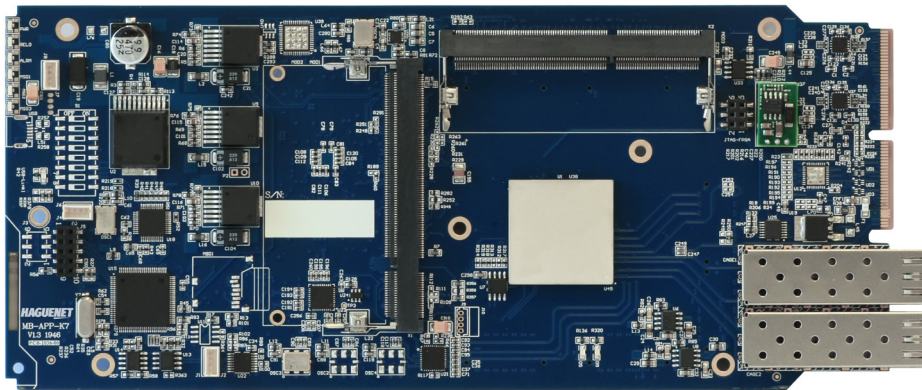


EM-3G

Datasheet 2021

3G/HD/SD-SDI Audio Embedder



This Product, at a glance

HAGUENET EM-3G is a very powerful and flexible solution for embedding 4 stereo/8 mono analog audio or 8 balanced AES sources into a 3G/HD/SD-SDI signal. This module can delay audios up to 10 seconds for each processed pair (1 ms step), then it matches the delay to follow video processing delay. The audio processor controls every 16 channels through a web interface. The EM-3G has various configuration options, including internal pattern and test tone generator which are available for audio and video output. Two SFP+ input/output modules are offered as an option. As SFP+ modules are installed, the inputs or outputs are selectable through the web interface. This system is designed as a 3RU card with an optional 1RU or 3RU housing frame. All controls and adjustments can be applied using web interface remote control. Also, the main functional settings are available using frame front panel control.

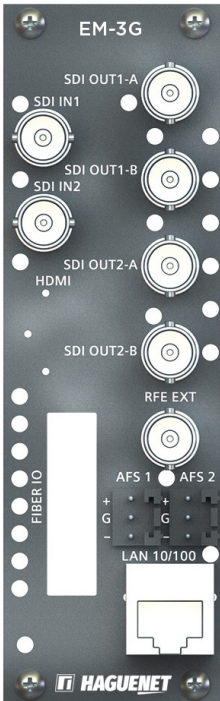
Applications

- ▶ Production and live production TV studios
- ▶ Master control rooms
- ▶ Monitoring centers
- ▶ OB vans

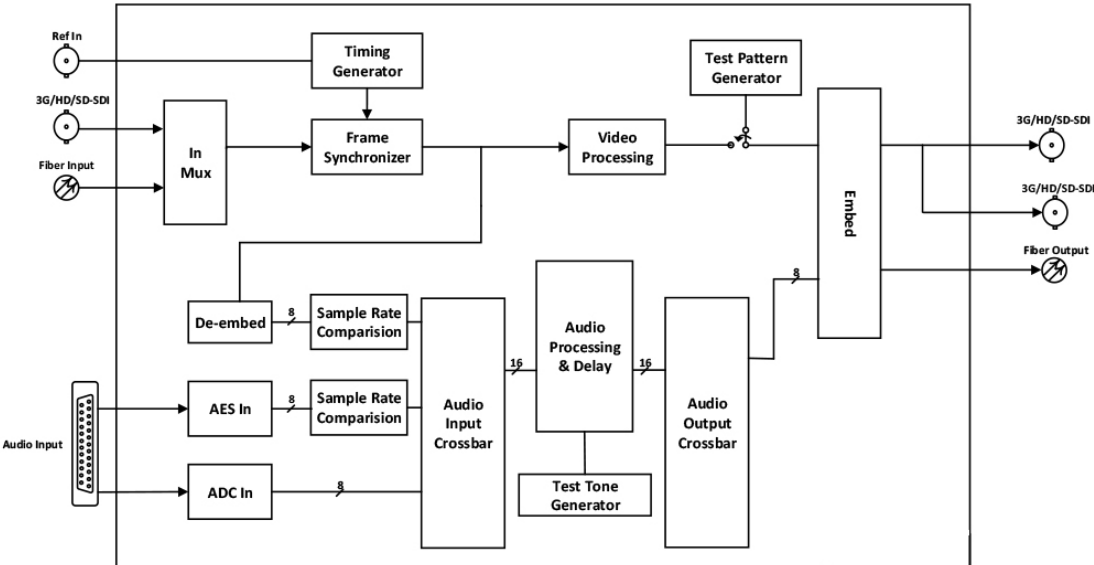
Key Features

- ✦ Supports 3G/HD/SD-SDI signals
- ✦ Embedding digital audio into SDI digital sources
- ✦ Frame synchronizer with Tri-level/Bi-level reference input and loss detection
- ✦ Horizontal/Vertical timing adjustment concerning reference input
- ✦ Auto freeze, black, frame, and pattern on video loss
- ✦ Video processor: noise remover, edge enhancer, and brightness, contrast, hue, saturation control
- ✦ Internal pattern generator
- ✦ Audio processor (16 channel): any to any input/output pair routing, gain control on each channel, invert and mute control on each channel, swap left/right audio of each pair, silence/overload detection
- ✦ Audio delayer (16 pairs): Up to 10 seconds for each processed pair (1 ms steps) + matching delay to follow video processing delay
- ✦ Audio delayer (16 channel): up to 10 seconds for each processed pair (1 ms steps) + matching delay to follow video processing delay
- ✦ Audio group de-embedding: de-embed audio from SDI input
- ✦ Audio group embedding: embed each pair of processed audios into the output video
- ✦ Internal test tone generator
- ✦ The web interface remote control
- ✦ Remote update
- ✦ SNMP support
- ✦ Front panel control
- ✦ 2 optional SFP+ selectable input/output through the web interface

Back Panel



Block Diagram



Specifications

DIGITAL VIDEO INPUTS	Signal type	3G/HD/SD-SDI
	Standards	SMPTE 292M, SMPT 299M, SMPTE 259M, SMPT 272M
	Number of inputs	1
	Connector	BNC
	Impedance	75Ω
	Voltage level	800 mV ± 10 %
	Cable length	Automatic compensation3G/ HD/SD: 60/110/250 m (Belden 1505)
	Return loss	>15 dB to 270 MHz >12 dB to 1.5 GHz >10 dB to 3 Gb/s
DIGITAL VIDEO OUTPUTS	Signal type	3G/HD/SD-SDI
	Standards	SMPTE 292M, SMPTE 259M SMPTE 272M, SMPTE 299M
	Number of outputs	1 + 1 redundant
	Connector	BNC
	Impedance	75Ω
	Voltage level	800 mV ± 10 %
	Jitter	<0.2 UI (HD, SD) <0.3 UI (3G)
	Return loss	>15 dB to 270 MHz >12 dB to 1.5 GHz >10 dB to 3 Gb/s
	Rise and fall time	0.4 to 1.5 ns (SD) <270 ps (HD) <135 ps (3G)
	Overshoot	<10 % Amplitude
	DC offset	0 V ± 0.5 V
FIBER INPUT/OUTPUT RX/TX (OPTION)	Signal type	Single mode
	Number of inputs/ outputs	2 configurable I/O
	Connector	LC/UPC
	Wavelength	1310 nm
ANALOG AUDIO INPUTS	Signal type	Balanced, 3 pin
	Number of inputs	4 Stereo/8 Mono
	Connector	25 Pin D-sub
	Impedance	Hi-Z
	Maximum input level	24 dBu

DIGITAL AUDIO INPUTS	Signal type	Balanced, 3 pin
	Standard	AES3
	Number of inputs	16 CH/ 8 AES
	Connector	25 pin D-sub
	Impedance	110Ω
	Voltage level	2-7 V
REFERENCE SIGNAL INPUTS	Signal type	HD: Tri-level sync SD: Black Burst (NTSC or PAL)
	Number of inputs	1
	Connector	BNC
	Impedance	75Ω
ELECTRICAL	Voltage	±(12-8)V DC
	Power	<10W
MECHANICAL	Dimensions	220 mm × 100 mm (for 19", 3RU standard frame)
	Weight	250 g with shield plate, 100 g back panel
ENVIRONMENT	Temperature	5 °C to 40 °C
	Humidity	0 % to 90 %

System Requirements

TYPE	ITEM	PRODUCT	DESCRIPTION
Frames and Accessories	1	KS- 1U	1RU Frame with Redundant Power Supply
		KS- 3U	3RU Frame with Two 150/225W Power Supplies and Fan Door with LED Display

Ordering Information

PRODUCT	DESCRIPTION
EM-3G	3G/HD/SD-SDI Audio Embedder
FTX	Fiber Output (option)
FRX	Fiber Input (option)



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