

INSTALLATION GUIDE

MFR-8SDI
MFR-8SDIGB
MFR-8SDIFS
MFR-8SDO
MFR-8SDOGB
MFR-8SDODL
MFR-8AAI
MFR-8AAO
MFR-8AESI
MFR-8AESO
MFR-8AESPO
MFR-8MADIPO
MFR-16MV

Upon Receipt

MFR-3000 / MFR-3100EX option cards and their accessories are fully inspected and adjusted prior to shipment.

Check your received items against the packing lists below. Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

◆ **Packing List**

ITEM	QTY	REMARKS
MFR-8SDI MFR-8SDIGB MFR-8SDIFS MFR-8SDO MFR-8SDOGB MFR-8SDODL MFR-8AAI MFR-8AAO MFR-8AESI MFR-8AESO MFR-8AESPO MFR-8MADIPO MFR-16MV	1	
Label	1	
Installation Guide	1	This guide book

Before Starting

MFR-8SDI/8SDIGB/8AAI/8AESI are input cards for MFR-3000 / MFR-3100EX units.
 MFR-8SDO/8SDOGB/8AAO/8AESO/8AESPO/8MADIPO and MFR-16MV are output cards for MFR-3000 / MFR-3100EX units.
 MFR-8SDIFS is an input card for MFR-3100EX units.
 MFR-8SDODL is an output card for MFR-3100EX units.

If installing the card to MFR-3000, go to Sec. 1 (p3-6).
 If installing the card to MFR-3100EX, go to Sec. 2 (p7-10).

1. MFR-3000

◆ Available Slots and Number for MFR-3000 Input / Output Cards

Slot	Slot number	Installable cards	Installable number of cards
Input slot	No.01-08 (INPUT1-8)	MFR-8SDI/8SDIGB MFR-8AAI/8AESI	Up to 8 cards
Output slot	No.09-16 (OUTPUT1-8)	MFR-8SDO/8SDOGB MFR-8AAO/8AESO MFR-8AESPO/8MADIPO	Up to 8 cards
		MFR-16MV	Up to 4 cards *

* Installable into slots No. **09-10, 11-12, 13-14, and 15-16.**

◆ Matrix Size

<Standard SDI Signal Routing>

The number of installed MFR-8SDI and 8SDO cards determines the matrix size.(64 x 64 to 8 x 8)

		Number of MFR-8SDO cards							
		8	7	6	5	4	3	2	1
Number of MFR-8SDI cards	8	64 x 64	64 x 56	64 x 48	64 x 40	64 x 32	64 x 24	64 x 16	64 x 8
	7	56 x 64	56 x 56	56 x 48	56 x 40	56 x 32	56 x 24	56 x 16	56 x 8
	6	48 x 64	48 x 56	48 x 48	48 x 40	48 x 32	48 x 24	48 x 16	48 x 8
	5	40 x 64	40 x 56	40 x 48	40 x 40	40 x 32	40 x 24	40 x 16	40 x 8
	4	32 x 64	32 x 56	32 x 48	32 x 40	32 x 32	32 x 24	32 x 16	32 x 8
	3	24 x 64	24 x 56	24 x 48	24 x 40	24 x 32	24 x 24	24 x 16	24 x 8
	2	16 x 64	16 x 56	16 x 48	16 x 40	16 x 32	16 x 24	16 x 16	16 x 8
	1	8 x 64	8 x 56	8 x 48	8 x 40	8 x 32	8 x 24	8 x 16	8 x 8

<12G-SDI Signal Routing>

12G-SDI signal routing is enabled by installing MFR-8SDIGB and 8SDOGB cards and using them for 12G-SDI input/output. (If using MFR-8SDIGB and MFR-8SDOGB for 3G-SDI input/output, the "Standard SDI Signal Routing" table above applies.)

The number of installed MFR-8SDIGB and MFR-8SDOGB cards determines the matrix size.
 (16 x 16 to 2 x 2)

		Number of cards: MFR-8SDOGB (12G-SDI output)							
		8	7	6	5	4	3	2	1
Number of cards: MFR-8SDIGB (12G-SDI input)	8	16 x 16	16 x 14	16 x 12	16 x 10	16 x 8	16 x 6	16 x 4	16 x 2
	7	14 x 16	14 x 14	14 x 12	14 x 10	14 x 8	14 x 6	14 x 4	14 x 2
	6	12 x 16	12 x 14	12 x 12	12 x 10	12 x 8	12 x 6	12 x 4	12 x 2
	5	10 x 16	10 x 14	10 x 12	10 x 10	10 x 8	10 x 6	10 x 4	10 x 2
	4	8 x 16	8 x 14	8 x 12	8 x 10	8 x 8	8 x 6	8 x 4	8 x 2
	3	6 x 16	6 x 14	6 x 12	6 x 10	6 x 8	6 x 6	6 x 4	6 x 2
	2	4 x 16	4 x 14	4 x 12	4 x 10	4 x 8	4 x 6	4 x 4	4 x 2
	1	2 x 16	2 x 14	2 x 12	2 x 10	2 x 8	2 x 6	2 x 4	2 x 2

One MFR-16MV produces 16 outputs per card. (Requires 2 slots.) 2 systems of multi-viewer output are available per card.

<AUDIO Signal Routing>

The number of installed audio cards: MFR-8SDI (*1), MFR-8AAI, MFR-8AAO, MFR-8AESI, MFR-8AESO, MFR-8MADIPO and MFR-8AESPO determines the matrix size.

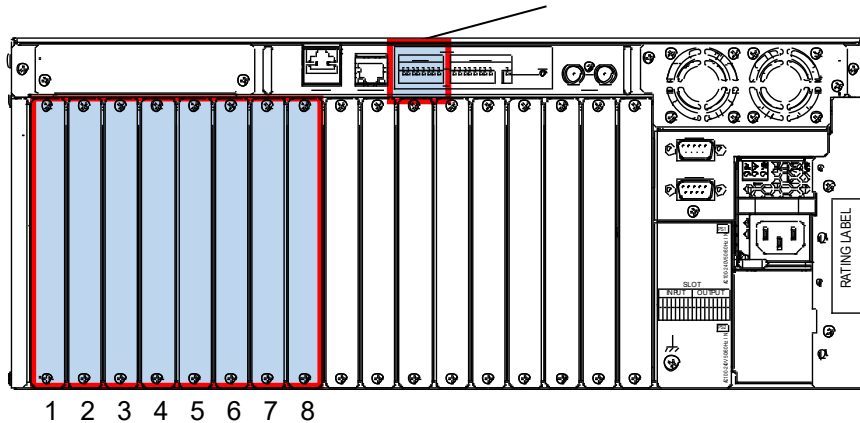
(The matrix sizes below do not indicate the number of audio channels, but the number of streams. Use the followings to find the number of audio channels: SDI embedded: 16 channels, AES/EBU: 2 channels, Analog: 2 channels, MADI: 64 channels)

		Number of cards: MFR-8AAO/8AESO/8AESPO/8MADIPO							
		8	7	6	5	4	3	2	1
Number of cards: MFR-8SDI, MFR-8AAI or MFR-8AESI	8	64 x 64	64 x 56	64 x 48	64 x 40	64 x 32	64 x 24	64 x 16	64 x 8
	7	56 x 64	56 x 56	56 x 48	56 x 40	56 x 32	56 x 24	56 x 16	56 x 8
	6	48 x 64	48 x 56	48 x 48	48 x 40	48 x 32	48 x 24	48 x 16	48 x 8
	5	40 x 64	40 x 56	40 x 48	40 x 40	40 x 32	40 x 24	40 x 16	40 x 8
	4	32 x 64	32 x 56	32 x 48	32 x 40	32 x 32	32 x 24	32 x 16	32 x 8
	3	24 x 64	24 x 56	24 x 48	24 x 40	24 x 32	24 x 24	24 x 16	24 x 8
	2	16 x 64	16 x 56	16 x 48	16 x 40	16 x 32	16 x 24	16 x 16	16 x 8
	1	8 x 64	8 x 56	8 x 48	8 x 40	8 x 32	8 x 24	8 x 16	8 x 8

(*1) Used as MADI input card.

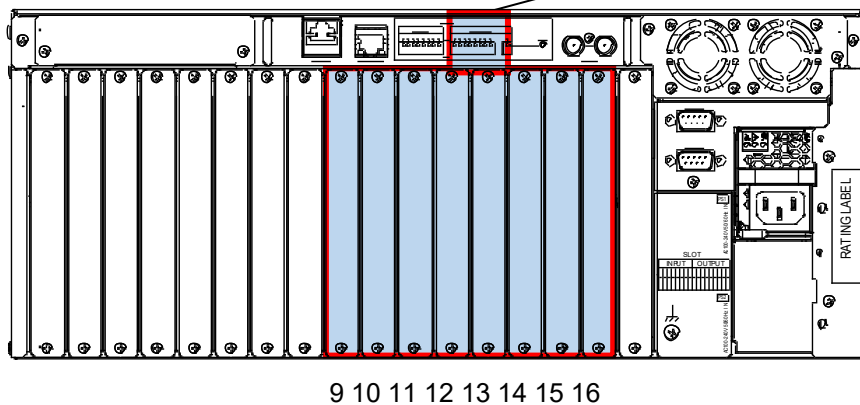
◆ Input Slots (No. 01-08)

Input slot power switches




◆ Output Slots (No. 09-16)

Output slot power switches



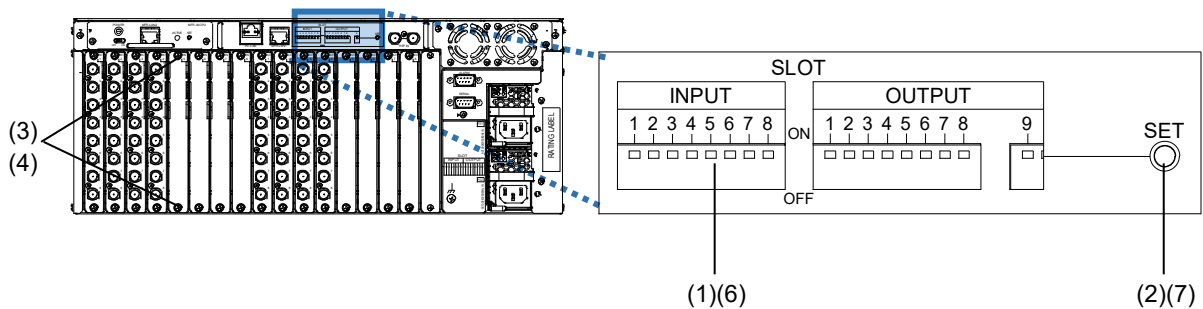
1-1. Installing the Input / Output Cards

Before starting the installation, save the MFR-3000 system settings. See "Saving / Loading All Page Settings (All Files)" in the MFR-3000 Web-based Control User Manual for details.

 CAUTION	Installation should only be performed by qualified technical person. To protect cards from electrostatic damage, do not touch the components on the cards. Although the Input / Output Cards can be installed while the power of the MFR-3000 is turned on, it is recommended to turn off the power and disconnect all unit power cords before an installation is performed.
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The procedure below shows how to install an input card (**MFR-8SDI**) into **Slot 5** of your MFR-3000 as an example.

- (1) On the MFR-3000 rear panel, set **INPUT Dipswitch 5** to **DOWN** position as shown below. *



- (2) Hold down the **SET** switch for **1 sec. or more** to turn Off the Slot 5 power.
(3) Remove the Slot 5 blank panel by removing the top and bottom screws. (If you are replacing the card, remove the installed card.)
(4) Align the guide rails precisely on the top and bottom of the card, then gently insert the card into the slot. Tighten the supplied two screws on the top and bottom edges to secure the card to the chassis.
(5) Put a supplied label on the card. Use the label matched to the slot number (5 in this example).
(6) Set **INPUT Dipswitch 5** to **UP** position. *
(7) Hold down the **SET** switch for **1 sec. or more** to turn On the Slot 5 power.

* When installing an MFR-16MV, the two dipswitches of the two MFR-16MV slots need to be set in the DOWN position (1) then UP position (6).

* The slot power supply can also be turned ON/OFF using "Web based control: **Slot Status page.**"

The installation is now complete.

1-2. Verifying the Installation

Follow the steps below to verify that the Input / Output card is properly installed and perform the card setup in the menu.

- (1) Launch a Web browser (e.g. Microsoft Edge) and access the PC-LAN port address "http://192.168.1.12".



- (2) After accessing the address, a username and a password will be requested. Enter the following username and password.

Username: user

Password: password (default)



IMPORTANT

The above address, username, and password are default settings. If settings have been changed, enter the new address, username and password.

- (3) Open the "Web-based Control: **Slot Status** page" and verify that the card is properly installed. Perform the card setup in the page, if necessary.

Refer to the above pages in the MFR-3000 Web-based Control User Manual for more details.

2. MFR-3100EX

◆ Available Slots and Number for MFR-3100EX Input / Output Cards

Slot	Slot number	Installable cards	Installable number of cards
Input slot	No.01-08 (INPUT1-8)	MFR-8SDI/8SDIGB/ 8SDIFS MFR-8AAI/8AESI	Up to 8 cards
Output slot	OUTPUT1-9 (No.09-17)	MFR-8SDO/8SDOGB MFR-8AAO/8AESO MFR-8AESPO/8MADIPO MFR-8SDODL	Up to 9 cards
		MFR-16MV	Up to 4 cards *

* Installable into slots No. **09-10, 11-12, 13-14, and 15-16.**

◆ Matrix Size

<Standard SDI Signal Routing>

The number of installed MFR-8SDI, MFR-8SDIFS, MFR-8SDO and MFR-8SDODL cards determines the matrix size.(64 x 72 to 8 x 8)

		Number of cards: MFR-8SDO or MFR-8SDODL								
		9	8	7	6	5	4	3	2	1
Number of cards: MFR-8SDI or MFR-8SDIFS	8	64 x 72	64 x 64	64 x 56	64 x 48	64 x 40	64 x 32	64 x 24	64 x 16	64 x 8
	7	56 x 72	56 x 64	56 x 56	56 x 48	56 x 40	56 x 32	56 x 24	56 x 16	56 x 8
	6	48 x 72	48 x 64	48 x 56	48 x 48	48 x 40	48 x 32	48 x 24	48 x 16	48 x 8
	5	40 x 72	40 x 64	40 x 56	40 x 48	40 x 40	40 x 32	40 x 24	40 x 16	40 x 8
	4	32 x 72	32 x 64	32 x 56	32 x 48	32 x 40	32 x 32	32 x 24	32 x 16	32 x 8
	3	24 x 72	24 x 64	24 x 56	24 x 48	24 x 40	24 x 32	24 x 24	24 x 16	24 x 8
	2	16 x 72	16 x 64	16 x 56	16 x 48	16 x 40	16 x 32	16 x 24	16 x 16	16 x 8
	1	8 x 72	8 x 64	8 x 56	8 x 48	8 x 40	8 x 32	8 x 24	8 x 16	8 x 8

<12G-SDI Signal Routing>

12G-SDI signal routing is enabled by installing MFR-8SDIGB and 8SDOGB cards and using them for 12G-SDI input/output. (If using MFR-8SDIGB and MFR-8SDOGB for 3G-SDI input/output, the "Standard SDI Signal Routing" table above applies.)

The number of installed MFR-8SDIGB and MFR-8SDOGB cards determines the matrix size.

(16 x 18 to 2 x 2)

		Number of cards: MFR-8SDOGB (12G-SDI output)								
		9	8	7	6	5	4	3	2	1
Number of cards: MFR-8SDIGB (12G-SDI input)	8	16 x 18	16 x 16	16 x 14	16 x 12	16 x 10	16 x 8	16 x 6	16 x 4	16 x 2
	7	14 x 18	14 x 16	14 x 14	14 x 12	14 x 10	14 x 8	14 x 6	14 x 4	14 x 2
	6	12 x 18	12 x 16	12 x 14	12 x 12	12 x 10	12 x 8	12 x 6	12 x 4	12 x 2
	5	10 x 18	10 x 16	10 x 14	10 x 12	10 x 10	10 x 8	10 x 6	10 x 4	10 x 2
	4	8 x 18	8 x 16	8 x 14	8 x 12	8 x 10	8 x 8	8 x 6	8 x 4	8 x 2
	3	6 x 18	6 x 16	6 x 14	6 x 12	6 x 10	6 x 8	6 x 6	6 x 4	6 x 2
	2	4 x 18	4 x 16	4 x 14	4 x 12	4 x 10	4 x 8	4 x 6	4 x 4	4 x 2
	1	2 x 18	2 x 16	2 x 14	2 x 12	2 x 10	2 x 8	2 x 6	2 x 4	2 x 2

One MFR-16MV produces 16 outputs per card. (Requires 2 slots.) 2 systems of multi-viewer output are available per card.

<AUDIO Signal Routing>

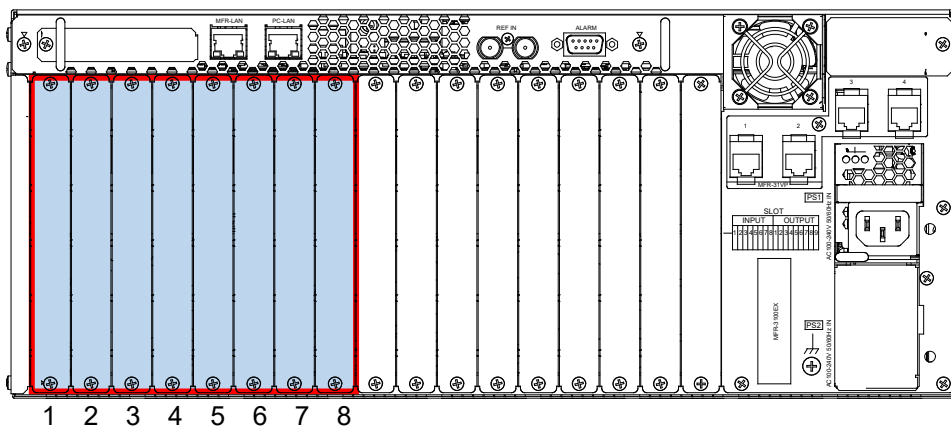
The number of installed audio cards: MFR-8SDI (*1), MFR-8AAI, MFR-8AAO, MFR-8AESI, MFR-8AESO, MFR-8MADIPO and MFR-8AESPO determines the matrix size.

(The matrix sizes below do not indicate the number of audio channels, but the number of streams. Use the followings to find the number of audio channels: SDI embedded: 16 channels, AES/EBU: 2 channels, Analog: 2 channels, MADI: 64 channels)

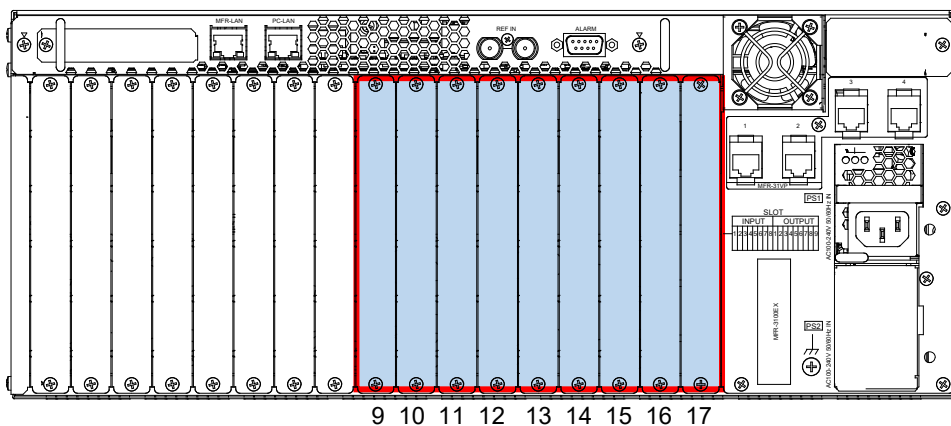
		Number of cards: MFR-8AAO/8AESO/8AESPO/8MADIPO								
		9	8	7	6	5	4	3	2	1
Number of cards: MFR-8SDI, MFR-8AAI or MFR-8AESI	8	64 x 72	64 x 64	64 x 56	64 x 48	64 x 40	64 x 32	64 x 24	64 x 16	64 x 8
	7	56 x 72	56 x 64	56 x 56	56 x 48	56 x 40	56 x 32	56 x 24	56 x 16	56 x 8
	6	48 x 72	48 x 64	48 x 56	48 x 48	48 x 40	48 x 32	48 x 24	48 x 16	48 x 8
	5	40 x 72	40 x 64	40 x 56	40 x 48	40 x 40	40 x 32	40 x 24	40 x 16	40 x 8
	4	32 x 72	32 x 64	32 x 56	32 x 48	32 x 40	32 x 32	32 x 24	32 x 16	32 x 8
	3	24 x 72	24 x 64	24 x 56	24 x 48	24 x 40	24 x 32	24 x 24	24 x 16	24 x 8
	2	16 x 72	16 x 64	16 x 56	16 x 48	16 x 40	16 x 32	16 x 24	16 x 16	16 x 8
1	8 x 72	8 x 64	8 x 56	8 x 48	8 x 40	8 x 32	8 x 24	8 x 16	8 x 8	

(*1) Used as MADI input card.

◆ Input Slots (No. 01-08)




◆ Output Slots (No. 09-17)



2-1. Installing the Input / Output Cards

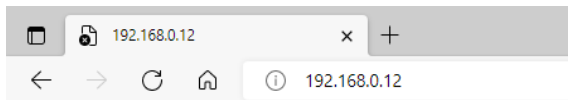
Before starting the installation, save the MFR-3100EX system settings. See "Saving / Loading All Page Settings (All Files)" in the MFR-3100EX Web-based Control User Manual for details.

 CAUTION	Installation should only be performed by qualified technical person. To protect cards from electrostatic damage, do not touch the components on the cards. Although the Input / Output Cards can be installed while the power of the MFR-3100EX is turned on, it is recommended to turn off the power and disconnect all unit power cords before an installation is performed.
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The procedure example below shows how to install a card to a slot of your MFR-3100EX initially or how to replace the card (**MFR-8SDI** on **Slot 5** in this example).

* Steps (3) and (4) are not needed when initially installing a card to a slot.

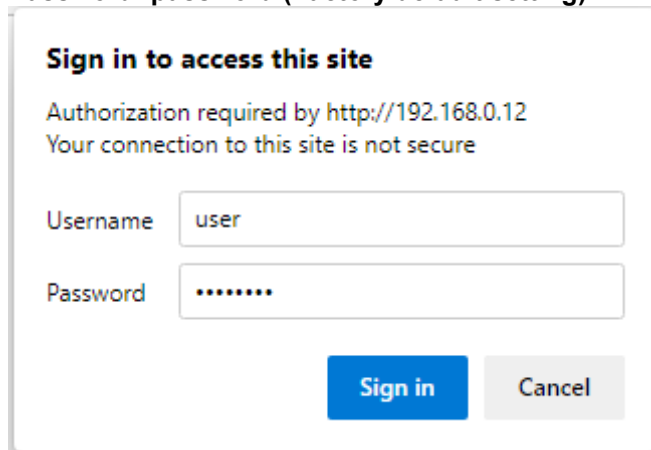
- (1) Launch a Web browser (e.g. Microsoft Edge) and access the PC-LAN port address "http://192.168.0.12".
(If MFR-31CPU is configured, enter "http://192.168.0.13.")



- (2) After accessing the address, a username and a password will be requested. Enter the following username and password.

Username: user

Password: password (Factory default setting)



IMPORTANT

The above address, username, and password are default settings. If settings have been changed, enter the new address, username and password.

- (3) Open [Web-based Control: **Slot Status** page] and turn **OFF** the Slot 5 Slot Power.
- (4) Click **Send**. Slot 5 is powered off.
- (5) Remove the Slot 5 blank panel by removing the top and bottom screws. (If you are replacing the card, remove the installed card.)
- (6) Align the guide rails precisely on the top and bottom of the card, then gently insert the card into the slot. Tighten the supplied two screws on the top and bottom edges to secure the card to the chassis.
- (7) Put a supplied label on the card. Use the label matched to the slot number (5 in this example).

- (8) In the [Web-based Control: **Slot Status** page] turn **ON** the Slot 5 Slot Power.
- (9) Click **Send**. Slot 5 is powered on.
 - * For MFR-16MV cards, turn on/off the power of 2 slots.
- (10) Open the “Web-based Control: **Slot Status** page,” refresh the page and verify that the card is properly installed.

The installation is now complete.