

## BBG-1123-ENC2 • Dual-Channel 3G/HD/SD MPEG-4 Standalone Encoder Units



The **BBG-1123-ENC2** provides a compact form-factor standalone unit for distribution of MPEG-4 encoding. Utilizing the openGear® open-architecture control/monitoring platform, the BBG-1123-ENC2 can be remotely controlled and monitored with the free, easy-to-use DashBoard™ setup and control operator interface. (When connected to your network, the BBG-1123-ENC2 appears in DashBoard just like any other device.) The BBG-1123-ENC2 includes dual redundant 10/100/1000 Mb/s Ethernet ports for control. Low-profile packaging fits 1 RU installations.

The BBG-1123-ENC2 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 two ASI outputs, the BBG-1123-ENC2 provides two 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 BBG-1123-ENC2 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 BBG-1123-ENC2 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.

BBG-1123-ENC encoders are also available in single encoding channel configuration. For BBG-1123-ENC single-channel encoder models information, please see **BBG-1123-ENC Single-Channel 3G/HD/SD MPEG-4 Encoder Units** web page.

### FEATURES

Compact self-contained form with built-in AC power supply. Up to 3 units can be installed in a 1RU tray.

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.

Optional RTP/ARQ support

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

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 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

Multi-angle support allows creation of transport streams with two synchronized video PIDs

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

Ethernet remote control/monitoring via free DashBoard™ software. Advanced front panel display/user interface allows initial and basic configuration setup without needing connection to external network or remote control.

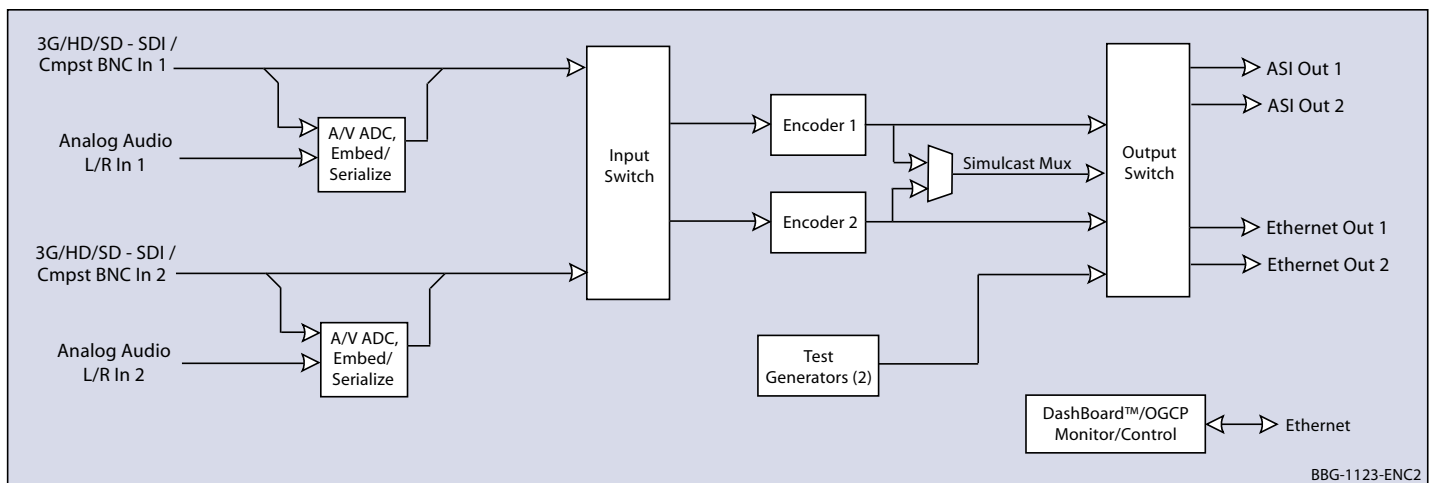
RTMP support for publishing to Adobe® Media Server, availing SDI content to Internet viewers

Dual-redundant internal power supplies

Five year warranty

### OPTIONS

Please see Ordering Information



BBG-1123-ENC2



# BBG-1123-ENC2 • Dual-Channel 3G/HD/SD MPEG-4 Standalone Encoder Units

## SPECIFICATIONS

### Power

100-250 VAC, 47-63 Hz, 12W

### 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

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 (Dolby® pass-thru)  
 MPEG-4 AAC-LC up to 2 pairs  
 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 and CEA-708C  
 WSS/AFD

### ASI Outputs

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

### Ethernet

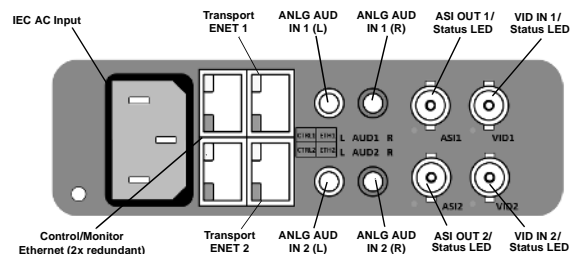
Number of control/monitor connections: 2, redundant 10/100Base-T RJ-45  
 Number of transport outputs: 2, 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed  
 IPv4, IPv6, UDP, RTP  
 SMPTE 2022 ProMPEG FEC CoP3, 'Forward Error Correction' (Row and Column)

### Regulatory Compliance

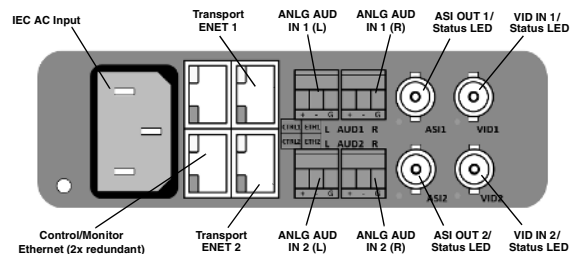
CE: CE marked in accordance with 89/336/EEC, 72/23/EEC and 1999/5/EEC Directive  
 UL: UL approval  
 US FCC: Part 15  
 EMC: EN55022, EN55024, EN6100-3-2  
 Safety: IEC60950  
 RoHS: 2011/65/EU  
 WEEE: 2012/19/EU

### Physical

Dimensions (WxDxH): 5.8 x 14 x 1.7 in (14.6 x 35.6 x 4.4 cm) (including component projection)  
 Operating Temperature/Humidity: 32°F to 122°F (0°C to 50°C); 5% to 95% non-condensing



BBG-1123-ENC UNBALANCED INPUT (-U) MODELS



BBG-1123-ENC BALANCED INPUT (-B) MODELS

## ORDERING INFORMATION

## BBG-1123-ENC2 • Dual-Channel 3G/HD/SD MPEG-4 Standalone Encoder Units

**Note:** All models are available with unbalanced (RCA) analog audio inputs or balanced 3-wire analog audio inputs. Use -U suffix on part number for unbalanced-input unit (example: "BBG-1123-ENC2-U"). Use -B suffix on part number for balanced-input unit (example: "BBG-1123-ENC2-B").

**BBG-1123-ENC2** Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD

**BBG-1123-ENC2-HD-I** Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080i

**BBG-1123-ENC2-HD-P** Dual-Channel 3G/HD/SD MPEG-4 Encoder Unit with H.264 SD/HD up to 1080p

### Options and Accessories:

**Note:** - Unless indicated as program channel or audio channel pair license, licenses below are **device-based** licenses and require **only one license per unit**.

- 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.

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

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

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

**+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

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

**+2A-SA** Additional Audio Pair License

**+SMPTE2022** SMPTE 2022 FEC License

**BBG-1100-TRAY** 1 RU Rack Mount Tray (supports up to three BBG-1100 units)

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

**Base** - (2) standard MP1L2 encoding licenses on 2 PIDs.

**Add PIDs:**

- Can have 4 audio PIDs total (2 additional +2A licenses or 2 additional +UP-AAC licenses).