

Panacea™

Small-Scale Routing



All HD Panacea™ routers now offer 3 Gb/s (1080p) performance!

The affordable, compact Panacea™ routing switcher line is the market leader for small routing applications, offering the largest selection of matrix sizes, options and built-in control features — allowing you to purchase a router tailored to your applications.

PRODUCT DETAILS

HD/SD-SDI

The Panacea wideband digital multirate routing switcher offers a clear growth path from lower-bit-rate SDI and ASI to high-bandwidth HDTV applications. It routes signals from 3.072 Mb/s to 3 Gb/s.

SD-SDI

From 8x8 to 32x32, the Panacea SDI router switches signals from 3.072 to 540 Mb/s.

Wideband Analog Video

The Panacea wideband analog video router switches standard composite NTSC, PAL, SECAM and analog component video signals, and RF/IF-up to 200 MHz.

Analog Audio

The Panacea analog audio router switches standard stereo and mono analog audio signals, as well as timecode.

AES/EBU Digital Audio

The Panacea AES/EBU routing switcher provides synchronous or asynchronous quiet switching for balanced or unbalanced digital audio signals.

FEATURES

- 3 Gb/s (1080p) performance at HD-SDI (1.485 Gb/s) prices
- Flexible matrix partitioning options allow for flexibility and customization
- Available in the widest array of format sizes available — from 8x8 through 32x32 and up to a 256x4 solution
- Available in 1RU or 2RU sizes:
 - Panacea 1RU — single-format matrix options: 16x16, 16x4, 16x1, 8x8 in HD-SDI, SDI, AES, analog video and analog audio
 - Panacea 2RU — dual-format matrix options: 32x32, 32x4, dual 16x16, dual 16x4, dual 8x8 in HD-SDI, SDI, AES, analog video and analog audio
 - Panacea 2RU — mixed-format matrix options: 16x16, 16x4, 16x1 and 8x8 HD-SDI SDI and analog video with analog audio
 - Other mixed formats including HD and SDI with discrete AES available — contact sales for more information
- Comprehensive signal formats include HD-SDI (3 Gb/s), SD-SDI, ASI, analog video, analog audio, AES/EBU balanced and unbalanced and RF
- Choose either integrated universal AC or DC power supplies or external (brick) universal power supplies
- Redundant power supplies, external 1RU and 2RU, integrated 2RU only
- Ethernet communications optional on all Panacea routers except Panacea™ Lite
- Quiet switching of discrete AES/EBU digital audio option
- Signal diagnosis capabilities (i.e., signal presence, error detection)
- Small frame footprint, only 5.25-in. (13.3 cm) deep
- Control via XY, serial RS-232/422, local control panel, optional remote control panel or direct-to-frame; optional IP/Ethernet/SNMP

Key Benefits

- 3 Gb/s performance
- Flexible matrix sizes from 8x8 to 256x4
- Widest range of formats in the industry
- Control via Ethernet, coaxial XY and serial standard
- Redundant power supplies available
- Small-frame footprint
- Budget-conscious price
- Superior quality

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SPECIFICATIONS

Specifications are subject to change without notice.

Frame And Systems

Input

1RU	1RU portable desktop power supply (rear mount AC power supply module available as an option)
2RU	2RU portable desktop power supply (rear mount AC power supply module available as an option)
Desktop Power Supply	Universal input
1RU	47 to 63 Hz, 70 W AC: 100 to 240 VAC DC: -36 to -72 VDC
2RU	47 to 63 Hz, 130 W AC: 100 to 240 VAC DC: -36 to -72 VDC

Output

Total Power	15 VDC
1RU	70 W
2RU	105 W
Performance Temperature	41° to 104° F (5° to 40° C)
Operating Temperature	32° to 122° F (0° to 50° C)

Mechanical

1RU Dimensions (W x H x D)	19 x 5.25 x 1.75 in. (48.3 x 13.3 x 44 cm)
2RU Dimensions (W x H x D)	19 x 5.25 x 3.5 in. (48.3 x 13.3 x 88 cm)

Weight (fully loaded)

1RU	5 lbs (2.3 kg)
2RU	7 lbs (3.2 kg)

Indicators

Standard Resource Module	Power/alarm LED
Enhanced Resource Module	Power/alarm LED, data LED
Cooling (only in HD and analog audio)	Forced air/convection

Input/Output Signals

RS-232/422 Serial Communication	DB-9 pin connector
Alarm/Comm Port	3-pin connector
XY (coaxial communication)	75 ohms, BNC
Sync	75 ohms, BNC
Ethernet	RJ45

Analog Audio

Inputs

Number of Inputs	8, 16 or 32
Signal Type	Balanced, analog audio
Impedance	High Z (20 k ohms), or low Z (600 ohms) Low Z analog audio only available in 16x1, 16x16, 32x32 sizes
Connector	DB-25
CMRR	>75 dB rejection, 20 Hz to 20 kHz
Normal Input Level	+8 dBu
Maximum Level	+28 dBu

Outputs

Number of Outputs	1, 4, 16 or 32
Signal Type	Balanced, analog audio
Connector	DB-25
Maximum Level	+28 dBu
DC Output Level	±50 mV maximum
Maximum Cable Length	328 ft (100 m) of Belden 8451 or equivalent
Minimum Load	600 ohms
Impedance	66 ohms

Performance

Gain	Unity, ±0.15 dB
THD+N*	<0.01% at 28 dBu, <0.005%, typical
IMD (SMPTE 4:1)	<0.005%, +24 dBu, typical <0.01%, worst case
Crosstalk	>90 dB isolation, 20 Hz to 20 kHz, all hostile, typical >85 dB isolation, worst case
Frequency Response	<-3 dB to 200 kHz 0.15 dB, 20 Hz to 20 kHz
S/N Ratio	>105 dB ref. to +28 dBu, 20 Hz to 20 kHz

Temperature

Performance Temperature	41° to 104° F (5° to 40° C)
Operating Temperature	32° to 122° F (0° to 50° C)

* THD+N increases as matrix size and/or number of destinations increase. The worst case is a 128x64 stereo system or a 128x128 mono system with all destinations set to a single source. In this worst case, the THD+N is <0.025%, 20 Hz to 20 kHz, +28 dBu, with a High Z load.

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Analog Video

Inputs

Number of Inputs	8, 16 or 32
Signal Type	Composite or component analog video or any video or RF signal within the voltage and frequency limits
Connector	75 ohms BNC per IEC 169-8
Signal Coupling	DC
Impedance	75 ohms
Return Loss	>45 dB at 5 MHz, >35 dB at 20 MHz >18 dB at 250 MHz
Normal Input Level	1 V pk-pk
Maximum Level	3 V pk-pk centered at 0 V

Outputs

Number of Outputs	1, 4, 8, 16 or 32
Signal Type	Composite, component analog video or any video or RF signal within the voltage and frequency limits
Connector	75 ohms, BNC per IEC 169-8
Impedance	75 ohms
Return Loss	>45 dB at 5 MHz >35 dB at 20 MHz >18 dB at 250 MHz
Normal Level	1 V pk-pk
Maximum Level	3 V pk-pk centered at 0 V
Tilt	0.1%

Performance

DC Offset	<±50 mV
Input to Input Gain	Unity ±0.15 dB
Frequency Response	±0.1 dB from DC to 20 MHz ±0.5 dB from 20 to 50 MHz +2 dB to -3 dB from 50 to 200 MHz
Crosstalk	>65 dB, typical >60 worst case
Differential Gain	<0.15% at 3.58 and 4.43 MHz
Differential Phase	<0.15° at 3.58 and 4.43 MHz
Phase Scatter	<±1° input to input
Signal to Noise	>65 dB 5 MHz
Power Consumption	35 W

Temperature

Performance Temperature	41° to 104° F (5° to 40° C)
Operating Temperature	32° to 122° F (0° to 50° C)

SDI, HD-SDI

Inputs

Number of Inputs	8, 16 or 32
Connector	75 W BNC per IEC 169-8
Signal Type	SMPTE 259M, SMPTE 344M and SMPTE 292M signal formats (HS only) Frequency limited — 3.072 Mb/s to 3 Gb/s
Normal Input Level	800 mV pk-pk ±10%
Maximum Input Level	1200 mV
Return Loss	>-20 dB (5 to 540 MHz) >-18 dB (540 MHz to 1.485 GHz)
Equalization	Auto 270 Mb/s — 1100 ft (335 m) Belden 1694A 1.485 Gb/s (HS only) — 400 ft (122 m) Belden 1694A

Outputs

Number of Outputs	1, 4, 16 or 32
Connector	75 ohms, BNC per IEC 169-8
Signal Type	SMPTE 259M, SMPTE 344M and SMPTE 292M signal formats
Reclocking	Automatic for all SMPTE-defined data rates passthrough for all non-standard clock rates
Return Loss	-20 dB (5 to 540 MHz) >-18 dB (540 MHz to 1.485 GHz) >12dB to 3 Gb/s
Jitter	<0.2 UI @ frequency tested
Output Amplitude	800 mV pk-pk ±10%
Rise and Fall Time	270 Mb/s — 400 to 1500 ps 1.485 Gb/s (HS only) — <270 ps 3 Gb/s (HS only) — <135ps
Overshoot	<10% of amplitude

Performance

DC Offset	0 ±0.5 V
Power Consumption	16x16 = 25 W 32x32 = 50 W
Propagation Delay	<4.5 nS P16 xn S (270 Mb/s) <13 nS P16 xn SR (270 Mb/s) <5.5 nS P32 xn S (270 Mb/s) <13.5 nS P-2 xn SR (270 Mb/s)

Temperature

Performance Temperature	41° to 104° F (5° to 40° C)
Operating Temperature	32° to 122° F (0° to 50° C)

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AES Audio

Inputs

	Balanced I/O	Coaxial I/O
Type	Balanced, transformer coupled	AC coupled
Qty. (Signals)	32, 16 or 8	32, 16 or 8
Qty. (Reference)	One, terminated	One, looping
Connector (Signals)	DB-25	BNC
Connector (Reference)	Removable terminal strip	BNC
Impedance	110 ohms	75 ohms
Return Loss	N/A	>30 dB, 0.1 to 6 MHz >25 dB, 6 to 12 MHz
Signal Amplitude	0.2 V to 7 V pk-pk	0.1 V to 2 V pk-pk

Outputs

	Balanced I/O	Coaxial I/O
Type	Balanced, transformer coupled	Unbalanced
Quantity	32, 16, 8, 4 or 1	32, 16 or 4
Connector	DB-25	BNC
Impedance	110 ohms	75 ohms
Return Loss	N/A	>35 dB, 0.1 to 6 MHz >25 dB, 6 to 12 MHz
Signal Amplitude	5 V pk-pk ±1 V into 110 ohms load	1 V pk-pk ±10% into 75 ohms load
DC Offset	0 V ±50 mV	0 V ±50 mV
Rise and Fall Time	5 to 30 ns	30 to 44 ns

Performance

- Propagation Delay <170 ns, asynchronous mode
<1.5 AES frames, synchronous or SQS modes
- Intrinsic Jitter <5 ns
- Switching Type Asynchronous, synchronous or synchronous quiet switching (SQS)
- AES Frame Rates 30 to 192 kHz in asynchronous mode
32 kHz, 44.1 kHz or 48 kHz in synchronous or SQS mode
- Data Rates Up to 30 Mb/s, 50% duty cycle, asynchronous mode
- Power Consumption <20 W

Temperature

- Performance Temperature 41° to 104° F (5° to 40° C)
- Operating Temperature 32° to 122° F (0° to 50° C)

ORDERING INFORMATION

Signal Formats

- S. SDI, non-reclocking
- SR SDI with reclocking
- HS HD-SDI (wideband digital multi-rate) non-reclocking
- HSR HD-SDI (wideband digital multi-rate) with reclocking
- AEB. AES/EBU balanced, digital audio
- AEC AES/EBU coaxial digital audio
- AEBQ AES/EBU balanced, digital audio quiet switch
- AECQ AES/EBU coaxial digital audio quiet switch
- A2 Analog stereo audio
- V. Analog video

Power Supplies

- I. Internal AC power supply
- Y. Internal DC power supply
- O External AC power supply

Ethernet Connectivity

- E. Enables Ethernet connectivity