

# **INSTALLATION GUIDE**

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MFR-9SDI12GA  
MFR-9SDO12GA  
MFR-9SDI  
MFR-9SDO

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3<sup>rd</sup> Edition

# Upon Receipt

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MFR-9SDI12GA/9SDO12GA 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**

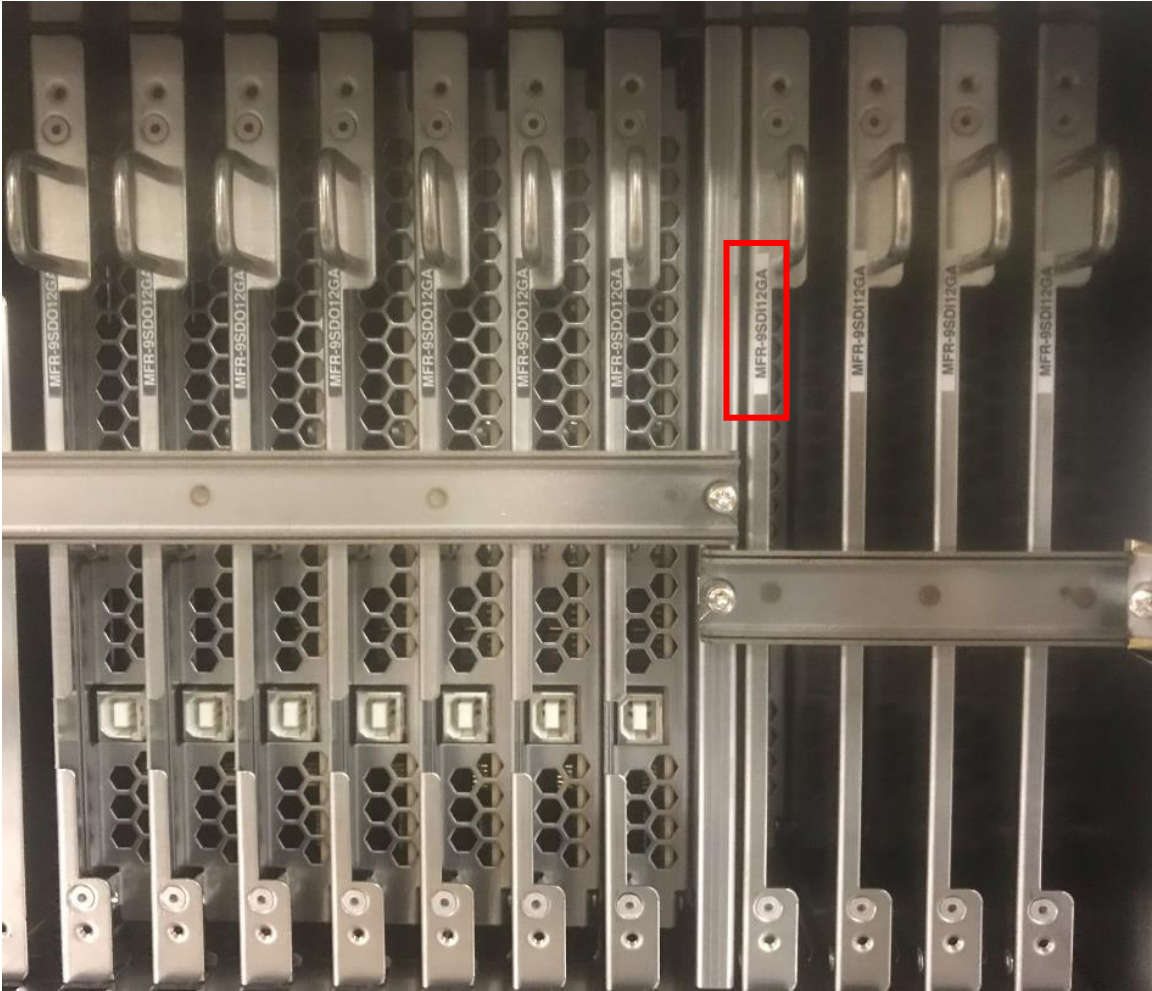
ITEM	QTY	REMARKS
MFR-9SDI12GA MFR-9SDO12GA MFR-9SDI MFR-9SDO	1	Option cards for MFR-4100/6100
Installation Guide	1	This guide book

# Before Starting

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MFR-9SDI12GA/MFR-9SDI is an input card for MFR-4100/MFR-6100 units.  
MFR-9SDO12GA/MFR-9SDO is an output card for MFR-4100/MFR-6100 units.

Open the front panel and see the product label as shown below to identify the card type.



◆ **Available Slots and Numbers for MFR-4100 Input / Output Cards**

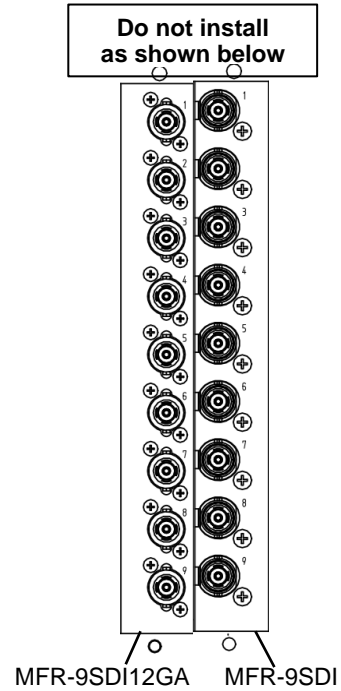
Slot	Slot number	Installable cards	Installable number of cards
Input slot	No. 01-04 (INPUT1-4) No. 13-16 (INPUT5-8)	MFR-9SDI12GA or MFR-9SDI	Up to 8 cards
Output slot	No. 05-12 (OUTPUT1-8)	MFR-9SDO12GA or MFR-9SDO	Up to 8 cards

**IMPORTANT**

Do not install MFR-9SDI12GA cards into slots located just left of an MFR-9SDI card. (viewed from the rear).

If an MFR-9SDI12GA is installed into a slot located just left of an MFR-9SDI, BNC cables cannot be connected or BNC connectors or BNC cables may be damaged.

- See Sec. 2-1. "Checking Installation Slots" for details.



◆ Available Slots and Numbers for MFR-6100 Input / Output Cards

Slot	Slot number	Installable cards	Installable number of cards
Input slot	No. 01-04 (INPUT1-4) No. 13-16 (INPUT5-8) No. 17-20 (INPUT9-12) No. 29-32 (INPUT13-16)	MFR-9SDI12GA or MFR-9SDI	Up to 16 cards
Output slot	No. 05-12 (OUTPUT1-8) No. 21-28 (OUTPUT9-16)	MFR-9SDO12GA or MFR-9SDO	Up to 16 cards

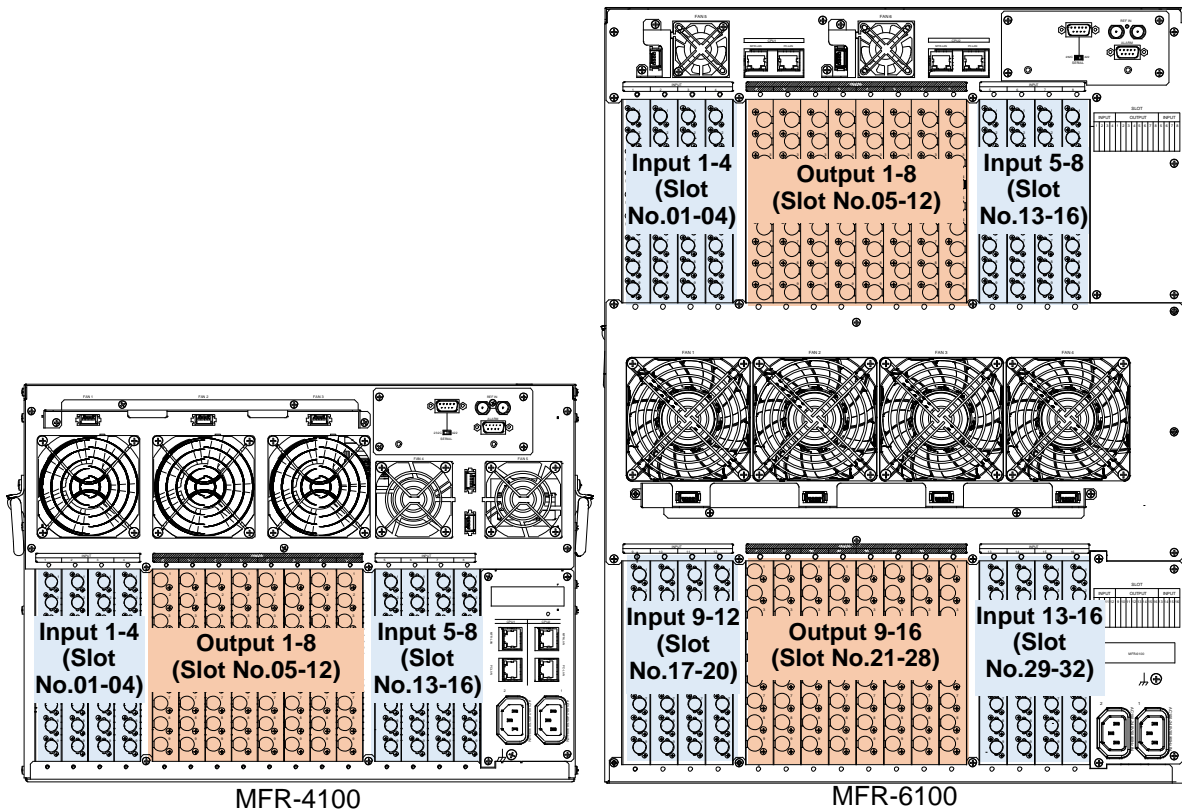
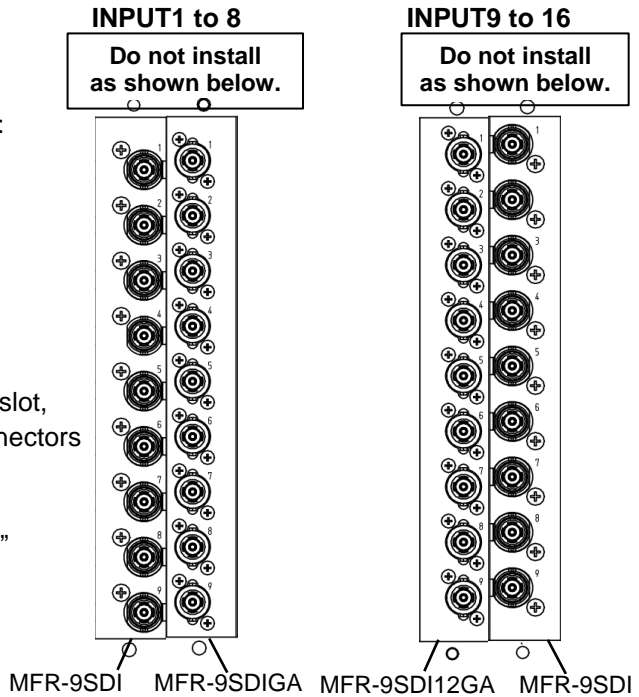
**IMPORTANT**

When installing into **INPUT1 to 8**  
(Slot No.1 to 4 and 13 to 16) slots:  
Do not install MFR-9SDI12GA cards **just right**  
(viewed from the rear) of an **MFR-9SDI** card.

When installing into **INPUT9 to 16**  
(Slot No.17 to 20 and 29 to 32) slots:  
Do not install MFR-9SDI12GA cards **just left**  
(viewed from the rear) of an **MFR-9SDI** card.

If an MFR-9SDI12GA is installed into a wrong slot,  
BNC cables cannot be connected or BNC connectors  
or BNC cables may be damaged.

- See Sec. 3-1. "Checking Installation Slots"  
for details.



# 1. Matrix Size Chart

## 1-1. MFR-4100

Matrix size varies depending on the number of installed MFR-9SDI12GA/9SDI and MFR-9SDO12GA/9SDO cards as shown below. (72 x 72 to 9 x 9)

		Number of cards: MFR-9SDO12GA / MFR-9SDO							
		8	7	6	5	4	3	2	1
Number of cards: MFR-9SDI12GA / MFR-9SDI	8	72 x 72	72 x 63	72 x 54	72 x 45	72 x 36	72 x 27	72 x 18	72 x 9
	7	63 x 72	63 x 63	63 x 54	63 x 45	63 x 36	63 x 27	63 x 18	63 x 9
	6	54 x 72	54 x 63	54 x 54	54 x 45	54 x 36	54 x 27	54 x 18	54 x 9
	5	45 x 72	45 x 63	45 x 54	45 x 45	45 x 36	45 x 27	45 x 18	45 x 9
	4	36 x 72	36 x 63	36 x 54	36 x 45	36 x 36	36 x 27	36 x 18	36 x 9
	3	27 x 72	27 x 63	27 x 54	27 x 45	27 x 36	27 x 27	27 x 18	27 x 9
	2	18 x 72	18 x 63	18 x 54	18 x 45	18 x 36	18 x 27	18 x 18	18 x 9
	1	9 x 72	9 x 63	9 x 54	9 x 45	9 x 36	9 x 27	9 x 18	9 x 9

# 1-2. MFR-6100

Matrix size varies depending on the number of installed MFR-9SDI12GA/9SDI and MFR-9SDO12GA/9SDO cards as shown below. (144 x144 to 9 x 9)

		Number of cards: MFR-9SDO12GA / MFR-9SDO															
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Number of cards: MFR-9SDI12GA / MFR-9SDI	16	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	15	144	135	126	117	108	99	90	81	72	63	54	45	36	27	18	9
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	14	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	13	144	135	126	117	108	99	90	81	72	63	54	45	36	27	18	9
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	12	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	11	144	135	126	117	108	99	90	81	72	63	54	45	36	27	18	9
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	10	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	9	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	144	135	126	117	108	99	90	81	72	63	54	45	36	27	18	9	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
7	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
6	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
1	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

## 2. [MFR-4100] I/ O Cards Installation / Replacement

### IMPORTANT

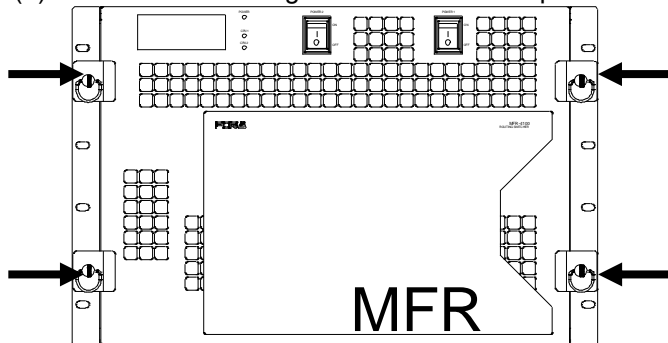
Contact FOR-A agent of service center for I/O Card installation and replacement work since such work should only be conducted by qualified technical personnel.

### 2-1. Checking Installation Slots

When installing both MFR-9SDI and MFR-9SDI12GA cards, there are installation restrictions. To properly function cards, locate the right place for installing cards. If these cards are installed in wrong slots, BNC cables cannot be connected or BNC connectors or BNC cables may be damaged.

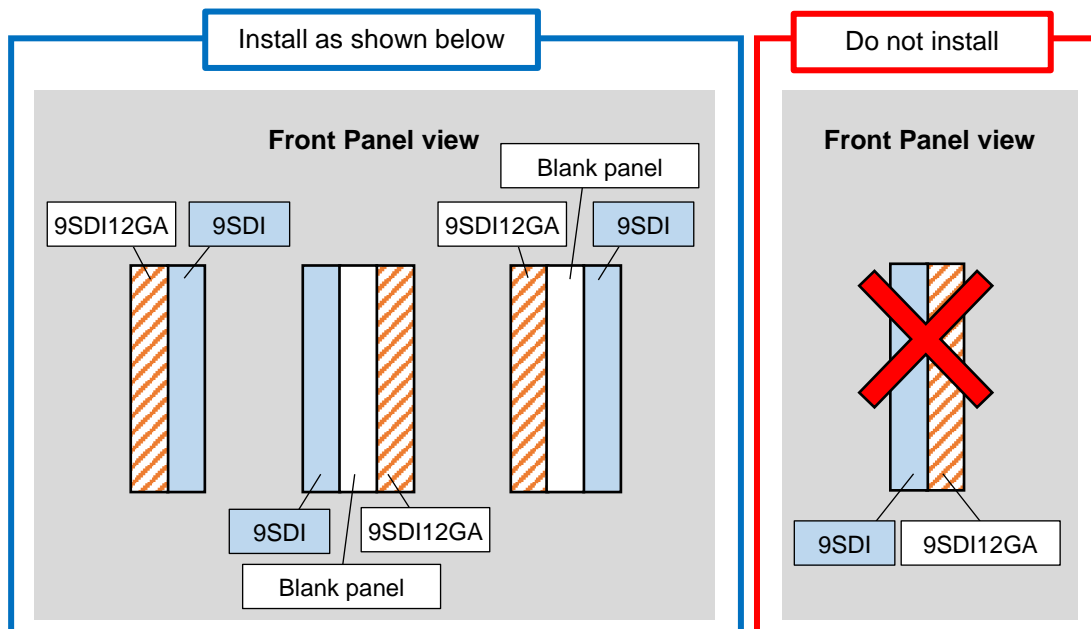
Check the card installation status. Follow the procedure below.

- (1) Unfasten four fixing screws on the front panel and detach the front panel.



- (2) Open the [STATUS > SLOT] menu in the Menu display. (See Sec. 4-1-4. "STATUS > SLOT" in the MFR-4100 Operation Manual for details.)

The illustration below shows the right place for installing these cards.

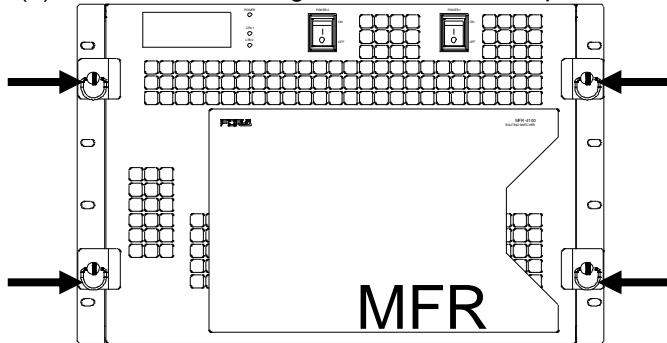




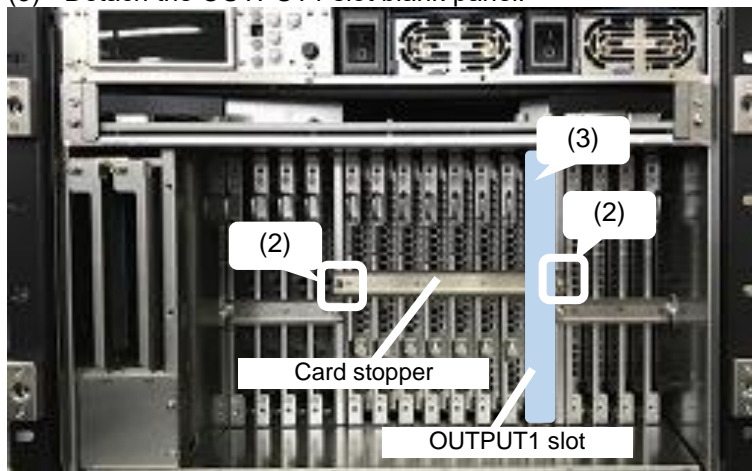
## 2-2. How to Install a New Card

The following procedure shows how to install an output card into OUTPUT1 slot.

- (1) Unfasten four fixing screws on the front panel and detach the front panel.

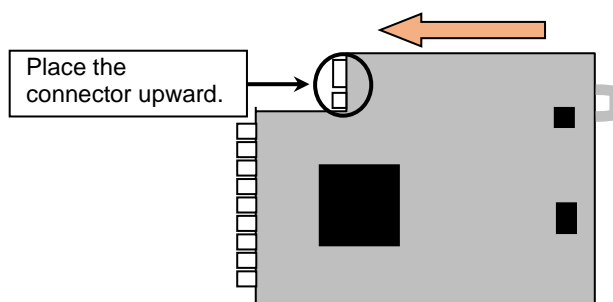


- (2) Remove the two screws on both sides of the card stopper and detach the stopper.
- (3) Detach the OUTPUT1 slot blank panel.



- (4) Insert a new card into the OUTPUT1 slot and push it in until the hole becomes entirely visible.

\* Confirm the slot number and direction before card insertion.



- (5) Re-install the card stopper removed in Step (2).
- (6) Turn the OUTPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display. (See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-4100 Operation Manual for details.)

- (7) Check whether OUTPUT1 slot status is normal using [STATUS > SLOT] menu in Menu display.  
(After installing the card, it takes about 10 seconds for the status to be applied in the menu.)  
(See Sec. 4-1-4. "STATUS > SLOT" in the MFR-4100 Operation Manual for details.)
- (8) Re-install the front panel.

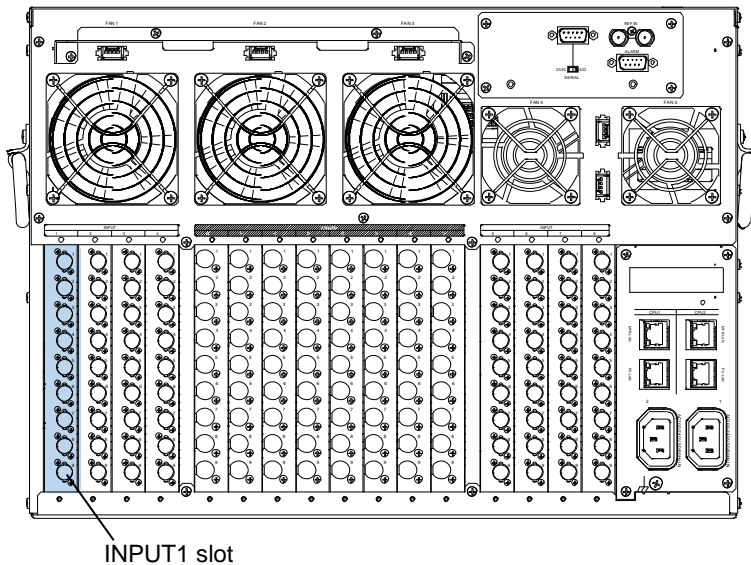
A new card installation is now complete.

To use inputs and outputs of the installed card, add assignment settings in the Source Assignment Menu and Destination Assignment Menu of the Web GUI.

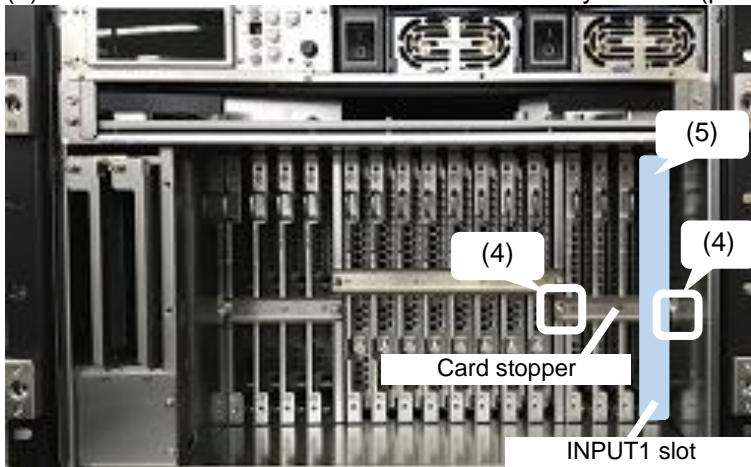
## 2-3. How to Replace a Card

The following procedure shows how to replace the card in INPUT1 to a new input card.

- (1) Detach all the BNC cables connected to the INPUT1 connector ports.



- (2) Unfasten four fixing screws on the front panel and detach the front panel.
- (3) Shutdown the INPUT1 slot using [SETTING > SLOT SHUTDOWN] menu in Menu Display. See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-4100 Operation Manual for details.
- (4) Remove the two screws on both sides of the card stopper and detach the stopper.
- (5) Grab the INPUT1 slot card handle and slowly remove (pull out) the card.



- (6) Insert a new card into the INPUT1 slot and push it in until the hole becomes entirely visible.
  - \* Confirm the slot number and direction before card insertion. (See Step (4). in Sec. 2-2. "How to Install a New Card.")
- (7) Re-install the card stopper removed in Step (4).
- (8) Turn the INPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display. See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-4100 Operation Manual for details.
- (9) Check whether INPUT1 slot status is normal using [STATUS > SLOT] menu in Menu display. (After installing the card, it takes about 10 seconds for the status to be applied in the menu.) (See Sec. 4-1-4. "STATUS > SLOT" in the MFR-4100 Operation Manual for details.)
- (10) Re-install the front panel.

The card replacement is now complete.

### 3. [MFR-6100] I / O Card Installation / Replacement

#### 3-1. Checking Installation Slots

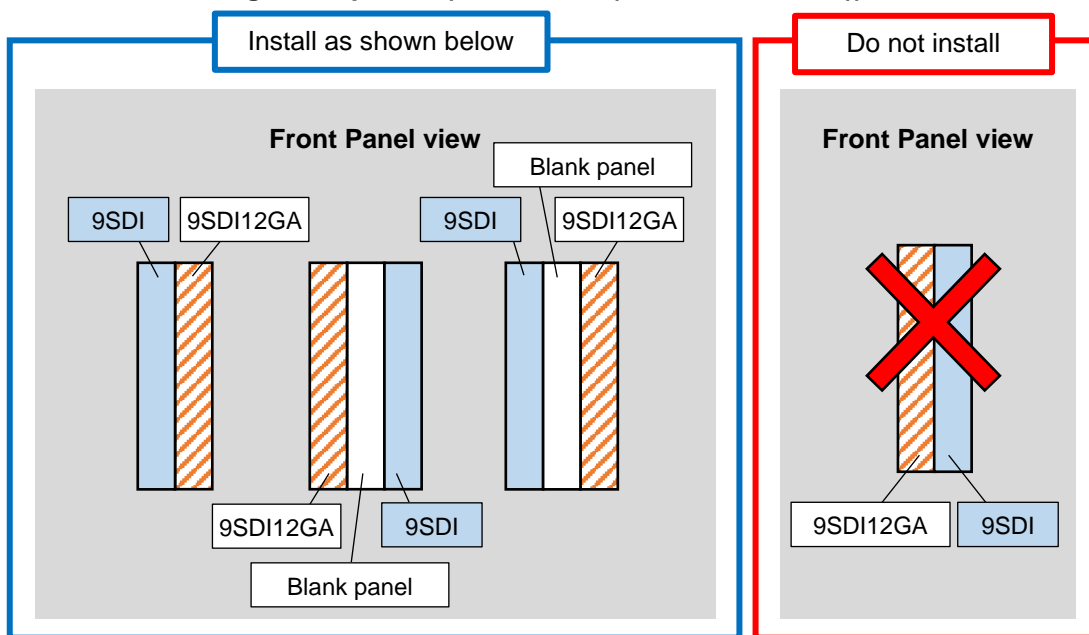
When installing both MFR-9SDI and MFR-9SDI12GA cards, there are installation restrictions. To properly function cards, locate the right place for installing cards. If these cards are installed in wrong slots, BNC cables cannot be connected or BNC connectors or BNC cables may be damaged.

Check the card installation status. Follow the procedure below.

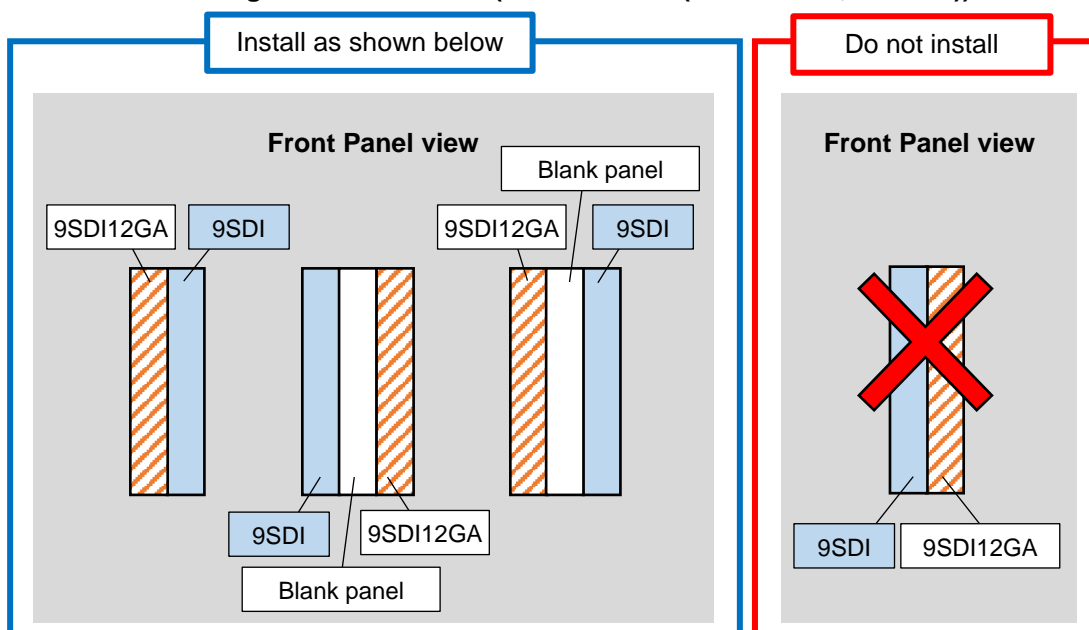
- (1) Unfasten four fixing screws on the front panel and detach the front panel.
- (2) Open the [STATUS > SLOT] menu in the Menu display. (See Sec. 4-1-4. "STATUS > SLOT" in the MFR-6100 Operation Manual for details.)

The illustration below shows the right place for installing these cards.

◆ **When installing into top slots (INPUT1 to 8 (No.1 to 4, 13 to 16))**



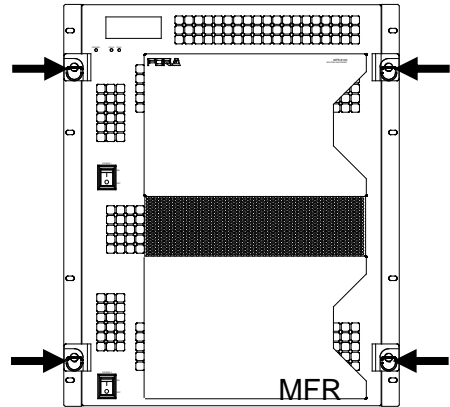
◆ **When installing into bottom slots (INPUT 9 to 16 (No. 17 to 20, 29 to 32))**



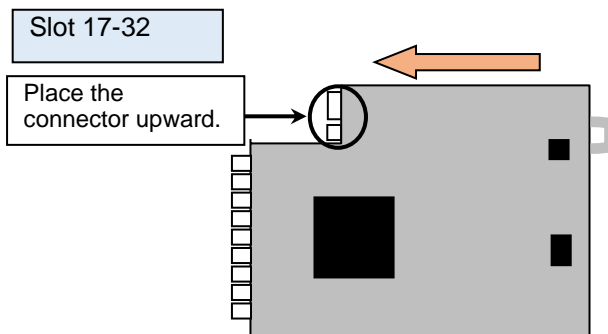
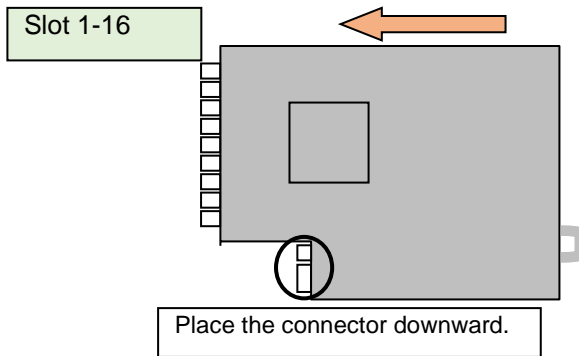
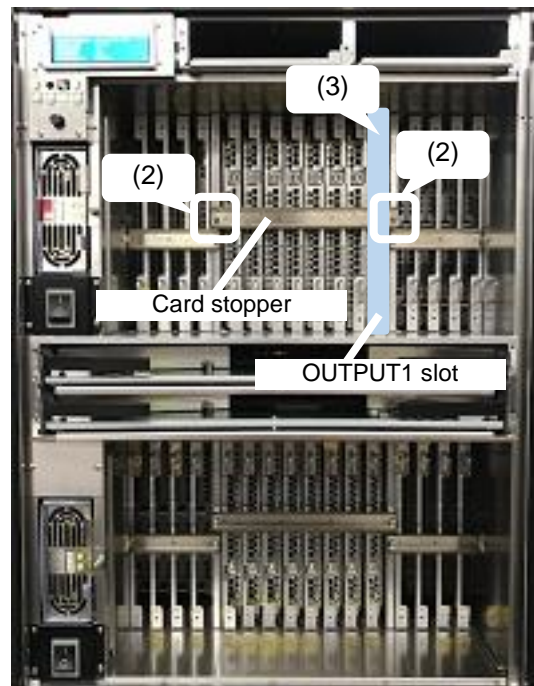
## 3-2. How to Install a New Card

The following procedure shows how to install an output card into OUTPUT1 slot.

- (1) Unfasten four fixing screws on the front panel and detach the front panel.



- (2) Remove the two screws on both sides of the card stopper and detach the stopper.
- (3) Detach the OUTPUT1 slot blank panel.
- (4) Insert a new card into the OUTPUT1 slot and push it in until the hole becomes entirely visible.
  - \* Confirm the slot number (See the figure on page 5) and direction before card insertion.



- (5) Re-install the card stopper removed in Step (2).

- (6) Turn the OUTPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display.  
(See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-6100 Operation Manual for details.)
- (7) Check whether OUTPUT1 slot status is normal using [STATUS > SLOT] menu in Menu display.  
(After installing the card, it takes about 10 seconds for the status to be applied in the menu.)  
(See Sec. 4-1-4. "STATUS > SLOT" in the MFR-6100 Operation Manual for details.)
- (8) Re-install the front panel.

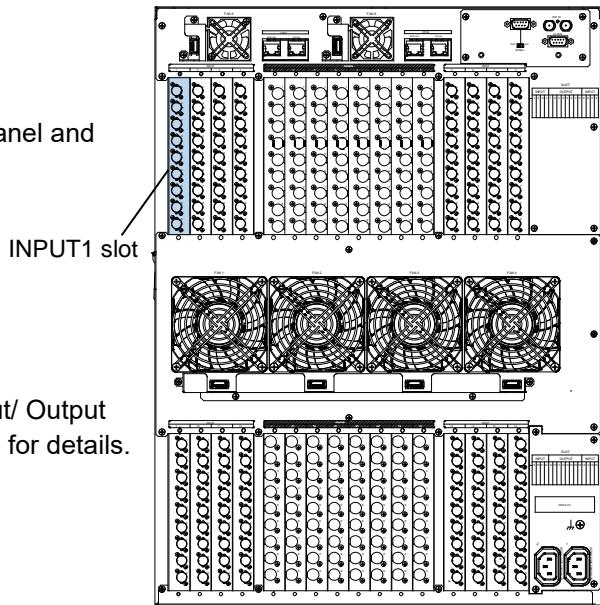
A new card installation is now complete.

To use inputs and outputs of the installed card, add assignment settings in the Source Assignment Menu and Destination Assignment Menu of the Web GUI.

### 3-3. How to Replace a Card

The following procedure shows how to replace the card in INPUT1 slot to a new input card.

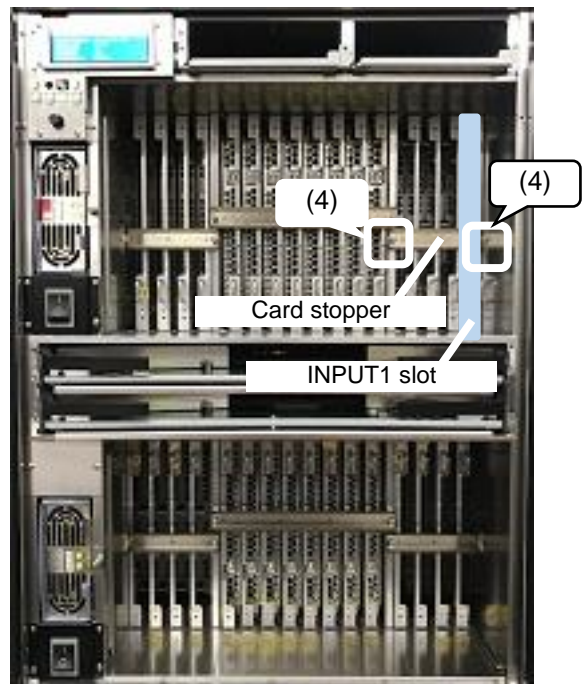
- (1) Detach all the BNC cables connected to the INPUT1 connector ports.
- (2) Unfasten four fixing screws on the front panel and detach the front panel.
- (3) Shutdown the INPUT1 slot using [SETTING > SLOT SHUTDOWN] menu in Menu Display.  
See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-6100 Operation Manual for details.



- (4) Remove the two screws on both sides of the card stopper and detach the stopper.
- (5) Grab the INPUT1 slot card handle and slowly remove (pull out) the card.
- (6) Insert a new card into the INPUT1 slot and push it in until the hole becomes entirely visible.

\* Confirm the slot number and direction before card insertion.  
(See the figure on page 5 and Step (4) in Sec. 3-2. "How to Install a New Card.")

- (7) Re-install the card stopper removed in Step (4).
- (8) Turn the INPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display.  
(See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" in the MFR-6100 Operation Manual for details.)
- (9) Check whether OUTPUT1 slot status is normal using [STATUS > SLOT] menu in Menu display.  
(After installing the card, it takes about 10 seconds for the status to be applied in the menu.)  
(See Sec. 4-1-4. "STATUS > SLOT" in the MFR-6100 Operation Manual for details.)
- (10) Re-install the front panel.



The card replacement is now complete.



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