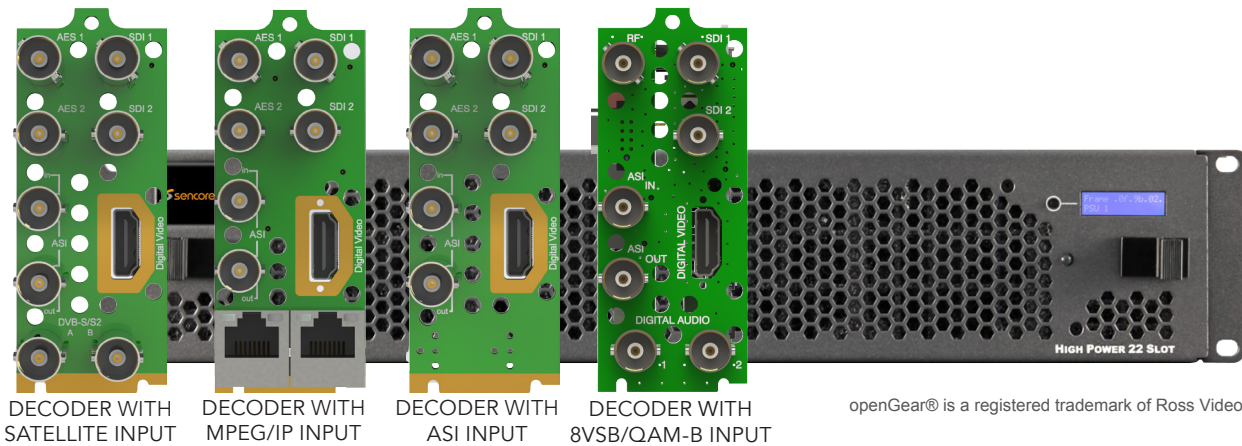


Receiver Decoder Card

AG 4400 openGear® Module



OVERVIEW

The new AG 4400 card-based receiver decoder provides an ideal solution for high-quality video decoding where rack space is at a premium. The platform supports up to 10 H.264/MPEG2 decoder cards in a 2RU OG-3 frame.

The product supports decoding MPEG2 or H.264 video, as well as up to four audio PIDs. The audio decoding capability is the perfect solution for video distributors looking to meet upcoming descriptive video requirements, while continuing to support surround, stereo, and SAP services.

The AG 4400 receiver decoder card offers satellite, IP, ASI, and 8VSB/QAM-B and DVB-T/T2/C/C2/ISDB-T inputs for flexible installation into a variety of video delivery systems. Optional integrated DVB-CI descrambling, as well as BISS-1/E capabilities, makes the AG 4400 a powerful solution for receiving feeds from primary distribution.

When combined with versatile IP input/output capabilities, a full complement of ancillary data support, and tested interoperability with all major encode vendors, the AG 4400 is an ideal solution for high-density re-encode or monitoring.

In addition, the decoder benefits from Sencore's tradition of receiver decoder design and is backed by best-in-class ProCare support.

KEY FEATURES

- Intuitive, straightforward web interface
- Extensive automation support via SNMP status, configuration, and traps, HTTP-based APIs, and Syslog
- Shared software and feature-set with Sencore 1RU decoders ensure reliability and interoperability
- Support for All Common Video Formats
 - √ MPEG2 or H.264, HD or SD video
 - √ Codecs auto-detected and switchable on-the-fly
- Up to 4 services of audio decoding or SDI pass-through with support for all major audio formats
- Dual SDI auto-switching outputs
- Built-in ASI I/O for maximum value and flexibility
- Available IP, 8VSB/QAM-B, DVB-T/T2/C/C2/ISDB-T and satellite inputs
- Full complement of ancillary data output in ANC and VBI
- Closed-caption or auto-scaling subtitle overlays for monitoring or burn-in applications
- Full control, status, and alarm monitoring via SNMP

APPLICATIONS

- **Monitor Multi-channel Distribution Installations**
Create a real-time monitoring system to feed an SDI matrix or power a multi-viewer with minimal rack-space and power consumption. Time-tested, professional grade decode engine handles any video feed.
- **Decode Multiple Channels for Re-encoding**
Reduce the footprint of existing decode/re-encode infrastructure without reinventing the entire system. Redundant SDI outputs with a full complement of ancillary data interoperate with any encoder.

SPECIFICATIONS

Receiver Decoder Card AG 4400

AVAILABLE VIDEO DECODER MODULES

AG 44021 ASI I/O, SDI Outputs, Discrete Audio, Genlock Support
 AG 44020 ASI, SDI Outputs, Discrete Audio

COMMON VIDEO DECODER FEATURES

Base Decoding (SD 4:2:0)
 Additional Profile/Levels: MPEG2 MP@ML
 H.264 up to MP@L3

HD Decoding License AG 44710
 Additional Profile/Levels: MPEG2 MP@HL
 H.264 up to HP@L4.2

Additional Base Video Features
 Frame Synchronization Modes: PCR-Recovered Clock
 Genlock Reference (AG 44021 Only)

Aspect Ratio Conversion
 Manual Selection: Letterbox, Center-Cut, Anamorphic
 Automatic Selection: Follows AFD Codes

Output Formats: 1920x1080i @ 25, 29.97, 30
 1920x1080p @ 23.97, 24, 25, 29.97, 30
 1280x720p @ 50, 59.94, 60
 720x576i @ 25
 720x480i @ 29.97

Output Interfaces:
 SD/HD-SDI: 2x 75Ω BNC
 Digital Video: 1x HDMI-type Connector

Video Overlay Support
 Closed Caption Overlays: CEA-608, CEA-708, or SCTE-20
 DVB-Subtitle Overlays: HD/SD with Auto Scaling (EN 300743)

Base Audio Decoding Features
 Number of Audio PIDs: 2 Standard, Up to 4 Available
 Audio Codecs Supported: Dolby Digital (AC-3) & Plus (EAC-3)
 AAC-LC, HE-AAC, & HE-AACv2
 MPEG-1L2 & MPEG2L2
 Linear PCM & Dolby E (Pass-through)
 Digital Pass-through
 Output Formats: PCM (Downmixed for 5.1 Sources)
 Analog (Downmixed for 5.1 Sources)
 Audio Delay/Advance: Per Service, +100/-35 ms

4 Service Audio Decode License AG 44840
 Additional Audio PIDs: 2 PIDs (Total of 4 PIDs)

Discrete Channel Audio Output License AG 44851
 For 5.1 Sources: Output Individual Channel Pairs

Base Audio Output Features
 AES Outputs: 2x 75Ω BNC
 SDI Embedded Audio Output: 4 Audio Pairs

Ancillary Data Support
 SDI ANC Data Types: AFD (SMPTE 2016)
 Closed Captions (CEA-708)
 OP-47 (SMPTE RDD-08)
 SMPTE RDD-11
 VANC Passthrough (SMPTE 2038)
 SCTE 127 (SMPTE 2031)
 EN301775 (SMPTE 2031)
 Time Code (SMPTE 12M-2)
 VBI Waveforms (SDI/Composite): Line 21 Captions (CEA-608)
 TVG2X, AMOL-48/96 (SCTE-127)
 Teletext/WSS/VPS (EN301775)
 Timecode in VBI (SMPTE 12M-1)⁵

COMMON VIDEO DECODER FEATURES, CONTINUED

SCTE 35 to SCTE 104 Output License AG 44992
Cablelabs ESAM POIS Interface License AG 44993

Included Transport Stream Input/Output Features
 ASI Input/Output: 1x In, 1x Out - 75Ω BNC
 Supported Bitrate: 250 Kbps to 200 Mbps

BISS Descrambling License AG 44921
 Supported Modes: Mode 1, Mode E, Injected ID
 Multi-BISS Support: Up to 12 Separate Keys

PID/Service Filtering License AG 44928
 Filtering: 10 Independent TS (MPTS or SPTS
 created; output via IP or ASI)

Table Regeneration (DVB Mode): PAT regeneration
 Table Pass-through (DVB Mode): PMT, CAT, NIT pass-through Table
 Regeneration (DVB Mode): PAT, SDT
 Table Pass-through (DVB Mode): PMT, CAT, NIT, EIT, RST, TDT, TOT

DVB-S/S2 INPUT MODULE AG 44116

Physical Interface: 2x 75Ω BNC
 Frequency Range: 950-2150 MHz
 Symbol Rates: 1-60 MSpS
 DVB-S Modulation Modes: QPSK (All FEC Rates)
 DVB-S2 Modulation Modes: QPSK/8PSK (All FEC Rates)
 16/32APSK with License
 Supported Roll-off Factors: 0.35, 0.25, 0.20, 0.15, 0.10, 0.05

DVB-S2 Advanced Feature License AG 44916
 Additional Modulation Modes: 16ASPK/32APSK (All FEC Rates)
 VCM, Multistream (Single ISI)

DVB-S/S2 INPUT MODULE WITH DVB-CI AG 44137

Physical Interface: Adds one DVB-CI CAM Slot
 Without Multi-Service License: Descrambles Decoded Service Only
 With Multi-Service License: Number of Services limited by CAM

DVB-CI Multi-Service Descrambling License AG 44991
 With DVB-CI Capable Input: Enables Multi-service Descrambling

8VSB/QAM-B INPUT MODULE AG 44101

Physical Interface: 1x 75Ω BNC
 Frequency Range: 50-1000 MHz
 Sensitivity: -34 to +40 dBmV (A74 Compliant)
 8VSB Standard: ATSC A/53E
 8VSB Channel Plans: Broadcast
 QAM Standard: ITU Annex B/SCTE DVS-031
 QAM Channel Plans: FCC, IRC, HRC
 QAM Constellations: QAM64, QAM256

IP INPUT/OUTPUT MODULE AG 44127

Physical Interface: 2x RJ45, 10/100/1000 Auto-Negotiate
 Input Format: UDP or RTP
 Constant Bitrate or Null-Stripped
 RTP Header Extensions Supported
 SMPTE 2022/CoP3 FEC Supported
 Output Format: UDP
 MPE De-encapsulation: Up to 2 PIDs
 Up to 60 Mbps per MPE PID

Addressing: Unicast or Multicast
 IGMP compatibility: Version 1, 2 & 3
 Per TS Bitrate: 250 Kbps to 200 Mbps

MPEG/IP FEC Output License AG 44925
 Additional Output Formats: RTP with SMPTE 2022/CoP3 FEC

SPECIFICATIONS

Receiver Decoder Card AG 4400

DVB-T/T2/C/C2/ISDB-T INPUT MODULE AG 44115

Physical Interface:	1x 75Ω BNC
Frequency Range:	42-1002 MHz
Bandwidth:	1.7MHz, 5 MHz, 6MHz, 7MHz, 8MHz
Constellations:	
DVB-T:	QPSK, QAM16, QAM64 (All FEC Rates)
DVB-T2:	QPSK, QAM16, QAM64, QAM256 (All FEC Rates)
DVB-C:	QAM16, QAM32, QAM64, QAM128, QAM256 (All FEC Rates)
DVB-C2:	QAM16, QAM64, QAM256, QAM1024, QAM4096 (All FEC Rates)
ISDB-T:	QPSK, QAM16, QAM64 (All FEC Rates)

MANAGEMENT

User Interfaces:	Full control via web GUI
Automation Interfaces:	SNMP status, control, traps Syslog alarm output HTTP Web services API Remote in-band control with CMD 4000

ENVIRONMENTAL CONDITIONS

Power:	100-240 VAC 50/60 Hz Dual, Redundant Supply Available
Operating Temp:	0° to 50°C