HDTV/SDTV Closed Caption Bridge

The TE531 is a versatile disembedding, bridging and upconversion tool for use in broadcast environments where closed caption data is encoded into HD-SDI VANC for transport. The TE531 disembeds EIA-708B caption data encoded in HD VANC and feeds this data to an on-board caption server. The caption server's serial output, which supports both the SMPTE 333M and Grand Alliance interface protocols, should be connected to the captioning port of an ATSC encoder for integration into the MPEG emission stream. In the absence of VANC caption data, EIA-608B captioning present on the SDI input will be upconverted and fed to the caption server. The TE531 automatically switches from 708 caption recovery to 608 caption upconversion when VANC data is not present on the HD-SDI input. The TE531 may also be used to bridge the downconversion compatibility bytes in a captioned HD video source to the SDI video feed for HD/SD simulcast.

- Disembeds EIA-708B caption data from HD VANC for direct connection to an ATSC encoder
- Upconverts EIA-608B caption data from SDI Line 21 signals to 708 format
- Automatic selection of caption data source between HD and SDI inputs
- EEG's industry-leading DTV caption upconversion technology ensures the richest HD caption service and widest compatibility with consumer decoders
- Performs downconversion from HD VANC captions to SDI Line 21 captions with simulcast-ready EIA-608B compliant encoding
- Relay bypass protection on SDI video path
- Seamless interfacing with all available ATSC encoders supporting SMPTE 333M or Grand Alliance protocols

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TE531 SPECIFICATIONS

ENCODER HD-SDI INPUT VIDEO CHARACTERISTICS	
Number of Inputs	1
Connector	BNC per IEC 169-8
Format	SMPTE 292M 1.485 Gbit/s 1080i, 720p, 720psF, 480p
Input Impedance	75 Ohms
Equalization	Automatic up to 100m @ 1.5 Gb/s w/ Belden 1694 (or equivalent)
Video Input Level	800 mV p-p ± 10%, Out 1 bypass protected

ENCODER SD-SDI INPUT VIDEO CHARACTERISTICS	
Number of Inputs	1
Connector	BNC per IEC 169-8
Format	270 Mbits/s component, complies with SMPTE 259M and CCIR 656
Video Input Level	800 mV p-p ± 10%, Out 1 bypass protected
Input Impedance	75 Ohms
Equalization	Automatic up to 200m @ 270 Mb/s w/ Belden 1694 (or equivalent)
Input Return Loss	>= 18dB, 1-270 MHz
Input S/N Ratio	Unit will function down to 25 dB ratio (CCIR weighted) with typically one error per row at that level

ENCODER SD-SDI OUTPUT VIDEO CHARACTERISTICS	
Number of Outputs	2 Program Outputs (Output 1 bypass relay protected)
Connector	BNC per IEC 169-8
Format	270 Mbits/s component, complies with SMPTE 259M and CCIR 656
Output Impedance	75 Ohms
Output Level	800 mV p-p ± 10%
DC Offset	0V ± 0.5V
Rise/Fall Time	470pS nominal
Overshoot	< 10% of amplitude
Output Return Loss	>= 18dB, 1-270 MHz
Output Jitter	< 300 pS

DATA INPUT CHARACTERISTICS	
Data Ports	Three serial RJ-11 jacks, RS232C

FRONT PANEL CONTROLS & DISPLAY	
Power (On/Off)	Push-button switch with integral circuit breaker, white band indicates Off state
Encoder ON	Push-button switch controls bypass state, LED lit for non-bypassed state
Reset	Flush momentary switch resets the encoder

REAR PANEL CONNECTORS	
SDI In	BNC connector, internal 75 Ohm termination when not by-passed
SDI Out 1	BNC 75 Ohm connector, unity gain output, bypass protected, external termination
SDI Out 2	BNC 75 Ohm connector, unity gain output, , external termination
Data	Three DB9F for SMPTE333M, Aux1 and Aux2
Power	Standard IEC 60320 non-captive socket 3-wire North American power cord, 7 feet long

PHYSICAL CHARACTERISTICS	
Height	1.75 inches (4.4 cm)
Width	19 inches (48.3 cm)
Depth	6 inches (25.4 cm)
Mounting	Designed for rack mounting
Weight	9 lbs. (4.1kg)
Ambient Operating Temp	0° C to 50° C

POWER REQUIREMENTS	
Line Voltage	117 VAC 10%
Line Frequency	50/60 Hz
Line Current	0.3 A maximum
Input Power	36 W
Circuit Protection	Internal to On/Off switch, 0.4 A
EMI/RFI	Complies with FCC Part 15 Class A, EU EMC Directive

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