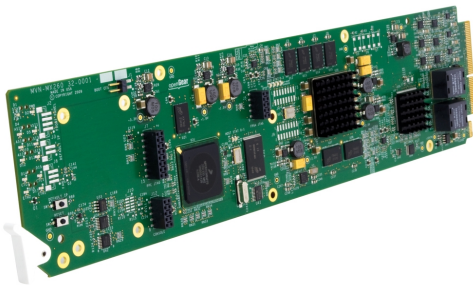


# 9990-DEC-MPEG • MPEG4 AVC and MPEG2 Decoder with ASI and IP Inputs and SDI Outputs



The Cobalt® **9990-DEC-MPEG MPEG4 AVC and MPEG2 Decoder** with ASI and IP Inputs and SDI Outputs provides a high performance real-time MPEG-2 and MPEG-4 SD and HD video decoding openGear® solution. Its design is practically future-proof and decodes traditional video formats such as UDP and RTP (MPEG Transport Stream) as well as Internet and Mobile formats such as RTMP (Adobe® Flash) and HLS (Apple® HTTP Live Streaming).

The 9990-DEC-MPEG supports newer cameras that output RTMP and security cameras that output RTSP. Its high-density, low power design saves on operating expenses, with up to 10 cards installed in a 20-slot openGear® frame.

IP and DVB-ASI input streams are supported, with outputs as ASI, DVB-ASI, SDI, and CVBS (for SD streams) using MPEG4 AVC or MPEG2 decoding. The 9990-DEC-MPEG can decode from several audio codecs and provides Dolby® pass-thru. SMPTE-2038 processing allows de-embedding SMPTE-2038 generic ancillary data packets.

Full user DashBoard™ remote control allows full status and control access locally or across a standard Ethernet network. A complete SNMP MIB is also included.

## FEATURES

Comprehensive MPEG decoding solution – MPEG4 AVC and MPEG2 to ASI, SDI, and CVBS with built-in audio codecs. Up to two DA SDI BNC outputs. Convenience IP output also.

IP reception of unicast or multicast

DVB-ASI Turnaround to IP and ASI with SPTS Splitting

MPEG-1 Layer II, AAC-LC, AAC-HE, E-AC-3 and AC-3 audio codecs standard (Dolby pass-thru; Dolby decode option available)

Supports RTMP and RTSP sources

SMPTE-2038 processing allows de-embedding of SMPTE-2038 generic ancillary data packets

Support for RTP/ARQ interoperability with **+RTP/ARQ** Cobalt Encoder option. (Decoder **+ARQ** license included standard.)

Support for selecting desired video PID in multi-angle streams

Several options available for scalable configuring  
SNMP MIB included

Low-power/high-density design

Remote control/monitoring via Dashboard™ software

Hot-swappable

Five year warranty

## OPTIONS

Dolby® Decode License (**+DEC-DDEC**) – Allows Dolby audio to be decoded as SDI embedded PCM audio or analog audio output

SMPTE 2022 Forward Error Correction License (**+FEC-DEC**)

Automatic Repeat Request, Error Correction Assigned For Live Video Over IP / Internet Based on the Reliable Internet Streaming Transport (RIST) Standard. (**+RIST/ARQ-DEC**)

Genlock License (**+GENLOCK**)

RTMP Server License Option (**+DEC-RTMP-SVR**)

SRT Support Option (per unit) (**+SRT-DEC**)

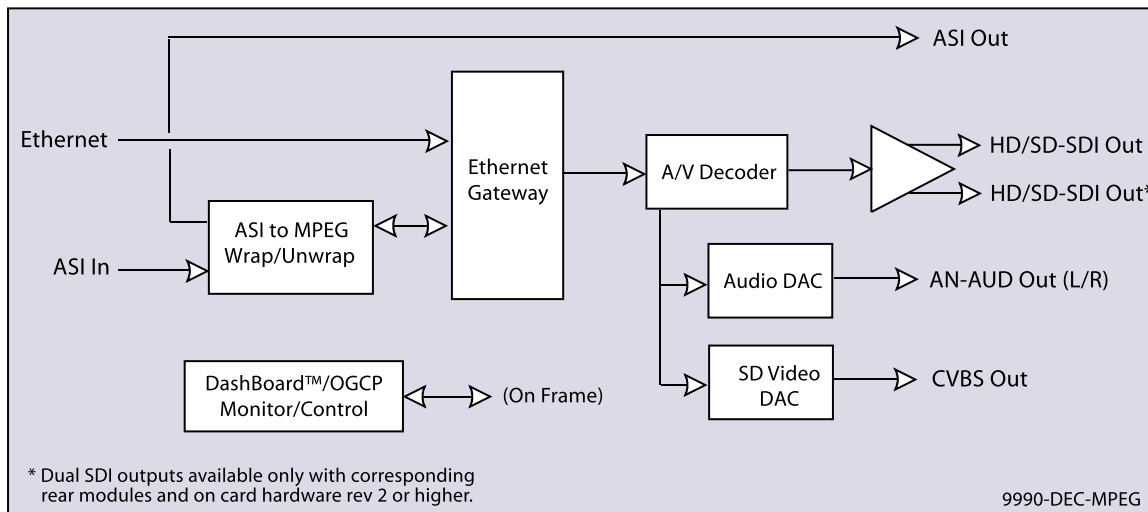
IP IN License (**+IP-IN**) – Enables IP Port and IP Protocols for IP-to-SDI conversion

Monitoring License (**+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.)

RTMP Server License Option (**+DEC-RTMP-SVR**)

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

IP Out License (**+IP-OUT**) – ASI-to-IP conversion option (If host card has **+FEC-DEC** license, card will also be able to generate FEC on the output stream)



9990-DEC-MPEG



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## SPECIFICATIONS

Note: Inputs/outputs are a function in some cases of rear I/O module used.

### Power

< 8 Watts

### Inputs

(1) DVB-ASI 75Ω BNC  
 (1) IP; 1000Base-T RJ-45  
 Gen lock (from frame ref 1/2)

### Outputs

Up to (2) HD/SD-SDI 75Ω BNC (4:2:2 10-bit; dual SDI outputs available only on Rev 2 or higher hardware)  
 (1) CVBS 75Ω BNC  
 (1) DVB-ASI 75Ω BNC  
 (1) HDMI  
 (2) Analog Audio Out L/R (balanced 3-pin terminals or unbal RCA depending on rear module used)

### Network Transport Protocols

UPD (Unicast or Multicast)  
 RTP (Unicast or Multicast)  
 RTMP (Adobe Flash)  
 RTSP (Security Camera)  
 SMPTE 2022 Pro-MPEG-FEC  
 ARQ  
 HTTP Live Streaming (HLS) client

### Video Resolution

3G:  
 1920 x 1080p - 50/59.94/60  
 HD:  
 1920 x 1080i - 50/59.94/60  
 720 x 1280p - 50/59.94  
 SD:  
 480 x 720 - 29.97  
 576 x 720 - 25

### Video Codec Supported

MPEG-2  
 H.264 4:2:0 High Profile

### Audio Codec Supported/Processing

MPEG-1 Layer 2 (mp2)  
 AAC-LC  
 HE-AAC  
 AC-3, E-AC-3 (Dolby® pass-thru)

## ORDERING INFORMATION

**9990-DEC-MPEG** MPEG4 AVC and MPEG2 Decoder with ASI and IP Inputs and SDI Outputs

**RM20-9990DEC-B** 20-Slot Frame Rear I/O Module (Standard Width) (1) RJ-45 Ethernet connector, (1) ASI Input BNC, (1) ASI Output BNC, (1) 3G/HD/SD-SDI Output BNC, (1) CVBS Output BNC, (1) HDMI Output, (2) Balanced Analog Audio Outputs

**RM20-9990DEC-C** 20-Slot Frame Rear I/O Module (Standard Width) (1) RJ-45 Ethernet connector, (1) ASI Input BNC, (1) ASI Output BNC, (1) 3G/HD/SD-SDI Output BNC, (1) CVBS Output BNC, (1) HDMI Output, (2) Unbalanced Analog Audio Outputs (RCA)

**RM20-9990DEC-D** 20-Slot Frame Rear I/O Module (Standard Width) (1) RJ-45 Ethernet connector, (1) ASI Input BNC, (1) ASI Output BNC, (2) 3G/HD/SD-SDI Output BNC, (1) CVBS Output BNC, (2) Balanced Analog Audio Outputs (RM20-9990DEC-D compatible only with rev 2 or higher card hardware)

**RM20-9990DEC-E** 20-Slot Frame Rear I/O Module (Standard Width) (1) RJ-45 Ethernet connector, (1) ASI Input BNC, (1) ASI Output BNC, (2) 3G/HD/SD-SDI Output BNC, (1) CVBS Output BNC, (2) Unbalanced Analog Audio Outputs (RCA) (RM20-9990DEC-E compatible only with rev 2 or higher card hardware)

**+DEC-DDEC** Dolby® Decode License Option

**+FEC-DEC** SMPTE 2022 Forward Error Correction License Option

**+GENLOCK** Genlock License Option

**+DEC-RTMP-SVR** RTMP Server License Option

**+IP-IN** IP iN License Option

**+IP-OUT** ASI-to-IP Conversion License Option

**+TSMON** Monitoring License Option

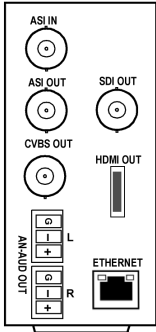
**+SRT-DEC** SRT Support Option

**+DEC-RTMP-SVR** RTMP Server License Option

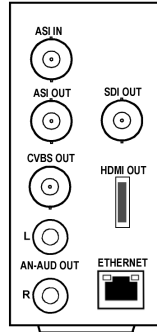
**+RIST/ARQ-DEC** Automatic Repeat Request License, Error Correction Assigned For Live Video Over IP / Internet Based on the Reliable Internet Streaming Transport (RIST) Standard

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

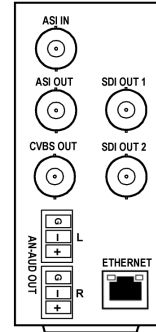
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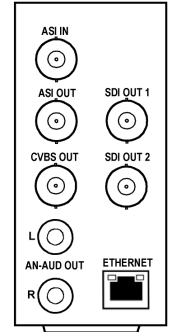
**RM20-9990DEC-B**



**RM20-9990DEC-C**



**RM20-9990DEC-D**



**RM20-9990DEC-E**