COBALT

9501-DCDA-3G • Down-Converter/DA with 3G/HD/SD-SDI Input, Reclocking, SD-SDI and Analog Video/Audio Outputs

The **9501-DCDA-3G** provides 3G/HD-to-SD down-conversion with ARC and has versatility in providing up to four SD-SDI and/or analog composite outputs as well as up to four reclocked SDI input copies. The space-saving design of the 9501-DCDA-3G provides for high density, allowing two cards to be collocated in adjacent slots and served by a single, standard width "split" rear module. Up to 20 of the 9501-DCDA cards can be installed in a 20-slot frame.

The card can pass SD signals with re-aspect, if needed. AFD processing can detect an incoming AFD code and correspondingly set scaling to track with AFD. This processor also allows independent custom ARC to be applied for each incoming AFD code, and set the desired AFD code to be inserted on the output, even if there is no code detected on the input. Analog audio outputs can be de-embedded from selected embedded audio channels. The 9501-DCDA can rate-convert 23.98 frame video to 59.94 fields, move progressive to interlace and is equipped with extensive user programmable reticule overlays. Two discrete character burn strings can be inserted on output video, with each string inserted as static text and/or insert only upon LOS.

The data path is 10-bit with 12-bit analog encoding. Full proc control allows adjustment of luma gain, luma lift, color gain, and color phase. Preset save/load allows saving custom card settings while allowing one-button revert to factory settings.

Preset save/load allows saving custom card 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. Full user DashBoard™ or Remote Control Panel remote control allows full status and control access over a standard Ethernet network.

Alternate Base Model
· **9501-DCDA-HD** Down-Converter/DA with HD/SD-SDI Input, Reclocking, SD-SDI and Analog Video/Audio Outputs
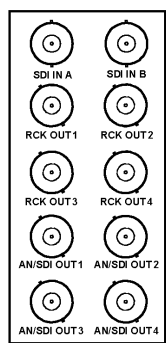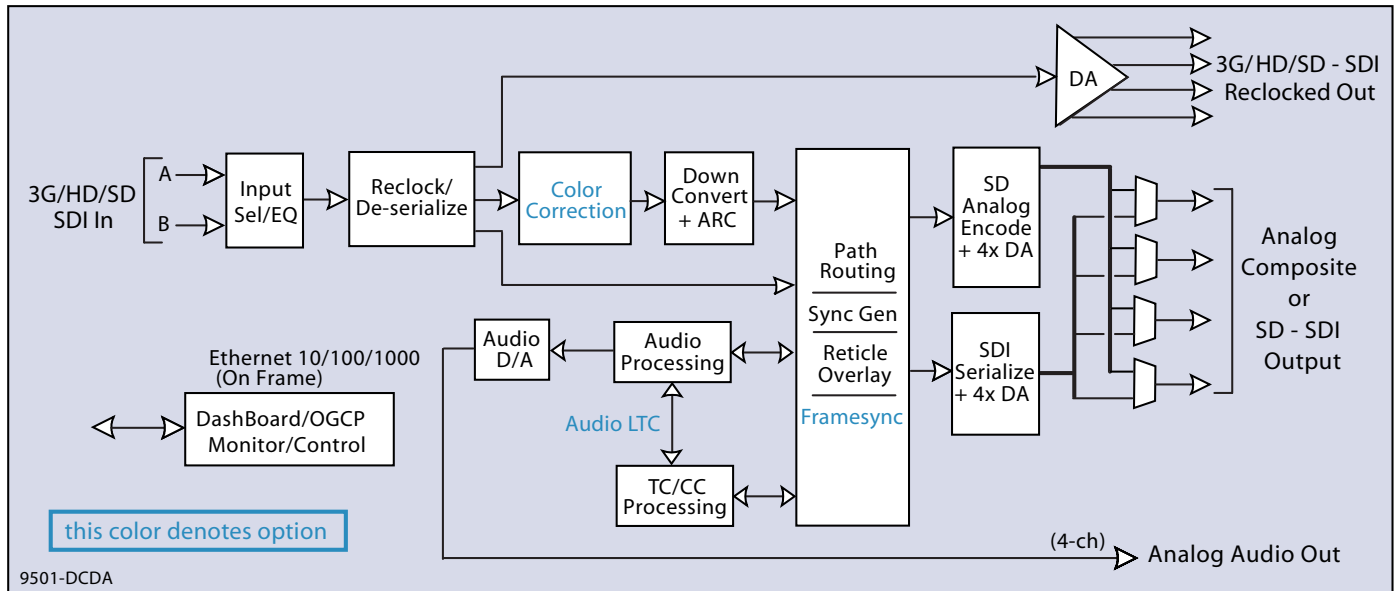
FEATURES

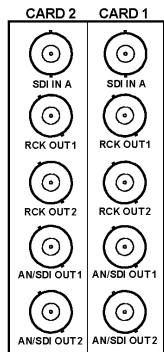|	
Low power/high-density design allows up to 20 cards per frame; less than 18 Watts per card	User DashBoard output selection flexibly allows SDI or CVBS outputs on four processed-output BNCs
Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p	Dual independent text/character burn-in insertion allows condition-based insertion (such as basic ID text for valid input and different text message for failover/LOS conditions)
Built-in x4 DAs for both reclocked and processed outputs	
Dual SDI inputs with manual GUI select and basic failover function	Full timecode and CEA 708 / CEA 608 conversion to SD VITC timecode and closed-captioning. Option **+LTC** allows bidirectional transfer between embedded video timecode formats and audio LTC.
Economical solution for 3G/HD down-conversion to legacy SD monitoring systems. HD version further economizes for environments requiring only HD/SD support (field upgradeable to 3G with software license upload if later desired).	
	Remote control/monitoring via Dashboard™ software or OGCP-9000 remote control panels
Auto-format detect/down-conversion of SMPTE 424M/292/259M formats	Hot-swappable
Down-conversion scaling includes user-configurable ARC and AFD-controlled ARC	Five year warranty
Full embedded audio control with selectable downmix and analog audio de-embed	
Color framing preserved on CVBS outputs for all conversions	

OPTIONS

3G Software Option Upgrade (**+3G**) – Upgrades 9501-DCDA-HD card to 9501-DCDA-3G functionality/specifications.

Color Correction (**+COLOR**) – Provides independent RGB channel controls for luma, black, and gamma. Ultra-fast response time. The color correction feature is perfectly suited for use with Cobalt OGCP-9000/CC Remote Control Panel.

Frame Sync Software Option (**+FS**) – Adds frame sync to 9501-DCDA-3G card. Provides full vertical and horizontal offset and frame delay controls. Glitch-free handling of embedded audio when a frame is dropped or duplicated.

Audio LTC Software Option (**+LTC**) – Offers bidirectional transfer and conversion between video timecode formats and audio LTC. Audio LTC can be received or sent over various card audio channels.

Extended Frame Sync Delay Option (**+DLY**) – Increases frame buffer to provide adjustable audio/video delay buffer capacity to over 9 seconds for SD video, 1.5 seconds for HD video, or 0.8 seconds for 3G video. (Add-on to option +FS; option +FS required)
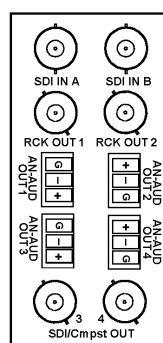
openGear

9501-DCDA

3G/HD/SD SDI In → A, B → Input Sel/EQ → Reclock/De-serialize → Color Correction → Down Convert + ARC → Path Routing

DA → 3G/HD/SD - SDI Reclocked Out

Path Routing / Sync Gen / Reticle Overlay / Framesync

SD Analog Encode + 4x DA → Analog Composite or SD - SDI Output

SDI Serialize + 4x DA

Ethernet 10/100/1000 (On Frame)

DashBoard/OGCP Monitor/Control

Audio D/A ← Audio Processing ← Audio LTC

TC/CC Processing

this color denotes option

(4-ch) Analog Audio Out
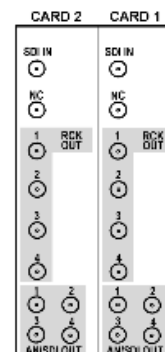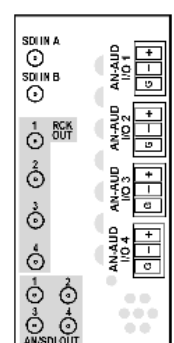

RM20-9501-A

RM20-9501-A/S

Note: Although this rear module offers only two SDI/Cmpst OUT BNCs, the two outputs on the rear module correlate to card output channels 3 and 4.

RM20-9501-B

RM20-9501-C/S-DIN
RM20-9501-C/S-HDBNC

RM20-9501-F-DIN
RM20-9501-F-HDBNC

SPECIFICATIONS

Note: Inputs/outputs are a function in some cases of rear I/O module used.

Power
< 18 Watts

SDI Input
Number of Inputs: (2) 3G/HD/SD-SDI BNCs. GUI-selectable.
Standards: SMPTE 259M, 292M, 424M (9501-DCDA-3G only)
Supported Formats: 1080p59.94,50,29.97, 24, 23.98, 1080i59.94,50, 720p59.94,50,29.97, 24, 23.98, 625I, 525i
Cable Length, Minimum, 3G/HD/SD (Belden 1694A): 120m / 180m / 360m
Return Loss: 15 dB up to 1.485 GHz, 10 dB up to 2.970 GHz

Video Outputs
Number of Outputs: (4) dedicated reclocked output BNCs. Up to 4 processed SD-SDI (or CVBS output) BNCs. GUI-selectable.
SDI Signal Level: 800 mV nominal
SDI Return Loss: >15 dB up to 1.485 GHz, >10 dB up to 2.970 GHz
SDI Jitter: SD: < 0.2 UI
SDI Embedded Audio: 16-Ch

Frame Sync Audio/Video Delay (option +FS)
Max offset: 20 frames
Latency (min): 1 frame
Option +DLY Delay (3G/HD/SD): >800 msec / >1580 msec / >9000 msec

Reference Video Input
Number of Inputs: (2) looping (openGear® frame)
Standard: Tri-level sync (SMPTE 274) and black burst (NTSC and PAL)

Analog Audio Output
Number of Outputs: 4-Ch (max) balanced using 3-wire Phoenix connectors
Maximum Output Level: +24 dBu @ 0 dBFS
DAC Resolution: 24-bit

ORDERING INFORMATION

9501-DCDA-3G Down-Converter/DA with 3G/HD/SD-SDI Input, Reclocking, SD-SDI and Analog Video/Audio Outputs

9501-DCDA-HD Down-Converter/DA with HD/SD-SDI Input, Reclocking, SD-SDI and Analog Video/Audio Outputs

RM20-9501-A 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI Input BNCs, (4) 3G/HD/SD-SDI Reclocked Output BNCs, (4) Output BNCs (GUI-selectable as SD-SDI and/or Analog CVBS)

RM20-9501-A/S 20-Slot Frame Rear I/O Module (Split; supports 2 cards) 3G/HD/SD-SDI Input BNC, (2) HD/SD-SDI Reclocked Output BNCs, (2) Output BNCs (GUI-selectable as SD-SDI and/or Analog CVBS) (connections are per card)

RM20-9501-B 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI Input BNCs, (2) 3G/HD/SD-SDI Reclocked Output BNCs, (2) Output BNCs (GUI-selectable as SD-SDI and/or Analog CVBS), (4) Analog Audio Outputs

RM20-9501-C/S-DIN 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Input BNCs, (4) HD/SD-SDI Reclocked Outputs, (4) Outputs (GUI-selectable as SD-SDI and/or Analog CVBS) (connections are per card; all connectors DIN1.0/2.3)

RM20-9501-C/S-HDBNC 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Input BNCs, (4) HD/SD-SDI Reclocked Outputs, (4) Outputs (GUI-selectable as SD-SDI and/or Analog CVBS) (connections are per card; all connectors HD-BNC)

RM20-9501-F-DIN 20-Slot Frame Rear I/O Module (Standard Width, Hi-Density) (2) 3G/HD/SD-SDI Inputs, (4) 3G/HD/SD-SDI Reclocked Outputs, (4) Outputs (GUI-selectable as SD-SDI and/or Analog CVBS), (4) Analog Audio Outputs (all coaxial connectors DIN1.0/2)

RM20-9501-F-HDBNC 20-Slot Frame Rear I/O Module (Standard Width, Hi-Density) (2) 3G/HD/SD-SDI Inputs, (4) 3G/HD/SD-SDI Reclocked Outputs, (4) Outputs (GUI-selectable as SD-SDI and/or Analog CVBS), (4) Analog Audio Outputs (all coaxial connectors HD-BNC)

+3G Software license upgrade for 9501-DCDA-HD card. Upgrades card to 9501-DCDA-3G functionality/specifications.

+COLOR Color Correction Software Option

+FS Frame Sync Software Option

+DLY Extended Frame Sync Delay Option (add-on to option +FS; option +FS required)

+LTC Audio LTC Option