

FLEX Series Small-Scale Routing Switcher



FLEX series features high performance and compact structure. Mix of different signal formats (CVBS, AUDIO, 3G/HD/SD-SDI, DVB-ASI, HDMI and VGA) is allowed in a single frame. Switching sizes can be customized from 4x4 to 16x16(FLEX-VGA and FLEX-HDMI range from 4x4 to 8x8). Modular design enhances configuration flexibility.

Flexible control

FLEX 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 and TCP/IP control is supported. Powerful expansion and compatibility is available through the RS-485 interface for frame cascading control.

FLEX 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, AUDIO, 3G/HD/SD-SDI, HDMI, DVB-ASI, VGA
- CVBS and audio signal mixed routing
- 4x4 ~ 16x16 (FLEX-HDMI, FLEX-VGA up to 8x8)
- REF sync switching for CVBS and SDI signals

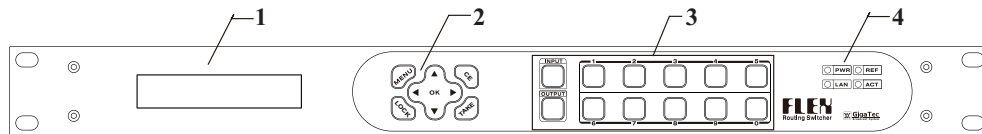
Communication and control

- Front panel LCD and buttons
- RS-485 interface for cascading control
- Compatible with CREATOR protocol
- Supports manual and auto switching
- RS-232/422, TCP/IP control

High Stability

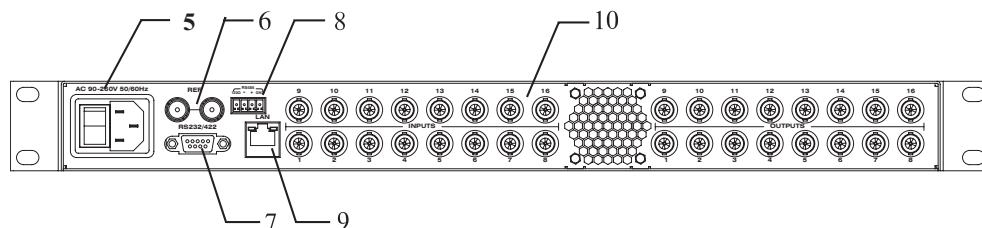
- Save/recall function
- Non-volatile memory
- Firmware upgrade

FRONT VIEW



1. LCD display 2. Navigation buttons 3. Switching buttons 4. Status indication

REAR VIEW



5. Power supply switch 6. Reference video inputs 7. RS-232/422 ports 8. RS-485 port 9. LAN 10. Input/output connectors

FLEX Series Small-Scale Routing Switcher

SPECIFICATIONS

Specifications are subject to change without notice.

CONTROL INTERFACE

RS-232/422.....DB-9F (x1)
 RS-485.....4Pin (x1)
 TCP/IP.....RJ-45 (x1)

ELECTRICAL

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

MECHANICAL

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

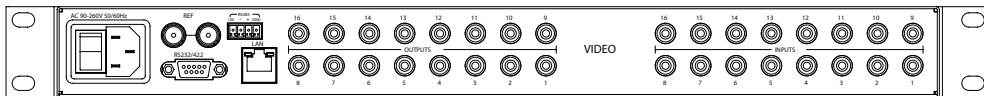
ENVIRONMENTAL

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

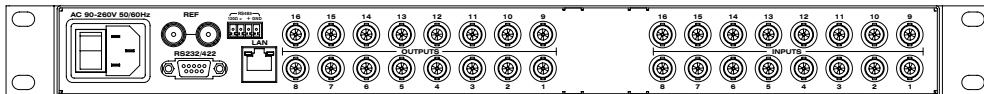
FLEX Series Analog Video Routing Switcher

FLEX series analog video routing switcher uses BNC/RCA connectors as I/O interface. It uses a modular design. Switching sizes range from 4x4 to 16x16. With removable modules, it can be configured flexibly.

Back module, RCA connectors



Back module, BNC 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

Impedance.....75 Ω
 Amplitude.....1.0 Vp-p
 Coupling Mode.....DC
 Return Loss.....>40 dB @ 4.43 MHz

VIDEO SYNC INPUT

Type.....Analog video sync
 Standard.....DAL, NTSC or level sync
 Connector.....BNC

MISCELLANEOUS

Gain.....0 dB
 Differential Gain.....<0.2% @ 4.43 MHz
 Differential Phase.....<0.2° @ 4.43 MHz
 Frequency Response.....< \pm 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

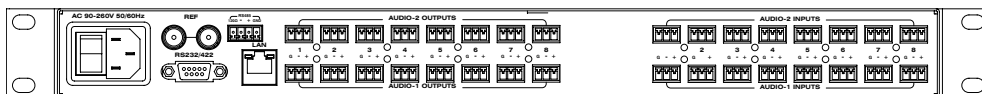
ANALOG VIDEO OUTPUT

Connector.....BNC/RCA
 Signal Format.....CVBS

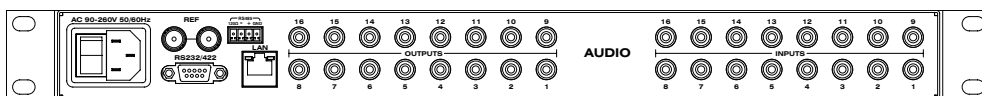
FLEX Series Analog Audio Routing Switcher

FLEX series analog audio routing switcher uses 3Pin (balanced/unbalanced stereo) /RCA (unbalanced) connectors as I/O interface. It uses a modular design. Switching sizes range from 4x4 to 16x16. With removable modules, the routing switcher can be configured easily and flexibly.

Back module , 3Pin connectors, balanced



Back module, RCA connectors, unbalanced



SPECIFICATIONS

Specifications are subject to change without notice.

UNBALANCED ANALOG AUDIO

INPUT

Connector.....RCA(mono)/3Pin(stereo)
Signal Format.....Unbalanced analog audio

OUTPUT

Connector.....RCA(mono)/3Pin(stereo)
Signal Format.....Unbalanced analog audio

MISCELLANEOUS

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

OUTPUT

Connector.....3Pin
Signal Format.....Balanced analog audio
Impedance.....33 Ω

MISCELLANEOUS

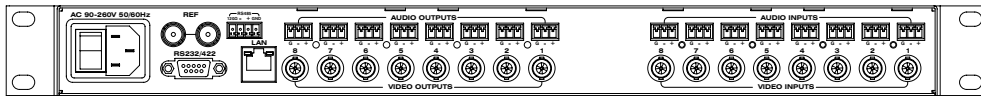
Gain.....0 dB
Frequency Response.....<±0.2 dB, 20 Hz ~ 20 kHz
THD.....<0.02%
THD+N.....<0.05%

FLEX Series Small-Scale Routing Switcher

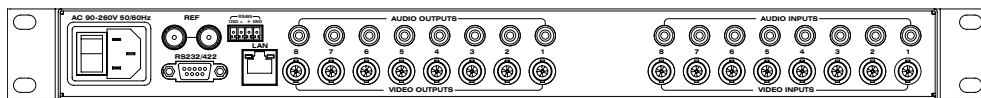
FLEX Series Analog Video and Audio Routing Switcher

FLEX series analog video and audio routing switcher uses 3Pin (balanced/unbalanced stereo) /RCA (unbalanced) as audio connector, BNC/RCA as video connector. It uses a modular design and switching sizes range from 4x4 to 8x8. With removable modules, the routing switcher can be configured easily and flexibly.

Back module, 3Pin+BNC connectors



Back module, BNC+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 coupled
 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 coupled
 Return Loss.....> 40 dB @ 4.43 MHz

MISCELLANEOUS

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

MISCELLANEOUS

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

BALANCED ANALOG AUDIO OUTPUT

Connector.....3Pin
 Signal Format.....Balanced analog audio
 Impedance.....33 Ω

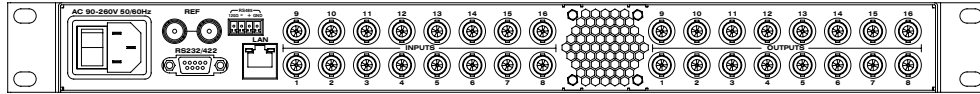
MISCELLANEOUS

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

FLEX Series 3G/HD/SD-SDI Digital Video Routing Switcher

FLEX series 3G/HD/SD-SDI digital video routing switcher uses BNC as I/O interface. It supports input cable auto equalizing and output reclocking. Switching sizes are 8x8, 16x8 and 16x16.

Back module, BNC connectors



SPECIFICATIONS

Specifications are subject to change without notice.

INPUT

Connector.....	BNC
Signal Format.....	3G-SDI, HD-SDI, SD-SDI
Impedance.....	75 Ω
Rate.....	3G-SDI up to 3 Gbps max HD-SDI up to 1.5 Gbps SD-SDI up to 650 Mbps
Cable EQ.....	3G-SDI 100 m Belden 1694A or equivalent cable HD-SDI 150 m Belden 1694A or equivalent cable SD-SDI 300 m Belden 1694A or equivalent cable
Return Loss.....	3G-SDI ≥15 dB @ 5 MHz~1.5 GHz ≥10 dB @ 1.5 MHz~3 GHz HD-SDI ≥15 dB @ 5 MHz~1.5 GHz SD-SDI ≥15 dB @ 5~270 MHz

OUTPUT

Connector.....BNC

Signal Format.....	3G-SDI, HD-SDI, SD-SDI
Impedance.....	75 Ω
Offset.....	0V DC ±0.5V
Reclocking.....	SMPTE 424M, SMPTE 292M and SMPTE 259M-C compliant Supports DVB-ASI at 270Mb/s
Return Loss.....	3G-SDI ≥15 dB @ 5 MHz~1.5 GHz ≥10 dB @ 1.5 MHz~3 GHz HD-SDI ≥15 dB @ 5 MHz~1.5 GHz SD-SDI ≥15 dB @ 5~270 MHz

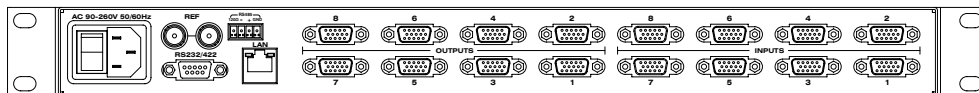
MISCELLANEOUS

Amplitude.....	800 mV±10%
Rise/Fall Time.....	3G-SDI: ≤135 ps(20%~80%) HD-SDI: ≤270 ps (20%~80%) SD-SDI: 0.4~1.5 ns (20%~80%)
Jitter.....	3G-SDI: ≤0.3 UI HD-SDI&SD-SDI: < 0.2 UI
Overshoot.....	≤10% of amplitude

FLEX Series VGA Routing Switcher

FLEX series VGA video routing switcher uses HD-15 as I/O interface. Switching sizes range from 4x1 to 8x8. It 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.....	DC coupled

VGA VIDEO OUTPUT

Connector.....HD-15F

Signal Format.....	VGA
Amplitude of R, G, B.....	700 mVp-p
Amplitude of H, V.....	TTL level
R, G, B Impedance.....	75 Ω
Return Loss.....	>30 dB @ 5 MHz
Coupling Mode.....	DC coupled

MISCELLANEOUS

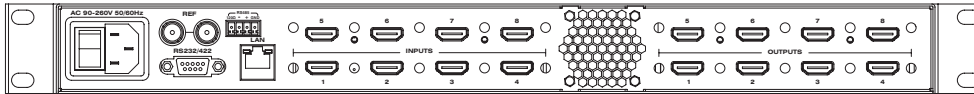
Gain.....	0 dB
Differential Phase.....	< 0.2° @ 4.43 MHz
Differential Gain.....	< 0.2% @ 4.43 MHz
S/N Ratio.....	> 75 dB
Crosstalk.....	- 68 dB @ 10 MHz

FLEX Series Small-Scale Routing Switcher

FLEX Series HDMI Routing Switcher

FLEX series HDMI video routing switcher (DVI-D signal compatibility) uses HDMI as I/O interface. Switching sizes range from 4x4 to 8x8. It supports auto cable equalizing and reclocking. Input distance supports up to 25m (24AWG or equivalent cable), with EDID management supported.

Back module, HDMI connectors



SPECIFICATIONS

Specifications are subject to change without notice.

INPUT

Connector.....HDMI
 Signal Type.....DVI 1.0, HDMI 1.3a
 Minimum Level.....Differential 500 mVp-p
 Maximum Level.....Differential 1560 mVp-p
 Impedance.....50Ω single-ended (TMDS)

Impedance.....50Ω single-ended (TMDS)
 Output Level.....Differential 1000 mVp-p

MISCELLANEOUS

Gain.....0dB
 Signal.....VGA, XGA, SXGA, UXGA, WUXGA,
 480i, 576i, 480P, 576P, 720P,
 1080i, 1080P
 Data Transmission.....Up to 6.75 Gbps
 (2.25Gbps for each color)

OUTPUT

Connector.....HDMI
 Signal Type.....DVI 1.0, HDMI 1.3a