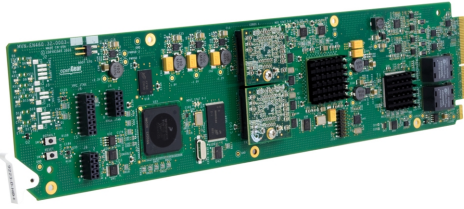


9223 • Dual-Channel 3G/HD/SD MPEG-4 Encoder



The 9223 provides a card-based solution for distribution of MPEG-4 encoding. Utilizing the openGear® open-architecture platform, the 9223 offers scalable incorporation and the easy-to-use DashBoard™ setup and control operator interface. Up to 10 of the 9223 cards can be installed in a 20-slot frame, offering distribution delivery of up to 20 individual or simulcast channels in a single frame, using less than 150W total, for reduced operating expenses..

The 9223 offers the latest advances in video compression that delivers excellent video quality at very low bit rates. Unique encoding designs allow delivery of multiple HD and SD video services simultaneously. In addition to SD/HD-SDI/3G-SDI inputs, the 9223 provides the flexibility of supporting SD analog composite video and one pair of analog stereo audio per channel (using MPEG-1 Layer II audio encoding as standard). The 9223 features two ASI outputs, as well as two simultaneous transport Ethernet outputs, supporting full-duplex 100 Mb/s and 1 Gb/s

operation. Input video auto-detect mode allows encoding to automatically configure an output that correspond to the input, with resolution and frame rate same as input, and scaling set to same as input or other applicable choices.

When using the Ethernet output, the 9223 supports the traditional UDP/RTP/SPMTE 2022 FEC protocols, as well as the HTTP Live Streaming protocol for transmitting live video over the Internet. Using HTTP Live Streaming, the 9223 can transmit broadcast-quality video to mobile phones (Apple and Android 4.0 supported), tablets, and a variety of consumer set-top boxes (such as the Amino A140 and the Roku Player). RTMP support allows direct publishing of real-time, live content to Adobe® Media Servers or any other servers, web sites and CDNs with RTMP ingress, such as Justin.tv, UStream, LiveStream and Akamai.

Publish professional-quality real-time SD/HD content to Internet viewers (including some critical features not available in PC-based software encoders) such as ancillary data support (closed-captioning, AFD) and SD-SDI/HD-SDI video inputs with embedded audio support - all in broadcast-grade video quality. Full user remote monitor/control allows full device status and control access across a standard Ethernet network.

Full user remote monitor/control allows full card status and control access across a standard Ethernet network. Status monitoring is also available at card edge.

FEATURES

Compact self-contained form with built-in AC power supply

Input video auto-detect mode automatically configures output to correspond to input frame rate and scaling

DVB-ASI and Ethernet outputs

Full support of CEA-608 and CEA-708 closed captioning and PMT information

License-based options allow tailoring functionality as needed, with upgrades available if later desired

Built-in video/audio ADC and embedder allows direct use with SD composite video and audio analog sources

Optional support for additional audio pairs per encoded output

Built-in Packet Test Generators allow pre-validation of transport

HTTP Live Streaming protocol allows viewing by Apple® and Android™ 3.0 (or higher) devices

SCTE 104 to SCTE 35 conversion

Multiple pre-defined control templates provide automatic setup of popular contribution-to-distribution schemes

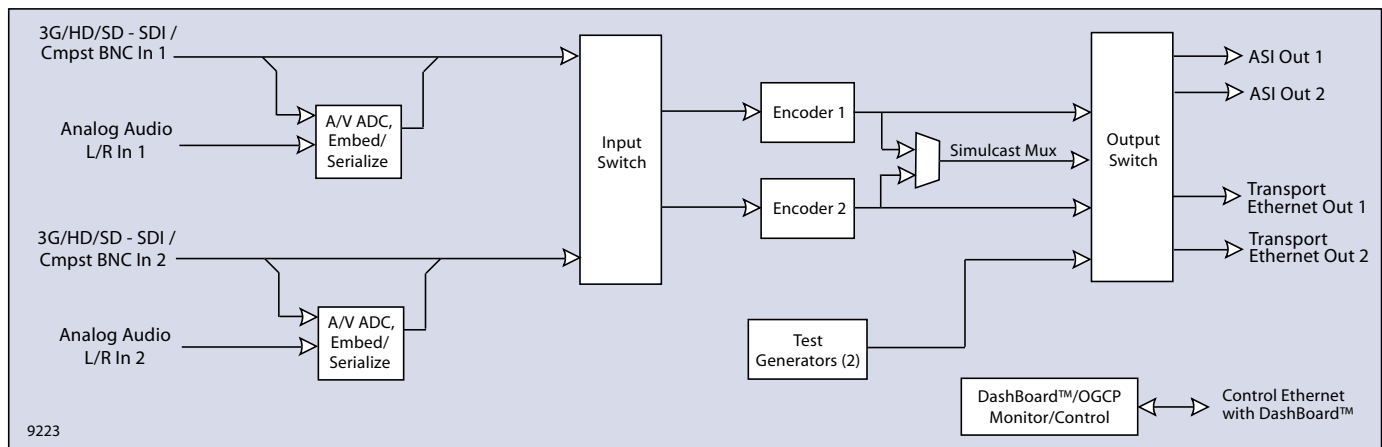
Ethernet remote control/monitoring via free DashBoard™ software

RTMP support for publishing to Adobe® Media Server, availing SDI content to Internet viewers

Five year warranty

OPTIONS

Please see Ordering Information



9223 • Dual-Channel 3G/HD/SD MPEG-4 Encoder

SPECIFICATIONS

Power

6W

3G/HD/SD-SDI Inputs

Number of inputs: 2, each configurable as:
 3G-SDI (SMPTE 424M)
 HD-SDI (SMPTE 292M)
 SD-SDI (SMPTE 259M) with EDH
 Composite analog video (PAL/NTSC)

Audio Inputs Supported

Embedded SDI, AC-3 (optional),
 Unbalanced stereo analog audio via RCA jacks

Video Encoding

Dual-channel HD Video:
 MPEG-4 AVC High profile at level 4.2 (HP@L4.2)
 MPEG-4 AVC High profile at level 4.0 (HP@L4.0)
 CBR & VBR
 2Mbps to 30Mbps (configurable)
 Dual channel SD Video:
 MPEG-4 AVC Main profile at level 3.0 (MP@L3.0)
 CBR & VBR
 1.5Mbps to 10 Mbps (configurable)

Audio Encoding

MPEG-1 layer II, up to 2 stereo pairs base (1 stereo pair base on single-channel models) Dolby®
 Digital AC 3 (optional)
 MPEG-4 AAC-LC up to 2 pairs
 MPEG-2(ADTS) & MPEG-4(LATM/LAOS encapsulation)
 Lip sync adjustment

Video Resolution Supported

HD: 1080 x 1920p 60/50
 1080 x 1920/1440i 25/29.97/30
 720 x 1280/960/640p 50/59.94
 SD: 576 x 720/528i 29.97fps
 576 x 720/528i 25fps

Video Pre-Processing

Advanced adaptive spatial filtering
 Closed Captions CEA 608B & CEA-708C
 WSS/AFD
 Teletext (WST system B)

ASI Outputs

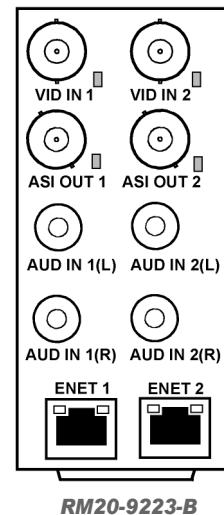
Number of outputs: 2, 75Ω BNC DVB-ASI
 213Mbit/s maximum ASI TS bit-rate per port

Ethernet

Number of control/monitor connections: 2, redundant 10/100Base-T RJ-45
 Number of transport outputs: 2, 100/1000Base-T RJ-45
 ports, auto-negotiate or fixed speed
 IPv4, IPv6, UDP & RTP
 SMPTE 2022 ProMPEG FEC CoP3, 'Forward Error
 Correction' (Row and Column)

Regulatory Compliance

CE: CE marked in accordance with 93/68/EEC
 (22/07/03) Directive
 UL: UL approval
 US FCC: Part 15
 EMC: EN55022, EN55024, EN6100-3-2



9223 • Dual-Channel 3G/HD/SD MPEG-4 Encoder

ORDERING INFORMATION

9223-D Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD

9223-D-HD-I Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080i

9223-D-HD-P Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080p

RM20-9223-B 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI/SD BNC Composite In, (2) DVB-ASI BNC Out, (4) Unbalanced Analog Audio RCA In, (2) 100/1000Base-T RJ-45 Ethernet

+SD-HD-I-SA Upgrade License; SD Channel to HD up to 1080i

+SD-HD-P-SA Upgrade License; SD Channel to HD up to 1080p

+HD-I-HD-P-SA Upgrade License; HD 1080i Channel to HD 1080p

+UP-AAC-SA AAC Audio License

+2A-SA Additional Audio Pair License

+SMPTE2022 SMPTE 2022 FEC License

TRAY 1 RU Rack Mount Tray (supports up to 3 modular chassis units)

Single-Channel Alternate Models and Add Channel Upgrade Licenses

9223-S Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD

9223-S-HD-I Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080i

9223-S-HD-P Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080p

+SD-SA Add Encoder Second Channel H.264 SD (applicable for single-channel unit 9223-S)

+HD-I-SA Add Encoder Second Channel H.264 SD/HD (up to 1080i) (applicable for single-channel unit 9223-S)

+HD-P-SA Add Encoder Second Channel H.264 SD/HD (up to 1080p) (applicable for single-channel unit 9223-S)

Note: The Upgrade, Audio, and SMPTE2022 licenses above are also available for single-channel alternate models.

Audio Capacity (Base and with Option Licenses +2A)

Single-Channel Encoders 9223-S		
Base	One +2A License	Two +2A Licenses
1 Stereo PID	2 Stereo PIDs	3 Stereo PIDs

Dual-Channel Encoders 9223-D		
Base	One +2A License	Two +2A Licenses
2 Stereo PIDs	3 Stereo PIDs*	4 Stereo PIDs**

* Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels.

** Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels as desired, also including configuring the device as single-channel with 4 total Stereo PIDs in one encoder channel.

Note: Maximum of two (2) +2A licenses can be added to single-channel (-S) or dual-channel (-D) encoders. For Dual-Channel Encoders, added +2A audio channels can be only be sourced from de-embedded SDI.