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.

**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**

<table>
<thead>
<tr>
<th>Model</th>
<th>Stock #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDE-4S-QAM</td>
<td>6374</td>
<td>MPEG-2 HD Encoder; 4xHD-SDI + 4xComponent inputs; 4xQAM + 1xGigE + 4xASI outputs; EAS compatible</td>
</tr>
</tbody>
</table>
INPUT

**HD-SDI**
- Connectors: 4x BNC
- Standard: SMPTE 292M
- Video & Audio: 720p & 1080p – Embedded PCM Audio

**Component**
- Connectors: 4 sets each 3x RCA for Video (Y, Pb, Pr) + 2 sets each 2x RCA for Analog Audio (L, R)
- Video Standard: 4 sets each 1x RCA for Digital Audio (PDM), 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 ((1080), 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, 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 Component: Pass-through (Embedded in HD-SDI input)
- Component: EIA-608

**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

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.183; Annex A and B
- DVB Symbol Rate: Variable, up to 7 MSymbol/sec (MHz)
- Frequency Range: 54 to 1002 MHz
- CATV Channel Selectable (Ch. 2 to 158)
- Channels’ Bandwidth: 24 MHz (4x Adjacent 6 MHz)
- RF Level: +42 to +52 dBmV, 1 dB increment (4x combined)
- +46 to +56 dBmV, 1 dB increment (2x combined)
- ± 1 dB
- ± 0.5 kHz @ 77 °F (25 °C)
- ± 5 kHz over 32 to 122 °F (0 to 50 °C)
- ± 0.05 dB (over 6 MHz channel)
- ± -88 dBc (@ 10 kHz)
- ± -60 dBc
- ± -70 dBc (@ +52 dBmV output level, 5.5 MHz bandwidth)
- ± 75 Ω

**ASI**
- Connectors: 4x BNC (Front-panel)
- 4 output programs can be assigned as follows:

<table>
<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 (user-prop)</td>
<td>1,2</td>
</tr>
<tr>
<td>0</td>
<td>2 (user-prop)</td>
<td>1,2</td>
</tr>
</tbody>
</table>

**GigE**
- Connector: 1x RJ45 (Front-panel)
- Standard: 1000Base-T Ethernet
- Address Assignment: IPv4 address with up to 4 port numbers (xxx.xxx.xxx.000-4)
- (IP encapsulated copy of ASI outputs)

**ALARMS/MONITORING/CONTROL**
- Local Monitoring: 8x Input Status LEDs (Video 1-4, Audio 1-4)
- Local Control: 1x Encoder LED
- 1x Power LED
- 1x “F” Female RF Test Port
- 1x IPv4 address with up to 4 port numbers (xxx.xxx.xxx.000-4)
- (IP encapsulated copy of ASI outputs)

**RELATED PRODUCTS**

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

©2012 Blonder Tongue Laboratories, Inc. All Rights Reserved. Specifications subject to change without notice. All trademarks are property of their respective owners.