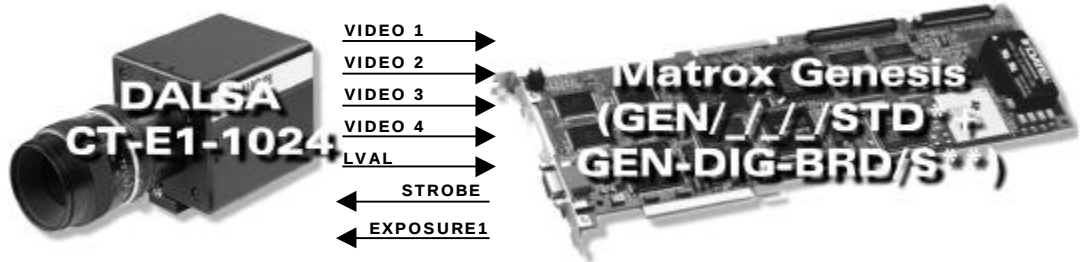


Application Note:

Interfacing non-standard cameras to Matrox Genesis

DALSA CT-E1-1024

April 23, 1998

Camera Descriptions	• 1024 x 8-bit. • 4-channel RS-422 digital video output. • Progressive scan. • Internal exposure control. • Maximum data rate: 10 MHz																																																							
Interface mode	• Fixed line scan rate mode.																																																							
Camera Interface Briefs	Mode: Fixed Line Scan Mode  *Matrox Genesis Main Board with Grab Module ** Matrox Digital Data Input Board • 1024 x 8-bit. • 4-channel RS-422 digital video. • Progressive scan. • DCF configured for 400 lines per virtual frame. • Matrox Genesis sending RS-422 EXPOSURE1 (EXSYNC); RS-422 EXPOSURE1 (EXSYNC) signal initiates line readout. • Matrox Genesis receiving RS-422 pixel clock (STROBE @ 10 MHz) and RS-422 HSYNC (LVAL) and video signals from camera. • DCF used: CTE1.DCF																																																							
Cabling Requirements	Mode: Fixed line scan rate • GEN/DIG/BRD/S required for digital data, syncs and control signals in RS-422 format. • Matrox cable kit (GEN-TO-DALSA/32) is available for this mode as an alternative to custom cable development based on the pin-outs listing below. • Connections between the 40-pin dual row connector (labeled OS1/OS2) of the camera and the 100-pin connector of the GEN-DIG-BRD/S are as follows: <table><tr><th colspan="2">DALSA CT-E1-1024</th><th></th><th colspan="2">GEN-DIG-BRD/S</th></tr><tr><th colspan="2">(40-pin dual row connector - OS1/OS2)</th><th></th><th colspan="2">(GEN/CBL/OPEN connector)</th></tr><tr><th>Pin name</th><th>Pin no.</th><th></th><th>Pin name</th><th>Pin no.</th></tr><tr><td>AD0</td><td>35</td><td>→</td><td>DATA, INPUT +0</td><td>01</td></tr><tr><td>AD0B</td><td>36</td><td>→</td><td>DATA, INPUT -0</td><td>02</td></tr><tr><td>AD1</td><td>33</td><td>→</td><td>DATA, INPUT +1</td><td>03</td></tr><tr><td>AD1B</td><td>34</td><td>→</td><td>DATA, INPUT -1</td><td>04</td></tr><tr><td>AD2</td><td>31</td><td>→</td><td>DATA, INPUT +2</td><td>05</td></tr><tr><td>AD2B</td><td>32</td><td>→</td><td>DATA, INPUT -2</td><td>06</td></tr><tr><td>AD3</td><td>29</td><td>→</td><td>DATA, INPUT +3</td><td>07</td></tr><tr><td>AD3B</td><td>30</td><td>→</td><td>DATA, INPUT -3</td><td>08</td></tr></table>	DALSA CT-E1-1024			GEN-DIG-BRD/S		(40-pin dual row connector - OS1/OS2)			(GEN/CBL/OPEN connector)		Pin name	Pin no.		Pin name	Pin no.	AD0	35	→	DATA, INPUT +0	01	AD0B	36	→	DATA, INPUT -0	02	AD1	33	→	DATA, INPUT +1	03	AD1B	34	→	DATA, INPUT -1	04	AD2	31	→	DATA, INPUT +2	05	AD2B	32	→	DATA, INPUT -2	06	AD3	29	→	DATA, INPUT +3	07	AD3B	30	→	DATA, INPUT -3	08
DALSA CT-E1-1024			GEN-DIG-BRD/S																																																					
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AD2	31	→	DATA, INPUT +2	05																																																				
AD2B	32	→	DATA, INPUT -2	06																																																				
AD3	29	→	DATA, INPUT +3	07																																																				
AD3B	30	→	DATA, INPUT -3	08																																																				

Application Note:

Interfacing non-standard cameras to Matrox Genesis

DALSA CT-E1-1024

April 23, 1998

Cabling Requirements (continued)	DALSA CT-E1-1024 (40-pin dual row connector - OS1/OS2)			GEN-DIG-BRD/S (GEN/CBL/OPEN connector)		
	Pin name	Pin no.		Pin name	Pin no.	
	AD4	27	→	DATA, INPUT +4	09	
	AD4B	28	→	DATA, INPUT -4	10	
	AD5	25	→	DATA, INPUT +5	11	
	AD5B	26	→	DATA, INPUT -5	12	
	AD6	23	→	DATA, INPUT +6	13	
	AD6B	24	→	DATA, INPUT -6	14	
	AD7	21	→	DATA, INPUT +7	15	
	AD7B	22	→	DATA, INPUT -7	16	
	LVAL	39	→	HSYNC, INPUT, +	33	
	LVALB	40	→	HSYNC, INPUT, -	34	
	STROBE	37	←	CLOCK, INPUT, +	39	
	STROBEB	38	←	CLOCK, INPUT, -	40	
	DALSA CT-E1-1024 (40-pin dual row connector - OS1/OS2)			GEN-DIG-BRD/S (GEN/CBL/OPEN connector)		
	Pin name	Pin no.		Pin name	Pin no.	
	BD0	15	→	DATA, INPUT +8	17	
	BD0B	16	→	DATA, INPUT -8	18	
	BD1	13	→	DATA, INPUT +9	19	
	BD1B	14	→	DATA, INPUT -9	20	
	BD2	11	→	DATA, INPUT +10	21	
	BD2B	12	→	DATA, INPUT -10	22	
	BD3	09	→	DATA, INPUT +11	23	
	BD3B	10	→	DATA, INPUT -11	24	
	BD4	07	→	DATA, INPUT +12	25	
	BD4B	08	→	DATA, INPUT -12	26	
	BD5	05	→	DATA, INPUT +13	27	
	BD5B	06	→	DATA, INPUT -13	28	
	BD6	03	→	DATA, INPUT +14	29	
	BD6B	04	→	DATA, INPUT -14	30	
	BD7	01	→	DATA, INPUT +15	31	
	BD7B	02	→	DATA, INPUT -15	32	
	(pin-out continued)					

Application Note:

Interfacing non-standard cameras to Matrox Genesis

DALSA CT-E1-1024
April 23, 1998

Cabling Requirements (continued)	Connections between the 40-pin dual row connector (labeled OS3/OS4) of the camera and the 100-pin connector of the GEN-DIG-BRD/S are as follows:			
	DALSA CT-E1-1024 (40-pin dual row connector – OS3/OS4)		GEN-DIG-BRD/S (GEN/CBL/OPEN connector)	
	Pin name	Pin no.	Pin name	Pin no.
	AD0	35	→ DATA, INPUT +16	51
	AD0B	36	→ DATA, INPUT –16	52
	AD1	33	→ DATA, INPUT +17	53
	AD1B	34	→ DATA, INPUT –17	54
	AD2	31	→ DATA, INPUT +18	55
	AD2B	32	→ DATA, INPUT –18	56
	AD3	29	→ DATA, INPUT +19	57
	AD3B	30	→ DATA, INPUT -19	58
	AD4	27	→ DATA, INPUT +20	59
	AD4B	28	→ DATA, INPUT –20	60
	AD5	25	→ DATA, INPUT +21	61
	AD5B	26	→ DATA, INPUT –21	62
	AD6	23	→ DATA, INPUT +22	63
	AD6B	24	→ DATA, INPUT –22	64
	AD7	21	→ DATA, INPUT +23	65
	AD7B	22	→ DATA, INPUT –23	66
	BD0	15	→ DATA, INPUT +24	67
	BD0B	16	→ DATA, INPUT –24	68
	BD1	13	→ DATA, INPUT +25	69
	BD1B	14	→ DATA, INPUT –25	70
	BD2	11	→ DATA, INPUT +26	71
	BD2B	12	→ DATA, INPUT –26	72
	BD3	09	→ DATA, INPUT +27	73
	BD3B	10	→ DATA, INPUT –27	74
	BD4	07	→ DATA, INPUT +28	75
	BD4B	08	→ DATA, INPUT –28	76
	BD5	05	→ DATA, INPUT +29	77
	BD5B	06	→ DATA, INPUT –29	78
	BD6	03	→ DATA, INPUT +30	79
	BD6B	04	→ DATA, INPUT –30	80
	BD7	01	→ DATA, INPUT +31	81
	BD7B	02	→ DATA, INPUT –31	82
	(pin-out continued)			

Application Note:

Interfacing non-standard cameras to Matrox Genesis

DALSA CT-E1-1024

April 23, 1998

Cabling Requirements (continued)	DALSA CT-E1-1024 (DB-25 connector – OS4)		GEN-DIG-BRD/S (GEN/CBL/OPEN connector)	
	Pin name	Pin no.	Pin name	Pin no.
	EXSYNC	17	← EXPOSURE0 OUTPUT +	95
	EXSYNCB	04	← EXPOSURE0 OUTPUT -	96

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 Matrox Imaging Applications at 514-822-6061 for assistance.

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