

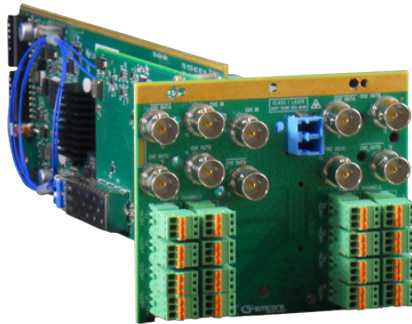
OPG-2HDP16DA

3G HD-SDI Video with Audio



DATASHEET

FIBER OPTICS



Features

- 2 Input channels, any signal up to 3G total bandwidth
- 8 AES3 inputs (16 ch) configurable input / output
- Audio format conversion, analog to AES3 & back
- Optional: SFP interface for video transport, single or dual link
- Optional: 8 configurable analog audio channels (input/output)
- Audio sample rate conversion 32KS/S-192KS/S into 48KS/S
- "AutoMux": Automatically multiplex SD/HD streams into 3Gbps transport to lower fiber count or create a redundant stream
- Configurable audio delay up to 1 sec
- Audio level control from -60dBu to +20dBu

Applications

- Broadcast Studios / OB Trucks
- Pre & Post Production Facilities
- Video Editing Suites
- Live Broadcast Facilities

3G HD-SDI Video Transmission

A true advancement in the openGear platform, the OPG-2HDP16DA is five products in one: video transport, audio embedding / de-embedding, signal routing, conversion and fiber transport. The OPG-2HDP16DA provides for the transmission of 2 independent channels of 3G HD-SDI, HD-SDI or SDI. Each channel utilizes a single fiber, and can optionally be multiplexed together.

OPG-2HDP16DA is capable of embedding or de-embedding any combination of 16 audio channels, both analog and digital (AES3). It features audio format conversion (analog to AES3 and AES3 to analog), the first openGear card with this ability. The OPG-2HDP16DA also functions as a video and audio test pattern generator.

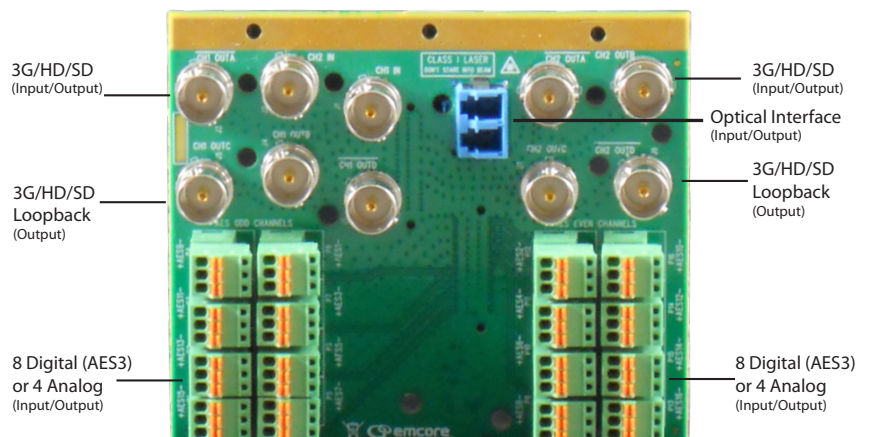
Additionally, the OPG-2HDP16DA is compatible with our innovative Optiva video, audio and data media transport system, enabling the most versatile, interoperability for 3G HD-SDI signal transport in the broadcast industry.

System Design

The OPG-2HDP16DA was designed to be fully compatible with the openGear standard for terminal equipment design. This means that when you install an openGear enclosure, you can then purchase additional insert cards from different manufacturers to be used in the same enclosure. The standard enclosure is a 19" rackmount frame that can hold up to 20 insert cards. A separate module handles the management and control systems, and allows for local or remote interfaces. Each enclosure utilizes 2U of rack space, maximizing the overall usage of the equipment rack.



Backplane Diagram



OPG-2HDP16DA

3G HD-SDI Video with Audio



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Models (Preliminary)

Transmitter Embedder Card (rear I/O included)	Receiver De-embedder (rear I/O included)	Description
OPG-2HDPT-16DAT-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	OPG-2HDPR-16DAR-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	2 3G-HD channels & 16 digital audio channels (Terminal Block)
OPG-2HDPT-8DAT-XX/XX-LC (rear module: OPG-RM-EMB-4-03)	OPG-2HDPR-8DAR-XX/XX-LC (rear module: OPG-RM-EMB-4-04)	2 3G-HD channels & 8 digital audio channels (Terminal Block)
OPG-2HDPT-8EAT-XX/XX-LC (rear module: OPG-RM-EMB-4-03)	OPG-2HDPR-8EAR-XX/XX-LC (rear module: OPG-RM-EMB-4-04)	2 3G-HD channels & 8 analog audio channels (Terminal Block)
OPG-2HDPT-16EAT-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	OPG-2HDPR-16EAR-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	2 3G-HD channels & 16 analog audio channels (Terminal Block)
OPG-2HDPT-8DAT-4EAT-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	OPG-2HDPR-8DAR-4EAR-XX/XX-LC (rear module: OPG-RM-EMB-6-01)	2 3G-HD channels, 8 digital/4 analog audio channels (Terminal Block)
OPG-2HDPT-8DANT-XX/XX-LC (rear module: OPG-RM-EMB-4-01)	OPG-2HDPR-8DANR-XX/XX-LC (rear module: OPG-RM-EMB-4-02)	2 3G-HD channels, 8 digital audio channels (BNC)

■ When ordering, replace "XXXX" with one of the optical codes specified below

Non-optical Embedder / De-embedder (rear I/O included)	Description
OPG-2HDPT-16DA-NOC (rear module: OPG-RM-EMB-6-02)	2 3G-HD channels w/loopback, 16 AES3 channels
OPG-2HDPT-8DAT-4EAT-NOC (rear module: OPG-RM-EMB-6-02)	2 3G-HD channels w/loopback, 8 AES3 & 4 analog channels

Spare or Replacement Rear I/O	Video	Audio	Fiber
OPG-RM-EMB-6-01	2 Channel BNC w/ 4 loopback per channel	16 Terminal block	Dual LC
OPG-RM-EMB-6-02	2 Channel BNC w/ 4 loopback per channel	16 Terminal block	-
OPG-RM-EMB-4-01	2 Channel BNC input	8 BNC	Dual LC
OPG-RM-EMB-4-02	2 Channel BNC output	8 BNC	Dual LC
OPG-RM-EMB-4-03	2 Channel BNC input	8 Terminal block	Dual LC
OPG-RM-EMB-4-04	2 Channel BNC output	8 Terminal block	Dual LC

Optical Specifications

Code	Wavelength (nm)	Distance (Km)	Output Power (dBm)	RX Sensitivity (dBm)	Budget Loss (minimum)
D1/D1 (AVAILABILITY: 2Q12)	1310 MM	0.5	-1 to 3	-	17
D2/D2	1310 SM	10	-1 to 3	-	17
D2D/D2D	1310 SM	30	-1 to 3	-	17
D3/D3	1550 SM	50	-1 to 3	-	17
D4A/D4B	1270/1290 SM	30-50	-1 to 3	-	17
D4C/D4D	1310/1330 SM	30-50	-1 to 3	-	17
D4E/D4F	1350/1370 SM	30-50	-1 to 3	-	17
D4G/D4H	1390/1410 SM	30-50	-1 to 3	-	17
D4I/D4J	1430/1450 SM	30-50	-1 to 3	-	17
D4K/D4L	1470/1490 SM	30-50	-1 to 3	-	17
D4M/D4N	1510/1530 SM	30-50	-1 to 3	-	17
D4O/D4P	1550/1570 SM	30-50	-1 to 3	-	17
D4Q/D4R	1590/1610 SM	30-50	-1 to 3	-	17
D5/D5	1270-1610 SM	-	-	-18	-
D6/D6	1270-1610 SM	-	-	-28	-

- Chromatic dispersion as well as other losses should also be taken into account
- Stated distances are the maximum range, shorter distance may require attenuation
- Transmitting two SMPTE signals requires two fibers

Video

Specifications	Values
Standards	SMPTE 424M, 310M, 292M, 259M, ASI
Data Rate	2.97 Gbps; 2.97/1.001 Gbps; 1.485 Gbps; 1.485/1.001 Gbps; 270 Mbps
Connector	BNC (IEC 60169-8)
Pathological Test Code	RP-178
Cable Equalization	2.97 Gbps @ 300'

Audio

Specifications	Values
Channels	24-Bit Stereo Audio
Impedance	47k Ohm Unbalanced
Audio Levels	2V p-p Max
Frequency Response	20 Hz to 20 KHz (±0.1 dB)
Signal-to-Noise Ratio	> 85 dB @ 1KHz (weighted)
Total Harmonic Distortion	< 0.1% @ 1KHz
Connector Type	Terminal Block

General

Specifications	Values
Dimensions (Insert Card)	14" W x 3.0"H
Weight	11 oz.
Operating Temperature	0° to +50°C
Storage Temperature	-30°C to +85°C
Humidity	0 to 95% non-condensing
Power Consumption (XMT or RCV)	> 3 Watts
MTBF	100K Hours

Monitoring & Control

Specifications	Values
Local	Front panel LED status and alert indicators
Remote	DashBoard Remote Management Software

Compliance

