HDE-1C-QAM (MPEG-2 HD Encoder - 1xComponent/Composite - 1xQAM) accepts one (1) high-definition (HD) program from a component input or (1) standard definition (SD) from a composite video input. MPEG-2 encoded outputs are available in QAM (1x) format. The QAM RF output is frequency agile over the entire CATV frequency range of 5-1002 MHz (channels T7-T14, 2-158) with an output level of +40 dBmV. The encoder also has a Delayed Audio output feature to provide proper lip-syncing when external audio amplifiers are used in the system.

The encoder supports Dolby® Digital audio encoding and Closed Captioning (EIA-608). Comprehensive remote monitoring and control is accomplished using any standard Web browser via a front-panel 100/1000 Ethernet connection.

**Features**

- Accepts one (1) program from any of the following inputs: 1xComponent or 1xComposite
- Delivers the following outputs: 1xQAM
- Provides +40 dBmV QAM RF output level
- Provides comprehensive GUI-based monitoring and control via standard Web browsers
- Compact design permits installation of up to 3 Encoder modules in 1RU
- Supports Real-time Dolby® Digital audio encoding
- Supports user-defined PSIP configuration
- Supports Closed Captioning EIA-608
- Full QAM output channel coverage from 5 to 1002 MHz (T7 to 158)
- Delayed Digital Audio Output feature for external audio applications
- Optional Analog Delayed Audio Output for public address system interface

**Ordering Information**

<table>
<thead>
<tr>
<th>Model</th>
<th>Stock #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDE-1C-QAM</td>
<td>6383</td>
<td>MPEG-2 HD Encoder; 1xComponent/Composite inputs; 1xQAM output</td>
</tr>
<tr>
<td></td>
<td>6383 DA</td>
<td>MPEG-2 HD Encoder with Delayed Analog Audio Output</td>
</tr>
<tr>
<td>HDE-3MCH</td>
<td>6389</td>
<td>1RU Rack mount chassis; holds 3 HDE-1C-QAM modules</td>
</tr>
</tbody>
</table>

Dolby® is a registered trademark of Dolby Laboratories.
## Specifications

### Input

<table>
<thead>
<tr>
<th>Component</th>
<th>Connectors:</th>
<th>Video Resolution:</th>
<th>Video Aspect Ratio:</th>
<th>Audio:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component</strong></td>
<td>3x RCA for Video (Y, Pb, Pr)</td>
<td>480i, 720p, &amp; 1080i</td>
<td>4:3 &amp; 16:9</td>
<td>2x RCA for Analog Audio (L, R)</td>
</tr>
<tr>
<td></td>
<td>1x RCA for Digital Audio (PCM)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Composite</strong></td>
<td>1x RCA for Video (Y)</td>
<td>480i</td>
<td></td>
<td>2x RCA for Analog Audio (L, R)</td>
</tr>
<tr>
<td></td>
<td>1x RCA for Digital Audio (PCM)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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); 59.97 fps (720p)
- **Aspect Ratio:** 4:3 & 16:9
- **GOP Structure:** I & P frames (user-selectable)
- **Transport Rate:** Variable (user-selectable)
- **Video Bit Rate:** Variable (user-selectable)
- **Video Pre-filter:** YCbCr and RGB
- **Color Space:** YUV

#### Audio

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

### Closed Captioning

- **Component:** EIA-608
- **Composite:** EIA-608

### Alarms/ Monitoring/ Control

- **Local Monitoring:** 1x Power LED
- **Local Control:** 1x Status LED
- **Remote Monitoring/Control:** GUI-based menu via Web browser

### Output

#### QAM

- **Connector:** 1x “F” Female (Rear-panel)
- **Modulation:** QAM 16, 32, 64, 128, and 256
- **Standards:** ITU-T.J.83, Annex A and B
- **DVBS Symbol Rate:** Variable; up to 7 Msymbol/sec (MBaud)
- **Frequency Range:** 5 to 1002 MHz
- **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)
- **Spread:** ≤ 60 dBc
- **Broadband Noise:** ≤ 70 dBc (@ +40 dBm output level, 5.5 MHz bandwidth)

#### Delayed Audio Output

- **Digital:**
  - **Connector:** 1x RCA
  - **Delay:** 0-2000 msec, 32 msec increments
- **Analog Option (#6383 DA):**
  - **Connector:** 1x 3.5mm Stereo Jack
  - **Delay:** 0-2000 msec, 32 msec increments

### General

- **Dimensions (W x D x H):** 5.65 x 12.5 x 1.75 inches (144 x 317.5 x 44.5 mm)
- **Power:**
  - **External Power Supply:** Input 115-230VAC / Output 12VDC @ 3 Amp
  - **Power Dissipation:** 17 W
  - **Weight (one module):** 1.5 lbs (0.7 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

### Related Products

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDE-8C-QAM</td>
<td>8xComponent + 8xComposite + 1xSpare inputs; 4xQAM + 1xASI outputs; EAS compatible</td>
</tr>
<tr>
<td>HDE-CHV-QAM</td>
<td>MPEG-2 HD Encoder; 1xComponent/HDMI/VGA/Composite inputs; 1xQAM + 1xASI + 1xIP outputs</td>
</tr>
<tr>
<td>HDE-CSV-QAM</td>
<td>MPEG-2 HD Encoder; 1xComponent/HD-SDI/HDMI/VGA/Composite inputs; 1xQAM + 1xASI + 1xIP outputs</td>
</tr>
</tbody>
</table>

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