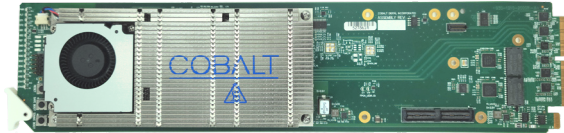


# PACIFIC ULL-DEC • HEVC Upgradeable AVC / MPEG-2 Software Defined Broadcast Decoder



The Cobalt® **PACIFIC ULL-DEC HEVC Upgradeable AVC/MPEG-2 Software Defined Broadcast Decoder** is a professional multi-standard decoder designed to meet the most stringent requirements for today's broadcasters. It supports MPEG-2 and AVC (H.264) (4K support available), as well as offering a full complement of audio decoding capabilities. The PACIFIC ULL-DEC is an industry standard openGear® card and provides an ideal platform for transitioning to state-of-the-art decoding capabilities.

## FEATURES

**Future-Proof** – The PACIFIC ULL-DEC 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 PACIFIC ULL-DEC is offered in the industry-standard openGear® format and is compatible with existing deployed openGear® frames.

**High Density** – The Pacific ULL-DEC supports one input stream up to 1080p60 (two independent streams with +AVC option), or (optionally) 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.

**Full Audio Support** – The PACIFIC ULL-DEC supports decoding of MPEG-1 Layers I/II/III, AAC-LC, HE-AAC, SMPTE 302M LPCM, as well as Dolby AC-3/ EAC-3/AC-4 pass-through.

**Ultra Low Latency:** Under 5ms of latency for suitable streams.

### Base Unit Features –

Support for decode up to 1080p60

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

Support for 4:2:0 8-bit/10-bit decoding (\*MPEG-2 does not support 10-bit)

Supports ASI, UDP and RTP. Other protocols available as options.

Extensive ancillary data support

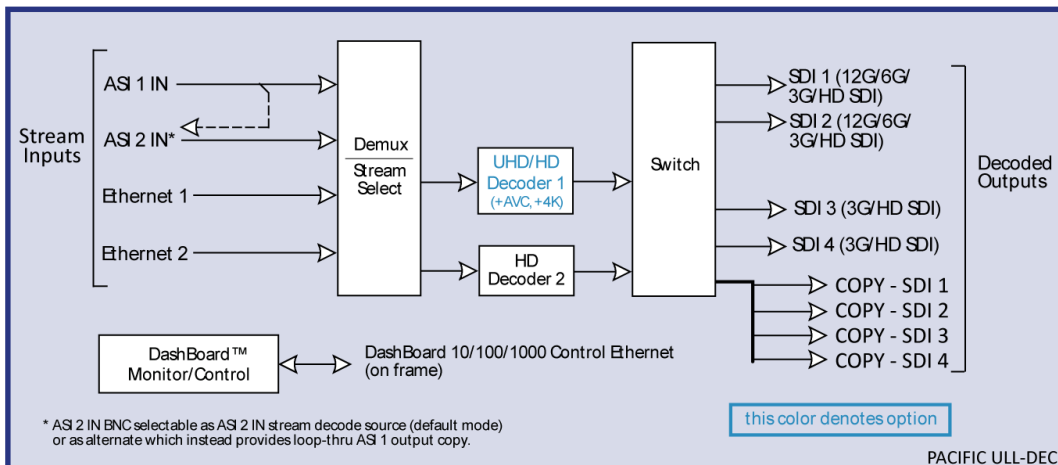
Support for 4 stereo pairs (8 audio channels) in any combination of channels of MPEG-1 Layer II, AAC-LC, and HE-AAC (v1/v2) modes

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

Remote control/monitoring via Dashboard™ software

Hot-swappable

Five-year warranty



\* 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.

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## 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
  - RTMP Client
  - RTMP Server (requires optional license)
  - RTSP Client
  - HTTP Live Streaming\*
  - RIST for contribution over the Internet (requires optional license)
  - SRT for legacy contribution over the Internet (requires optional license)
- 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

### Video Decoding

- Decoding Standards:
  - MPEG -2
  - MPEG-4 AVC (H.264)
  - HEVC (H.265) (Option)
- Support for one 1080p60 decode session (dual 1080p60 decode session support optional)
- 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 \*10-bit not available in MPEG-2
- Ultra Low latency decoding

### Audio Decoding

- Decoding Standards:
  - MPEG-1 Layers I/II/III
  - AAC-LC
  - HE-AAC (v1/v2)
  - LPCM (SMPTE-302M)
  - Dolby AC-3/EAC-3/AC-4 pass-thru support
    - (5.1-Surround decoding available for AAC-LC, HE-AAC ; subject to licensing)
  - Maximum number of channels supported (subject to licensing)
  - MPEG-1 Layers I/II/III: 16 stereo pairs (32 audio channels)
  - AAC-LC: 8 stereo pairs (16 channels or an equivalent number of surround channels)
  - HE-AAC (v1/v2) 8 stereo pairs (16 channels or an equivalent number of surround channels)
  - Optional support for 5.1 Surround Sound decoding, in AAC mode

### Ancillary Data Support

- Closed-Captioning: SMPTE-334M (EIA-608 and EIA-708 supported), Line 21 (SD signals)
- OP-47/SMPTE RDD-08 teletext subtitles
- AFD: SMPTE-2016
- SCTE-35 to SCTE-104 conversion
- SMPTE-2038 generic ancillary data transport (timecode, KLV, etc.)
- SMPTE-2108 HDR Metadata

# PACIFIC ULL-DEC • HEVC Upgradeable AVC / MPEG-2 Software Defined Broadcast Decoder

## ORDERING INFORMATION

**Note:** For Software Options and Upgrades, please see the respective Options sections listed below.

The PACIFIC ULL-DEC Single-channel HEVC Upgradeable AVC / MPEG-2 Software Defined Broadcast Decoder (includes (1) +AVC and (2) +MP1L2-AAC licenses)

## SOFTWARE OPTION LICENSES

- +HEVC-DEC** Enable HEVC decoding on one AVC encode engine (up to 2 licenses max per unit)
- +AVC-DEC** Additional 1080p60 decoder channel with MPEG-2, MPEG-4 AVC, HEVC (up to one additional channel, for a total of 2 channels per unit)
- +4K-DEC** Add 4K support. Requires +AVC-DEC and +HEVC-DEC license on card
- +422** Add 4:2:2 decoding support (per unit)
- +SRT-DEC** SRT Support license
- +DEC-RTMP-SVR** RTMP Server License Option
- +FEC-DEC** Add SMPTE-2022 support (per unit)
- +IP-OUT** Add ASI-to-IP conversion option (If host card has +FEC-DEC license, card will also be able to generate FEC on the output stream)
- +TSMON** Add transport stream continuous monitoring (per channel)
- +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 Module: RM20-ULL-DEC-A

20-Slot Frame Rear I/O Module (Standard-Width) (2) ASI Inputs, (2) GigE Ethernet Media Ports, (4) 12G/6G/3G/HD-SD-SDI Coaxial Outputs, (4) Output Copy Coaxial Outputs (All SDI coaxial connectors HD-BNC)

