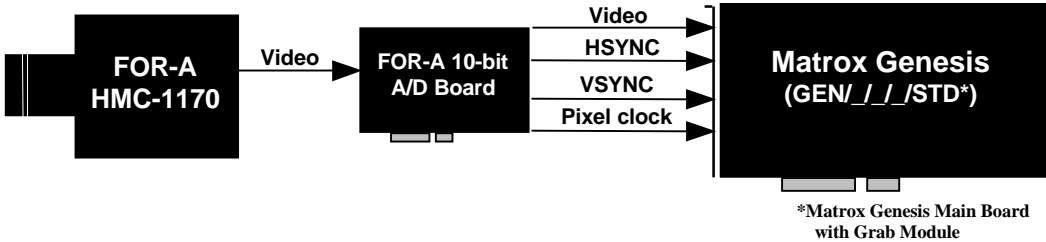
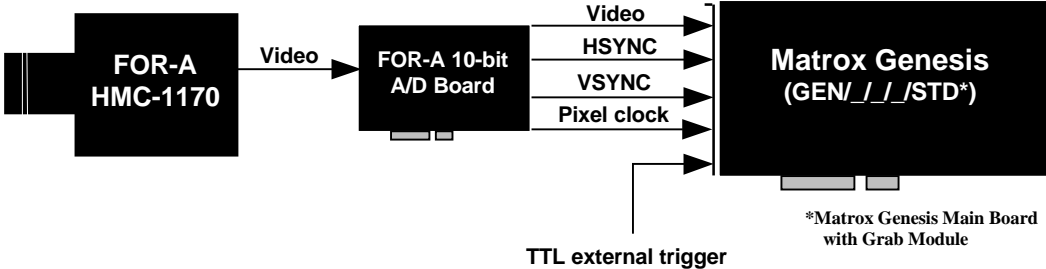


Application Note:

Interfacing non-standard cameras to Matrox Genesis

FOR-A HMC-1170

October 30, 1997

Camera Descriptions	<ul style="list-style-type: none"> • 1280 x 1024 x 8-bit @ 12 fps. • Digital video output (TTL). • Non-interlace. • Internal (composite) and external sync. • Internal and external exposure control.
Interface modes	<ul style="list-style-type: none"> • Continuous, trigger mode
Camera Interface Briefs	<p>Mode 1: Continuous mode</p>  <ul style="list-style-type: none"> • 1280 x 1024 x 8-bit @ 12 fps. • Digital video output (TTL). • Non-interlace. • Continuous video. • Matrox Genesis receiving video signals from camera. • DCF used : FORA2.DCF <p>Mode 2: Trigger mode</p>  <ul style="list-style-type: none"> • 1280 x 1024 x 8-bit @ 12 fps. • Digital video output (TTL). • Continuous video. • Non-interlace. • Internal exposure control (via camera shutter DIP switch on A/D board) • Matrox Genesis receiving TTL external trigger. • Matrox Genesis receiving TTL hsync (HD), TTL vsync (VD), TTL Pixel Clock (CLK), and TTL video output. • DCF used : FORA2TRG.DCF

Application Note:

Interfacing non-standard cameras to Matrox Genesis

FOR-A HMC-1170

October 30, 1997

Camera Interface Details	<p>Mode 1: Continuous mode</p> <ul style="list-style-type: none">Shutter speed is controlled using a combination of switch settings (SW3) and shutter speed settings on the FOR-A A/D board. Refer to the camera manual for additional information on switch position and shutter speed setting relationships.For the 8 position DIP switch (SW5) on the FOR-A A/D board, NOTE switch number 3 must be in the ON position (20 MHz) : <div><div><div>ON</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div></div></div></div><div><div>SW5 DIP Switch</div><div><div>FOR-A A/D Board</div></div></div></div> <p>Mode 2: Trigger mode</p> <ul style="list-style-type: none">Shutter speed and gamma settings are the same as in <i>Mode 1 : Continuous mode</i>.FOR-A HMC-1170 continuously outputs video as in continuous mode, while the TTL external trigger signal causes Matrox Genesis to grab on the next vsync of the video signal, thereby acquiring the next frame.																																																																																															
Cabling Requirements	<p>Mode 1: Continuous mode</p> <ul style="list-style-type: none">The connections between the 60-pin connector of the FOR-A A/D interface board and the 100-pin connector of the Matrox Genesis are as follows: <table><tr><th colspan="3">FOR-A A/D interface board (60-pin connector)</th><th colspan="2">Matrox Genesis (Digital Interface 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>V0</td><td>3</td><td>→</td><td>DATA(0), I/O, TTL</td><td>52</td></tr><tr><td>V1</td><td>4</td><td>→</td><td>DATA(1), I/O, TTL</td><td>53</td></tr><tr><td>V2</td><td>5</td><td>→</td><td>DATA(2), I/O, TTL</td><td>55</td></tr><tr><td>V3</td><td>6</td><td>→</td><td>DATA(3), I/O, TTL</td><td>56</td></tr><tr><td>V4</td><td>7</td><td>→</td><td>DATA(4), I/O, TTL</td><td>57</td></tr><tr><td>V5</td><td>8</td><td>→</td><td>DATA(5), I/O, TTL</td><td>58</td></tr><tr><td>V6</td><td>9</td><td>→</td><td>DATA(6), I/O, TTL</td><td>60</td></tr><tr><td>V7</td><td>10</td><td>→</td><td>DATA(7), I/O, TTL</td><td>61</td></tr><tr><td>CLK</td><td>39</td><td>→</td><td>CLOCK, INPUT, TTL</td><td>6</td></tr><tr><td>HD</td><td>40</td><td>→</td><td>HSYNC, INPUT, TTL</td><td>2</td></tr><tr><td>VD</td><td>55</td><td>→</td><td>VSYNC, INPUT, TTL</td><td>3</td></tr><tr><td>GND</td><td>11</td><td></td><td>GND</td><td>51</td></tr><tr><td>GND</td><td>12</td><td></td><td>GND</td><td>54</td></tr><tr><td>GND</td><td>13</td><td></td><td>GND</td><td>59</td></tr><tr><td>GND</td><td>38</td><td></td><td>GND</td><td>1</td></tr><tr><td>GND</td><td>54</td><td></td><td>GND</td><td>5</td></tr><tr><td>BUSY</td><td>42</td><td></td><td>not connected</td><td>- --</td></tr></table>	FOR-A A/D interface board (60-pin connector)			Matrox Genesis (Digital Interface connector)		Pin name	Pin no.		Pin name	Pin no.	V0	3	→	DATA(0), I/O, TTL	52	V1	4	→	DATA(1), I/O, TTL	53	V2	5	→	DATA(2), I/O, TTL	55	V3	6	→	DATA(3), I/O, TTL	56	V4	7	→	DATA(4), I/O, TTL	57	V5	8	→	DATA(5), I/O, TTL	58	V6	9	→	DATA(6), I/O, TTL	60	V7	10	→	DATA(7), I/O, TTL	61	CLK	39	→	CLOCK, INPUT, TTL	6	HD	40	→	HSYNC, INPUT, TTL	2	VD	55	→	VSYNC, INPUT, TTL	3	GND	11		GND	51	GND	12		GND	54	GND	13		GND	59	GND	38		GND	1	GND	54		GND	5	BUSY	42		not connected	- --
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Application Note:

Interfacing non-standard cameras to Matrox Genesis

FOR-A HMC-1170

October 30, 1997

Cabling Requirements (continued)	<p>Mode 2: Trigger mode</p> <ul style="list-style-type: none"> • IMG-7W2-TO-5BNC cable required for TTL external trigger source and GEN-DIG-BRD/S required for digital data in TTL format. • The connections between the 60-pin connector of the FOR-A A/D interface board and the 100-pin connector of the GEN-DIG-BRD/S are the same as in <i>Mode 1: Continuous mode</i>. • TTL external trigger source should be connected to the TTL Trigger input of the IMG-7W2-TO-5BNC cable.
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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.

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