

DVC 501 SD

3G-SDI TO DVI AND RGB/COMPONENT CONVERTER

- ▶ Automatically adapts to SMPTE and ITU digital video standards for 3G-SDI, HD-SDI, and SDI
- ▶ Supports data rates from 270 Mbps to 2.97 Gbps
- ▶ Simultaneous DVI-D and analog RGB or component video outputs
- ▶ AES audio de-embedding
- ▶ Input equalization and reclocking on buffered output
- ▶ Internal test patterns for calibration and setup
- ▶ Output muting control
- ▶ RS-232 control
- ▶ Front panel USB configuration port



The Extron DVC 501 SD converts 3G-SDI, HD-SDI, and SDI signals to DVI-D as well as analog RGB or component video. It accepts data rates from NTSC and PAL up to HDTV 1080p/60, automatically equalizes incoming 3G-SDI/HD-SDI/SDI signals to optimize transmission over long cables, and extracts embedded AES audio. The DVC 501 SD is ideal for applications requiring broadcast-type signals to be interfaced with professional or consumer-level equipment.



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DVC 501 SD** converts 3G-SDI, HD-SDI, and SDI serial digital video signals to DVI-D and analog RGB or component video formats. It features automatic equalization of input signals, extraction of embedded AES audio, and RS-232 serial control. The DVC 501 SD is ideal for applications requiring broadcast-type signals to be interfaced with professional or consumer-level equipment, including video editing and production, rental and staging, medical imaging, and large-scale presentations. It is compliant with SMPTE 259M, 292M, 424M, and ITU digital video standards.

The DVC 501 SD accepts data rates from NTSC and PAL to HDTV 1080p/60. An input loop-through delivers reshaped and restored 3G-SDI/HD-SDI/SDI signals. The RGB output can be set for RGBHV, RGBS, and RGsB. Bi-level or tri-level sync can be selected when the unit is set for component video output.

FEATURES

- ▶ **Automatically adapts to SMPTE and ITU digital video standards for 3G-SDI, HD-SDI, and SDI** – Complies with SMPTE 259M, ITU-R BT.601, SMPTE 292M, ITU-R BT.1120, SMPTE 372M, and SMPTE 424M standards.
- ▶ **Supports data rates from 270 Mbps to 2.97 Gbps** – The DVC 501 SD accepts data rates from standard definition NTSC and PAL to HDTV 1080p/60.
- ▶ **Simultaneous DVI-D and analog RGB / component video outputs** – The DVC 501 SD offers high resolution digital and analog video outputs that allow for easy integration of 3G-SDI/HD-SDI/SDI signals into DVI or RGB-based AV devices and systems.
- ▶ **AES audio de-embedding** – An embedded AES stereo audio stream can be extracted and then output from the DVC 501 SD. Audio output can be balanced or unbalanced, and adjusted for attenuation.
- ▶ **Audio attenuation control**
- ▶ **Input equalization and reclocking on buffered output** – The DVC 501 SD automatically equalizes incoming 3G-SDI/HD-SDI/SDI signals, and reshapes and restores the signals on the buffered output.
- ▶ **Analog RGB or component video output** – The DVC 501 SD can be set to output analog RGB as RGBHV, RGBS, or RGsB, or component video as R-Y, B-Y, Y.
- ▶ **Bi-level or tri-level sync available for component video output**
- ▶ **Internal test patterns for calibration and setup** – Nine test patterns are available with the DVC 501 SD, including a crop pattern, color bars, and alternating pixels.
- ▶ **Output muting control** – Provides the capability to mute the video and/or audio output.
- ▶ **RS-232 control** – Using serial commands, the DVC 501 SD can be controlled and configured via the Extron Windows®-based control program, or integrated into a control system. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming.

FEATURES (Cont.)

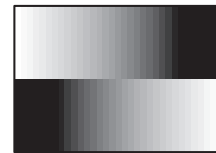
- ▶ **Front panel USB configuration port** – Provides convenient access to the DVC 501 SD for setup, configuration, and firmware updates.
- ▶ **Front panel security lockout** – This feature locks out all front panel functions; all functions however, are available through RS-232 control.
- ▶ **Rack-mountable 1U, half rack width metal enclosure**
- ▶ **Internal universal power supply** – The 100-240 VAC, 50/60 Hz, international power supply provides worldwide power compatibility.

Test Patterns

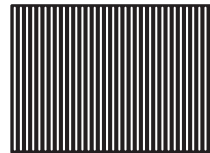
The DVC 501 SD has an internal test generator with nine test patterns, including color bars, grayscale, alternating pixels, 4x4 crosshatch, a crop pattern, and four aspect ratio patterns.



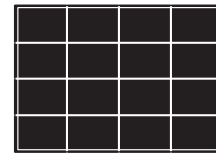
Color Bars



Grayscale



Alternating Pixels



Crosshatch



Crop



1.78 Aspect Ratio



2.35 Aspect Ratio



1.85 Aspect Ratio



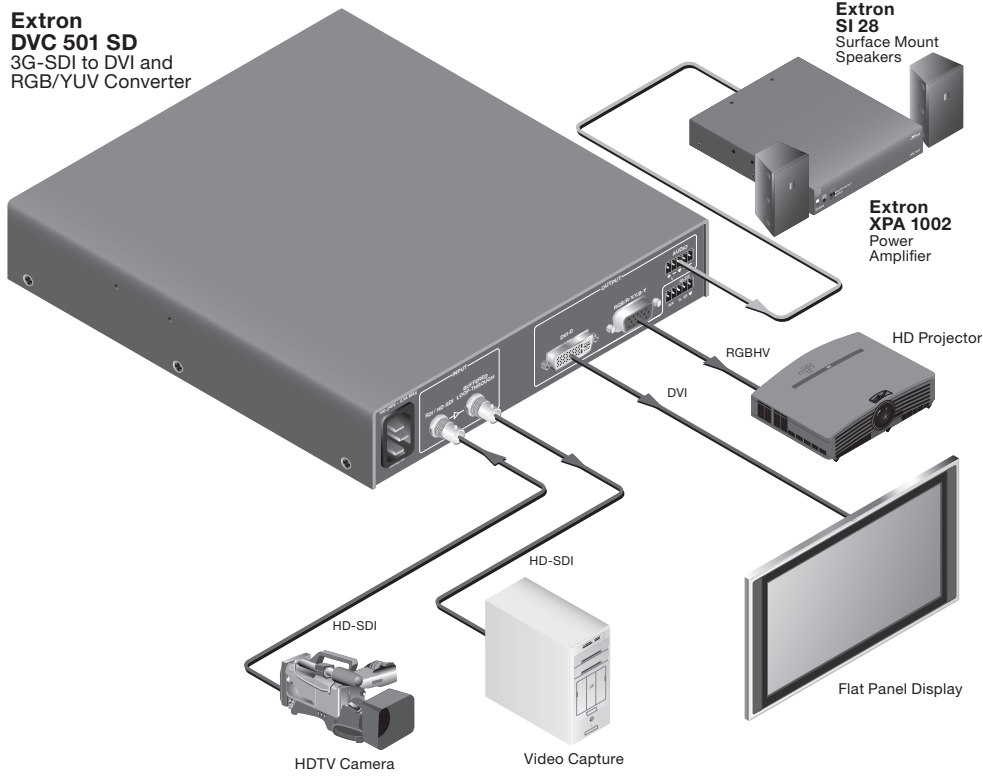
1.33 Aspect Ratio

SPECIFICATIONS

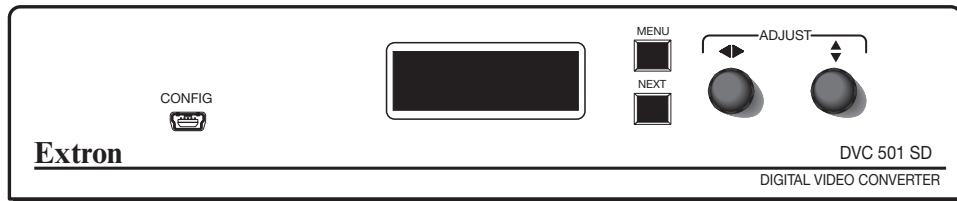
VIDEO	
Signal type	SDI, HD-SDI, and 3G-SDI digital video signals
Data rates	270 Mbps, 1.485 Gbps, 2.970 Gbps
Operation standards	SMPTE 259M-C, SMPTE 292M, SMPTE 424M
Auto data rate lock	Yes
VIDEO INPUT AND LOOP THROUGH	
Number/signal type	1 SDI (SMPTE 259M-C, 270 Mbps), HD-SDI (SMPTE 292M, 1.485 Gbps), or 3G-SDI (SMPTE 424M, 2.97 Gbps) digital component video
Connectors	1 female BNC, 1 female BNC loop-through
Data rates	270 Mbps to 2.97 Gbps
Nominal level	0.8 Vp-p
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	24 Hz to 60 Hz
Resolution range	NTSC, PAL, 720p, 1080i, 1080p
Return loss	<-15 dB @ 1 MHz to 1.5 GHz
DC offset (max. allowable)	5 V
Input cable equalization	Automatic for up to -30 dB of cable loss
HD-SDI	120 m (400') using Extron RG6 cable 90 m (300') using Extron RG59 cable
SDI	150 m (500') using Extron RG6 cable 120 m (400') using Extron RG59 cable
NOTE: The transmission distance varies depending on the signal resolution and on the type of cable, graphics card, and display used in the system.	
VIDEO PROCESSING	
Digital sampling	24 bit, 8 bits per color, 165 MHz standard
Colors	16.78 million
VIDEO OUTPUT	
Number/signal type	1 single link DVI-D 1 RGB, YUV / YPbPr
Connectors	1 female DVI-I 1 female 15-pin HD
Nominal level	
TMDS	1.0 Vp-p swing
Analog	1 Vp-p for Y of component video 0.7 Vp-p for RGB and for R-Y and B-Y of component video
Impedance	
TMDS	100 ohms
RGB	75 ohms
Return loss	<-25 dB @ 100 MHz
DC offset	±5 mV with input at 0 offset
SYNC	
Output type	RGBHV, RGBS, RGsB, component video (bi-level or tri-level)
Output level	5.0 Vp-p for RGB 0.6 Vp-p for component video tri-level sync 0.3 Vp-p for component video bi-level sync
Output impedance	75 ohms
Output polarity	Positive or negative (selectable)

AUDIO		
Frequency response	20 Hz to 20 kHz, ±0.2 dB	
THD + Noise	0.05% @ 1 kHz at nominal level, 0 dB gain	
S/N	>100 dB at maximum output (unweighted)	
Stereo channel separation	>80 dB @ 1 kHz	
AUDIO INPUT		
Number/signal type	1 SDI embedded audio (SMPTE 272M, SMPTE 299M)	
Connector	1 female BNC	
Adjustment range	-18 dB to 0 dB	
AUDIO OUTPUT		
Number/signal type	1 stereo, balanced/unbalanced	
Connectors	(1) 3.5 mm captive screw connector, 5 pole	
Impedance	50 ohms unbalanced, 100 ohms balanced	
Gain error	±0.1 dB channel to channel	
Maximum level (Hi-Z)	+21 dBu, balanced, or +15 dBu, unbalanced, at 0.05% THD+N	
CONTROL/REMOTE – DECODER/SCALER		
Serial control port	1 RS-232, 3.5 mm captive screw connector, 5 pole (uses 3 poles)	
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity	
Serial control pin configuration	3 = Tx, 4 = Rx, 5 = GND	
USB control ports	1 front panel female mini USB B	
USB standards	USB 2.0, low speed	
Program control	Extron Simple Instruction Set (SIS™)	
GENERAL		
Power supply	Internal Input: 100-240 VAC, 50-60 Hz	
Power consumption	12 watts	
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing	
Cooling	Convection, sides to top	
Mounting		
Rack mount	Yes, with optional 1U rack shelf	
Furniture mount	Yes, with optional through-desk mounting kit or under-desk mounting kit	
Enclosure type	Metal	
Enclosure dimensions	1.75" H x 8.75" W x 9.5" D (half rack wide) 4.4 cm H x 22.2 cm W x 24.1 cm D (Depth excludes connectors and knobs.)	
Product weight	2.3 lbs (1.1 kg)	
Vibration	ISTA 1A in carton (International Safe Transit Association)	
Regulatory compliance		
Safety	CE, c-UL, UL	
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI	
Warranty	3 years parts and labor	
NOTE: All nominal levels are at ±10%.		
Model	Version Description	Part number
DVC 501 SD	3G-SDI to DVI/RGB/Component Converter	60-1033-01

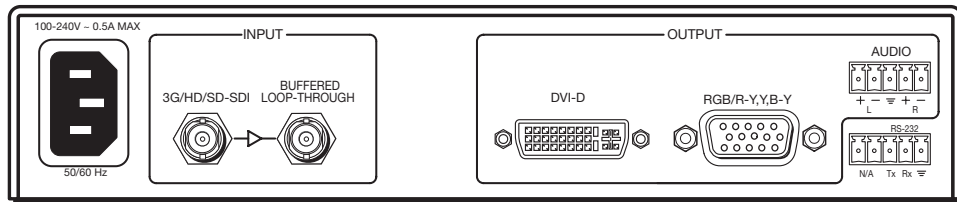
APPLICATION DIAGRAM



PANEL DRAWINGS



Front



Back

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