

# 9992-DEC-4K-HEVC • 4K / AVC / MPEG-2 Software Defined Broadcast Decoder with Single-Channel 4K or Dual-Channel 2K Video Paths

The Cobalt® 9992-DEC-4K-HEVC 4K/AVC/MPEG-2 Software Defined Broadcast Decoder with Single-Channel 4K or Dual-Channel 2K Video Paths is a broadcast-grade multi-standard decoder designed to meet the most stringent requirements for today's broadcasters. It supports MPEG-2, AVC (H.264) and HEVC (H.265), with resolution up to 4K, and a full complement of audio decoding capabilities. The 9992-DEC-4K-HEVC is an industry standard openGear® card module and provides an ideal platform for transitioning to state-of-the-art decoding capabilities.

## FEATURES

**Future-Proof** – The 9992-DEC-4K-HEVC Decoder supports MPEG-2, MPEG-4 AVC (H.264) and HEVC (H.265), so it can be deployed today as well as tomorrow.

**Industry Standard Form-Factor** – The 9992-DEC-4K-HEVC is offered in the industry-standard openGear format, and is compatible with existing deployed openGear frames.

**High Density** – The 9992-DEC-4K-HEVC supports up to two independent 1080p60 input streams, or a single UHD 4Kp60 input stream. One openGear frame can support up to 10 cards, for a total of 20 HD or 10 UHD 4K channels.

**Full Audio Support** – The 9992-DEC-4K-HEVC supports MPEG-1 Layer II, AAC-LC, HE-AAC, Dolby AC-3/EAC-3 and LPCM (SMPTE-302M), as well as Dolby AC-3/EAC-3 pass-thru. With an optional audio board, the decoder can support up to 16 audio channels with each video service.

**Ultra Low Latency** – Low latency modes available

### Base Unit Features –

Support for two decode channels up to 1080p60, or one 4K channel

Support for MPEG-2, MPEG-4 AVC (H.264), and HEVC (H.265)

Support for 4:2:0 8-bit/10-bit decoding

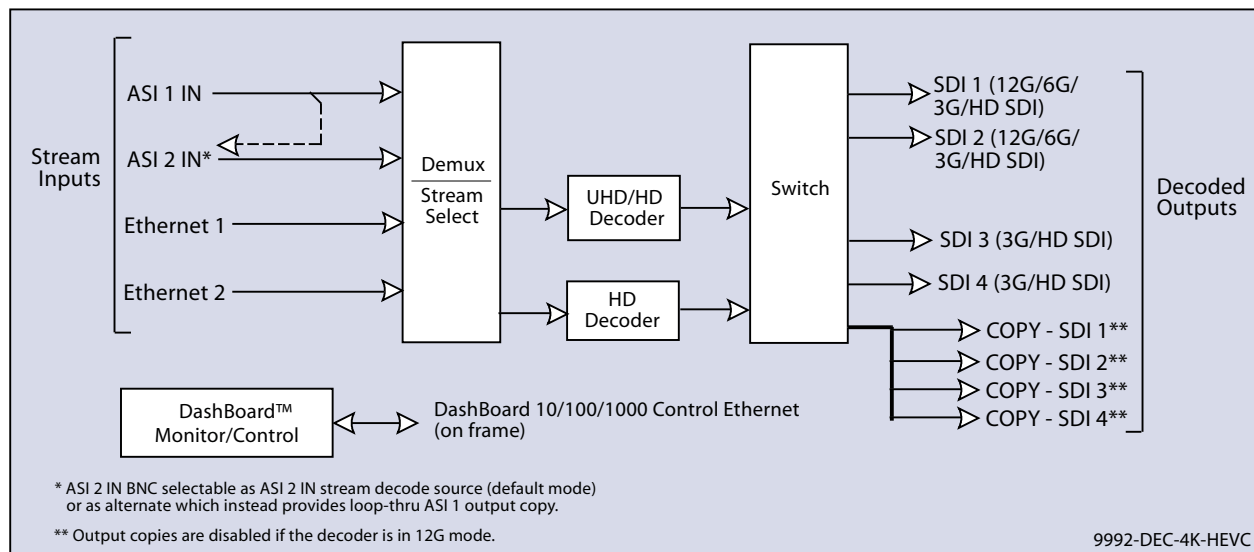
Full ancillary data support

Support for 4 stereo pairs (8 audio channels) in any combination of MPEG-1 Layer II, AAC-LC, and HE-AAC (v1/v2) modes

Supports UDP, RTP, HLS, and RTMP (Client mode). Other protocols available as options.

Remote control/monitoring via Dashboard™ software

Five-year warranty



## SOFTWARE LICENSABLE OPTIONS

**+DEC-2.0** Dolby Digital/Dolby Digital Plus stereo audio decoding license

**+DEC-5.1** Dolby Digital/Dolby Digital Plus 5.1 Surround Sound audio decoding license

**+MP1L2-AAC-DEC** MPEG-1 Layer II, AAC-LC, and HE-AAC audio decoding per pair. Three AAC licenses can be combined to allow one 5.1 surround decode.

**+FEC** Add SMPTE-2022 support (per unit)

**+422** 4:2:2 decoding support (per unit)

**+RIST/ARQ-DEC** RIST RTP/ARQ support (per unit)

**+DEC-RTMP-SVR** RTMP Server Mode software option

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## HARDWARE OPTIONAL FEATURES (Factory-installed on new product)

-9992DEC-IP-2110 SMPTE-2110 input / output module expansion (Future release availability)

-9992DEC-AUD Additional audio processor module equipped with a full set of MPEG-1 Layer II and AAC licenses (Future release availability)

## SPECIFICATIONS

### Inputs

- (2) DVB-ASI inputs
- (2) Gigabit Ethernet ports for IP input, supporting the following protocols:
  - UDP unicast/multicast
  - RTP unicast/multicast with optional SMPTE-2022 FEC
  - HTTP Live Streaming
  - RTMP (Server or Client; limited to H.264 only)
  - RIST for contribution over the Internet

Optional SMPTE-2110 baseband video over IP turnaround\*

\* Future release availability

### Outputs

- (2) SDI outputs each supporting 12G-SDI, 3G-SDI, HD-SDI and SD-SDI
  - (2) SDI outputs each supporting 3G-SDI, HD-SDI and SD-SDI
- Support for all standard frame rates (interlaced and progressive): 23.98, 24, 25, 29.97, 30, 50, 59.94, 60

### Video Post-Processing

- Support for up/down/cross conversion of output video (independent of incoming stream)\*
  - Conversion between interlaced and progressive
  - Frame rate conversion
  - High Dynamic Range (HDR) support\*
  - Built-in Genlock support
- \* Future release availability

### Video Decoding

- Decoding Standards:
  - MPEG-2
  - MPEG-4 AVC (H.264)
  - HEVC (H.265)
- Support for two independent 1080p60 decode sessions
- Support for UHD decoding in AVC and HEVC modes (Maximum resolution 3840x2160p60)
- Support for 4:2:0 and 4:2:2 (option) color spaces in all modes
- Support for 8-bit / 10-bit decoding in all modes
- Low latency decoding supported

### Audio Decoding

- Decoding Standards:
    - MPEG-1 Layer II
    - AAC-LC
    - HE-AAC (v1/v2)
    - Dolby AC-3 / EAC-3
    - LPCM (SMPTE-302M)
    - Dolby AC-3/EAC-3 pass-thru support
  - (5.1-Surround decoding available for AAC-LC, HE-AAC, Dolby AC-3 and Dolby EAC-3; subject to licensing)
  - Maximum number of channels supported (subject to licensing):
    - MPEG-1 Layer II: 16 stereo pairs (32 audio channels)
    - Dolby AC-3: 16 stereo pairs (32 audio channels)
    - Dolby EAC-3: 8 stereo pairs (16 audio channels)
    - AAC-LC: 8 stereo pairs (16 audio channels)
    - HE-AAC (v1/v2) 8 stereo pairs (16 audio channels)
  - Optional support for 5.1 Surround Sound decoding, in AAC and Dolby modes.
  - Optional audio module: increases the capacity to 32 stereo pairs (64 audio channels), allowing full 16-channel support for the four HD inputs, in all compression modes\*
- \* Future release availability

### Ancillary Data Support

- Closed-Captioning: SMPTE-334M (EIA-608 and EIA-708 supported), Line 21 (SD sources)
  - OP-47/SMPTE RDD-08 teletext subtitles\*
  - AFD: SMPTE-2016, Line 20/22 WSS (SD sources)
  - SCTE-35 to SCTE-104 conversion
  - SMPTE-2038 generic ancillary data transport (timecode, KLV, etc.)
- \* Future release availability

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**BASE MODEL ORDERING INFORMATION**

**Note:** For Software Options and Upgrades, as well as Hardware Options, please see the respective Options sections listed above.

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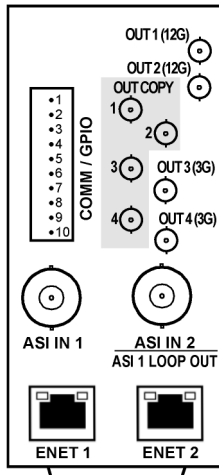
**RM20-9992-DEC-B** 20-Slot Frame Rear I/O Module (Standard-Width) (2) ASI Input BNCs, (2) GigE Ethernet Media Ports, (2) 12G/6G/3G/HD-SD-SDI Coaxial Outputs, (2) 3G/HD/SD-SDI Coaxial Outputs, (4) Output Copy Coaxial Outputs, COMM/GPIO Port (All SDI coaxial connectors HD-BNC. See Notes in illustration regarding port functions and limitations.)

- 1 - GPI 1
- 2 - GPI 2
- 3 - GPO 1
- 4 - GPO 2
- 5 - GPO COM
- 6 - GND
- 7 - RS232-A RX / 422 RX(-)
- 8 - RS232-B RX / 422 RX(+)
- 9 - RS232-A TX / 422 TX(-)
- 10 - RS232-B TX / 422 TX(+)

**Note:** Output ports marked as "(12G)" can output 12G and lower SDI media.  
Output ports marked as "(3G)" are compatible only with 3G or lower SDI media.

**Note:** ASI IN 2 BNC can be DashBoard selected to function as an ASI copy of ASI IN 1.

**Note:** OUT COPY ports are disabled when card is in 12G mode.



**RM20-9992-DEC-B-HDBNC**