

9223-SA-S • Single-Channel 3G/HD/SD MPEG-4 Standalone Encoder Units



The **9223-SA-S** provides a compact form-factor standalone unit for distribution of MPEG-4 encoding. Utilizing the openGear® open-architecture control/monitoring platform, the 9223-SA-S can be remotely controlled and monitored with the free, easy-to-use DashBoard™ setup and control operator interface. (When connected to your network, the 9223-SA-S appears in DashBoard just like any other device.) The 9223-SA-S includes dual redundant 10/100/1000 Mb/s Ethernet ports for control.

The 9223-SA-S 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-SA-S 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-SA-S 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-SA-S 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-SA-S 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. SMPTE-2038 processing allows inserting generic ancillary data packets in the transport stream, with frame accuracy. Up to four DID/SDID pairs can be supported. Full user remote monitor/control allows full device status and control access across a standard Ethernet network.

9223-SA encoders are also available in dual encoding channel configuration (some 9223-SA models can be upgraded to dual-channel; see Options and Ordering Information). For 9223-SA dual-channel encoder models information, please see **9223-SA-D Dual-Channel 3G/HD/SD MPEG-4 Encoder Units** web page.

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. Closed-captioning filtering allows filtering to allow and use only SMPTE-334M and/or CEA-708 closed captioning.

SCTE 104 to SCTE 35 conversion

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

Support for inserting generic ancillary data packets in the transport stream using SMPTE-2038, with frame accuracy. Up to four DID/SDID pairs can be supported.

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

Optional RTP/ARQ support

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

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

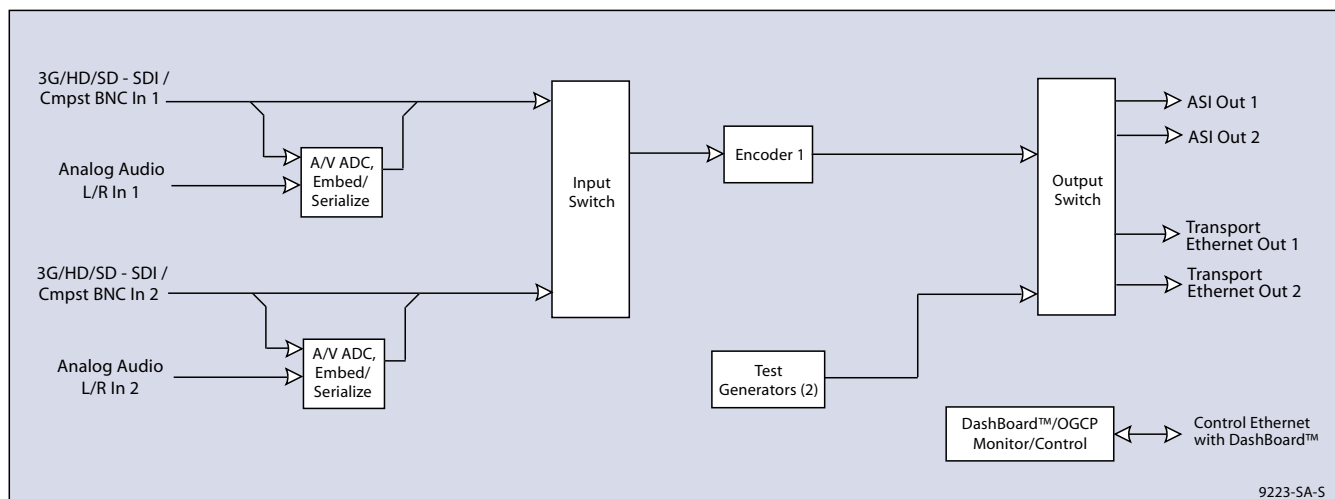
Ethernet remote control/monitoring via free DashBoard™ software

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

Five year warranty

OPTIONS

Please see Ordering Information



9223-SA-S



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SPECIFICATIONS

Power

100-250 VAC, 47-63 Hz, 15W

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)
 (2) L/R pairs (max) of analog audio embeds

Video Encoding

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)
 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 (Dolby® pass-thru)
 MPEG-4 AAC-LC up to 2 pairs
 MPEG-2(ADTS) & MPEG-4(LATM/LAOS encapsulation)
 Lip sync adjustment

Video Resolution Supported

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

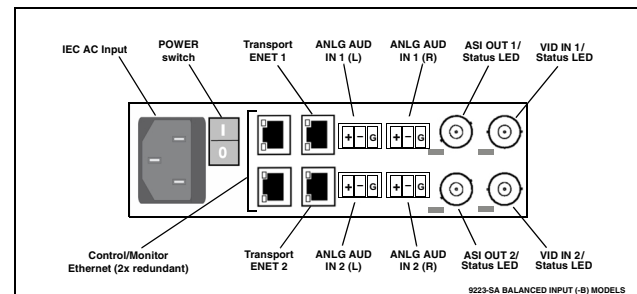
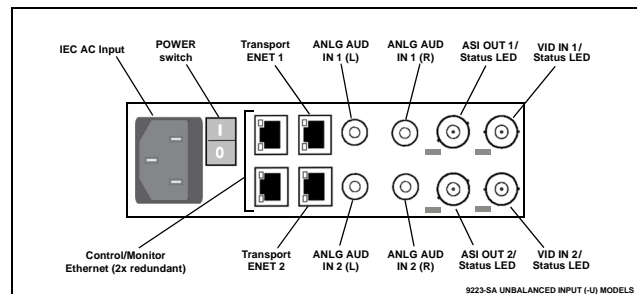
Number of control/monitor connections: 2, redundant 10/100Base-T RJ-45
 Number of transport outputs: 2, 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed
 IPv4, IPv6, UDP & RTP
 SMPTE 2022 ProMPEG FEC CoP3, 'Forward Error Correction' (Row and Column)

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

Physical

Dimensions (WxHxD): 5.8 x 1.8 x 14 in (14.7 x 4.6 x 35.6 cm) (including component projection)



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ORDERING INFORMATION

Note: All models are available with unbalanced (RCA) analog audio inputs or balanced 3-wire (Phoenix connector) analog audio inputs. Use -U suffix on part number for unbalanced-input unit (example: "9223-SA-S-U"). Use -B suffix on part number for balanced-input unit (example: "9223-SA-S-B").

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

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

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

9223-A8-SA-S Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD. Support for 4 audio pairs (8-ch).

9223-SA-A8-S-HD-I Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080i. Support for 4 audio pairs (8-ch).

9223-SA-A8-S-HD-P Single-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080p. Support for 4 audio pairs (8-ch).

Options and Accessories:

Note: - Although the -A8 versions support eight channels, encoding is not designed for phase coherency between PCM pairs (i.e., using six available channels to carry 5.1 PCM surround-sound).

- Add Encoder Second Channel options cannot be used with -A8 (8-channel audio) models.
- 9223-A8 models come standard with maximum audio channel capacity. +2A option cannot be added to these models.
- Unless indicated as program channel or audio channel pair license, licenses below are **device-based** licenses and require **only one license per unit**.
- RMTP and HLS modes can only use stereo encoding.
- Options denoted as "+" are software-based options which can be fitted on new product at ordering or field-installed as a software upload upgrade. Options denoted as "-" are hardware-based options which are factory-installed upon ordering, or factory-installed by returning fielded product to Cobalt for option installation.

-SD-HD-I-SA Upgrade License; Upgrade (1) SD Channel to HD up to 1080i

-SD-HD-P-SA Upgrade License; Upgrade (1) SD Channel to HD up to 1080p

-HD-I-HD-P-SA Upgrade License; Upgrade (1) HD 1080i Channel to HD 1080p

+UP-AAC AAC Audio License; Add (1) AAC-LC Stereo Channel

-SD-SA Add Encoder Second Channel H.264 SD

-HD-I-SA Add Encoder Second Channel H.264 SD/HD (up to 1080i)

-HD-P-SA Add Encoder Second Channel H.264 SD/HD (up to 1080p)

-PIP Encoder 2nd channel H.264 low resolution PIP option

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

+2A-SA Additional Audio Pair License

+SMPTE2022 SMPTE 2022 FEC License

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

– Audio Capacity (Base and with Audio Add Option Licenses +2A or +UP-AAC) –

Base – (1) standard MP1L2 encoding license on 1 PID

Add PIDs:

- Can have 2 audio PIDs total (1 additional +2A license or 1 additional +UP-AAC license).
- Can expand up to 4 audio PIDs with +PIP license (3 additional +2A and/or 2 additional +UP-AAC licenses)

Note: 9223-SA-A8 models come standard with 4 x MP1L2 stereo encoders for full eight channels of audio support in a single ordering option.