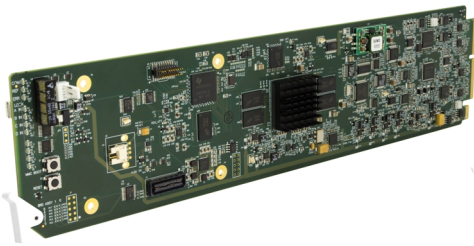


## 9940-4x1-CS • 3G/HD/SD-SDI 4x1 Clean and Quiet Bypass Router with Relay-Protected Input and GPIO Monitoring / Control



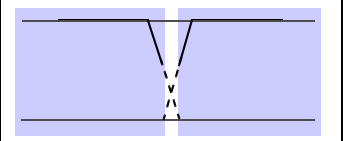
The Cobalt® 9940-4x1-CS 3G/HD/SD-SDI 4x1 Clean and Quiet Bypass Router with Relay-Protected Input and GPIO Monitoring / Control provides Clean & Quiet routing in a high-density card-based openGear® solution. The Clean & Quiet routing not only provides switching on the RP168-specified VANC switch line, but also provides audio cross-fade upon switches to provide video switches free of switching artifacts, and provides dead-quiet audio between switches.

Multiple SDI input ports allow manual selection of input, or failover to alternate inputs (Auto-Changeover) on loss of input conditions. Also included standard is closed captioning absence/presence detection for CEA 608/708 and line 21 SD closed captioning. Option +QC provides user-configurable Video Quality Event intelligent assessments such as black/frozen frame or audio silence. Video Quality or Closed-Captioning event status can independently be propagated for each event type as GPO, automated alert email, input routing changes, or card user presets you can configure to provide any number of special actions such as routing changes or burn-in text alert messages.

Two discrete character burn strings can be inserted on output video, with each string inserted as static text and/or insert only upon LOS. Any of several standard test patterns can be inserted as an input LOS marker. A moving-box insertion can serve as a dynamic raster confidence check even when the input video image is static. 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.

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 locally or across a standard Ethernet network. GPIO allows direct input routing control and status monitoring.

Quiet Cross-Fade pulls audio to floor and gracefully reverts to normal level during input routing changes



### FEATURES

Clean & Quiet Routing ensures program video switches free from video artifacts and audio clicks or pops

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

Closed-captioning absence detection

Auto-Changeover can be set to invoke failover for basic input loss. Quality Check option (+QC) provides alert actions on criteria such as black/frozen frame, audio silence, and closed-captioning absence. 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)

Input selection and status can be propagated via GPIO, serial, or IP interfaces

Video options include color correction

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

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

Five year warranty

### OPTIONS

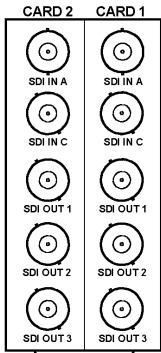
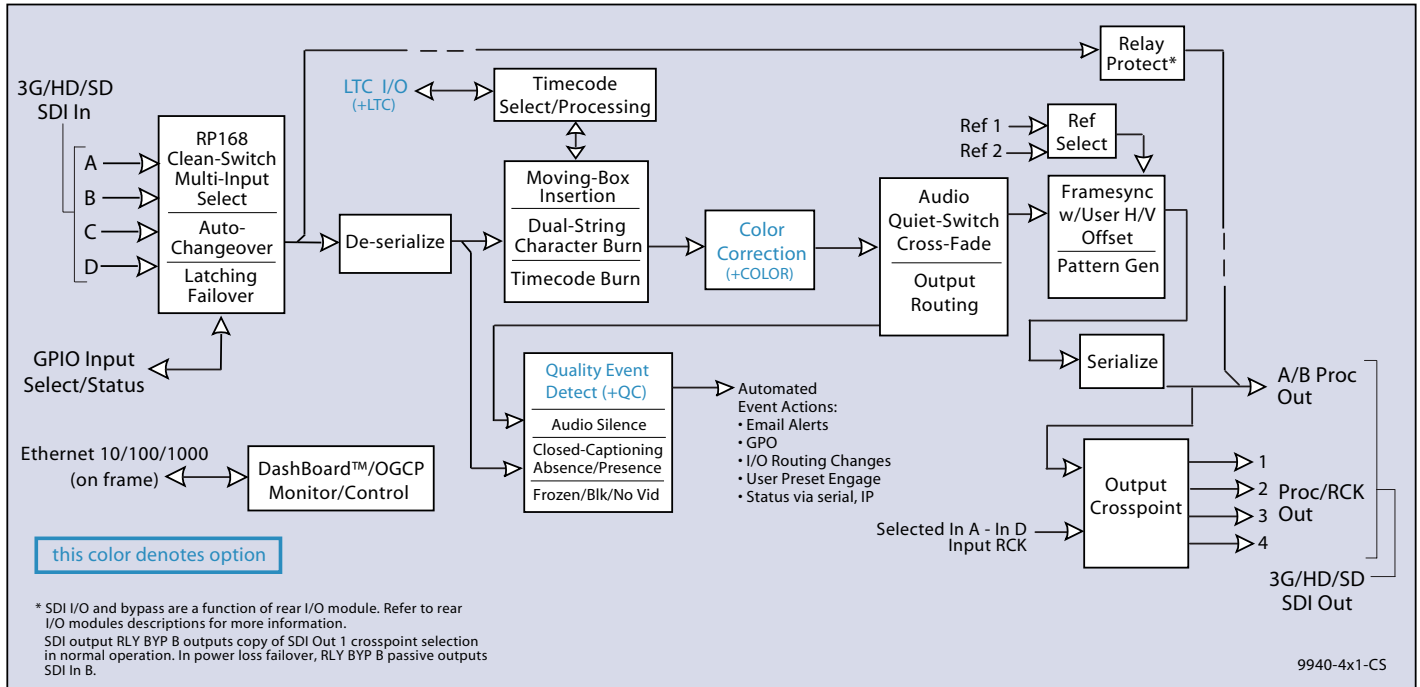
Quality Check (+QC) – Provides failover, alert, or user presets action on criteria such as black/frozen frame, audio silence, and CC absence.

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

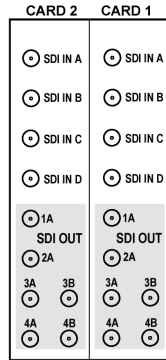
Audio LTC I/O (+LTC)



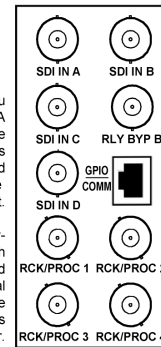
**9940-4x1-CS • 3G/HD/SD-SDI 4x1 Clean and Quiet Bypass Router**  
with Relay-Protected Input and GPIO Monitoring / Control



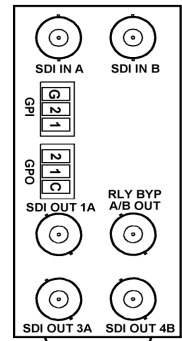
RM20-9940-A/S



RM20-9940-B/S-DIN  
RM20-9940-B/S-HDBNC



RM20-9940-C



RM20-9940-F

Note: RCK/PROC 1 thru RCK/PROC 4 are DA outputs which can be individually set as relocked 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.

# 9940-4x1-CS • 3G/HD/SD-SDI 4x1 Clean and Quiet Bypass Router with Relay-Protected Input and GPIO Monitoring / Control

## 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 (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  
 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.

### 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.

## ORDERING INFORMATION

**9940-4X1-CS** 3G/HD/SD-SDI 4x1 Clean and Quiet Bypass Router with Relay-Protected Input and GPIO Monitoring / Control

**RM20-9940-A/S** 20-Slot Frame Rear I/O Module (Split; supports 2 cards) (2) 3G/HD/SD-SDI Input BNCs, (3) 3G/HD/SD-SDI Processed or Reclocked Output BNCs (connections are per each Card 1 / Card 2 connector bank)

**RM20-9940-B/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)

**RM20-9940-B/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)

**RM20-9940-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

**RM20-9940-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, (2) GPI, (2) GPO

**+QC** Quality Check Option

**+COLOR** Color Correction Option

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