Applied Video Imaging

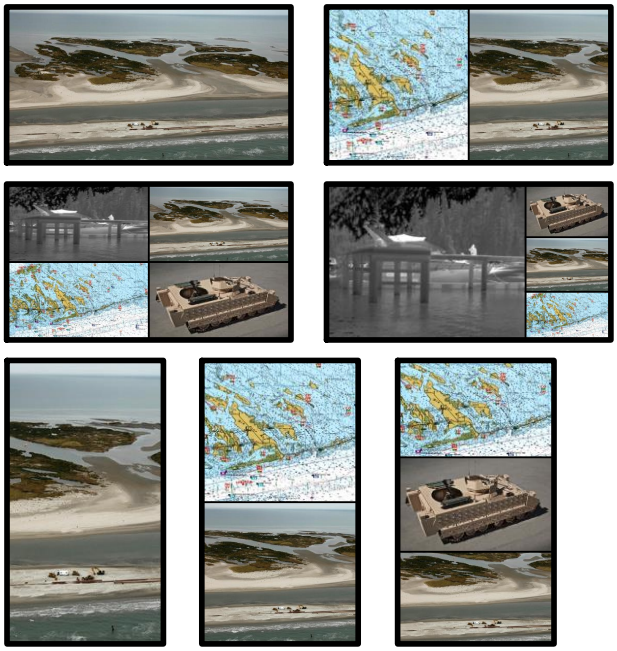
AVI – Optimize your sensor suite.™

DVI/HDMI/Analog Quad Video Processor with 3-G SDI Output

Overview

The AVI DVI/HDMI/Analog Quad Video Processor is a rugged, high-performance, stand-alone unit that combines four video inputs into a single video output for display.

Composite NTSC/PAL, S-Video, DVI, HDMI, VGA, and optional SDI input video standards are supported in various combinations. These inputs can be scaled and recombined into a single HDMI, DVI, VGA, or SD SDI, HD SDI, 3-G SDI video output. The Q0101's processor supports numerous presentation modes for the combined input video including independent image rotation. Low latency buffering allows non-synchronous input to be scaled and processed into a single SD SDI, HD SDI, 3-G SDI or DVI/HDMI output in real time.



Typical presentation examples

Control of the Q0101 is provided by AVI's Open Command Protocol via USB or RS-232 directly from AVI's various Display and Controller products. AVI's Open Command Protocol can also be easily embedded in customer's systems for seamless integration.

Stand-alone or in combination with various AVI system components, AVI's rugged DVI/HDMI/Analog Quad Video

Processor offers a high performance solution for display of all video sources, maximizing the capability of the sensor suite in use.

Standard Features

- 4 inputs to 1 full screen output
- 4 inputs to dual screen output
- 4 inputs to 1 quad output (Landscape)
- 4 inputs to tri screen output (Portrait)
- Independent image rotation of inputs
- Independent scaling of inputs
- Independent scaling of output
- DVI-D/HDMI output or dual 3G/HD/SD SDI output
- 2 DVI/HDMI or VGA inputs
- 2 NTSC/PAL or S-Video inputs
- User controllable functions and configurations
- USB interface for control, configuration, and updates
- SDI and DVI/HDMI video lock indicators
- 9 – 36 V DC Power
- Fully ruggedized for harsh environments

Benefits

- Increased Situational Awareness - all sensor sources viewable at the same time
- Portrait Mode Capability – use any display in portrait mode for space saving installations
- Video Switch - simple selection of any single image or quad image using AVI system control components or embedded control software
- Scaling and Conversion – use any video standard input
- Reduction in wiring weight and complexity – only a single cable run needed to the display and additional displays not needed
- Allows single, unified SDI cabling infrastructure on sensor platform
- Open - works with any SDI/DVI/HDMI display

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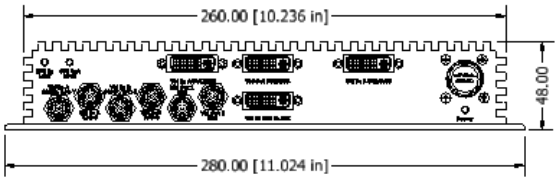
DVI/HDMI/Analog Quad Video Processor with 3-G SDI Output - Specifications

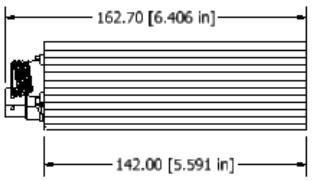
Video Inputs	• DVI/HDMI or VGA (2) - DVI-I Female Sub-D • NTSC/PAL or S-Video (2) - BNC 75 Ω • DVI/HDMI to SDI (1) - DVI-D Female Sub-D • 3G/HD/SD SDI (option) - BNC 75 Ω ○ Input equalization > 100m (Belden 1694A)	**Options**	• Q010104-00 STD Product Number • Q010104-01 SDI Input Option

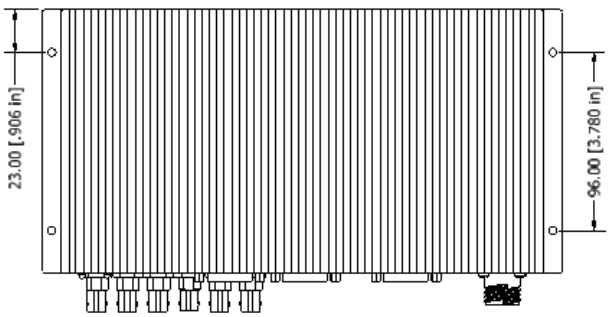
Video Outputs	• DVI/HDMI/VGA (1)* - DVI-I Female Sub-D
	• 3G/HD/SD (2)* - BNC 75 Ω
	  ○ Re-clocked
	  ○ 10 bit
	* SVI/HDMI/VGA output is unavailable when using the 3-G SDI outputs and vice versa.
		Functionality	• Output selection of quad type 1 or 2 (Landscape)
			• Full screen selection of channel 1, 2, 3, or 4
			• Output selection of dual screen
			• Output selection of tri screen (Portrait)
			• Quad or Tri screen image position
			• 99 programed pre-sets
			• Unit program interface

Video Input and Output Formats	• 3G – SMPTE 425
	  ○ 2.97 and 2.967Gb/s
	  ○ 1080p@60/59.94/50Hz
	• HD – SMPTE 292/274/296
	  ○ 1.485 and 1.435Gb/s
	  ○ 1080i@60/59.94/50Hz (input only)
	  ○ 1080p@30/29.97/25/24/23.98Hz
	  ○ 720p @60/59.94/50/30/29.97/25/24/23.98Hz
	• SD – SMPTE 259M
	  ○ 270Mb/s
	  ○ 625i@50Hz
	  ○ 525i@59.94Hz
	• DVI/HDMI/VGA
	  ○ VGA through UXGA
	  ○ Up to 1920x1200 max pixel clock 164.5MHz
		Environmental
		
		DO-160 Tested
			• Operating Temp Low -30°C / -22°F DO-160G Cat B4
			• Operating Temp High +65° C / +149°F DO-160G Cat B4
			• Short Term Op Temp Low -35°C /-31°F DO-160G Cat B4
			• Short Term Op Temp High +70° C / +158°F DO-160G Cat B4
			• Ground Survival Low Temp -55°C /-67°F DO-160G Cat B4
			• Ground Survival High Temp +85C° /+185F° DO-160G Cat B4
			• Temp Variation 5C° per minute DO-160G Cat B
			• Humidity 0 to 95±4% @ 50C° DO-160G Cat A
			• Operational Shock & Crash 6g @ 20ms, 20g Sus DO-160G Cat A, R
			• Vibration Random, 10-2000Hz DO-160G Cat U2
			• EMI/EMC Sec 18, 19, 20, 21 DO-160G Cat B, CC, R, B
			• Voltage Spike 2x Line Voltage DO-160G Cat B
			• Waterproofness Drip Test DO-160G Cat W
			• Ingress Rating IP67
			• Altitude Operating 25,000ft DO160G Cat B

Power	• +9 to +36 DC • 0.65 amps 28 VDC • Connector Type MIL-STD D38999/20MB98PN	**Dimensions and Weight**	• 280 mm [11.02 in] W • 162.7 mm [6.41 in] D (including connector) • 48 mm [1.89 in] H • 1.61 kg [3.54 lbs]







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