



# HDE-4S-PRO LL

PROFESSIONAL MPEG-2 HD LOW LATENCY ENCODER



## KEY FEATURES

- » Accepts up to (4) programs; HD-SDI loop-thru for monitoring
- » Simultaneously delivers 4xQAM (adjacent), 4xIP (SPTS), 4xASI
- » 250 mSec Encoding Speed when operating in Low Latency mode
- » Supports real-time Dolby® Digital audio encoding
- » Supports user-defined PSIP configuration

## PRODUCT OVERVIEW

The **HDE-4S-PRO LL** is especially designed to deliver superior motion optimization for programming, such as fast-paced live sporting events. The low latency feature significantly reduces the standard encoder operational time delay and will benefit all applications that encode and distribute live programming on-site.

The unit accepts up to (4) HD programs from: 4xHD-SDI. The 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 operators to assign (2) HD programs to a QAM output channel, and individually turn on/off each of the (4) adjacent QAM output channels.

## ORDERING INFORMATION



MODEL	STOCK#	DESCRIPTION
HDE-4S-PRO LL	<b>6372 LL</b>	Professional MPEG-2 HD Low Latency Encoder 4xHD-SDI + 1 Spare to 4xQAM + 4xIP + 4x ASI w/ EAS

# HDE-4S-PRO LL

## SPECIFICATIONS



### INPUT

HD-SDI	
Connectors	10x BNC total (4x Inputs + 1x Spare in/loop thru)
Standard	SMPTE 292M
Video Resolution	480i, 720p, and 1080i
Audio	Embedded PCM; Pass-thru Dolby® Digital only

EAS (EMERGENCY ALERT SYSTEM)	
Connectors	3x RCA (Video and 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 (29.97 FPS); 720p (59.97 FPS); 1080i (29.97 FPS)
Aspect Ratio	4:3 & 16:9
GOP Structure	I & P frames (user-selectable)
Video Bit Rate	Variable (user-selectable)
Video Pre-filter	Variable (user-selectable)
Color Space	YCbCr & RGB

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

CLOSED CAPTIONING	
HD-SDI	Embedded in HD-SDI inputs (EIA-708)
Analog	4x RCA inputs (EIA-608)

### ALARMS & MONITORING

Local Monitoring	5x Input Status LED; 1x Power LED 1x "F" Female RF Test Port
Local Control	1x IP Reset Button
Remote Device Monitoring/Control	1x RJ45 (10/100 Base-T) GUI-Based Menu Via Internal Web Server

### GENERAL

Dimensions (W x H x D)	19.0 x 1.75 x 18.125 in (483 x 45 x 460 mm)
Weight	10 lbs (4.54 kg)
Power	115/230 VAC, 1.0/0.5 A, 60/50 Hz (Fuse 3.0A, 250VDC, SloBlo)
Power Consumption	65 W (QAM/IP)
Operating Temp.	32 to 122 °F (0 to 50 °C)
Storage Temp.	-13 to 158 °F (-25 to 70 °C)
Operating/Storage Humidity	0 to 95% RH @ 35 °C max, non-condensing

### OUTPUT

QAM	
Connector	1x "F" (Rear Panel, ≤ 4xRF QAM Ch.)
Modulation	QAM 16, 32, 64, 128, and 256
Standards	ITU-T J.83; Annex A & B
DVB Symbol Rate	Variable; ≤ Msymbol/sec (Mbaud)
Frequency Range	54 to 1002 MHz
Tuning	CATV Channel Selectable (Ch. 2-158)
Channel 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	-60 dBc
Broadband Noise	-70 dBc (@ +52 dBmV level, 5.5 MHz BW)
Impedance	75 Ω
Spectral Inversion	Auto-Recognition
Carrier Suppression	45 dB
Return Loss	14 dB typical
Signal-to-Noise Ratio	40 dB typical
MER	40 dB typical
I/Q Phase Error	< 1 degree
I/Q Amplitude Imbalance	< 1 degree

IP	
Connector	1x RJ45 (Rear Panel)
Standard	1000 Base-T Ethernet (GigE)
TS Bit Rate	Variable (user-selectable)
Network Protocols	UDP, RTP Multicast, Unicast (4x SPTS or SPTS/MPTS combined outputs)

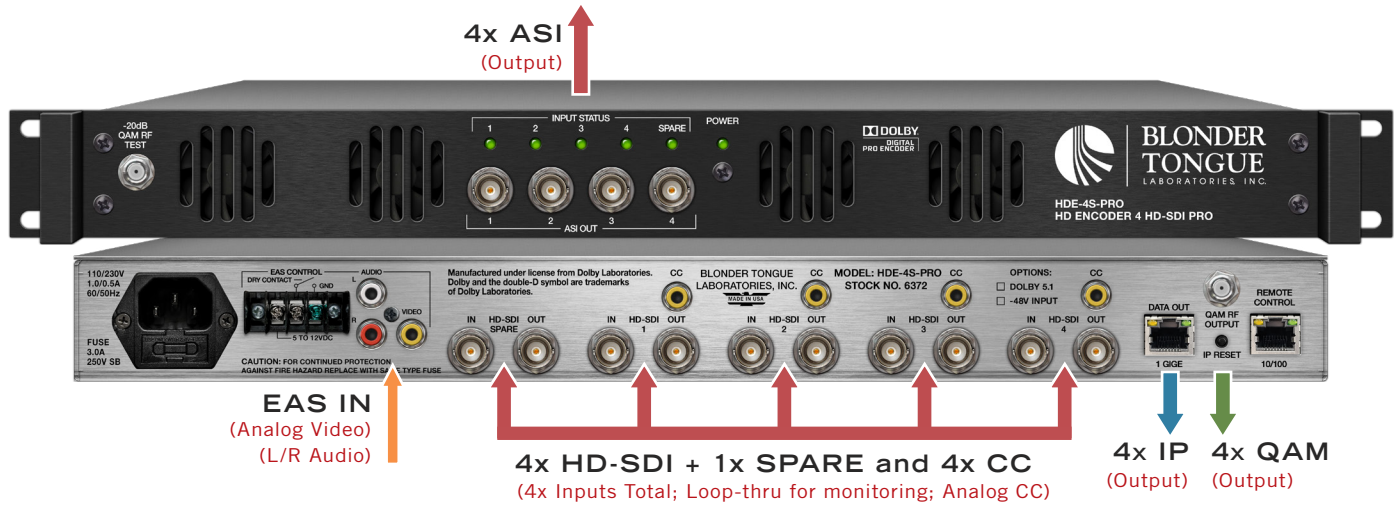
ASI	
Connector	4x BNC (Front Panel)
Format	DVB-ASI
Standard	ETSI EN 50083-9
TS Bit Rate	Variable (user-selectable)

LATENCY	
Encoding Speed	250 msec

## HDE-4S-PRO LL

PROFESSIONAL MPEG-2 HD LOW LATENCY ENCODER

### I/O OVERVIEW



### ORDERING INFORMATION



MODEL	STOCK#	DESCRIPTION
HDE-4S-PRO LL	<b>6372 LL</b>	Professional MPEG-2 HD Low Latency Encoder 4xHD-SDI + 1 Spare to 4xQAM + 4xIP + 4x ASI w/ EAS



**SALES DEPARTMENT**  
sales@blondertongue.com

**CUSTOMER SERVICE**  
custsvc@blondertongue.com

---

**CONNECT WITH US**

