



Blonder Tongue

HDE-4S-PRO PROFESSIONAL MPEG-2 ENCODER

4xHD-SDI + 1xSpare to 4xQAM + 4xIP

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.



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



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

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
Local Control:	1x "F" Female RF Test Port 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