9992-2DEC • Dual Upgradeable AVC / MPEG-2 Software Defined Broadcast Decoder

The Cobalt® **9992-2DEC Dual Upgradeable AVC/MPEG-2 Software Defined Broadcast Decoder** is a broadcast-grade multi-standard decoder designed to meet the most stringent requirements for today's broadcasters. It supports two channels of MPEG-2 and AVC (H.264) decoding, with resolution optionally up to 4K over a single channel, and offers a full complement of audio decoding capabilities. The 9992-2DEC 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 9992-2DEC Decoder supports MPEG-2, MPEG-4 AVC (H.264) and (optionally) HEVC (H.265), so it can be deployed today and upgraded as your needs change.

Industry Standard Form-Factor — The 9992-2DEC is offered in the industry-standard openGear format, and is compatible with existing deployed openGear frames.

High Density — The 9992-2DEC supports two independent 1080p60 input streams, or (optionally) a single UHD 4Kp60 input stream. One openGear frame can support up to 10 cards, for a total of 20 HD channels standard, or optionally 10 UHD 4K channels.

Full Audio Support — The 9992-2DEC 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 —

Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p

Support for two decode channels up to 1080p60

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

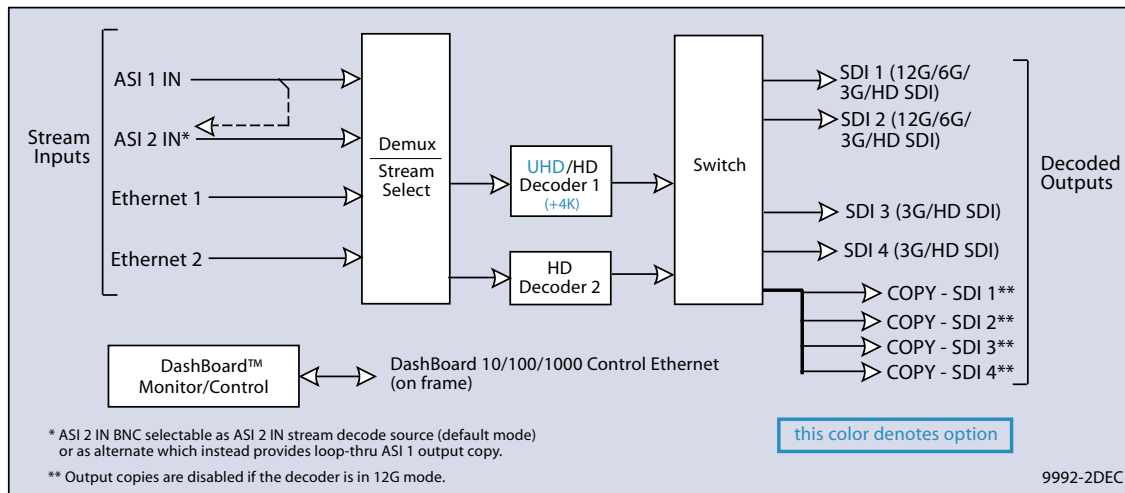Support for 4:2:0 8-bit/10-bit decoding

Full ancillary data support

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

Supports UDP and RTP. Other protocols available as options.

Remote control/monitoring via Dashboard™ software

Hot-swappable

Five-year warranty

openGear

* ASI 2 IN BNC selectable as ASI 2 IN stream decode source (default mode) or as alternate which instead provides loop-thru ASI 1 output copy.

** Output copies are disabled if the decoder is in 12G mode.

SOFTWARE LICENSABLE OPTIONS

+HEVC-DEC Enables HEVC decoding on one AVC encode engine (up to 2 licenses max per unit).

+4K-DEC 4K support. Requires +HEVC-DEC license on card.

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

+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

+DEC-E Dolby E audio decoding license

+GENLOCK Add Genlock support (license is **per channel**)

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

+DEC-RTMP-SVR   RTMP Server License Option

+SRT-DEC   SRT Support (per unit) Option

+TSMON – Adds continuous monitoring of current transport stream being decoded. Provides a list of all PIDs available in the transport stream, their current individual bit rates, and keeps numerical track of any continuity counter errors. Can also be configured to watch up to 8 PIDs and issue an alarm if PID disappears for a configurable amount of time. (If SNMP is available, this alarm is also provided as a trap.) (License is **per channel**)

+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.

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

+RIST/ENCRP-DEC   RIST Encryption/Authentication Support (per unit). (Requires the +RIST/ARQ-DEC license to also be present on the decoder.)

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
 - 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
 * Future release availability

Video Decoding
Decoding Standards:
 - MPEG-2
 - MPEG-4 AVC (H.264)
 - HEVC (H.265) (Option)
Support for up to two independent 1080p60 decode sessions
Support for UHD decoding (option) 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 audio 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

ORDERING INFORMATION

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

9992-2DEC Dual Upgradeable AVC / MPEG-2 Software Defined Broadcast Decoder (includes (2) +AVC and (4) +MP1L2-AAC licenses)

Option Licenses:

+HEVC-DEC Enable HEVC decoding on one AVC encode engine (up to 2 licenses max per unit).

+4K-DEC Add 4K support. Requires +HEVC-DEC license on card.

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

+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

+DEC-E Dolby E audio decoding license

+SRT-DEC SRT Support license

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

+DEC-RTMP-SVR   RTMP Server License Option

+TSMON – Adds transport stream continuous monitoring

+GENLOCK Add Genlock support (license is per channel)

+MP1L2-AAC-DEC MPEG-1 Layer II, AAC-LC, and HE-AAC audio decoding per pair

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

+RIST/ENCRP-DEC Add RIST Encryption/Authentication Support (per unit). (Requires the +RIST/ARQ-DEC license to also be present on the decoder.)
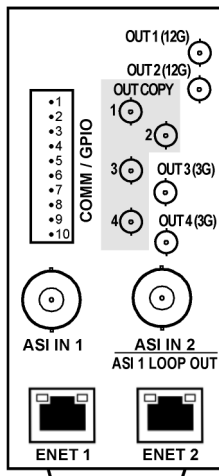
Rear I/O Modules:

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.

OUT 1 (12G)
OUT 2 (12G)
OUT COPY
1
2
3   OUT 3 (3G)
4   OUT 4 (3G)
COMM / GPIO
ASI IN 1
ASI IN 2
ASI 1 LOOP OUT
ENET 1
ENET 2

RM20-9992-DEC-B-HDBNC