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)

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

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

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

12G-SDI transmission greatly reduces cables

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

<table>
<thead>
<tr>
<th></th>
<th>Input Cards</th>
<th>Output Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFR-8SDI</td>
<td>MFR-8SDI G&amp;B</td>
</tr>
<tr>
<td>Supported formats</td>
<td>3G/HD/SD</td>
<td>12G/3G</td>
</tr>
<tr>
<td>BNC</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Ports supporting 12G-SDI</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Gearbox (12G/3G-SDI interconversion)</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
### Audio I/O Cards

<table>
<thead>
<tr>
<th></th>
<th>Input Cards</th>
<th>Output Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MFR-8AAI</strong></td>
<td>A/D conversion</td>
<td>D/A conversion</td>
</tr>
<tr>
<td><strong>MFR-8AESI</strong></td>
<td>AES/EBU input</td>
<td>AES/EBU output</td>
</tr>
<tr>
<td><strong>MFR-8AAO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MFR-8AESO</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **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

<table>
<thead>
<tr>
<th></th>
<th>MFR-16RUW</th>
<th>MFR-32RUW</th>
<th>MFR-64RUW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>1RU</td>
<td>1RU</td>
<td>2RU</td>
</tr>
<tr>
<td><strong>Buttons</strong></td>
<td>16 (green)</td>
<td>32 (green)</td>
<td>64 (green)</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>16 customizable buttons</td>
<td>32 customizable buttons</td>
<td>64 customizable buttons</td>
</tr>
</tbody>
</table>

#### Standard models

<table>
<thead>
<tr>
<th></th>
<th>MFR-16RU</th>
<th>MFR-16RUD</th>
<th>MFR-40RU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>1RU</td>
<td>1RU</td>
<td>1RU</td>
</tr>
<tr>
<td><strong>Buttons</strong></td>
<td>16 (green)</td>
<td>16 (green)</td>
<td>40 (red/green/orange)</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>16 customizable buttons</td>
<td>• 16 customizable buttons</td>
<td>• All buttons are customizable • Redundant power supply (AC adapter)</td>
</tr>
</tbody>
</table>

#### Full-featured models with display

<table>
<thead>
<tr>
<th></th>
<th>MFR-18RUA</th>
<th>MFR-39RUA</th>
<th>MFR-16RUTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>1RU</td>
<td>2RU</td>
<td>2RU half tabletop</td>
</tr>
<tr>
<td><strong>Buttons</strong></td>
<td>18 (red/green/orange)</td>
<td>39 (13 x 3 rows)</td>
<td>16 (red/green/orange)</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>• 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)</td>
<td>• 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)</td>
<td>• 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)</td>
</tr>
</tbody>
</table>
## Specifications

### Video formats
- 3G: 1080/60p, 1080/59.94p, 1080/50p
- 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-BSLD
- SMPTE2424 (3 Gbps), SMPTE2429 (1.5 Gbps), SMPTE292M (270 Mbps), DVBS-ASI
- MFR-BSLDG8
- SMPTE2082 (12 Gbps), SMPTE2424 (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)
- Digital video output compliant with the following (75Ω, BNC; with auto re-clocking)

### Audio inputs (optional)
- MFR-BAAI (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-BAESI (AES/EBU)
- BNC x 8 (16 channels, 8 stereo pairs); output impedance: 75Ω

### Audio outputs (optional)
- Digital video output compliant with the following (75Ω, BNC; with auto re-clocking)

### Genlock input
- B: NTSC 0.429 V (p-p)/PAL 0.45 V (p-p) or Tri-sync: ±0.3 V (p-p), 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
- 9-pin D-sub (male) x 1 (Input: reset/Output: alarm (power, fan, crosspoint, CPU))

### Power
- 100 V to 240 V AC ±10%, 50/60 Hz
- Consumption
  - Approx. 750 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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### External view

![External view](image)

### Rear view

![Rear view](image)

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