

## MFR-3100EX Datasheet

### 1. Specifications

#### MFR-3100EX Basic specifications

Temperature/ Humidity	0°C to 40°C/ 30% to 85% (no condensation)
Power	100VAC to 240VAC $\pm$ 10%, 50/60Hz IN x 2 (MFR-31PS required for redundant power configuration)
Consumption	671VA (661W) at 100 - 120VAC 608VA (510W) at 220 - 240VAC
Dimensions	430 (W) x 177 (H) x 400 (D) mm EIA 4RU 482 (W) (including rack mount brackets)
Weight	25kg (with full options)

#### MFR-3100EX Technical specifications

Video Formats	
UHD 4K (12G-SDI) (3G-SDI)	2160p / 59.94, 50 (With MFR-8SDIGB/ 8SDOGB) Single Link 12G-SDI (SMPTE ST 2082-10) Quad Link 3G-SDI (SMPTE ST 425-5)
HD (3G-SDI)	1080p / 60, 59.94, 50 (SMPTE 424M)
HD (HD-SDI)	1080i / 60, 59.94, 50 1080p / 30, 29.97, 23.98, 25, 24 1080PsF / 30, 29.97, 23.98, 25, 24 720p / 60, 59.94, 50 (SMPTE 292M)
SD (SD-SDI)	525/59.94i, 625/50i (SMPTE 259M) (With MFR-8SDI/ 8SDO)
DVB-ASI	Compliant to EN 50083-9 (MFR-8SDI/ 8SDO)
Matrix Size	Min. 8 x 8 to Max. 64 x 72 (Max. logical matrix: 512 x 512) Number of input slots: 8 Number of output slots: 9 (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	12G/3G-SDI Input Card (Max. 8 cards) - 75-ohm BNC x 2 (12G-SDI or 3G-SDI) - 75-ohm BNC x 6 (3G-SDI) I/O delay selection Delay (H) (0.3H-1H), 1 frame, 1 frame+ Delay (H) Cable Equalization 12G-SDI: 100 m (L-5.5CUHD cable) 3G-SDI: 100 m (5C-FB cable)
Video Output	
MFR-8SDO	3G/HD/SD-SDI Output Card (Max. 9 Cards) - 75 ohm BNC x 8 (Auto reclocking)

MFR-8SDOGB	<p>12G/3G-SDI Output Card (Max. 9Cards)</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>
MFR-8SDODL	<p>3G/HD-SDI Output Card (Max. 9 cards)</p> <ul style="list-style-type: none"> <li>-75 ohm BNC x 8</li> </ul> <p>Phase adjustment for 3G/HD-SDI output</p> <ul style="list-style-type: none"> <li>- Output phase: +1H to +5H referring to REF IN signal</li> <li>- Adjustment range (variable depending on the output phase) <ul style="list-style-type: none"> <li>+1H output: -4.1H to +0.9H</li> <li>+2H output: -3.1H to +1.9H</li> <li>+3H output: -2.1H to +2.9H</li> <li>+4H output: -1.1H to +3.9H</li> <li>+5H output: -0.1H to +4.9H</li> </ul> </li> <li>- Quiet Switch OFF: Passes through all ANC data in inputs (W/o measures for signal switching effects)</li> <li>- Quiet Switch ON: Passes through ANC data below (reproduced) <ul style="list-style-type: none"> <li>- SMPTE ST352 (Video payload ID information)</li> <li>- SMPTE ST299-1 (Embedded audio)</li> </ul> </li> </ul> <p>16-channel (Group1-4), PCM, 48kHz 24bit, Synchronous</p>
Audio Input	
MFR-8AAI	<p>Analog Audio Input Card with A/D 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 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. 9 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. 9 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. 9 cards)</p> <ul style="list-style-type: none"> <li>- 75-ohm BNC x 8 (MADI/SDI x 8)</li> </ul> <p>Audio output</p> <ul style="list-style-type: none"> <li>- MADI: 64-channel, 48kHz / 24bit (AES10-2008(MADI))</li> <li>- Audio I/O delay: 1 ms or less</li> </ul> <p>Video output:</p> <ul style="list-style-type: none"> <li>- 3G-SDI: 1080p / 59.94, 50</li> <li>- HD-SDI: 1080i / 59.94, 50 1080PsF / 29.97, 23.98 720p /59.94</li> <li>- Additional delay time: Delay (H) (0.2H-1H)</li> </ul>

MFR-8AESPO	AES/EBU Audio Output Card (Max. 9 cards) - 75-ohm BNC x 8 (8 stereo pairs. 16 channels) - 48kHz / 24bit - Audio I/O delay: 1 ms or less
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	10/100Base-TX, RJ-45 x 2 (For connecting up to 128 RU/GPI units.) (Second LAN port used in redundant CPU configuration)
PC-LAN	10/100/1000 Base-T, RJ-45 x 2 (For PC and external device operation) (Second LAN port used in redundant CPU configuration)
ALARM	9-pin D-sub (female) x 1 (Power alarm, fan alarm, crosspoint error, CPU changeover and secondary CPU error)

#### Options

MFR-31CPU	Redundant CPU card *
MFR-31PS	Redundant power supply unit (with AC cord and AC cord clamp.)

#### Other Options

MFR-8RUA/18RUA/39RUA MFR-40RU MFR-16RU/16RUD/16RUTA MFR-16/32/64RUW	Remote Control Unit
MFR-GPI	Interface Expansion Unit
MFR-TALM	Tally Manager Unit
MFR-RULINK	MFR Remote Control Relay Unit
MFR-8SDIFS *	FS input board for MFR-3100EX

\* To be supported in the future.

#### Accessories

AC cord, Rubber feet, Quick setup guide

**2. External Dimensions**

(All dimensions in mm.)

