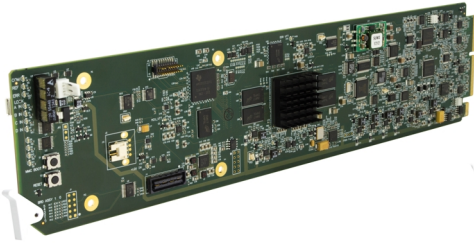# 9980-CSC-3G • 3G/HD/SD-SDI RGB Color Space Corrector / Frame Sync
with Integrated Test Signal Generator and OGCP-9000/CC Control Panel Support

The Cobalt® **9980-CSC-3G 3G/HD/SD-SDI RGB Color Space Corrector / Frame Sync with Integrated Test Signal Generator and OGCP-9000/CC Control Panel Support** provides a high-density card-based solution that includes an advanced frame sync/pattern generator in addition to a full-featured SD/HD/3G color corrector. The 9980-CSC-3G offers RGB-space color correction with YCbCr proc features with RGB processing controls providing full offset, gain and gamma adjustments. The YCbCr proc controls provide lift, gain, saturation, phase, white clip (hard and soft), black clip, and color saturation clip.

The built-in pattern generator (which provides calibrated 75% or 100% color bars among other patterns) preceding the color correction block allows setting custom calibration offsets to compensate for on-set monitor/camera colorimetry, with the custom settings saved to a preset, resulting in one-button recall of monitor/camera calibration settings. Any custom settings can be saved to user presets for instant recall via DashBoard or our intuitive OGCP-9000/CC Color Correction Remote Control Panel.

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 while not changing any other processing settings or aspects. Full user DashBoard™ or Remote Control Panel remote control allows full status and control access locally or across a standard Ethernet network. GPIO allows direct input routing control and status monitoring.

FEATURES

Full RGB color corrector (offset, gain, gamma)

Frame Sync with full H/V offset and manual/LOS video pattern generator. Color corrector preceded by pattern generator allows custom offset calibrations for on-set monitor/camera colorimetry characteristics.

Passes entire YCbCr gamut in unity gain configuration

10-bit gamma LUT

Extended YCbCr proc controls with white hard clip, white soft clip, black hard clip, and saturation clip

Phase preserved when applying saturation clip

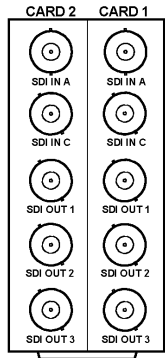One button bypass of color correction for comparison purposes

Low-power/high-density design – less than 18 Watts per card

Remote control/monitoring via DashBoard™ software or OGCP-9000/CC remote control panel. Award-winning OGCP-9000/CC Remote Control Panel provides fast and intuitive color correction control.
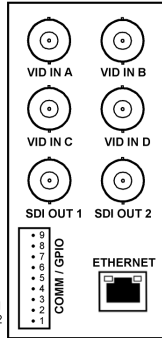
Five year warranty
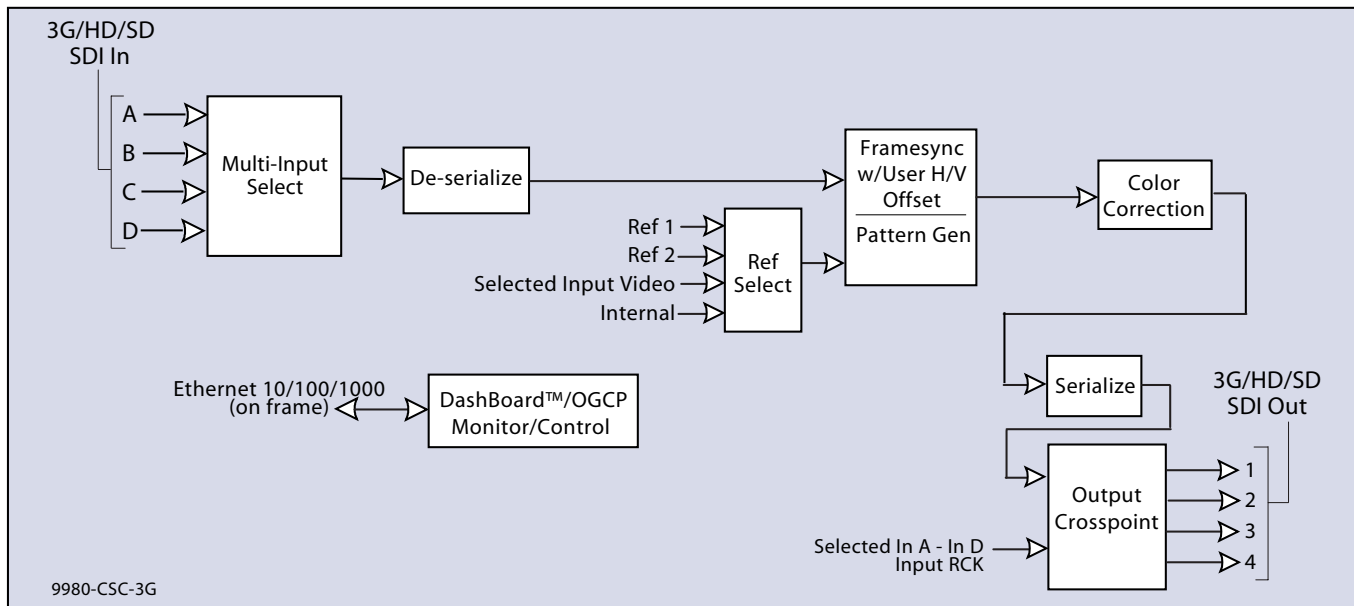
openGear

COBALT

9980-CSC-3G • 3G/HD/SD-SDI RGB Color Space Corrector / Frame Sync
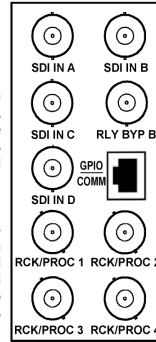## with Integrated Test Signal Generator and OGCP-9000/CC Control Panel Support
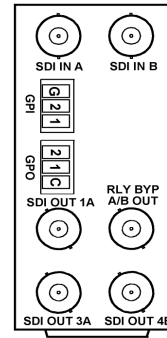
RM20-9980-A/S

RM20-9980-B

RM20-9980-C

RM20-9980-F

RM20-9980-G/S-DIN
RM20-9908-G/S-HDBNC

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.
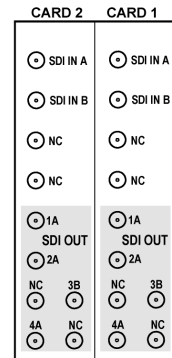
RLY BYP B is a relay-protected path which carries processed SDI out under normal conditions and passive routes SDI IN B to this BNC upon loss of power.

COMM / GPIO
- 9 - UARTA TX
- 8 - UARTA RX
- 7 - GND
- 6 - GPI IN1
- 5 - GPI IN 2
- 4 - GND
- 3 - GPO OUT 1
- 2 - GPO OUT 2
- 1 - GPO RTN

SPECIFICATIONS

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

Power
< 18 Watts

SDI Input/Outputs
Up to (4) 75Ω BNC inputs
Up to (4) 75Ω BNC outputs
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
Timing Jitter: 3G/HD/SD: < 2.0/1.0/0.2 UI
Minimum Latency (frame sync disabled):
  SD: 127 pixels; 9.4 us
  720p: 330 pixels; 4.45 us
  1080i: 271 pixels; 3.65 us
  1080p: 361 pixels; 2.43 us
Note: SDI Return loss and receive cable length are affected by rear I/O module used. Specifications represent typical performance.

Frame Sync Audio/VIdeo Delay
Max offset: 20 frames
Latency (min): 1 frame

Frame Reference Input
(2) reference from frame bus. SMPTE 170M/318M "Black Burst", SMPTE 274M/296M "Tri-Level". Return Loss: >35 dB up to 5.75 MHz

RGB Color Correction
RGB Black Adjust (one per primary): -100% to 100% in 0.1% steps
RGB White Adjust (one per primary): 0% to 200% in 0.1% steps
RGB Gamma Control (one per primary): 0.125 to 8.0 in 0.001 steps

YCbCr Processing Amp
White Adjust (Gain): 0 to 200% in 0.1% steps
Black Adjust (Lift): -100% to 100% in 0.1% steps
C Gain (Saturation): 0% to 200% in 0.1% steps
Color Phase: -360° to + 360° in 0.1 degree steps

YCbCr Clip
Y Black hard clip (values limited at or above): -6.8% to 50% in 0.1% steps
Y White hard clip (values limited at or below): 50% to 109.1% in 0.1% steps
Y White soft clip (values rolled off at): 50% to 109.1% in 0.1% steps
CbCr Saturation clip (values limited at or below): 50% to 160% in 0.1% steps

ORDERING INFORMATION

9980-CSC-3G 3G/HD/SD-SDI RGB Color Space Corrector / Frame Sync with Integrated Test Signal Generator and OGCP-9000/CC Control Panel Support

RM20-9980-A/S 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Input BNC, (3) 3G/HD/SD-SDI Processed or Reclocked Output BNCs (connections are per each Card 1 / Card 2 connector bank)

RM20-9980-B 20-Slot Frame Rear I/O Module (Standard-Width) (4) 3G/HD-SD-SDI Input BNCs, (2) 3G/HD/SD-SDI Output BNCs , COMM/GPIO Port, Ethernet Port

RM20-9980-C 20-Slot Frame Rear I/O Module (Standard Width) (4) 3G/HD/SD-SDI Input BNCs, (4) 3G/HD/SD-SDI Output BNCs, (1) 3G/HD/SDI Output BNC (with relay bypass failover), (1) GPIO/COMM RJ-45 connector

RM20-9980-F 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI Input BNCs, (1) 3G/HD/SD-SDI Processed Out BNC w/ Latching Input Select/Bypass, (3) 3G/HD/SD-SDI Output BNCs (GUI-selectable as Processed or Reclocked of selected input, (2) GPI, (2) GPO

RM20-9980-G/S-DIN 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (4) 3G/HD/SD-SDI Inputs, (6) 3G/HD/SD-SDI Outputs (Connections are per each Card 1 / Card 2 connector bank; all coaxial connectors DIN1.0/2.3)

RM20-9980-G/S-HDBNC 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (4) 3G/HD/SD-SDI Inputs, (6) 3G/HD/SD-SDI Outputs (Connections are per each Card 1 / Card 2 connector bank; all coaxial connectors HD-BNC)

OGCP-9000/CC 2RU Remote Control Panel for Color Correction (Specify country of destination for power cord)