

HDE-4S-QAM (MPEG-2 HD Encoder – 4xHD-SDI/4xComponent – 4xQAM) accepts up to four (4) high-definition (HD) programs from any of the following inputs: 4xHD-SDI, and 4xComponent. MPEG-2 encoded outputs are available in the following formats simultaneously: 4xQAM, 1xGigE (1000Base-T Ethernet), and 4xASI.

To improve transport efficiency, the encoder allows operator to (i) assign one (1) or two (2) programs to each QAM output channel, and (ii) to individually turn on/off each of the four (4) adjacent QAM output channels.

The encoder supports Dolby® Digital AC-3 and Closed Captioning (EIA-608 and EIA-708). It is also equipped with an Emergency Alert System (EAS) interface. 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 front-panel 10/100BaseT Ethernet connection.



4xHD-SDI + 4xComponent

(4 Inputs Total)



4xASI 1xGigE 4xAdjacent QAM

HD MPEG-2 ENCODING
DOLBY® AC-3 AUDIO ENCODING

FEATURES

- Accepts up to four (4) programs from any of the following inputs: 4xHD-SDI, and 4xComponent
- Simultaneously delivers the following outputs: 4xQAM, 1xGigE, and 4xASI
- Multiplexes up to four (4) input programs in any of the following output combinations:
 - (i) 1:1 (1 program per QAM channel)
 - (ii) 2:1 (2 programs per QAM channel, not exceeding 38.8Mbps)
- Each of the four (4) QAM channels can (i) contain 1 or 2 programs, and (ii) be turned on/off individually
- Provides +52 dBmV QAM output level for four (4) combined channels (+60 dBmV for 1 QAM)
- Provides comprehensive GUI-based monitoring and control via standard Web browsers
- Supports Closed Captioning EIA-608 and EIA-708
- Equipped with EAS interface (Analog Video + L/R Audio)
- Supports Real-time Dolby® Digital AC-3 audio encoding
- Supports user-defined PSIP configuration

ORDERING INFORMATION

Model	Stock #	Description
HDE-4S-QAM	6374	MPEG-2 HD Encoder; 4xHD-SDI + 4xComponent inputs; 4xQAM + 1xGigE + 4xASI outputs; EAS compatible

SPECIFICATIONS

INPUT

HD-SDI	Connectors: 4x BNC Standard: SMPTE 292M Video & Audio: 720p & 1080i – Embedded PCM Audio
Component	Connectors: 4 sets each 3x RCA for Video (Y, Pb, Pr) 4 sets each 2x RCA for Analog Audio (L, R) 4 sets each 1x RCA for Digital Audio (PCM) Video Standard: Analog (720p) Video Aspect Ratio: 16:9 & 4:3
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: 720x480; 1280x720; 1920x1080 Frame rate: 29.97 fps (1080i); 59.97 fps (720p) Aspect Ratio: 16:9, 4:3 GOP Structure: I & P frames (user-selectable) Transport Rate: Variable (user-selectable) Video Rate: Variable (user-selectable) Video Pre-filter: Variable (user-selectable) Intra DC Precision: Variable; 8- to 11-bit (user-selectable) Color Space: YCbCr and RGB
Audio	Output Format: Dolby® Digital AC-3 Sampling rate: 48 kHz Bit rate: Variable; 96-448 Kbps (user-selectable)
Closed Captioning	HD-SDI: Pass-through (Embedded in HD-SDI input) Component: EIA-608

OUTPUT

QAM	Connector: 1x "F" Female (rear panel; up to 4x RF QAM ch. combined) Modulation: QAM 16, 32, 64, 128, and 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) Channels' Bandwidth: 24 MHz (4x Adjacent 6MHz) RF Level: +42 to +52 dBmV, 1 dB increment (4 ch. combined) +46 to +56 dBmV, 1 dB increment (2 ch. combined) ± 1 dB RF Level Accuracy: ± 0.5 kHz @ 77 °F (25 °C) Frequency Tolerance: ± 5 kHz over 32 to 122 °F (0 to 50 °C) Frequency Stability: ± 0.25 dB (over 6 MHz channel) Amplitude Flatness: -98 dBc (@ 10 kHz) Phase Noise: -60 dBc Spurious: -70 dBc (@ +52 dBmV output level, 5.5 MHz bandwidth) Broadband Noise: 75 Ω Impedance: Auto Recognition Spectral Inversion: 45 dB Carrier Suppression: 14 dB typical Return Loss: 40 dB typical Signal-to-Noise Ratio (SNR): 40 dB typical MER: Less than 1 degree I/Q Phase Error: Less than 1% I/Q Amplitude Imbalance: Less than 1%															
ASI	Connectors: 4x BNC (Front-panel) Output Assignment: 4 output programs can be assigned as follows: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>No. of SPTS</th> <th>No. of MPTS</th> <th>Connectors used (user-defined)</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>N/A</td> <td>1,2,3,4</td> </tr> <tr> <td>3</td> <td>N/A</td> <td>1,2,3</td> </tr> <tr> <td>2</td> <td>1 (2 progs.)</td> <td>1,2,3</td> </tr> <tr> <td>0</td> <td>2 (2 progs.)</td> <td>1,2</td> </tr> </tbody> </table> Format: DVB-ASI Standard: ETSI EN 50083-9	No. of SPTS	No. of MPTS	Connectors used (user-defined)	4	N/A	1,2,3,4	3	N/A	1,2,3	2	1 (2 progs.)	1,2,3	0	2 (2 progs.)	1,2
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4	N/A	1,2,3,4														
3	N/A	1,2,3														
2	1 (2 progs.)	1,2,3														
0	2 (2 progs.)	1,2														
GigE	Connector: 1x RJ45 (Front-panel) Standard: 1000Base-T Ethernet UDP/RTP: Supported (user-selectable) Address Assignment: 1x IPv4 address with up to 4 port numbers (x.x.x.x:port no.) (IP encapsulated copy of ASI outputs)															

GENERAL

Dimensions (W x D x H):	19.0 x 18.125 x 1.75 inches (483 x 460 x 44 mm)
Power:	115-230VAC, 60/50Hz (Fuse:3.0A, 250VDC, Slo Blo)
Power Dissipation:	60 W
Weight:	8 lbs (3.6 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 @ 35 °C max, non-condensing
Storage Humidity:	0 to 95% RH @ 35 °C max, non-condensing

ALARMS/MONITORING/CONTROL

Local Monitoring:	8x Input Status LEDs (Video 1-4; Audio 1-4) 1x Encoder LED 1x Power LED 1x "F" Female RF Test Port 1x IP Reset button
Local Control:	1x IP Reset button
Remote Monitoring/Control:	GUI-based menu via Web browser (1x RJ45 front-panel connector; 10/100Base-T)

RELATED PRODUCTS

Model	Description
HDE-2H/2S-QAM	MPEG-2 HD Encoder; 2xHDMI + 2xHD-SDI + 2xComponent inputs; 4xQAM + 1xGigE + 4xASI outputs; EAS compatible; 1RU
HD264-2S-IP	H.264HD Encoder; 2xHD-SDI + 2xHDMI + 2xComponent inputs; 2xIP + 4xASI outputs; 1RU
HDE-ASI	HD/SD Encoder; 1xHD-SDI + 4xSD-SDI + 4x AV inputs; 1xASI output; 2RU
SD10E-QAM	SD Encoder; 10xSD-SDI + 10xAV inputs; 1xQAM output; EAS compatible; 2RU
AV10E-QAM	SD Encoder; 10xAV inputs; 1xQAM output; EAS compatible; 2RU

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