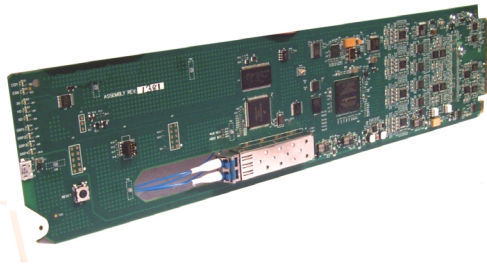# COBALT

9433-EMDE-75/110-EOOE • 3G/HD/SD-SDI Fiber-Optic Transceiver
with 16-Channel Unbalanced/Balanced AES Embed / De-Embed

The Cobalt® **9433-EMDE-75/110-EOOE 3G/HD/SD-SDI Fiber-Optic Transceiver** with 16-Channel Unbalanced/ Balanced AES Embed / De-Embed offers full-flexibility AES embedding/de-embedding for unbalanced and balanced AES with the built-in versatility of both coaxial and fiber SDI I/O in a basic, economical, high-efficiency openGear® card. More than only a basic embedder/de-embedder, the 9433-EMDE-75/110-EOOE offers the flexibility of SDI/ Fiber EO – OE transceive as well as providing AES balun functions and fully flexible embedding/de-embedding.

The 9433-EMDE-75/110-EOOE 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. Fully error-free pathological pattern operation is fully compatible with professional fiber video interfaces. The 9433-EMDE-75/110-EOOE is available with numerous CWDM wavelengths that allow the card to be used with CWDM systems. Full audio crosspoint allows per-channel gain and routing controls, as well as built-in tone generators.

Preset save/load allows saving custom card settings while allowing one-button revert to factory settings. Full user DashBoard™ or Remote Control Panel remote control allows full status and control access locally or across a standard Ethernet network.

FEATURES

Versatile EO - OE fiber transceiver with fiber and coax as both inputs and outputs

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.

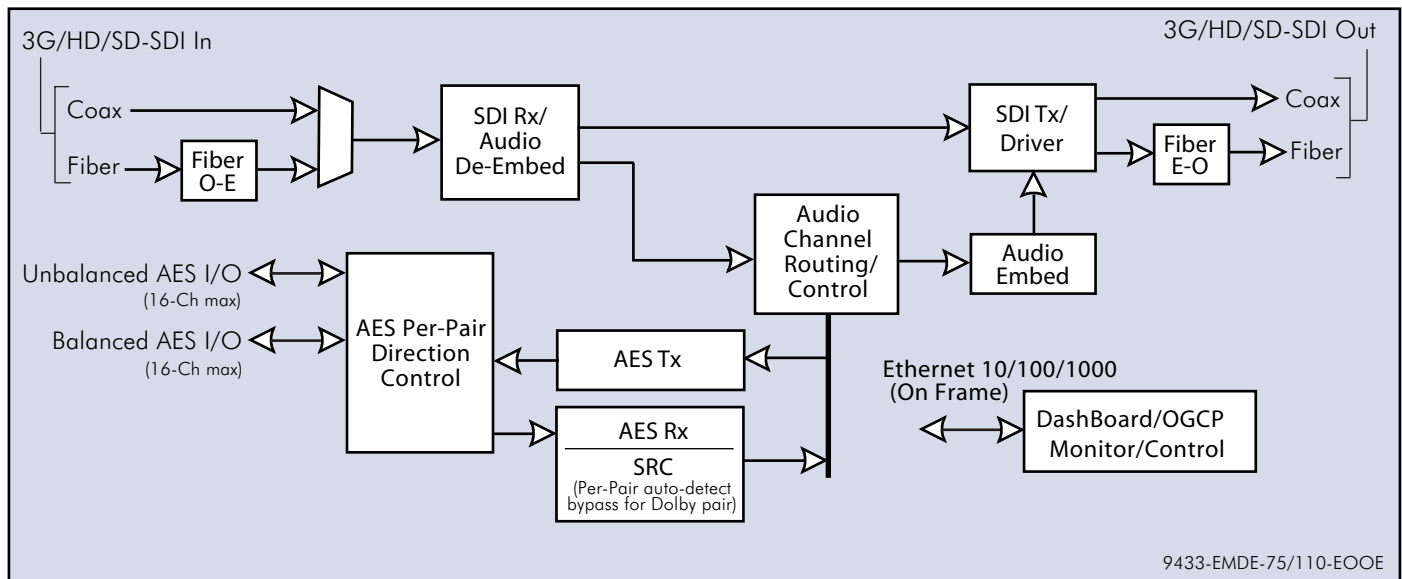Low-power/high-density design – less than 18 Watts per card

Available with CWDM wavelength divisions allowing use in CWDM systems

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

Five year warranty

OPTIONS

User COM Data Insert/Extract Software Option (+DT) – serial data insert/extract over SDI (User DID/SDID access)

9433-EMDE-75/110-EOOE

openGear®

9433-EMDE-75/110-EOOE • 3G/HD/SD-SDI Fiber-Optic Transceiver
with 16-Channel Unbalanced/Balanced AES Embed / De-Embed

SPECIFICATIONS

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

Power
<18 Watts

SDI/Fiber Inputs/Outputs
(1) 75Ω BNC inputs
(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
(1) Fiber input; LC connector
(1) Fiber output; LC connector
Fiber Wavelength, Tx: 1310 nm
Fiber Rx Sensitivity: -23 dBm; 1260 to 1620 nm
Fiber Tx Power: -5.0 dBm (min)
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

RM20-9433EMDE-EOOE-A-DIN
RM20-9433EMDE-EOOE-A-HDBNC

ORDERING INFORMATION

9433-EMDE-75/110-EOOE 3G/HD/SD-SDI Fiber-Optic Transceiver with 16-Channel Unbalanced/Balanced AES Embed / De-Embed

9433-EMDE-75/110-EOOE-CWDM-WX 3G/HD/SD-SDI Fiber-Optic Transceiver with 16-Channel Unbalanced/Balanced AES Embed / De-Embed with Fiber Optic CWDM I/O

Use fiber wavelength codes below for card Fiber Optic Modules (FOMs) when ordering. Available wavelengths (in nm) are as follows: 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610.
In "WX" places in part number, substitute code for wavelengths in each place as listed below:
-27: 1270nm -29: 1290nm -31: 1310nm
-33: 1330nm -35: 1350nm -37: 1370nm
-39: 1390nm -41: 1410nm -43: 1430nm
-45: 1450nm -47: 1470nm -49: 1490nm
-51: 1510nm -53: 1530nm -55: 1550nm
-57: 1570nm -59: 1590nm -61: 1610nm
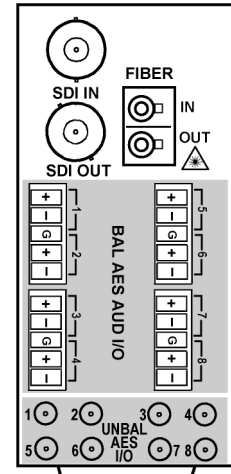(Example: 9433-EMDE-75/110-EOOE-CWDM-27 has 1270 nm FIBER OUT wavelength)

RM20-9433EMDE-EOOE-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, (1) Fiber Input, (1) Fiber Output (LC connectors), (8) Balanced AES Audio I/O, (8) Unbalanced AES I/O (coaxial; DIN 1.0/2.3)

RM20-9433EMDE-EOOE-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, (1) Fiber Input, (1) Fiber Output (LC connectors), (8) Balanced AES Audio I/O, (8) Unbalanced AES I/O (coaxial; HD-BNC)
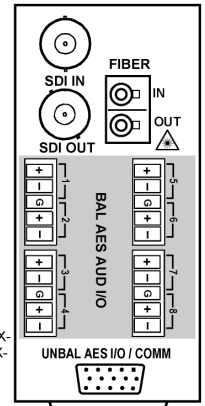
RM20-9433EMDE-EOOE-B 20-Slot Frame Rear I/O Module (Standard Width) (1) 3G/HD/SD-SDI Input BNC, (1) 3G/HD/SD-SDI Output BNC, (1) Fiber Input, (1) Fiber Output (LC connectors), (8) Balanced AES Audio I/O, Unbalanced AES I/O/COMM (via HD-15 connector)

+DT User COM Data Insert/Extract Software Option

Note: COMM port setup and usage available only with option +DT.

1 - RS422 RX+
2 - RS422 TX+
5 - GND
6 - RS232 RX / RS422 RX-
7 - RS232 TX / RS422 TX-
14 - AES I/O 1
15 - AES I/O 2
Other conns NC

RM20-9433EMDE-EOOE-B