

# 7721AE8-DEE-HD

## HD/SD-SDI Audio Embedder & Dolby-E® Encoder



The 7721AE8-DEE-HD Audio Embedder & Dolby-E® Encoder inserts eight AES inputs as four embedded audio groups into a 1.5Gb/s HD or a 270Mb/s SD video signal as specified by ST 299-1 or 272M respectively.

Eight channels can be processed by the on-card Dolby Encoder. The encoder will transform the eight discrete channels into two channels containing Dolby-E® and the associated Dolby-E® metadata. The two channels of Dolby-E® can be embedded into the video output or output to an AES. This device also handles the Dolby-E® Metadata.

Metadata is optionally embedded in VANC and can be provided as an output for downstream devices (i.e. Dolby Encoders, Multichannel Audio Tool, etc.).

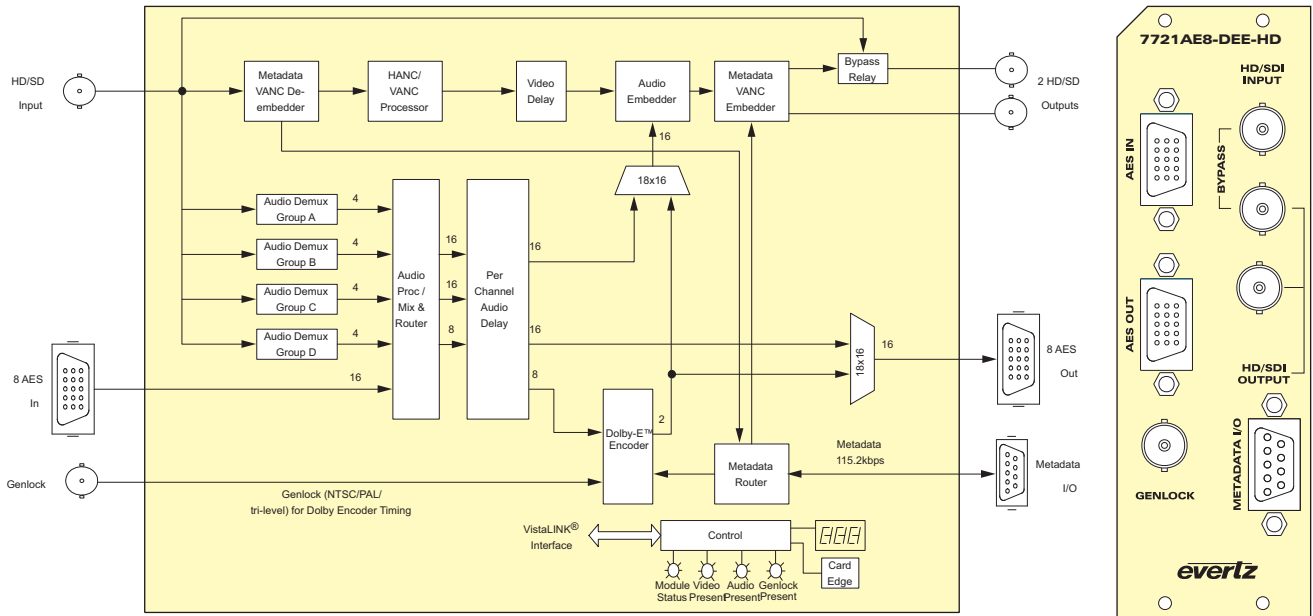
Up to 16 selected channels may be optionally delayed up to 1.2 seconds and embedded into the output video and/or directed to AES outputs. Video output may be optionally delayed to help with lip sync. For lip sync cohesion and ease of editing, Dolby-E® data is organized in blocks with lengths matching the associated video frame. The encoder will match the beginning of each output block with the start of video, as provided with the genlock input. Up to 1.2 seconds of additional delay can be dialed up by the user.

### IntelliGain® Audio and Loudness Processor

- Consistent audio loudness levels within a channel and/or program
- Automatic detection and level adjust for loud commercials
- Gain control within a program interval to preserve audio dynamic range
- Artifact-free transitions between program and commercials
- Elimination of drastic volume changes during commercials and interstitials

### Features & Benefits

- Dolby-E® encoding modes available: 5.1+2, 5.1+2x1, 2x4, 4+2x2, 4+2+2x1, 4+4x1, 4x2, 3x2+2x1, 2x2+4x2, 2x2+4x1, 2+6x1, 8x1, 5.1, 5+2, 5+2x1, 3x2, 2x2+2x1, 2+4x1, 6x1, 4, 2x2, 2+2x1, 4x1, 7.1, and 7.1 screen
- Dolby-E® encoding frame rates of 23.98, 24, 25, 29.97 and 30 frame/sec
- External color-black reference not required for Dolby-E® encoding
- Video reference input is still provided and is compatible with bi-level and tri-level syncs
- Adjustable video delay to match Dolby encoder audio delay
- Dolby metadata is sourced from VANC or external RS-422 port (metadata authoring will be available in future releases)
- Dolby metadata monitoring and processing (dial norm adjustment) of any metadata input
- Optional professional upmix with +UMX
- Eight AES inputs as well as four group de-embedder
- Two audio mixers, one for AES/embedded audio, another for Dolby-E® encoding
- Headphone jack (on card edge) for monitoring any input source
- Card edge display
- Card edge LEDs for module status, video signal presence, selected audio group presence, Dolby Decoder status, Video Reference health/compatibility and AES signal presence
- VistaLINK® capable for remote monitoring, control and configuration capabilities via SNMP; using VistaLINK® PRO, CP-2116E or CP-2232E Control Panels. VistaLINK® is available when modules are used with the 3RU 7800FR frame and a 7700FC VistaLINK® Frame Controller module in slot 1 of the frame



The Complete Solution Provider



► Specifications

<b>Serial Video Input:</b>		<b>Metadata I/O:</b>		<b>Genlock Input:</b>	
Standard:	ST 292-1, 1080i/60, 1080i/59.94, 1080i/50, 1080p/30 (sF), 1080p/29.97 (sF), 1080p/25 (sF), 1080p/24 (sF), 1080p/23.98 (sF), 720p/50, 720p/60, 720p/59.94, 1035i/60, 1035i/59.94 SMPTE 259M-C (270Mb/s) 525 or 625 line component	Type:	Dolby-E® Metadata, SMPTE 2020	Type:	NTSC, PAL, black or any tri-level, all autodetect
Connector:	BNC per IEC 61169-8 Annex A	Connector:	Female B-9	Connector:	1 BNC per IEC 61169-8 Annex A
Equalization:	HD: 115m @ 1.5Gb/s with Belden 1694A SD: 300m @ 270Mb/s with Belden 1694A	Baud Rate:	115,200 baud	Impedance:	Hi-Z or 75Ω (jumper configurable)
		Vanc Embedding:	SMPTE 2020	Return Loss:	> 40dB to 10MHz
		<b>AES Audio Input:</b>		<b>Electrical:</b>	
		Standard:	SMPTE 276M	Voltage:	+12V DC
		Number of Inputs:	8 unbalanced	Power:	21W
		Connector:	Female High Density dB-15 (breakout cable to BNC provided)	EMI/RFI:	Complies with FCC Part 15 Class A, EU EMC Directive
		Input Level:	0.1 to 2.5V p-p (5V p-p tolerant)		
		Input Impedance:	75Ω	<b>Number of Slots:</b>	
		Return Loss:	> 25dB 100kHz to 6MHz	350FR:	2
		Equalization:	Automatic to 1000m with Belden 1694A (or equivalent) @ 48kHz AES signal	7700FR-C:	2
				7800FR:	2
		Sample Rate:	48kHz ±100ppm		
<b>Processed Serial Video Output:</b>		<b>AES Audio Output:</b>			
Standard:	Same as input or user controlled	Standard:	SMPTE 276M, single ended AES		
Number of Outputs:	2	Number of Outputs:	8 unbalanced		
Connector:	BNC per IEC 61169-8 Annex A	Connector:	Female High Density DB-15 (breakout cable to BNC provided)		
Signal Level:	800mV nominal	Sample Rate:	48kHz		
DC Offset:	0V ±0.5V	Impedance:	75Ω		
Rise and Fall Time:	Per standard	Resolution:	Up to 24-bit		
Overshoot:	< 10% of amplitude				
Wide Band Jitter:					
HD:	< 0.16 UI				
SD:	< 0.10 UI				

► Ordering Information

<b>7721AE8-DEE-HD</b>	HD/SD-SDI Audio Embedder & Dolby-E® Encoder (Requires 7700FC for full module control)	<b>Accessories</b>	
<b>Ordering Options</b>	Rear Plate must be specified at time of order (Eg: Model +3RU)	<b>7700FC</b>	VistaLINK® Frame Controller
<b>+UMX</b>	Professional 2-channel Stereo to 5.1 Multi-channel Surround Sound Upmixing	<b>CP-2116E-H</b>	Remote Control Panel
<b>+IG</b>	<b>IntelliGain Loudness Processor</b>	<b>CP-2232E</b>	Remote Control Panel
<b>Rear Plate Suffix</b>		<b>WPAES8-BNCM-6F</b>	Cable (included)
<b>+3RU</b>	3RU Rear Plate for use with 350FR, 7700FR-C or 7800FR Multiframe	<b>Enclosures</b>	
		<b>350FR</b>	3RU Portable Multiframe which holds up to 7 single slot modules
		<b>7700FR-C</b>	3RU Multiframe which holds up to 15 single slot modules
		<b>7800FR</b>	3RU Multiframe which holds up to 15 single slot modules
		<b>7801FR</b>	1RU Multiframe which holds up to 4 single or 2 dual slot modules

