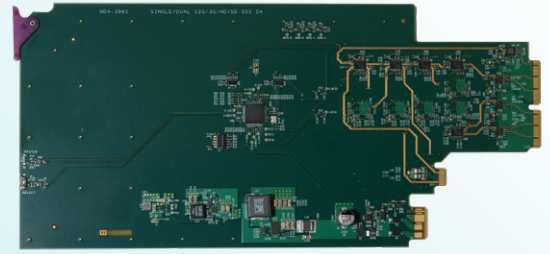


DENSITÉ HDA-3962

Single/Dual 12G/3G/HD/SD-SDI Distribution Amplifier (DA) with Optional Fiber Connectivity and 12G Relay Input Bypass



Single and dual channel distribution for 12G/3G/HD/SD-SDI signals.

The HDA-3962 from Grass Valley® provides single and dual channel distribution for 12G/3G/HD/SD-SDI signals with flexible routing of inputs to outputs. Flexible output selection enables the HDA-3962 to be used either as a single channel DA with up to 10 outputs, or in dual channel mode with up to five outputs per input.

The HDA-3962 provides up to ten reclocked outputs with automatic equalization for up to 60 meters (197 feet) of cable using Belden 4794R at 12 Gb/s, and 100m (328 feet) at 3 Gb/s and up to 150 meters (492 feet) at 1.5 Gb/s using Belden 1694A cable.

The HDA-396N-3SRP-HF rear offers fiber connectivity, making it ideal for longer cable lengths. The HDA-3962

provides a user-configurable fiber optic transceiver for bidirectional conversion of 12G, 3G, HD and SD-SDI signals to 1310 nm optical signals. Ideal for mixed coax and fiber workflows, the HDA-3962 allows users to configure the inputs and outputs to match their infrastructure needs.

The HDA-3962-3DRP-HR rear provides a 12G relay input bypass feature, ideal for signal protection in critical applications.

Based on the proven Densité® modular framework of over 100 functional cards, the HDA-3962 provides a space-efficient signal distribution solution. With the flexibility to configure up to 20 HDA-3962 module per Densité 3 frame,

with each module carrying 12 12G single outputs or six 12G dual outputs, this platform scales to a density of 240 12G signals in a 3 RU frame. The HDA-3962 also support the Densité 3+ FR1 frame with four modules in 1 RU, the Densité 3+ FR4 frame with 24 modules in 4 RU and the Densité 3 mini frame with two modules in 1/2 RU.

The HDA-3962 can be configured and monitored by the proven GV Orbit® Network Orchestration solution.

Key Features

- Single/dual 12G/3G/HD/SD-SDI inputs
- Flexible selection of inputs allows single or dual channel operation on some rear panels
- Supports bitrates up to 11.88 Gb/s
- Automatic format detection and cable equalization
- Up to 10 12G/3G/HD/SD-SDI with one bypass HD-BNC outputs on the HDA-3962-3DRP-HR rear
- Up to 7 12G/3G/HD/SD-SDI BNC outputs on the HDA-396N-3SRP rear
- Up to 6 12G/3G/HD/SD-SDI BNC outputs on the HDA-396N-3SRP-2IN rear
- Up to 10 12G/3G/HD/SD-SDI HD-BNC outputs on the HDA-396N-3SRP-HF rear
- Optional fiber I/O on the HDA-396N-3SRP-HF rear

Specifications

Electrical Inputs and Outputs

Physical:

8 BNC Connectors:

- 1 in, 7 out (HDA-396N-3SRP)
- 2 in, 6 out (HDA-396N-3SRP-2IN)

12 HD-BNC Connectors:

- 2 in, 10 out (HDA-396N-3SRP-HF)
- 1 in, 10 out with relay bypass for in 1 to out 1 (HDA-3962-3DRP-HR)

SDI standards:

- SMPTE ST 259-C (270 Mb/s)
- SMPTE ST 292 (1.485, 1.485/1.001 Gb/s)
- SMPTE ST 424 (2.970, 2.970/1.001 Gb/s)
- SMPTE ST 2082-1:2015 (2.970, 2.970/1.001 Gb/s)

Cable length (Belden 1694A cable):

- 365m (1197 ft.) at 270 Mb/s
- 150m (492 ft.) at 1.485 Gb/s
- 100m (328 ft.) at 2.970 Gb/s

Cable length (Belden 4794R cable):

- 60m (197 ft.) at 11.88 Gb/s

Return loss:

- >15 dB up to 1.5 GHz
- >10 dB from 1.5 GHz to 3 GHz

Jitter (wideband): <0.2 UI p-p

Rise/fall time:

- <135 ps, 20% to 80%, for HD and 3G
- 400-800 ps, 20% to 80%, for SD

Processing Performance

Processing delay: 7 ns typical

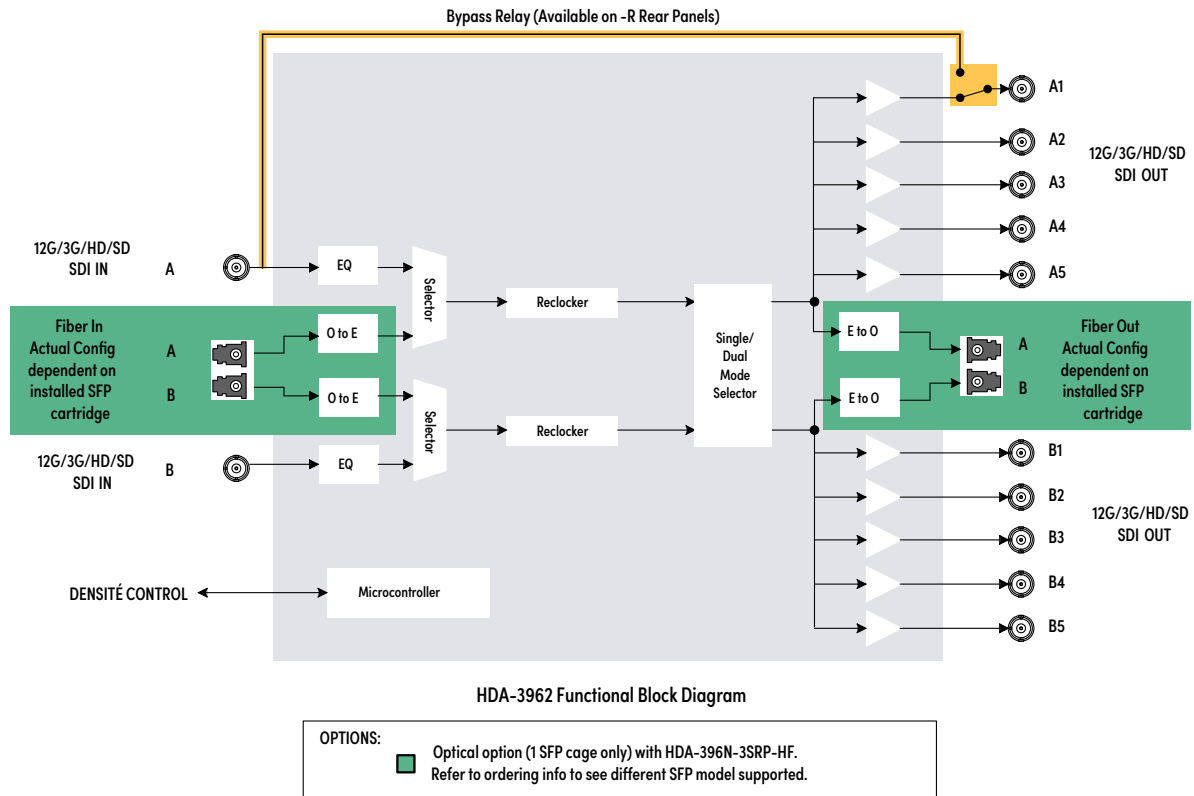
Electrical

Power: less than 12.5W max

NOTE: When using a rear panel that is equipped with a bypass relay (model: HDA-3962-3DRP-HR), performance will be reduced for equipment connected to the output protected by the bypass relay (Output 1).

The total cable length of the bypass relay protected path must not be greater than the maximum input cable length requirement of the receiving equipment. For this, add the cable length of the equipment connected to the card's input to the cable length of the receiving equipment connected to the output protected by the bypass relay.

The return loss specifications of the bypass relay protected path will be reduced as it depends on the return loss of the receiving equipment connected to the output protected by the bypass relay.



Ordering

Densité 3 Frame

HDA-3962

Single/dual 12G SDI distribution amplifier with EQ and reclocking

HDA-396N-3SRP

Single rear panel with single 1x7 BNCs

HDA-396N-3SRP-2IN

Single rear panel with single 1x6 or dual 1x3 BNCs

HDA-396N-3SRP-HF

Single rear panel with single 1x10 or dual 1x5 HD-BNC with fiber option support

HDA-3962-3DRP-HR

Double rear panel with single 1x10 HD-BNC with relay bypass support on output 1

Fiber Options

SFP-U-R-LC

12G Single RX Fiber with LC/PC

SFP-U-RR-LC

12G Dual Rx Fiber with LC/PC

SFP-U-RT-S13-LC

12G Dual Rx/Tx Fiber 1310 nm with LC/PC

SFP-U-T-S13-LC

12G Single Tx Fiber 1310 nm with LC/PC

SFP-U-TT-S13S13-LC

12G Dual Tx Fiber 1310 nm with LC/PC

SFP-R-LC

Single fiber RX (input) cartridge with LC/PC connector

SFP-RR-LC

Dual fiber Rx (input) cartridge with LC/PC connector

SFP-T-S13-LC

Single fiber TX (output) cartridge at 1310 nm with LC/PC connector

SFP-TT-S13S13-LC

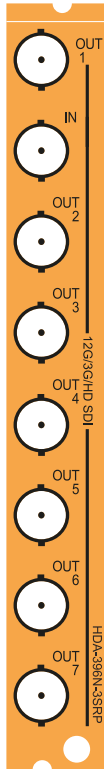
Dual fiber Tx (output) cartridge at 1310 nm with LC/PC connector

SFP-RT-S13-LC

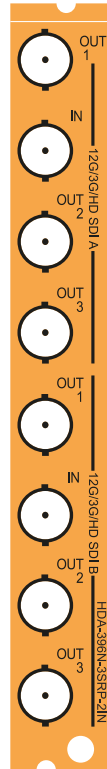
Dual fiber Rx/Tx (input/output) cartridge 1310 nm with LC/PC connector

NOTE: The HDA-3962 can also make use of SFP optical plug-in cartridges from the WDM and CWDM series. Other types of SFP optical plug-in cartridges may be available.

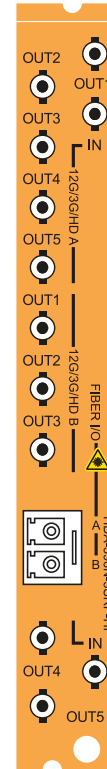
Remote control: GV Orbit, iControl or iControl Solo (version 7.10 or higher required)



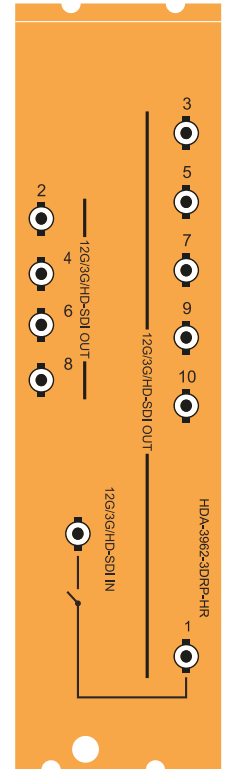
HDA-396N-3SRP



HDA-396N-3SRP-2IN



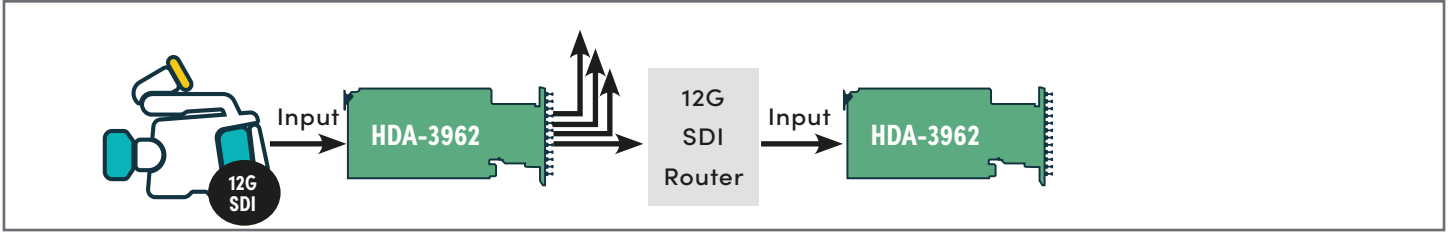
HDA-396N-3SRP-HF



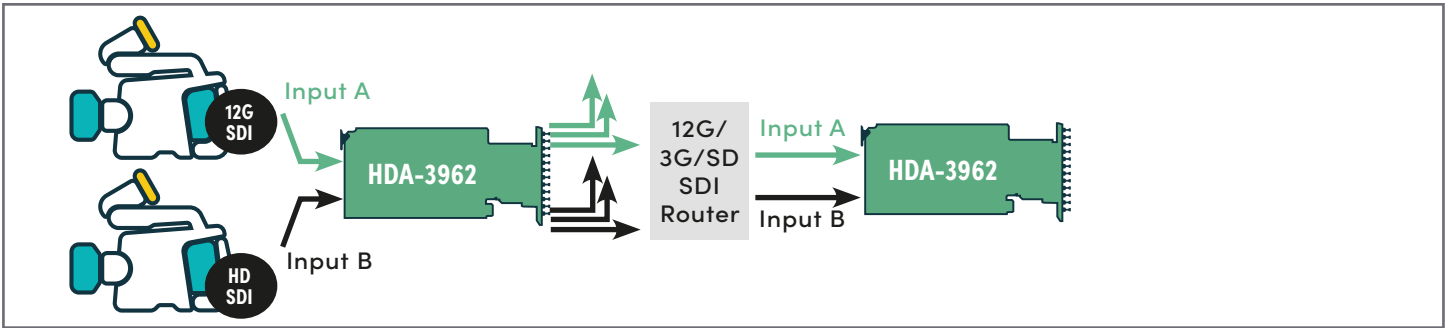
HDA-3962-3DRP-HR

Typical Applications

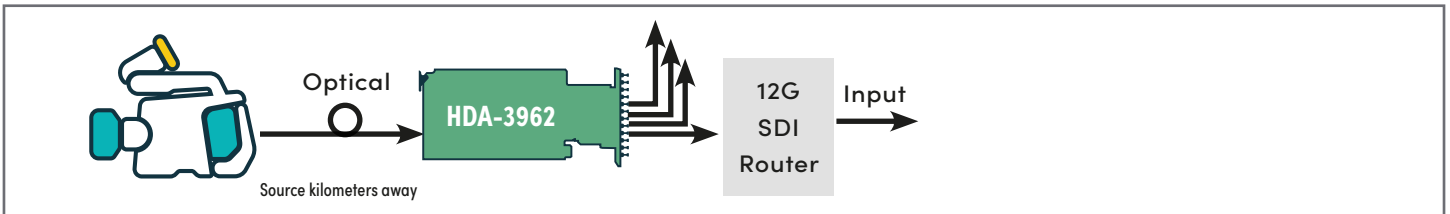
1) Simple router fan-in/fan-out application



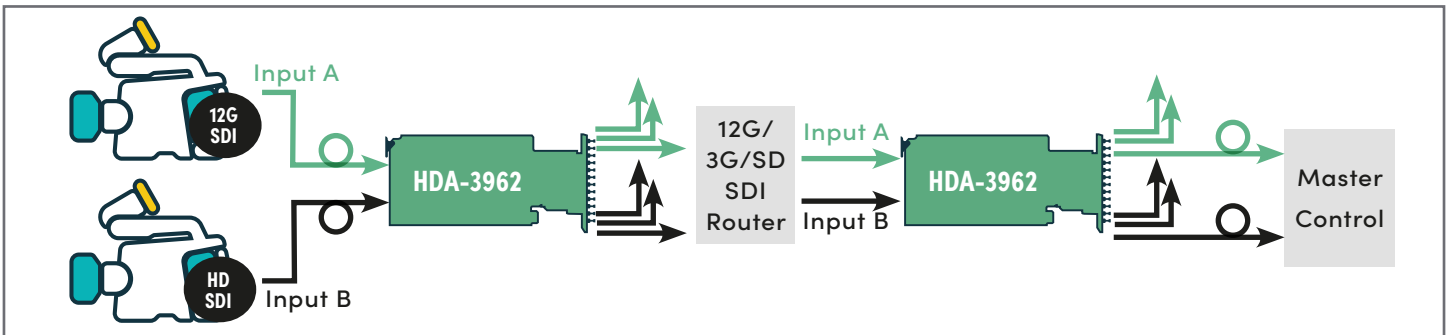
2) Dual channel, dual format multiformat fan-in/fan-out application



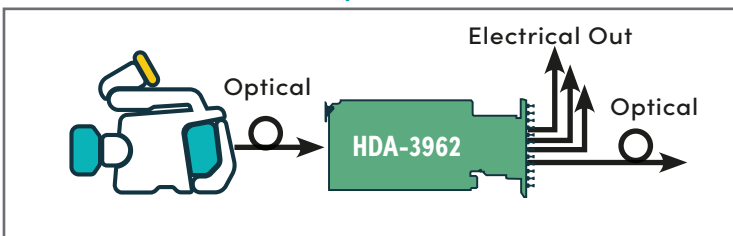
3) Simple channel fiber optic long distance router fan-in/fan-out



4) Dual channel fiber optic long distance router fan-in/fan-out



5) Fiber-to-fiber with electrical drop-down



This product may be protected by one or more patents. For further information, please visit: www.grassvalley.com/patents

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