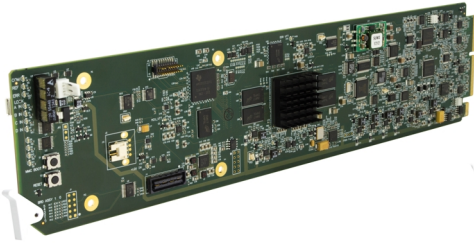# COBALT

9502-DCDA-3G • Down-Converter/DA with 3G/HD/SD-SDI Input, HD/SD-SDI Processed Outputs, and SDI Input Reclocking

The **9502-DCDA-3G** provides 3G/HD-to-SD down-conversion with ARC and has versatility in providing up to four HD/SD-SDI processed outputs as well as up to four reclocked SDI input copies selectable from two SDI inputs. The space-saving design of the 9502-DCDA 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 9502-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. Using a 10-bit video path, the 9502-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. Full proc control allows adjustment of white level, black level, color gain, and color phase.

Factory presets enable a return to factory settings. The 9502 offers 3G down-conversion to 1080i, 720p, or SD-SDI. AES audio outputs can be de-embedded from selected embedded audio channels.

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
· **9502-DCDA-HD** Downconverter/DA with HD/SD-SDI Input, HD/SD-SDI Processed Outputs, and SDI Input Reclocking

FEATURES

Low power/high-density design allows up to 20 cards per frame; less than 18 Watts per card

Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p

Economical solution for 3G/HD downconversion 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).

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.

Down-conversion scaling includes user-configurable ARC and AFD-controlled ARC

Auto-format detect/down-conversion of SMPTE 424M/292/259M formats

Full embedded audio processing with selectable downmix and AES audio de-embed. Dolby passthru on downconversions.

Remote control/monitoring via Dashboard™ software or OGCP-9000 remote control panels

Hot-swappable

Five year warranty

OPTIONS

3G Software Option Upgrade (**+3G**) – Upgrades 9502-DCDA-HD card to 9502-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.
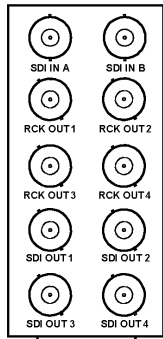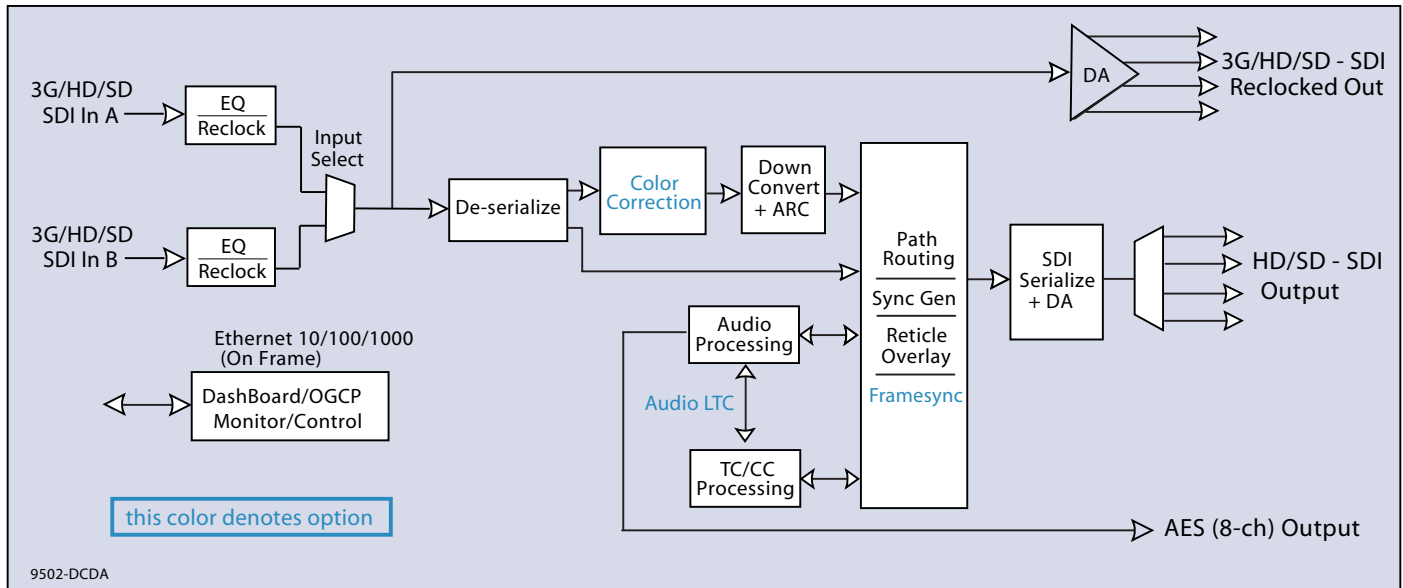
Frame Sync Software Option (**+FS**) – Adds frame sync to 9502-DCDA-3G card. Provides full vertical and horizontal offset and frame delay controls. Glitch-free handling of embedded audio when a frame is dropped or duplicated.

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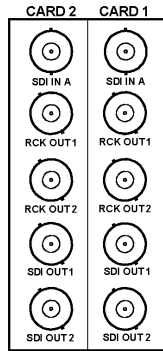
Audio LTC Software Option (**+LTC**) – Offers bidirectional transfer and conversion between video timecode formats and audio LTC. Audio LTC can be received or sent over various card audio channels.
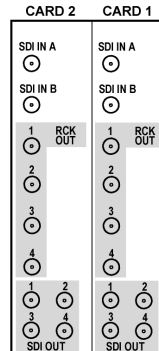
openGear®

Specifications subject to change. E&OE. ©2020 Cobalt Digital Inc.

Block diagram labels:

3G/HD/SD SDI In A → EQ Reclock → Input Select
3G/HD/SD SDI In B → EQ Reclock → Input Select
Input Select → De-serialize → Color Correction → Down Convert + ARC → Path Routing / Sync Gen / Reticle Overlay (Framesync)
DA → 3G/HD/SD - SDI Reclocked Out
Path Routing → SDI Serialize + DA → HD/SD - SDI Output
Audio Processing
Audio LTC
TC/CC Processing
Ethernet 10/100/1000 (On Frame) → DashBoard/OGCP Monitor/Control
AES (8-ch) Output

this color denotes option

9502-DCDA

Rear module labels:

RM20-9502-A
SDI IN A SDI IN B
RCK OUT1 RCK OUT2
RCK OUT3 RCK OUT4
SDI OUT1 SDI OUT2
SDI OUT3 SDI OUT4

RM20-9502-A/S
CARD 2 CARD 1
SDI IN A SDI IN A
RCK OUT1 RCK OUT1
RCK OUT2 RCK OUT2
SDI OUT1 SDI OUT1
SDI OUT2 SDI OUT2

RM20-9502-C/S-DIN
RM20-9502-C/S-HDBNC
CARD 2 CARD 1
SDI IN A SDI IN A
SDI IN B SDI IN B
1 RCK OUT 1 RCK OUT
2 2
3 3
4 4
1 2 3 4 1 2 3 4
SDI OUT SDI OUT
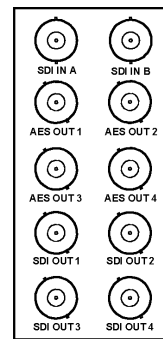
RM20-9502-F
SDI IN A SDI IN B
AES OUT 1 AES OUT 2
AES OUT 3 AES OUT 4
SDI OUT 1 SDI OUT 2
SDI OUT 3 SDI OUT 4

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
Standards: SMPTE 259M, 292M, 424M (9502-DCDA-3G only)
Supported Formats:
  1080p59.94,50,29.97, 25, 24, 23.98
  1080i59.94,50
  625i50, 525i59.94
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 HD/SD-SDI
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)

AES Output
Number of Outputs: 8-Ch (max) unbalanced (AES-3id)
Impedance: 75 Ω
Sample Rate: 48 kHz
Resolution: 24-bit

ORDERING INFORMATION

9502-DCDA-3G Down-Converter/DA with 3G/HD/SD-SDI Input, HD/SD-SDI Processed Outputs, and SDI Input Reclocking

9502-DCDA-HD Down-Converter/DA with HD/SD-SDI Input, HD/SD-SDI Processed Outputs, and SDI Input Reclocking

RM20-9502-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) HD/SD-SDI Processed Output BNCs

RM20-9502-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) HD/SD-SDI Processed Output BNCs (connections are per card)

RM20-9502-C/S-DIN 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Inputs, (4) HD/SD-SDI Reclocked Outputs, (4) HD/SD-SDI Processed Outputs (connections are per card; all connectors DIN1.0/2.3)

RM20-9502-C/S-HDBNC 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Inputs, (4) HD/SD-SDI Reclocked Outputs, (4) HD/SD-SDI Processed Outputs (connections are per card; all connectors HD-BNC)

RM20-9502-F 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI Input BNCs, (4) Video HD/SD-SDI Processed Output BNCs, (4) AES Audio Output BNCs

+3G Software license upgrade for 9502-DCDA-HD card. Upgrades card to 9502-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