advanced media technologies®

DigiVu®

Digital Video Platform

Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output (DigiVu Mini):

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 4 A/V programs can be directly encoded/multiplexed with QAM output or up to 2 A/V programs with GigE output
- Hot-pluggable 1-Channel & 2-Channel encoder cards available for easy upgrade & unit configuration
- Hot-pluggable QAM Demodulator card available for QAM processing functionality
- Hot-pluggable GigE 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 in-line 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

DGVU* (front view)

DGVU* (rear view)

Ordering Information

Part Number	Description
DGVU1RU*CE(1)	Compact Multi-Channel Digital Encoder with * A/V Baseband Inputs (* = Number of Inputs, ie. 1, 2, 3 or 4).
DV1CE(1)	Separate 1-Channel Encoder Plug-in Card (1 Video + 2 Audio Inputs) for Subsequent Plug-in Installation.
DV2CE(1)	Separate 2-Channel Encoder Plug-in Card (2 Video + 4 Audio Inputs) for Subsequent Plug-in Installation.
DV2DA	Baseband Audio/Video Distribution Amplifier (2-way split).
DVDMQMB	Separate QAM-B Demodulator Plug-in Card (Add/Drop Functionality) for Subsequent Plug-in Installation.
DVDMQMAC	Separate QAM-A/C Demodulator Plug-in Card (Add/Drop Functionality) for Subsequent Plug-in Installation.
DVGIGE	Separate Gigabit Ethernet Output Plug-in Card SFP/RJ45.

NOTE:
(1) To order MPEG Audio Encoding, add letter M to the end of part number.

Specifications subject to change without notice.

Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output (DigiVu Mini):

Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output Specifications

BASE PLATFORM SPECIFICATIONS	
CHASSIS OVERVIEW	
SIZE	1.75"H x 19.0"W x 16.5"D (4.45H x 48.26W x 41.91D cm), 19" Rack Mount (1RU)
EXPANSION CARD SLOTS	2
ENCODED PROGRAMS	Up to 4 into one QAM Channel, Scalable (plug-in cards with 1 or 2 encoders per card) Up to 2 with Gigabit Ethernet Output Card Module Up to 2 with Demodulator Card Module
POWER SUPPLY	IEC Connector/ 90-264 VAC, 50/60Hz
POWER CONSUMPTION	43W
DEVICE MANAGEMENT	HTTP/SNMP Network Interface (RJ45)
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)
HUMIDITY	0-95% (without condensation)
TS MULTIPLEXER	
PACKET SIZE	188 Bytes
TS SUPPORT	QBA, AF
PROGRAM NUMBER & TS NUMBER	User Settable (Program #: 1-65535; TS ID: 1-65535)
PSI / SI INFORMATION TABLE (PAT, PMT)	Automatically Generated
SETTABLE PIDs	PMT, PCR (0x0015-0x1FFE; dec. 21-8190)
QAM MODULATOR/RF UPCONVERTER	
QAM MODULATION	ITU-T J.83 Annex A/Annex B/Annex C
MODULATION FORMAT	16, 32, 64, 128, 256 QAM
RF QAM OUTPUT POWER AT RF OUT	57.5 +/- 1.5 dBmV
ATTENUATOR	0-26 dB
ATTENUATOR STEP	1.0 dB
RF QAM FREQUENCY OUTPUT RANGE(1)	45-870 MHz(1)
SUPPORTED CHANNEL PLANS	STANDARD, HRC, IRC
FREQUENCY STEP	250 kHz
RF QAM CHANNEL BANDWIDTH	6 MHz (Annex B) Max. 8 MHz (Annex A/C)
EXCESS BANDWIDTH	Annex B: 12% (256QAM), 18% (64QAM) Annex A: 15% Annex C: 13%
SYMBOL RATE	Annex B: Automatically Set with Selected Modulation Format 5.360537 MSymb/s - 256QAM 5.056941 MSymb/s - 64QAM Annex A/C: max. 7 MSymb/s
MER EQUALIZED(2)	> 40 dB(2)
FREQUENCY OFFSET	< 2ppm
SYMBOL RATE OFFSET	< +/- 50 Hz
CARRIER SUPPRESSION	> 55 dB
SIGNAL/NOISE	> 45 dB
SPURIOUS	-60 dB
TS PROCESSING	Null Packet Insertion & PCR Correction
FEC	ITU-T J.83 Annex B; DVB-C EN300429 & ITU-T J.83 Annex A/C
RF INTERFACES	
RF OUT	F, 75 Ohm
RF OUT TEST	F, 75 Ohm (-20 dB)
RF OUT RETURN LOSS	> 15 dB

NOTES:

(1) Extended Tune Range 15-975 MHz. Contact factory for details.

(2) Measured with Rohde & Schwarz EFA (FW Ver 05.33).

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Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output (DigiVu Mini):

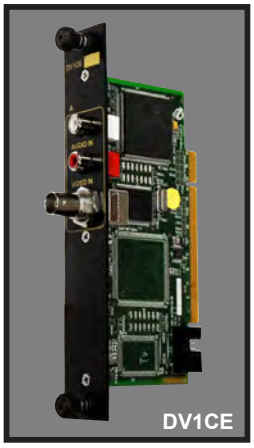
Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output Specifications (cont'd)

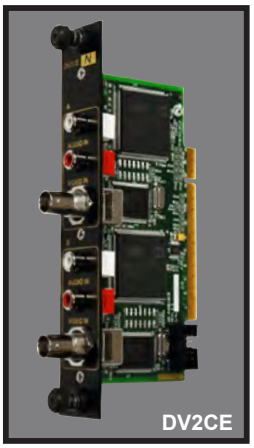
ENCODER PLUG-IN CARD SPECIFICATIONS		DV1CE	DV2CE
VIDEO			
INPUT		CVBS, NTSC / PAL	
INPUT INTERFACE		1 x BNC, 75 Ohm	2 x BNC, 75 Ohm
ENCODING FORMAT		MPEG-2, 4:2:0, MP@ML	
ENCODING BIT RATE TYPE		CBR	
VIDEO ADJUSTMENTS		Brightness, Contrast, Saturation	
VIDEO PROCESSING		TBC	
RESOLUTION	HORIZONTAL	720, 704, 544, 528, 480, 352	
	VERTICAL	480, 576	
FRAME RATE		29.97fps, 25fps	
VIDEO ENCODING BIT RATE		1 - 8 Mbps	
GOP STRUCTURE		IBBP - Length 15	
VIDEO PID SETTING		Yes (0x0015-0x1FFE; dec. 21-8190)	
AUDIO			
INPUT		Analog, Unbalanced	
INPUT INTERFACE		2 x RCA (pair L, R)	4 x RCA (2 x pair L, R)
ENCODING FORMAT		Dolby Digital AC-3, MPEG-1 Layer II(1)	
MODES		Stereo, Mono	
SAMPLING RATE		48 kHz	
ENCODING BIT RATES		192, 256, 384 kbps	
AUDIO PID SETTING		Yes (0x0015-0x1FFE; dec. 21-8190)	

NOTES:

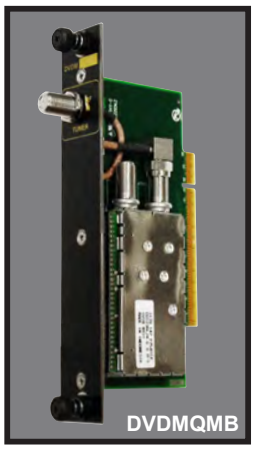
(1) Default format is Dolby Digital AC-3, without MPEG-1 Layer II.

Dolby is a trademark of Dolby Laboratories. Manufactured under license from Dolby Laboratories.





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, 256QAM	16, 32, 64, 128, 256QAM
INPUT INTERFACE	F, 75 Ohm	
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	10-15 dBmV	
INTERMEDIATE CENTER FREQUENCY	44 MHz	36.15 MHz
OSCILLATOR PHASE NOISE (@10 kHz)	-88 dBc (min.)	
RF AGC RANGE (Typ.)	45 dB	
OSC. VOLTAGE AT DEMOD. CARD RF INPUT (Max.)	< -45 dBmV (40 MHz < f < 900 MHz)	



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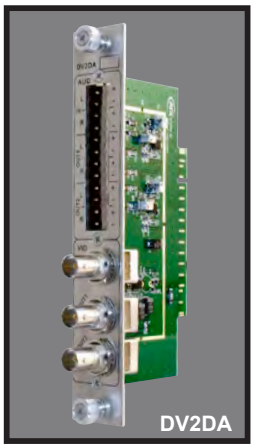
Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output (DigiVu Mini):

Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output Specifications (cont'd)

GIGABIT ETHERNET CARD SPECIFICATIONS	DVGIGE
PHYSICAL	
COPPER PORTS	2 X RJ45
SFP PORTS	2 X SFP Cage
POWER CONSUMPTION (w/ 4 Active Ports)	~ 4W
BITRATES & STANDARDS	
RJ45 PORTS	10/100/1000BASE-T & 10/100/1000BASE-TX
SFP PORTS	1000BASE-LX
IP OUTPUT CHARACTERISTICS	
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 (1 Program), MPTS (≥2 Programs)
NULL STUFFING	OFF, ON (User Settable Limit)

A/V DA (2-WAY SPLIT) CARD SPECIFICATIONS	DV2DA
VIDEO	
INPUT/OUTPUT	CVBS (PAL/NTSC)
INPUT/OUTPUT INTERFACES	1xBNC (75 Ohm) / 2xBNC (75 Ohm)
INPUT IMPEDANCE	75 Ohm
OUTPUT IMPEDANCE	75 Ohm
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
AUDIO	
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 Ohm
OUTPUT IMPEDANCE	200 Ohm
AUDIO BANDWIDTH	50 Hz to > 20 kHz



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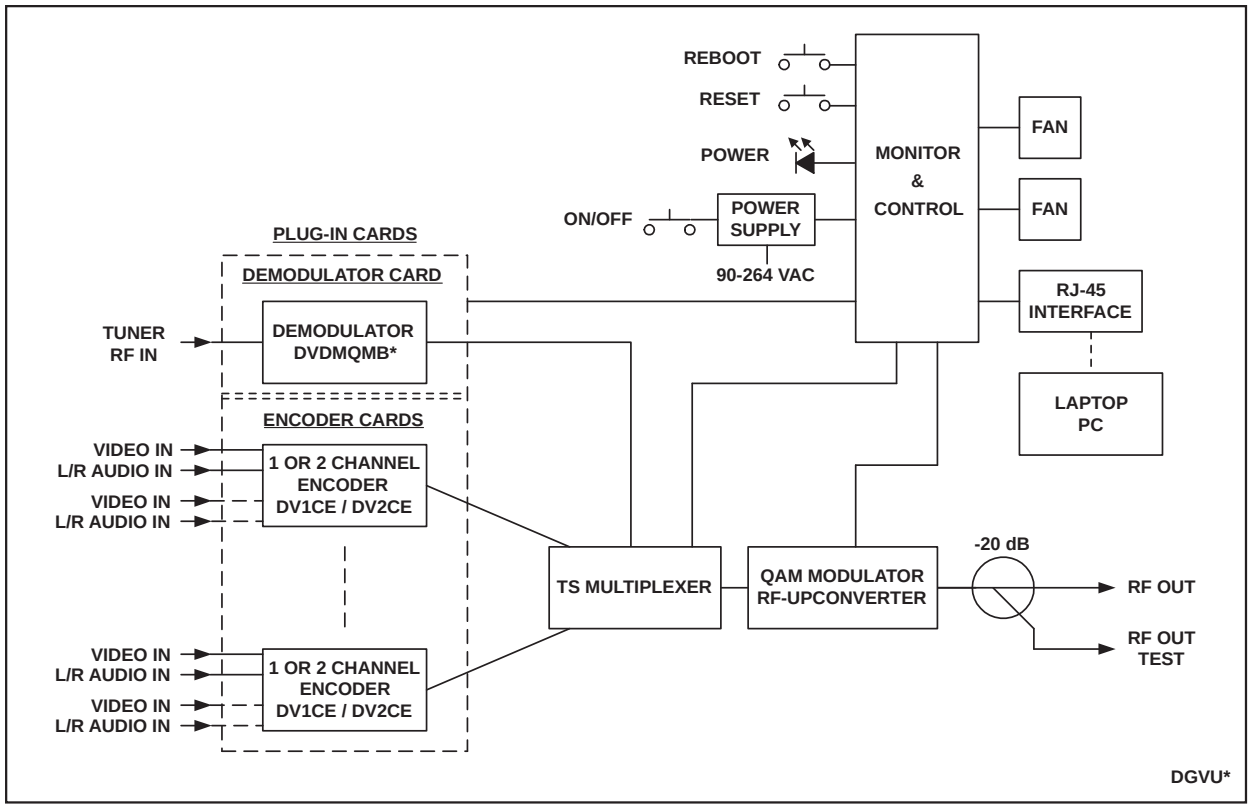
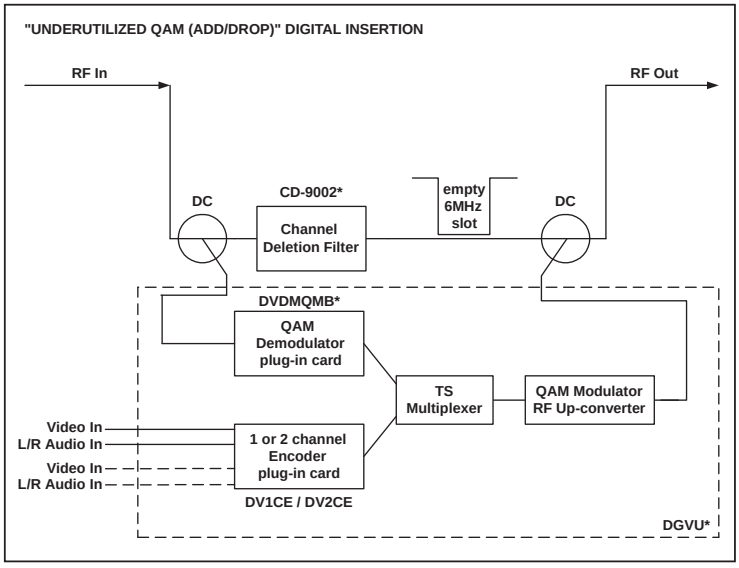
Compact Multi-Channel MPEG-2 Encoder/Multiplexer with QAM Output (DigiVu Mini):

Functional Schematic



Application Diagram



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