

INSTALLATION GUIDE

MFR-9SDI12G
MFR-9SDO12G
MFR-8SDIEX
MFR-8SDOEX
MFR-2SDIGB
MFR-2SDOGB

1st Edition - Rev. 1

Upon Receipt

Unpacking

MFR-9SDI12G/9SDO12G/8SDIEX/8SDOEX/2SDIGB/2SDOGB 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-9SDI12G		
MFR-9SDO12G		
MFR-8SDIEX	1	
MFR-8SDOEX		
MFR-2SDIGB		
MFR-2SDOGB		
Installation Guide	1	This guide book

Before Starting

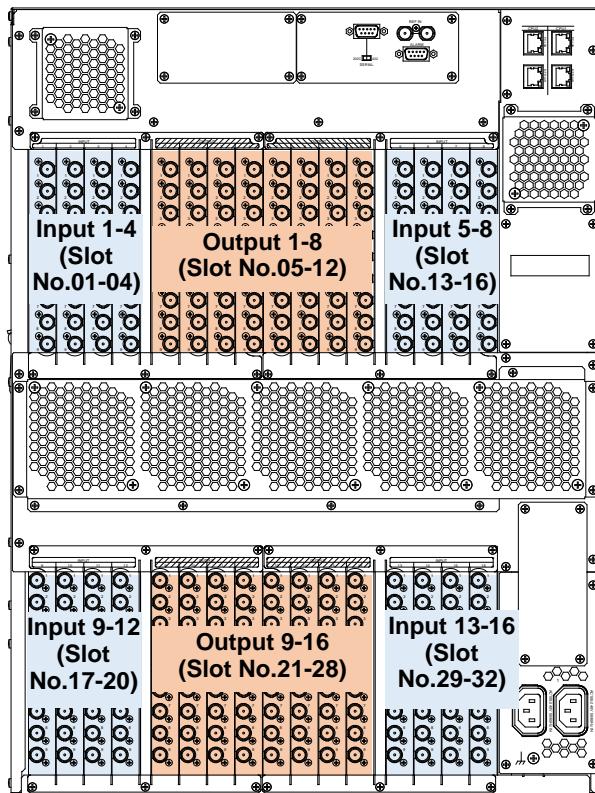
MFR-9SDI12G/8SDIEX/2SDIGB are input cards for MFR-4000/MFR-6000 units.
MFR-9SDO12G/8SDOEX/2SDOGB are output cards for MFR-4000/MFR-6000 units.

◆ Available Slots and Number for MFR-4000 Input / Output Cards

Slot	Slot number	Installable cards	Installable number of cards
Input slot	No.01-08 (INPUT1-8)	MFR-9SDI12G/8SDIEX 2SDIGB	Up to 8 cards
Output slot	No.09-16 (OUTPUT1-8)	MFR-9SDO12G/8SDOEX 2SDOGB	Up to 8 cards

◆ Available Slots and Number for MFR-6000 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-9SDI12G/ 8SDIEX/2SDIGB	Up to 16 cards
Output slot	No. 05-12 (OUTPUT1-8) No. 21 -28 (OUTPUT9-16)	MFR-9SDO12G/ 8SDOEX/2SDOGB	Up to 16 cards



1. Matrix Size Chart

1-1. MFR-4000

◆ Standard SDI Signal Routing

Matrix size varies depending on the number of installed MFR-9SDI12G and MFR-9SDO12G cards as shown below. (72 x 72 to 9 x 9)

		Number of cards: MFR-9SDO12G							
		8	7	6	5	4	3	2	1
Number of cards: MFR-9SDI12G	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

Matrix size varies depending on the number of installed MFR-8SDIEX, MFR-8SDOEX, MFR-2SDIGB and MFR-2SDOGB cards as shown below. (64 x 64 to 8 x 8)

		Number of cards: MFR-8SDOEX and MFR-2SDOGB							
		8	7	6	5	4	3	2	1
Number of cards: MFR-8SDIEX and MFR-2SDIGB	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

1-2. MFR-6000

◆ Standard SDI Signal Routing

Matrix size varies depending on the number of installed MFR-9SDI12G and MFR-9SDO12G cards as shown below. (144 x 144 to 9 x 9)

		Number of cards: MFR-9SDO12G																	
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Number of cards: MFR-9SDI12G	16	144 x 144	144 x 135	144 x 126	144 x 117	144 x 108	144 x 99	144 x 90	144 x 81	144 x 72	144 x 63	144 x 54	144 x 45	144 x 36	144 x 27	144 x 18	144 x 9		
	15	135 x 144	135 x 135	135 x 126	135 x 117	135 x 108	135 x 99	135 x 90	135 x 81	135 x 72	135 x 63	135 x 54	135 x 45	135 x 36	135 x 27	135 x 18	135 x 9		
	14	126 x 144	126 x 135	126 x 126	126 x 117	126 x 108	126 x 99	126 x 90	126 x 81	126 x 72	126 x 63	126 x 54	126 x 45	126 x 36	126 x 27	126 x 18	126 x 9		
	13	117 x 144	117 x 135	117 x 126	117 x 117	117 x 108	117 x 99	117 x 90	117 x 81	117 x 72	117 x 63	117 x 54	117 x 45	117 x 36	117 x 27	117 x 18	117 x 9		
	12	108 x 144	108 x 135	108 x 126	108 x 117	108 x 108	108 x 99	108 x 90	108 x 81	108 x 72	108 x 63	108 x 54	108 x 45	108 x 36	108 x 27	108 x 18	108 x 9		
	11	99 x 144	99 x 135	99 x 126	99 x 117	99 x 108	99 x 99	99 x 90	99 x 81	99 x 72	99 x 63	99 x 54	99 x 45	99 x 36	99 x 27	99 x 18	99 x 9		
	10	90 x 144	90 x 135	90 x 126	90 x 117	90 x 108	90 x 99	90 x 90	90 x 81	90 x 72	90 x 63	90 x 54	90 x 45	90 x 36	90 x 27	90 x 18	90 x 9		
	9	81 x 144	81 x 135	81 x 126	81 x 117	81 x 108	81 x 99	81 x 90	81 x 81	81 x 72	81 x 63	81 x 54	81 x 45	81 x 36	81 x 27	81 x 18	81 x 9		
	8	72 x 144	72 x 135	72 x 126	72 x 117	72 x 108	72 x 99	72 x 90	72 x 81	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 144	63 x 135	63 x 126	63 x 117	63 x 108	63 x 99	63 x 90	63 x 81	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 144	54 x 135	54 x 126	54 x 117	54 x 108	54 x 99	54 x 90	54 x 81	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 144	45 x 135	45 x 126	45 x 117	45 x 108	45 x 99	45 x 90	45 x 81	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 144	36 x 135	36 x 126	36 x 117	36 x 108	36 x 99	36 x 90	36 x 81	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 144	27 x 135	27 x 126	27 x 117	27 x 108	27 x 99	27 x 90	27 x 81	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 144	18 x 135	18 x 126	18 x 117	18 x 108	18 x 99	18 x 90	18 x 81	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 144	9 x 135	9 x 126	9 x 117	9 x 108	9 x 99	9 x 90	9 x 81	9 x 72	9 x 63	9 x 54	9 x 45	9 x 36	9 x 27	9 x 18	9 x 9		

Matrix size varies depending on the number of installed MFR-8SDIEX, MFR-8SDOEX, MFR-2SDIGB and MFR-2SDOGB cards as shown below. (128 x 128 to 8 x 8)

		Number of cards: MFR-8SDOEX / MFR-2SDOGB																	
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Number of cards: MFR-8SDIEX / MFR-2SDIGB	16	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	15	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	14	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	13	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	12	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	11	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	10	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	9	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	8	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	7	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	5	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	3	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8		
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

2. [MFR-4000] I/O Card Installation / Replacement

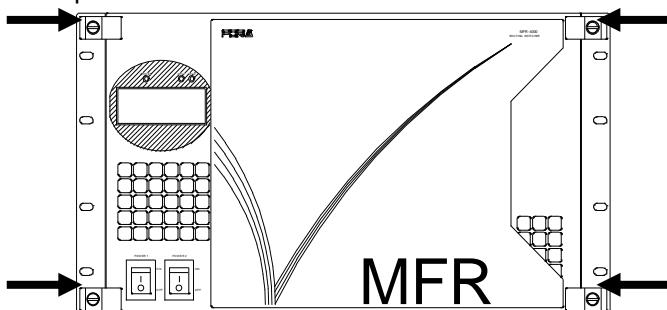
IMPORTANT

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

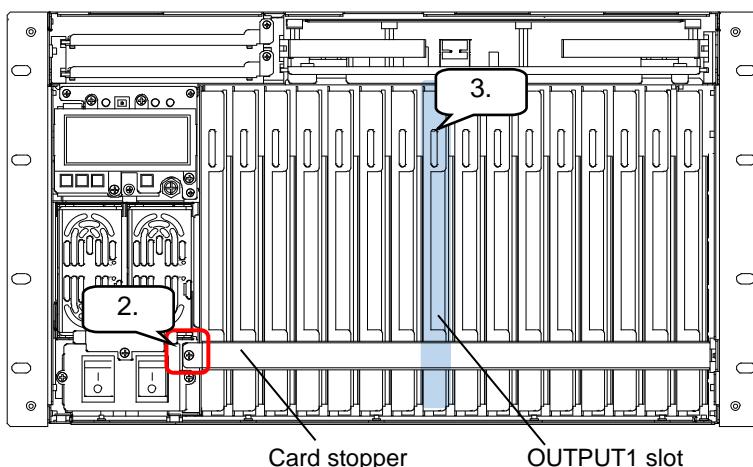
2-1. How to Install a New Card

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

1. Unfasten to remove four fixing screws along the front panel as shown and detach the front panel.



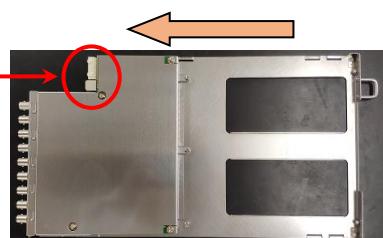
2. Remove the screw on the left side of the card stopper (circled in red) and detach the stopper.
3. Detach the OUTPUT1 slot blank panel.



4. Insert a new card firmly into the OUTPUT1 slot.

* Confirm the slot number and direction before card insertion.

Place the connector upward.



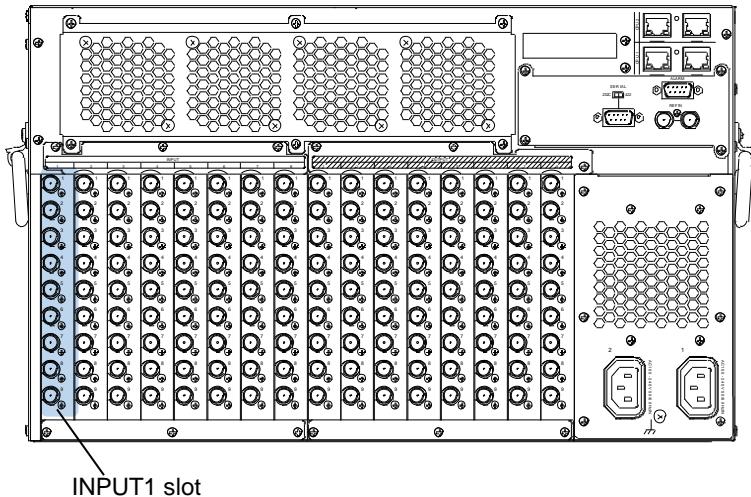
5. Re-install the card stopper removed in Step 2.
6. Turn the OUTPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display. See MFR-4000 Operation Manual Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.
7. Verify that LEDs on the card installed into OUTPUT1 light up.
8. Re-install the front panel.

A new card installation is now complete.

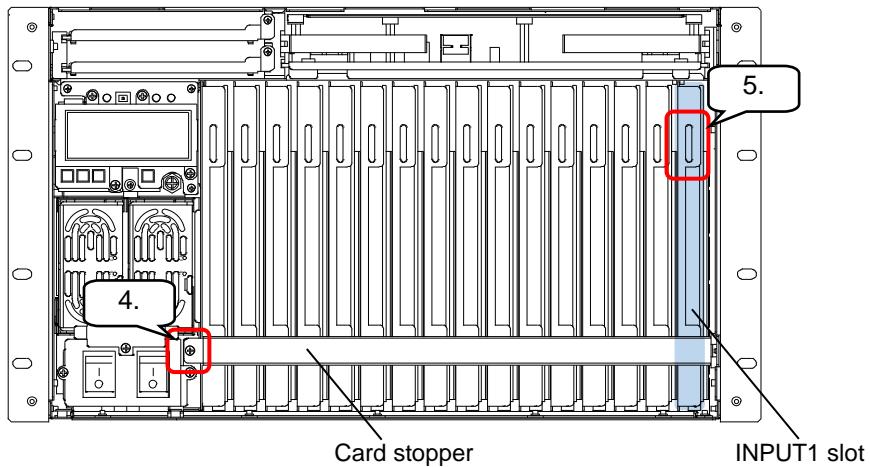
1-2. How to Replace a Card

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

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



2. Unfasten to remove four fixing screws along the front panel and detach the front panel.
3. Shutdown the INPUT1 slot in [SETTING > SLOT SHUTDOWN] menu of Menu Display. See MFR-4000 Operation Manual Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.
4. Remove the screw on the left side 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 firmly into the INPUT1 slot.
* Confirm the slot number and direction before card insertion. (See Step 4. in Sec. 2-1. "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 MFR-4000 Operation Manual Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.
9. Verify that LEDs on the card installed into INPUT1 light up.
10. Re-install the front panel.

The card replacement is now complete.

3. [MFR-6000] I/O Card Installation / Replacement

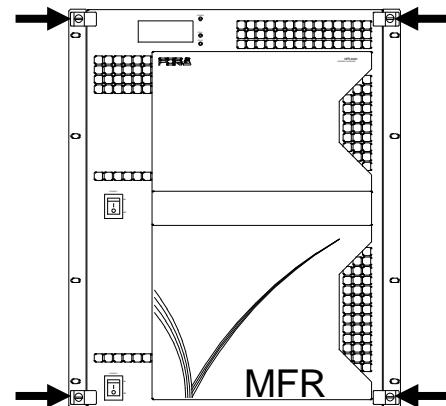
IMPORTANT

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

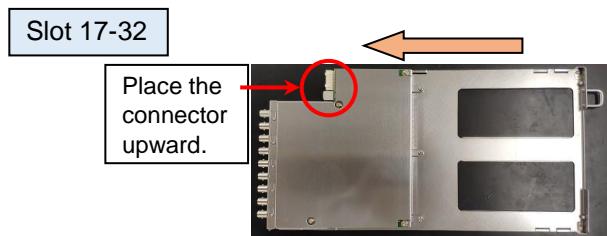
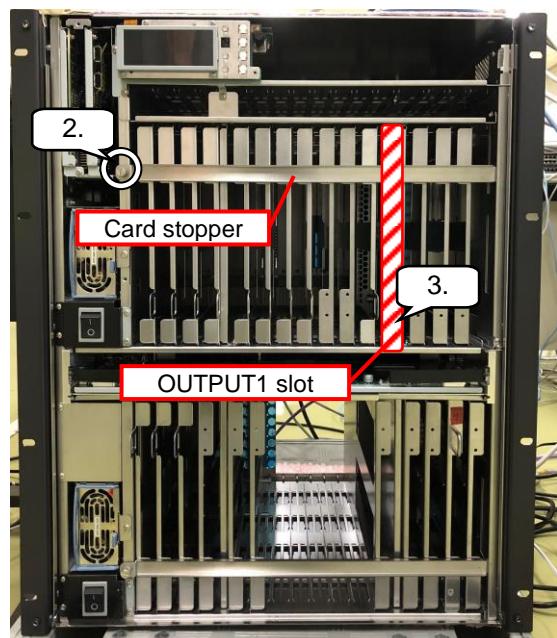
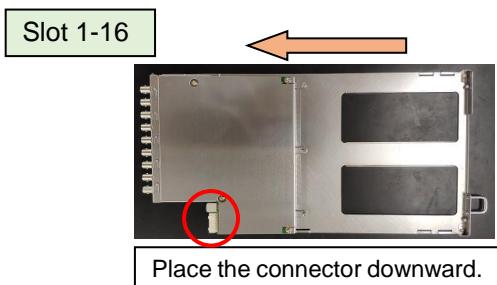
1-1. How to Install a New Card

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

1. Unfasten to remove four fixing screws along the front panel as shown and detach the front panel.



2. Remove the screw on the left side of the card stopper (circled) and detach the stopper.
3. Detach the OUTPUT1 slot blank panel.
4. Insert a new card firmly into the OUTPUT1 slot.
* Confirm the slot number (See the figure on page 3) and direction before card insertion.



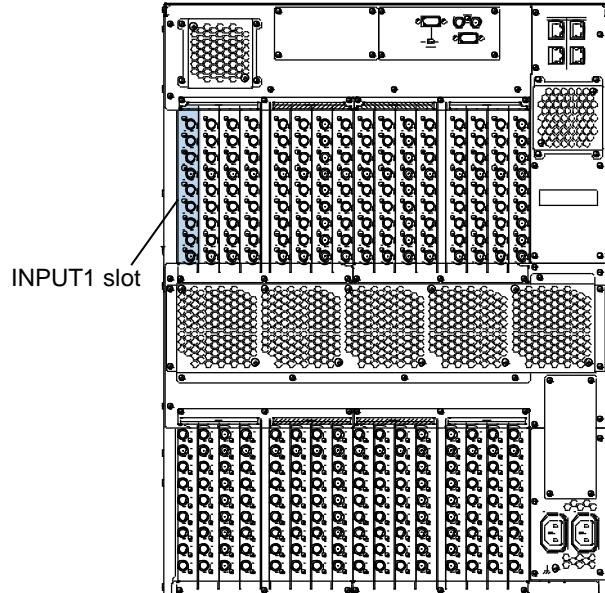
5. Re-install the card stopper removed in Step 2
6. Turn the OUTPUT1 slot ON using [SETTING > SLOT SHUTDOWN] menu in Menu display. (See MFR-6000 Operation Manual Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.)
7. Verify that LEDs on the card installed into OUTPUT1 light up.
8. Re-install the front panel.

A new card installation is now complete.

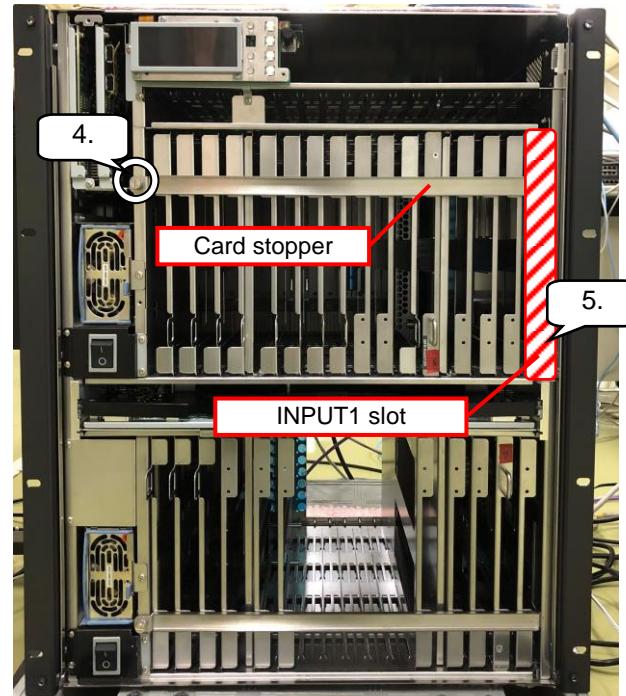
1-2. How to Replace a Card

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

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



2. Unfasten to remove four fixing screws along the front panel and detach the front panel.
3. Shutdown the INPUT1 slot in [SETTING > SLOT SHUTDOWN] menu of Menu Display. See Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.
4. Remove the screw on the left side 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 firmly into the INPUT1 slot.
* Confirm the slot number and direction before card insertion. (See Step 4. in Sec. 2-1. "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 MFR-6000 Operation Manual Sec. 4-2-2. "Turning ON/OFF an Input/ Output Card" for details.)
9. Verify that LEDs on the card installed into INPUT1 light up.
10. Re-install the front panel.



The card replacement is now complete.



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