

PMD Ogden OPAL



PMD Ogden OPAL Routing Switcher

PMD Ogden OPAL series feature high performance and compact structure. Mix of different signal formats is allowed in a single frame. Switching sizes can be customized from 4×4 to 16×16. Modular design enhances configuration flexibility.

Flexible control

OPAL series are equipped with LCD display and buttons on front panel for local control. Both manual and auto switching are supported. Crosspoint status can be preset and stored for direct switch. RS-232/422 control is supported. Powerful expansion and compatibility is available through using the RS-485 interface for frame cascading control.

OPAL series routing switcher is ideal for applications of large screen display projectors, distance learning, command control centers and multimedia conference systems.

Key Features and Benefits

Frame and signal

- 19", 1RU
- CVBS, SD-SDI, HD-SDI, mono audio, stereo audio and VGA
- CVBS and audio signal mixed routing
- 4x4 ~ 16x16
- Supports vertical blanking interval switching

Communication and control

- Front panel LCD and buttons
- RS-485 interface for cascading control
- Compatible with CREATOR protocol
- Supports manual and auto switching
- RS-232/422 serial communication
- Supports control with dedicated PC applications

High Stability

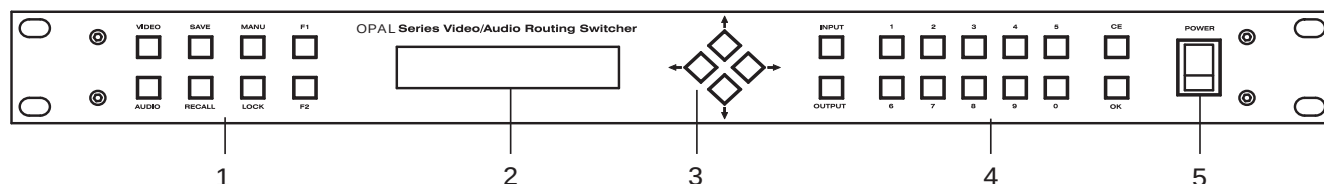
- Save/recall function
- Non-volatile memory



OPAL Series Small-Scale Routing Switcher

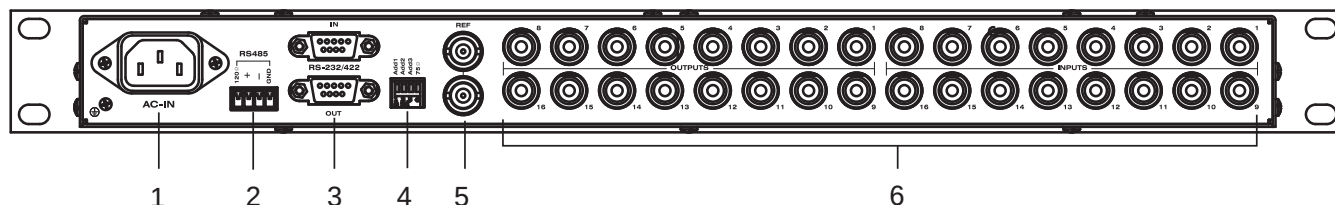
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Front / Rear View



1. Function buttons 2. LCD display 3. Navigation buttons 4. Switching buttons 5. Power on/off switch

Rear View



1. Power supply input 2. RS-485 port 3. RS-232/422 ports 4. DIP switches 5. Reference video inputs 6. Input/output connectors

Specifications

Specifications are subject to change without notice.

CONTROL INTERFACE

RS-232/422 DB-9F (×2) for V/A/VGA
DB-9F (×1) for HD-SDI
RS-485 4Pin (×1)

MECHANICAL

Width..... 19 in. (483 mm)
Height..... 1RU (44 mm)
Depth..... 7.2 in. (183 mm)

ELECTRICAL

Power Supply..... 90 ~ 260 V AC, 50/60 Hz
Power Consumption 40 W

ENVIRONMENTAL

Operating Temperature..... 32° ~ 104° F (0° ~ 40° C)
Relative Humidity..... 10% ~ 90%



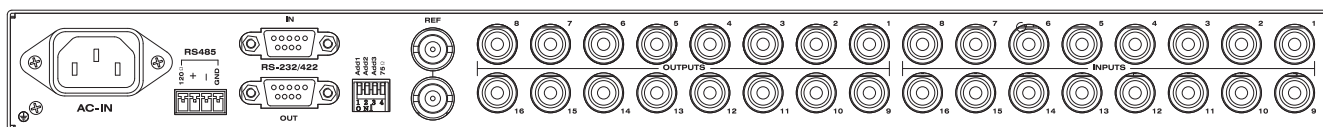
OPAL-V Analog Video Routing Switcher

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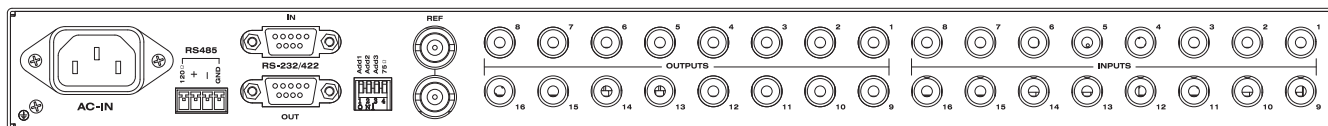
PMD Ogden OPAL-V – Analog Video Routing Switcher

PMD Ogden OPAL-V is an analog video routing switcher in OPAL Series. It uses BNC/RCA connectors as I/O interface. OPAL-V uses a modular design. Switching sizes range from 4×4 to 16×16. With removable modules, it can be configured flexibly.

Back module, BNC connectors



Back module, RCA connectors



Specifications

Specifications are subject to change without notice.

ANALOG VIDEO

INPUT

Connector	BNC/RCA
Signal Format	CVBS
Impedance	75 Ω
Amplitude	1.0 Vp-p
Coupling Mode	AC
Return Loss	>40 dB @ 4.43 MHz
Gain	0 dB
Differential Gain	<0.2% @ 4.43 MHz
Differential Phase	<0.2° @ 4.43 MHz
Frequency Response	± 0.1 dB to 8 MHz
S/N Ratio	>75 dB (unweighted)
K Factor	<0.25%
2T Pulse	<0.25%
Crosstalk	<-60 dB @ 4.43 MHz

OUTPUT

Connector	BNC/RCA
Signal Format	CVBS
Impedance	75 Ω
Amplitude	1.0 Vp-p
Coupling Mode	DC
Return Loss	>40 dB @ 4.43 MHz
Gain	0 dB
Differential Gain	<0.2% @ 4.43 MHz
Differential Phase	<0.2° @ 4.43 MHz
Frequency Response	± 0.1 dB to 8 MHz
S/N Ratio	>75 dB (unweighted)
K Factor	<0.25%
2T Pulse	<0.25%
Crosstalk	<-60 dB @ 4.43 MHz



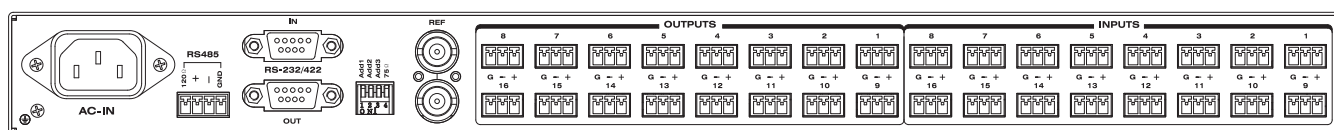
OPAL-A Analog Audio Routing Switcher

PMD Ogden

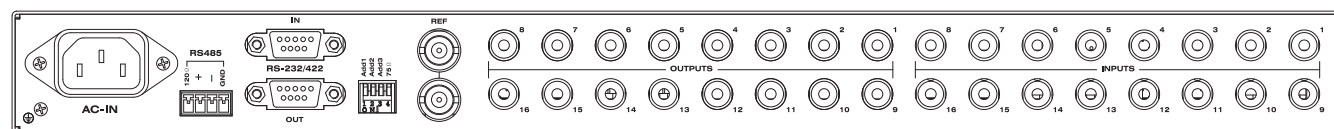
PMD Ogden OPAL-A – Analog Audio Routing Switcher

PMD Ogden OPAL-A is an analog audio routing switcher. It uses 3Pin (balanced) /RCA (unbalanced) connectors as I/O interface. OPAL-A uses a modular design. Switching sizes range from 4×4 to 16×16. With removable modules, the routing switcher can be configured easily and flexibly.

Back module , 3Pin connectors, balanced mono or unbalanced stereo



Back module, RCA connectors, unbalanced mono



Specifications

Specifications are subject to change without notice.

UNBALANCED ANALOG AUDIO

INPUT

Connector	RCA
Signal Format	Unbalanced analog audio
Common Mode Rejection	>60 dB, 20Hz ~ 20 kHz
Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	< 0.02%
THD+N	< 0.05%

OUTPUT

Connector	RCA
Signal Format	Unbalanced analog audio
Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	< 0.02%
THD+N	< 0.05%

BALANCED ANALOG AUDIO

INPUT

Connector	3Pin
Signal Format	Balanced analog audio
Impedance	110 kΩ
Common Mode Rejection	>60 dB, 20 Hz ~ 20 kHz
Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	<0.02%
THD+N	<0.05%

OUTPUT

Connector	3Pin
Signal Format	Balanced analog audio
Impedance	33 Ω
Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	<0.02%
THD+N	<0.05%



OPAL-VA

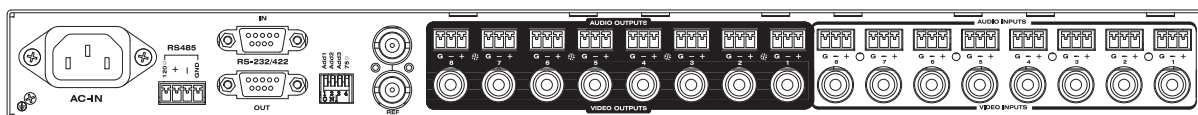
Analog Video and Audio Routing Switcher

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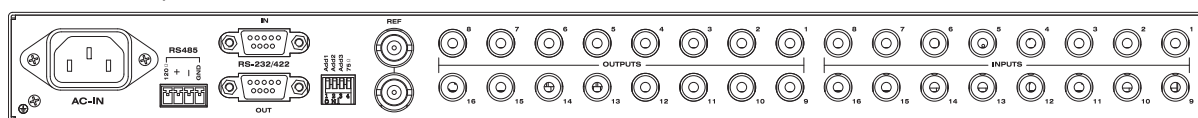
PMD Ogden OPAL-VA – Analog Video and Audio Routing Switcher

PMD Ogden OPAL-VA is an analog video and audio mixed routing switcher. It uses 3Pin (balanced) /RCA (unbalanced) as audio connector, BNC/RCA as video connector. It uses a modular design and switching sizes range from 4×4 to 8×8. With removable modules, the routing switcher can be configured easily and flexibly.

Back module, 3Pin+BNC connectors



Back module, RCA connectors



Specifications

Specifications are subject to change without notice.

ANALOG VIDEO INPUT

Connector	BNC/RCA
Signal Format	CVBS
Impedance	75 Ω
Amplitude	1.0 Vp-p
Coupling Mode	AC
Return Loss	>40 dB @ 4.43 MHz

ANALOG VIDEO OUTPUT

Connector	BNC/RCA
Signal Format	CVBS
Impedance	75 Ω
Amplitude	1.0 Vp-p
Coupling Mode	DC
Return Loss	>40 dB @ 4.43 MHz

PERFORMANCE

Gain	0 dB
Differential Gain	<0.2% @ 4.43 MHz
Differential Phase	<0.2° @ 4.43 MHz
Frequency Response	<±0.1 dB to 8 MHz
S/N Ratio	>75 dB (unweighted)
K Factor	<0.25%
2T Pulse	<0.25%
Crosstalk	<-60 dB @ 4.43 MHz

UNBALANCED ANALOG AUDIO INPUT

Connector	RCA
Signal Format	Unbalanced analog audio
Common Mode Rejection	>60 dB, 20 Hz~20 kHz

UNBALANCED ANALOG AUDIO OUTPUT

Connector	RCA
Signal Format	Unbalanced analog audio

PERFORMANCE

Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	< 0.02%
THD+N	< 0.05%

BALANCED ANALOG AUDIO INPUT

Connector	3Pin
Signal Format	Balanced analog audio
Impedance	112 k Ω
Common Mode Rejection	>60 dB, 20 Hz ~ 20 kHz

BALANCED ANALOG AUDIO OUTPUT

Connector	3Pin
Signal Format	Balanced analog audio
Impedance	33 Ω

PERFORMANCE

Gain	0 dB
Frequency Response	<±0.2 dB, 20 Hz ~ 20 kHz
THD	< 0.02%
THD+N	< 0.05%



OPAL-HD

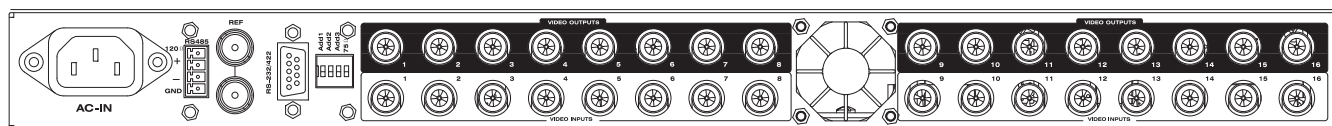
HD Digital Video Routing Switcher

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PMD Ogden OPAL-HD – HD Digital Video Routing Switcher

PMD Ogden OPAL-HD is a HD/SD-SDI digital video routing switcher. It uses BNC as its I/O interface. Switching sizes are 8×8, 16×8 and 16×16.

Back module, BNC connectors



Specifications

Specifications are subject to change without notice.

HD INPUT

Connector.....	BNC
Signal Format.....	HD-SDI, SD-SDI
Impedance.....	75 Ω
Coupling Mode	AC
Amplitude.....	800 mV $\pm 10\%$
Rise/Fall Time.....	≤ 270 ps (20% ~ 80%)
Jitter.....	< 0.2 UI
Overshoot.....	$< 10\%$ of signal amplitude

HD OUTPUT

Connector	BNC
Signal Format.....	HD-SDI, SD-SDI
Impedance.....	75 Ω
Coupling Mode.....	AC
Amplitude.....	800 mV $\pm 10\%$
Rise/Fall Time.....	≤ 270 ps (20% ~ 80%)
Jitter.....	< 0.2 UI
Overshoot.....	$< 10\%$ of signal amplitude



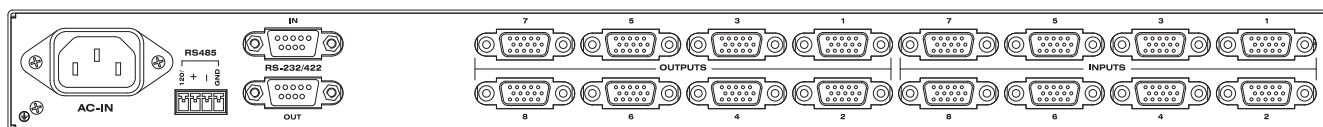
OPAL-VGA VGA Routing Switcher

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PMD Ogden OPAL-VGA – VGA Routing Switcher

PMD Ogden OPAL-VGA is a VGA video routing switcher. It uses HD-15 as its I/O interface. Switching sizes range from 4×1 to 8×8. OPAL-VGA uses a layered independent transmission, routing R, G, B, H and V independently. Undisturbed transmission ensures clear VGA image.

Back module, HD-15 connectors



Specifications

Specifications are subject to change without notice.

VGA VIDEO INPUT

Connector	HD-15F
Signal Format	VGA
Amplitude of R, G, B	700 mVp-p
Amplitude of H, V	1 ~ 5 V
R, G, B Impedance	75 Ω
Return Loss	-30 dB @ 5 MHz
Coupling Mode	AC coupled/DC restored
Bandwidth	-3 dB @ 450 MHz
Gain	0 dB
Differential Phase	<0.15° @ 4.43 MHz
Differential Gain	<0.15% @ 4.43 MHz
S/N Ratio	>75 dB
Crosstalk	<74 dB @ 10 MHz

VGA VIDEO OUTPUT

Connector	HD-15F
Signal Format	VGA
Amplitude of R, G, B	700 mVp-p
Amplitude of H, V	1 ~ 5 V
R, G, B Impedance	75 Ω
Return Loss	-30 dB @ 5 MHz
Coupling Mode	DC coupled
Bandwidth	-3 dB @ 450 MHz
Gain	0 dB
Differential Phase	<0.15° @ 4.43 MHz
Differential Gain	<0.15% @ 4.43 MHz
S/N Ratio	>75 dB
Crosstalk	<74 dB @ 10 MHz



OPAL Series Ordering Information

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Ordering Information

Frame Components

OP-FM-1RU	OPAL frame
OP-PWR	OPAL power supply

I/O Modules

OP-A-IN-DOWN-PIN	4-channel balanced analog audio input module (Down)
OP-A-IN-UP-PIN	4-channel balanced analog audio input module (Up)
OP-A-OUT-DOWN-PIN	4-channel balanced analog audio output module (Down)
OP-A-OUT-UP-PIN	4-channel balanced analog audio output module (Up)
OP-A-IN-DOWN-RCA	4-channel unbalanced analog audio input module (Down)
OP-A-IN-UP-RCA	4-channel unbalanced analog audio input module (Up)
OP-A-OUT-DOWN-RCA	4-channel unbalanced analog audio output module (Down)
OP-A-OUT-UP-RCA	4-channel unbalanced analog audio output module (Up)
OP-S-IN-DOWN	4-channel unbalanced analog stereo audio input module (Down)
OP-S-IN-UP	4-channel unbalanced analog stereo audio input module (Up)
OP-S-OUT-DOWN	4-channel unbalanced analog stereo audio output module (Down)
OP-S-OUT-UP	4-channel unbalanced analog stereo audio output module (Up)
OP-V-IN-DOWN-BNC	4-channel analog video input module (Down)
OP-V-IN-UP-BNC	4-channel analog video input module (Up)
OP-V-OUT-DOWN-BNC	4-channel analog video output module (Down)
OP-V-OUT-UP-BNC	4-channel analog video output module (Up)
OP-V-IN-DOWN-RCA	4-channel analog video input module (Down)
OP-V-OUT-UP-RCA	4-channel analog video input module (Up)
OP-VGA-8×8	8×8 VGA switching module
OP-VGA-4×4	4×4 VGA switching module
OP-HD-16×16	16-channel HD input switching module, used with OPAL-HD-8-OPT
OP-HD-8-OPT	8-channel HD output module, used with OPAL-HD-16×16
OP-HD-8×8	8×8 HD switching module