

HD2020-3G Video PassPort™

1RU Multi-Path Video Converter and Frame Synchronizer



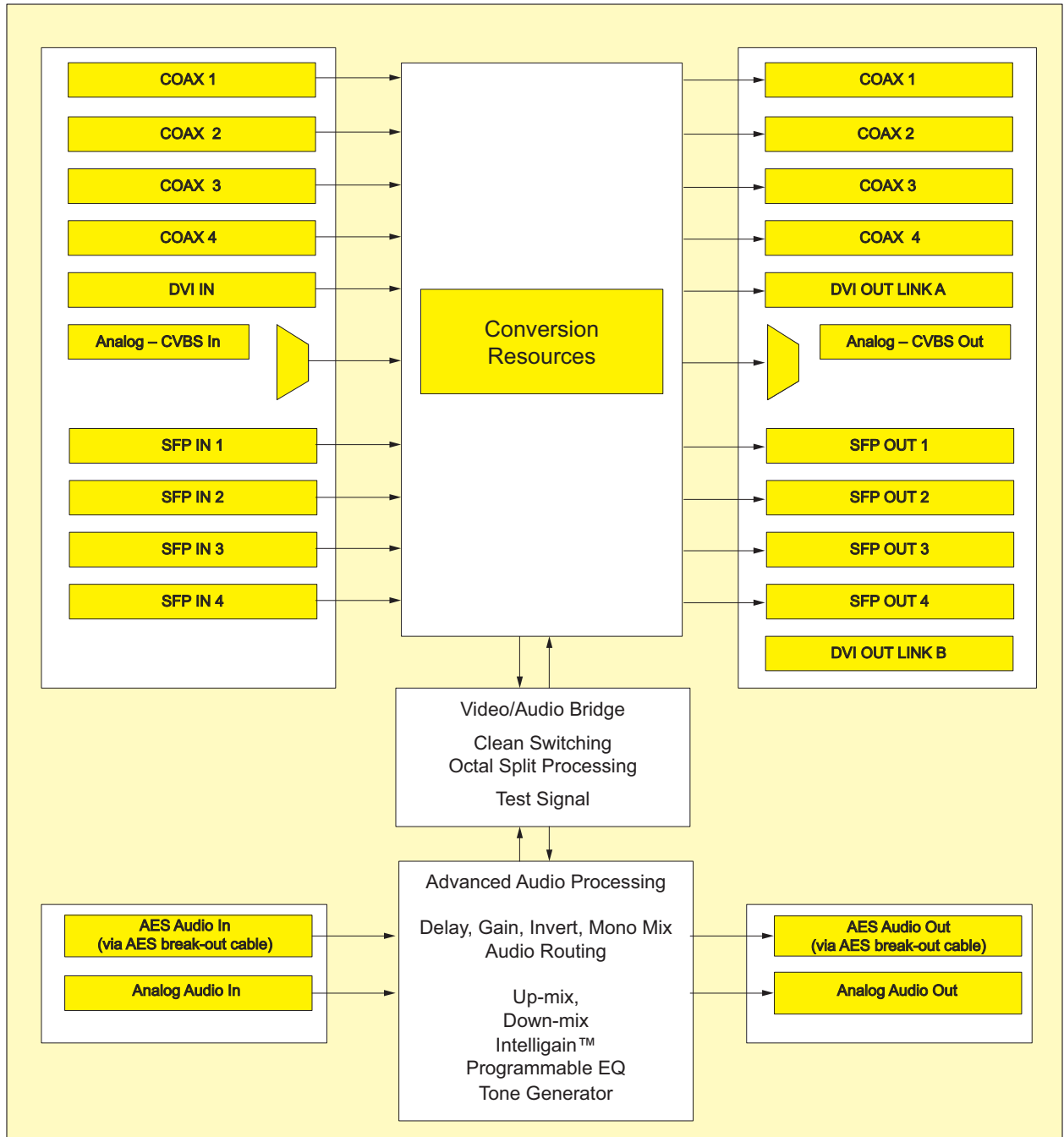
The HD2020 processing architecture allows its four up/down/cross conversion paths to independently connect to any system input and independently drive any system output. In addition, eight unique video sources can be routed to the Advanced Audio/Video Bridge (AAVB).

Within the AAVB, sources are routed to the HD2020 internal audio processor, two internal eight input video clean switches and the internal octal split display processor. The HD2020 also supports internal bars and tone generation with source ID character burn-in capabilities. Video clean switch outputs can drive any system output.

Within the audio processor per channel audio delay is available for each embedded and discrete audio input channel. Following this, stereo to 5.1 up-mixing (+UMX), 5.1 to stereo down-mixing (+DMX), IntelliGain™ audio loudness management (+IG) can be performed. In addition, a programmable audio equalizer is available (+EQ).

Two 16 channel audio embedders with per channel audio routing, inversion, gain and mono mixing capabilities feed the two AAVB clean switch outputs. Similar per channel audio routing, inversion, gain and mono-mixing capabilities are available for the 8 x AES outputs (16 channels) and the 8 x mono analog audio outputs.

▶HD2020 Block Diagram



The Complete Solution Provider



HD2020, HD2020-3G Video PassPort™ 1RU Multi-Path Video Converter and Frame Synchronizer



Specifications

<p>Coax Inputs: Number of Inputs: 4 Connector: BNC per IEC 61169-8 Annex A Input Equalization: 300m @ 270Mbs with Belden 1694A or equivalent 100m @ 1.5Gbs with Belden 1694A or equivalent Return Loss: > 15dB to 1.5GHz Data Rate: Auto-sensing SD/HD/3G Formats: 525i/59.94, 720p/59.94, 1080i/59.94 625i/50, 720p/50, 1080i/50</p> <p>Fiber Inputs: Number of Inputs: 4 Connector: LC Form Factor: Dual Optical SFP Receiver Wavelength: 1260-1620 nm Data Rate: Auto-sensing SD/HD/3G Formats: 525i/59.94, 720p/59.94, 1080i/59.94 625i/50, 720p/50, 1080i/50</p> <p>DVI and Analog Video Inputs: Number of Inputs: 1 Connector: DVI-I (Female) Breakout Cable: DVI-I to DVI-D and 5x RGBHV BNCs Standards: DVI-D: 1080p/720p @59.94Hz (no HDCP) DVI-D: 1080p/720p @50 Hz (no HDCP) CVBS – NTSC on G channel CVBS – PAL on G channel</p> <p>Analog Audio Inputs: Number of Inputs: 4 Type: Mono signals, balanced analog audio Connector: Removable terminal strip Input Impedance: 10kΩ minimum (differential) Sampling Freq: Analog signal sampled at 48kHz Signal Level: 0dBFS = 19dBu/25dBu software selectable Freq Response: ±0.5dB (20Hz to 20kHz) THD+N: > 99dB (20Hz to 20kHz, -1dBFS) CMRR: > 85dB @ 100Hz</p>	<p>AES Audio Input: Number of Inputs: 8 x AES inputs Standard: SMPTE ST 276-1, synchronous or asynchronous Connector: DB15 Input Type: Unbalanced Impedance: 75Ω Signal Level: 1 Vp-p Sampling Rate: 48kHz</p> <p>Reference Input and Passive Loop: Type: NTSC bi-level sync PAL bi-level sync Connector: BNC per IEC 61169-8 Annex A</p> <p>GPIO: Number : 8 (configurable as inputs or outputs) Type: Opto-isolated, active low with internal pull-ups to +5V Connector: Removable terminal block Signal Level: Closure to ground Function: Virtual front panel button push Tally of front panel button push</p> <p>Coax Outputs: Number of Outputs: 4 Connector : BNC per IEC 61169-8 Annex A Signal Level : 800 mV nominal DC Offset: 0V ± 0.5V Rise/Fall Time: 200 ps nominal Overshoot: < 10% of amplitude Return Loss : > 15dB to 1.5GHz Wide Band Jitter: < 0.20 UI Format: 525i/59.94, 720p/59.94, 1080i/59.94 625i/50, 720p/50, 1080i/50</p> <p>Fiber Outputs: Number of Inputs: 4 Connector: LC Form Factor: Dual Optical SFP Transmitter Wavelength: 1310 nm Data Rate: SD and HD (270Mbs and 1.5Gbs) Format: 525i/59.94, 720p/59.94, 1080i/59.94 625i/50, 720p/50, 1080i/50</p>	<p>DVI and Analog Video Outputs: Number of Outputs: 1 Connector: DVI-I (Female) Breakout Cables: DVI-I to DVI/RGBHV break out cable DVI "Y Cable" break out cable Standards: DVI-D Out A: 1080i/720p@59.94Hz (no HDCP) DVI-D Out A: 1080i/720p@50Hz (no HDCP) DVI-D Out B: 1680x1050 out when running 1080i DVI-D Out B: 1920x1080p out when running 720p DVI-D Out B: 1440x900 out when running 525i CVBS – NTSC on G channel CVBS – PAL on G channel</p> <p>Analog Audio Outputs: Number of Outputs: 8 Type: Mono signals, balanced analog audio Connector: Removable terminal strip Output Impedance: 60Ω max Output Loads: Hi Z Peak Conv Level: 0dBFS = 18dBu/24dBu software selectable Sampling Freq: 48kHz Freq Response: ±0.1dB (20Hz to 20kHz) THD+N: > 80dB (20Hz to 20kHz, -1dBFS)</p> <p>AES Audio Outputs: Number of Outputs: 8 x AES inputs Standard: SMPTE ST 276-1 Connector: DB15 Input Type: Unbalanced Impedance: 75Ω Signal Level : 1 Vp-p Sampling Rate: 48kHz</p>
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Ordering Information

HD2020-3G Multi-Path Video Converter and Frame Synchronizer with 3G I/O support

Ordering Options

+2X	Upgrade to Four Conversion Paths
+CF2G	Embedded Compact Flash for Test Signal Storage
+AA	Balanced Analog Audio I/O
+FP	HD2020 Local Front Panel
+FL-HIO	Triple bidirectional HD/SD I/O left flex module
+FR-HIO	Triple bidirectional HD/SD/ I/O right flex module
+UMX	Stereo to 5.1 PCM Surround Sound Upmix
+DMX	5.1 to 2-Channel Stereo Downmix
+IG	IntelliGain™ Audio Loudness Management
+EQ	Programmable Audio Frequency Equalizer
+2TX	1x Dual SFP Fiber Transmitter (two fiber outputs)
+4TX	2x Dual SFP Fiber Transmitter (four fiber outputs)
+2RX	1x Dual SFP Fiber Receiver (two fiber inputs)
+4RX	2x Dual SFP Fiber Receiver (four fiber inputs)
+PCRCP	PC Remote Control Panel

Accessories

HD2020-RCP	HD2020 Remote Control Panel
WPDVI-DVIBNC5	DVI to DVI/RGBHV break out cable
WPDVI-DVI2	DVI "Y" break out cable
WPAES8-BNCM-6F	AES audio break-out cable (8 x unbalanced connectors, 1 x DB15 connector) 1 x cable required for AES inputs. 1 x cable required for AES outputs.
7701RS	Mechanical Rear Support