SOLUTIONS FOR ALL YOUR APPLICATIONS

HDE-4S-PRO (MPEG-2 HD Encoder: 4xHD-SDI + 1xSpare to 4xQAM + 4xIP) is the first generation in Professional MPEG-2 Encoder Series, especially designed to deliver superior motion optimization for programming such as fast-paced live sporting events. Additionally, a new low latency option is available that significantly reduces the standard encoder's operational time delay. Low latency is recommended for any applications that encodes and distributes live programming on-site, such as a sporting event within a stadium.

The unit accepts up to four (4) high-definition (HD) programs from: 4xHD-SDI. MPEG-2 encoded outputs are available in the following formats simultaneously: 4xQAM, 4xIP (1000Base-T Ethernet), and 4xASI. To improve transport efficiency, the encoder allows operator to (i) assign two (2) HD programs to a QAM output channel, and (ii) to individually turn on/off each of the four (4) adjacent QAM output channels.

The encoder supports Dolby® Digital 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 + 1xSpare
EAS
(4 Inputs Total)

HD MPEG-2 Encoding
DOLBY® Digital Audio Encoding

(4 Programs)

4xASI

4xIP Streams (1xGigE)

4xQAM Adjacent (1xRF)

Features

- Accepts up to four (4) programs: 4xHD-SDI
- Supports HD-SDI input loop thru for monitoring
- Simultaneously delivers the following outputs: 4xQAM (Adjacent), 4xIP (SPTS), 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 40 dBmV QAM output level for four (4) combined channels
- 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 audio encoding
- Supports user-defined PSIP configuration

-NEW- Low Latency Option Available

Ordering Information

Model	Stock #	Description
HDE-4S-PRO	6372	4xHD-SDI + 1xSpare to 4xQAM + 4xIP + 4xASI with EAS
	6372 LL	HDE-4S-PRO with Low Latency option
	6372 48	HDE-4S-PRO with -48 VDC option
	6372 48 LL	HDE-4S-PRO with -48 VDC and Low Latency option
HDE-4S-LLOPT	6372 LIC	Low Latency option (only) for HDE-4S-PRO; S/W license key

Made in U.S.A.

Specifications

Input

HD-SDI

Connectors:	10x BNC total (4 inputs + 1 Spare in/loop thru)
Standard:	SMPTE 292M
Video Resolution:	480i, 720p, & 1080i
Audio:	Embedded PCM and pass-through Dolby® Digital only

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, & 1080i
Frame rate:	29.97 fps (480i); 29.97 fps (1080i); 59.97 fps (720p)
Aspect Ratio:	4:3 & 16:9
GOP Structure:	I & P frames (user-selectable)
Transport Rate:	Variable (user-selectable)
Video Rate:	Variable (user-selectable)
Video Pre-filter:	Variable (user-selectable)
Color Space:	YCbCr and RGB

Audio

Output Format:	Dolby® Digital
Sampling rate:	48 kHz
Bit rate:	Variable; 96-448 Kbps (user-selectable)

Closed Captioning

HD-SDI:	EIA-708; Embedded in HD-SDI input

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 6 MHz)
RF Level:	40 dBmV (4 ch. combined)
RF Level Accuracy:	± 1 dB
Frequency Tolerance:	± 0.5 kHz @ 77 °F (25 °C)
Frequency Stability:	± 5 kHz over 32 to 122 °F (0 to 50 °C)
Amplitude Flatness:	± 0.25 dB (over 6 MHz channel)
Phase Noise:	-98 dBc (@ 10 kHz)
Spurious:	-57 dBc
Broadband Noise:	-70 dBc (@ +52 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 Ratio (SNR):	40 dB typical
MER:	40 dB typical
I/Q Phase Error:	Less than 1 degree
I/Q Amplitude Imbalance:	Less than 1%

ASI

Connectors:	4x BNC (Front-panel)
Format:	DVB-ASI
Standard:	ETSI EN 50083-9

IP

Standard:	Ethernet 1000 Base_T
Connector:	RJ45
Network protocols:	UDP, RTP Multicast, Unicast (4 SPTS or combination of SPTS and MPTS outputs)

Encoder Latency:

Standard:	900 msec
Low Latency (LL) Option:	250 msec

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:	65 W (QAM/IP version)
Weight:	10 lbs (4.54 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:	5x Input Status LEDs 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 front-panel connector; 10/100Base-T)

Related Products

Model	Description
HDE-HVC-PRO	Professional Series MPEG-2 HD Encoder; 1xHDMI/VGA/Component/Composite inputs; 1xQAM + 1xASI + IP outputs
SDE-4AV-QAM	MPEG-2 SD Encoder; 4xAV inputs; 1xQAM + 1xASI + IP outputs; EAS compatible
SDE-4AV-HD-LIC	HD-PRO software upgrade for SDE-4AV-QAM
HDE-CSV-QAM	MPEG-2 HD Encoder; 1xComponent/HD-SDI/HDMI/VGA/Composite inputs; 1xQAM + 1xASI + 1xIP outputs
HDE-CHV-QAM	MPEG-2 HD Encoder; 1xComponent/HDMI/VGA/Composite inputs; 1xQAM + 1xASI + 1xIP outputs
HDE-2H/2S-QAM	MPEG-2 HD Encoder; 2xHDMI + 2xHD-SDI + 2xComponent/Composite inputs; 4xQAM + 4xIP + 4xASI outputs; EAS