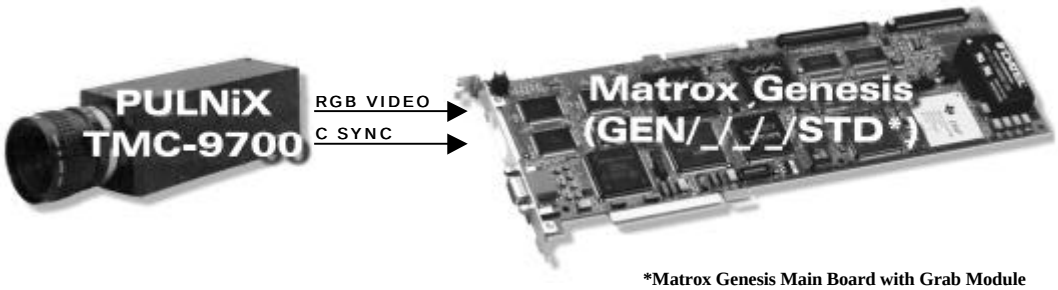
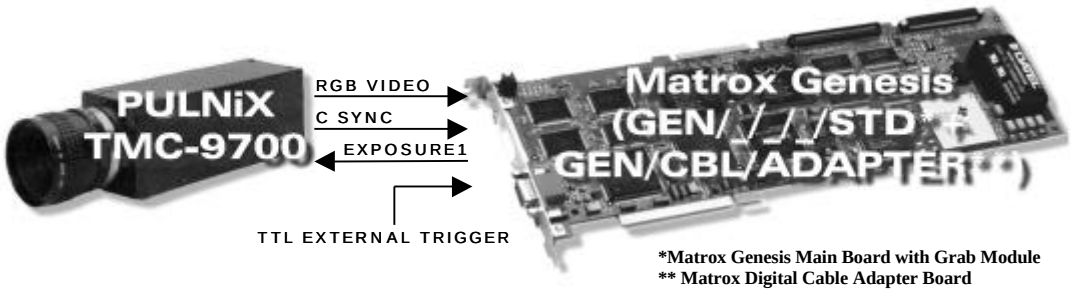
Application Note:
Interfacing non-standard cameras to Matrox Genesis

MATROX GENESIS

PULNiX TMC-9700

May 11, 1998

Camera Descriptions	• 725 x 480 x 24-bit @ 30fps • RGB analog video output with separate C-sync. • Progressive Scan. • Internal sync (camera master). • 14.318 MHz pixel clock rate. • External exposure control.
Interface modes	• Continuous, asynchronous reset (pulse width control mode)
Camera Interface Briefs	**Mode 1 : Continuous Mode (30 Hz)**  ***Matrox Genesis Main Board with Grab Module** • 725 x 480 x 24-bit @ 30fps • RGB analog video output with separate C-sync. • Continuous video. • Progressive Scan. • DCF used : C9700N.DCF **Mode 2 : Asynchronous Reset Mode (pulse width control mode)**  ***Matrox Genesis Main Board with Grab Module** ****** **Matrox Digital Cable Adapter Board** • 725 x 480 x 24-bit @ 30fps (max.) • RGB analog video output with separate C-sync. • Progressive Scan. • Matrox Genesis receiving TTL external trigger. • Matrox Genesis sending EXPOSURE1 (VINIT) signal to camera to initiate exposure and control exposure time. • DCF used : C9700NAE.DCF

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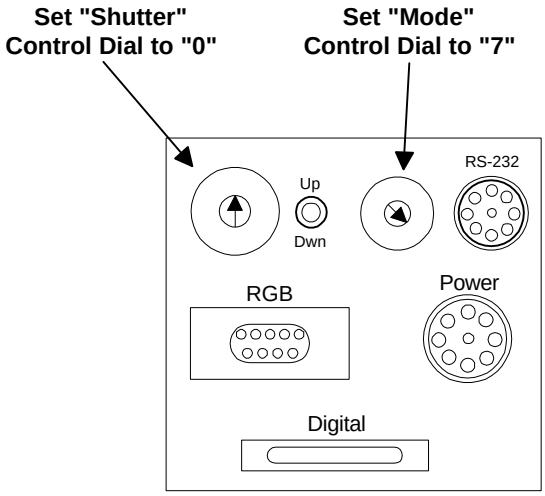
Camera Interface Details

Mode 1 : Continuous Mode (30 Hz)



Camera's Rear Panel

- The Shutter Control Switch on the rear of the camera must be set to position '0'.
- The Mode Switch on the rear of the camera must be set to "7" and the Up/Down Switch set to Down.
- RS-232 communication can also be used to configure the camera instead of switches.

Mode 2 : Asynchronous Reset Mode (pulse width control mode)

- The mode switch on the rear of the camera must be set to position "7" and the Up/Down Switch set to Down.
- The Shutter Control Switch on the rear of the camera must be set to position "9".
- The camera is reset upon the falling edge of the EXPOSURE1 (VINIT IN) pulse. The exposure period is for the inactive (low) period of EXPOSURE1 (VINIT IN). The default exposure time in this DCF is 32 ms.

Cabling Requirements

Mode 1 : Continuous Mode (30 Hz)

- IMG-7W2-TO-5BNC cable required for RGB video output of camera and separate C-sync (Black BNC).

Mode 2 : Asynchronous Reset Mode (pulse width control mode)

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

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Cabling Requirements (continued)

- The connections between the 68-pin connector of the GEN/CBL/ADAPTER, the 12-pin connector of the camera and the power supply are as follows:

GEN/CBL/ADAPTER (68-pin connector)			PULNiX TMC-9700 (12-pin connector)		POWER SUPPLY
Pin name	**Pin no.**		**Pin name**	**Pin no.**	
EXPOSURE1	24	→	VINIT in	6	
GROUND	68		GND	1, 5, 8, 10 or 12	GND
			12V DC in	2	+12V

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). 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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