



## Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

### Features:

- ▶ Compact & flexible audio/video encoding solution for digital transmission and/or insertion applications
- ▶ A cost-effective & space-efficient encoding, multiplexing & transmission (QAM or GigE) platform ideal for digital simulcast applications or digital delivery of PEG or hub site specific programming
- ▶ Scalable 1RU (19" rack mount) solution: up to 6 SD (or 3 HD) A/V programs can be directly encoded/multiplexed with QAM output, or up to 4 SD (or 2 HD) A/V programs with IP output
- ▶ Hot-pluggable 1-channel & 2-channel encoder cards available for easy upgrade & unit configuration
- ▶ Possibility of mixing HD & SD encoder cards within same chassis
- ▶ Hot-pluggable QAM demodulator card available for QAM processing functionality
- ▶ Hot-pluggable IP output card (copper/SFP optical) available
- ▶ Plug-in cards are externally accessible & easily replaceable; no need to open or remove unit from rack
- ▶ Fully integrated system components & QAM modulator with agile wideband RF upconverter (15-975 MHz)
- ▶ Front accessible & replaceable fans with inline fan connector
- ▶ HTTP-based GUI allows for easy set-up & control without the need for proprietary software installation
- ▶ Remote access & SNMP monitoring available via integrated RJ45 Ethernet interface
- ▶ Includes the following operational modes (set through GUI): IP output only, IP+QAM output simultaneously, & QAM output only (please see appropriate spec sheet for IP/QAM specs)



### Ordering Information

Part Number	Description
DGVU1RU*S	Compact Multichannel Digital QAM Out Encoder with * MPEG-2 SD A/V Baseband Inputs (* = Number of Inputs, i.e. 1, 2, 3, 4, 5 or 6), NTSC/AC-3 Dolby®.
DGVU1RU*SM	Compact Multichannel Digital QAM Out Encoder with * MPEG-2 SD A/V Baseband Inputs (* = Number of Inputs, i.e. 1, 2, 3, 4, 5 or 6), PAL/MPEG-1 Layer II.
DGVU1RU*H	Compact Multichannel Digital QAM Out Encoder with * MPEG-2/H.264 SD/HD DV1HDA Cards Installed (* = Number of Cards, i.e. 1, 2 or 3).
DGVU1RUBASE3	DigiVu Mini QAM Out 1RU Base Unit/chassis (no plug-in cards installed).
DV1CE	Separate 1-channel MPEG-2 SD Encoder Plug-in Card (1 Video + 2 Audio Inputs), NTSC/AC-3 Dolby.
DV1CEM	Separate 1-channel MPEG-2 SD Encoder Plug-in Card (1 Video + 2 Audio Inputs), PAL/MPEG-1 Layer II.
DV2CE	Separate 2-channel MPEG-2 SD Encoder Plug-in Card (2 Video + 4 Audio Inputs), NTSC/AC-3 Dolby.
DV2CEM	Separate 2-channel MPEG-2 SD Encoder Plug-in Card (2 Video + 4 Audio Inputs), PAL/MPEG-1 Layer II.
DV1HDA	Separate 1-channel MPEG-2/H.264 SD/HD Encoder Plug-in Card (Component/VGA).
DV2DA	Baseband Audio/video Distribution Amplifier (2-way split).
DVDMQMB	Separate QAM-B Demodulator Plug-in Card (Add/drop functionality).
DVDMQMAC	Separate QAM-A/C Demodulator Plug-in Card (Add/drop functionality).
DVGIGE	Separate Gigabit Ethernet Output Plug-in Card SFP/RJ45.
DVFTXM^	Optical Transmitter Module, Single 10 dBm Output Port, ^ ITU Wavelength (^ = 16,17...46), SC/APC Connector.
<b>NOTE:</b>	Dolby is a registered trademark of Dolby Laboratories. Manufactured under license from Dolby Laboratories.

## Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

### DigiVu Mini - QAM Output Specifications

BASE PLATFORM SPECIFICATIONS	
<b>CHASSIS OVERVIEW</b>	
<b>DIMENSIONS</b>	1.75"H x 19.0"W x 16.5"D (4.45H x 48.26W x 41.91D cm); 19" Rack Mount (1RU)
<b>WEIGHT (Max)</b>	10.3 lbs (4.7 kg)
<b>EXPANSION CARD SLOTS</b>	3
<b>ENCODED PROGRAMS</b>	Up to 6 SD into one QAM Channel, Scalable (plug-in cards with 1 or 2 encoders per card) Up to 3 HD into one QAM Channel, Scalable (plug-in cards with 1 encoder per card) Up to 4 SD with Gigabit Ethernet Output Card Up to 2 HD with Gigabit Ethernet Output Card Up to 4 SD with Demodulator Card Up to 2 HD with Demodulator Card
<b>POWER SUPPLY</b>	IEC Connector/ 90-264 VAC, 50/60 Hz
<b>POWER CONSUMPTION</b>	55W
<b>DEVICE MANAGEMENT</b>	HTTP/SNMP Network Interface (RJ45)
<b>OPERATING TEMPERATURE</b>	0°C to +50°C (+32°F to +122°F)
<b>HUMIDITY</b>	0-95% (without condensation)
<b>TS MULTIPLEXER</b>	
<b>PACKET SIZE</b>	188 Bytes
<b>TS SUPPORT</b>	QBA, AF
<b>PROGRAM NUMBER &amp; TS NUMBER</b>	User Settable (Program #: 1-65535; TS ID: 1-65535)
<b>PSI / SI / PSIP INFORMATION TABLE</b>	PAT, PMT, SDT, NIT, MGT, CVCT
<b>SETTABLE PIDs</b>	PMT, PCR (0x0015-0x1FFE; dec. 21-8190)
<b>QAM MODULATOR/RF UPCONVERTER</b>	
<b>QAM MODULATION</b>	ITU-T J.83 Annex A/Annex B/Annex C
<b>MODULATION FORMAT</b>	16, 32, 64, 128, 256 QAM
<b>RF QAM OUTPUT POWER AT RF OUT</b>	57.5 +/- 1.5 dBmV
<b>ATTENUATOR</b>	0-26 dB
<b>ATTENUATOR STEP</b>	1.0 dB
<b>RF QAM FREQUENCY OUTPUT RANGE<sup>(1)</sup></b>	45-870 MHz <sup>(1)</sup>
<b>SUPPORTED CHANNEL PLANS</b>	STANDARD, HRC, IRC
<b>FREQUENCY STEP</b>	250 kHz
<b>RF QAM CHANNEL BANDWIDTH</b>	6 MHz (Annex B) Max. 8 MHz (Annex A/C)
<b>EXCESS BANDWIDTH</b>	Annex B: 12% (256 QAM), 18% (64 QAM) Annex A: 15% Annex C: 13%
<b>SYMBOL RATE</b>	Annex B: Automatically Set with Selected Modulation Format 5.360537 MSymb/s - 256 QAM 5.056941 MSymb/s - 64 QAM Annex A/C: max. 7 MSymb/s
<b>MER EQUALIZED<sup>(2)</sup></b>	> 40 dB <sup>(2)</sup>
<b>FREQUENCY OFFSET</b>	< 2ppm
<b>SYMBOL RATE OFFSET</b>	< +/- 50 Hz
<b>CARRIER SUPPRESSION</b>	> 55 dB
<b>SIGNAL/NOISE</b>	> 45 dB
<b>SPURIOUS</b>	-60 dB
<b>TS PROCESSING</b>	Null Packet Insertion & PCR Correction
<b>FEC</b>	ITU-T J.83 Annex B; DVB-C EN300429 & ITU-T J.83 Annex A/C
<b>RF INTERFACES</b>	
<b>RF OUT</b>	F, 75 Ω
<b>RF OUT TEST</b>	F, 75 Ω (-20 dB)
<b>RF OUT RETURN LOSS</b>	> 15 dB
<b>NOTES:</b>	
(1) Extended Tune Range 15-975 MHz. Contact ATX for details.	
(2) Measured with Rohde & Schwarz EFA (FW Ver 05.33).	

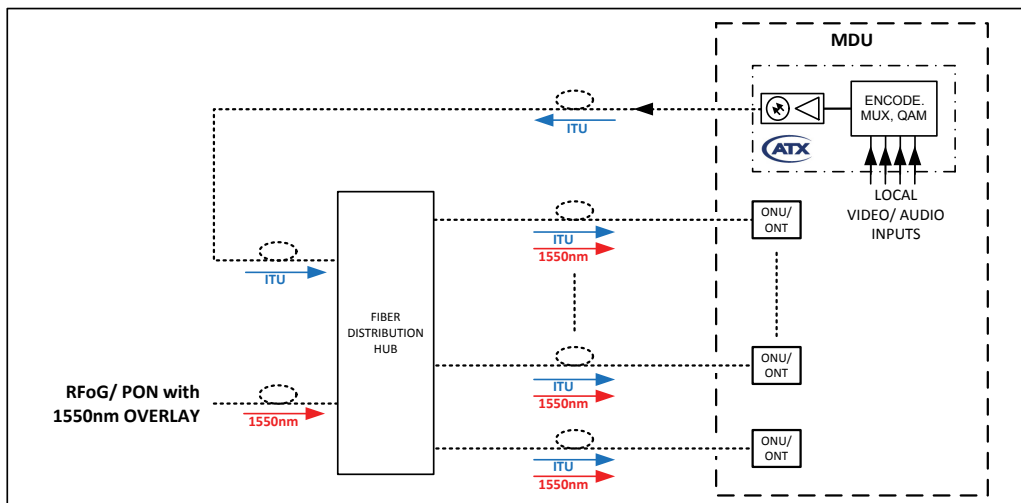
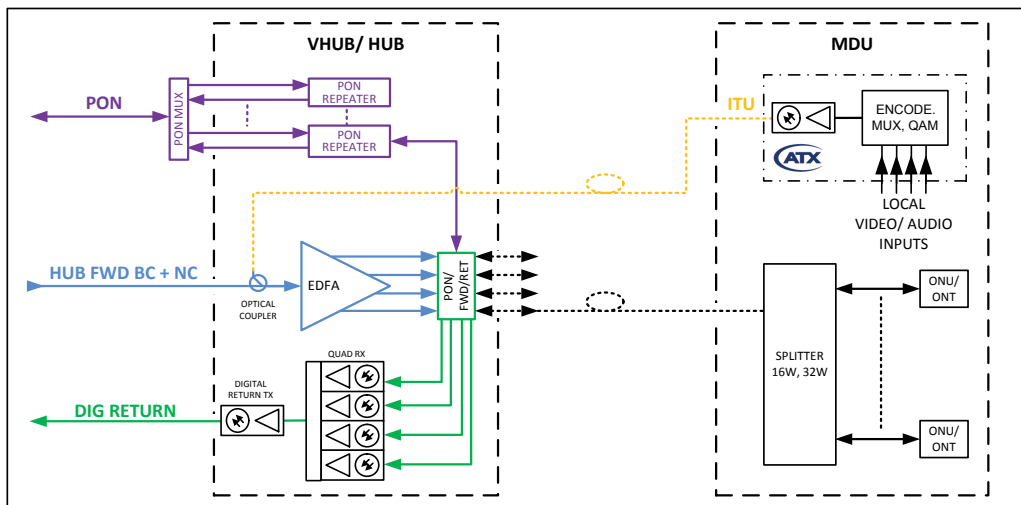
# Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

## DigiVu Mini - QAM Output Specifications (cont'd)

OPTICAL TRANSMITTER MODULE SPECIFICATIONS		DVFTXM
<b>INPUT</b>		
CONNECTOR	F, 75 Ω	
MAXIMUM RF LEVEL	48 dBmV (Single QAM Carrier at 45-870 MHz) <sup>(1)</sup>	
RETURN LOSS	18 dB (min)	
<b>OUTPUT</b>		
CONNECTOR	SC/APC, 1 Port	
OPTICAL POWER	10.0 +/- 1.0 dBm	
WAVELENGTH	User Specified: ITU ch 16-46*	
<b>MONITOR</b>		
STATUS	Front LED	
POWER	7.5W (max)	
<b>PHYSICAL</b>		
DIMENSIONS	6.5"H x 1.2"W x 4.5"D (16.5H x 3.0W x 11.5D cm)	
WEIGHT	0.7 lbs (0.3 kg)	
<b>NOTES:</b>		
(1) Extended Tune Range 15-975 MHz. Contact ATX for details.		
* See Ordering Information. Wavelength must be provided at time of ordering.		



## Typical Application Diagrams



## Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

### DigiVu Mini - QAM Output Specifications (cont'd)

HD/SD ENCODER CARD SPECIFICATIONS		DV1HDA
<b>VIDEO INPUTS</b>		
<b>COMPONENT</b>		
CONNECTOR	3x RCA Female	
CHROMA FORMAT	YPbPr 4:2:2	
RESOLUTIONS	480p_60 (59.94) 576p_50 720p_60 (59.94) 720p_50 1080i_60 (59.94) 1080i_50	
<b>PC - VGA</b>		
CONNECTOR	DE-15 Female, 15-Pin, 3 Rows	
CHROMA FORMAT	RGB 4:4:4	
RESOLUTIONS	640 x 480, 60 Hz 800 x 600, 60 Hz 1280 x 720, 60 Hz 1024 x 768, 60 Hz 1280 x 1024, 60 Hz 1366 x 768, 60 Hz 1400 x 1050, 60 Hz 1920 x 1080, 60 Hz	
<b>AUDIO INPUTS</b>		
<b>ANALOG L/R</b>		
CONNECTOR	TRS 3.5 mm Female, 2x RCA Adapter Female	
<b>DIGITAL SPDIF</b>		
CONNECTOR	1x RCA (Coaxial) Female	
AUDIO STANDARD	IEC 61937:AC3 (Pass Through)	
MAX CHANNELS	6 (5.1) Pass Through	
<b>VIDEO PROCESSING</b>		
ENCODING	MPEG-2	H.264
ENCODE LEVEL	MPEG-2 HD MP @ HL	High Profile Level 5
CHROMA	4:2:0	4:2:0
BIT RATE	1-25 Mbps	1-25 Mbps
COMPONENT VIDEO RESOLUTIONS	480p_60 (59.94) 576p_50 720p_60 (59.94) 720p_50 1080i_60 (59.94) 1080i_50	
VGA RESOLUTIONS	640 x 480, 60 Hz 800 x 600, 60 Hz 1280 x 720, 60 Hz 1024 x 768, 60 Hz 1280 x 1024, 60 Hz 1366 x 768, 60 Hz 1400 x 1050, 60 Hz 1920 x 1080, 60 Hz	
VIDEO PID SETTING	Yes (0x0015-0x1FFE; dec. 21-8190)	
VBI PROCESSING	Closed Captions	
<b>AUDIO PROCESSING</b>		
<b>AUDIO ENCODER</b>		
ENCODE STANDARD	Dolby® Digital AC-3 ATSC A/52 (2.0)	
SAMPLE RATE	48 kHz	
BIT RATE	192, 256, 384 kbps	
AUDIO PID SETTING	Yes (0x0015-0x1FFE; dec. 21-8190)	
<b>DIGITAL AUDIO PASS THROUGH</b>		
AC-3 (2.0/5.1) PASS THROUGH	Yes (S/PDIF)	
<b>PHYSICAL</b>		
DIMENSIONS	6.5"H x 0.75"W x 3.0"D (16.5H x 1.9W x 7.6D cm)	
WEIGHT	0.33 lbs (0.15 kg)	
<b>NOTE:</b> Dolby is a registered trademark of Dolby Laboratories. Manufactured under license from Dolby Laboratories.		



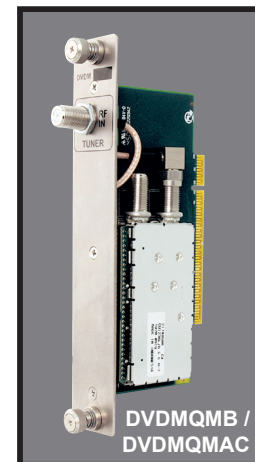
## Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

### DigiVu Mini - QAM Output Specifications (cont'd)

SD ENCODER CARD SPECIFICATIONS		DV1CE / DV1CEM	DV2CE / DV2CEM
<b>VIDEO</b>			
INPUT	CVBS, NTSC / PAL <sup>(1)</sup>		
INPUT INTERFACE	1x BNC, 75 $\Omega$	2x BNC, 75 $\Omega$	
ENCODING FORMAT	MPEG-2, 4:2:0, MP@ML		
ENCODING BIT RATE TYPE	CBR		
VIDEO ADJUSTMENTS	Brightness, Contrast, Saturation		
VIDEO PROCESSING	TBC		
RESOLUTION	HORIZONTAL	720, 704, 544, 528, 480, 352	
	VERTICAL	480, 576	
FRAME RATE	29.97fps, 25fps <sup>(1)</sup>		
VIDEO ENCODING BIT RATE	1-8 Mbps		
GOP STRUCTURE	IBBP - Length 15		
VIDEO PID SETTING	Yes (0x0015-0x1FFE; dec. 21-8190)		
VBI PROCESSING	Closed Captions		
<b>AUDIO</b>			
INPUT	Analog, Unbalanced		
INPUT INTERFACE	2x RCA (pair L/R)	4x RCA (2x pair L/R)	
ENCODING FORMAT	Dolby Digital AC-3, MPEG-1 Layer II <sup>(1)</sup>		
MODES	Stereo, Mono		
SAMPLING RATE	48 kHz		
ENCODING BIT RATES	192, 256, 384 kbps		
AUDIO PID SETTING	Yes (0x0015-0x1FFE; dec. 21-8190)		
<b>PHYSICAL</b>			
DIMENSIONS	6.5"H x 0.75"W x 3.0"D (16.5H x 1.9W x 7.6D cm)		
WEIGHT	0.33 lbs (0.15 kg)		
<b>NOTES:</b>			
(1) DV1CE & DV2CE provide NTSC/Dolby Digital AC-3 encoding (29.97fps); DV1CEM & DV2CEM provide PAL/MPEG-1 Layer II encoding (25fps).			
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DEMODULATOR PLUG-IN CARD SPECIFICATIONS		DVDMQMB	DVDMQMAC
QAM MODULATION	QAM-B (ITU-T J.83 Annex B)	QAM-A/C (ITU-T J.83 Annex A/C)	
MODULATION FORMAT	64, 256 QAM	16, 32, 64, 128, 256 QAM	
INPUT INTERFACE	F, 75 $\Omega$		
RF QAM FREQUENCY INPUT RANGE	54-864 MHz	47-862 MHz	
FREQUENCY STEP	250 kHz		
CHANNEL BANDWIDTH	6 MHz	8 MHz	
RF QAM INPUT POWER INTO DEMODULATOR CARD	10 dBmV $\pm$ 2 dBmV		
INTERMEDIATE CENTER FREQUENCY	44 MHz	36.15 MHz	
OSCILLATOR PHASE NOISE (@10 kHz)	-88 dBc (min)		
RF AGC RANGE (Typ)	45 dB		
OSCILLATOR VOLTAGE AT DEMODULATOR CARD RF INPUT (Max)	< -45 dBmV (40 MHz < f < 900 MHz)		
<b>PHYSICAL</b>			
DIMENSIONS	6.5"H x 0.75"W x 3.0"D (16.5H x 1.9W x 7.6D cm)		
WEIGHT	0.33 lbs (0.15 kg)		



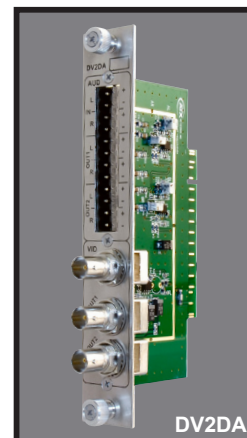
GIGABIT ETHERNET CARD SPECIFICATIONS		DVGIGE
<b>PHYSICAL</b>		
COPPER PORTS	2x RJ45	
SFP PORTS	2x SFP Cage	
POWER CONSUMPTION (w/ 4 Active Ports)	~ 4W	
DIMENSIONS	6.5"H x 0.75"W x 3.0"D (16.5H x 1.9W x 7.6D cm)	
WEIGHT	0.33 lbs (0.15 kg)	
<b>BIT RATES &amp; STANDARDS</b>		
RJ45 PORTS	10/100/1000BASE-T & 10/100/1000BASE-TX	
SFP PORTS	1000BASE-LX	
<b>IP OUTPUT CHARACTERISTICS</b>		
TRANSPORT LAYER	UDP, RTP	
STREAMING PROTOCOL	Multicast, Unicast	
NETWORK	DHCP, VLAN Tagging (IEEE 802.1Q)	
ENCAPSULATION	1-7 TS Packets per Ethernet Frame	
TRANSMISSION	SPTS, MPTS	
NULL STUFFING	OFF, ON (User Settable Limit)	



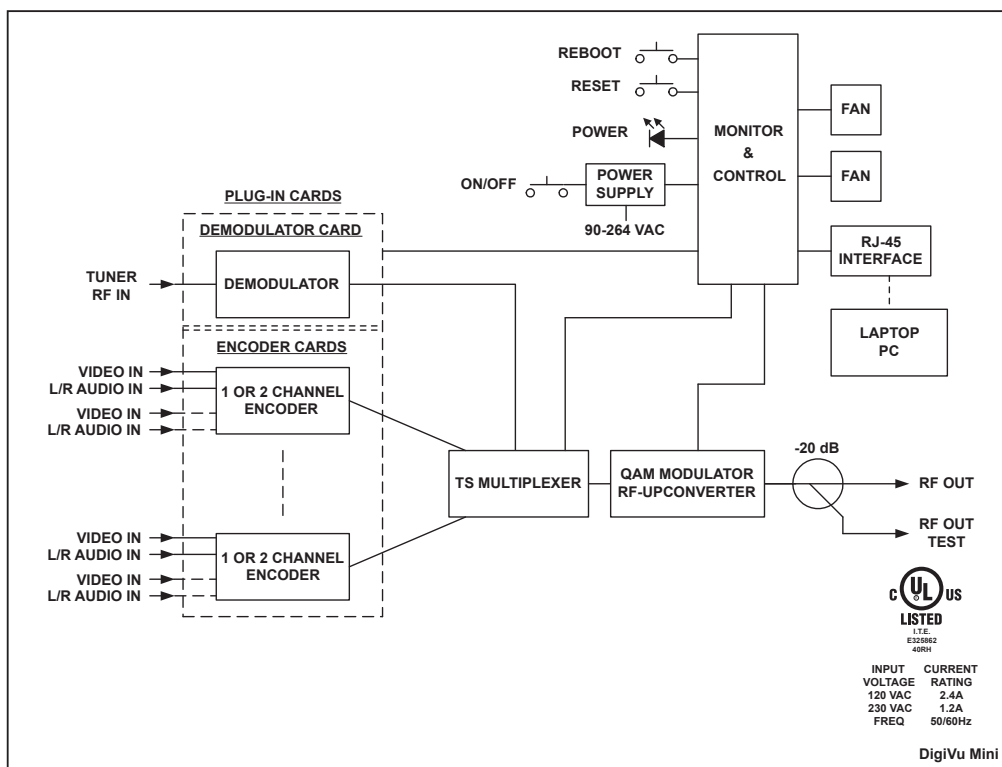
## Compact Multichannel MPEG-2/H.264 SD/HD Encoder/Multiplexer (DigiVu Mini) - QAM Output:

### DigiVu Mini - QAM Output Specifications (cont'd)

A/V DA (2-WAY SPLIT) CARD SPECIFICATIONS		DV2DA
<b>VIDEO</b>		
INPUT/OUTPUT	CVBS (PAL/NTSC)	
INPUT/OUTPUT INTERFACES	1x BNC (75 $\Omega$ ) / 2x BNC (75 $\Omega$ )	
INPUT IMPEDANCE	75 $\Omega$	
OUTPUT IMPEDANCE	75 $\Omega$	
VIDEO INSERTION LOSS (0.3 - 12.0 MHz)	< 0.4 dB	
INPUT/OUTPUT RETURN LOSS	> 30 dB	
OUTPUT TO OUTPUT ISOLATION	> 60 dB	
OUTPUT TO INPUT ISOLATION	> 60 dB	
VIDEO BANDWIDTH	> 10 MHz	
<b>AUDIO</b>		
INPUT/OUTPUT	Analog Unbalanced	
INPUT/OUTPUT INTERFACES	1 Pair L/R / 2 Pairs L/R (Terminal Block x6)	
GAIN (1-20 kHz)	0 dB	
INPUT IMPEDANCE	22 $\Omega$	
OUTPUT IMPEDANCE	200 $\Omega$	
AUDIO BANDWIDTH	50 Hz to > 20 kHz	
<b>PHYSICAL</b>		
DIMENSIONS	6.5"H x 0.75"W x 3.0"D (16.5H x 1.9W x 7.6D cm)	
WEIGHT	0.33 lbs (0.15 kg)	



### Functional Schematic



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