Model D9844 Commercial Decoder

Description
The Model D9844 Commercial Decoder is designed to receive broadcasts using MPEG-2 4:2:0 digital compression technology. It is ideally suited for decoding digitally compressed signals for further distribution into direct-to-home networks. Optional IP input or output interfaces provide for next generation network architecture integration.

Secured Broadcast Reception
Availability of BISS modes 1 and E provides protected distribution of video, audio and/or data broadcasts to multiple locations. To further support interoperability, DVB-CI allows the receiver to be used in different broadcast networks with the most common conditional access (CA) systems.

Key Features
- Single or dual decoder configuration
- MPEG-2/DVB 4:2:0 video decoding
- NTSC, PAL B/G/I/M/N/D, SECAM L/B/G/K1 video formats
- Video resolution interpolation (Pan-Scan, letter box or pass-through)
- Aspect ratio conversion (4:3, 16:9)
- Configured and controlled via front panel LCD
- Supports Basic Interoperable Scrambling System (BISS) conditional access
- Two analog stereo outputs per program
- VBI re-insertion of WST, WSS, VPS, VITC, CC, AMOL I, AMOL II
- EBU Teletext and DVB subtitling
- Redundancy support via two General Purpose Indicator (GPI) contact closures
- SNMP control and monitoring
- Web-based management (10/100 Base-T)
- Two-slot, DVB-CI common interface

Optional Features
- Dolby® Digital (AC-3) downmixing (left and right channels)
- DVB-S QPSK input
- DVB-S2 Single Input QPSK/8PSK
- DVB-S2 16APSK, VCM, ACM
- Multiple input transport stream (MSI)
- ASI input
- Dual ASI outputs
- MPEG over IP input (without FEC)
- Link and source redundancy for IP inputs
- MPEG over IP output (without FEC)
- MPE IP Data output
- Two SDI outputs with embedded audio and VBI
- Two AES/EBU digital audio outputs per program
- Second video decoder with two audio outputs
## Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>System</strong></td>
<td>MPEG-2/DVB compatible</td>
</tr>
<tr>
<td><strong>Transport Stream Inputs and Outputs</strong></td>
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<tr>
<td>DVB Satellite – QPSK</td>
<td>Frequency Range: 950 MHz to 2150 MHz  Symbol Rate Range: 1.0 to 45 Msymbols/s  L-band RF input with LNB control and loop-through output</td>
</tr>
<tr>
<td>DVB S2 Single Input – QPSK/8PSK</td>
<td>16APSK software option  Frequency Range: 950 MHz to 2150 MHz  Symbol Rate Range: 1.0 to 45 Msymbols/s  L-band RF input with LNB control and loop-through output  Mode: CCM (VCM, ACM s/w option)  PLL Scrambling  Multiple input transport stream MSI (s/w option)  Data rate: 100 Kbps – 100 Mbps</td>
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<tr>
<td>MPEG over IP Input</td>
<td>TS bit rate: up to 44 Mbps  ProMPEG FEC: up to 25 Mbps</td>
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<tr>
<td>MPEG over IP Output</td>
<td>TS bit rate: up to 44 Mbps</td>
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<tr>
<td>ASI Input</td>
<td>Interface: copper BNC  TS bit rate: up to 100 Mbps (byte and burst mode)</td>
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<tr>
<td>Dual ASI Outputs</td>
<td>Interface: copper BNC  TS rate: up to 100 Mbps (byte mode)  Options: Input with selected program decrypted, loop-through of input stream</td>
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<td><strong>Video and Audio Outputs</strong></td>
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<tr>
<td>Video</td>
<td>Analog video interfaces: up to 3 composite, 1 S-video  Digital video interfaces: 2 x SDI with embedded VBI and stereo channels  Video formats: PAL-B/G/I/M/N/D, NTSC, SE&amp;AM L/B/G/K1  Decoding: 4:2:0 MP@ML (1.5 to 15 Mbps)  Video resolution interpolation: Pan-Scan, letter box or pass-through  Aspect ratio: 4:3, 16:9  Graphic processing: DVB subtitling, EBU (teletext) subtitling</td>
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<td>Audio</td>
<td>Analog Audio: up to 4 balanced stereo pairs  Digital audio: up to 4 unbalanced outputs (BNC)  Embedded in SDI: up to 4 stereo pairs  Mode: stereo, joint stereo, dual channel, single channel  Max output level: +18 dBu analog, 0 dBFs digital  Gain control: -64 dB to 0 dB / mute  Dolby® Digital 2.0 decoding</td>
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<td><strong>Conditional Access</strong></td>
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<td>DVB Descrambling</td>
<td>BISS Mode-1  BISS-E</td>
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<tr>
<td>DVB-CI</td>
<td>Interface: 2 CI slots – EN 50221  CA Method: Multicrypt, Simulcrypt  CAS: Irdeto, Viaccess, Cryptoworks, Conax, MediaGuard, Nagravision, OnDigital, CODICrypt, VideoGuard  Note: Viasat (uses NDS/VideoGuard) only authorizes decoders equipped with an ASI output to receive/decrypt Viasat-encrypted programs.</td>
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<td><strong>VBI Re-insertion</strong></td>
<td>In composite video and embedded in SDI  WST teletext and inverted teletext</td>
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<td><strong>Data Outputs</strong></td>
<td>IP data (EN 301 192)</td>
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<td><strong>Environmental/Physical</strong></td>
<td>Operating Temperature: 0°C to 50°C  (32°F to 122°F)  Humidity: 5% to 90% non-condensing</td>
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<td><strong>Power</strong></td>
<td>Voltage Range: 100 V to 240 V AC  Line Frequency: 50/60 Hz</td>
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Sample Rear Panel Configurations

Single Decoders

4012444 and 4012746

4012445 (shown with MPEG over IP Input)

4012448 and 4013196
### Ordering Information (see examples above)

**Factory-configured units**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DVB-S Input</th>
<th>DVB-S2 Input</th>
<th>MPEG over IP Input w/o FEC</th>
<th>ASI Input</th>
<th>Dual ASI O/Ps</th>
<th>IP Data &amp; MPEG over IP Output</th>
<th>Gen-lock</th>
<th>SDI Out</th>
<th>1st/2nd AES/EBU Outputs</th>
<th>Dolby Digital (AC-3) Down mixing</th>
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**4012444**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4014373**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4012445**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4013490**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4012746**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4012446**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4012447**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4012448**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4013196**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4014372**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4017834**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4017835**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4019410**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4019411**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4019412**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4019448**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4026207**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4026208**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4026209**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4031103**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

**4031103**

- DVB-S Input
- DVB-S2 Input
- MPEG over IP Input w/o FEC
- ASI Input
- Dual ASI O/Ps
- IP Data & MPEG over IP Output
- Gen-lock
- SDI Out
- 1st/2nd AES/EBU Outputs
- Dolby Digital (AC-3) Down mixing

- VCM & MSI
**Dual Decoders**

4012449

![Diagram of Dual Decoders 4012449](image1)

4012451

![Diagram of Dual Decoders 4012451](image2)

**Ordering Information** (see examples above)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DVB-S Input</th>
<th>MPEG over IP Input w/o FEC</th>
<th>ASI Input</th>
<th>Dual ASI O/Ps</th>
<th>IP Data &amp; MPEG over IP Output</th>
<th>Genlock</th>
<th>SDI Outputs</th>
<th>3rd/4th AES/EBU Outputs</th>
<th>1st/2nd AES/EBU Outputs</th>
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