

## MFR-3000 Datasheet

### 1. Specifications

#### MFR-3000 Basic specifications

Temperature / Humidity	0°C to 40°C / 30% to 85% (no condensation)
Power	100 VAC to 240 VAC $\pm$ 10%, 50/60Hz IN x 2 (MFR-30PS required for redundant power configuration)
Consumption	When performing 64 x 64 SDI signal routing: 150 VA (145W) at 100 - 120 V AC, 198 VA (136W) at 220 - 240 V AC * The power consumption may increase up to the following maximum value if performing different signal routing such as video and audio routing. 100 V AC to 120 V AC: 671 VA (661 W), 200 V AC to 240 V AC: 608 VA (510 W)
Dimensions	430 (W) x 177 (H) x 350 (D) mm EIA 4RU 482 (W) (Including rack mount brackets)
Weight	18 kg (with full options)
Consumables (at 24-hour operation)	Power supply unit: Replace every 5 years FAN 1 & 2 (rear) : P-1529 Replace every 4 years FAN 3 & 4 (front) : P-1567 Replace every 4 years FAN 3 & 4 (front) : P-1528 Replace every 4 years (Firmware version less than 1.81) MFR-16MV button battery: CR2032. Replace every 5 years

#### MFR-3000 Technical specifications

Video Formats	
UHD 4K (12G-SDI) (3G-SDI)	2160/59.94p, 2160/50p (W/ MFR-8SDIGB/8SDOGB) Single Link 12G-SDI (SMPTE 2082-10) Quad Link 3G-SDI (SMPTE ST 425-5)
HD (3G-SDI)	1080/60p, 1080/59.94p, 1080/50p (SMPTE424M)
HD (HD-SDI)	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, 1080/24PsF, 1080/24p, 720/60p, 720/59.94p, 720/50p (SMPTE292M)
SD (SD-SDI)	525/59.94i, 625/50i
DVB-ASI	Compliant to EN 50083-9
Matrix Size	Min. 8 x 8 to Max. 64 x 64 Number of input slots: 8 Number of output slots: 8 (Expandable on an 8-channel basis)
Video Input	
MFR-8SDI (as video input)	3G/HD/SD-SDI Input Card (Max. 8 cards) - 75-ohm BNC x 8 Cable Equalization 3G/HD-SDI: 100 m (5C-FB cable) SD-SDI: 200 m (5C-2V cable)

MFR-8SDIGB	<p>12G/3G/HD/SD-SDI Input Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 2 (12G-SDI or 3G-SDI)</li> <li>- 75-ohm BNC x 6 (3G-SDI)</li> </ul> <p>I/O delay selection Delay (H) (0.3H-1H), 1 frame, 1 frame+ Delay (H)</p>
Video Output	
MFR-8SDO	<p>3G/HD/SD-SDI Output Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 8 (Auto reclocking)</li> </ul>
MFR-8SDOGB	<p>12G/3G/HD/SD-SDI Output Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 2 (12G-SDI or 3G-SDI)</li> <li>- 75-ohm BNC x 6 (3G-SDI)</li> </ul> <p>I/O delay selection Delay (H) (0.3H-1H), 1 frame, 1 frame+ Delay (H)</p>
Audio Input	
MFR-8AAI	<p>Analog Audio Input Card with A/D converter (Max. 8 cards) - 25-pin D-sub (female) x 2 (8 stereo pairs, 16 channels)</p> <ul style="list-style-type: none"> <li>- Balanced or unbalanced, 600-ohm or high impedance</li> <li>- A/D conversion: 48kHz / 24bit</li> </ul>
MFR-8AESI	<p>AES/EBU Audio Input Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm, BNC x 8 (8 stereo pairs, 16 channels)</li> <li>- 48kHz / 24bit (No limitation for MFR-8AESO)</li> </ul>
MFR-8SDI (as audio input)	<p>MADI Audio Input Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm, BNC x 8 (MADI x 8)</li> <li>- MADI: 64-channel, 48kHz / 24bit</li> </ul>
Audio Output	
MFR-8AAO	<p>Analog Audio Output Card with D/A converter (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 25-pin D-sub (female) x 2 (8 stereo pairs. 16 channels),</li> <li>- Balanced or unbalanced, 600-ohm or 100-ohm</li> <li>- D/A conversion: 48kHz / 24bit</li> </ul>
MFR-8AESO	<p>AES/EBU Audio Output Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 8 (8 stereo pairs. 16 channels)</li> <li>- 48kHz / 24bit (No limitation for MFR-8AESI)</li> </ul>
MFR-8MADIPO	<p>MADI/SDI Output Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 16 (MADI/SDI x 16)</li> </ul> <p>Audio output</p> <ul style="list-style-type: none"> <li>- MADI: 64-channel, 48kHz / 24bit : 24-bit</li> <li>- Audio I/O delay: 1 ms or less</li> </ul> <p>Digital audio output is compliant with the following:</p> <ul style="list-style-type: none"> <li>- AES10-2008 (MADI)</li> </ul> <p>Video output:</p> <ul style="list-style-type: none"> <li>- 3G-SDI: 1080/59.94p, 1080/50p</li> <li>- HD-SDI: 1080/59.94i, 1080/50i, 1080/29.97PsF, 1080/23.98PsF, 720/59.94p</li> <li>- Additional delay time: Delay (H) (0.2H-1H)</li> </ul>
MFR-8AESPO	<p>AES/EBU Audio Output Card (Max. 8 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 8 (8 stereo pairs. 16 channels)</li> <li>- 48kHz / 24bit</li> <li>- Audio I/O delay: 1 ms or less</li> </ul>

Multiviewer	
MFR-16MV	16 SDI output card with multiviewer function (Up to 4 cards) - 2 slots required per card - 75-ohm BNC x 16
Reference Input	BB: 0.429 Vp-p (NTSC)/0.45 Vp-p (PAL) or Tri-level Sync: 0.6 Vp-p 75-ohm BNC x 1, loop-through (Terminate with 75-ohm BNC terminator, it unused.)
Interfaces	
MFR-LAN	10/100/1000 Base-T, RJ-45 x 2 (For connecting up to 128 RU/GPI units.) (Second LAN port used in redundant CPU configuration)
PC-LAN	10/100 Base-TX, RJ-45 x 1 (for PC operation) (1 unit of MFR-RULINK is connectable.)
SERIAL	RS-232C/RS-422 (Internal switch), 9-pin D-sub (male) x 1
ALARM	9-pin D-sub (female) x 1 (Input: Reset, Output: Power alarm, fan alarm, crosspoint error, CPU changeover and secondary CPU error)

#### MFR-30FP Basic specifications

Temperature / Humidity	0°C to 40°C / 30% to 85% (no condensation)
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#### MFR-30FP Technical specifications

Buttons/Colors	64 buttons (1 color: green), user assignable Menu display (TFT, 320 x 240) x 1 Menu selection button (1 color: green) x 5 CANCEL button x 1 LOCK control button (1 color: green) x 1 Rotary selector x 1
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#### Options

MFR-30CPU	Redundant CPU card
MFR-30PS	Redundant power supply unit (with AC cord and AC cord clamp.)
MFR-30FP	Front control panel

#### Other Options

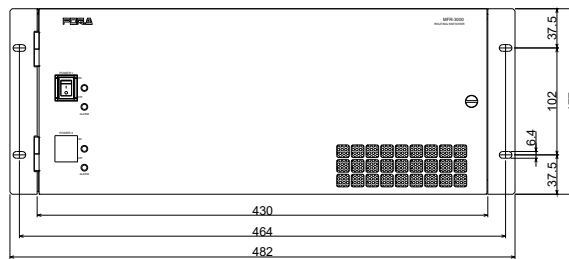
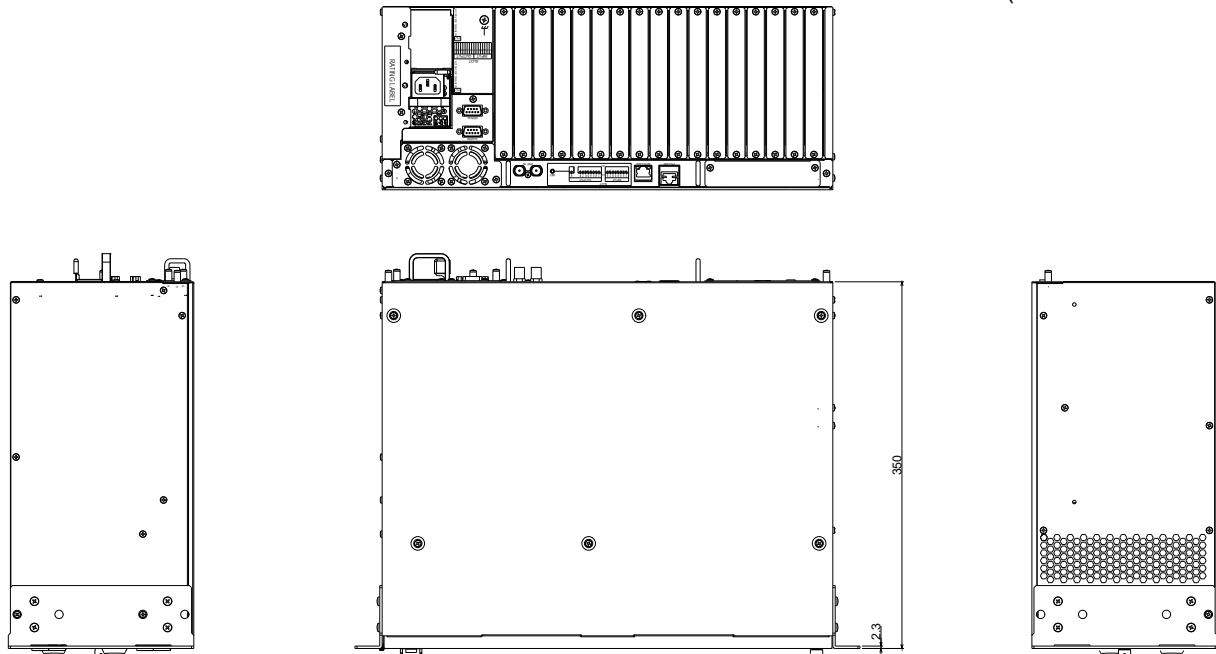
MFR-8RUA/18RUA/39RUA MFR-39RU/40RU/18RU MFR-16RU/16RUD/16RUTA MFR-16/32/64RUW	Remote Control Unit
MFR-GPI	Interface Expansion Unit
MFR-TALM	Tally Manager Unit
MFR-RULINK	Remote Control Relay Unit

#### Accessories

AC cord, EIA rack mount brackets, Rubber feet, CD-ROM, Notes on serial port setting, and Quick setup guide

**2. External Dimensions**

(All dimensions in mm.)



**When an MFR-30FP option installed:**

