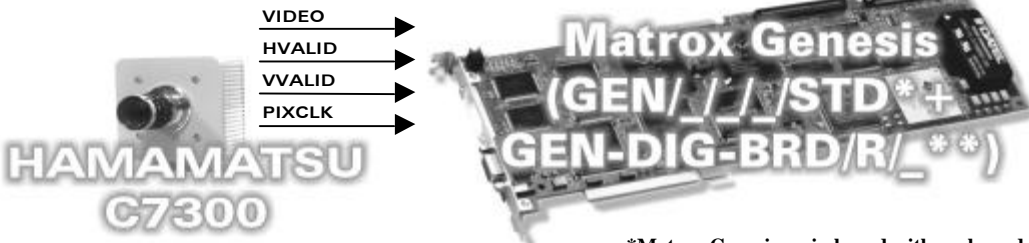
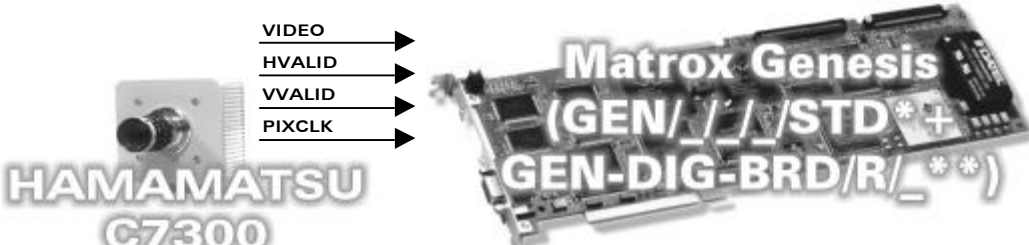


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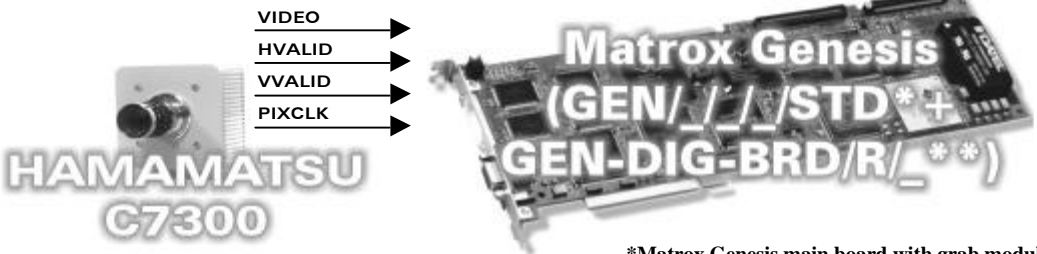
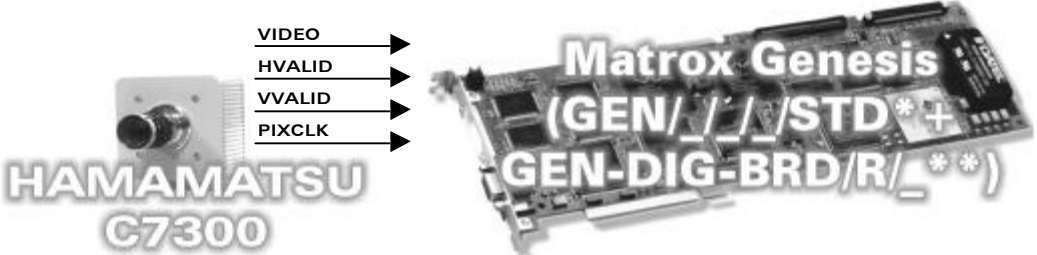
Camera Descriptions	<ul style="list-style-type: none"> • 1280 x 1024 x 12-bit (maximum). • Single channel RS-422 digital video output. • Progressive scan. • Maximum data rate: 20 MHz.
Interface mode	<ul style="list-style-type: none"> • Continuous mode (no binning, binning)
Camera Interface Briefs	<p>Mode 1: Continuous mode (no binning)</p>  <p>Mode 2: Continuous mode (no binning)</p>  <ul style="list-style-type: none"> • 1280 x 1024 x 12-bit @ 13 fps (maximum). • Single channel RS-422 digital video. • Progressive scan. • Matrox Genesis receiving HSYNC (HVALID), VSYNC (VVALID), PIXEL CLOCK (PIXCLK @ 20 MHz), and video signals from camera. • DCF used: 7300DN1.DCF <ul style="list-style-type: none"> • 1024 x 1024 x 12-bit @ 13 fps (maximum). • Single channel RS-422 digital video. • Progressive scan. • Matrox Genesis receiving HSYNC (HVALID), VSYNC (VVALID), PIXEL CLOCK (PIXCLK @ 20 MHz), and video signals from camera. • DCF used: 7300DN2.DCF <p><small>*Matrox Genesis main board with grab module **Matrox RS-422 digital data input board</small></p>

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<p>Camera Interface Briefs (continued)</p>	<p>Mode 3: Continuous mode (binning)</p>  <ul style="list-style-type: none"> • 640 x 512 x 12-bit @ 25 fps (maximum). • Single channel RS-422 digital video. • Progressive scan. • Matrox Genesis receiving HSYNC (HVALID), VSYNC (VVALID), PIXEL CLOCK (PIXCLK @ 20 MHz), and video signals from camera. • DCF used: 7300DNB1.DCF <p>Mode 4: Continuous mode (binning)</p>  <ul style="list-style-type: none"> • 512 x 512 x 12-bit @ 25 fps (maximum). • Single channel RS-422 digital video. • Progressive scan. • Matrox Genesis receiving HSYNC (HVALID), VSYNC (VVALID), PIXEL CLOCK (PIXCLK @ 20 MHz), and video signals from camera. • DCF used: 7300DNB2.DCF <p><small>*Matrox Genesis main board with grab module **Matrox RS-422 digital data input board</small></p>
<p>Camera Interface Details</p>	<p>Modes 1-4: Continuous mode</p> <ul style="list-style-type: none"> • Camera settings and mode of operation (i.e. exposure time, binning mode, external trigger, etc.) should be configured via the Hamamatsu “Digital Camera Control” software for RS-232 serial port control. Please note that the Fast Repetition Mode (or Dual Image Acquisition/PIV Mode) is not available. Refer to the camera manual for details.

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Cabling Requirements	Modes 1-4: Continuous mode				
	<ul style="list-style-type: none">DBHD100-TO-OPEN cable and GEN/DIG/BRD/R/_ board required for digital data, synchronization and control signals.Connections between the 68-pin connector of the camera and the 100-pin connector of the GEN/DIG/BRD/R/_ are as follows:				
	HAMAMATSU C7300		GEN-DIG-BRD/R/_		
	(68-pin connector)		(100-pin connector)		
	DB0 -	04	→	DATA, INPUT, 0-	02
	DB0 +	38	→	DATA, INPUT, 0+	01
	DB1 -	05	→	DATA, INPUT, 1-	04
	DB1 +	39	→	DATA, INPUT, 1+	03
	DB2 -	06	→	DATA, INPUT, 2-	06
	DB2 +	40	→	DATA, INPUT, 2+	05
	DB3 -	07	→	DATA, INPUT, 3-	08
	DB3 +	41	→	DATA, INPUT, 3+	07
	DB4 -	08	→	DATA, INPUT, 4-	10
	DB4 +	42	→	DATA, INPUT, 4+	09
	DB5 -	09	→	DATA, INPUT, 5-	12
	DB5 +	43	→	DATA, INPUT, 5+	11
	DB6 -	10	→	DATA, INPUT, 6-	14
	DB6 +	44	→	DATA, INPUT, 6+	13
	DB7 -	11	→	DATA, INPUT, 7-	16
	DB7 +	45	→	DATA, INPUT, 7+	15
	DB8 -	12	→	DATA, INPUT, 8-	18
	DB8 +	46	→	DATA, INPUT, 8+	17
	DB9 -	13	→	DATA, INPUT, 9-	20
	DB9 +	47	→	DATA, INPUT, 9+	19
	DB10 -	14	→	DATA, INPUT, 10-	22
	DB10 +	48	→	DATA, INPUT, 10+	21
	DB11 -	15	→	DATA, INPUT, 11-	24
DB11 +	49	→	DATA, INPUT, 11+	23	
PIXCLK -	01	→	CLOCK, INPUT, -	40	
PIXCLK +	35	→	CLOCK, INPUT, +	39	
HVALID -	02	→	HSYNC, INPUT, -	34	
HVALID +	36	→	HSYNC, INPUT, +	33	
VVALID -	03	→	VSYNC, INPUT, -	36	
VVALID +	37	→	VSYNC, INPUT, +	35	
continued					

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Cabling Requirements (continued)	HAMAMATSU C7300 (68-pin connector)		GEN-DIG-BRD/R/_ (100-pin connector)	
	GND	21	GROUND	38
	GND	55	GROUND	50
	A/D OVF -	20	→ USER, INPUT, 0 -	42
	A/D OVF +	54	→ USER, INPUT, 0 +	41

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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