



HDE-8C-QAM w/Opt 2 8 Input QAM Modulator with Encoder Watermarking (Option 2)

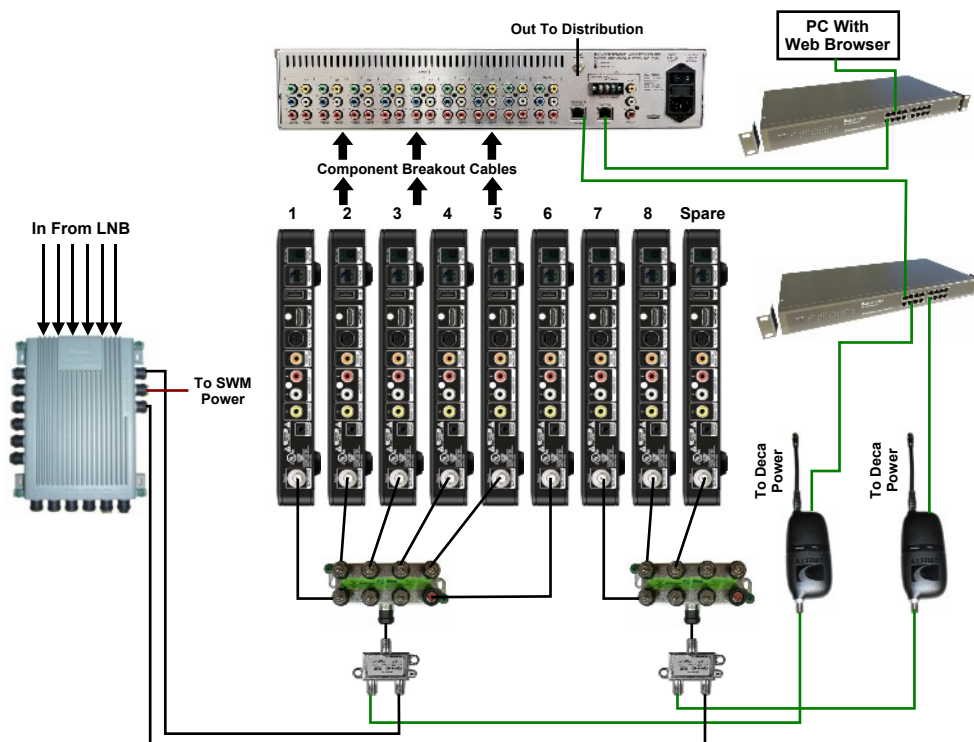
Features:

- Accepts up to 8 programs from any of the following inputs: 8xComponent and 8xComposite
- Supports additional 1 spare input to replace the failed input
- Emergency Alert System (EAS) provides the ability to override all eight (8) programs with an EAS message triggered by dry contact closure, or 5-12 VDC
- Remote monitoring and control
- Watermarked video
- H25 Satellite Receiver control
- Digitizes, MPEG-2 encodes, and multiplexes up to 8 inputs into 4 QAM output channels (2 programs per QAM channel)
- Configurable to ITU-T J.83 Annex A and B digital QAM formats
- Provides comprehensive GUI-based monitoring and control via standard Web browsers
- Provides a front-panel RF test point (at 20 dB below primary QAM output)
- Supports Real-time Dolby® Digital audio encoding
- Supports Closed Captioning EIA-608 for each of the 8 encoded programs
- Supports user-defined PSIP configuration



Description:

HDE-8C-QAM w/Opt 2 (MPEG-2 HD Encoder: 8xComponent/Composite to 4xQAM) accepts up to eight programs from either eight component and/or eight composite video sources. The encoder is equipped with a spare input (9th input) to replace any one of the primary eight inputs in the event of a failure. The encoder digitizes, MPEG-2 encodes each input into a high-definition stream, multiplexes the resulting eight streams, and then modulates them onto four watermarked adjacent QAM channels in the 54-1002 MHz range (CATV 2-158). The encoder supports Dolby® Digital audio encoding, and Closed Captioning (EIA-608) for each of the eight encoded programs. It is also equipped with an Emergency Alert System (EAS) interface consisting of a composite video and L/R audio program input. EAS triggering is via a 5-12 VDC input or dry contact closure available from most EAS receivers. A front-panel RF test point allows for monitoring/testing of the QAM output without service interruption. Comprehensive remote monitoring and control is accomplished using any standard Web browser via a rear-panel 10/100Base-T Ethernet connection.



North American Cable Equipment Inc.

(800) 688-9282 www.northamericancable.com sales@northamericancable.com



HDE-8C-QAM w/Opt2 8 Input QAM Modulator with Encoder Watermarking (Option 2)

Inputs

Component

Primary Connectors:	8 sets each 3x RCA for Video (Y, Pb, Pr) 8 sets each 2x RCA for Analog Audio (L, R)
Spare Connectors:	3x RCA for Video (Y, Pb, Pr) 2x RCA for Analog Audio (L, R)
Video Resolution:	480i, 720p
Video Aspect Ratio:	4:3 & 16:9

Composite Video

Primary Connectors:	8 sets each 1x RCA for Video (Y) 8 sets each 2x RCA for Analog Audio (L,R) (shared with component connectors)
Spare Connectors:	1x RCA for Video (Y) 2x RCA for Analog Audio (L,R) (shared with component connectors)
Video Resolution:	480i

EAS (Emergency Alert System)

Connectors:	3x RCA (Video, Audio L & R)
Trigger Mechanism:	5-12 VDC & Dry Contact Closure (Terminal Strip)

Encoding Profile

Video

Output Format:	MPEG-2 HD MP@ML; ISO 13818-2
Chroma:	4:2:0
Resolution:	480i, 720p
Frame rate:	29.97 fps (480i) 59.97 fps (720p)
Aspect Ratio:	4:3 & 16:9
GOP Structure:	I & P frames (user-selectable)
Transport Rate:	Variable (user-selectable)
Video Bit Rate:	Variable (user-selectable)
Video Pre-filter:	Variable (user-selectable)

Audio

Output Format:	Dolby® Digital
Sampling rate:	48 kHz
Bit rate:	Variable; 128-320 Kbps (user-selectable)

Closed Captioning

Component:	EIA- 608; 1x RCA (CC)
Composite:	EIA-608

General

Dimensions (W x D x H):	19.0 x 19.5 x 3.5" (483 x 495 x 89 mm)
Power:	110 - 230 VAC, 50/60 Hz (Fuse: 4.0A, 250 VDC, Slo Blo)
Power Dissipation:	~60 W (max)
Weight:	~15 lbs (6.8 kg)
Operating Temperature:	32 to 122 °F (0 to 50 °C)
Storage Temperature:	-13 to 158 °F (-25 to 70 °C)
Operating Humidity:	0 to 95% RH non-condensing
Storage Humidity:	0 to 95% RH non-condensing

Description:

HDE-8C-QAM w/Opt 2 Eight input QAM modulator with encoder watermarking

Output

QAM

Connector:	1x "F" Female (rear panel; up to 4x RF QAM ch. combined)
Modulation:	Watermarked QAM 16, 32, 64, 128 & 256
Standards:	ITU-T J.83; Annex A and B
DVB Symbol Rate:	Variable; up to 7 MSymbol/sec (MBAud)
Frequency Range:	54 to 1002 MHz
Tuning:	CATV Channel Selectable (CH. 2 to 158)
Channel Bandwidth:	24 MHz (4x Adjacent 6 MHz)
RF Level:	+40 dBmV $\pm$ 1 dB (4 channels combined)
RF Level Adj Range:	+35 to +45 dBmV, 1 dB increment
Frequency Tolerance:	$\pm$ 0.5 kHz @ 77 °F (25 °C)
Frequency Stability:	$\pm$ 5 kHz over 32 to 122 °F (0 to 50 °C)
Amplitude Flatness:	$\pm$ 0.25 dB (over 6 MHz channel)
Phase Noise:	-98 dBc (@ 10 kHz)
Spurious:	-60 dBc
Broadband Noise:	-70 dBc (@ +40 dBmV output level, 5.5 MHz bandwidth)
Impedance:	75 Ω
Spectral Inversion:	Auto Recognition
Carrier Suppression:	45 dB
Return Loss:	14 dB typical
Signal-to-Noise (SNR):	40 dB typical
MER:	39 dB typical
I/Q Phase Error:	Less than 1 degree
I/Q Amplitude Imbalance:	Less than 1%

Alarms/Monitoring/Control

Local Monitoring:	16x Input Status LEDs (Video 1-8; Audio 1-8) 2x Spare LEDs (Video & Audio) 1x Power LED 1x "F" Female RF Test Port
Local Control:	1x IP Reset button
Remote Monitoring/Control:	GUI-based menu via Web browser (1x RJ45 connector; 10/100Base-T)

ASI

Connector:	1x BNC (Front Panel)
Output Assignment:	Any 1 of 4 QAM output streams
Format:	DVB-ASI
Standard:	ETSI EN 50083-9

North American Cable Equipment Inc.

(800) 688-9282 www.northamericancable.com sales@northamericancable.com