

BBG-1002-UDX • Modular 3G/HD/SD-SDI Up-Down-Cross Converter/Framesync/Audio Embed/De-Embed with Multi-Input Auto-Changeover



The all-new Cobalt® BBG-1002-UDX Modular 3G/HD/SD-SDI Up-Down-Cross Converter/Framesync/Audio Embed-De-Embed with Multi-Input Auto-Changeover provides a high-density standalone modular unit that offers unprecedented multi-input support, flexibility, and ease of use and integration. Multiple SDI input ports allow manual selection of input, or failover to alternate inputs (Auto-Changeover) on loss of input conditions.

With option +ANC, the BBG-1002-UDX offers full VANC/HANC ancillary data packet de-embedding and embedding for 3G/HD/SD-SDI streams. The easy to use interface allows direct access to DID and SDID locations to extract or insert user data such as camera PTZ, SCTE 104, closed-captioning read/insert, GPI/GPO via ANC, or other specialized user payloads. Data can be extracted and inserted within the unit, bypassing the scaler (Bridge mode), or inserted and/or extracted to and from external interface via serial or IP interfaces.

Quality Check option +QC allows failover to alternate inputs based on user-configurable subjective criteria such as black/frozen frame. Two discrete character burn strings can be inserted on output video, with each string inserted as

static text and/or insert only upon LOS. Import of user trouble slate graphics is also supported in addition to standard test pattern insert as an input LOS marker. A moving-box insertion can be enabled to serve as a dynamic raster confidence check even when the input video image is static. Included standard is closed captioning absence/presence detection that allows CEA 608/708 and line 21 SD CC absence or presence to be detected, with event actions consisting of GPO, automated alert email actions, or go-to user presets or other actions.

The up/down/cross convert scaler is specifically designed for broadcast video progressive and interlaced formats, with full ARC control suitable for conversions to or from 4:3 and 16:9 aspect ratios. 3:2 pulldown optimization allows A-frame to use alignment correlated to received timecode or 6 Hz external input over GPI. Timecode can be received and prioritized among any standard SMPTE embedded or audio LTC timecode, and in turn outputted and burned-in on the output video. The 9902-UDX also provides analog CVBS video inputs and outputs, and AES/analog audio embedding and de-embedding. The BBG-1002-UDX-AV-EMDE model additionally provides analog video (CVBS) inputs and outputs, with AES and analog audio embedding and de-embedding. Timecode can be received and prioritized among any standard SMPTE embedded or audio LTC timecode, and in turn outputted and burned-in on the output video. The 9902-UDX also provides analog CVBS video inputs and outputs, and AES/analog audio embedding and de-embedding.

Preset save/load allows saving custom settings while allowing one-button revert to factory settings. Layered presets allow invoking changes related only to a specific area of concern (audio routing, for example) while not changing any other processing settings or aspects. The BBG-1002-UDX uses a built-in web server that allows control/monitor over computers or smart devices from anywhere accessible over the web; no special apps or plug-ins are required for remote control (can also be remote-controlled using DashBoard™). The compact 1/3-rack size of the BBG-1002-UDX allows 3 units to be installed in a 1RU space (an optional mounting tray is available that provides secure mounting of the units to a standard 19" frame). GPIO allows direct input routing control and status monitoring.

FEATURES

Multi-input, with manual selection or intelligent Auto-Changeover failover

Closed-captioning absence detection and flagging, with GPO, automated alert email, go-to user preset, or other actions

Auto-Changeover can be set to invoke failover for basic input loss. Quality Check option (+QC) provides failover on subjective criteria such as black/frozen frame or audio silence. Threshold and hold-off are user configurable.

Moving-box/motion insertion enable serves as a dynamic raster confidence check even in cases where the input video image is static

Dual independent burn-in text string insertion allows condition-based insertion (such as basic ID text for valid input and different text message for failover conditions)

Framesync with full H/V offset and manual/LOS video pattern generator

3:2 pulldown optimization allows A-frame alignment correlated to received timecode or 6 Hz external input over GPI

Up/Down/Cross Conversion and ARC specifically tailored for broadcast video

Supports import of user trouble slate graphic file for LOS failover insertion

Timecode processing can prioritize, filter for, and convert between specific SMPTE embedded-video or audio LTC, with output/burn-in timecode using selected format

Full audio crosspoint with delay control and 5.1-to-stereo downmix available for all audio outputs

CVBS analog video I/O and analog/AES embed / de-embed available

Video options include CGMS support, color correction, and keying

Option +ANC adds full user VANC/HANC packet insertion/extraction access to DID/SDID ancillary data such as camera PTZ, SCTE 104, closed captioning, and other specialized user payloads. Multi-mode setup includes Bridge mode (device internal path with scaler bypass bridging) or Insert/Extract modes for insert/extract to or from IP/serial external interfaces.

Supports import of user trouble slate graphic file for LOS failover insertion

Compact footprint - up to 3 units in a 1RU space. Optional tray provides secure captive-fastener mounting of 3 units in a 1RU tray.

Web-based user interface/remote control as well as front-panel pushbutton menu-based local control with LCD status/net ID. Also controllable using DashBoard remote control.

Five year warranty

html5
web UI remote control

DashBoard

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OPTIONS

Quality Check (+QC) – Provides failover on criteria such as black/frozen frame, audio silence, and CC absence

Key/Fill Keyer (+KEYER) – Provides keying using independent SDI inputs for key and fill signals. A separate preview SDI output is provided for observing key results before applying to program video output. Alpha Threshold mode allows full-color key/fill using low-cost PC-based graphics host where the same signal provides a shared key/fill input.

Color Correction (+COLOR) – Full RGB color corrector (offset, gain, gamma) with extended YCbCr proc controls with white hard clip, white soft clip, black hard clip, and saturation clip

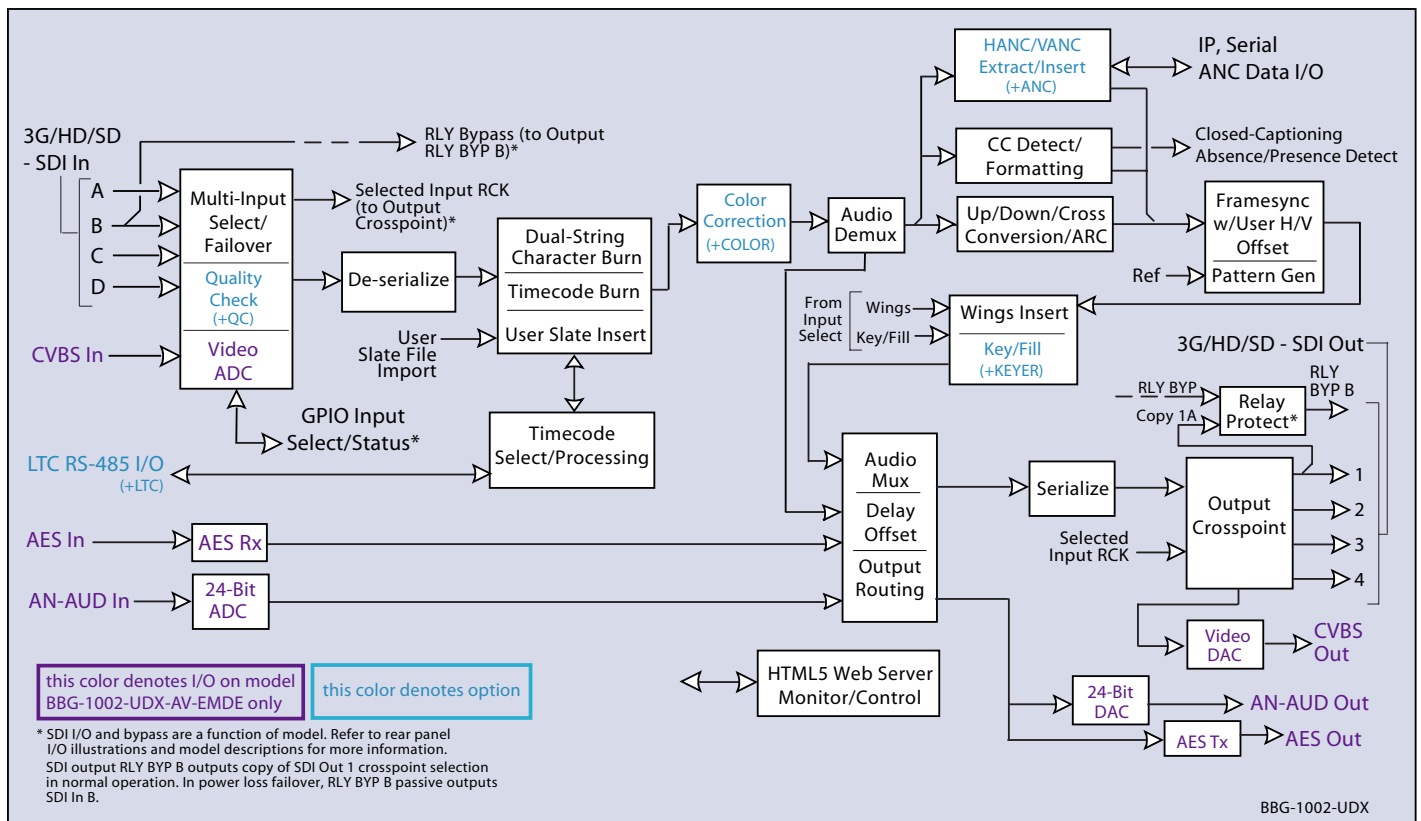
Ancillary Data Processor (+ANC). Provides full user VANC/HANC packet insertion/extraction access to DID/SDID ancillary data, with insert/extract to and from IP, RS-232/RS-422 serial, and GPIO external interfaces. Bridge mode can be set to preserve special/custom ANC packages when scaler is enabled.

CGMS Support (+CGMS)

Audio LTC I/O (+LTC)

1RU Mounting Tray (supports 3 units) (BBG-1000-TRAY)

Redundant Power Supply Module (BBG-1000-PS)



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SPECIFICATIONS

Note: Inputs/outputs are a function in some cases of model. See rear panel illustrations for I/O complements offered.

Power

< 18 Watts. Power supplied by 12VDC AC adapter, universal input.

SDI Input/Outputs

Up to (4) 75Ω BNC inputs
 Up to (4) 75Ω BNC outputs (selectable as processed SDI IN or IN RCK)
 SDI Formats Supported: SMPTE 259M, SMPTE 292M, SMPTE 424M
 SDI Receive Cable Length: 3G/HD/SD: 120/180/320 m (Belden 1694A)
 SDI Return Loss: >15 dB up to 1.485 GHz; >10 dB up to 2.970 GHz
 SDI Alignment Jitter: 3G/HD/SD: < 0.3/0.2/0.2 UI

CVBS Video Input/Outputs (BBG-1002-UDX-AV-EMDE only)

(1) 75Ω BNC input
 (1) 75Ω BNC output. CVBS can be upscaled to any supported SDI format; all SDI formats can be downconverted to CVBS.

Discrete Audio Input/Outputs (BBG-1002-UDX-AV-EMDE only)

(1) AES-3id 75Ω BNC input
 (1) AES-3id 75Ω BNC output
 (2) Balanced analog audio inputs
 (2) Balanced analog audio outputs
 I/O conforms to 0 dBFS = +24 dBu

Input Select/Auto-Changeover Failover

Manual selection (forced) of any input.
 · Failover to alternate input on loss of target input. Failover invoked upon LOS and/or (with option +QC) user configurable parametric criteria such as black/frozen frame or audio silence.
 - Black frame trigger configurable for black intensity threshold and persistence time.
 - Frozen frame trigger configurable for frozen percentage difference and persistence time.
 - Audio silence trigger configurable for dBFS floor threshold and persistence time.
 · Relay bypass SDI IN B to RLY BYP B upon loss of power.

Framesync Audio/Video Delay

Max offset: 20 frames
 Latency (min): 1 frame

User Audio Delay Offset from Video

Bulk delay control: -33 msec to +3000 msec.
 Per-channel delay controls: -800 msec to +800 msec

Timecode Insertion/Burn-In

Burn-in and embedded video output timecode selected via user controls from input video SMPTE embedded timecode and/or audio LTC. Burn-in enable/disable user controls. Configurable for burn-in string of seconds, seconds:frames, seconds:frames:field. User controls for text size and H/V position.

Text Burn-In

(2) independent strings supported. Independent insertions controls for enable/disable and enable upon LOS. User controls for text size and H/V position.

GPIO/COMM

(2) GPI configurable to select input routing. (2) GPO configurable to invoke upon input selected. RS-232/485 comm port. All connections via rear module RJ-45 GPIO/COMM jack.

Control/Monitor Interface

HTML5 web server/interface via rear-panel 10/100/1000 Ethernet port.

Frame Reference Input

Looping 2-BNC connection. SMPTE 170M/318M "Black Burst", SMPTE 274M/296M "Tri-Level"
 Return Loss: >35 dB up to 5.75 MHz

Physical

Dimensions (WxHxD): 5.7 x 1.4 x 14.7 in (14.5 x 3.5 x 37.3 cm) Dimensions include connector projections.
 Weight: 6 lb (2.8 kg)

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ORDERING INFORMATION

BBG-1002-UDX Modular 3G/HD/SD-SDI Up-Down-Cross Converter/Framesync/Audio Embed/De-Embed with Multi-Input Auto-Changeover (includes one BBG-1000-PS Power Supply)

BBG-1002-UDX-AV-EMDE Multi-Input Modular Up-Down-Cross Converter/Framesync with Auto-Changeover and Character Burn with CVBS analog video I/O and analog/AES audio embed/de-embed (includes one BBG-1000-PS Power Supply)

Options and Accessories:

+**ANC** Ancillary Data Processor Option

+**COLOR** Color Correction Option

+**CGMS** CGMS Option

+**KEYER** Key/Fill Keyer Option

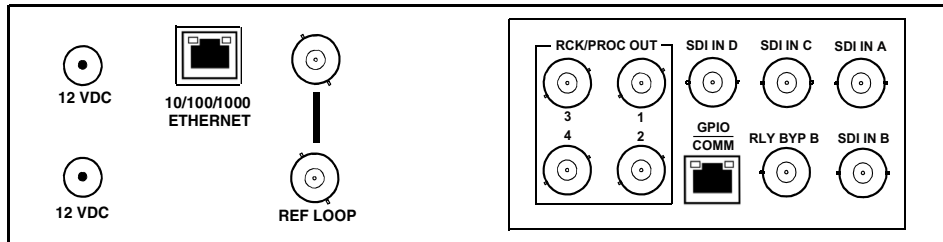
+**QC** Quality Check Option

+**LTC** Audio LTC I/O Option

BBG-1000-PS Redundant Power Supply Module

BBG-1000-TRAY 1RU Mounting Tray (supports 3 units)

BBG-1002-UDX Rear Panel



Note: RCK/PROC 1 thru RCK/PROC 4 are DA outputs which can be individually set as reclocked or processed outputs of the currently-selected input. RLY BYP B is a relay-protected path which carries processed SDI out under normal conditions and passive routes SDI IN B to this BNC upon loss of power.

BBG-1002-UDX-AV-EMDE Rear Panel

