

3G/HD/SD/ASI Routing Switcher

MFR-3000



FOR.A[®]
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

3G/HD/SD/ASI ROUTING SWITCHER **MFR-3000**



Ready for 4K/8K, the MFR-3000 enables compact system building that requires fewer cables and leaves more rack space (using 12G-SDI*¹) and more outputs for production (using innovative multi viewer output)

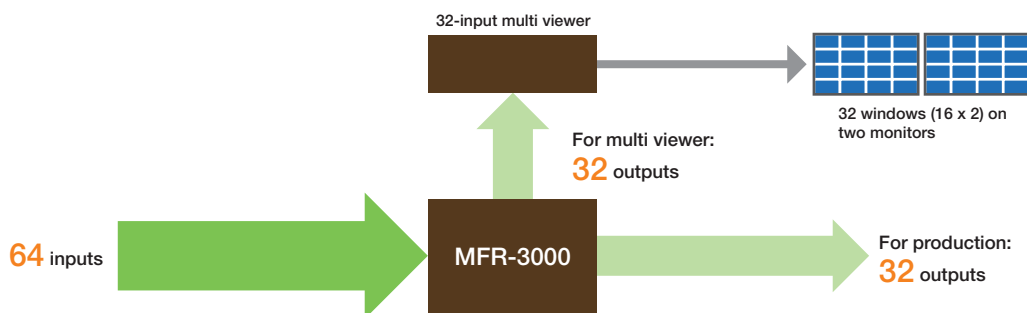
*1 Optional

Add up to eight I/O cards, with eight channels per card. Configure a matrix of up to 64 x 64 inputs and outputs. In mixed environments, audio modules can also be added in the same frame.

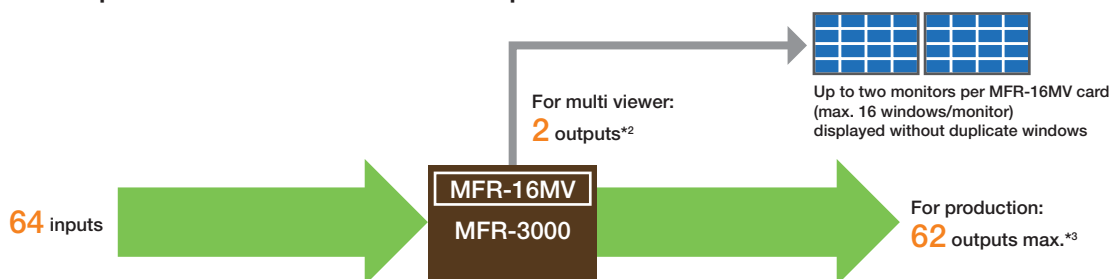
Multi Viewer Functionality Keeps More Outputs Available

Unlike conventional systems with external multi viewers that require one output per window, using an MFR-16MV card only requires one output per *monitor*, leaving other outputs available for production.

■ Connection example: MFR-3000 + multi viewer

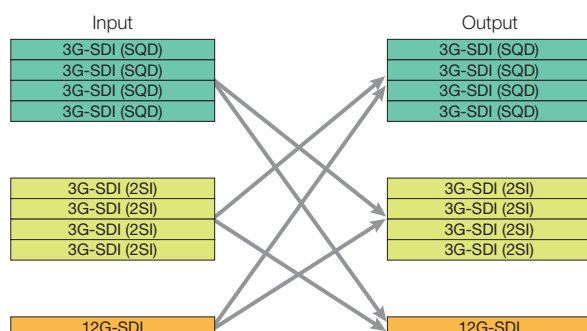


■ Connection example: MFR-3000 + MFR-16MV option

*² Add up to four cards (available two cards per option)*³ Using MFR-16MV, with 32 windows (16 x 2) on two monitors

Gearbox Functionality

Versatile signal conversion



4K conversion (12G-SDI/quad link 3G-SDI, 2SI/SQD)

Add the MFR-8SDIGB and MFR-8SDOGB cards for conversion of video (quad link 3G-SDI/12G-SDI) and mapping (2SI/SQD) formats. These options open the door for equipment previously incompatible with 12G-SDI, enabling system building focused on this new specification.

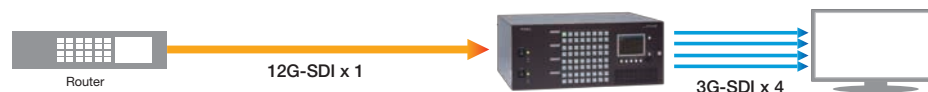
Applications

Convert quad link 3G-SDI camera output to 12G-SDI



12G-SDI transmission greatly reduces cables

Convert 12G-SDI router output to quad link 3G-SDI for monitors



Solid Performance in Eight Features

Multi-format video input and output

Support for SD/HD/3G-SDI and DVB-ASI input and output. No need to worry about signal formats, thanks to auto signal detection.

Outstanding redundancy

As core system components, FOR-A routing switchers can incorporate redundancy to ensure nonstop operation in case of problems.

- Redundant CPU board (optional MFR-30CPU)
- Redundant power supply (optional MFR-30PS)
- Router linkage: Parallel operation of two routing switchers ensures matrix redundancy and enables quadruple redundancy of the power supply unit and CPU board.

SNMP monitoring

Can be integrated into an SNMP monitoring system. Enables monitoring of various operational states, such as power, fan, and CPU status, and crosspoint errors. If system failure and recovery occur, SNMP traps are sent to managers.

GUI-based configuration

A built-in webserver enables immediate setup without installing software on external devices. Via this interface, settings can also be configured in an offline environment.

Versatile crosspoint control

Besides typical crosspoint switching, the unit enables a variety of crosspoint control.

- Salvo ■ Take ■ Link ■ Error-proofing (Inhibit, Lock)

Front control panel (MFR-30FP)

Equipped with a control panel for convenient crosspoint switching from the front.

Interface expansion units

Three types of interface expansion units are available to suit specific applications.

- MFR-TALM: Tally Manager
- MFR-RULINK: Remote Control Relay Unit
- MFR-GPI: GPI Unit

Connectivity with other products





Can be remote-controlled through the Ethernet or serial ports. Compatibility with common protocols such as TSL and Harris enables tally linkage or auto source name tracking for crosspoint switching. As well as our exclusive interface to the FOR-A line of HVS production switchers and standalone multi viewers.

Optional

Video I/O Cards

	Input Cards		Output Cards	
	MFR-8SDI	MFR-8SDIGB	MFR-8SDO	MFR-8SDOGB
Supported formats	3G/HD/SD	12G/3G	3G/HD/SD	12G/3G
BNC	8	8	8	8
Ports supporting 12G-SDI	0	2	0	2
Gearbox (12G/3G-SDI interconversion)	0	2	0	2




Audio I/O Cards




	Input Cards		Output Cards	
	MFR-8AAI	MFR-8AESI	MFR-8AAO	MFR-8AESO
				
Application	A/D conversion	AES/EBU input	D/A conversion	AES/EBU output
Interfaces	25-pin D-sub (female) Balanced or unbalanced, x 2	BNC x 8	25-pin D-sub (female) Balanced or unbalanced, x 2	BNC x 8
Channels	16 (8 stereo pairs)	16 (8 stereo pairs)	16 (8 stereo pairs)	16 (8 stereo pairs)
Impedance	600Ω or Hi-Z	75Ω	Less than 100Ω	75Ω
Sampling frequency	48 kHz	—	48 kHz	—


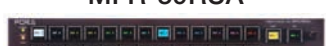

Multi Viewer

	MFR-16MV
Interfaces	BNC x 16 (using 2 slots)

Remote Control Units

Basic models	MFR-16RUW	MFR-32RUW	MFR-64RUW
			
Size	1RU	1RU	2RU
Buttons	16 (green)	32 (green)	64 (green)
Features	16 customizable buttons	32 customizable buttons	64 customizable buttons

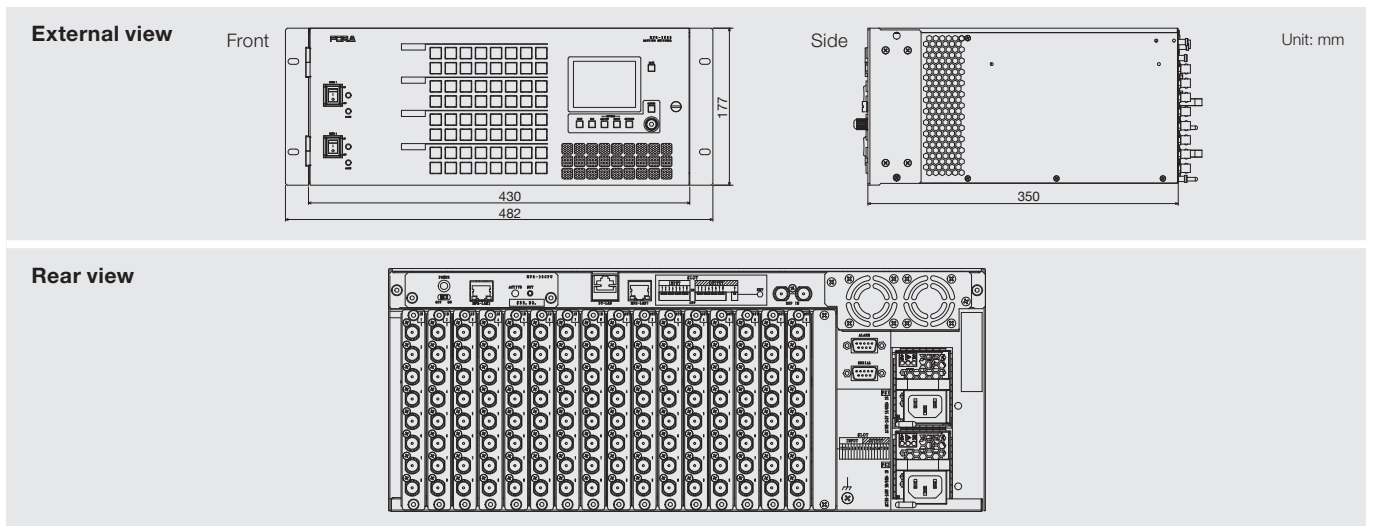
Standard models	MFR-16RU	MFR-16RUD	MFR-40RU
			
Size	1RU	1RU	1RU
Buttons	16 (green)	16 (green)	40 (red/green/orange)
Features	16 customizable buttons	<ul style="list-style-type: none"> 16 customizable buttons Equipped with a status/setting menu display 	<ul style="list-style-type: none"> All buttons are customizable Redundant power supply (AC adapter)

Full-featured models with display	MFR-18RUA	MFR-39RUA	MFR-16RUTA
			
Size	1RU	2RU	2RU half tabletop
Buttons	18 (red/green/orange)	39 (13 x 3 rows)	16 (red/green/orange)
Features	<ul style="list-style-type: none"> Buttons feature an OLED display that can show source names or assigned functions (7 colors: W, Ye, Cy, G, Mg, R, B) All buttons are customizable Redundant power supply (AC adapter) 	<ul style="list-style-type: none"> Buttons feature an OLED display that can show source names or assigned functions (7 colors: W, Ye, Cy, G, Mg, R, B) 6 customizable function buttons (3 colors: R, G, Or) separate from main buttons Equipped with a display showing information on current sources, destinations, and pages Ideal as a main control unit covering the entire crosspoint setup Redundant power supply (AC adapter) 	<ul style="list-style-type: none"> 16 customizable buttons Buttons feature an OLED display that can show source names or assigned functions (7 colors: W, Ye, Cy, G, Mg, R, B)

Specifications

Video formats		3G: 1080/60p, 1080/59.94p, 1080/50p HD: 1080/60i, 1080/59.94i, 1080/50i, 1080/30p, 1080/30PsF, 1080/29.97p, 1080/29.97PsF, 1080/23.98p, 1080/23.98PsF, 1080/25p, 1080/25PsF, 1080/24p, 1080/24PsF, 720/60p, 720/59.94p, 720/50p SD: 525/60, 625/50
Matrix size		Min. 8 x 8 - Max. 64 x 64, expandable in 8-I/O increments
Video inputs (optional)	MFR-8SDI	SMPTE424 (3 Gbps), SMPTE292 (1.5 Gbps), SMPTE259M (270 Mbps), DVB-ASI
	MFR-8SDIGB	SMPTE2082 (12 Gbps), SMPTE424 (3 Gbps)
Input cable equalization		3G/HD-SDI: 100 m (using 5C-FB or equivalent cable: Belden 1694A) SD-SDI: 200 m (using 5C-2V or equivalent cable: Belden 8281)
Video outputs (optional)	MFR-8SDO	SMPTE424 (3 Gbps), SMPTE292 (1.5 Gbps), SMPTE259M (270 Mbps), DVB-ASI
	MFR-8SDOGB	SMPTE2082 (12 Gbps), SMPTE424 (3 Gbps)
Audio inputs (optional)	MFR-8AAI (analog)	25-pin D-sub (female) x 2 (16 channels, 8 stereo pairs), balanced or unbalanced; input impedance: 600Ω or Hi-Z, sampling frequency: 48 kHz
	MFR-8AESI (AES/EBU)	BNC x 8 (16 channels, 8 stereo pairs); input impedance: 75Ω
Audio outputs (optional)	MFR-8AAO (analog)	25-pin D-sub (female) x 2 (16 channels, 8 stereo pairs), balanced or unbalanced; output impedance: less than 100Ω, sampling frequency: 48 kHz
	MFR-8AESO (AES/EBU)	BNC x 8 (16 channels, 8 stereo pairs); output impedance: 75Ω
Multi viewer (optional)	MFR-16MV	BNC x 16 (using two slots)
Genlock input		BB: NTSC 0.429 V (p-p)/PAL 0.45 V (p-p) or Tri-sync: ±0.3 V (p-p), 75Ω, BNC x 2, with loop-through (to be terminated with 75Ω terminator, if unused)
Interfaces	MFR-LAN	10/100/1000Base-T, RJ-45 x 2 (max.) (Connected to MFR series products. Up to 128 units can be connected.) (Second port only used in MFR-30CPU configurations.)
	PC-LAN	10/100BaseTX, RJ-45 x 1 (Connected to a computer or external device)
	SERIAL	RS-422 9-pin D-sub (male) x 1 (can be ordered as RS-232C, using an internal switch)
	ALARM	9-pin D-sub (female) x 1 (Input: reset/Output: alarm (power, fan, crosspoint, CPU))
Router linkage		Maximum: 8
Temperature/humidity		0°C to 40°C/30% to 85% (no condensation)
Power		100 V to 240 V AC ±10%, 50/60 Hz
Consumption		Approx. 150 VA (at 100 V AC, in a 64 x 64 configuration with a redundant CPU and power supply); max. 671 VA (at 100 V AC, used with an audio router)
Dimensions/weight		482 (W) x 177 (H) x 350 (D) mm, EIA 4RU/18 kg (with all options installed)
Included accessories		Operation manual (CD-ROM), AC cord, rack mount bracket, AC cord retaining clip
Consumables		Power unit: Replace every 5 years Fans (P-1529, P-1567): Replace every 4 years
Options*		MFR-30FP: Front control panel MFR-GPI: GPI unit MFR-TALM: Tally manager MFR-RULINK: Remote control relay unit MFR-30CPU: Redundant CPU card MFR-30PS: Redundant power card

* See "Options" for details on remote control units, video I/O cards, and multi viewers.



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