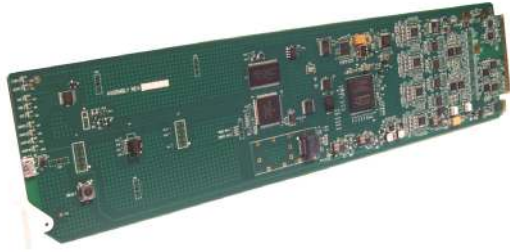


## 9933-EMDE-75/110 • 3G/HD/SD-SDI 16-Channel Unbalanced/Balanced AES Embedder / De-Embedder



The Cobalt® **9933-EMDE-75/110 3G/HD/SD-SDI 16-Channel Unbalanced/Balanced AES Embedder / De-Embedder** offers full-flexibility AES embedding/de-embedding for unbalanced and balanced AES in a basic, economical, high-efficiency openGear® card. More than only a basic embedder/de-embedder, the 9933-EMDE-75/110 offers the flexibility of AES balun functions as well as fully flexible AES embedding/de-embedding.

The 9933-EMDE-75/110 provides full 16-channel embed / de-embed between both unbalanced and balanced AES and all four groups of embedded audio. Audio embed adaptive SRC allows asynchronous 48 kHz AES audio to automatically sync with program video 48 kHz timing for glitch-free embedding. Individual, per-pair SRC auto-detects and disables SRC when a Dolby pair is detected on an input pair.

Full audio crosspoint allows per-channel gain and routing controls, as well as built-in tone generators.

Full user DashBoard™ or Remote Control Panel remote control allows full status and control access locally or across a standard Ethernet network.

### FEATURES

Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p

16-channel AES support for both balanced and unbalanced. Individual per-pair embedding or de-embedding. Can be used to provide cross-balun I/O as well as 4-group embed/de-embed.

DashBoard™ status display, audio meters, tone generators. GUI audio meters provide ready assessment of content presence and line-up.

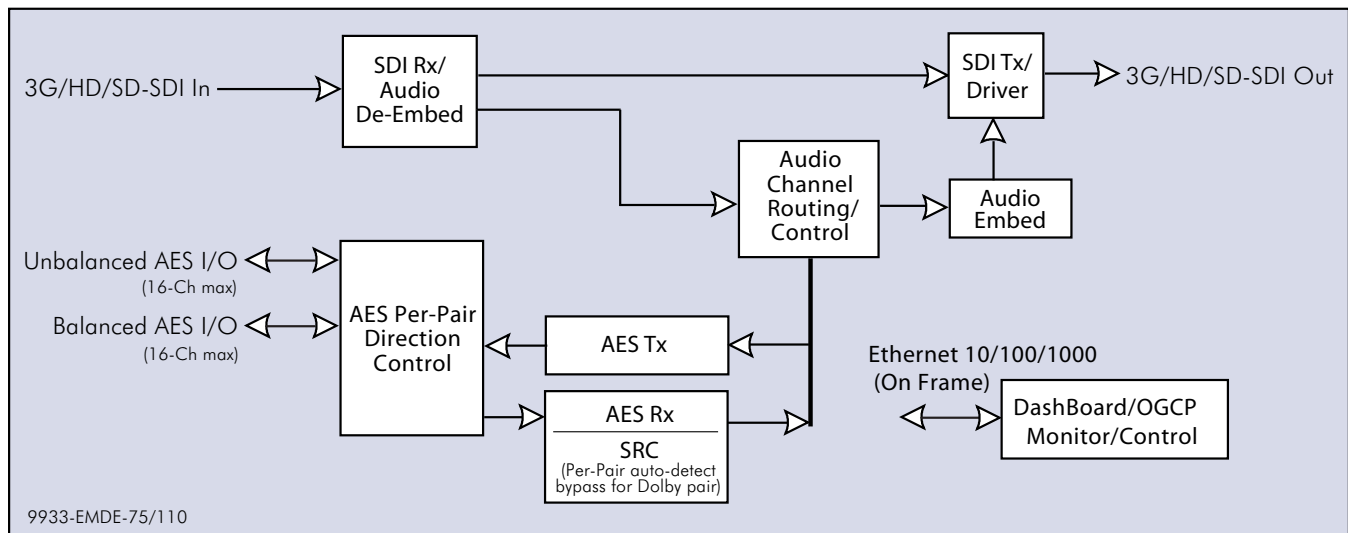
Audio embed adaptive SRC allows asynchronous 48 kHz AES audio to automatically sync with video 48 kHz timing for glitch-free embedding. Individual, per-pair SRC auto-detects and disables SRC when a Dolby pair is detected on an input pair.

Low-power/high-density design – less than 18 Watts per card

Remote control/monitoring via DashBoard™ software or OGCP-9000 remote control panels

Hot-swappable

Five year warranty



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## SPECIFICATIONS

Note: Inputs/outputs are a function in some cases of rear I/O module used.

### Power

<18 Watts

### SDI Inputs/Outputs

(1) 75Ω BNC input

(1) 75Ω BNC output

SDI Receive Cable Length (1694A): 120m/180m/360m (3G/HD/SD)

SDI Return Loss: >15 dB up to 1.485 GHz; >10 dB up to 2.970 GHz

Note: SDI Return loss and receive cable length are affected by rear I/O module used. Specifications represent typical performance.

Alignment Jitter: 3G/HD/SD: < 0.3/0.2/0.2 UI

Timing Jitter: 3G/HD/SD: < 2.0/1.0/0.2 UI

SDI Formats Supported: SMPTE 259M, SMPTE 292M, SMPTE 424M

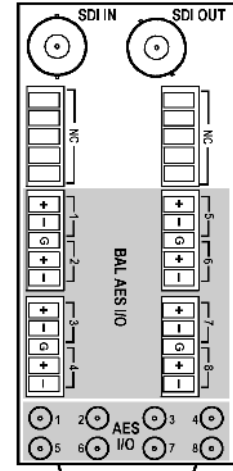
### Audio Conversion Format

48 kHz sampling, 24-bit. Auto-SRC bypass for Dolby inputs.

### AES Audio Input/Output

(8) Unbalanced AES (AES-3id; 75Ω) with per-pair port direction controls

(8) Balanced AES (AES/EBU; 110Ω) with per-pair port direction controls



**RM20-9933EMDE-A-DIN**  
**RM20-9933EMDE-A-HDBNC**

## ORDERING INFORMATION

**9933-EMDE-75/110** 3G/HD/SD-SDI 16-Channel Unbalanced/Balanced AES Embedder / De-Embedder

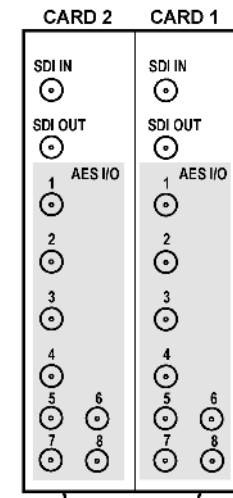
**RM20-9933EMDE-A-DIN** 20-Slot Frame Rear I/O Module (Standard Width) (1) 3G/HD/SD-SDI Input BNC, (1) 3G/HD/SD-SDI Output BNC, (8) Balanced AES Audio I/O, (8) Unbalanced AES I/O (coaxial; DIN 1.0/2.3)

**RM20-9933EMDE-A-HDBNC** 20-Slot Frame Rear I/O Module (Standard Width) (1) 3G/HD/SD-SDI Input BNC, (1) 3G/HD/SD-SDI Output BNC, (8) Balanced AES Audio I/O, (8) Unbalanced AES I/O (coaxial; HD-BNC)

**RM20-9933EMDE-C/S-DIN** 20 Slot Frame Rear I/O Module (Split; supports 2 cards) 3G/HD/SD-SDI Input, 3G/HD/SD-SDI Output, (8) Unbalanced AES I/O (connections are per card; all connectors are DIN 1.0/2.3)

**RM20-9933EMDE-C/S-HDBNC** 20 Slot Frame Rear I/O Module (Split; supports 2 cards) 3G/HD/SD-SDI Input, 3G/HD/SD-SDI Output, (8) Unbalanced AES I/O Outputs (connections are per card; all connectors are HD-BNC)

**Note:** Some rear module(s) have been available in two manufacturing versions (with correspondingly different MPN numbers). New cards with SN: 450452R or greater use the current/latest rear module version. Earlier-version and latest-version rear modules and cards are mutually incompatible. Manufacturing Part Number (MPN) is screened on the rear module PCB. See card web page for more information.



**RM20-9933EMDE-C/S-DIN**  
**RM20-9933EMDE-C/S-HDBNC**