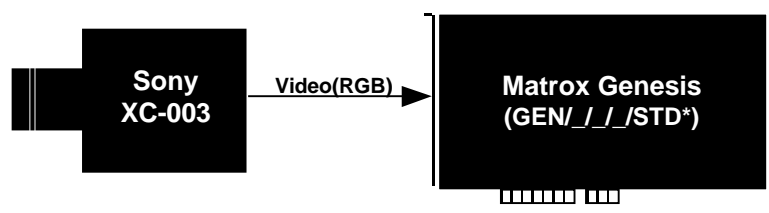
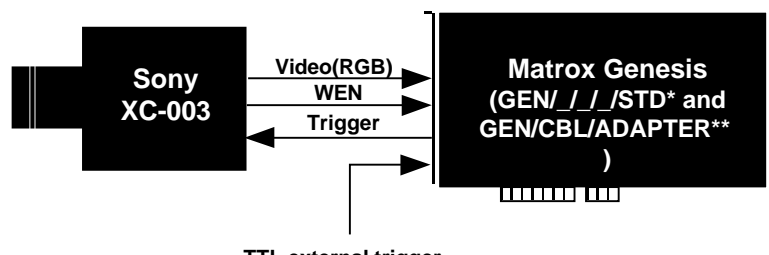


Application Note:

Interfacing non-standard cameras to Matrox Genesis

Sony XC-003

March 5, 1997

Camera Descriptions	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Continuous, Asynchronous reset (one field, two fields).
Camera Interface Briefs	<p>Mode 1 : Continuous mode</p>  <p>* Matrox Genesis Main Board with Grab Module</p> <ul style="list-style-type: none"> • 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 <p>Mode 2 : Asynchronous reset mode (R, R2)</p>  <p>TTL external trigger</p> <p>* Matrox Genesis Main Board with Grab Module ** Matrox Digital Cable Adapter Module</p> <ul style="list-style-type: none"> • 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

Application Note:

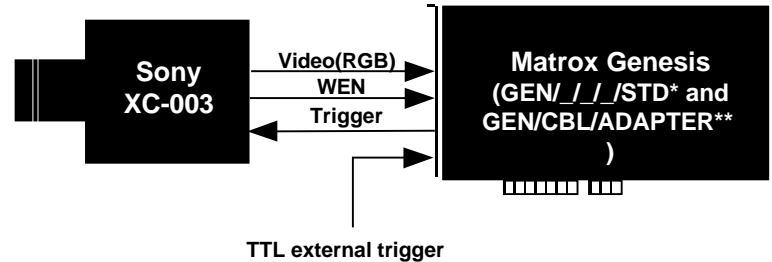
Interfacing non-standard cameras to Matrox Genesis

Sony XC-003

March 5, 1997

Camera Interface Briefs (continued)

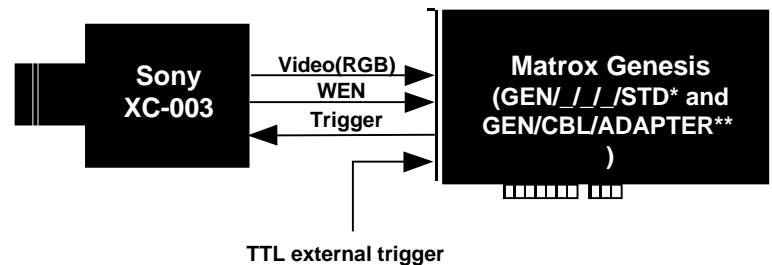
Mode 3 : Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)



* 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](#)

Application Note:

Interfacing non-standard cameras to Matrox Genesis

Sony XC-003

March 5, 1997

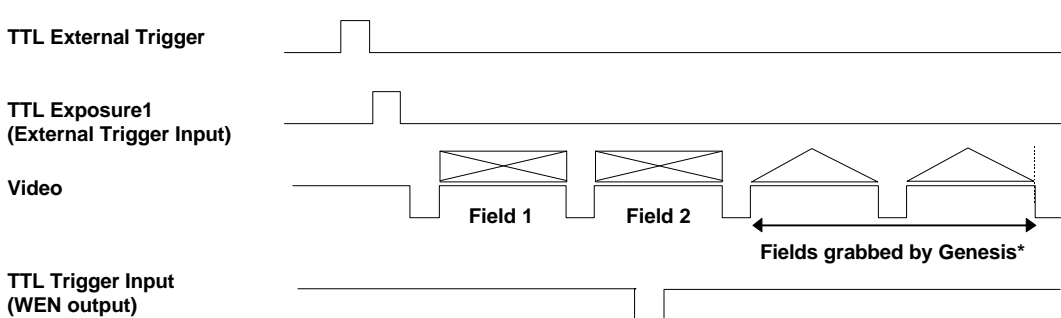
Camera Interface Details	<p>Mode 1 : Continuous mode</p> <ul style="list-style-type: none"> • The Genesis is SLAVE in this mode, in other words the camera sends the Video (RGB) signals (sync in green) in continuous mode to the Genesis. • Values for shooting, output, etc. are set or changed using the 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: <p>PAGE 2</p> <table> <tr> <td><i>Parameter</i></td><td><i>Setting</i></td></tr> <tr> <td>G SYNC</td><td>ON</td></tr> <tr> <td>GENLOCK</td><td>NORMAL</td></tr> </table> <p>Mode 2 : Asynchronous reset mode (R, R2)</p> <ul style="list-style-type: none"> • 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. <div data-bbox="487 1029 1421 1333"> <p>The diagram illustrates the timing for Mode 2. It shows four signals over time: 1. TTL External Trigger: A single high pulse. 2. TTL Exposure1 (External Trigger Input): A pulse that occurs after the external trigger. 3. Video: A continuous signal with a specific field grab sequence highlighted by a trapezoidal pulse. 4. TTL Trigger Input (WEN output): A pulse that occurs after the Exposure1 pulse. An arrow points from the WEN pulse to the start of the video field grab, with the label 'Field grabbed and displayed by Genesis'.</p> </div> <ul style="list-style-type: none"> • 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: <p>PAGE 1</p> <table> <tr> <td><i>Parameter</i></td><td><i>Setting</i></td></tr> <tr> <td>FRM/FLD</td><td>FLD</td></tr> <tr> <td>SHUTTER</td><td>NORMAL or OFF</td></tr> </table> <p>PAGE 2</p> <table> <tr> <td><i>Parameter</i></td><td><i>Setting</i></td></tr> <tr> <td>G SYNC</td><td>ON</td></tr> <tr> <td>GENLOCK</td><td>R.R2</td></tr> </table>	<i>Parameter</i>	<i>Setting</i>	G SYNC	ON	GENLOCK	NORMAL	<i>Parameter</i>	<i>Setting</i>	FRM/FLD	FLD	SHUTTER	NORMAL or OFF	<i>Parameter</i>	<i>Setting</i>	G SYNC	ON	GENLOCK	R.R2
<i>Parameter</i>	<i>Setting</i>																		
G SYNC	ON																		
GENLOCK	NORMAL																		
<i>Parameter</i>	<i>Setting</i>																		
FRM/FLD	FLD																		
SHUTTER	NORMAL or OFF																		
<i>Parameter</i>	<i>Setting</i>																		
G SYNC	ON																		
GENLOCK	R.R2																		

Application Note:

Interfacing non-standard cameras to Matrox Genesis

Sony XC-003

March 5, 1997

Camera Interface Details (continued)	<p>Mode 3 : Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)</p> <ul style="list-style-type: none"> • 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.  <p>*Field 1 displayed on top portion of screen, Field 2 displayed on bottom portion of screen</p> <ul style="list-style-type: none"> • 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: <p>PAGE 1</p> <table border="0"> <tr> <td><i>Parameter</i></td><td><i>Setting</i></td></tr> <tr> <td>FRM/FLD</td><td>FLD</td></tr> <tr> <td>SHUTTER</td><td>NORMAL or OFF</td></tr> </table> <p>PAGE 2</p> <table border="0"> <tr> <td><i>Parameter</i></td><td><i>Setting</i></td></tr> <tr> <td>G SYNC</td><td>ON</td></tr> <tr> <td>GENLOCK</td><td>R.R4</td></tr> </table> <p>Mode 4 : Asynchronous reset mode (R, R4 - 2 fields displayed interlaced)</p> <ul style="list-style-type: none"> • All interface details are the same (except display for the two fields are interlaced) as in Mode 3: <i>Asynchronous reset mode (R, R4 - 2 fields displayed non-interlaced)</i> 	<i>Parameter</i>	<i>Setting</i>	FRM/FLD	FLD	SHUTTER	NORMAL or OFF	<i>Parameter</i>	<i>Setting</i>	G SYNC	ON	GENLOCK	R.R4
<i>Parameter</i>	<i>Setting</i>												
FRM/FLD	FLD												
SHUTTER	NORMAL or OFF												
<i>Parameter</i>	<i>Setting</i>												
G SYNC	ON												
GENLOCK	R.R4												
Cabling Requirements	<p>Mode 1 : Continuous mode</p> <ul style="list-style-type: none"> • IMG-7W2-TO-5BNC cable required for video (RGB) output of camera.. <p>Mode 2, 3, and 4 : Asynchronous restart reset mode</p> <ul style="list-style-type: none"> • 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. 												

Application Note:

Interfacing non-standard cameras to Matrox Genesis

Sony XC-003

March 5, 1997

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)	
	<i>Pin name</i>	<i>Pin no</i>	<i>Pin name</i>	<i>Pin no.</i>
	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)	
	<i>Pin name</i>		<i>Pin name</i>	<i>Pin no.</i>
	+ 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.

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 Matrox for more information, if necessary.

Corporate Headquarters:
Canada and U.S.A.
Matrox Electronic Systems Ltd.
1055 St.Regis Blvd.
Dorval, Quebec, Canada
H9P 2T4
Tel: (514) 685-7230
Fax: (514) 822-6273

Sales Offices:

U.K.
Matrox (UK) Ltd.
Sefton Park, Stoke Poges
Buckinghamshire
U.K. SL2 4JS
Tel: +44 (0) 1753 665500
Fax: +44 (0) 1753 665599

France
Matrox France SARL
2, rue de la Couture,
Silic 225
94528 Rungis Cedex
Tel: (0) 1 45-60-62-00
Fax: (0) 1 45-60-62-05

Germany
Matrox GmbH
Inselkammerstr.8
D-82008 Unterhaching
Germany
Tel: 089/614 4740
Fax: 089/614 9743

Asia Pacific
Matrox Asia Liaison Office
Rm. 1901, 19/F, Workington Tower,
78 Bonham Strand E.,
Sheung Wan, Hong Kong.
Tel: 852.2877.5387
Fax: 852.2537.9530

matrox
IMAGING PRODUCTS GROUP

GEN-CID-008