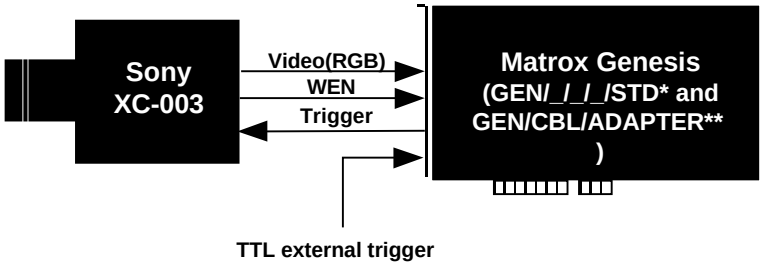
Mode 3 : Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)



*** Matrox Genesis Main Board with Grab Module**
**** Matrox Digital Cable Adapter Module**

- 750 (H) x 505 (V).
- Analog video (RGB) output (sync on green).
- Genesis grabs two fields and displays two fields non-interlaced.
- Internal exposure control (via camera shutter menu).
- Matrox Genesis receiving TTL external trigger.
- Matrox Genesis sending TTL Exposure1 (Trigger) to camera.
- Matrox Genesis receiving TTL Trigger Input (WEN) and Video (RGB) signals from camera.
- DCF used: 003NR1.DCF

Mode 4 : Asynchronous reset mode (R, R4 - 2 fields displayed interlaced)



*** Matrox Genesis Main Board with Grab Module**
**** Matrox Digital Cable Adapter Module**

- 750 (H) x 482 (V).
- Analog video (RGB) output (sync on green).
- Genesis grabs two fields and displays two fields interlaced.
- Internal exposure control.
- Exposure controlled via camera shutter menu.
- Matrox Genesis receiving TTL external trigger.
- Matrox Genesis sending TTL Exposure1 (Trigger) to camera.
- Matrox Genesis receiving TTL Trigger Input (WEN) and Video (RGB) signals from camera.
- DCF used: 003R.DCF

Camera Interface Details

Mode 1 : Continuous mode

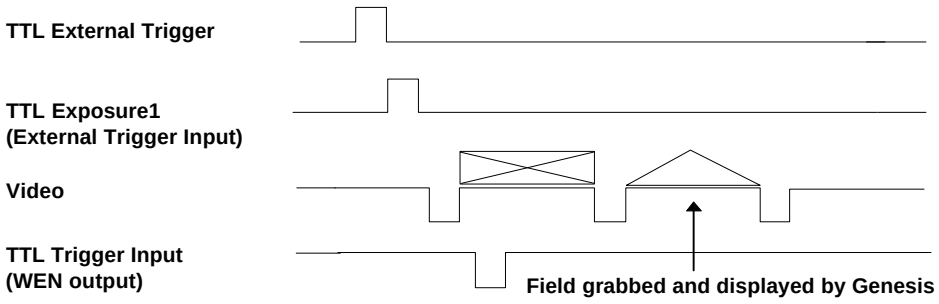
- The Genesis is SLAVE in this mode, in other words the camera sends the Video (RGB) signals (sync in green) in continuous mode to the Genesis.
- Values for shooting, output, etc. are set or changed using the menu displayed on the monitor screen. Refer to the camera manual for additional information on menu settings and page scrolling. Parameters for this mode should be set as follows:

PAGE 2

Parameter	*Setting*
G SYNC	**ON**
GENLOCK	**NORMAL**

Mode 2 : Asynchronous reset mode (R, R2)

- The frame scan rate is determined by the period of the TTL external trigger.
- The external trigger is input on the Genesis via the video input connector trigger input.
- Once the external trigger is received, the Genesis generates a trigger pulse (Exposure1) which in turn initiates the grab sequence.



- Values for shooting, output, etc. are set or changed using the menu displayed on the monitor screen. Refer to the camera manual for additional information on menu settings and page scrolling. Parameters for this mode should be set as follows:

PAGE 1

Parameter	*Setting*
FRM/FLD	**FLD**
SHUTTER	**NORMAL** or **OFF**

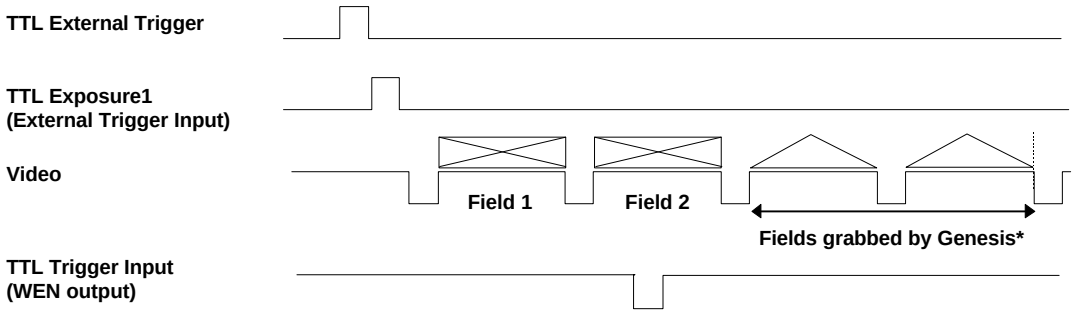
PAGE 2

Parameter	*Setting*
G SYNC	**ON**
GENLOCK	**R.R2**

Camera Interface Details (continued)

Mode 3 : Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)

- The frame scan rate is determined by the period of the TTL external trigger.
- The external trigger is input on the Genesis via the video input connector trigger input.
- Once the external trigger is received, the Genesis generates a trigger pulse Exposure1 which in turn initiates the camera exposure.



*Field 1 displayed on top portion of screen, Field 2 displayed on bottom portion of screen

- Values for shooting, output, etc. are set or changed using the menu displayed on the monitor screen. Refer to the camera manual for additional information on menu settings and page scrolling. Parameters for this mode should be set as follows:

PAGE 1

Parameter	*Setting*
FRM/FLD	**FLD**
SHUTTER	**NORMAL** or **OFF**

PAGE 2

Parameter	*Setting*
G SYNC	**ON**
GENLOCK	**R.R4**

Mode 4 : Asynchronous reset mode (R, R4 - 2 fields displayed interlaced)

- All interface details are the same (except display for the two fields are interlaced) as in Mode 3: *Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)*

Cabling Requirements

Mode 1 : Continuous mode

- IMG-7W2-TO-5BNC cable required for video (RGB) output of camera..

Mode 2, 3, and 4 : Asynchronous restart reset mode

- IMG-7W2-TO-5BNC cable required for TTL external trigger source and video (RGB) output of camera.
- TTL external trigger source should be connected to the TTL trigger input of the IMG-7W2-TO-5BNC cable.

Cabling Requirements (continued)

- The connections between the Digital Cable Adapter board and the 6-pin / 12-pin connector of the camera are as follows:

Digital Cable Adapter Board (PLS/CBL/OPEN connector)			**Sony XC-003 (6-pin connector)**	
Pin name	***Pin no***		***Pin name***	***Pin no.***
EXPOSURE1, OUTPUT, TTL	24	→	EXT. TRIGGER INPUT	2
GROUND	25		GROUND	3
TRIGGER, INPUT, TTL	67	←	WEN OUTPUT	4

Power Supply		**Sony XC-003 (12-pin connector)**	
Pin name		***Pin name***	***Pin no.***
+ 12 volts		+ 12 volts	2
GROUND		GROUND	1

If required, contact your local sales representative or Matrox Sales Office, or contact Matrox Imaging Applications at 514-822-6061 for assistance.

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