

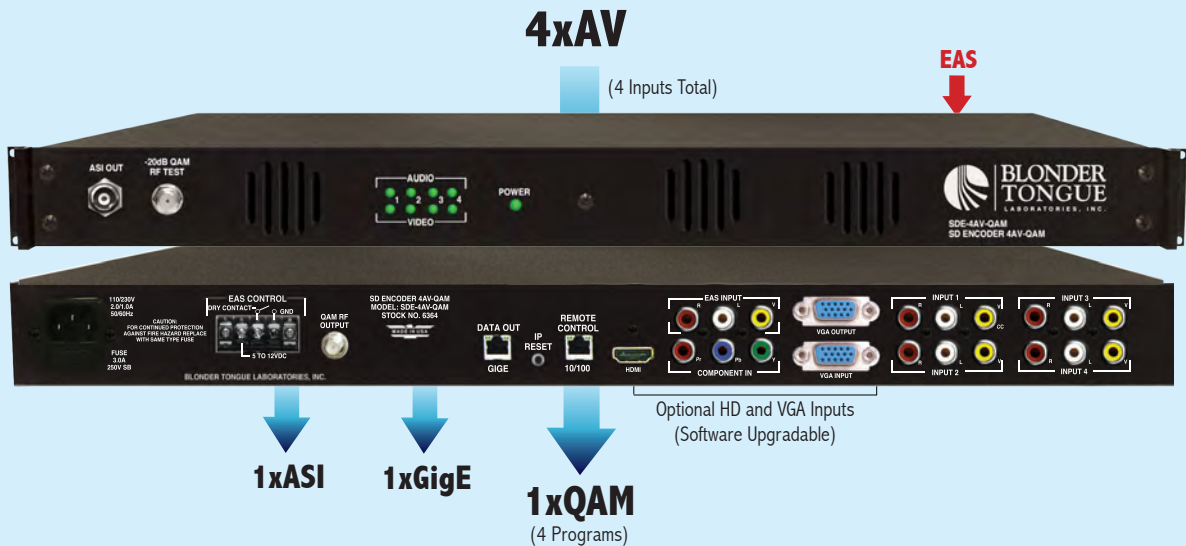


**SDE-4AV-QAM (MPEG-2 SD Encoder – 4xAV – 1xQAM)** accepts up to four (4) standard-definition (SD) input programs in NTSC baseband Audio/Video format. Each input program is digitized, MPEG-2 encoded, and then multiplexed into one Multi-Program Transport Stream (MPTS). The output is available in the following formats simultaneously: 1xQAM, 1xASI, and 1xGigE (1000Base-T Ethernet).

An optional high definition (HD) software upgrade allows the encoder to switch modes between SD and HD. When operating in HD mode, the encoder accepts one (1) program from any one of the following inputs: 1xHDMI (unencrypted), 1xVGA or 1xComponent.

The encoder supports Dolby® Digital audio encoding, and Closed Captioning (EIA-608). 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 rear-panel 10/100Base-T Ethernet connection.



## FEATURES

- Accepts up to four (4) programs in NTSC baseband A/V format
- Digitizes, MPEG-2 encodes, & multiplexes up to four (4) programs into one MPTS
- Simultaneously delivers the following outputs: 1xQAM, 1xASI, and 1xGigE
- Supports optional HD software upgrade to accept one (1) program from any of the following inputs: 1xHDMI (unencrypted), 1xVGA, or 1xComponent
- 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)
- Compatible with ITU Annex A and B digital QAM formats
- Equipped with EAS interface (Analog Video + L/R Audio)
- Supports Real-time Dolby® Digital audio encoding
- Supports Closed Captioning EIA-608
- Supports user-defined PSIP configuration

## ORDERING INFORMATION

Model	Stock #	Description
SDE-4AV-QAM	6364	MPEG-2 SD Encoder; 4xAV inputs; 1xQAM + 1xASI + 1xGigE outputs; EAS compatible

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# SPECIFICATIONS

## INPUT

<b>NTSC</b>	<b>Connectors:</b> 4x RCA for Analog Video 4 sets each 2x RCA for Analog Audio (L, R) <b>Video Resolution:</b> 480i
<b>EAS (Emergency Alert System)</b>	<b>Connectors:</b> 3x RCA (Video, Audio L & R) <b>Trigger Mechanism:</b> 5-12 VDC & Dry Contact Closure (Terminal Strip)

<b>Encoding Profile</b>	
<b>Video</b>	<b>Output Format:</b> MPEG-2 SD MP@ML; ISO 13818-2 <b>Chroma:</b> 4:2:0 <b>Resolution:</b> 480i <b>Frame rate:</b> 29.97 fps (480i) <b>Aspect Ratio:</b> 4:3 <b>GOP Structure:</b> I & P frames (user-selectable) <b>Transport Rate:</b> Variable (user-selectable) <b>Video Rate:</b> Variable (user-selectable) <b>Video Pre-filter:</b> Variable (user-selectable) <b>Color Space:</b> YCbCr and RGB
<b>Audio</b>	<b>Output Format:</b> Dolby® Digital <b>Sampling rate:</b> 48 kHz <b>Bit rate:</b> Variable; 128-320 Kbps (user-selectable)
<b>Closed Captioning</b>	<b>NTSC:</b> EIA-608; Embedded in NTSC input

## OPTIONAL INPUTS (REQUIRES SOFTWARE UPGRADE)

<b>HDMI</b>	<b>Connectors:</b> 1x HDMI <b>Video Resolution:</b> 480i, 720p, & 1080i <b>HDCP Encryption:</b> Not supported <b>Audio:</b> Embedded PCM & pass-through Dolby® Digital only
<b>VGA</b>	<b>Connectors:</b> 2x Female VGA (Input + Loop-through Output) <b>Video Resolution:</b> 640x480 @ 60 fps 800x600 @ 60 fps 1024x768 @ 60 fps <b>Audio:</b> 2x RCA for Analog Audio (L, R)
<b>Component</b>	<b>Connectors:</b> 3x RCA for Video (Y, Pb, Pr) 2x RCA for Analog Audio (L, R) <b>Video Resolution:</b> 480i, 720p, & 1080i <b>Video Aspect Ratio:</b> 4:3 & 16:9

## OUTPUT

<b>QAM</b>	<b>Connector:</b> 1x "F" Female (Rear-panel) <b>Modulation:</b> QAM 16, 32, 64, 128, and 256 <b>Standards:</b> ITU-T J.83; Annex A and B <b>DVB Symbol Rate:</b> Variable; up to 7 MSymbol/sec (MBaud) <b>Frequency Range:</b> 54 to 1002 MHz <b>Tuning:</b> CATV Channel Selectable (Ch. 2 to 158) <b>Channels' Bandwidth:</b> 6 MHz <b>RF Level:</b> +40 dBmV <b>RF Level Adjustment:</b> +32 to +42 dBmV, 1 dB increment <b>Frequency Tolerance:</b> ± 0.5 kHz @ 77 °F (25 °C) <b>Frequency Stability:</b> ± 5 kHz over 32 to 122 °F (0 to 50 °C) <b>Amplitude Flatness:</b> ± 0.25 dB (over 6 MHz channel) <b>Phase Noise:</b> -98 dBc (@ 10 kHz) <b>Spurious:</b> -60 dBc <b>Broadband Noise:</b> -70 dBc (@ +40 dBmV output level, 5.5 MHz bandwidth) <b>Impedance:</b> 75 Ω <b>Spectral Inversion:</b> Auto Recognition <b>Carrier Suppression:</b> 45 dB <b>Return Loss:</b> 14 dB typical <b>Signal-to-Noise Ratio (SNR):</b> 40 dB typical <b>MER:</b> 40 dB typical <b>I/Q Phase Error:</b> Less than 1 degree <b>I/Q Amplitude Imbalance:</b> Less than 1%
<b>ASI</b>	<b>Connectors:</b> 1x BNC (Front-panel) <b>Format:</b> DVB-ASI <b>Standard:</b> ETSI EN 50083-9
<b>GigE</b>	<b>Connector:</b> 1x RJ45 (Rear-panel) <b>Standard:</b> 1000Base-T Ethernet <b>UDP/RTP:</b> Supported (user-selectable)

## GENERAL

<b>Dimensions (W x D x H):</b>	19.0 x 18.125 x 1.75 inches (483 x 460 x 44 mm)
<b>Power:</b>	110-230 VAC, 50/60 Hz
<b>Power Dissipation:</b>	~40 W (max)
<b>Weight:</b>	~10 lbs (4.5 kg)
<b>Operating Temperature:</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temperature:</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing
<b>Storage Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensing

## ALARMS/MONITORING/CONTROL

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

## RELATED PRODUCTS

Model	Description
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-4S-QAM	HD Encoder; 4xHD-SDI + 4xComponent inputs; 4xQAM + 4xASI + 4xGigE outputs; EAS compatible; 1RU
HDE-2H/2S-QAM	HD Encoder; 2xHDMI + 2xHD-SDI + 4xComponent inputs; 4xQAM + 4xASI + 4xGigE outputs; EAS compatible; 1RU
HD264-2S-IP	H.264 HD Encoder; 2xHD-SDI + 2xHDMI + 2xComponent inputs; 2xIP + 4xASI outputs; 1RU