

# 7847FS-EAES8-3G, 7847FS-EAES8-HD

3G/HD/SD-SDI Frame Synchronizer with Embedded Audio Processing, 8 AES I/O & Advanced SCTE104 Message Processing



The 7847FS-EAES8 series Frame Synchronizers are designed to re-time a SMPTE ST 424 (3Gb/s), ST 292-1 (1080i/59.94, 1080i/50, 720p/60, 720p/59.94) or SMPTE ST 259-1 (625i/50, 525i/59.94) input to a local reference tri-level or composite sync signal. When necessary, frames are repeated or dropped to maintain synchronization. The 7847FS-EAES8 supports synchronization of both the video and any embedded audio present including the preservation of all VANC data. When the input video is lost, this module will freeze the last good frame or generate black video.

On the 7847FS-EAES8, the user can choose to have eight stereo pairs from four groups in the upstream embedded audio and from the eight AES inputs embedded on the output video and output as AES. The module can also pass all VANC data after switching line. When the input video is lost, it will pass the input AES or mute if embedded audio is selected for synchronizing.

The frame synchronizers also have the ability to set the audio delay independently from the video delay and have the ability to adjust many video parameters such as brightness, contrast, saturation and hue control. The adjustment of audio parameters such as gain, mixing stereo pairs into monaural and reassignment of audio channels is fully supported on up to 16 channels of embedded audio.

## SCTE104 Message Processing

The +SCTE104IP option allows for advanced SCTE104 DPI message processing. The module can author various SCTE104 messages and trigger them based on GPI's or SNMP commands. It also supports the industry standard SCTE104 API for connection to automation systems over IP. This provides an extremely flexible means of injecting dynamic SCTE104 messages as they are generated by an automation system. The 7847FS-EAES8 is ideal for SCTE104 message insertion at the point of emission from the broadcaster for local ad insertion by affiliates and re-broadcasters, or for re-insertion of SCTE104 messages that have been stripped out in the equipment chain and are required for OTT applications. The module can also operate at the opposite end of the SCTE104 message chain and act as a simple splicer for ad insertion. It will accept two inputs, one for program and one for ad content which can be clean-switched based on incoming SCTE104 splice request commands.

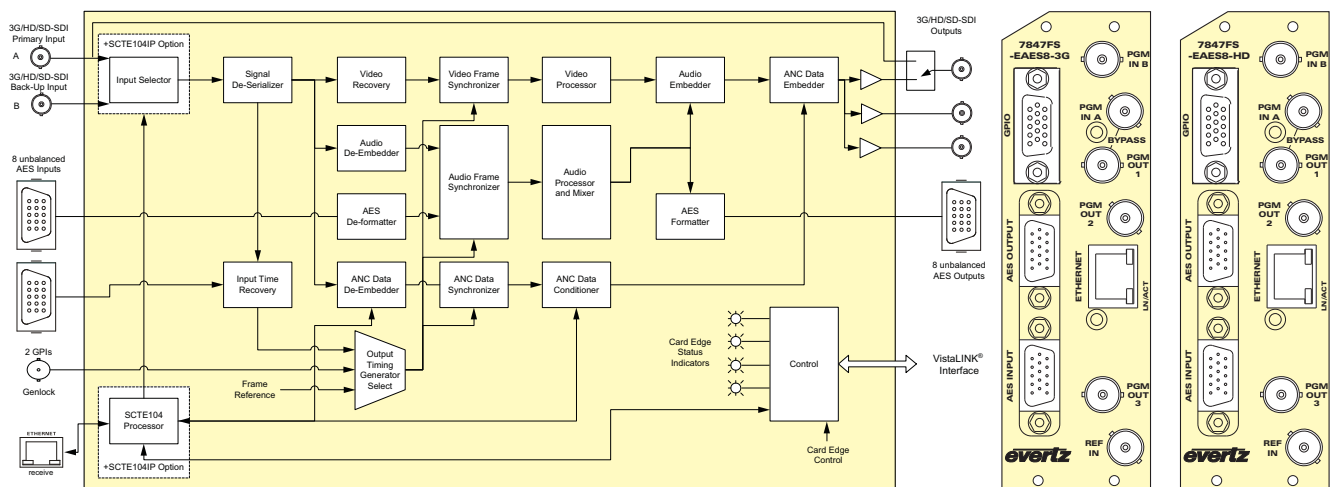
## IntelliGain™ Audio and Loudness Processor

- 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

The 7847FS-EAES8 is VistaLINK® enabled, offering remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP) giving the flexibility to manage operations, including signal monitoring and module configuration from SNMP capable control systems (Manager or NMS).

## Features & Benefits

- Synchronizes 3Gb/s, HD-SDI or SD-SDI video signals with embedded audio
- Supports additional frames of video and audio delay
- Program Video output bypass relay protected on power loss
- Programmable output phase with respect to reference input
- Freeze on last good frame, or field, or go to black on loss of video
- Video Proc adjustable brightness, contrast, saturation and more
- +SCTE104IP allows for advanced SCTE104 control and processing
- Audio Sample Rate Converters can be disabled, or set to automatically detect non-PCM data (i.e. Dolby-E®) and disable on a per-input basis
- Independently adjustable audio levels and inversion on all channels
- Ability to combine any two inputs to any output (including mono-aural down-mixes of all input stereo pairs)
- Provides 2:1 audio mixing capability, ideal for "ducking" audio or voice-overs
- Can be used at the inputs of an audio console to expand inputs and add mixing capacity
- Performs voice overs, mix downs and on-air breakaways
- Reassignment of audio channels
- Synchronizes eight external AES signals
- Synchronized audio is output as eight AES signals
- Audio breakout mode allows for de-embedded audio to be routed directly to AES outputs, ideal for use to feed discrete audio processors
- Optional Loudness Control
- Card edge status LEDs
- 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 Inputs A &amp; B:</b>		Overshoot:	< 10% of amplitude	Sample Rate:	48kHz
Standard:	SMPT E ST 424 (3Gb/s) 1080p (-3G models) SMPT E ST 292-1 (1.5Gb/s), 1080i, 720p, (-3G/HD models) SMPT E ST 259-1 (270Mb/s) 525i, 625i	Wide Band Jitter:	< 0.2 UI (HD)	Impedance:	75Ω
Connector:	BNC per IEC 61169-8 Annex A	<b>Genlock Input:</b>		Resolution:	24-bit
Input Equalization:		Type:	NTSC or PAL Color Black 1V p-p, or Composite bi-level sync (525i/59.94 or 625i/50) 300mV HD Tri-level Sync	<b>Audio:</b>	
SD:	Automatic to 300m @ 270Mb/s with Belden 1694A or equivalent cable	Connector:	BNC per IEC 61169-8 Annex A	Gain:	+/- 24dB
HD:	Automatic to 115m @ 1.5Gb/s with Belden 1694A or equivalent cable	Termination:	75Ω (dip-switch selectable)	Remapping:	Any input or mono mix of any L/R pair to any output
3G:	Automatic to 80m @ 3Gb/s with Belden 1694A or equivalent cable	<b>AES Audio Input:</b>		<b>Electrical:</b>	
Return Loss:		Standard:	SMPT E ST 276-1, single ended AES	Voltage:	+12V DC
SD:	> 15dB up to 270MHz	Number of Inputs:	8 unbalanced	Power:	26.5W
HD:	> 13dB up to 1.5GHz	Connector:	Female High Density dB-15 (breakout cable to BNC provided)	EMI/RFI:	Complies with FCC Part 15, Class A EU EMC Directive
3G:	> 10dB up to 3.0GHz	Input Level:	0.1 to 2.5V p-p (5V p-p tolerant)	<b>Physical (number of slots):</b>	
<b>Serial Video Outputs:</b>		Input Impedance:	75Ω	350FR:	3
Number of Outputs:	3 (1 output is bypass relay protected)	Return Loss:	> 25dB 100kHz to 6MHz	7700FR-C:	3
Connectors:	BNC per IEC 61169-8 Annex A	Equalization:	Automatic to 1000m with Belden1694A (or equivalent) @ 48kHz AES signal	7800FR:	2
Signal Level:	800mV nominal	Sample Rate:	48kHz@100ppm	7801FR:	2
DC Offset:	0V +/- 0.5V	<b>AES Audio Output:</b>			
Rise and Fall Time:	900ps nominal (SD) 200ps nominal (HD)	Standard:	SMPT E ST 276-1, single ended AES		
		Number of Outputs:	8 unbalanced		
		Connector:	Female High Density dB-15 (breakout cable to BNC provided)		

### ► Ordering Information

<b>7847FS-EAES8-3G</b>	3G/HD/SD-SDI Frame Synchronizer with Embedded Audio Processing & 8 AES Support	<b>Accessories</b>	
<b>7847FS-EAES8-HD</b>	HD/SD-SDI Frame Synchronizer with Embedded Audio Processing & 8 AES Support	<b>7800FC</b>	VistaLINK® Frame Controller
		<b>CP-2116E-H</b>	Remote Control Panel
		<b>CP-2232E</b>	Remote Control Panel
<b>Ordering Options</b>	Rear Plate must be specified at time of order (Eg. Model +3RU)	<b>Enclosures</b>	
<b>+SCTE104IP</b>	Advanced SCTE104 I/O Processing	<b>350FR</b>	3RU Portable multiframe which holds up to 7 single slot modules
<b>+IG</b>	IntelliGain Loudness Management	<b>7700FR-C</b>	3RU multiframe which holds up to 15 single slot modules
<b>Rear Plate Suffix</b>		<b>7800FR</b>	3RU multiframe which holds up to 15 single slot modules
<b>+3RU</b>	3RU Rear Plate for use with 350FR, 7700FR-C or 7800FR Multiframe	<b>7800FR-QT</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

