LOCATION SECTION

Contents

1. Overview of Storage system

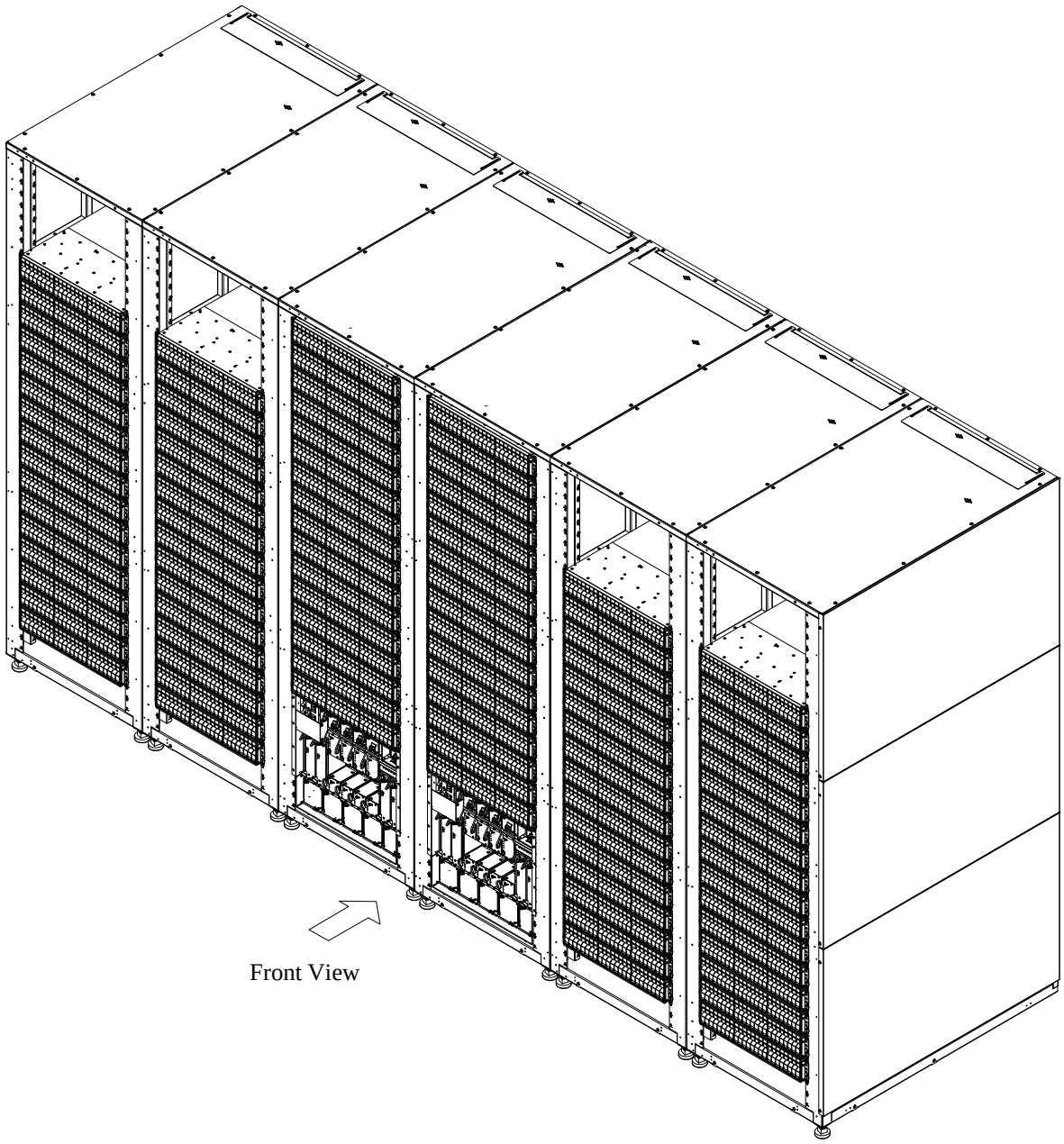


Fig. 1-1 Overview of Storage system

2. Parts Location

2.1 Configuration example of main parts

The following figure shows a configuration example of installing main parts in 42 units rack frame.

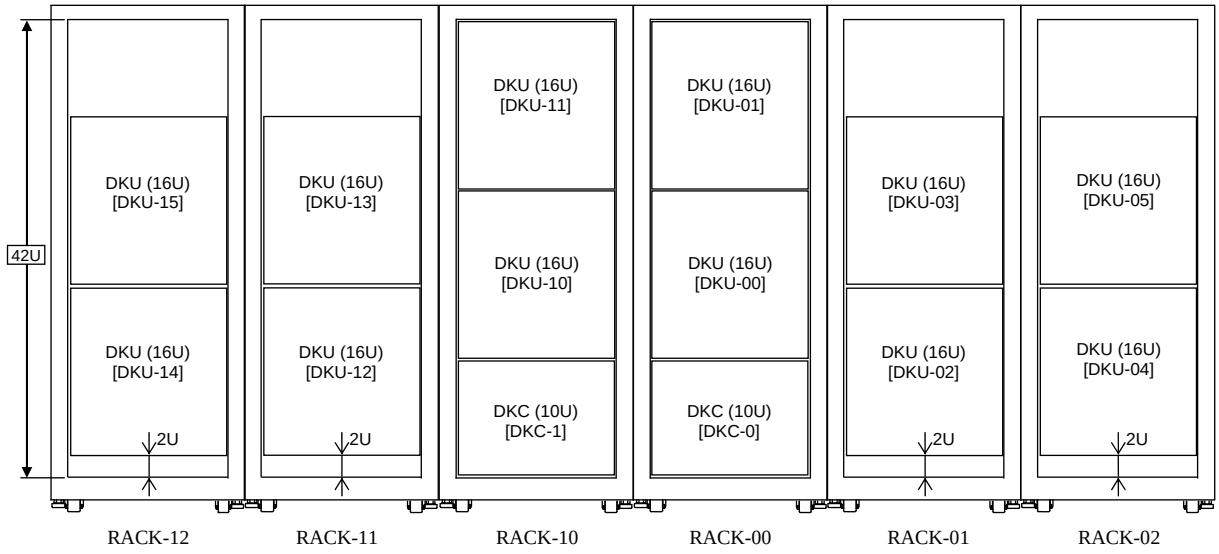
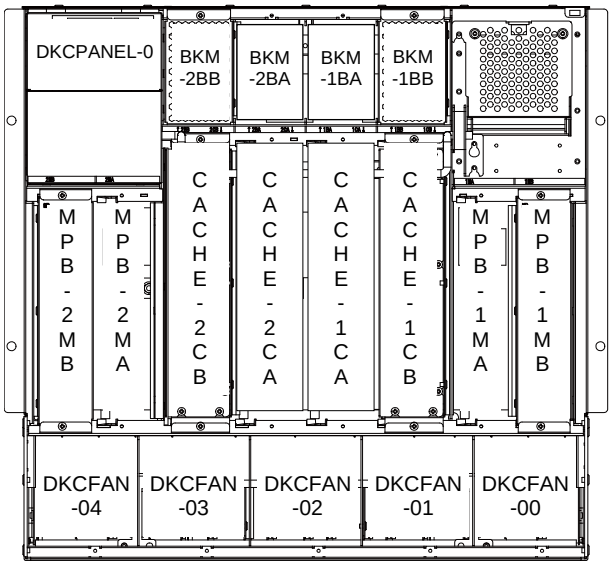


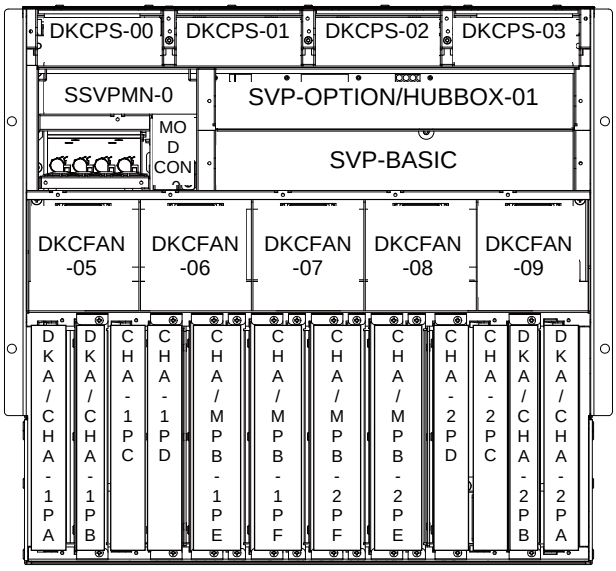
Fig. 2.1-1 Configuration example of main parts

2.2 DKC (10U)

1. DKC-0
   The following figure shows the parts location of DKC-0.



Front View of DKC-0

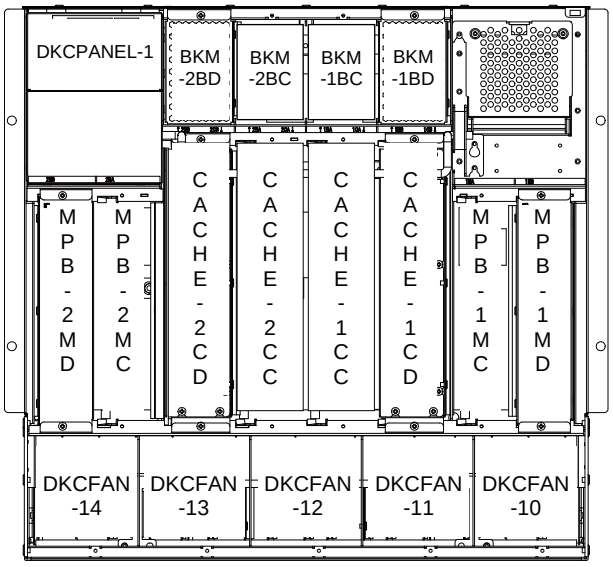


Rear View of DKC-0

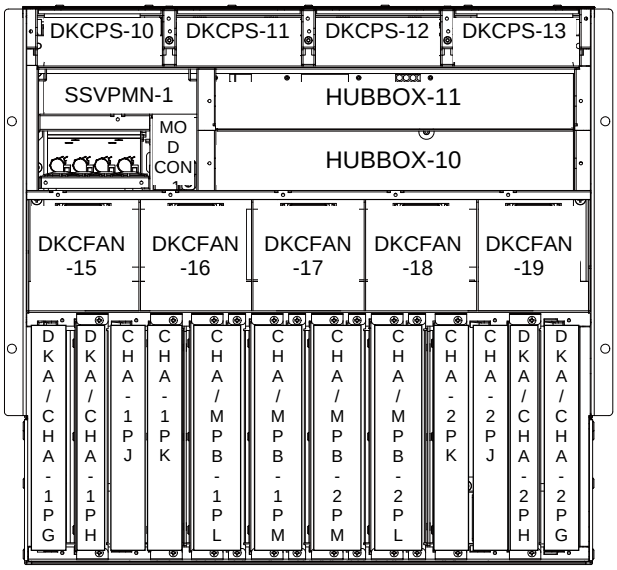
Fig. 2.2-1 Parts Location of DKC-0

2. DKC-1

The following figure shows the parts location of DKC-1.



Front View of DKC-1



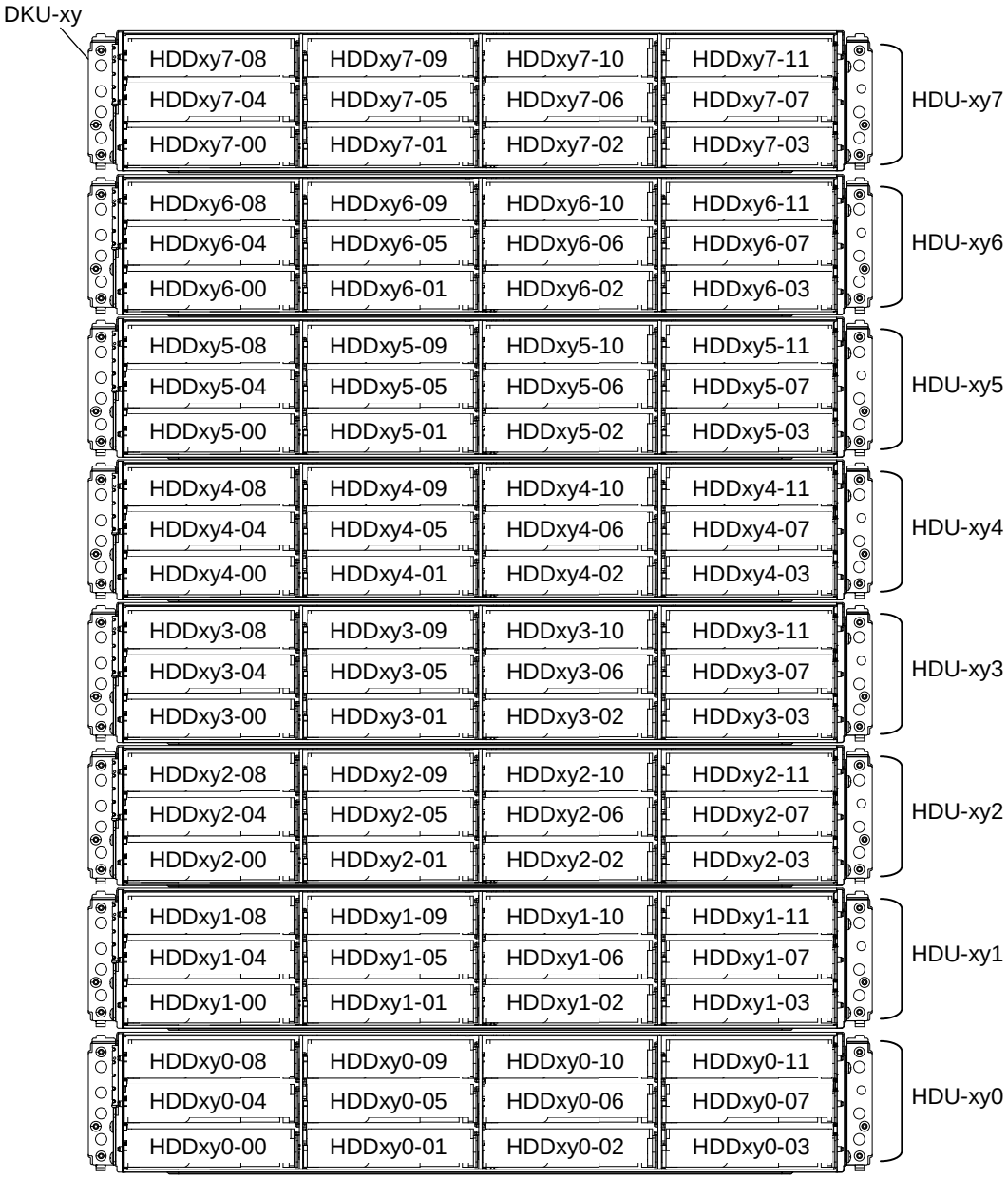
Rear View of DKC-1

Fig. 2.2-2 Parts Location of DKC-1

2.3 DKU (16U/8U)

The number (DKU-xy) of DKU doesn't indicate the installation location of DKU, but indicates the order of installation. Therefore, while performing process to DKU, it is necessary to confirm location with the location label put on DKU, and be careful not to make a mistake of target location.

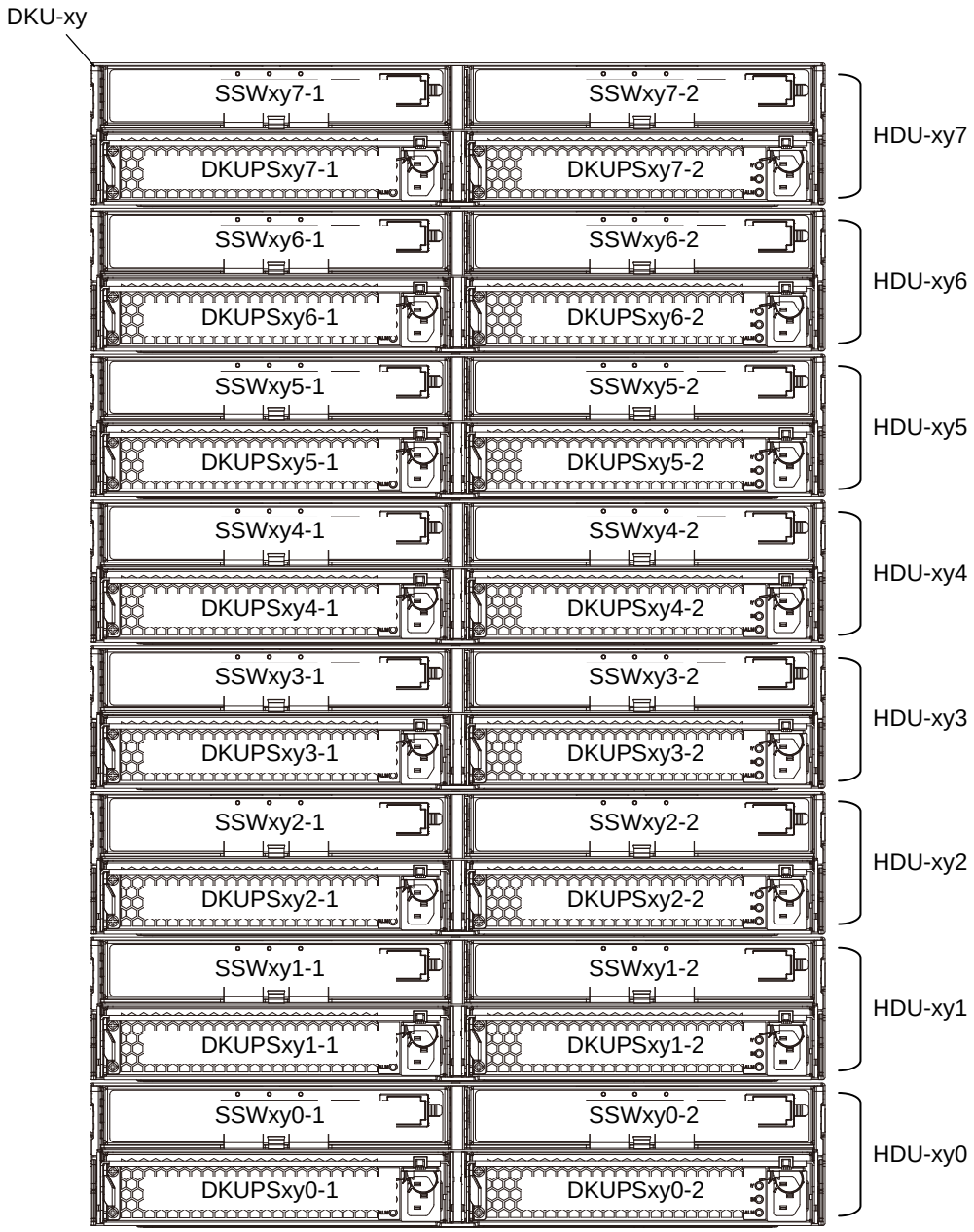
1. UBX (DKU for 3.5 inch Drive) (16U)
   Fig. 2.3-1 and Fig. 2.3-2 show the parts location of UBX.



Front View of UBX

*1: The name in parentheses in the SVP messages shows HDDXXX-YY here.
*2: DKU-xy
- DKU No. (0, 1, 2,....., 5)
- DKC No. (0, 1)

Fig. 2.3-1 Parts Location of UBX

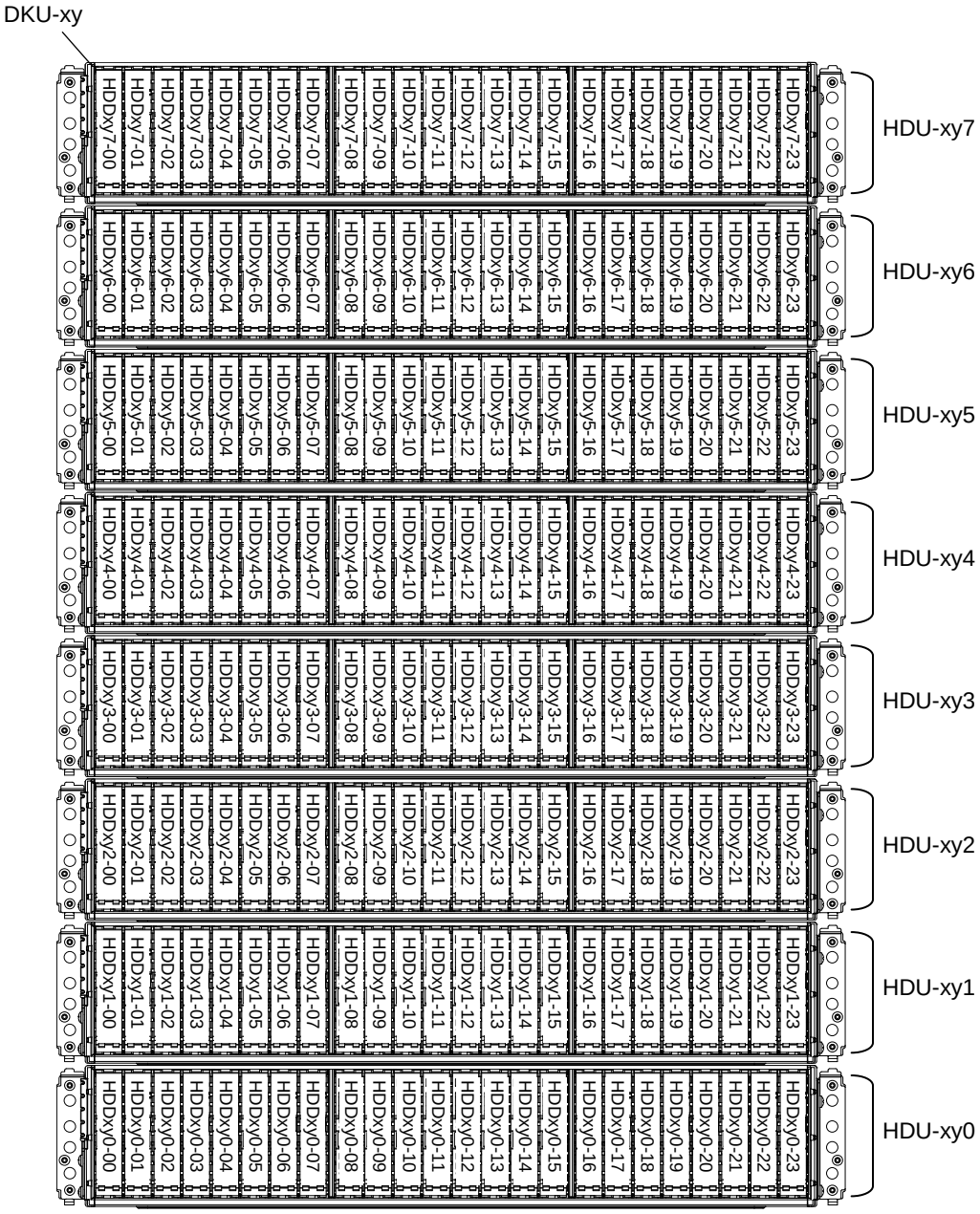


Rear View of UBX

*1: DKU-xy
- DKU No. (0, 1, 2,....., 5)
- DKC No. (0, 1)

Fig. 2.3-2 Parts Location of UBX

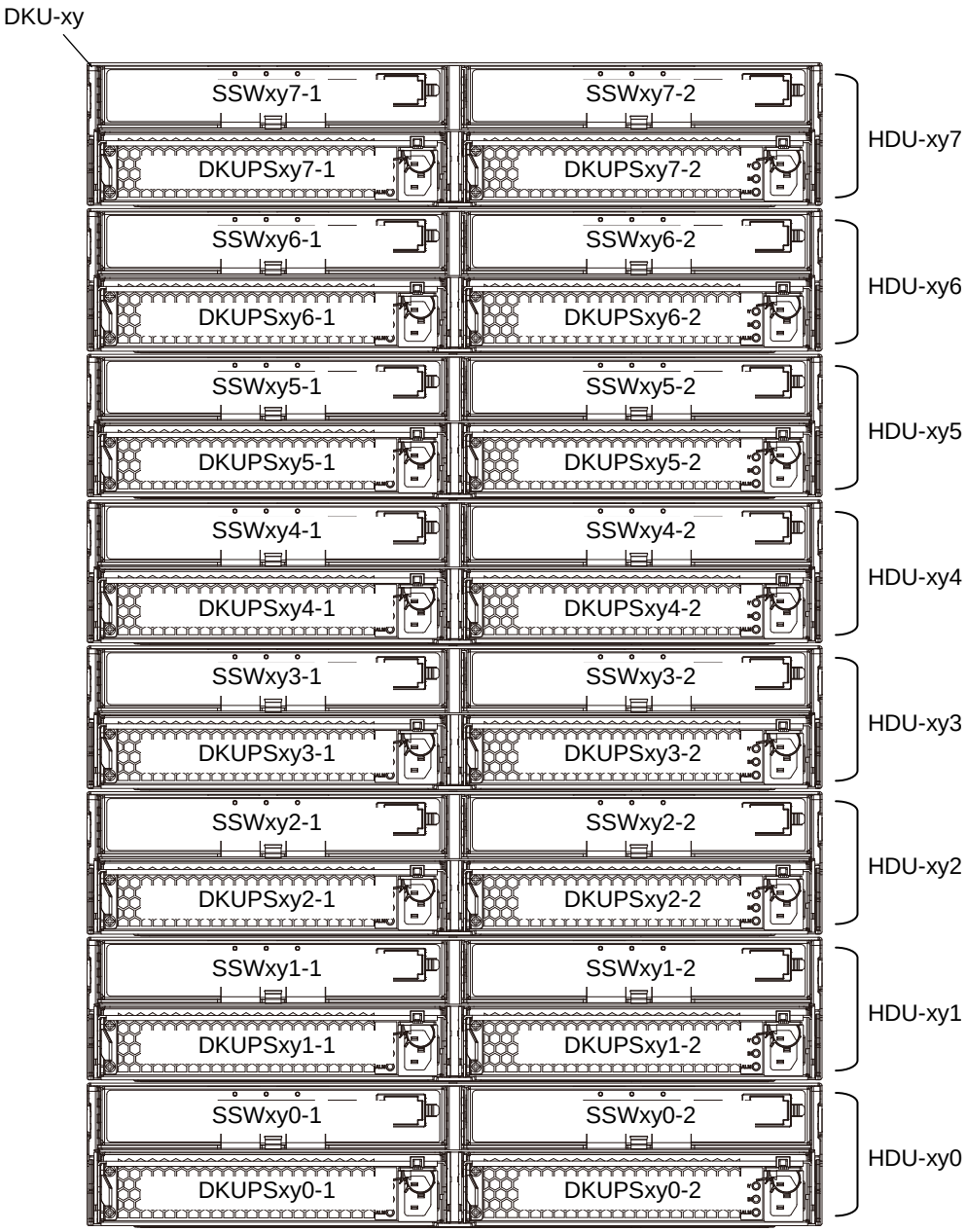
2. SBX (DKU for 2.5 inch Drive) (16U)
   Fig. 2.3-3 and Fig. 2.3-4 show the parts location of SBX.



Front View of SBX

*1: The name in parentheses in the SVP messages shows HDDXXX-YY here.
*2: DKU-xy
- DKU No. (0, 1, 2,....., 5)
- DKC No. (0, 1)

Fig. 2.3-3 Parts Location of SBX



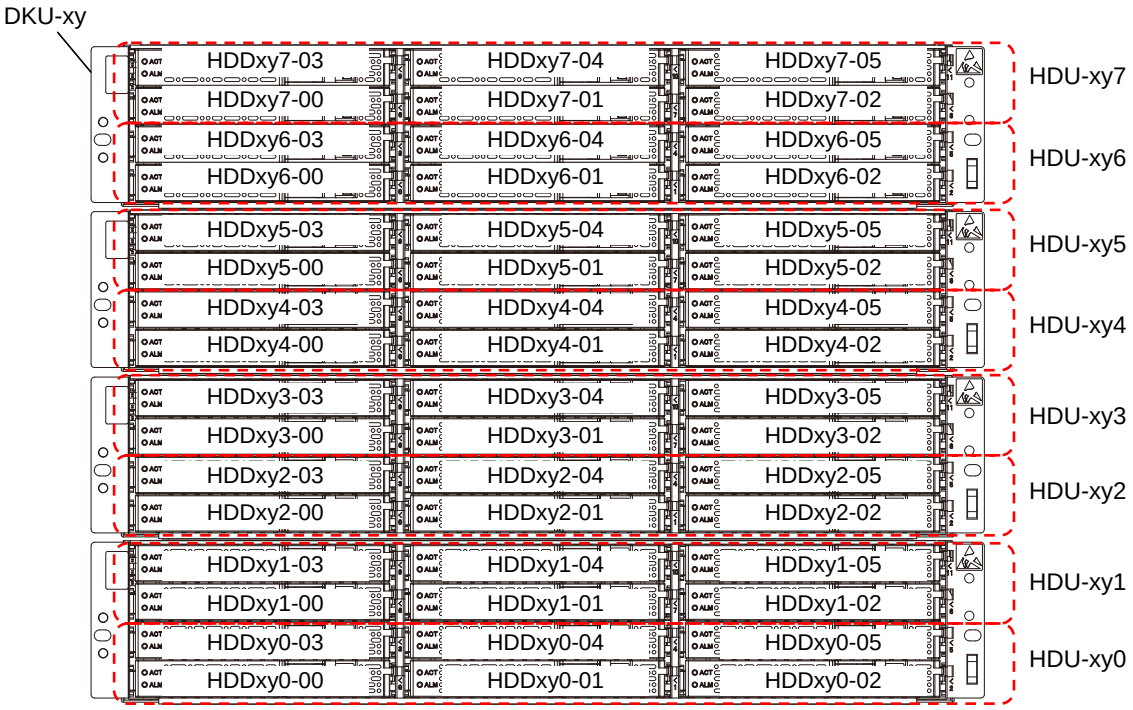
Rear View of SBX

*1: DKU-xy
- DKU No. (0, 1, 2,....., 5)
- DKC No. (0, 1)

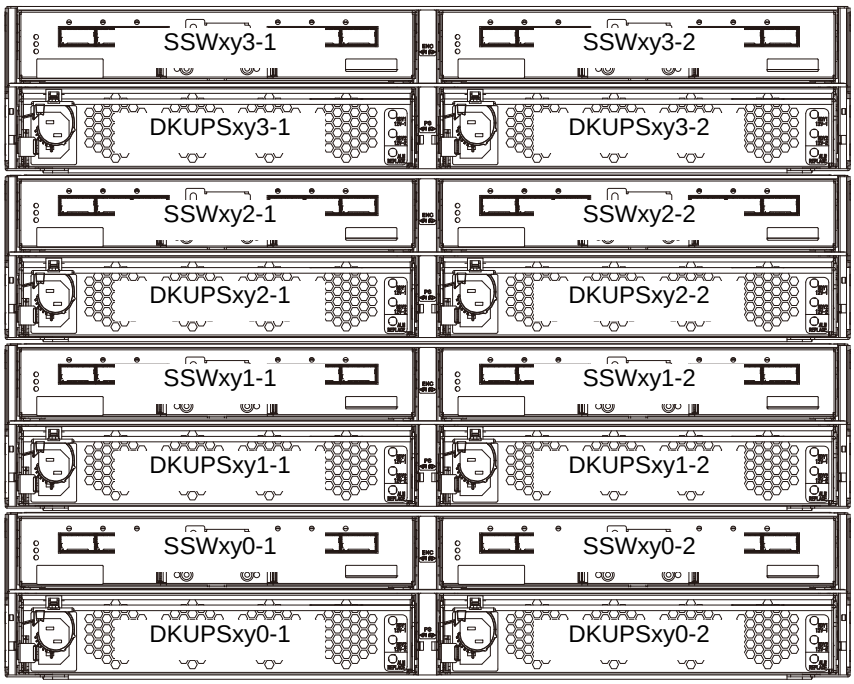
Fig. 2.3-4 Parts Location of SBX

3. FBX

The following figure shows the parts location of FBX.



Front View of FBX



Rear View of FBX

*1: The name in parentheses in the SVP messages shows HDDXXX-YY here.
*2: DKU-xy
- DKU No. (0, 1, 2,....., 5)
- DKC No. (0, 1)

Fig. 2.3-5 Parts Location of FBX

2.4 PCB Location

1. DKC-0 Location
   Fig. 2.4-1 and Fig. 2.4-2 show the PCB location of DKC-0.

DKC-0 LOCATION (FRONT)

CL2				CL1			
		2BB	2BA	1BA	1BB		
		2nd B K M *B	1st B K M *A	1st B K M *A	2nd B K M *B		
		BKM-2BB	BKM-2BA	BKM-1BA	BKM-1BB		
		Option 1	Basic	Basic	Option 1		
2MB	2MA	2CB	2CA	1CA	1CB	1MA	1MB
W P 8 5 0 - A / B *D	W P 8 5 0 - A / B	W P 8 4 0 - A *C	W P 8 4 0 - A	W P 8 4 0 - A	W P 8 4 0 - A *C	W P 8 5 0 - A / B	W P 8 5 0 - A / B *D
MPB-2MB	MPB-2MA	CACHE-2CB	CACHE-2CA	CACHE-1CA	CACHE-1CB	MPB-1MA	MPB-1MB
Option 1	Basic	Option 1	Basic	Basic	Option 1	Basic	Option 1

*A: DKC-F810I-BKMS/BKML × 1 set
*B: DKC-F810I-BKMS/BKML × 2 sets
*C: DKC-F810I-CPEX × 1 set
*D: DKC-F810I-MP × 1 set

Fig. 2.4-1 DKC-0 PCB Location

DKC-0 LOCATION (REAR)

DKCPS-00	DKCPS-01	DKCPS-02	DKCPS-03
SSVPMN-0	SVP-OPTION *J / HUBBOX-01 *K		
—	MODCON-0 *L	SVP-BASIC	
DKCFAN-05	DKCFAN-06	DKCFAN-07	DKCFAN-08	DKCFAN-09

CL1										CL2									
1PA		1PB		1PC	1PD	1PE		1PF		2PF		2PE		2PD	2PC	2PB		2PA	
1st	6th	2nd	5th	1st	2nd	3rd	WP8500-A/B	4th	WP8500-A/B	4th	WP8500-A/B	3rd	WP8500-A/B	2nd	1st	2nd	5th	1st	6th
DKA	CHA	DKA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	CHA	DKA	CHA	DKA	CHA
*E	*F	*E	*F	*F	*F	*F	*H	*F	*G	*F	*G	*F	*H	*F	*F	*E	*F	*E	*F
DKA-1PA	CHA-1PA	DKA-1PB	CHA-1PB	CHA-1PC	CHA-1PD	CHA-1PE	MPB-1PE	CHA-1PF	MPB-1PF	CHA-2PF	MPB-2PF	CHA-2PE	MPB-2PE	CHA-2PD	CHA-2PC	DKA-2PB	CHA-2PB	DKA-2PA	CHA-2PA
Basic	Option 5	Option 1	Option 4	Basic	Option 1	Option 2	Option 3	Option 3	Option 2	Option 3	Option 2	Option 2	Option 3	Option 1	Basic	Option 1	Option 4	Basic	Option 5

*E: Description of DKA PCBs

CL1 (1PA/1PB)/ CL2 (2PA/2PB)	
WP820-A	WP820-B
*1	*2

*1: DKC-F810I-SCA
*2: DKC-F810I-ESCA

*F: Description of CHA PCBs

CL1 (1PA/1PB/1PC/1PD/1PE/1PF)/ CL2 (2PA/2PB/2PC/2PD/2PE/2PF)			
WP8110-A	WP8112-A	WP8111-A	WP8111-B
*1	*2	*3	*4

*1: DKC-F810I-16FC8
*2: DKC-F810I-8FC16
*3: DKC-F810I-16MS8
*4: DKC-F810I-16ML8

*G: DKC-F810I-MP × 2 sets
*H: DKC-F810I-MP × 3 sets
*J: DKC-F810I-SVP × 1 set
*K: DKC-F810I-HUB × 1 set
*L: DKC-F810I-MOD5/MOD30/MOD1J

Fig. 2.4-2 DKC-0 PCB Location

2. DKC-1 Location

Fig. 2.4-3 and Fig. 2.4-4 show the PCB location of DKC-1.

DKC-1 LOCATION (FRONT)

CL2				CL1			
		2BD	2BC	1BC	1BD		
		4th B K M *B	3rd B K M *A	3rd B K M *A	4th B K M *B		
		BKM-2BD	BKM-2BC	BKM-1BC	BKM-1BD		
		Option 3	Option 2	Option 2	Option 3		
2MD	2MC	2CD	2CC	1CC	1CD	1MC	1MD
W P 8 5 0 - A / B *D	W P 8 5 0 - A / B	W P 8 4 0 - A *C	W P 8 4 0 - A	W P 8 4 0 - A	W P 8 4 0 - A *C	W P 8 5 0 - A / B	W P 8 5 0 - A / B *D
MPB-2MD	MPB-2MC	CACHE-2CD	CACHE-2CC	CACHE-1CC	CACHE-1CD	MPB-1MC	MPB-1MD
Option 5	Option 4	Option 3	Option 2	Option 2	Option 3	Option 4	Option 5

*A: DKC-F810I-BKMS/BKML × 3 sets
*B: DKC-F810I-BKMS/BKML × 4 sets
*C: DKC-F810I-CPEX × 2 sets
*D: DKC-F810I-MP × 4 sets

Fig. 2.4-3 DKC-1 PCB Location

DKC-1 LOCATION (REAR)

DKCPS-10	DKCPS-11	DKCPS-12	DKCPS-13
SSVPMN-1	HUBBOX-11 *J		
—	MODCON-1 *K	HUBBOX-10	
DKCFAN-15	DKCFAN-16	DKCFAN-17	DKCFAN-18	DKCFAN-19

CL1										CL2									
1PG		1PH		1PJ	1PK	1PL		1PM		2PM		2PL		2PK	2PJ	2PH		2PG	
3rd	12th	4th	11th	7th	8th	9th	WP8500-A/B	10th	WP8500-A/B	10th	WP8500-A/B	9th	WP8500-A/B	8th	7th	4th	11th	3rd	12th
DKA	CHA	DKA	CHA	CHA	CHA	CHA		CHA		CHA		CHA		CHA	CHA	DKA	CHA	DKA	CHA
*E	*F	*E	*F	*F	*F	*F	*H	*F	*G	*F	*G	*F	*H	*F	*F	*E	*F	*E	*F
DKA-1PG	CHA-1PG	DKA-1PH	CHA-1PH	CHA-1PJ	CHA-1PK	CHA-1PL	MPB-1PL	CHA-1PM	MPB-1PM	CHA-2PM	MPB-2PM	CHA-2PL	MPB-2PL	CHA-2PK	CHA-2PJ	DKA-2PH	CHA-2PH	DKA-2PG	CHA-2PG
Option 2	Option 11	Option 3	Option 10	Option 6	Option 7	Option 8	Option 7	Option 9	Option 6	Option 9	Option 6	Option 8	Option 7	Option 7	Option 6	Option 3	Option 10	Option 2	Option 11

*E: Description of DKA PCBs

CL1 (1PG/1PH)/ CL2 (2PG/2PH)	
WP8200-A	WP8200-B
*1	*2

*1: DKC-F810I-SCA
*2: DKC-F810I-ESCA

*F: Description of CHA PCBs

CL1 (1PG/1PH/1PJ/1PK/1PL/1PM)/ CL2 (2PG/2PH/2PJ/2PK/2PL/2PM)			
WP8100-A	WP8112-A	WP8111-A	WP8111-B
*1	*2	*3	*4

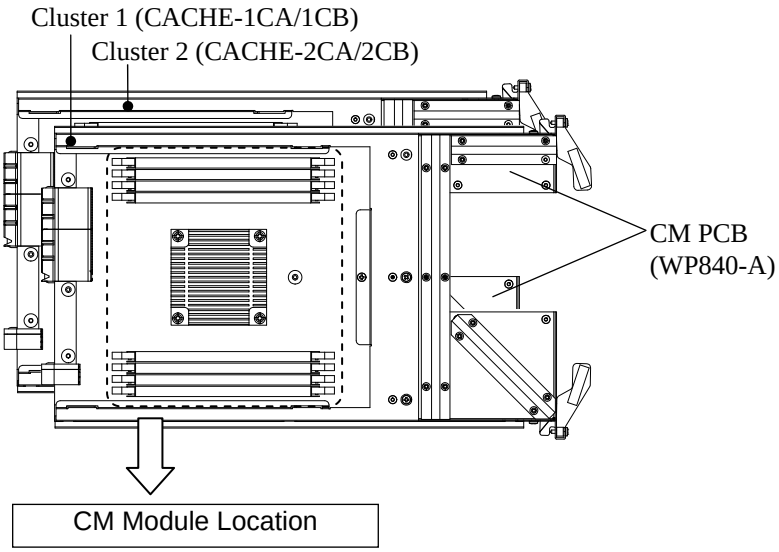
*1: DKC-F810I-16FC8
*2: DKC-F810I-8FC16
*3: DKC-F810I-16MS8
*4: DKC-F810I-16ML8

*G: DKC-F810I-MP × 3 sets
*H: DKC-F810I-MP × 4 sets
*J: DKC-F810I-HUB × 2 sets
*K: DKC-F810I-MOD5/MOD30/MOD1J

Fig. 2.4-4 DKC-1 PCB Location

2.5 Cache Memory Module Location

1. DKC-0
   The following figure shows the Cache Memory (CM) Module location on the DKC-0.



CACHE-1CA/2CA (Basic)

CM1P:	*2
CM5P:	*6
CM3P:	*4
CM7P:	*8

CM6P:	*7
CM2P:	*3
CM4P:	*5
CM0P:	*1

CACHE-1CB/2CB (Option 1)

CM1P:	*10
CM5P:	*14
CM3P:	*12
CM7P:	*16

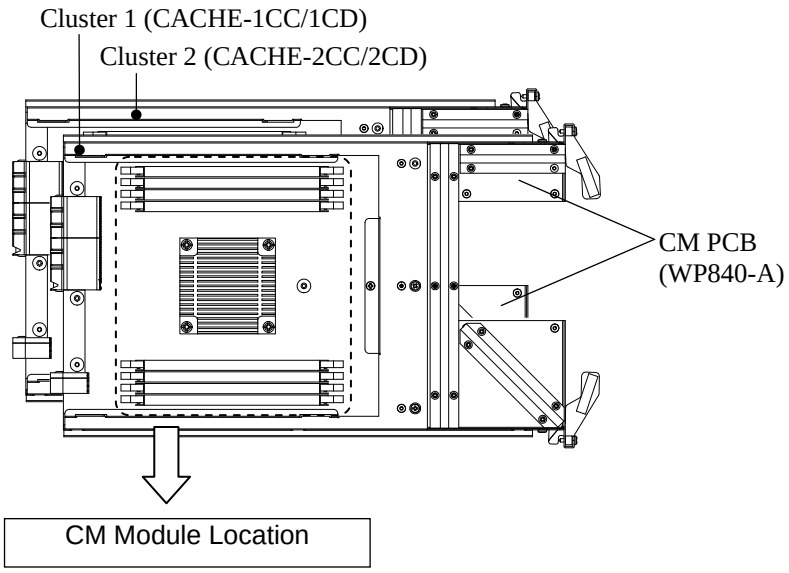
CM6P:	*15
CM2P:	*11
CM4P:	*13
CM0P:	*9

*1: Option 1 (DKC-F810I-CM16G/CM32G × 2 sets)
*2: Option 2 (DKC-F810I-CM16G/CM32G × 2 sets)
*3: Option 3 (DKC-F810I-CM16G/CM32G × 2 sets)
*4: Option 4 (DKC-F810I-CM16G/CM32G × 2 sets)
*5: Option 5 (DKC-F810I-CM16G/CM32G × 2 sets)
*6: Option 6 (DKC-F810I-CM16G/CM32G × 2 sets)
*7: Option 7 (DKC-F810I-CM16G/CM32G × 2 sets)
*8: Option 8 (DKC-F810I-CM16G/CM32G × 2 sets)
*9: Option 9 (DKC-F810I-CM16G/CM32G × 2 sets)
*10: Option 10 (DKC-F810I-CM16G/CM32G × 2 sets)
*11: Option 11 (DKC-F810I-CM16G/CM32G × 2 sets)
*12: Option 12 (DKC-F810I-CM16G/CM32G × 2 sets)
*13: Option 13 (DKC-F810I-CM16G/CM32G × 2 sets)
*14: Option 14 (DKC-F810I-CM16G/CM32G × 2 sets)
*15: Option 15 (DKC-F810I-CM16G/CM32G × 2 sets)
*16: Option 16 (DKC-F810I-CM16G/CM32G × 2 sets)

Fig. 2.5-1 Cache Memory (CM) Module Location (DKC-0)

2. DKC-1

The following figure shows the Cache Memory (CM) Module location on the DKC-1.



CACHE-1CC/2CC (Option 2)

CM1P:	*18
CM5P:	*22
CM3P:	*20
CM7P:	*24

CM6P:	*23
CM2P:	*19
CM4P:	*21
CM0P:	*17

CACHE-1CD/2CD (Option 3)

CM1P:	*26
CM5P:	*30
CM3P:	*28
CM7P:	*32

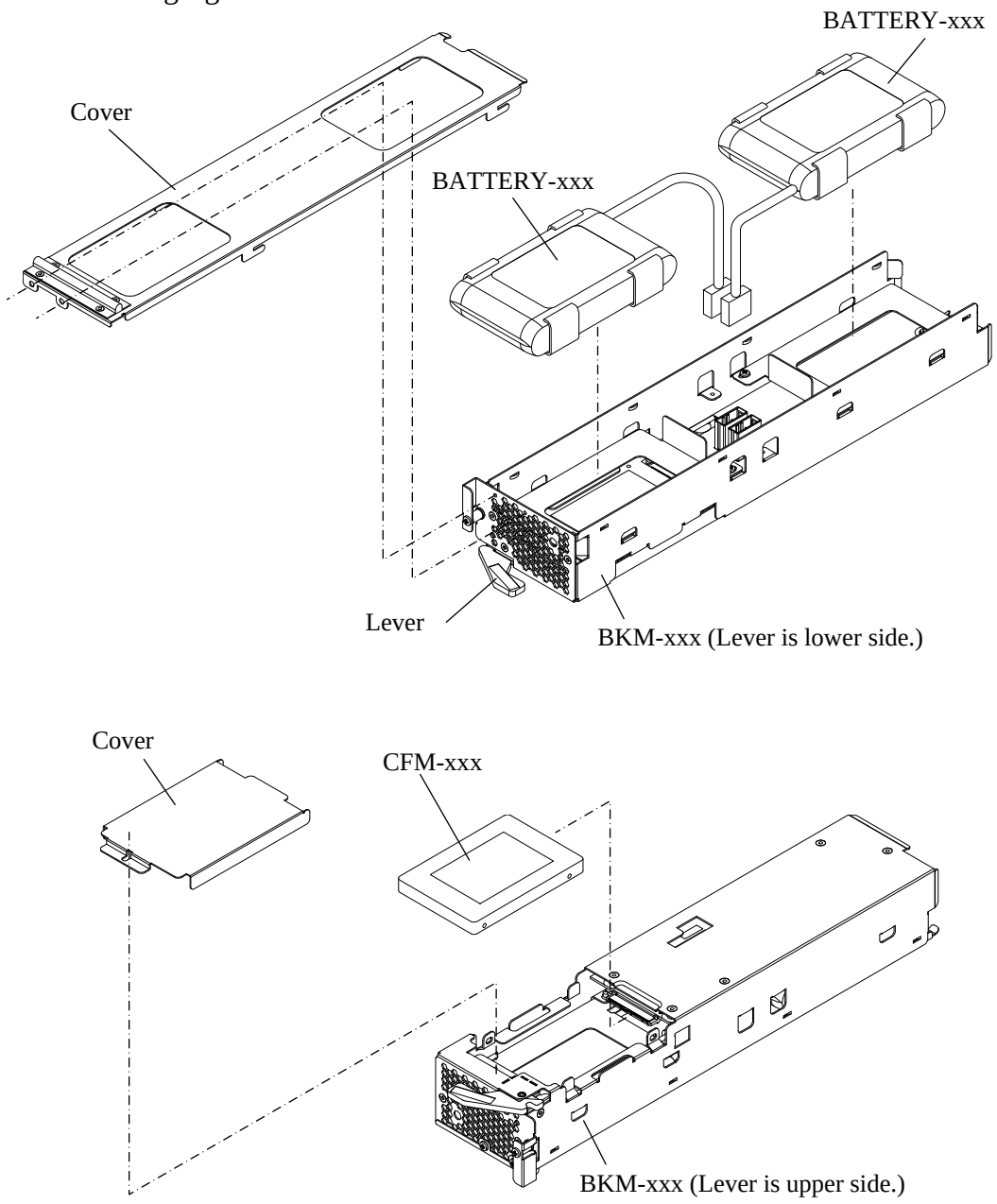
CM6P:	*31
CM2P:	*27
CM4P:	*29
CM0P:	*25

*17: Option 17 (DKC-F810I-CM16G/CM32G × 2 sets)
*18: Option 18 (DKC-F810I-CM16G/CM32G × 2 sets)
*19: Option 19 (DKC-F810I-CM16G/CM32G × 2 sets)
*20: Option 20 (DKC-F810I-CM16G/CM32G × 2 sets)
*21: Option 21 (DKC-F810I-CM16G/CM32G × 2 sets)
*22: Option 22 (DKC-F810I-CM16G/CM32G × 2 sets)
*23: Option 23 (DKC-F810I-CM16G/CM32G × 2 sets)
*24: Option 24 (DKC-F810I-CM16G/CM32G × 2 sets)
*25: Option 25 (DKC-F810I-CM16G/CM32G × 2 sets)
*26: Option 26 (DKC-F810I-CM16G/CM32G × 2 sets)
*27: Option 27 (DKC-F810I-CM16G/CM32G × 2 sets)
*28: Option 28 (DKC-F810I-CM16G/CM32G × 2 sets)
*29: Option 29 (DKC-F810I-CM16G/CM32G × 2 sets)
*30: Option 30 (DKC-F810I-CM16G/CM32G × 2 sets)
*31: Option 31 (DKC-F810I-CM16G/CM32G × 2 sets)
*32: Option 32 (DKC-F810I-CM16G/CM32G × 2 sets)

Fig. 2.5-2 Cache Memory (CM) Module Location (DKC-1)

2.6 BKM Parts Location

The following figure shows the BATTERY and CFM location on the BKM.



NOTR: xxx: BKM No.
(1BA, 1BB, 1BC, 1BD, 2BA, 2BB, 2BC, 2BD)

Fig. 2.6-1 BATTERY and CFM Location

2.7 MPB Parts Location

The following figure shows the memory module location on the MPB.

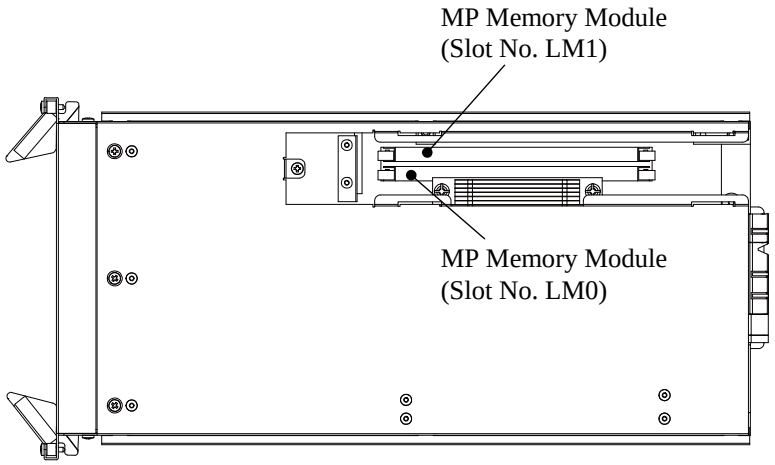


Fig. 2.7-1 Memory Module Location

3. Switches and LEDs

3.1 DKCPANEL

Fig. 3.1-1 and Table 3.1-1 show the Operator Panel and its functions respectively.
Circled numbers in Fig. 3.1-1 correspond to the numbers in Table 3.1-1.

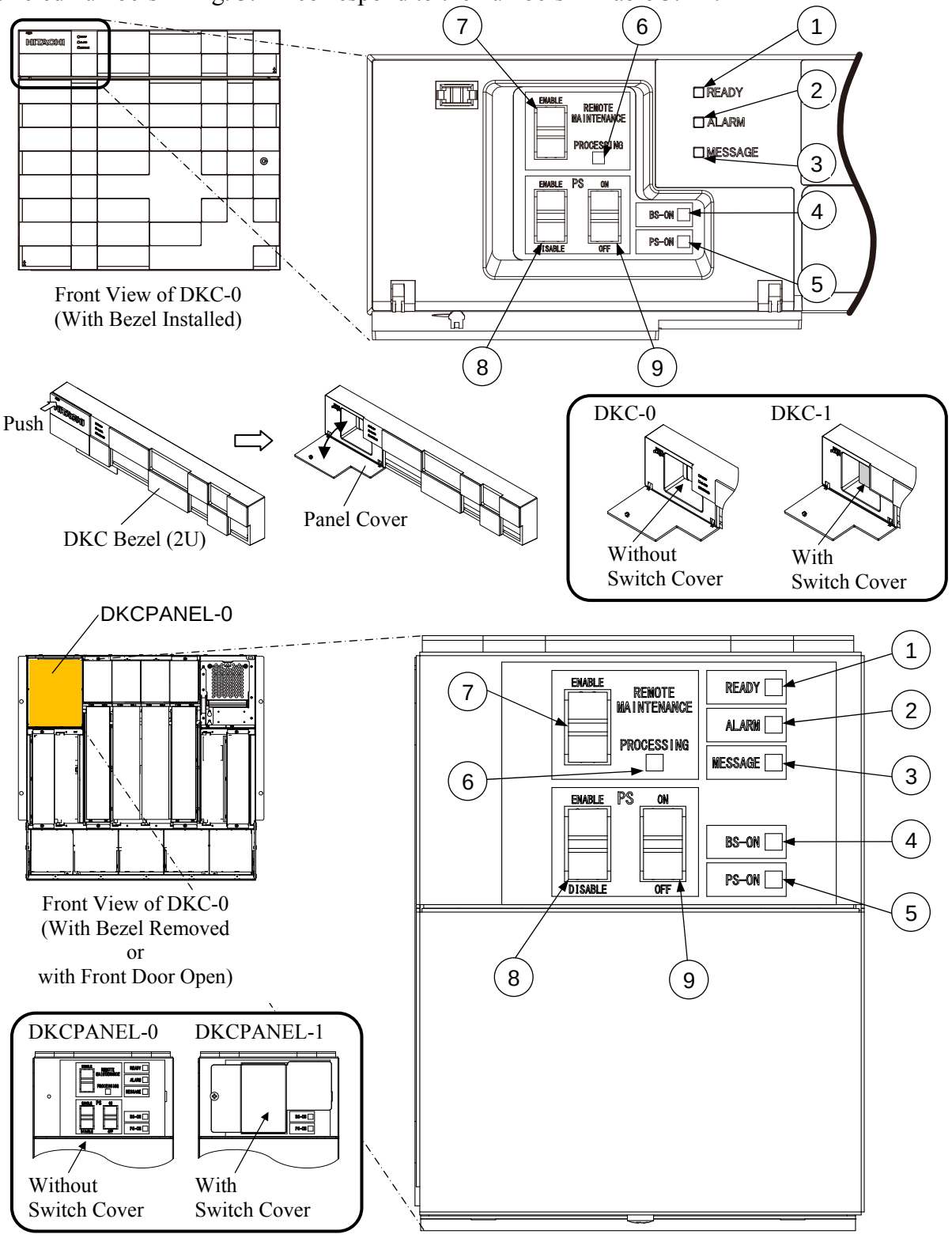


Fig. 3.1-1 Switches and LEDs on DKCPANEL

Table 3.1-1 Part Function on DKCPANEL

No.	Parts Name	Class	Function
1	READY	LED (Green)	Indicates that input/output operation on the channel interface is enabled.
2	ALARM	LED (Red)	ON: Indicates DC under voltage of DKC part, DC over current, abnormally high temperature, or an unrecoverable failure occurred.
3	MESSAGE	LED (Amber)	ON: Indicates that a SIM (Message) was generated from either of the clusters. Applied to both storage clusters. Blinking: • Indicates that a SVP failed in the single SVP configuration. • Indicates that two SVPs failed in the duplicated SVP configuration. This LED does not blink when one of the two SVPs failed in the duplicated SVP configuration.
4	BS ON	LED (Amber)	Indicates that the Sub-PS is on. (CL 1 or CL 2) This LED will not be turned off even if the storage system is powered off by using the PS ON/PS OFF switch.
5	PS ON	LED (Green)	Indicates that the storage system is powered on.
6	REMOTE MAINTENANCE PROCESSING	LED (Amber)	Indicates that remote maintenance is being processed.
7	REMOTE MAINTENANCE ENABLE/DISABLE	Switch	Used to permit remote maintenance.
8	PS SW ENABLE	Switch	Used to enable the PS ON/PS OFF switch. To enable the PS ON/PS OFF switch, turn the PS SW ENABLE switch to the ENABLE position.
9	PS ON/PS OFF	Switch	To switch ON/OFF the storage system, use this switch while turning the PS SW ENABLE switch to the ENABLE position.

(Numbers in this table correspond to the circled numbers in Fig. 3.1-1.)

3.2 Other Switches and LEDs

[1] CM PCB

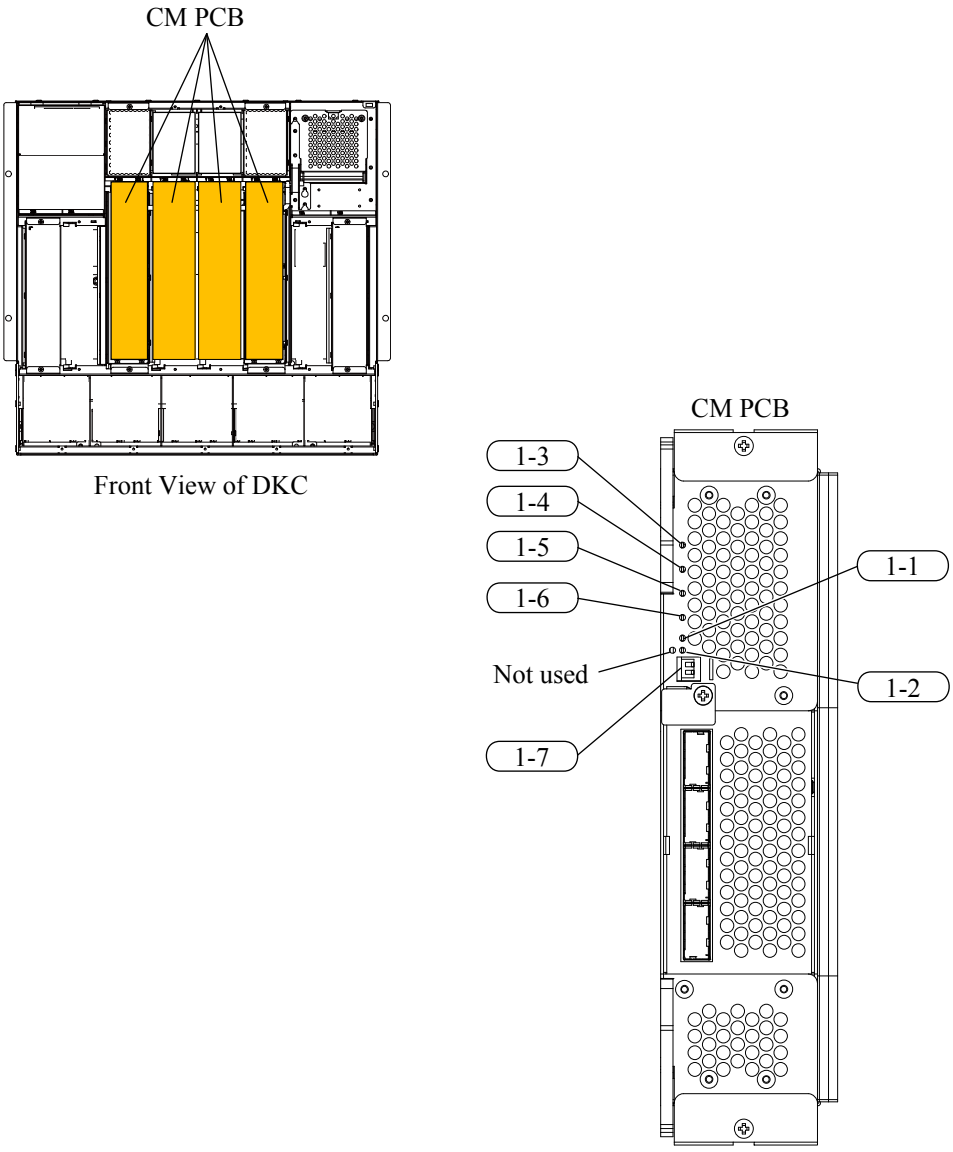


Fig. 3.2-1 LEDs of CM PCB

Table 3.2-1 Function of CM PCB LEDs

No.	Parts Name	Class	Function
1-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.
1-2	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.

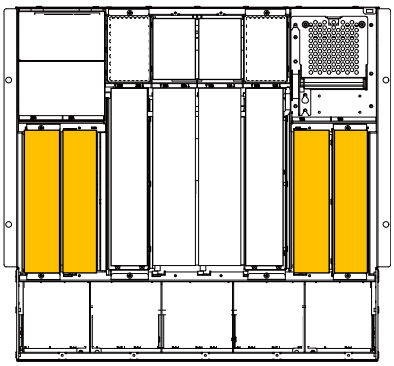
(To be continued)

(Continued from the preceding page)

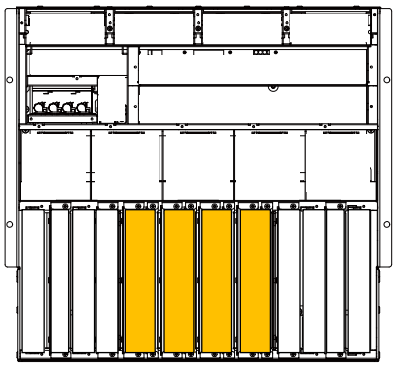
No.	Parts Name	Class	Function
1-3	CFM STATUS	LED (Green)	Indicates CFM status. ON·····Indicates that data in CFM is being restored to cache memory. Blinking at 2 second intervals (ON: 1 sec., OFF: 1 sec.) ·····Indicates that cache memory data is being saved on CFM at a planned stop. Blinking at 6 second intervals (ON: 3 sec., OFF: 3 sec.) ·····Indicates that cache memory data is being saved on CFM at a power outage. Blinking at 3 second intervals (ON: 2 sec., OFF: 1 sec.) ·····Indicates that the periodic diagnosis of CFM is in progress.
1-4	MAINTENANCE STATUS	LED (Green)	Indicates BKM maintenance status. Blinking at 3 second intervals (ON: 2 sec., OFF: 1 sec.) ·····Indicates that BKM has been ready for replacement.
1-5	ERROR STATUS	LED (Green)	Indicates cache error status. ON·····Indicates that Backup Controller is hung up. Blinking at 2 second intervals (ON: 1 sec., OFF: 1 sec.) ·····Indicates that CMBK is in warning status. Blinking at 6 second intervals (ON: 3 sec., OFF: 3 sec.) ·····Indicates that the battery is in warning status. Blinking at 3 second intervals (ON: 2 sec., OFF: 1 sec.) ·····Indicates that both of CMBK and the battery are in warning status.
1-6	PCB STATUS	LED (Green)	Indicates CM PCB status. ON·····Indicates that micro program is in Back-up Ready status. Blinking at 2 second intervals (ON: 1 sec., OFF: 1 sec.) ·····Indicates that CM PCB and BKM are in Ready status. Blinking at 6 second intervals (ON: 3 sec., OFF: 3 sec.) ·····Indicates that CM PCB is in Ready status while BKM is in NG status and has been ready for replacement. Blinking at 3 second intervals (ON: 2 sec., OFF: 1 sec.) ·····Indicates that CM PCB is before initialization. Blinking at 3 second intervals (ON: 1 sec., OFF: 2 sec.) ·····Indicates that BKM blockage in degradation of CM PCB is completed.
1-7	VOJP	Switch	Turning Switch on (to the left position) configures the CM PCB as follows. #1, 2: The cache data (control information or the like) is compulsorily made to volatilize by the PS ON/OFF operation. As for the old-type CM PCB, a jumper pin is used instead of the switch. (See LOC06-170.)

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-1.)

[2] MPB



Front View of DKC



Rear View of DKC

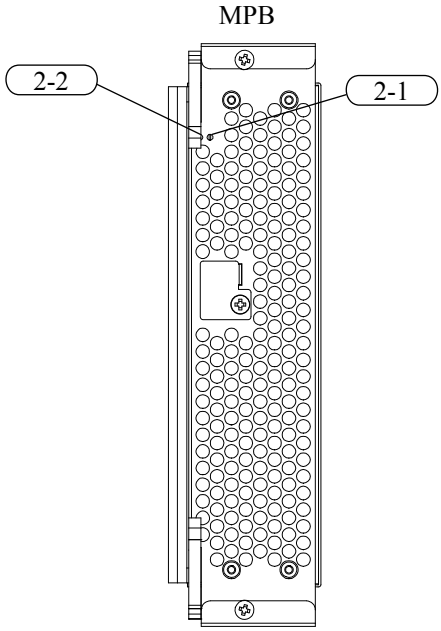


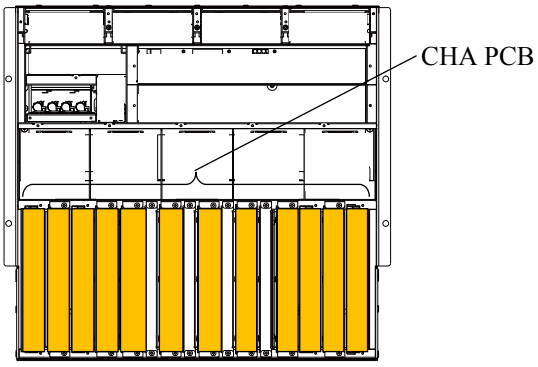
Fig. 3.2-2 LEDs of MPB

Table 3.2-2 Function of MPB LEDs

No.	Parts Name	Class	Function
2-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.
2-2	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-2.)

[3] CHA PCB (16FC8/8FC16)



Rear View of DKC

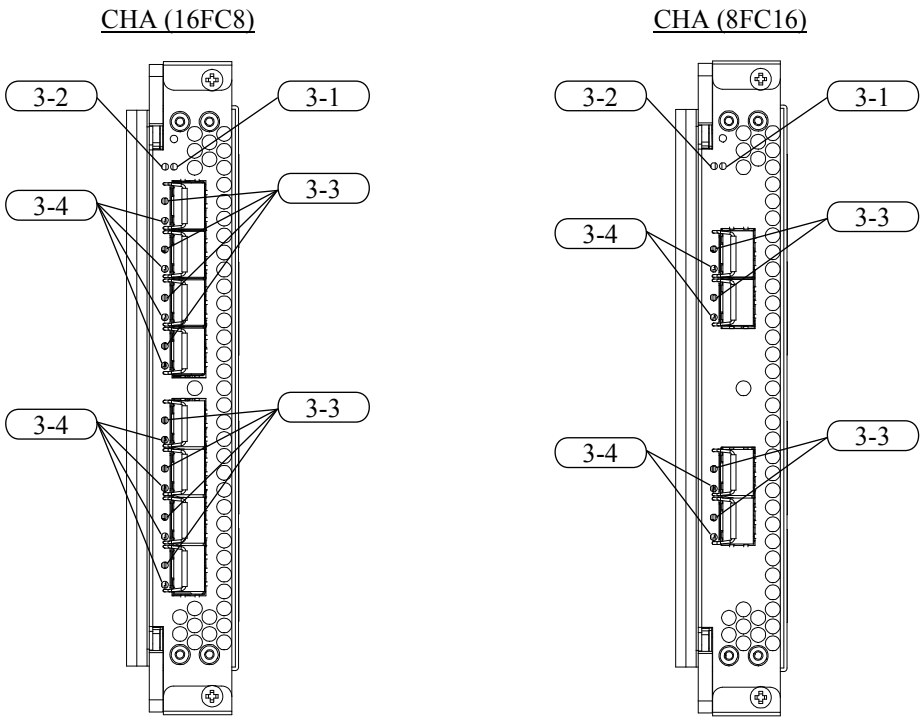


Fig. 3.2-3 LEDs of CHA PCB

Table 3.2-3 Function of CHA PCB LEDs

No.	Parts Name	Class	Function			
3-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.			
3-2	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.			
3-3 3-4	CHANNEL PORT 1 CHANNEL PORT 2	LED (Green)	Indicates the status of channel port by the combination of 3-3 and 3-4.			
			○ ○	OFF + OFF	Not Ready	Link activity is unavailable, due to power-down or initialization not completed.
			○ ●	OFF + ON	Ready	Link is available by initialization completion, but connection to the host has not been established.
			● ●	ON + ON	Link	Interface operation with the host is available by the connection establishment.
			● ●	ON + ON (Same as Link Up)	Active	Interface operation is active between the hosts.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-3.)

[4] CHA PCB (16ML8/16MS8)

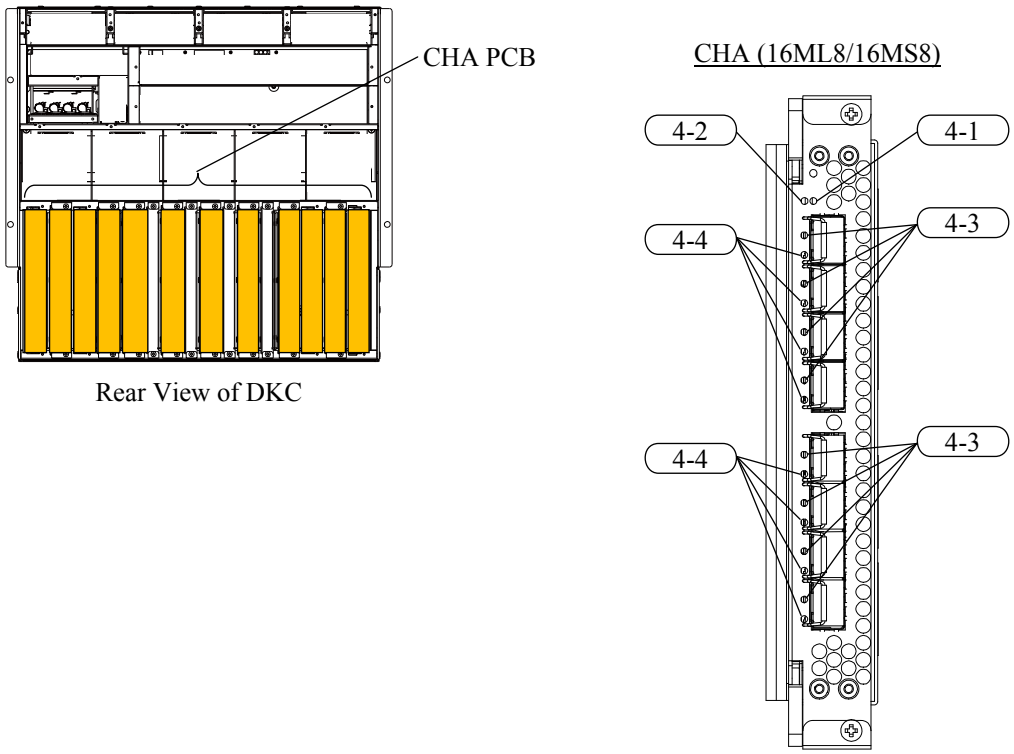


Fig. 3.2-4 LEDs of CHA PCB

Table 3.2-4 Function of CHA PCB LEDs

No.	Parts Name	Class	Function			
4-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.			
4-2	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.			
4-3 4-4	CHANNEL PORT 1 CHANNEL PORT 2	LED (Green)	Indicates the status of channel port by the combination of 4-3 and 4-4.			
			○ ○	OFF + OFF	Not Ready	Link activity is unavailable, due to power-down or initialization not completed.
			◘ ○	Blink (Slow) + OFF	Ready	Link is available by initialization completion, but connection to the host has not been established.
			● ○	ON + OFF	Link	Interface operation with the host is available by the connection establishment.
			◘ ○	Blink (Fast) + OFF	Active	Interface operation is active between the hosts.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-4.)

[5] DKA PCB

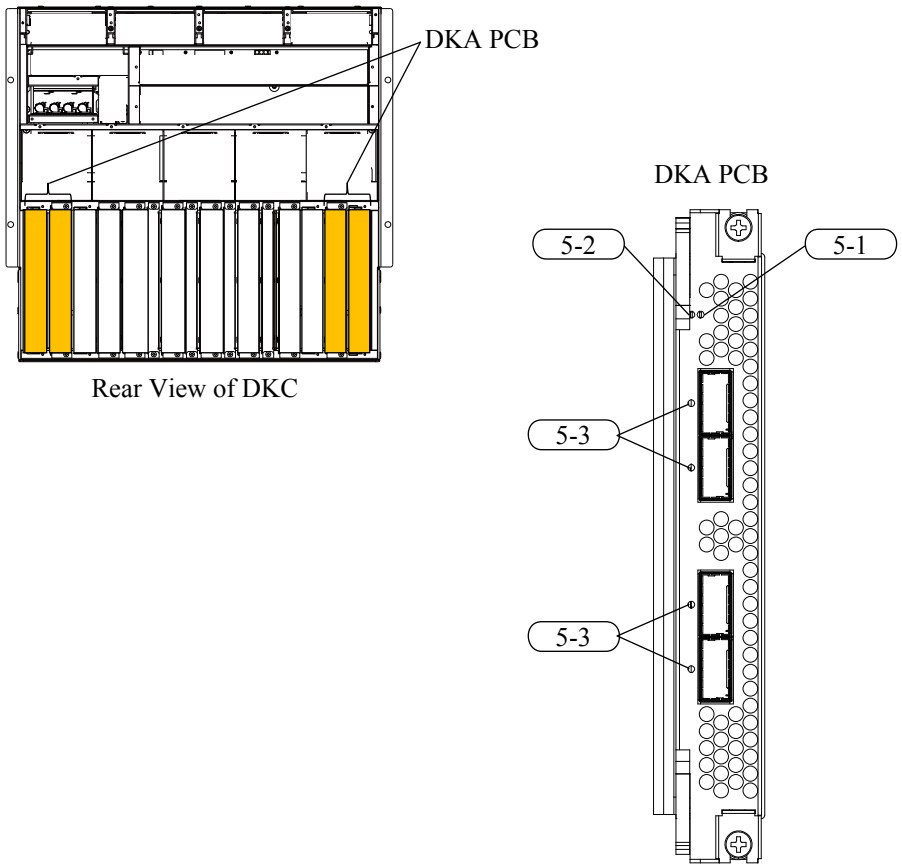


Fig. 3.2-5 LEDs of DKA PCB

Table 3.2-5 Function of DKA PCB LEDs

No.	Parts Name	Class	Function
5-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.
5-2	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.
5-3	PATH (LINK)	LED (Green)	Indicates that the SAS is linked up.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-5.)

[6] BKM PCB

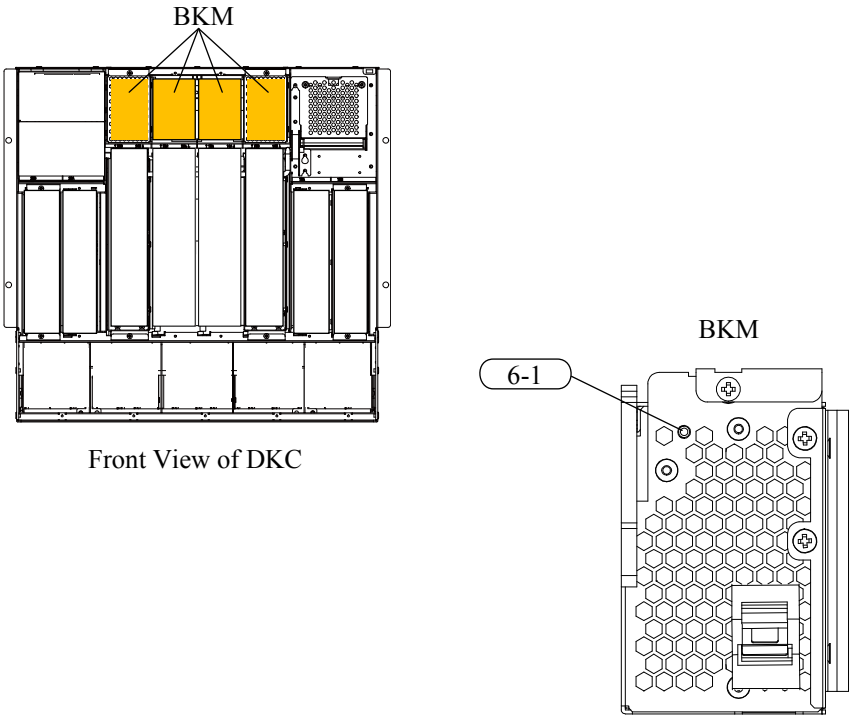


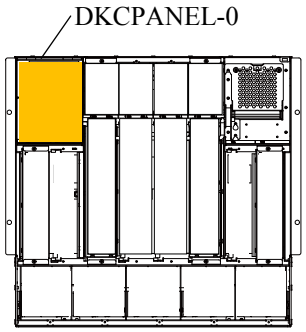
Fig. 3.2-6 LED of BKM PCB

Table 3.2-6 Functions of BKM PCB LED

No.	Parts Name	Class	Function
6-1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.
	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.
	BATTERY CHARGE	LED (Green)	This LED (Green) indicates the status of battery. • Lighting: The battery charge is completed. • High-Speed Blinking (ON: about one second, OFF: about one second): The battery is charging. • Low-Speed Blinking (ON: about one second, OFF: about five seconds): The battery is discharging. • Going out: The power is off. The battery discharge is completed. The battery has trouble. After the power is turned on, the Battery Box is started to be charged and the LED blinks. Though the LED becomes kept on after the charge is completed, it repeats the operation that indicates the refilling charge (blink) and completion of the refilling charge (being kept on) after that.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-6.)

[7] DKCPANEL



Front View of DKC-0

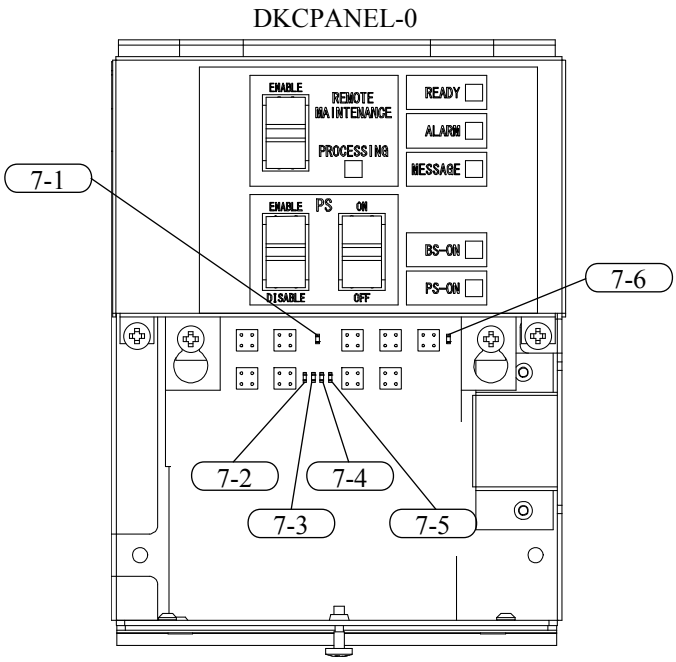


Fig. 3.2-7 LEDs of DKCPANEL

Table 3.2-7 Function of DKCPANEL LEDs

No.	Parts Name	Class	Function
7-1	FORCE MODE	LED (Amber)	This LED lights up when the storage system is forced to power off with the FORCE MODE jumper.
7-2 7-3 7-4 7-5	SSVP ALARM SSVP STATUS 1 SSVP STATUS 2 SSVP STATUS 3	LED (Red)	Indicates the status of SSVP by the combination of 7-2, 7-3, 7-4 and 7-5. The LED indicates the following statuses. ○: Indicates that the light is off. ●: Indicates that the light is on. ◘: Indicates that the light is blinking. (7-2) (7-3) (7-4) (7-5) ○ ○ ○ ○ Normal status ● ○ ○ ○ Self-contradiction of SSVP microprogram or hardware abnormality is detected. ○ ● ● ● During the memory test ● ● ● ● Memory system hardware error ○ ● ● ○ During the DUMP collection ● ● ● ○ DUMP terminated abnormally. ◘ ○ ○ ○ DUMP collection is completed ○ ● ○ ○ During microprogram replacement ● ● ○ ○ Microprogram replacement error
7-6	DKCPANEL REPLACE	LED (Red)	Indicates that the removal of the DKCPANEL is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-7.)

[8] SVP

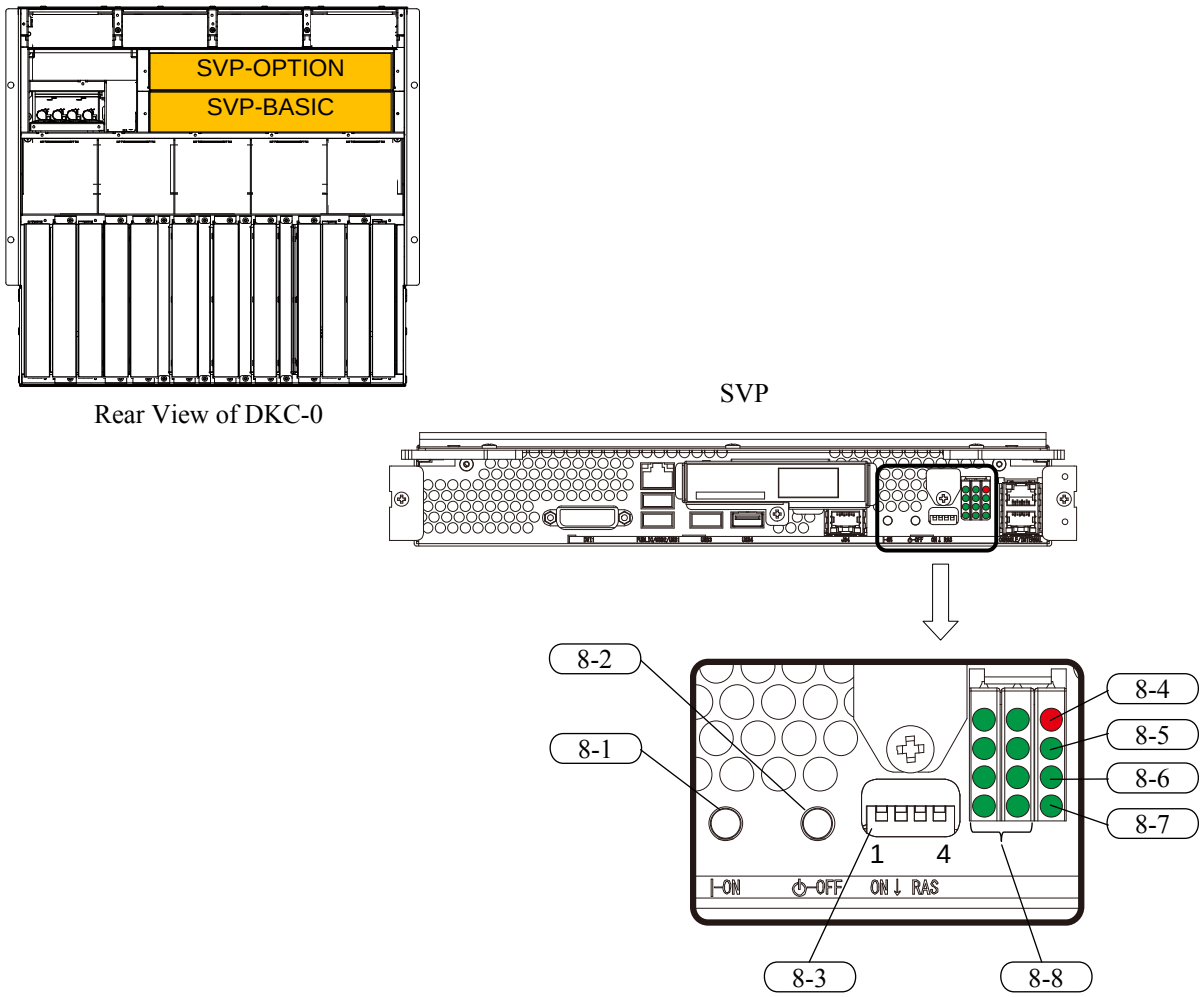


Fig. 3.2-8 LEDs and Switches of SVP

Table 3.2-8 Function of SVP LEDs and Switches

No.	Parts Name	Class	Function
8-1	SVP PS ON	Switch	A pressing of this switch turns on the power of the PC in the SVP.
8-2	SVP PS OFF	Switch	A pressing of this switch quits Windows and then turns off the power of the PC in the SVP. When this switch is pressed, Windows is quit forcibly and then the power of the PC in the SVP is turned off.
8-3	SVP RAS	Switch (SW)	Turning DIP Switch on (to the lower position) configures the SVP as follows. #1: SVP PS ON/OFF INH Switch The SVP Power ON/OFF Function is inhibited. #2: SVP HUB RESET Switch The HUB function in SVP is reset. #3: SVP IP ADDRESS DISPLAY Switch Operating Switch #3 in order of "off→on→off" from an off state within 10 seconds, makes SVP STATUS LEDs light by the following sequences. 1. All LEDs blink twice per 4 seconds (Off: 1 second, On: 1 second, Off: 1 second, On: 1 second) 2. The display of an IP address (for 12 seconds) 3. All LEDs go out (for 10 seconds) Refer to SVP01-200 for detailed action. #4: SVP PASSWORD/IP ADDRESS INITIALIZATION Switch Operating Switch #4 in order of "off→on→off→on→off" from an off state within 30 seconds, makes SVP STATUS LEDs light by the following sequences. 1. All LEDs blink twice per 4 seconds (Off: 1 second, On: 1 second, Off: 1 second, On: 1 second) 2. The display of an IP address (for 12 seconds) 3. All LEDs go out (for 10 seconds) 4. Initialize Password 5. Initialize IP Address 6. All LED blinks (at interval of 1 second for 10 times, 20 seconds) 7. SVP Reboot Refer to SVP01-200 for detailed action.

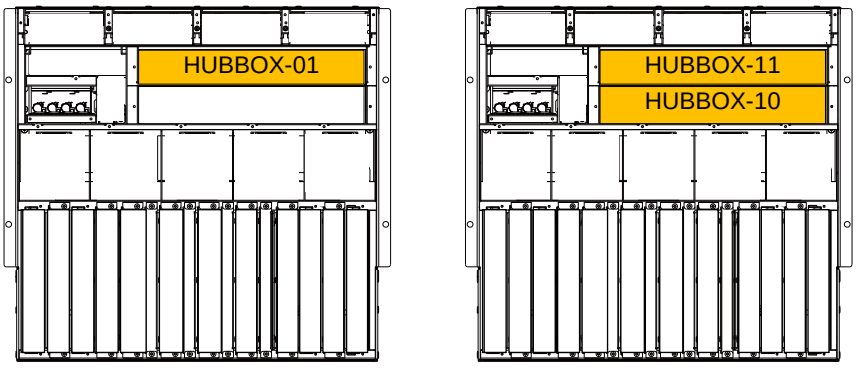
(To be continued)

(Continued from the preceding page)

No.	Parts Name	Class	Function
8-4	SVP SHUT DOWN	LED (Red)	Indicates that the removal of the SVP is possible when the storage system is powered on.
8-5	SVP HDD	LED (Green)	This LED lights up when accessing to HDD in SVP.
8-6	SVP POWER	LED (Green)	Indicates that the power of the SVP has been turned on. • Power of the built-in Hub in the SVP has been turned on. • Power of the PC in the SVP is turned on.
8-7	SVP DCIN	LED (Green)	Indicates that the DC power is supplied to the SVP. • Power of the built-in Hub in the SVP is turned on. • Power of the PC in the SVP is kept off.
8-8	SVP STATUS	LED (Green)	Indicates a status of the SVP using the SVP microprogram. The LED indicates the following status usually. ○: Indicates that the light is off. ●: Indicates that the light is on. ◘: Indicates that the light is blinking. ○ ● } The LED status at the time of Master SVP. ○ ○ ○ ○ ◘ ○ ○ ○ } The LED status at the time of Standby SVP. ○ ● ○ ○ ◘ ○ For the other LED display, see “ 1.10 SVP LED display specification” (SVP01-190 ~ 210).

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-8.)

[9] HUBBOX



Rear View of DKC-0 Rear View of DKC-1

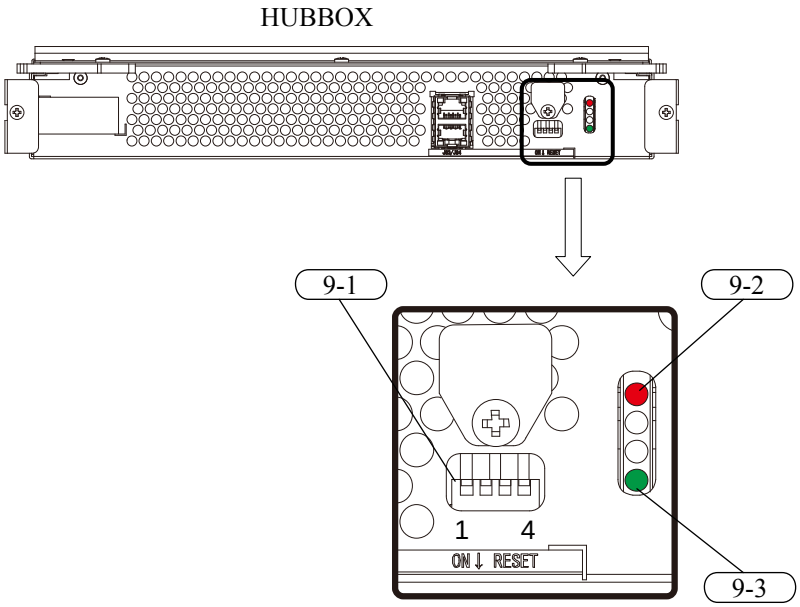


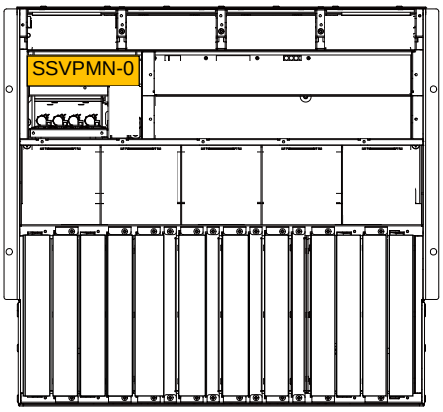
Fig. 3.2-9 LEDs and Switches of HUBBOX

Table 3.2-9 Function of HUBBOX LEDs and Switches

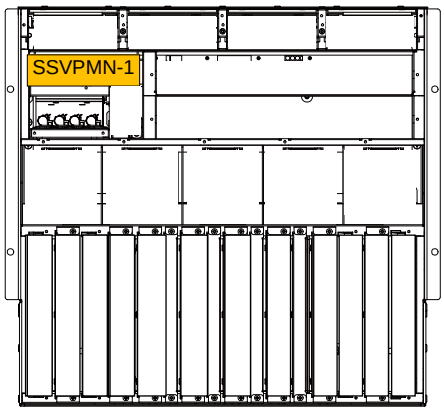
No.	Parts Name	Class	Function
9-1	HUB RAS	Switch (SW)	Turning DIP Switch on (to the lower position) configures the HUBBOX as follows. #1: Not used #2: HUB RESET Switch The HUB function in HUBBOX is reset. #3, 4: Not used
9-2	HUB SHUT DOWN	LED (Red)	Indicates that the removal of the HUB is possible when the storage system is powered on.
9-3	HUB POWER	LED (Green)	Indicates that the power of the HUB has been turned on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-9.)

[10] SSVPMN



Rear View of DKC-0



Rear View of DKC-1

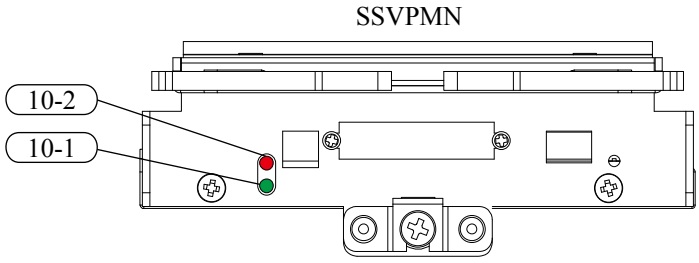


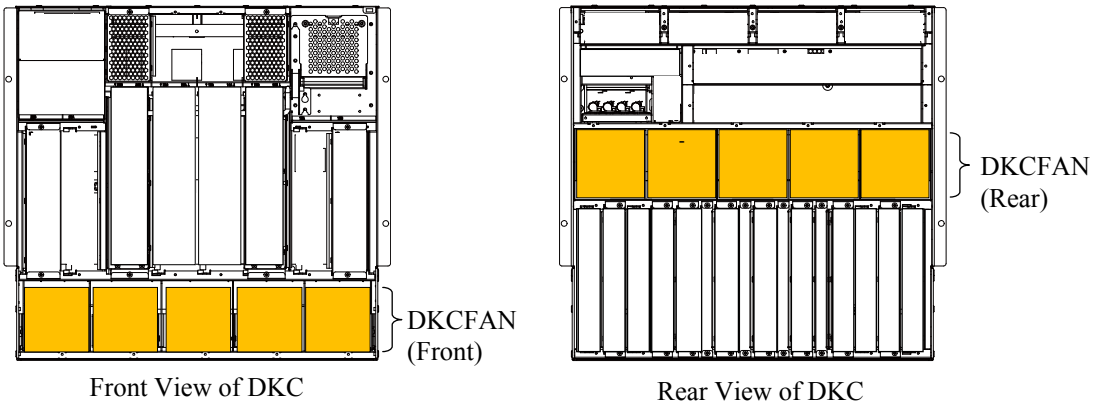
Fig. 3.2-10 LEDs of SSVPMN

Table 3.2-10 Function of SSVPMN LEDs

No.	Parts Name	Class	Function
10-1	SSVPMN POWER	LED (Green)	Indicates that the power of the SSVPMN has been turned on.
10-2	SSVPMN REPLACE	LED (Red)	Indicates that the removal of the SSVPMN is possible.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-10.)

[11] DKCFAN



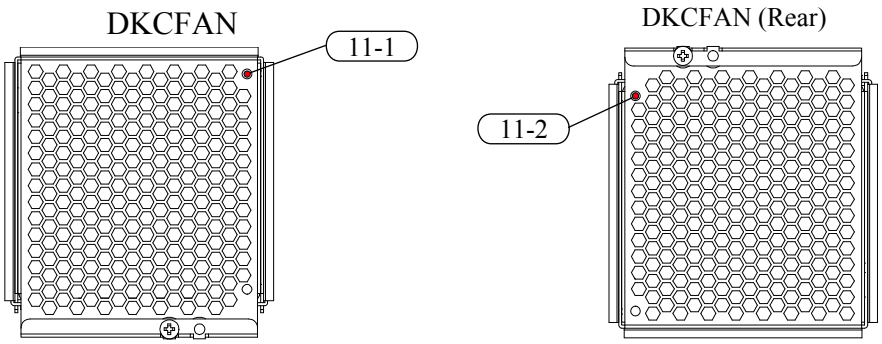


Fig. 3.2-11 LEDs of FAN

Table 3.2-11 Function of FAN LEDs

No.	Parts Name	Class	Function
11-1	FAN REPLACE	LED (Red)	Indicates that the removal of the FAN is possible when the storage system is powered on.
11-2	FAN REPLACE	LED (Red)	Indicates that the removal of the FAN is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-11.)

[12] DKCPS

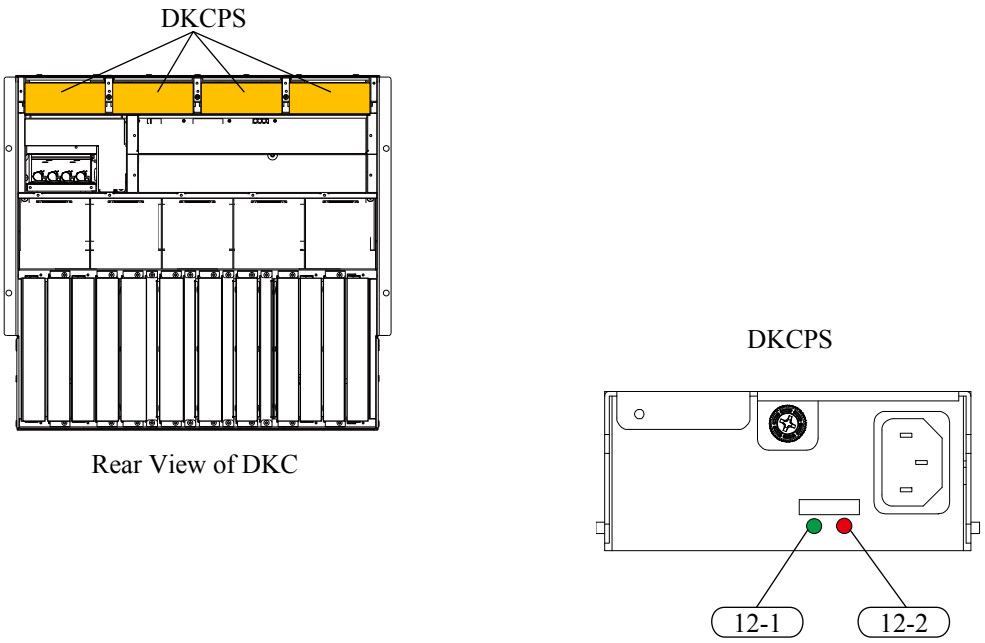


Fig. 3.2-12 LEDs of DKCPS

Table 3.2-12 Function of DKCPS LEDs

No.	Parts Name	Class	Function
12-1	PS ENABLE	LED (Green)	Indicates that the PS is powered on.
12-2	PS REPLACE	LED (Red)	Indicates that the removal of the PS is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-12.)

[13] MODCON

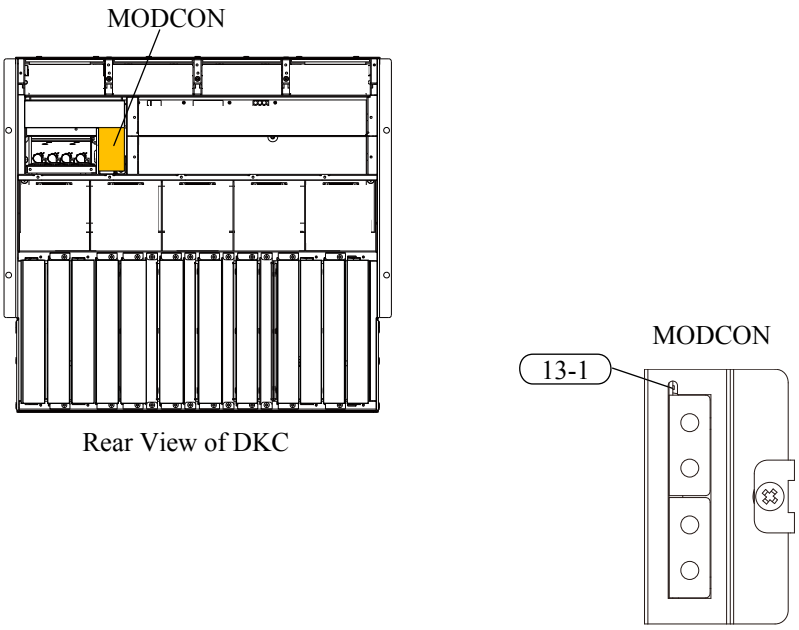


Fig. 3.2-13 LEDs of MODCON

Table 3.2-13 Function of MODCON LEDs

No.	Parts Name	Class	Function
13-1	MODCON REPLACE	LED (Red)	Indicates that the removal of the MODCON is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-13.)

[14] UBX/SBX and Drive

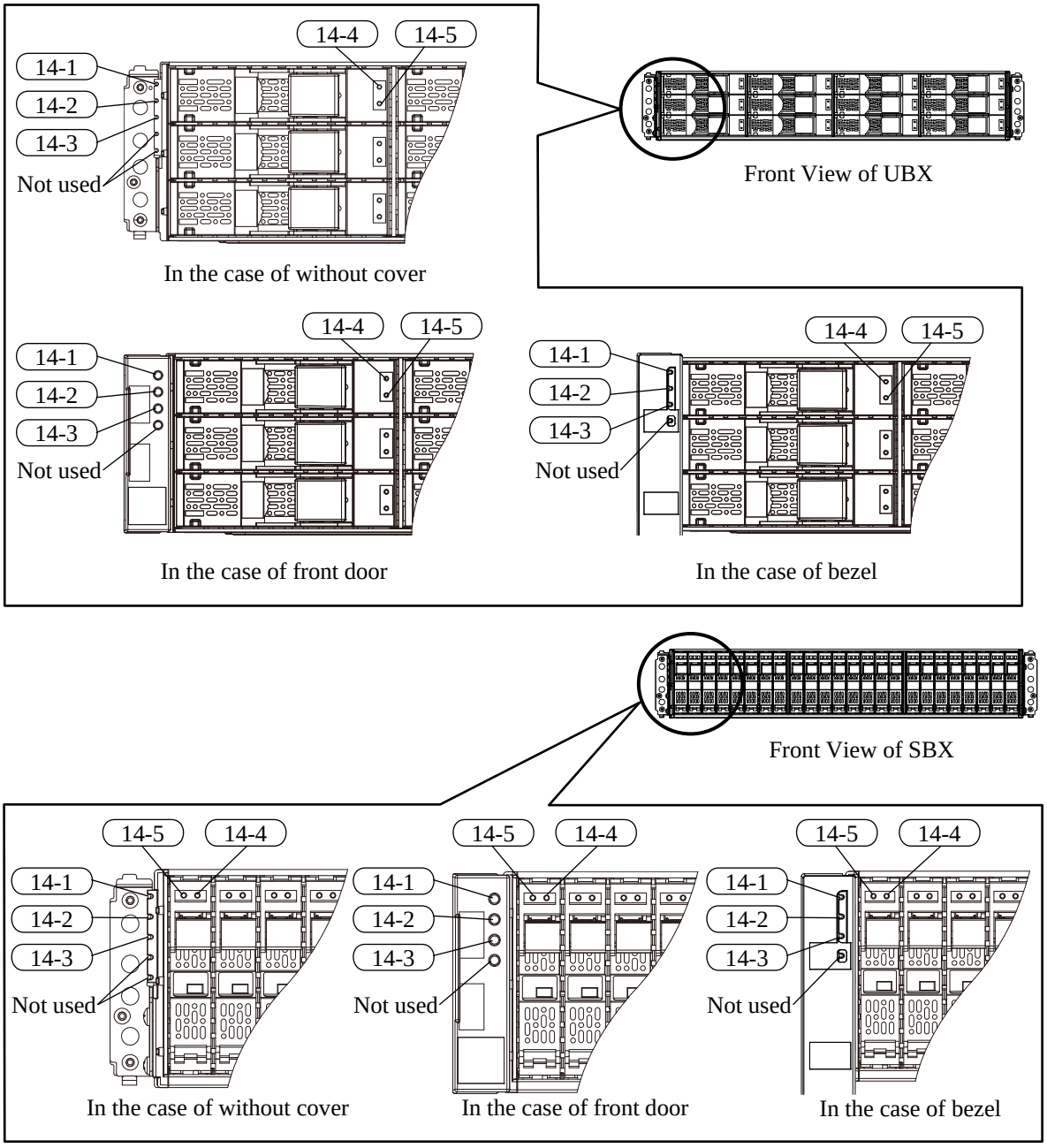


Fig. 3.2-14 LEDs of UBX/SBX and Drive

Table 3.2-14 Function of UBX/SBX and Drive LEDs

No.	Parts Name	Class	Function
14-1	POWER	LED (Green)	Indicates that the power supply is supplied to the chassis.
14-2	READY	LED (Green)	Indicates that the chassis can be operated.

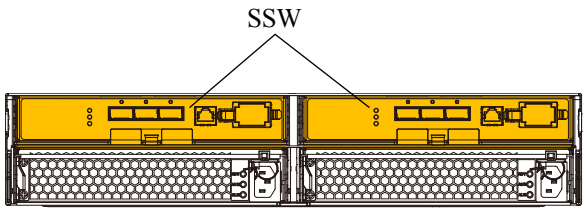
(To be continued)

(Continued from the preceding page)

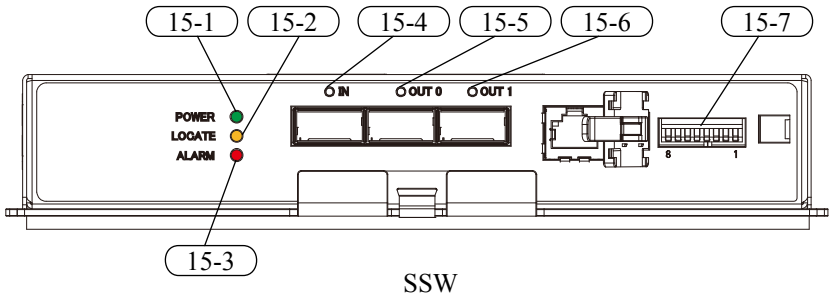
No.	Parts Name	Class	Function
14-3	LOCATE	LED (Amber)	• Indicates that a failure which allows the chassis operation occurred. • When adding the chassis with the power turned on, it lights up to indicate the addition source (this is not an error).
14-4	ACT	LED (Green)	This LED shows the state of HDD/SSD. • Lighting: Indicates that the HDD/SSD is powered on. • Blinking: Indicates that the HDD/SSD is active. NOTE: The interval of blinking may be different in HDD and SSD, however it is not abnormal.
14-5	SHUT DOWN	LED (Red)	Indicates that the removal of the HDD/SSD is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-14.)

[15] SSW (UBX/SBX)



Rear View of UBX/SBX



SSW

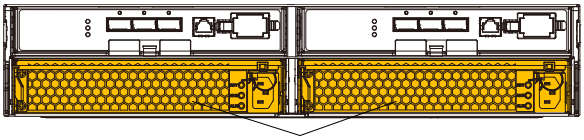
Fig. 3.2-15 LEDs and Switches of SSW

Table 3.2-15 Function of SSW LEDs and Switches

No.	Parts Name	Class	Function
15-1	SSW POWER	LED (Green)	Indicates that the power supply is supplied to SSW.
15-2	SSW LOCATE	LED (Amber)	Indicate the Chassis location • When adding the chassis with the power turned on, it lights up to indicate the addition source (this is not an error).
15-3	SSW SHUT DOWN (ALM)	LED (Red)	Indicates that the removal of the SSW is possible when the storage system is powered on.
15-4	SSW PATH (IN side)	LED (Green)	Indicates that the IN side is linked up.
15-5	SSW PATH (OUT 0 side)	LED (Green)	Indicates that the OUT 0 side is linked up.
15-6	SSW PATH (OUT 1 side)	LED (Green)	Indicates that the OUT 1 side is linked up.
15-7	BOX ID (SW1-3) CHASSIS ID (SW4-6) MODULE ID (SW7)	Switch	SW1-3: Sets the Box ID. SW4-6: Sets the Chassis ID. SW7: Sets the Module ID. SW8: Not used

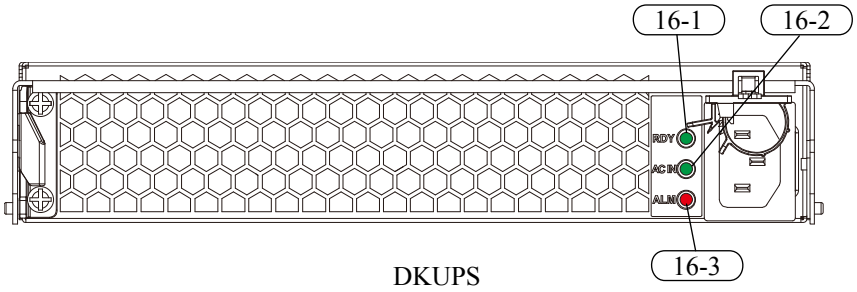
(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-15.)

[16] DKUPS (UBX/SBX)



DKUPS

Rear View of UBX/SBX



DKUPS

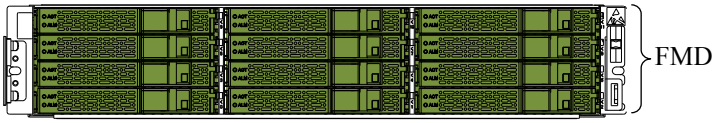
Fig. 3.2-16 LEDs of DKUPS

Table 3.2-16 Function of DKUPS LEDs

No.	Parts Name	Class	Function
16-1	PS RDY	LED (Green)	Indicates the operation state of the DKUPS. On: Normal operation Off: Abnormal operation or out of operation
16-2	PS AC IN	LED (Amber)	Indicates that the AC input is normal.
16-3	PS REPLACE (ALM)	LED (Red)	Lights when replacement of the DKUPS is possible.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-16.)

[17] FMD



Front View of FBX

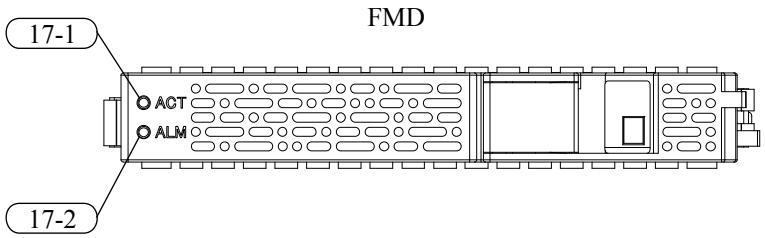


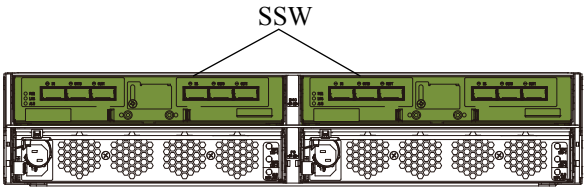
Fig. 3.2-17 LEDs of FMD

Table 3.2-17 Function of FMD LEDs

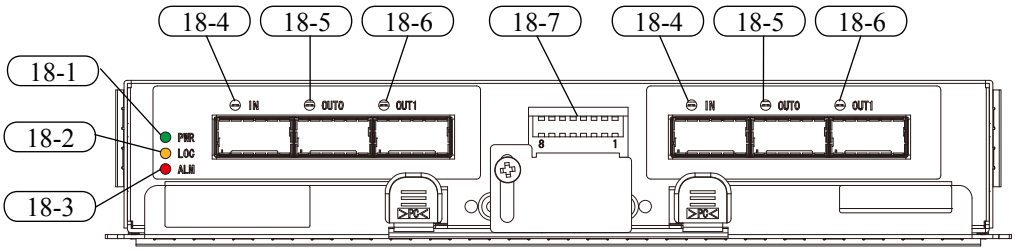
No.	Parts Name	Class	Function
17-1	FMD ACTIVE	LED (Green)	This LED shows the state of FMD. • Lighting: Indicates that the FMD is powered on. • Blinking: Indicates that the FMD is active. (ON: When in/out data transfer is not performed. OFF: When in/out data transfer is performed.) NOTE: The interval of blinking may be different in FMD, however it is not abnormal. • Low-Speed Blinking (ON: 1.5 seconds, OFF: 1.5 seconds): Indicates that the battery charge of the FMD is insufficient.
17-2	FMD SHUT DOWN (ALM)	LED (Red)	Indicates that the removal of the FMD is possible when the storage system is powered on.

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-17.)

[18] SSW



Rear View of FBX



SSW

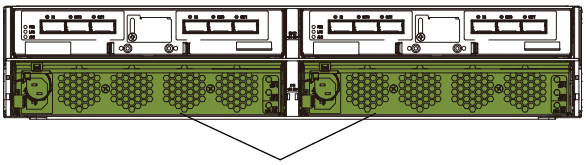
Fig. 3.2-18 LEDs and Switches of SSW

Table 3.2-18 Function of SSW LEDs and Switches

No.	Parts Name	Class	Function
18-1	SSW POWER	LED (Green)	Indicates that the power of the SSW has been turned on.
18-2	SSW LOCATE	LED (Amber)	Indicate the Chassis location • When adding the chassis with the power turned on, it lights up to indicate the addition source (this is not an error).
18-3	SSW SHUT DOWN (ALM)	LED (Red)	Indicates that the removal of the SSW is possible when the storage system is powered on.
18-4	SSW PATH (IN side)	LED (Green)	Indicates that the IN side is linked up.
18-5	SSW PATH (OUT 0 side)	LED (Green)	Indicates that the OUT 0 side is linked up.
18-6	SSW PATH (OUT 1 side)	LED (Green)	Indicates that the OUT 1 side is linked up.
18-7	BOX ID (SW1-3) CHASSIS ID (SW4-6) MODULE ID (SW7)	Switch	SW1-3: Sets the Box ID. SW4-6: Sets the Chassis ID. SW7: Sets the Module ID. SW8: Not used

(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-18.)

[19] DKUPS



Rear View of FBX

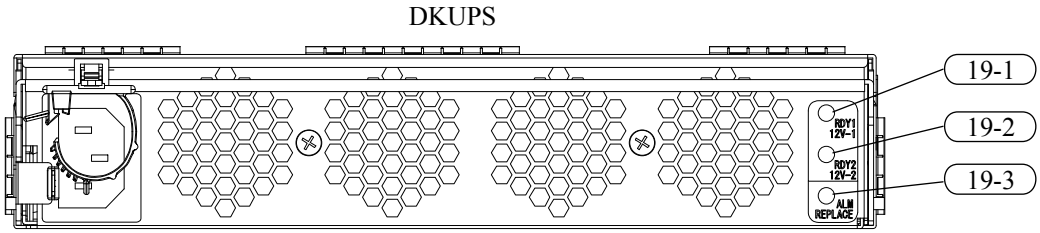


Fig. 3.2-19 LEDs of DKUPS

Table 3.2-19 Function of DKUPS LEDs

No.	Parts Name	Class	Function
19-1	PS READY 1	LED (Green)	Indicates that the PS is powered on.
19-2	PS READY 2	LED (Green)	Indicates that the PS is powered on.
19-3	PS REPLACE	LED (Red)	Indicates that the removal of the PS is possible when the storage system is powered on.

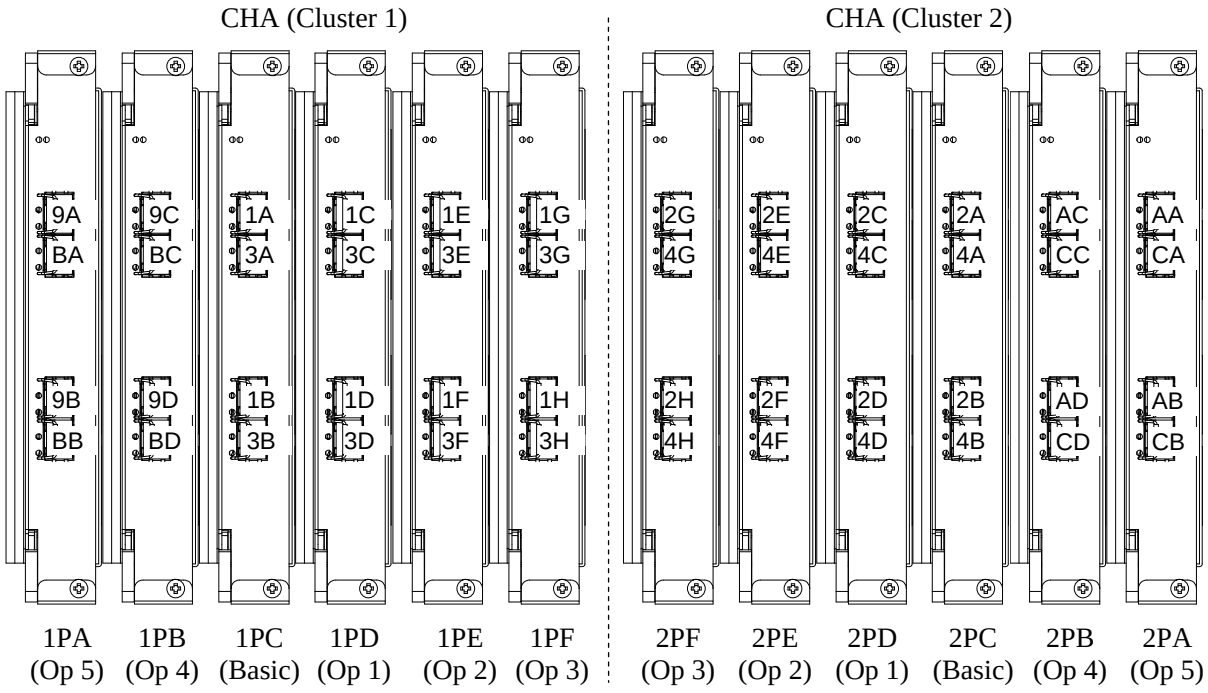
(Numbers in this table correspond to the numbers in an oval in Fig. 3.2-19.)

4. Connection of External Cable

4.1 Channel Interface

1. Fibre 4-port CHA PCB (DKC-F810I-8FC16)

In case of DKC-0



In case of DKC-1

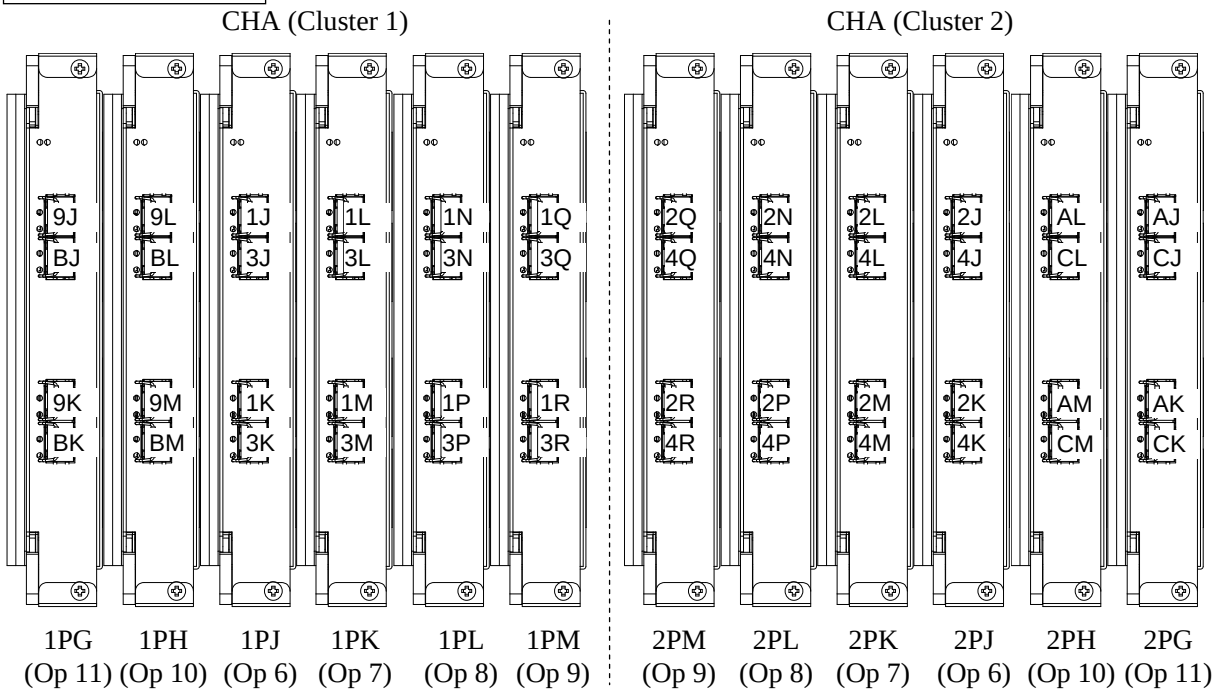
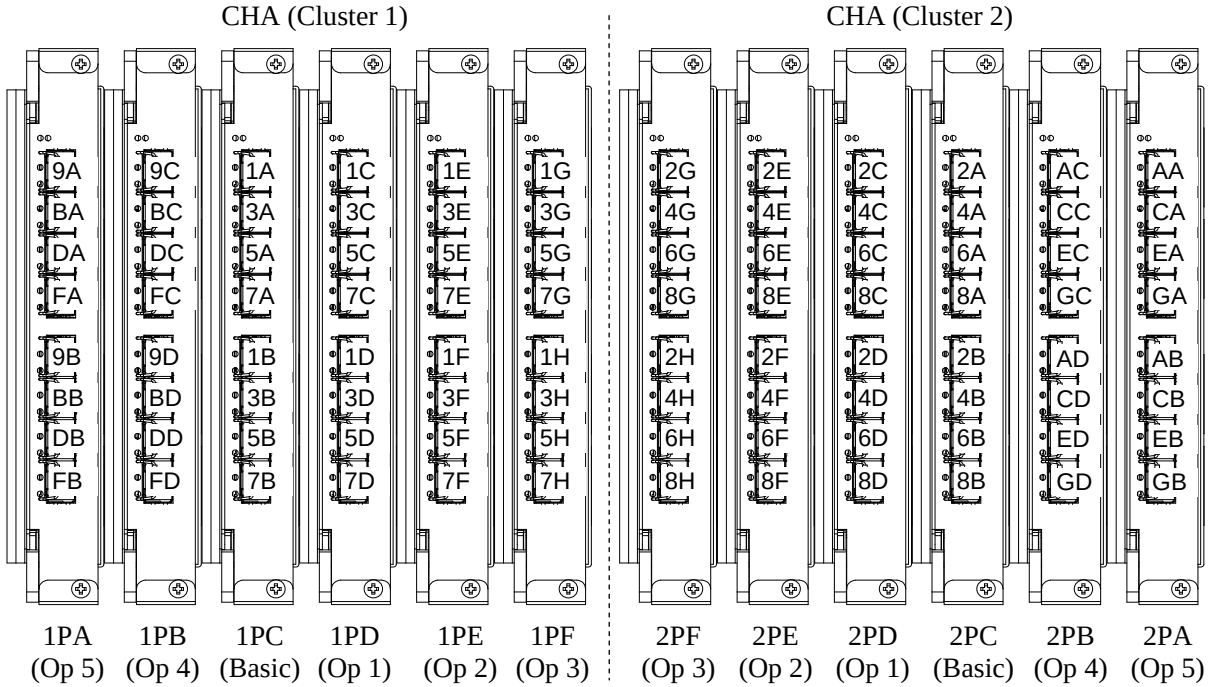


Fig. 4.1-1 Port Number of Fibre 4-port CHA PCB

2. Fibre 8-port CHA PCB (DKC-F810I-16FC8)

In case of DKC-0



In case of DKC-1

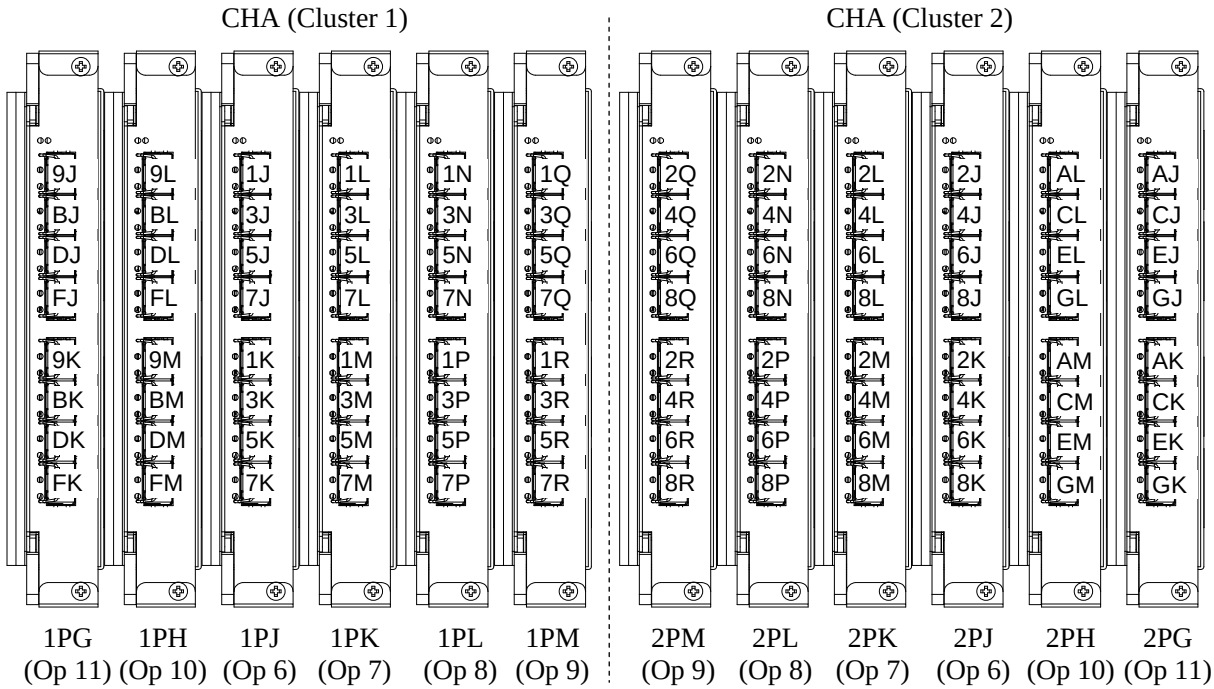
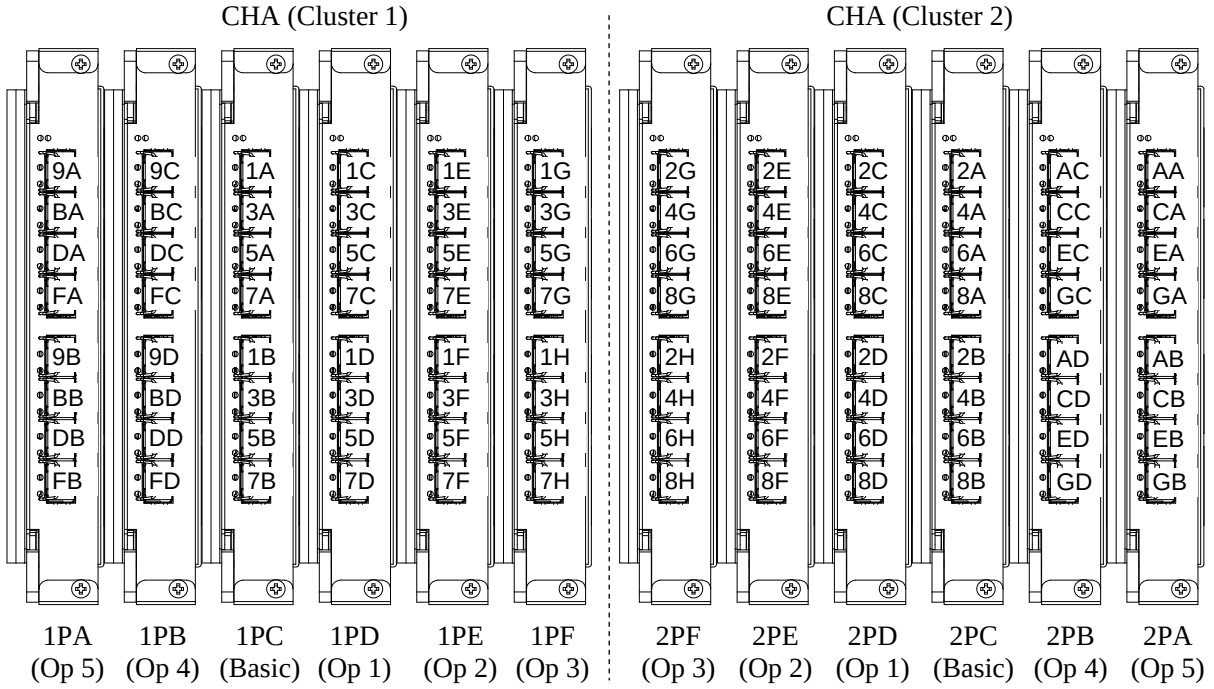


Fig. 4.1-2 Port Number of Fibre 8-port CHA PCB

3. MF Fibre 8-port CHA PCB (DKC-F810I-16ML8/16MS8)

In case of DKC-0



In case of DKC-1

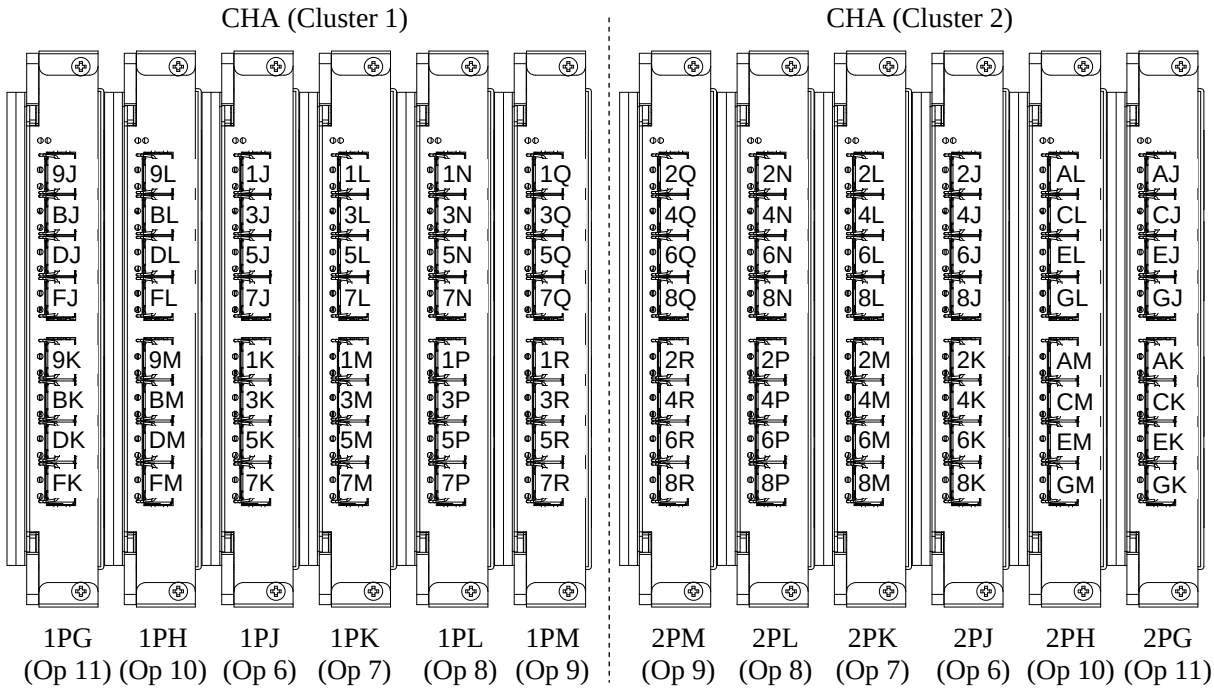
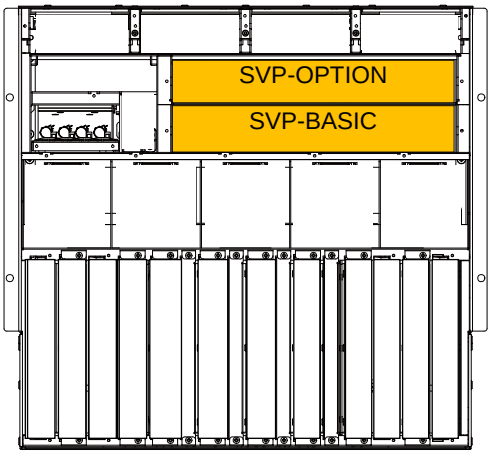
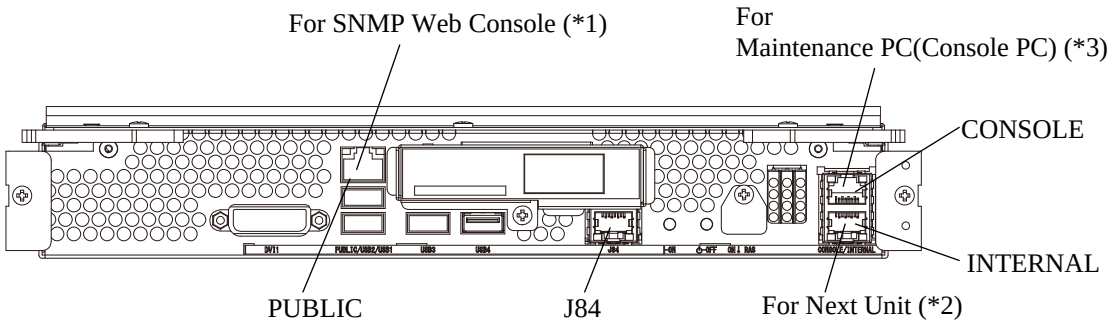


Fig. 4.1-3 Port Number of MF Fibre 8-port CHA PCB

4.2 SVP Interface



Rear View of DKC-0



Front View of SVP

*1: The cables are connected to both SVP-BASIC and SVP-OPTION.
*2: Connect cable only to SVP-BASIC. It is unnecessary to connect to SVP-OPTION.
*3: Connect Maintenance PC(Console PC) only to SVP-BASIC. Connect Maintenance PC(Console PC) to SVP-OPTION only when a trouble occurs on SVP-BASIC.

Fig. 4.2-1 SVP Interface

5. Storage system Cable Diagram

5.1 Cable Diagram

Standard Model (DKC-0 to DKU-00)

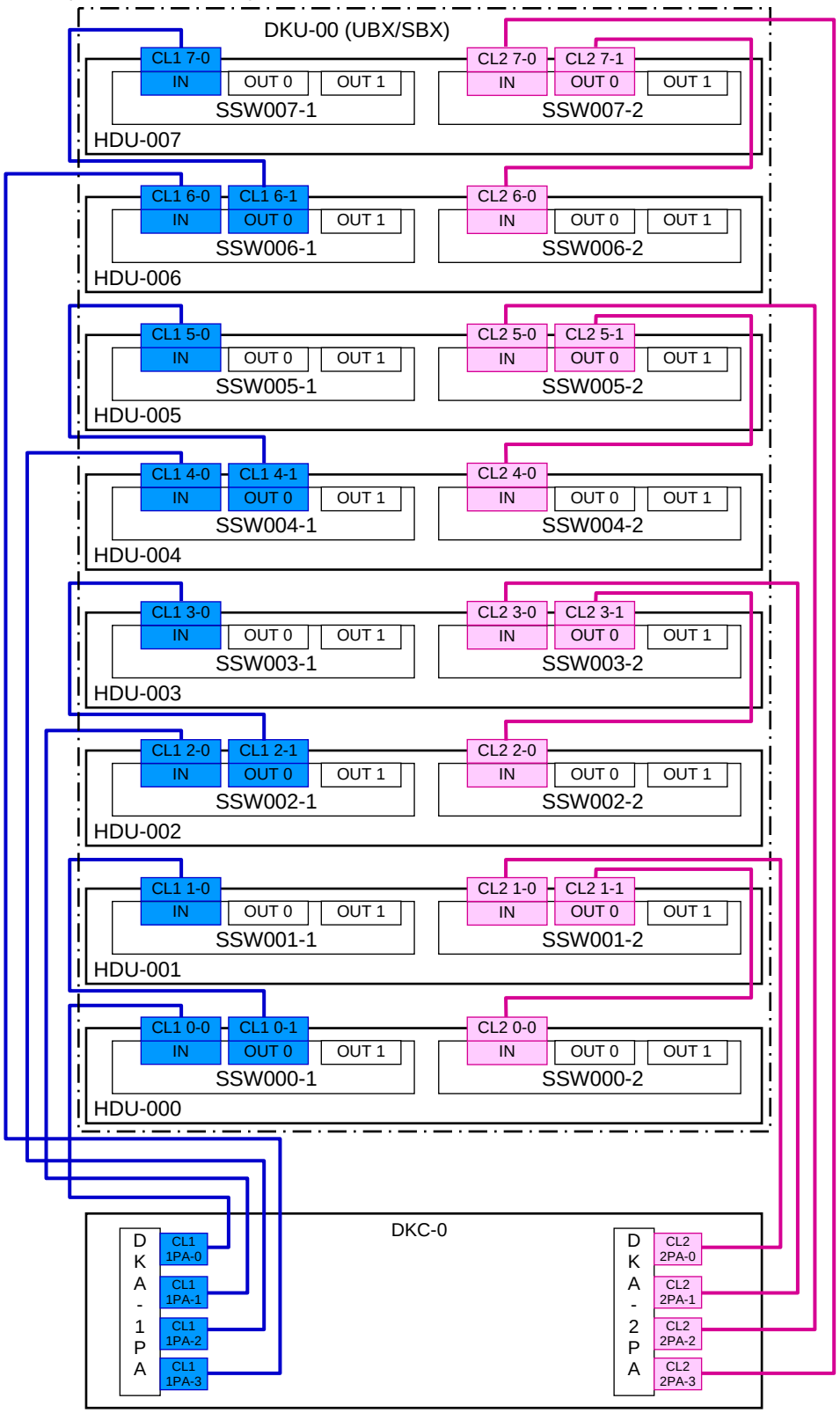


Fig. 5.1-1 Cable Diagram (DKA - UBX/SBX, CC1/CC2)

Standard Model (DKC-1 to DKU-10)

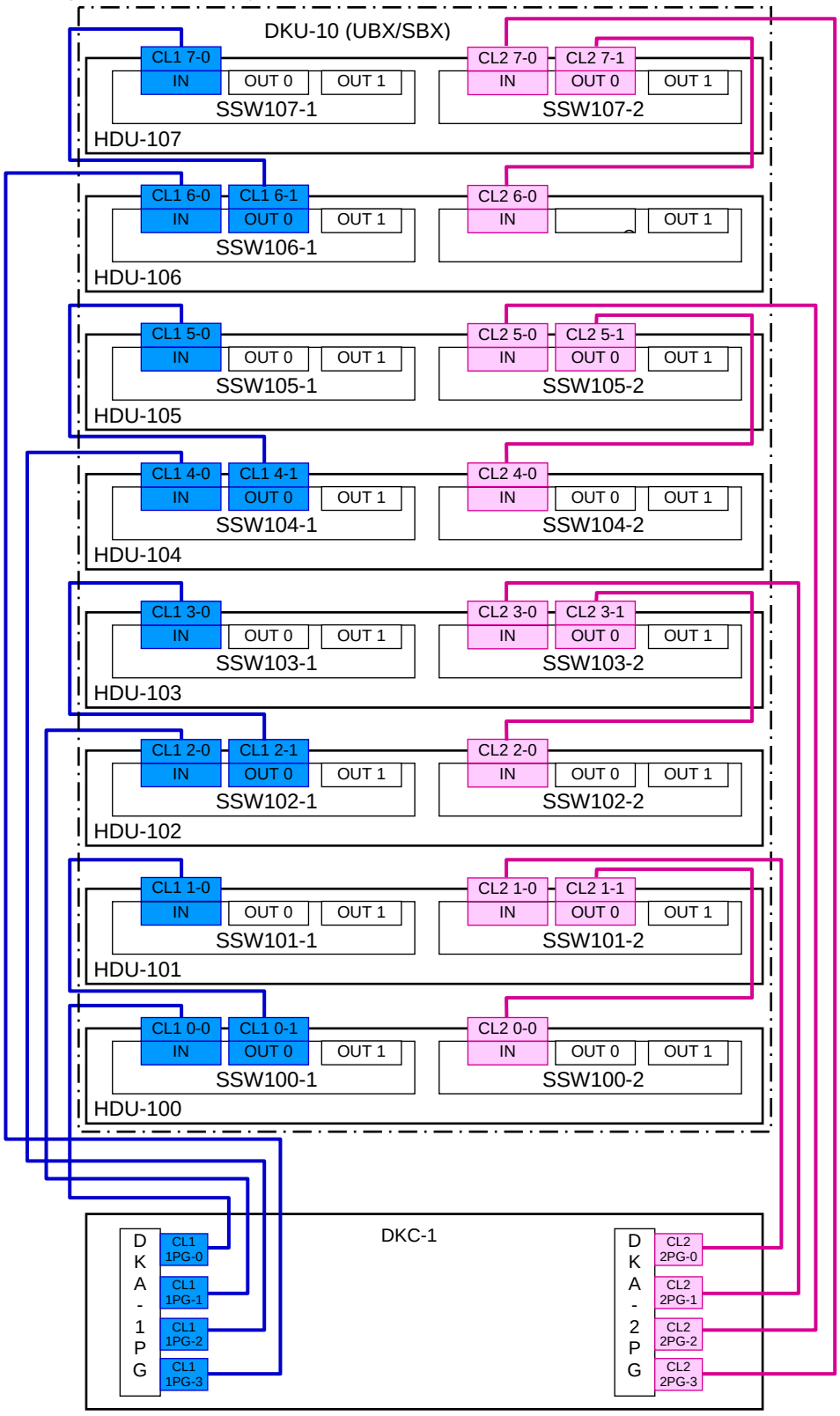


Fig. 5.1-2 Cable Diagram (DKA - UBX/SBX, CC1/CC2)

High Performance Model (DKC-0 to DKU-00)

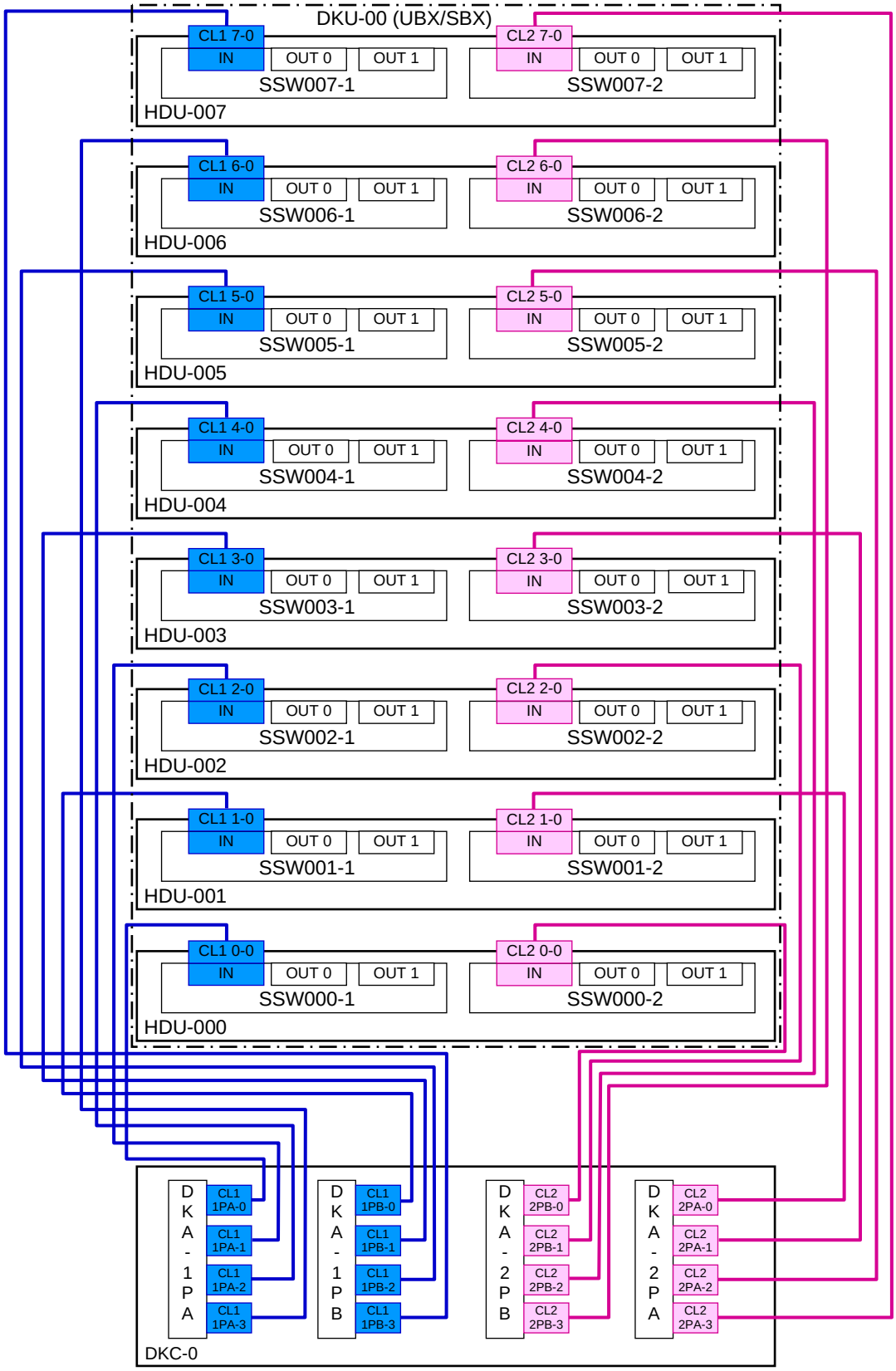


Fig. 5.1-3 Cable Diagram (DKA - UBX/SBX, CC2)

High Performance Model (DKC-1 to DKU-10)

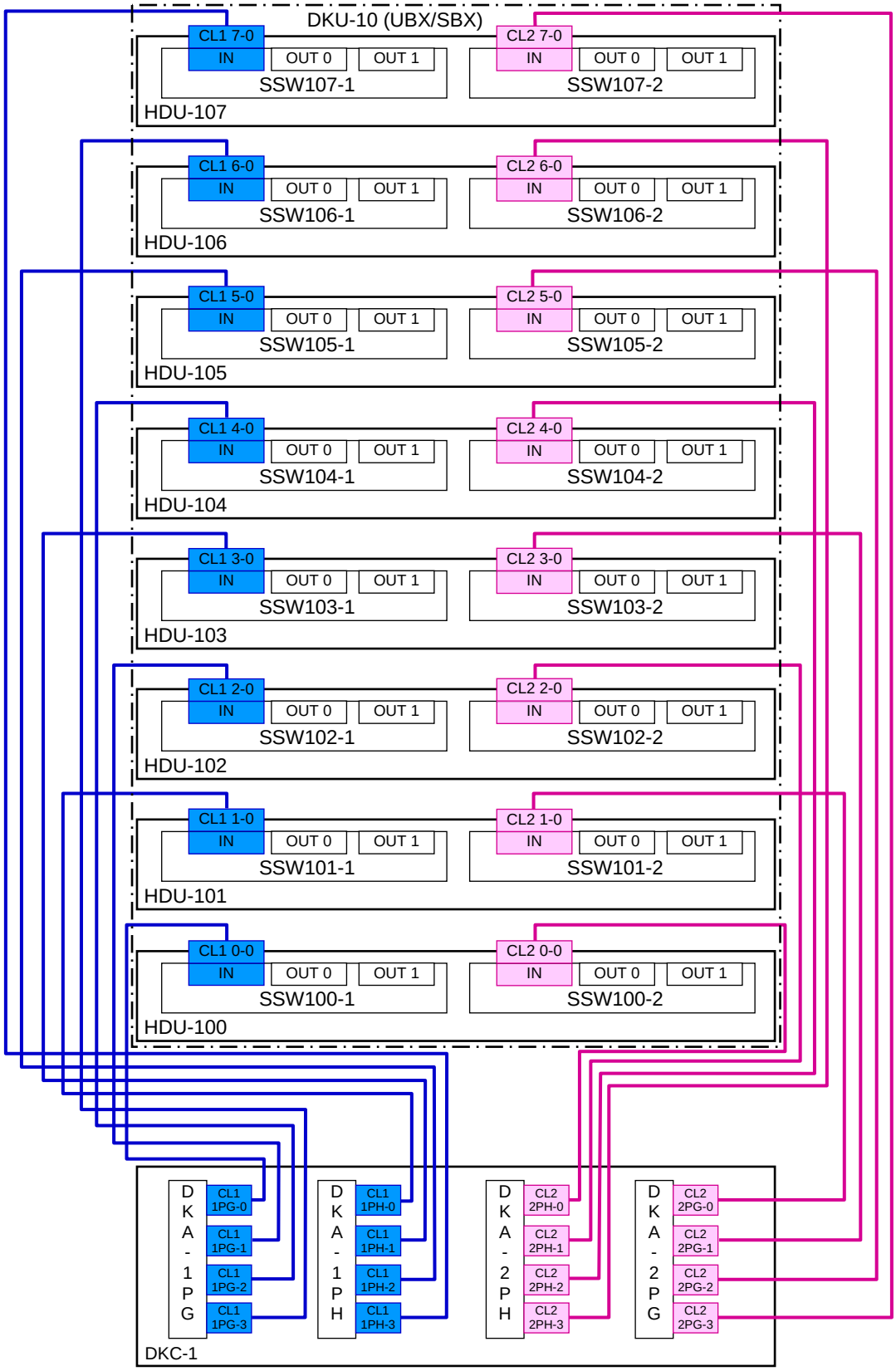


Fig. 5.1-4 Cable Diagram (DKA - UBX/SBX, CC2)

Standard Model / High Performance Model (DKU-xy to DKU-x(y+1))

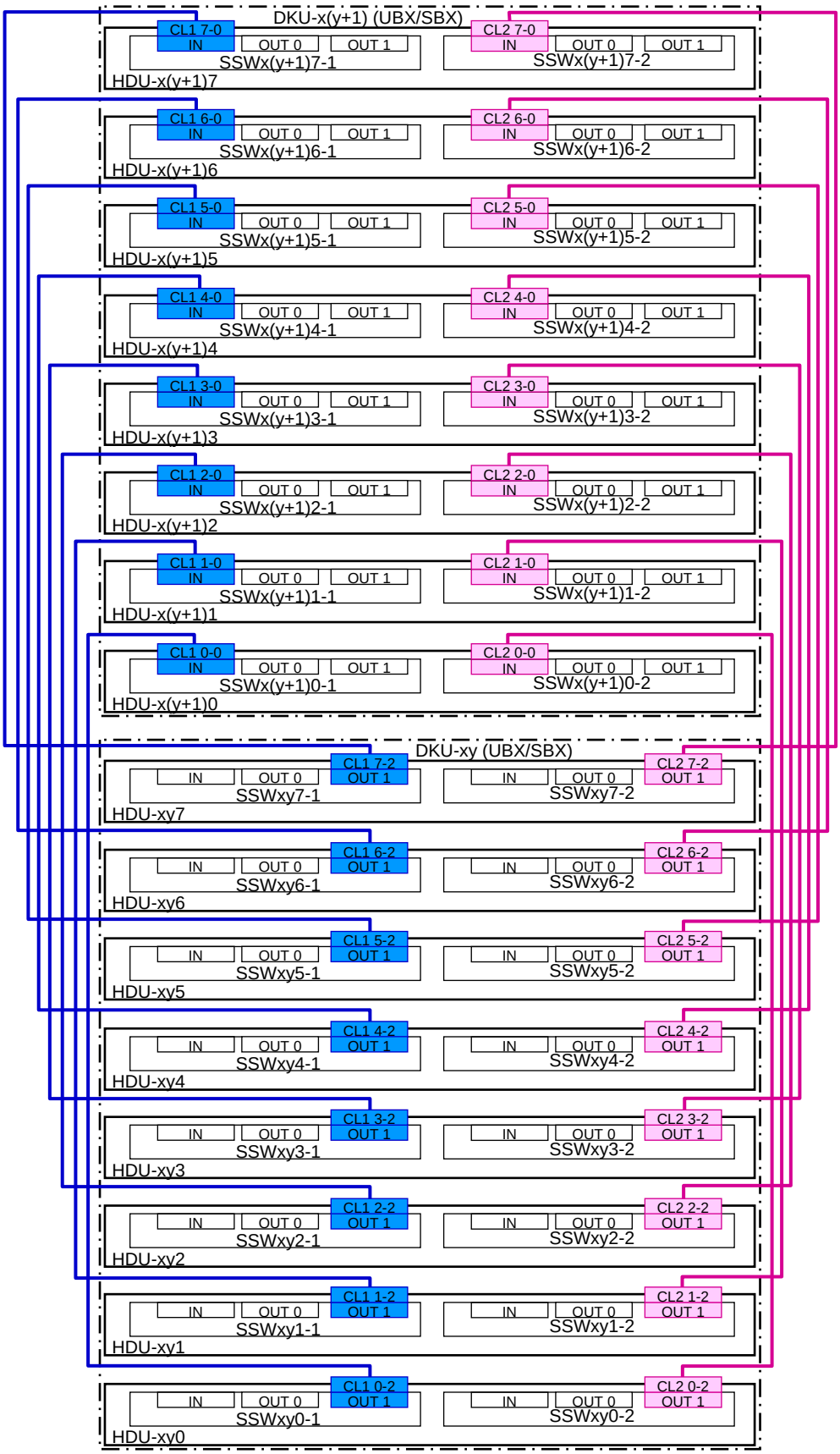


Fig. 5.1-5 Cable Diagram (UBX/SBX - UBX/SBX, CC2/CC4/FC5/FC30/FC1J)

Standard Model (DKC-0 to DKU-00)

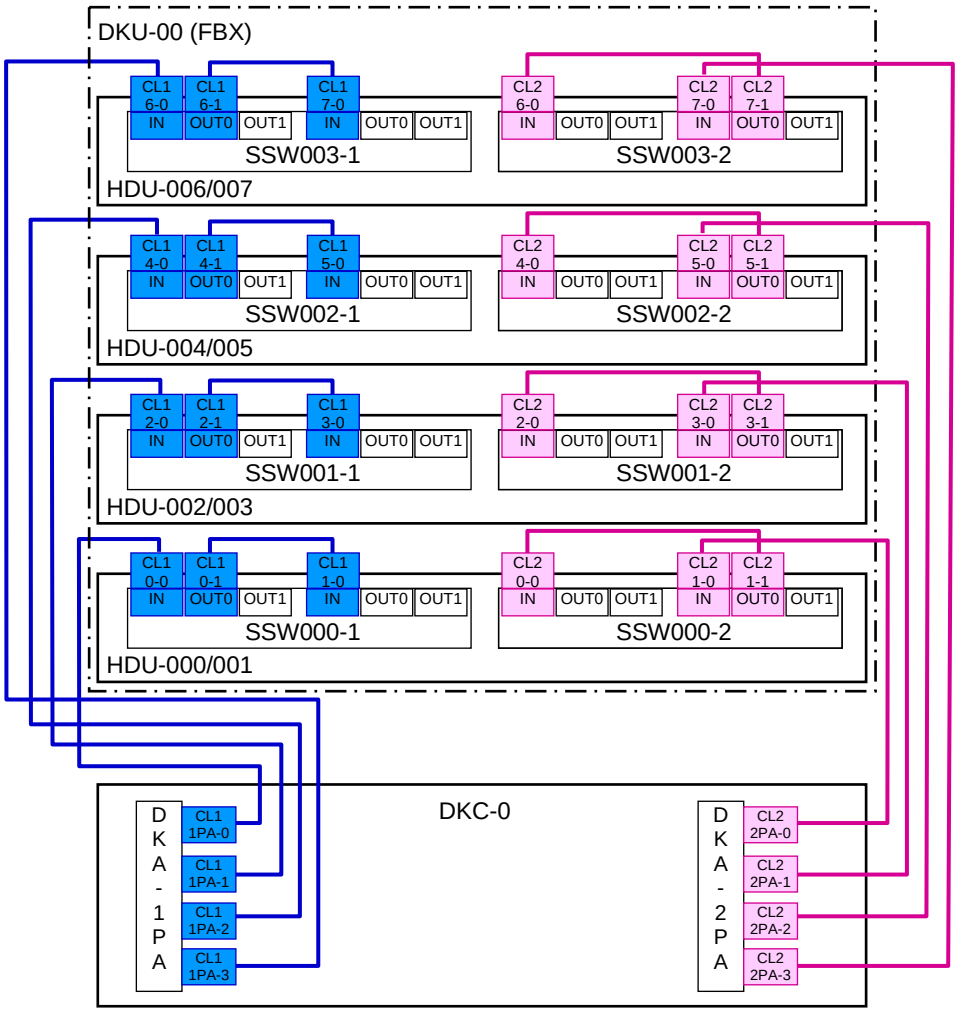


Fig. 5.1-6 Cable Diagram (DKA - FBX, CC1/CC2)

Standard Model (DKC-1 to DKU-10)

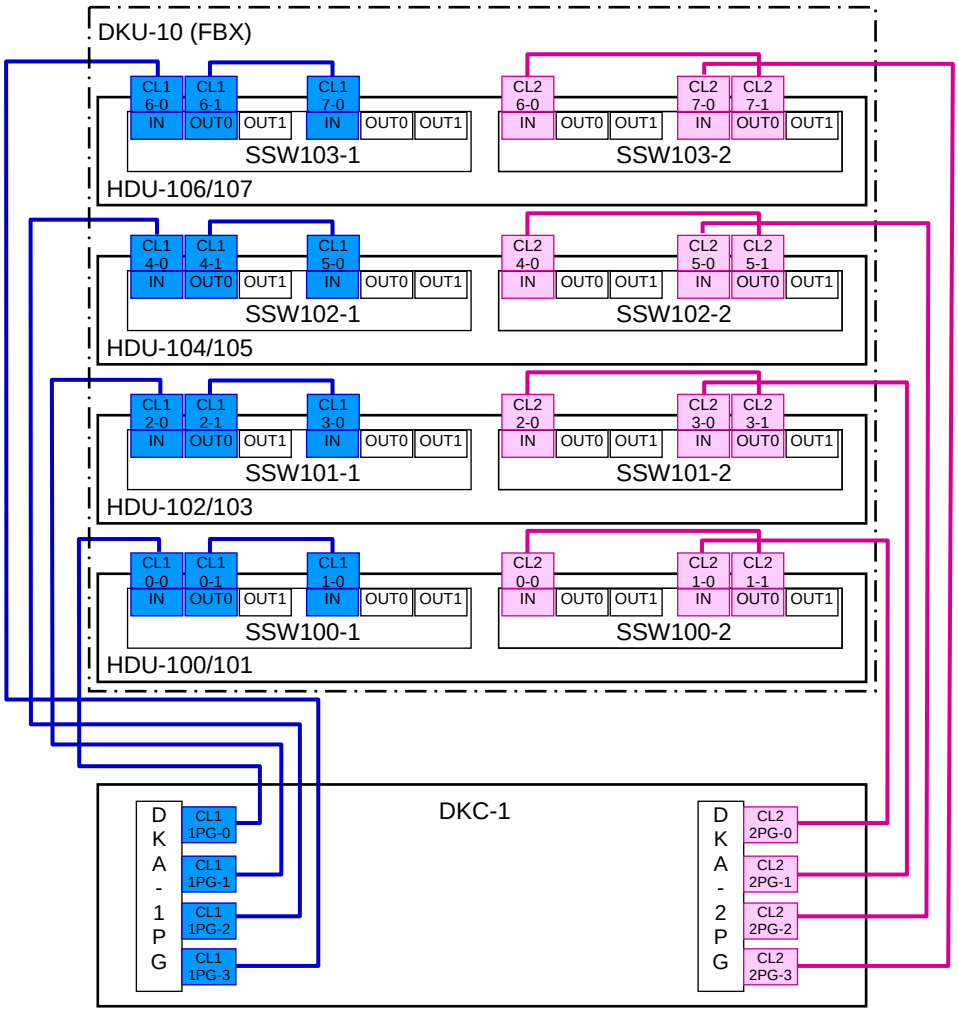


Fig. 5.1-7 Cable Diagram (DKA - FBX, CC1/CC2)

High Performance Model (DKC-0 to DKU-00)

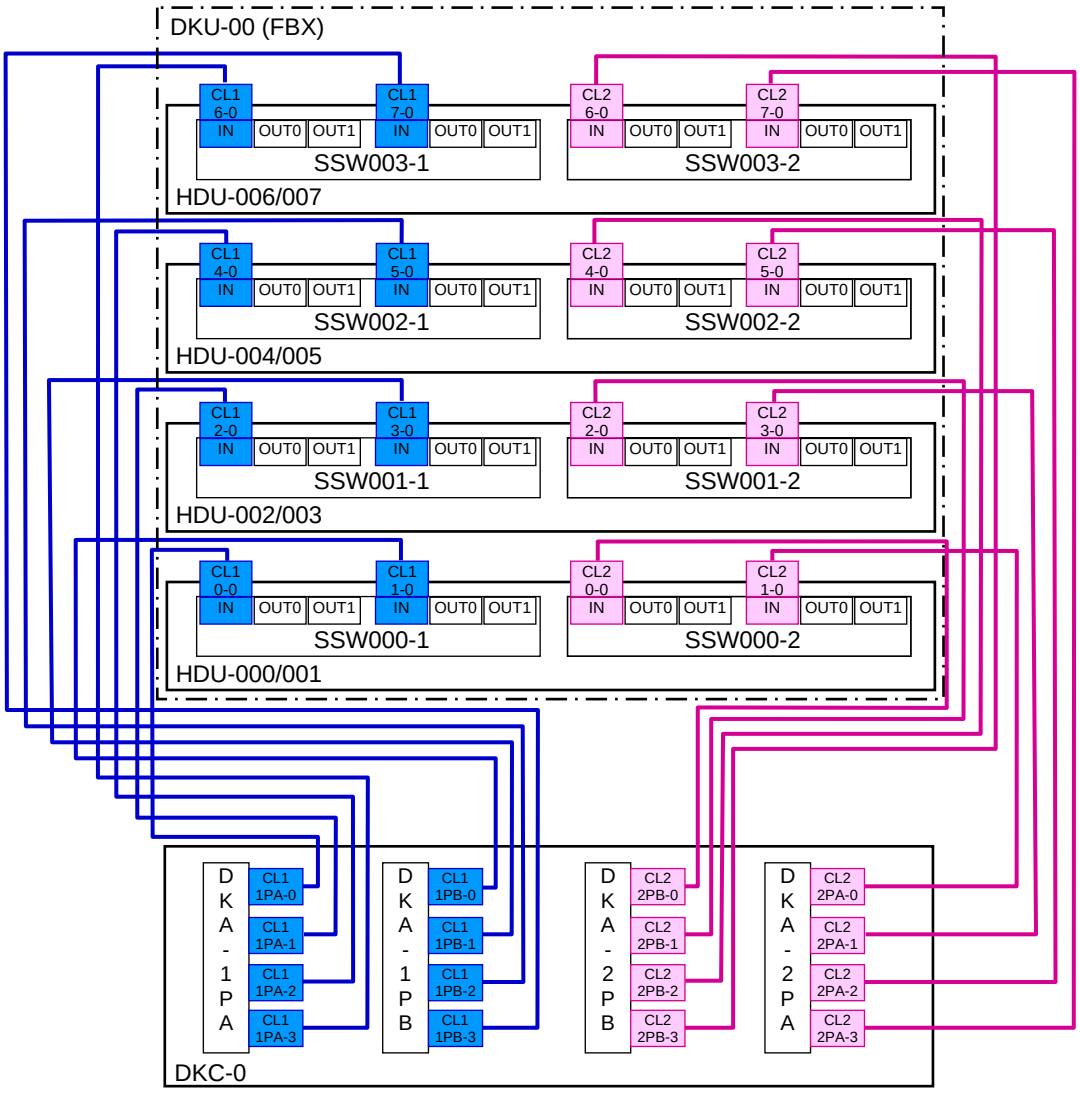


Fig. 5.1-8 Cable Diagram (DKA - FBX, CC2)

High Performance Model (DKC-1 to DKU-10)

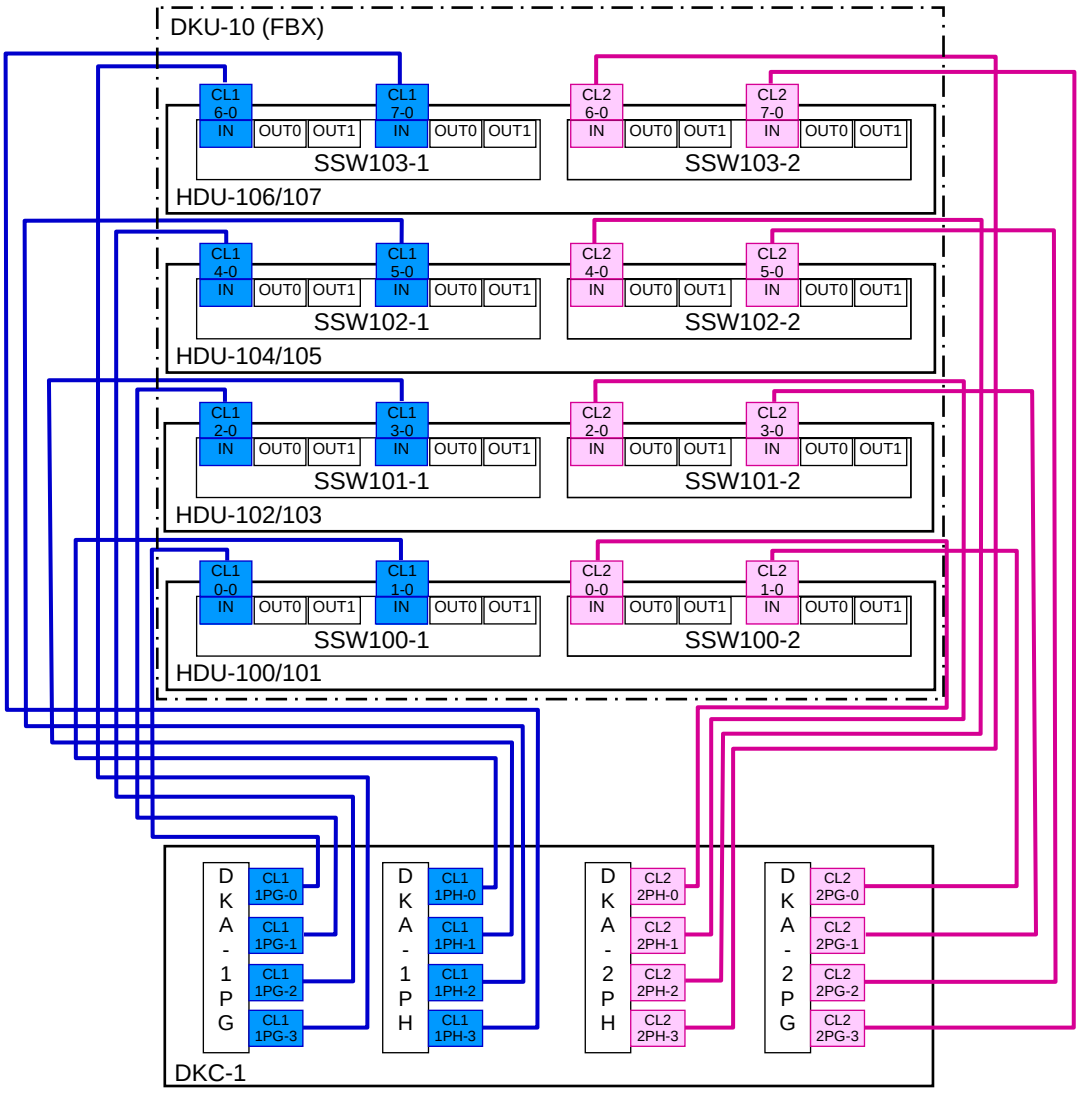


Fig. 5.1-9 Cable Diagram (DKA - FBX, CC2)

Standard Model / High Performance Model (DKU-xy to DKU-x(y+1))

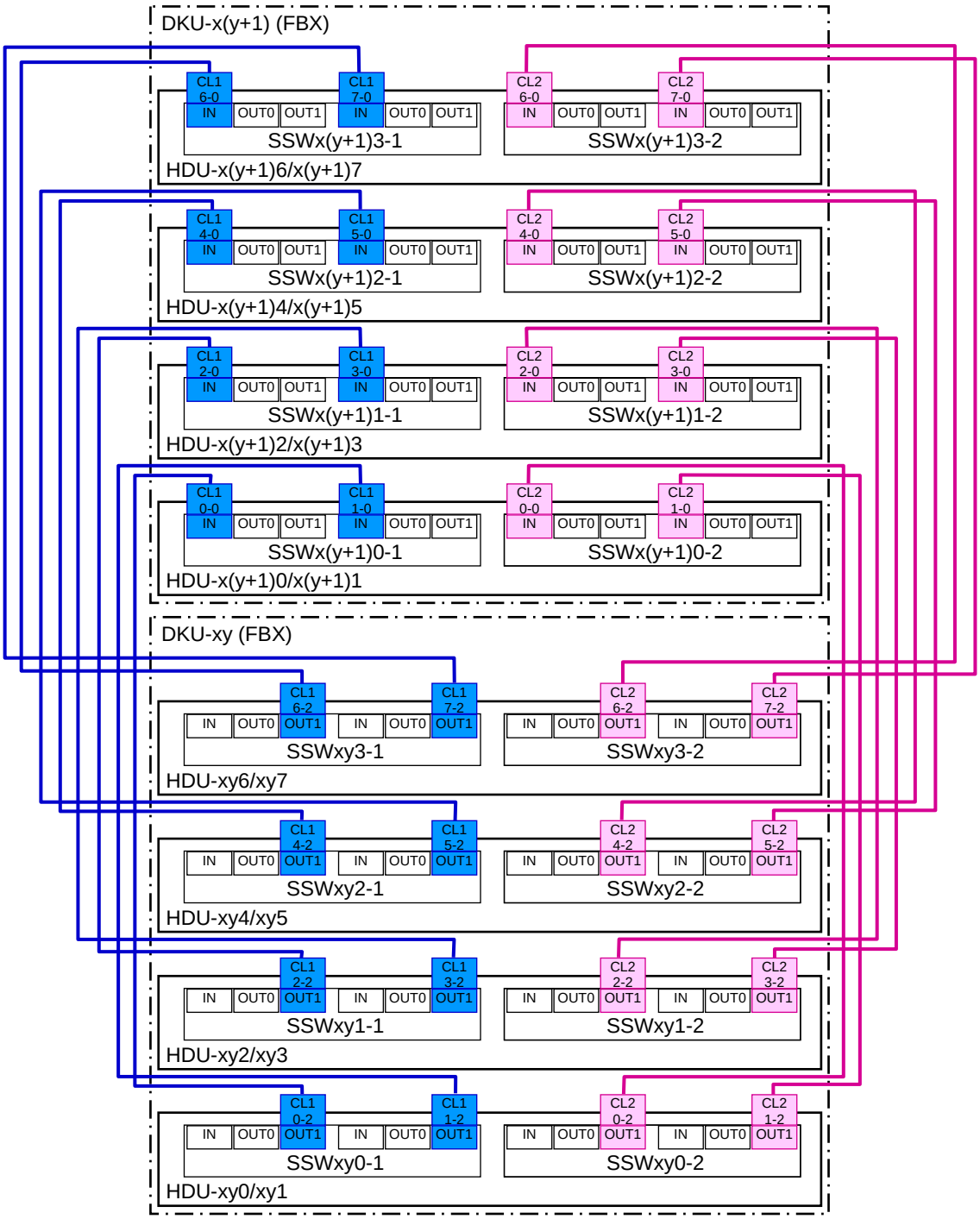


Fig. 5.1-10 Cable Diagram (FBX - FBX, CC1/CC4/FC5/FC30/FC1J)

Standard Model / High Performance Model (DKU-xy to DKU-x(y+1))

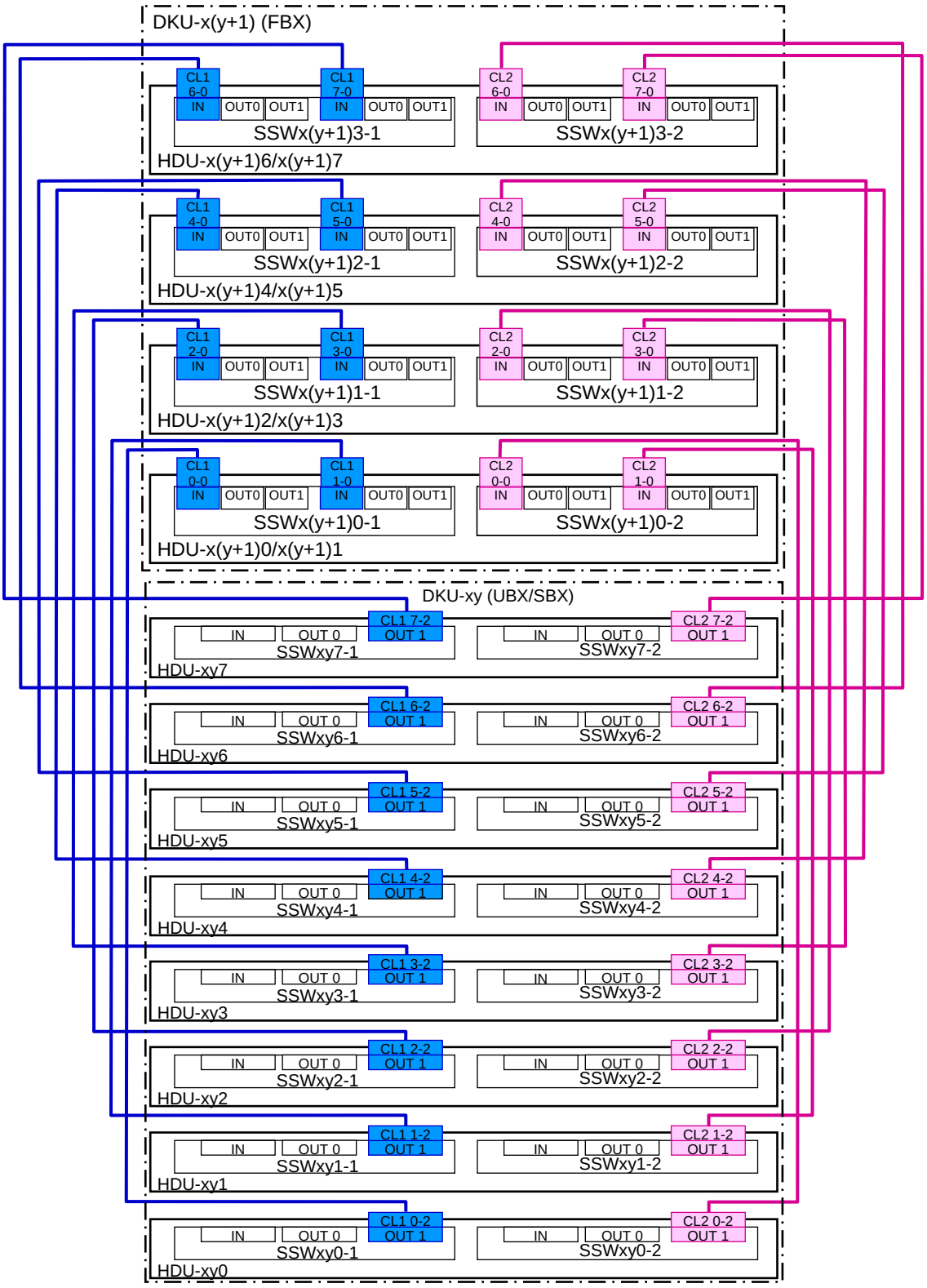


Fig. 5.1-11 Cable Diagram (UBX/SBX - FBX, CC2/CC4/FC5/FC30/FC1J)

Standard Model / High Performance Model (DKU-xy to DKU-x(y+1))

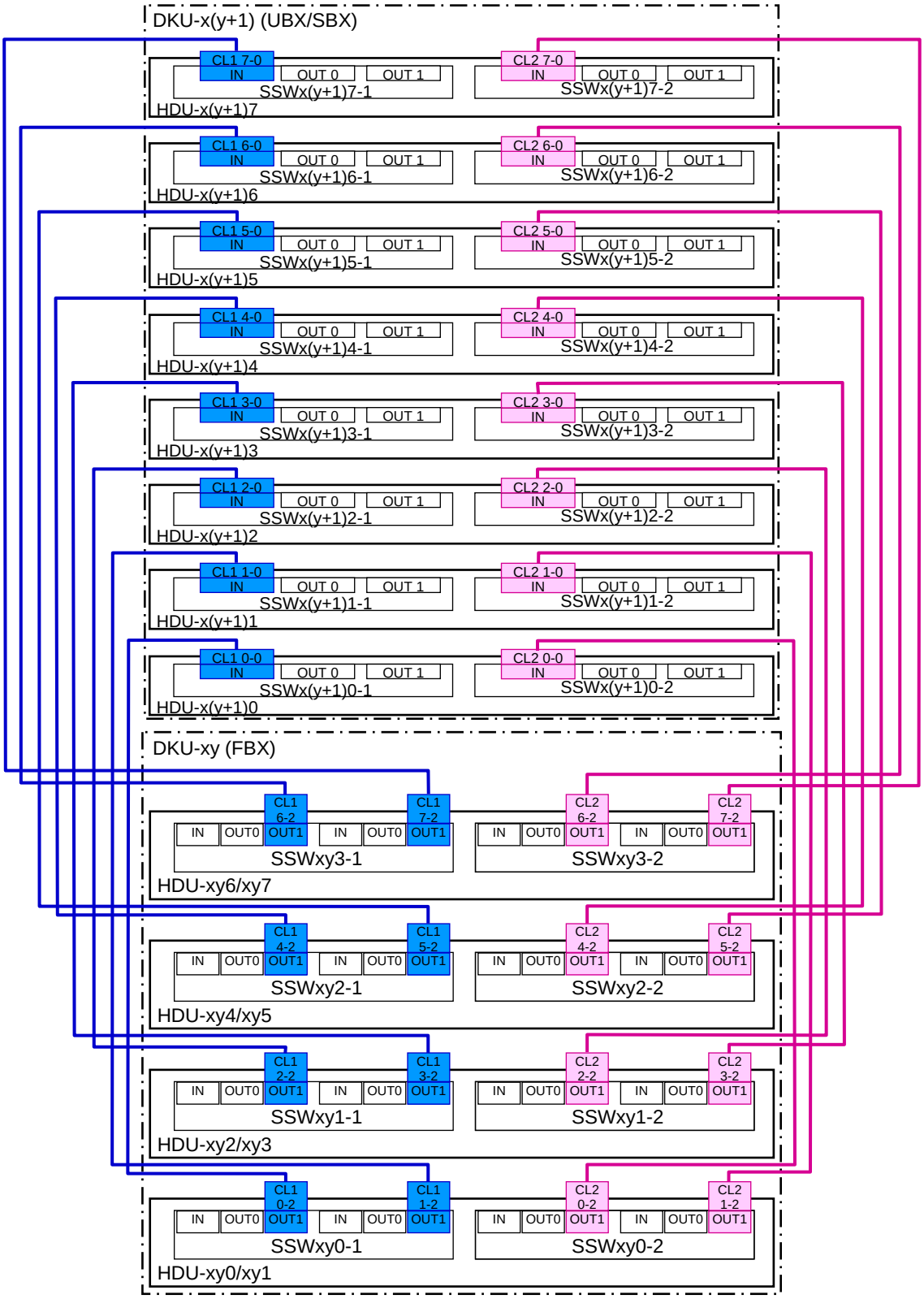


Fig. 5.1-12 Cable Diagram (FBX - UBX/SBX, CC2/CC4/FC5/FC30/FC1J)

DKC-0 to DKC-1

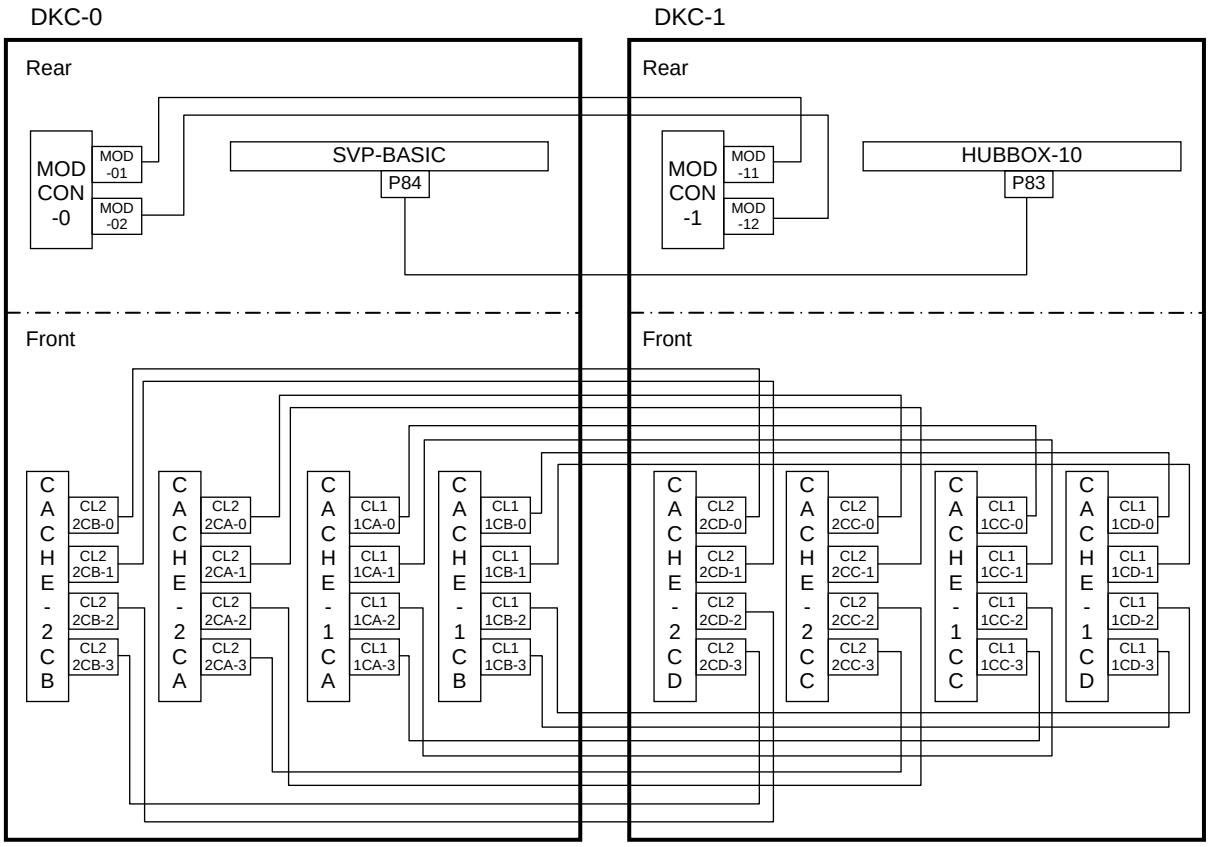
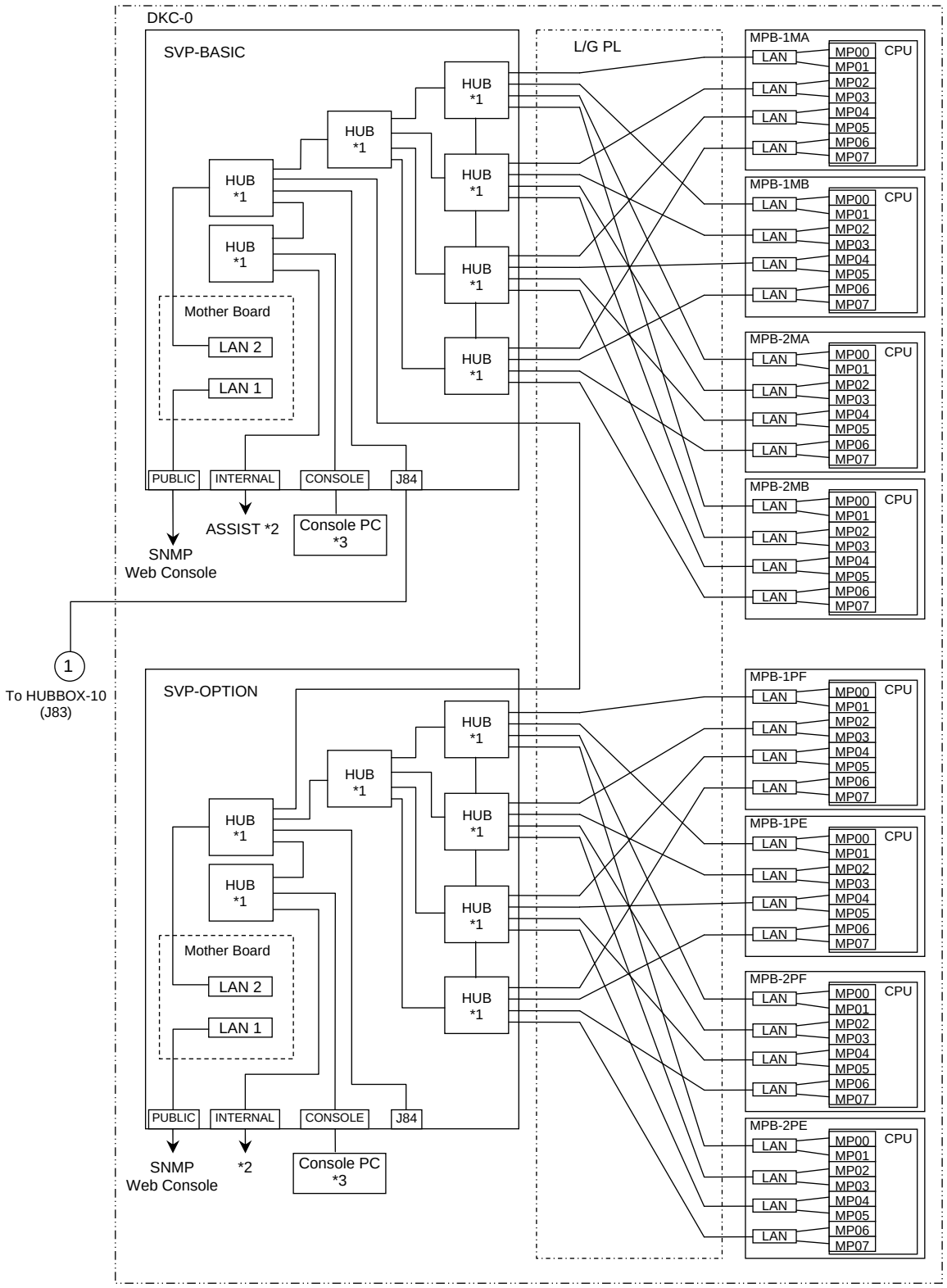


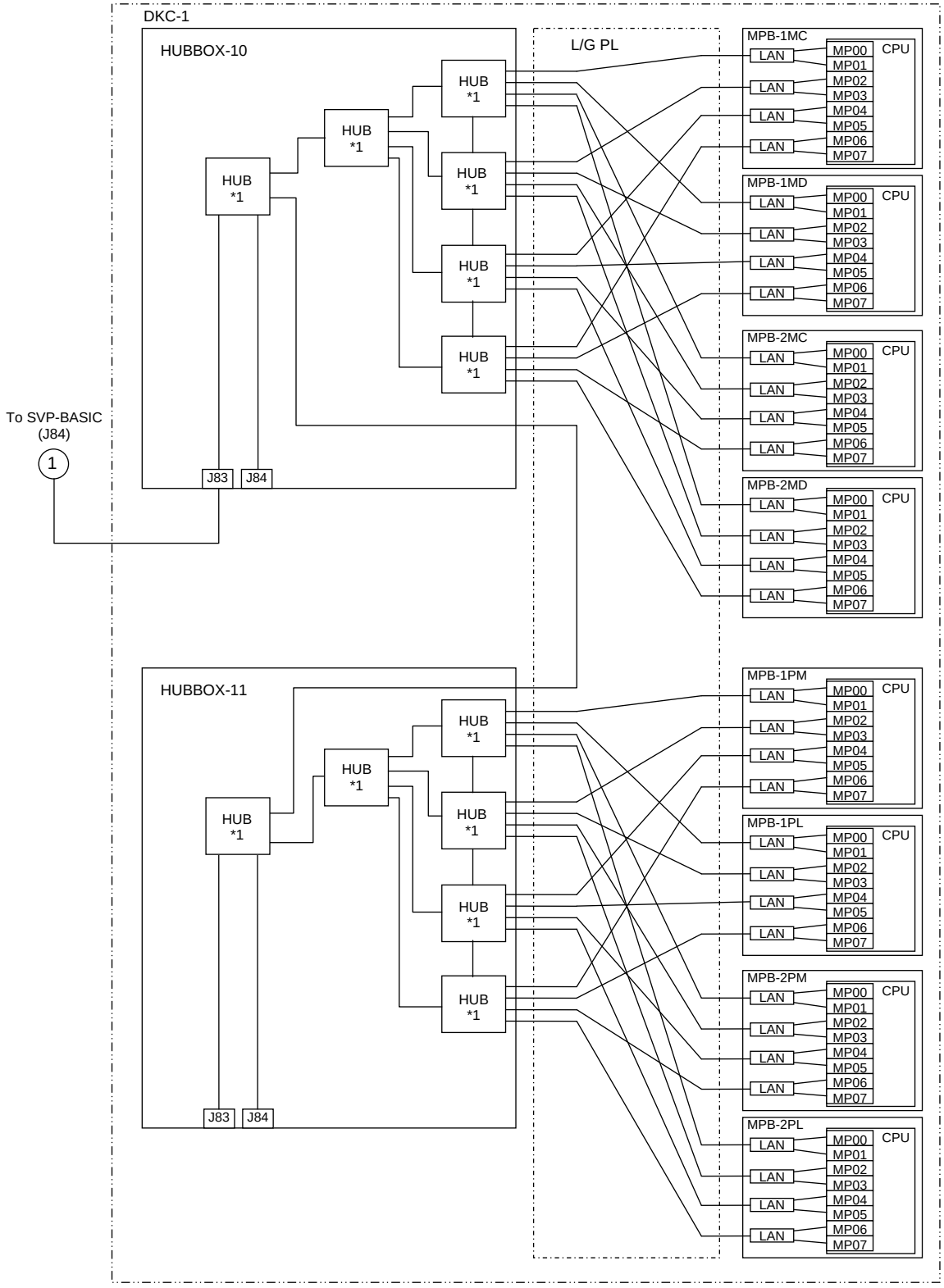
Fig. 5.1-13 Cable Diagram (MOD5/MOD30/MOD1J/MFC5/MFC30/MFC1J)

5.2 LAN Cable Diagram



*1: If the DC power is supplied though the power of SVP is turned off, the power of built-in HUB has been turned on.
*2: Connect cable only to SVP-BASIC. It is unnecessary to connect to SVP-OPTION.
*3: Connect Console PC only to SVP-BASIC. Connect Console PC to SVP-OPTION only when a trouble occurs on SVP-BASIC.

Fig. 5.2-1 LAN Cable Diagram (1/2)



*1: If the DC power is supplied though the power of SVP is turned off, the power of built-in HUB has been turned on.

Fig. 5.2-1 LAN Cable Diagram (2/2)

6. Jumper Setting

6.1 Jumper setting of each parts

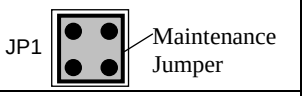
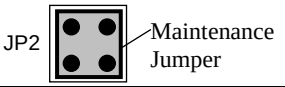
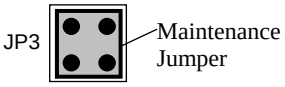
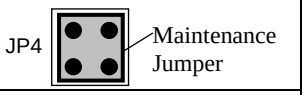
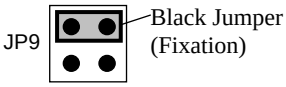
Table 6.1-1 Jumper setting of each parts List

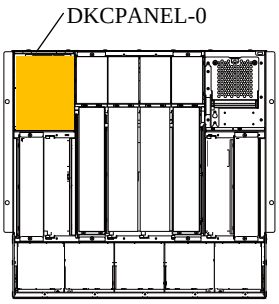
No.	Function Name	Jumper No.	Settings	Remarks
1	DKCPANEL	JP1	RESTART	
		JP2	CHK RESET	
		JP3	SSVP ALARM RESET	(*1)
		JP4	SSVP DUMP	
		JP5	FORCE MODE	
		JP6	SYSFORCEOFF	
		JP7, JP8	Not used	
		JP9	Fixed Jumper	
2	SSW (UBX/SBX)	SW1, SW2, SW3	Specification of Box ID	
		SW4, SW5, SW6	Specification of Chassis ID	
		SW7	Specification of Module ID	
		SW8	Not used	
3	MPB	CEMD, CEDT	Specification of CE MODE	
4	CACHE	VOJP	Volatile Switch/Jumper	
5	SSVPMN	JP1	MODULE ID	
		JP2	AUTOPSON	
6	SSW (FBX)	SW1, SW2, SW3	Specification of Box ID	
		SW4, SW5, SW6	Specification of Chassis ID	
		SW7	Specification of Module ID	
		SW8	Not used	

*1: When the SVP High Reliability Kit has been installed and an SVP fail over (SIM=7FF3XX) is detected, at first, take actions to resolve the failure (SIM=7FF3XX).

[1] DKCPANEL

Table 6.1.1-1 Setting of Jumper Socket on DKCPANEL PCB

Function Name	Jumper No.	Settings	Jumper Setting
DKCPANEL	JP1 (RESTART)	Used to unfence the fenced drive path and to release Write Inhibit.	
	JP2 (CHK RESET)	The PS ALARM and TH ALARM are reset.	
	JP3 (SSVP ALARM RESET)	When the jumper is set, the SSVP detection alarm is reset. Then IMPL of the SVP is executed. When the SVP High Reliability Kit has been installed and an SVP fail over (SIM=7FF3XX) is detected, at first, take actions to resolve the failure (SIM=7FF3XX).	
	JP4 (SSVP DUMP)	When the jumper is set, the data in SVP memory is written to the HDD.	
	JP5 (FORCE MODE)	This jumper is used to turn off the DKC/DKU power forcibly. It assumes a special case, so that do not use it unless otherwise instructed. (Refer to TRBL08-10 to 30 for the detailed procedure.)	
	JP6 (SYSFORCEOFF)		
	JP7, JP8	Not used	
	JP9 (DISPLAY OFF)	The LED Turn Off Function is set on the appropriate DKCPANEL. It is not generally required to change the setting, because the setting is set to the lighting with the jumper.	



Front View of DKC-0

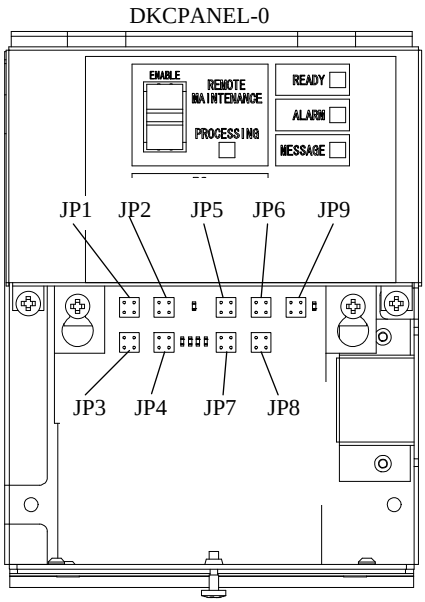


Fig. 6.1.1-1 Setting of Jumper Socket on DKCPANEL PCB

[2] SSW (UBX/SBX)

Table 6.1.2-1 Switch Setting of SSW

Function Name	Switch No.	Settings	Remarks
SSW	SW1, SW2, SW3	Sets the Box ID.	
	SW4, SW5, SW6	Sets the Chassis ID.	
	SW7	Sets the Module ID.	
	SW8	Not used	

NOTE: • Use something sharp (ex. a pen or a mini screwdriver etc.) when set the SSW switches.

• When the switch setting of SSW is wrong, execute the replace process of SSW and change the switch setting. The switch setting will not be effective unless the SSW is dismounted and mounted.

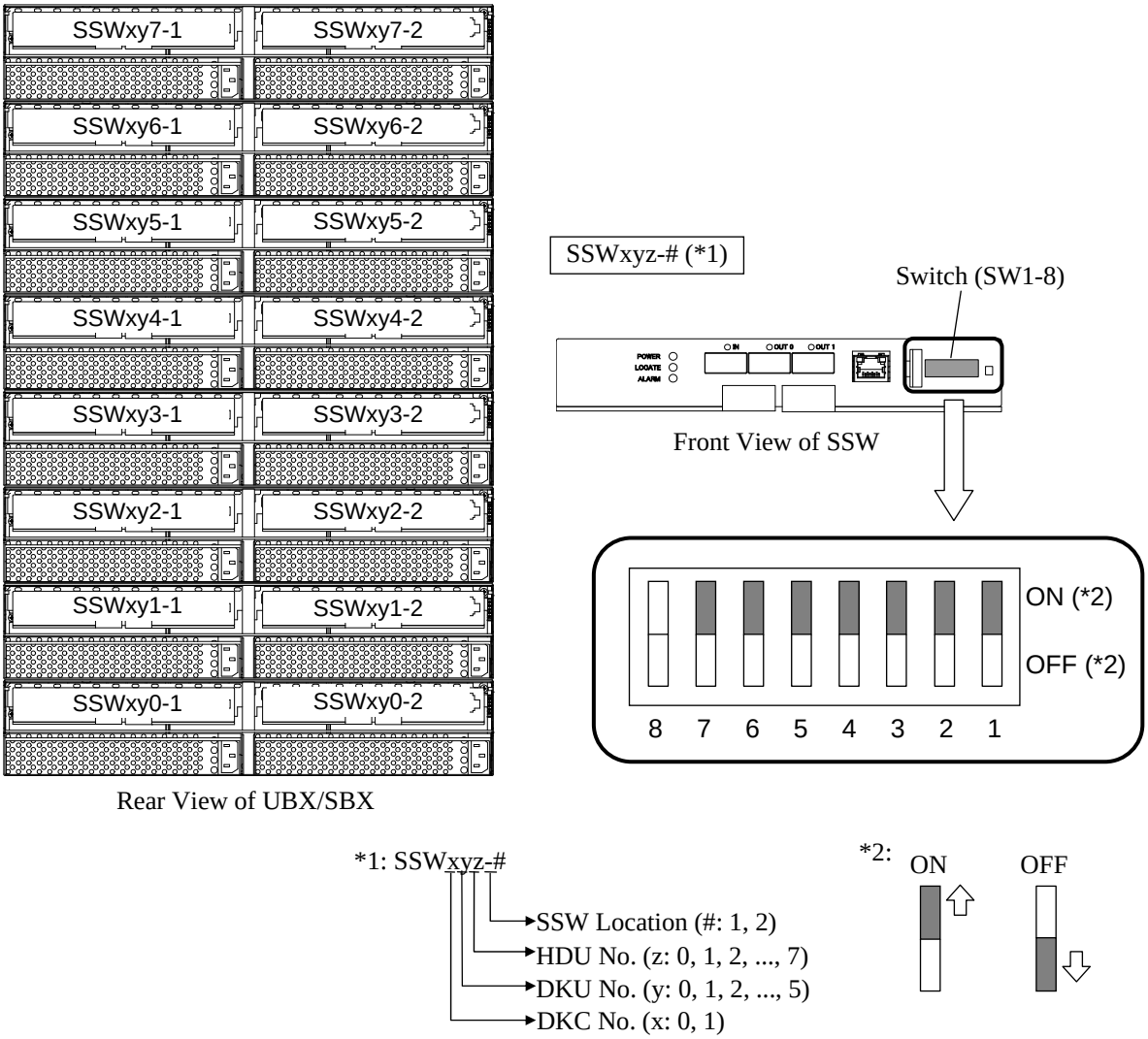


Fig. 6.1.2-1 Switch Setting of SSW

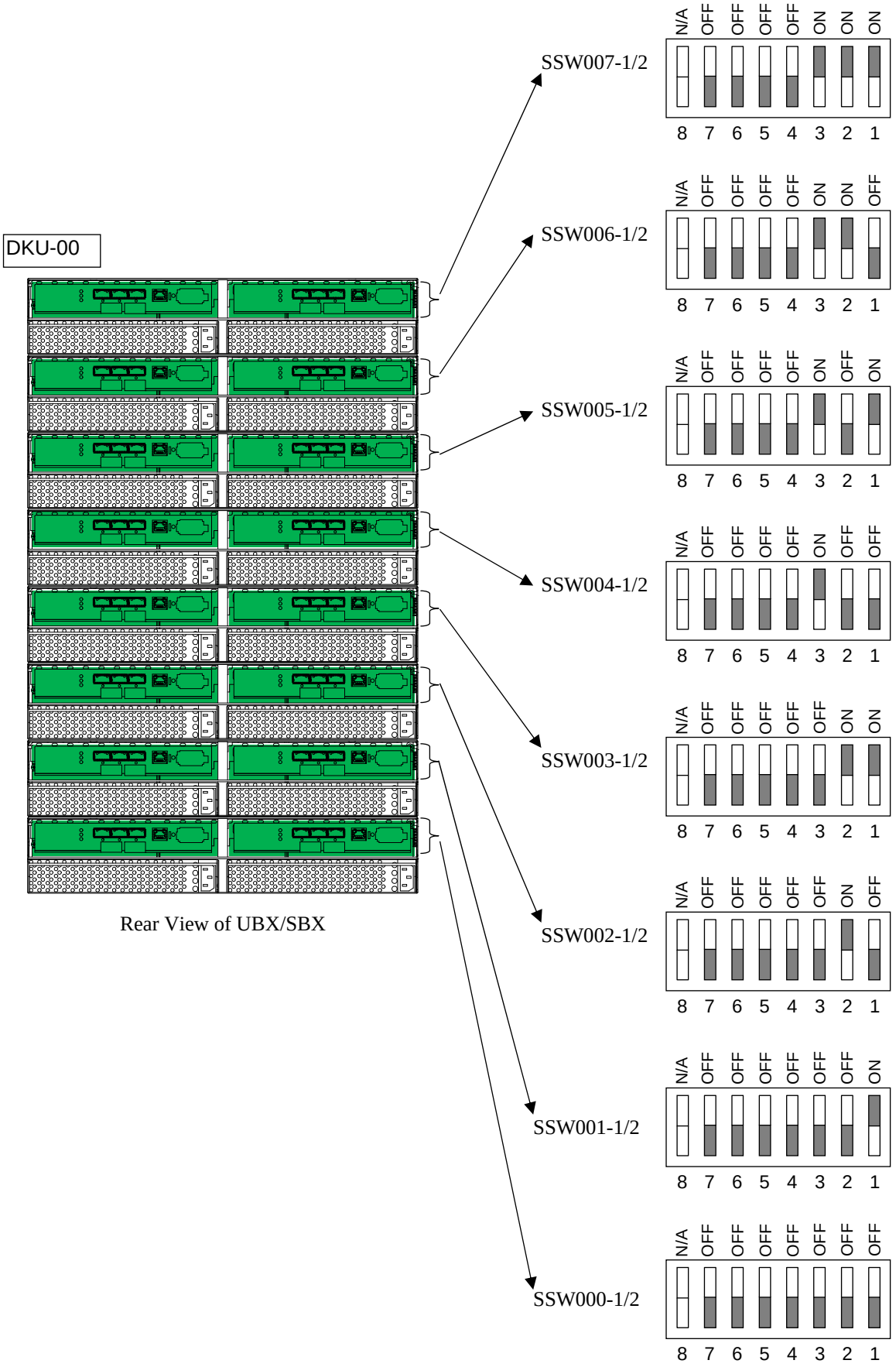


Fig. 6.1.2-2 Switch Setting of SSW (DKU-00)

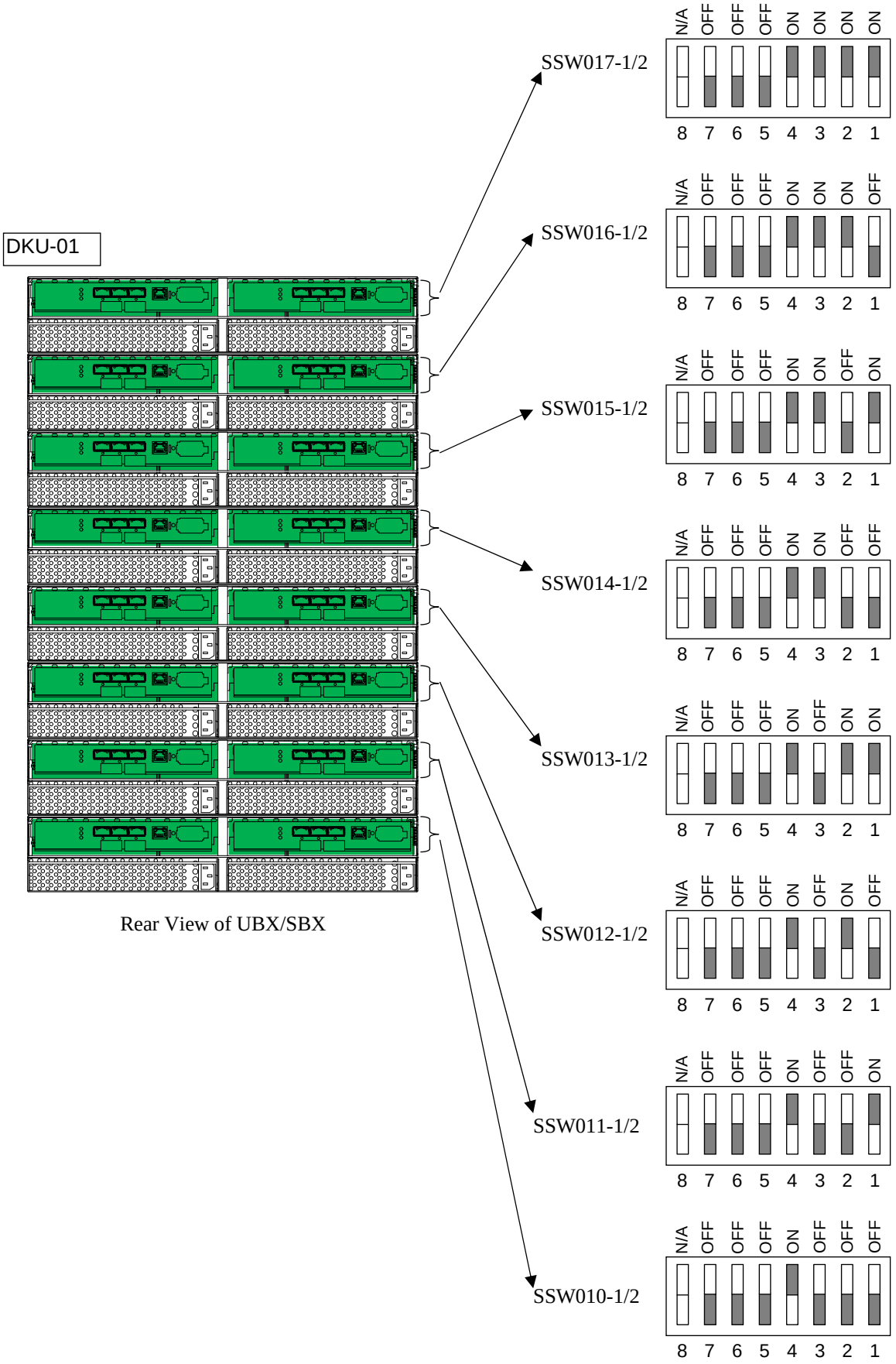


Fig. 6.1.2-3 Switch Setting of SSW (DKU-01)

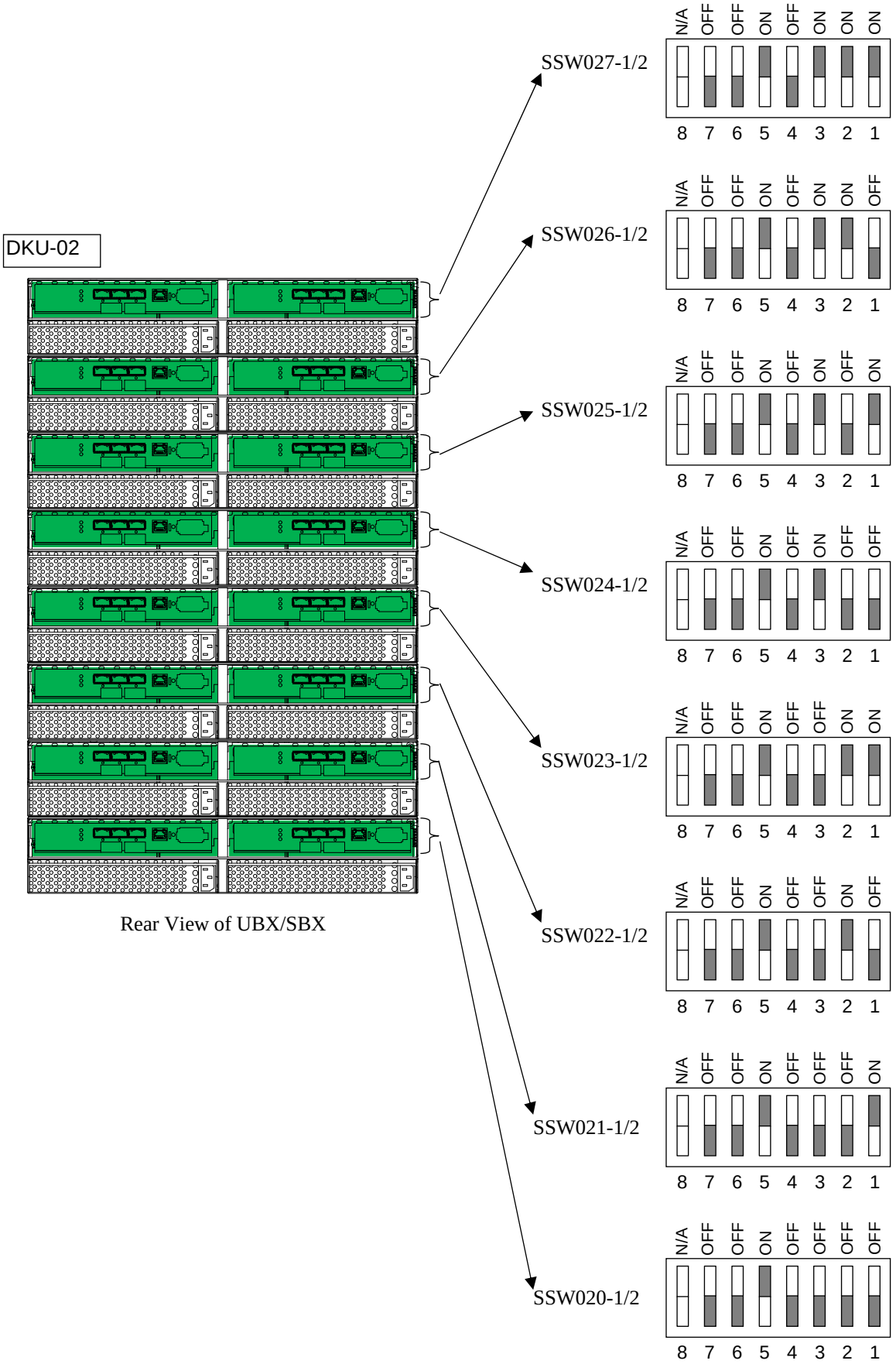


Fig. 6.1.2-4 Switch Setting of SSW (DKU-02)

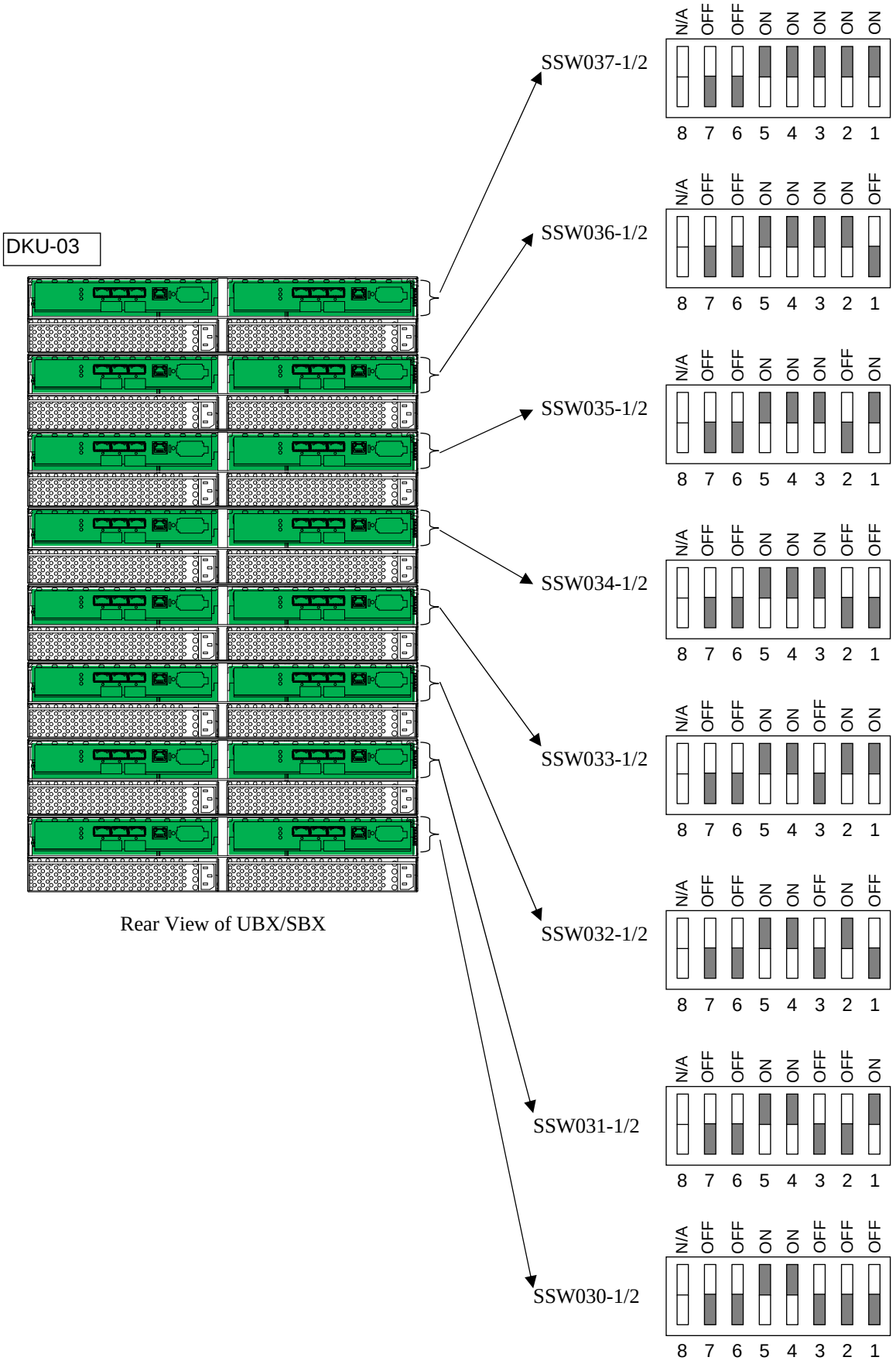


Fig. 6.1.2-5 Switch Setting of SSW (DKU-03)

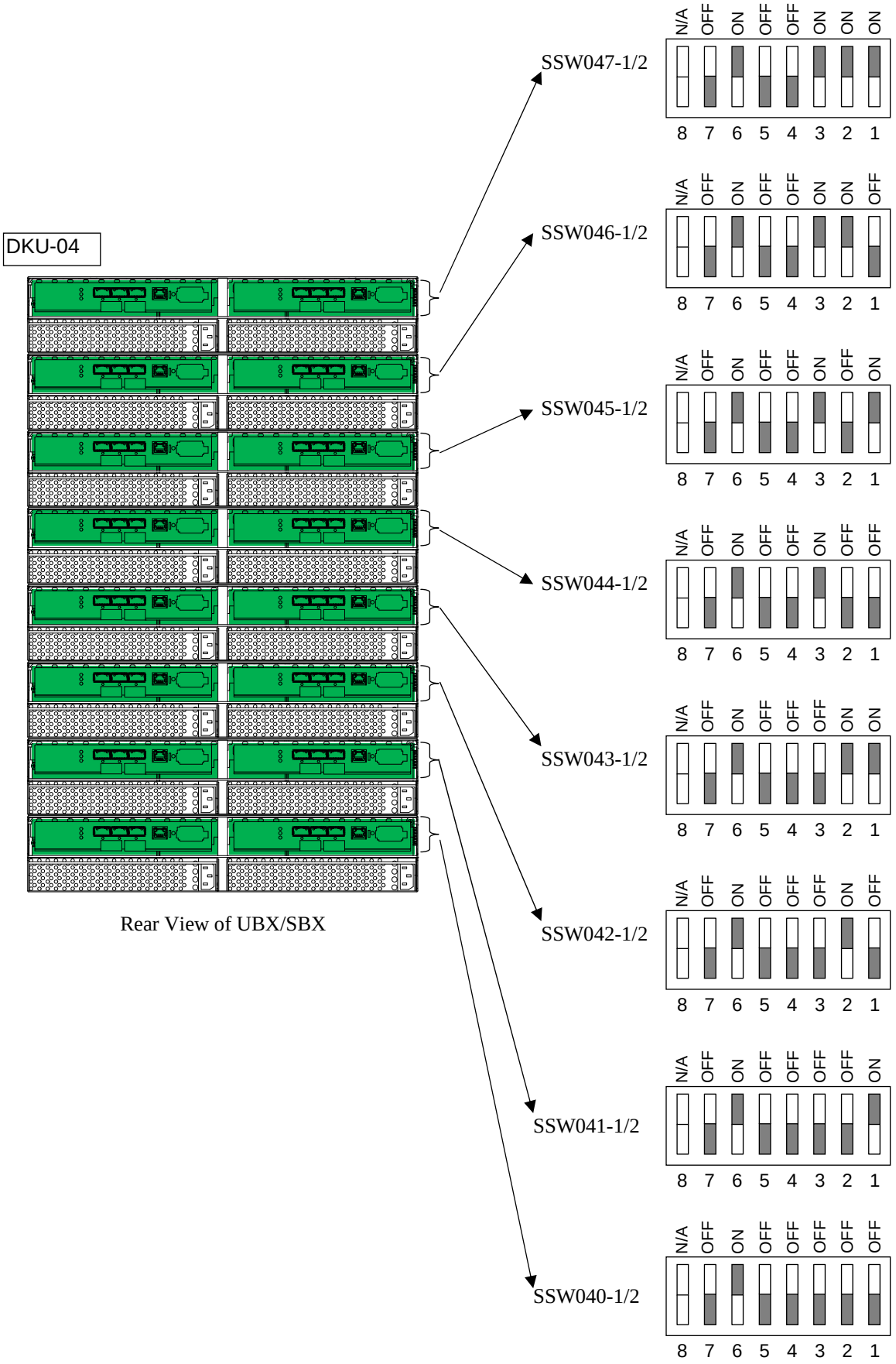


Fig. 6.1.2-6 Switch Setting of SSW (DKU-04)

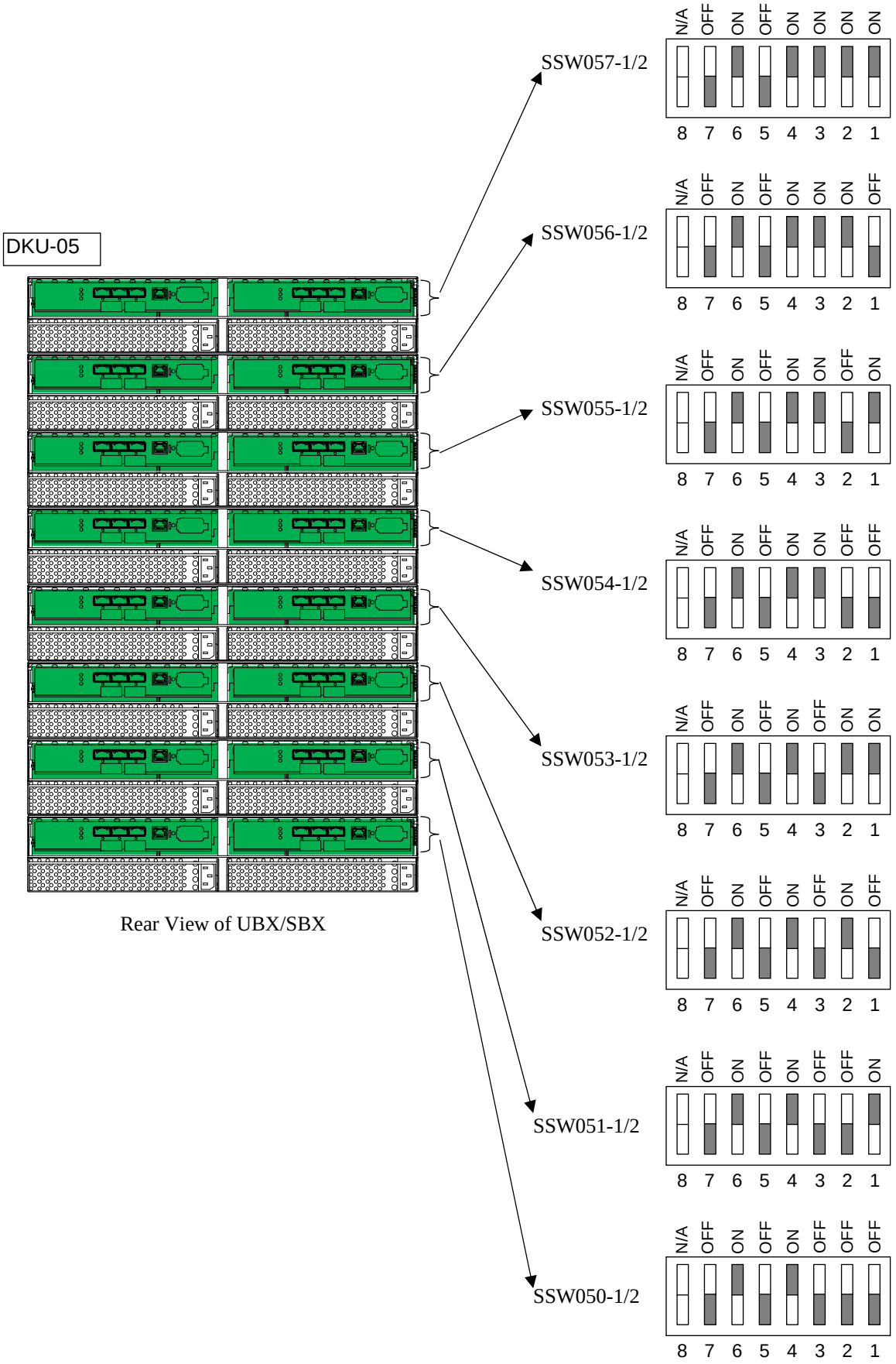


Fig. 6.1.2-7 Switch Setting of SSW (DKU-05)

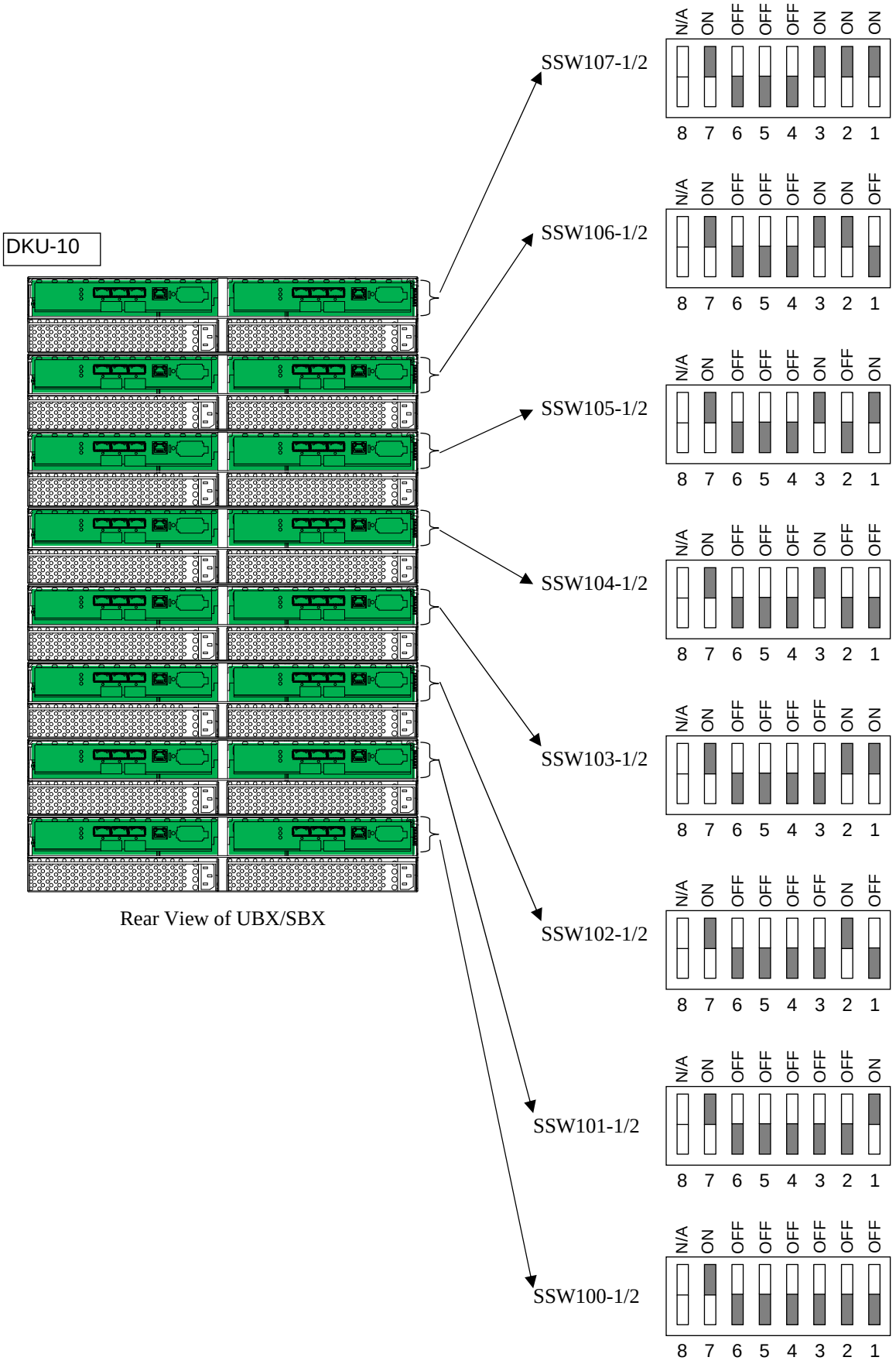


Fig. 6.1.2-8 Switch Setting of SSW (DKU-10)

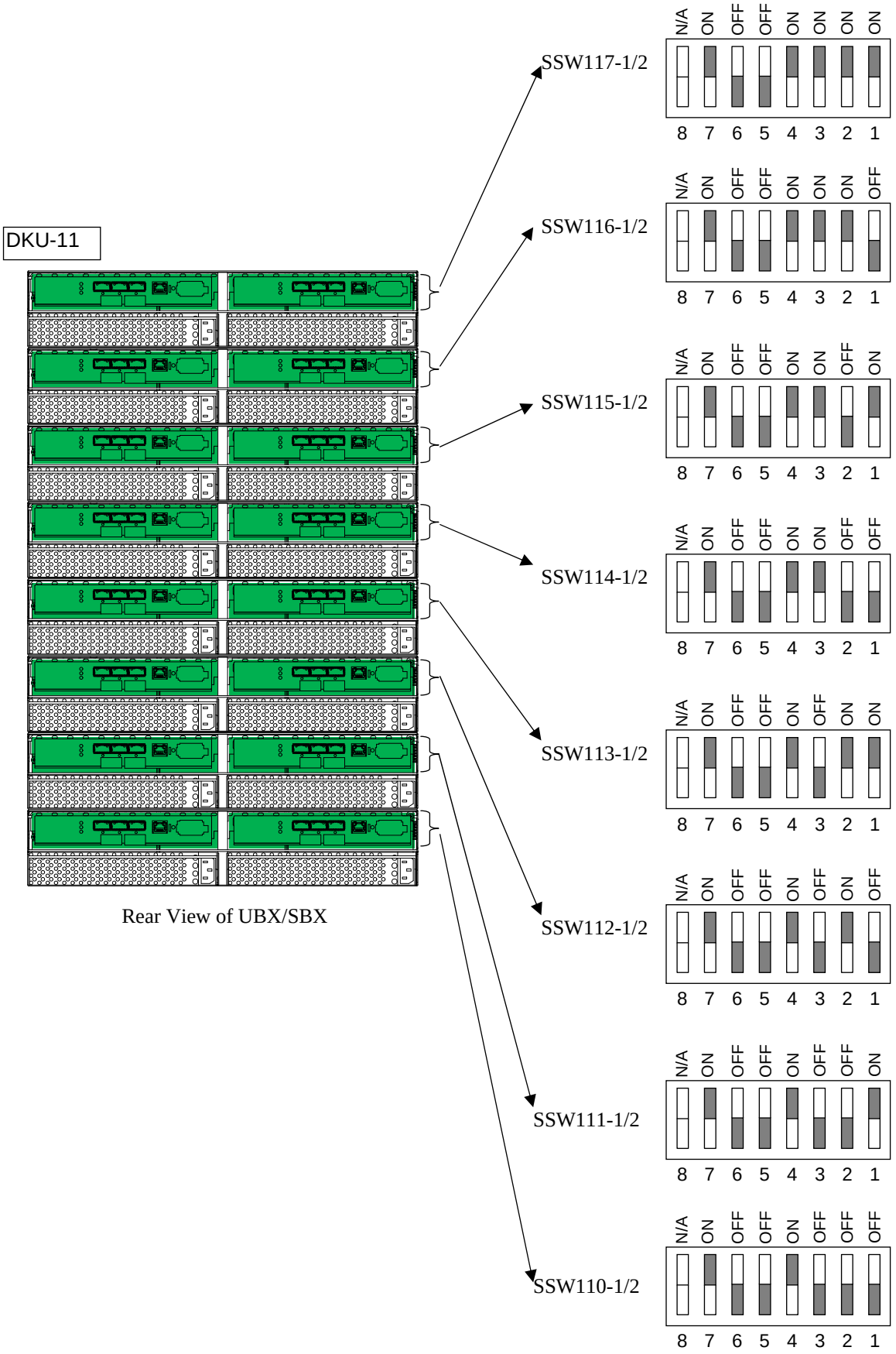


Fig. 6.1.2-9 Switch Setting of SSW (DKU-11)

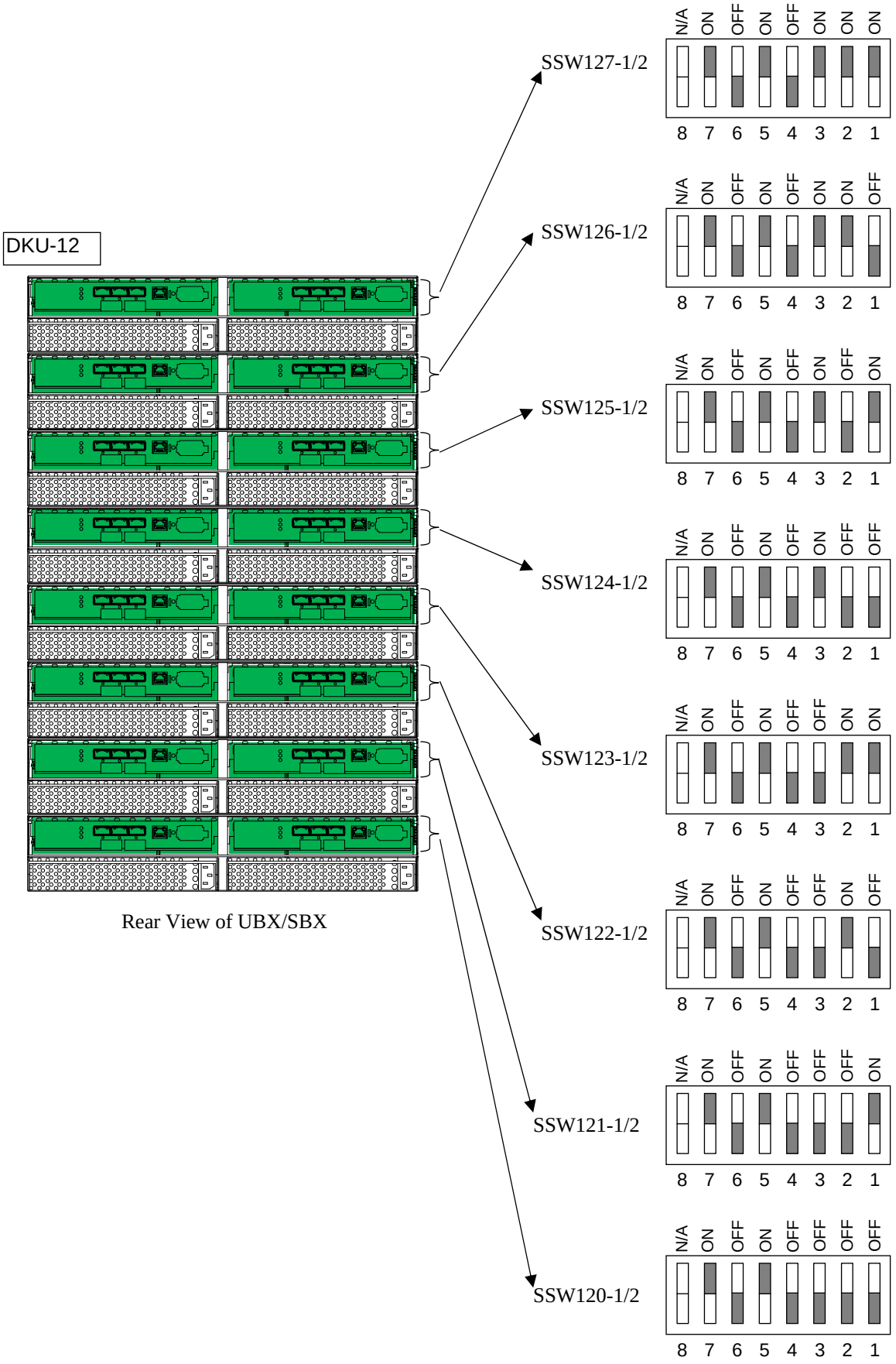


Fig. 6.1.2-10 Switch Setting of SSW (DKU-12)

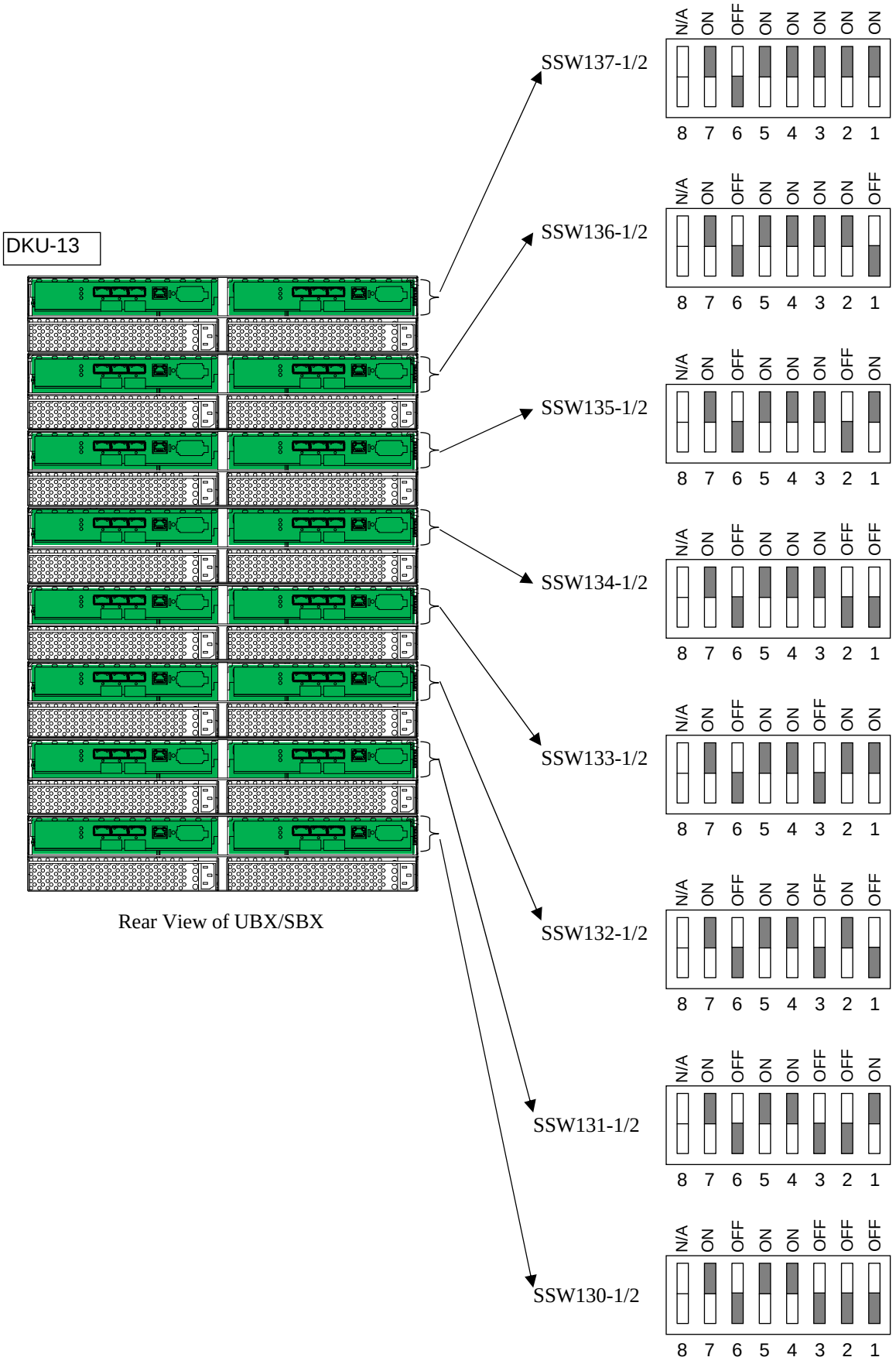


Fig. 6.1.2-11 Switch Setting of SSW (DKU-13)

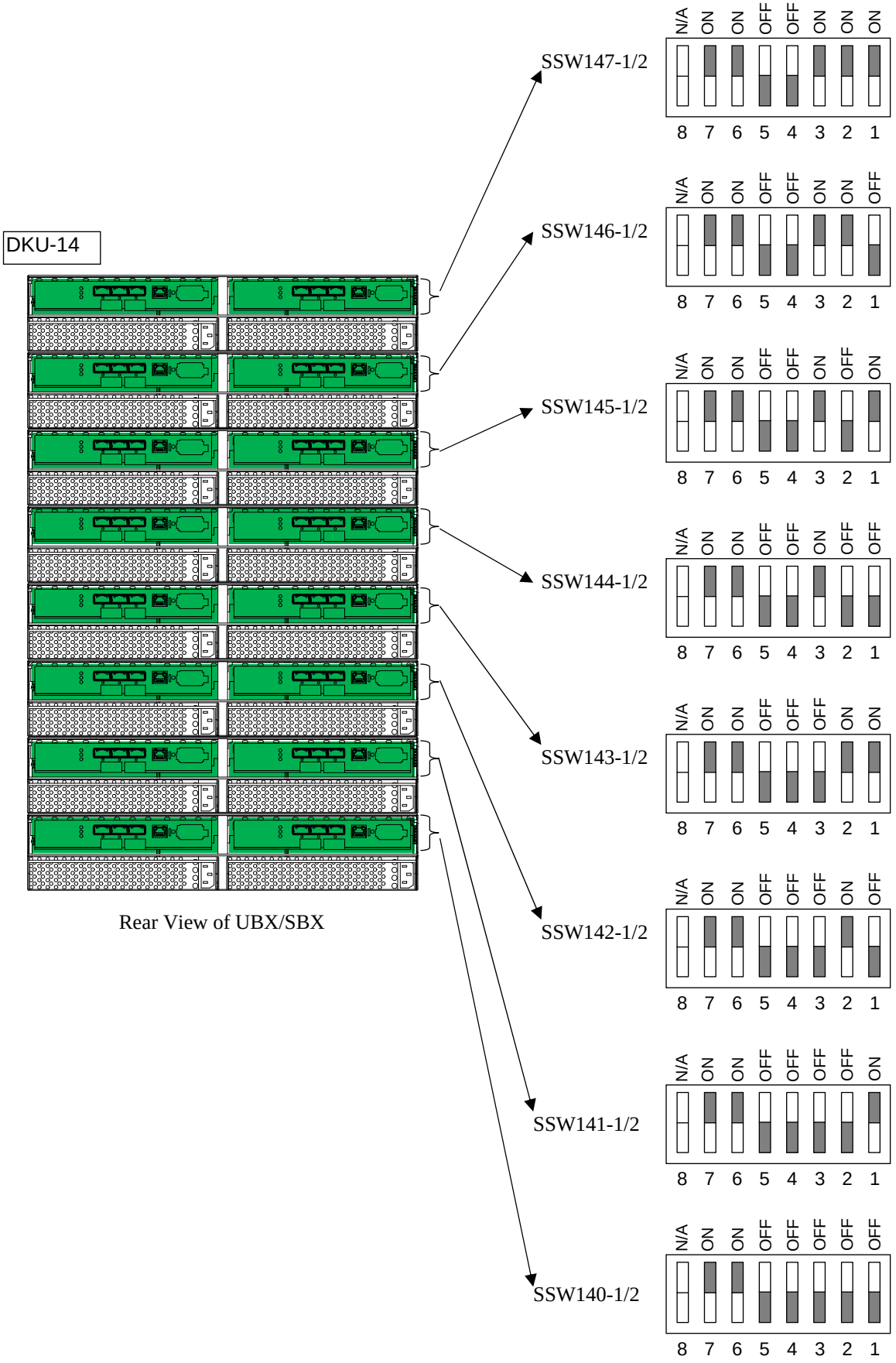


Fig. 6.1.2-12 Switch Setting of SSW (DKU-14)

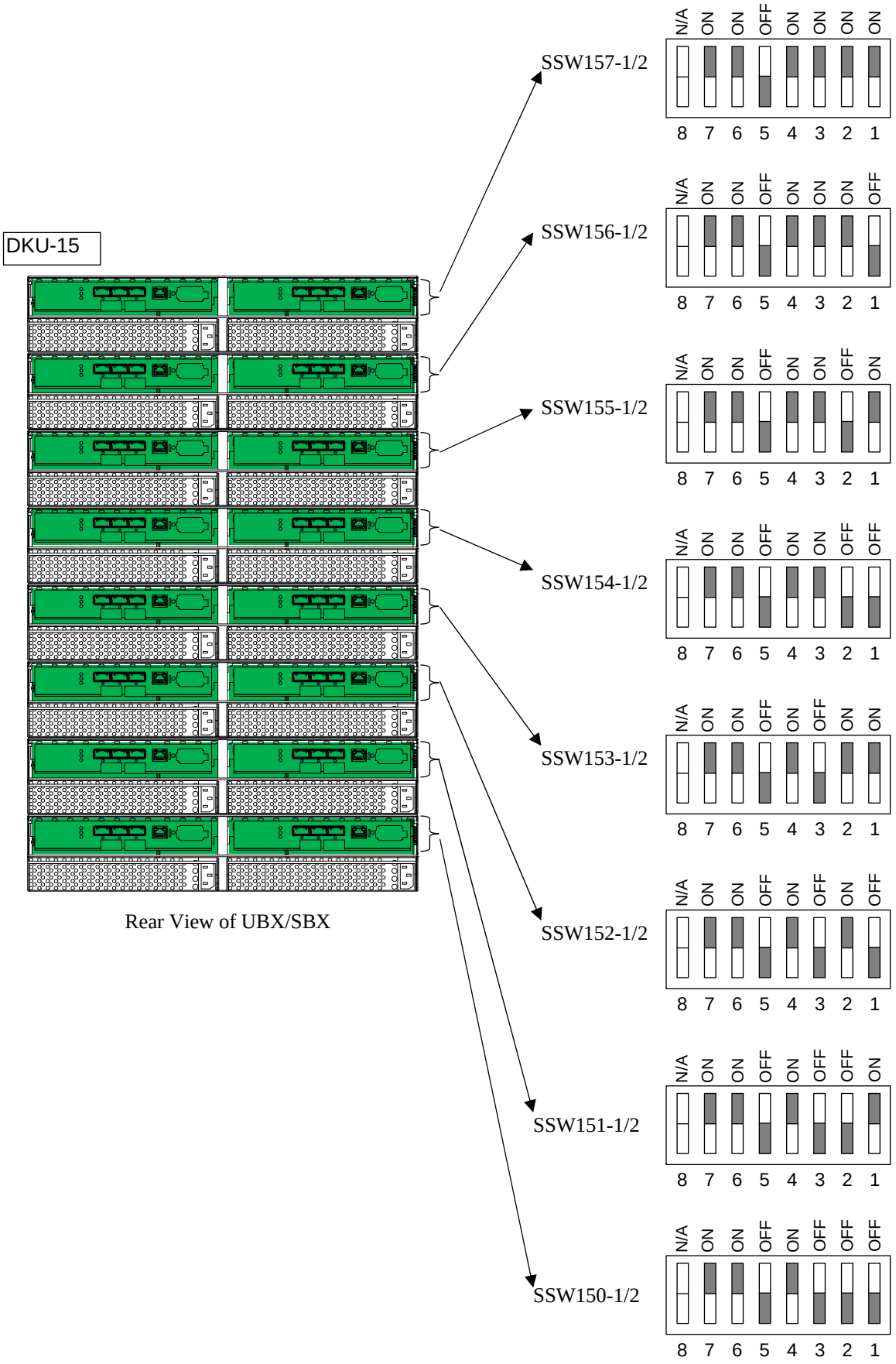
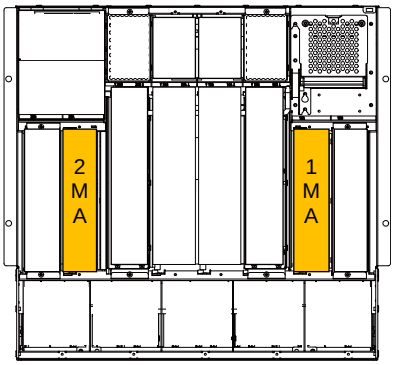


Fig. 6.1.2-13 Switch Setting of SSW (DKU-15)

[3] MPB

Table 6.1.3-1 Installation of Jumper in MPB

Function Name	Jumper No.	Settings	Remarks
MPB	CEDT	All PCBs corresponding to the cluster are set to CE mode. The jumper is installed only in BASIC PCB (MPB-1MA/2MA).	Maintenance Jumper
	CEMD		Maintenance Jumper



Front View of DKC-0

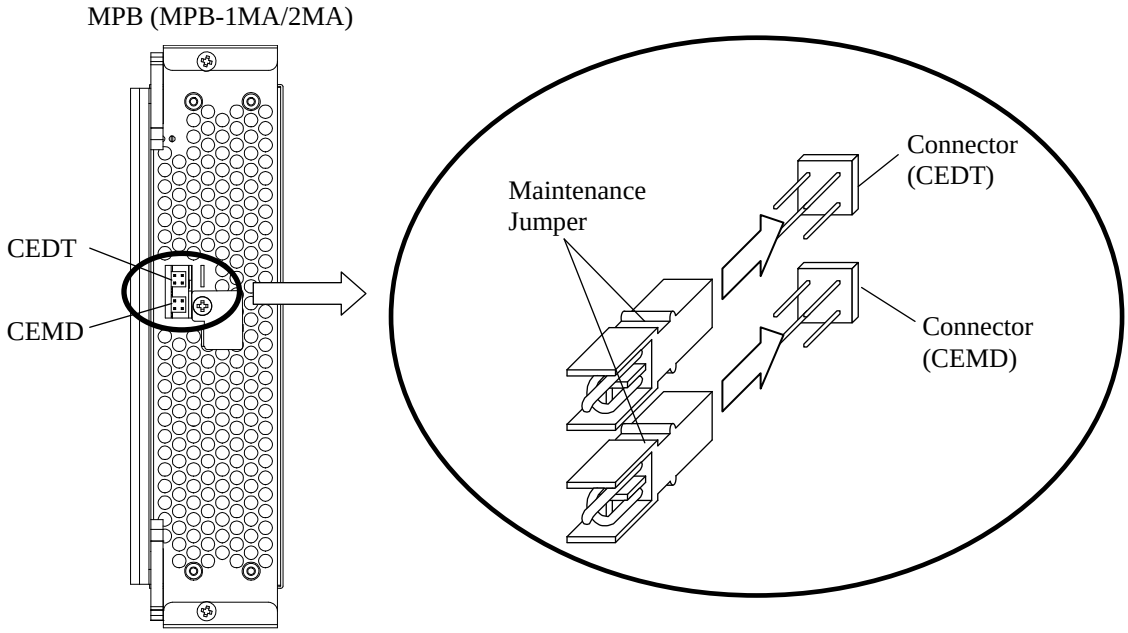
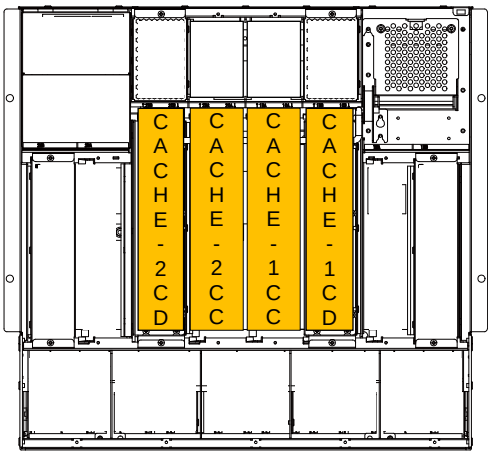


Fig. 6.1.3-1 Installation of Jumper in MPB

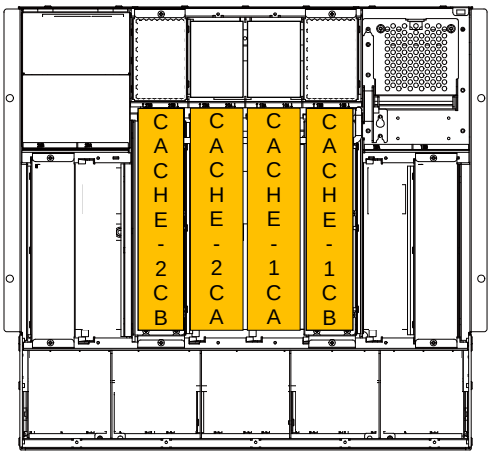
[4] CACHE

Table 6.1.4-1 Installation of Switch/Jumper in CACHE

Function Name	Switch/Jumper No.	Settings	Remarks
CACHE (New Type)	VOJP (Volatile Jumper) Switch	The cache data (control information or the like) is compulsorily made to volatilize by the PS ON/OFF operation.	Turn on the Switch 1 and 2. (Press to the left.)
CACHE (Old Type)	VOJP	The cache data (control information or the like) is compulsorily made to volatilize by the PS ON/OFF operation.	Insert the Maintenance Jumper.



Front View of DKC-1



Front View of DKC-0

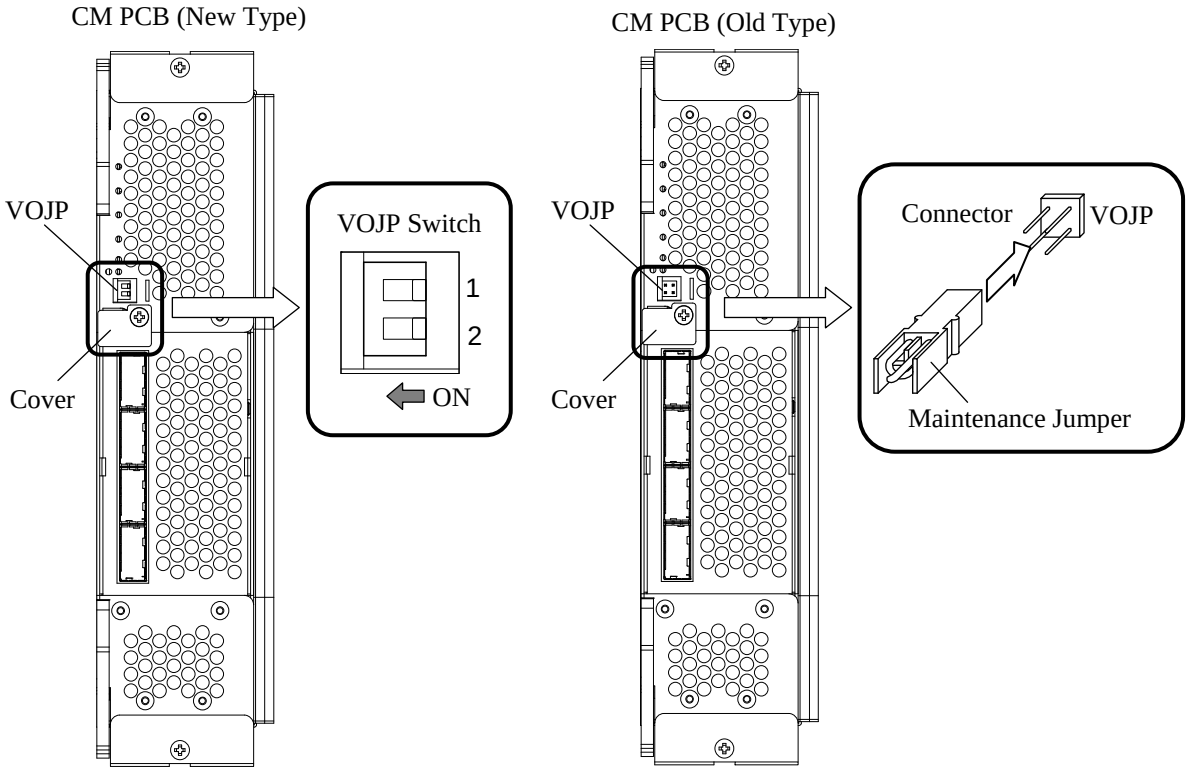
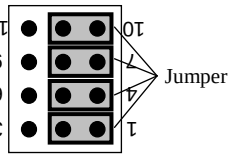
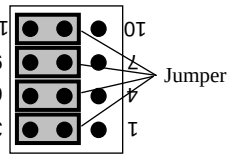
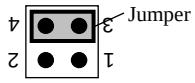
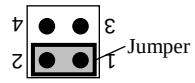
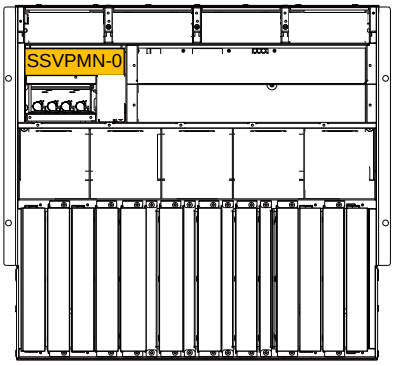


Fig. 6.1.4-1 Installation of Switch/Jumper in CACHE

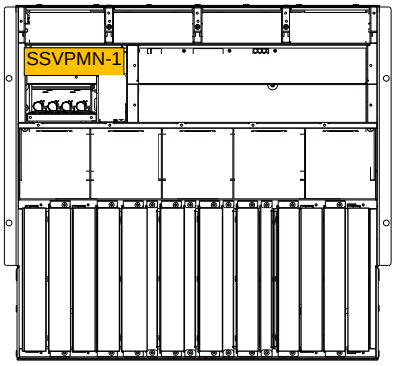
[5] SSVPMN

Table 6.1.5-1 Installation of Jumper in SSVPMN

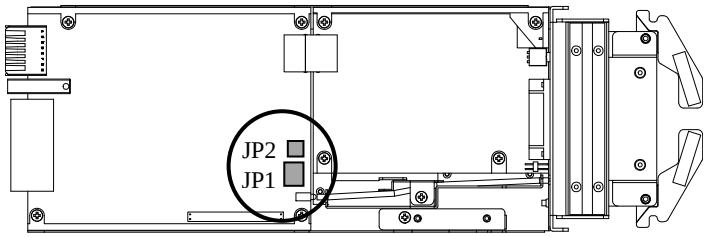
Function Name	Jumper No.	Settings	Remarks
SSVPMN	JP1 (MODULE ID)	Set the MODULE ID of the DKC equipped with SSVPMN. • MODULE0 ... SSVPMN-0 (DKC-0) Plug the jumper cap on #1, 4, 7, 10.	For SSVPMN-0 JP1 
		• MODULE1 ... SSVPMN-1 (DKC-1) Plug the jumper cap on #3, 6, 9, 12.	For SSVPMN-1 JP1 
	JP2 (AUTOPSON)	Power on the storage system by switching PS ON/PS OFF or PCI control after turn on the AC power. (Initial setting) Set only the SSVPMN-0 in the Jumper. (#3-4) No setting of SSVPMN-1 is needed.	Disable Setting JP2 
		The storage system is powered on automatically after turn on the AC power. Set only the SSVPMN-0 in the Jumper. (#1-2) No setting of SSVPMN-1 is needed.	Enable Setting JP2 



Rear View of DKC-0



Rear View of DKC-1



Top View of SSVPMN

Fig. 6.1.5-1 Installation of Jumper in SSVPMN

[6] SSW (FBX)

Table 6.1.6-1 Switch Setting of SSW

Function Name	Switch No.	Settings	Remarks
SSW	SW1, SW2, SW3	Sets the Box ID.	
	SW4, SW5, SW6	Sets the Chassis ID.	
	SW7	Sets the Module ID.	
	SW8	Not used	

NOTE: • Use something sharp (ex. a pen or a mini screwdriver etc.) when set the SSW switches.

• When the switch setting of SSW is wrong, execute the replace process of SSW and change the switch setting. The switch setting will not be effective unless the SSW is dismounted and mounted.

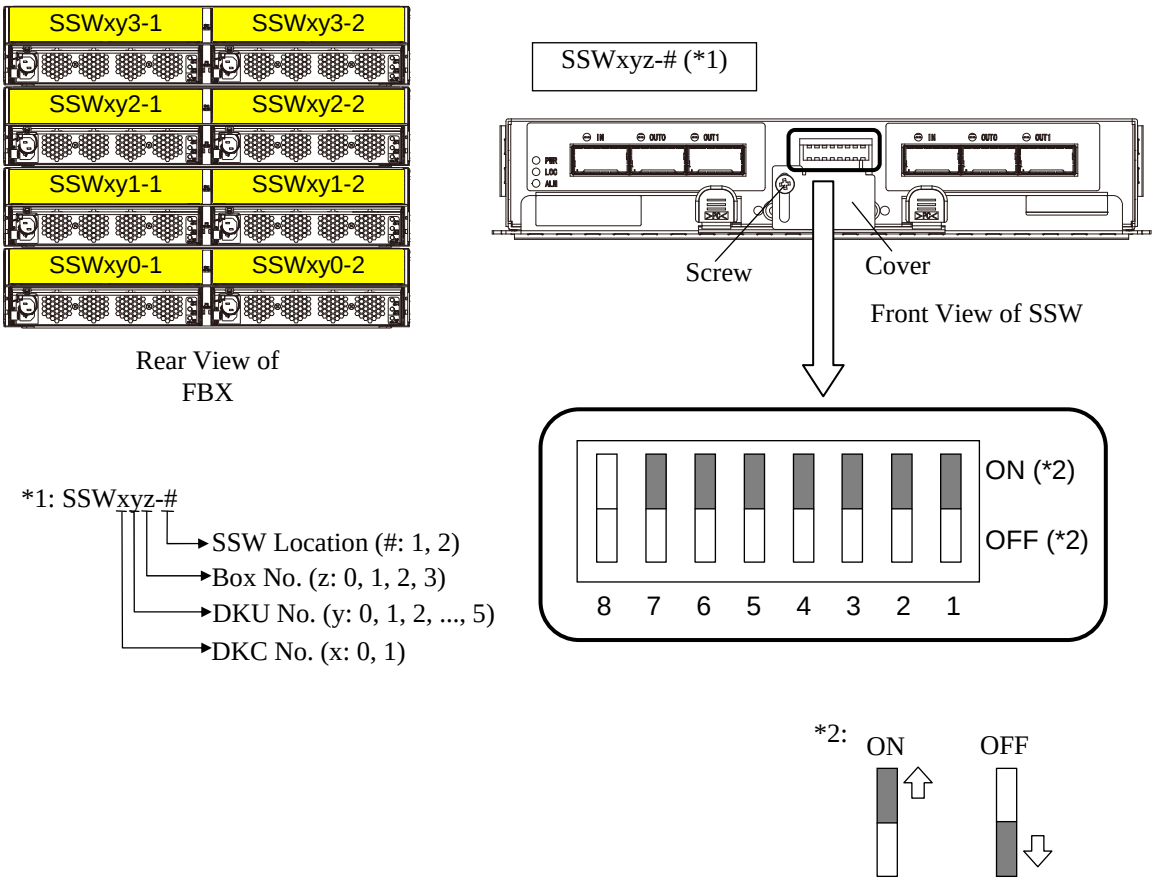


Fig. 6.1.6-1 Switch Setting of SSW

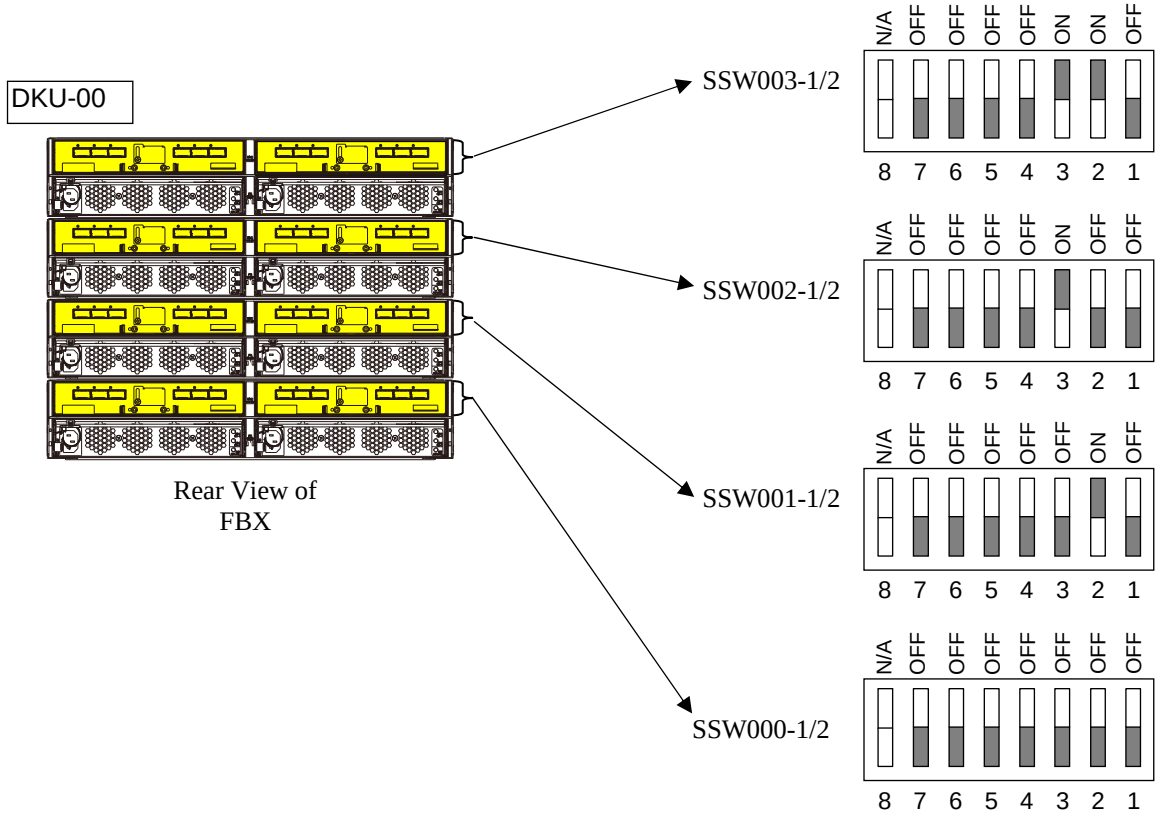


Fig. 6.1.6-2 Switch Setting of SSW (DKU-00)

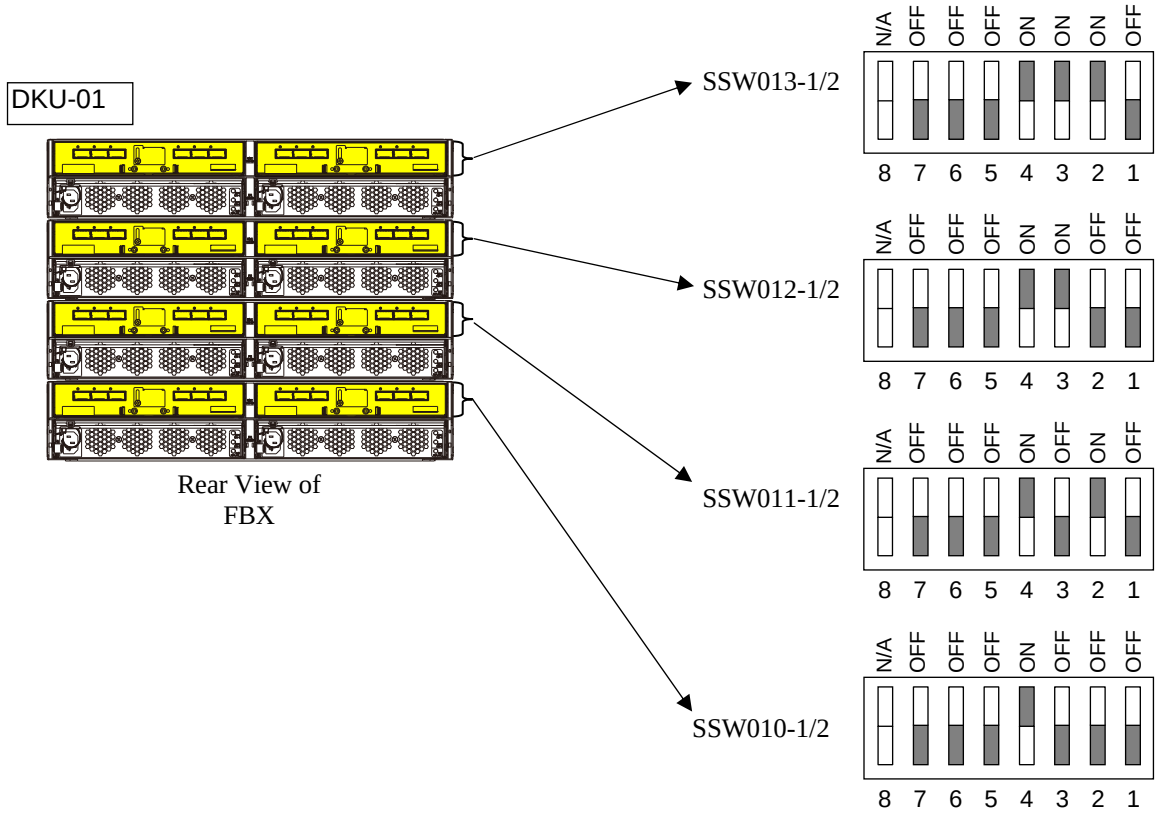


Fig. 6.1.6-3 Switch Setting of SSW (DKU-01)

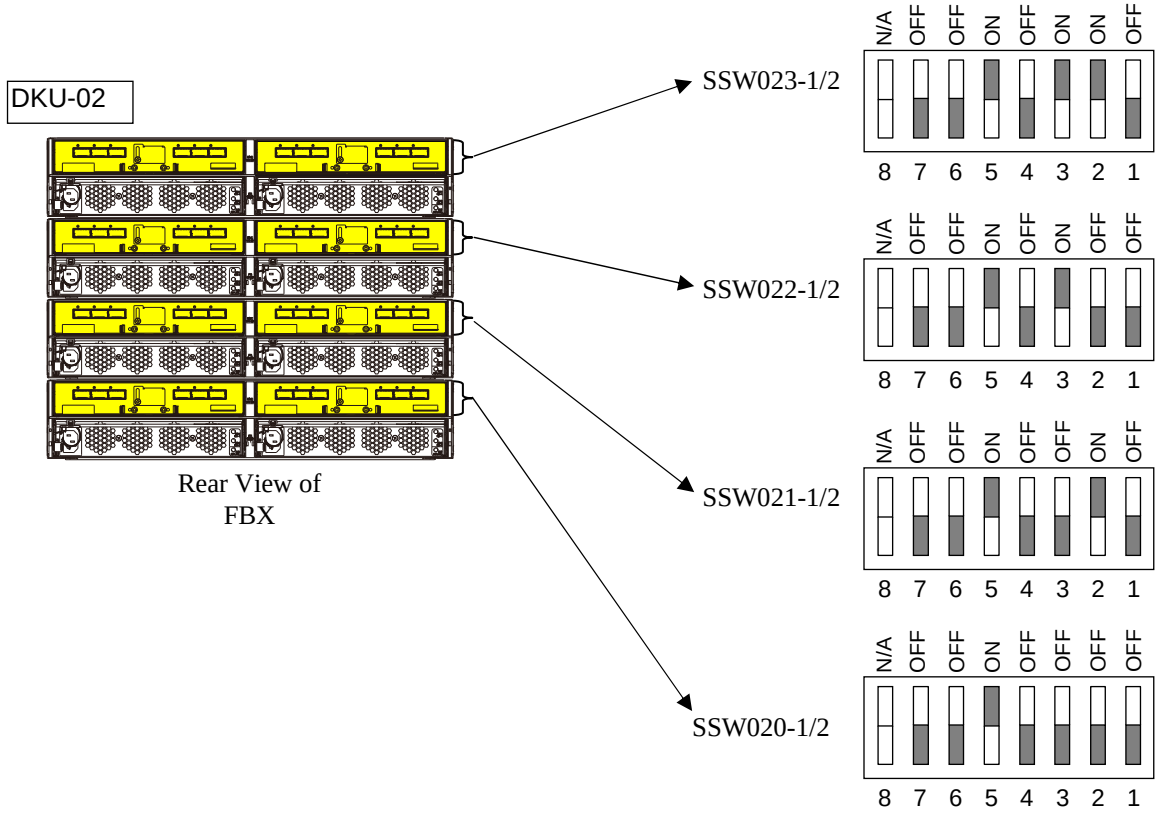


Fig. 6.1.6-4 Switch Setting of SSW (DKU-02)

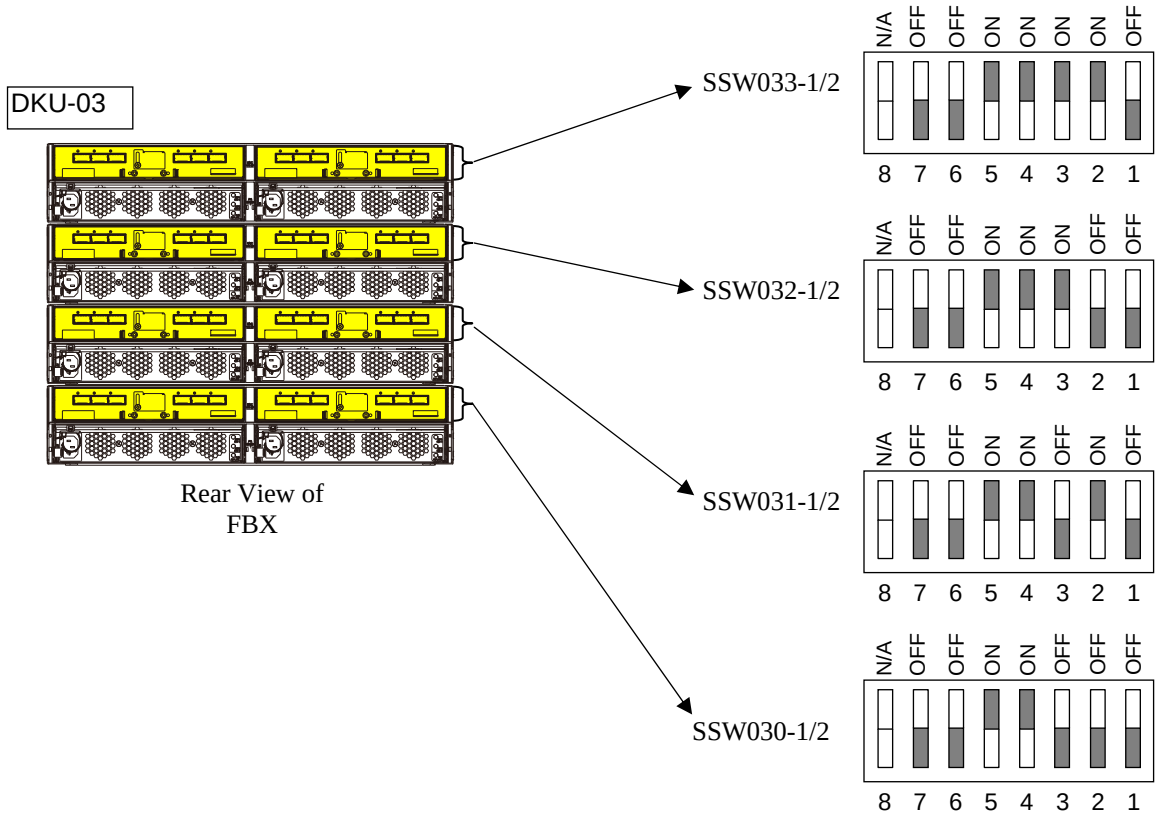


Fig. 6.1.6-5 Switch Setting of SSW (DKU-03)

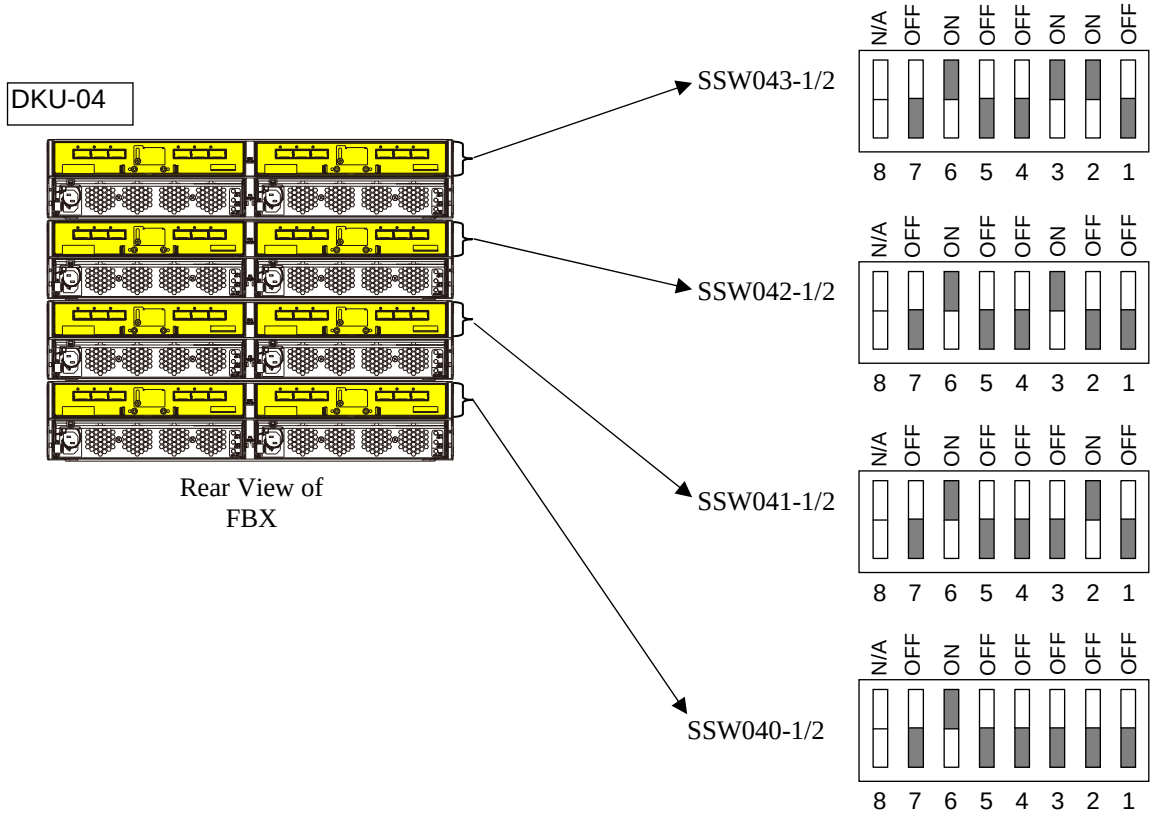


Fig. 6.1.6-6 Switch Setting of SSW (DKU-04)

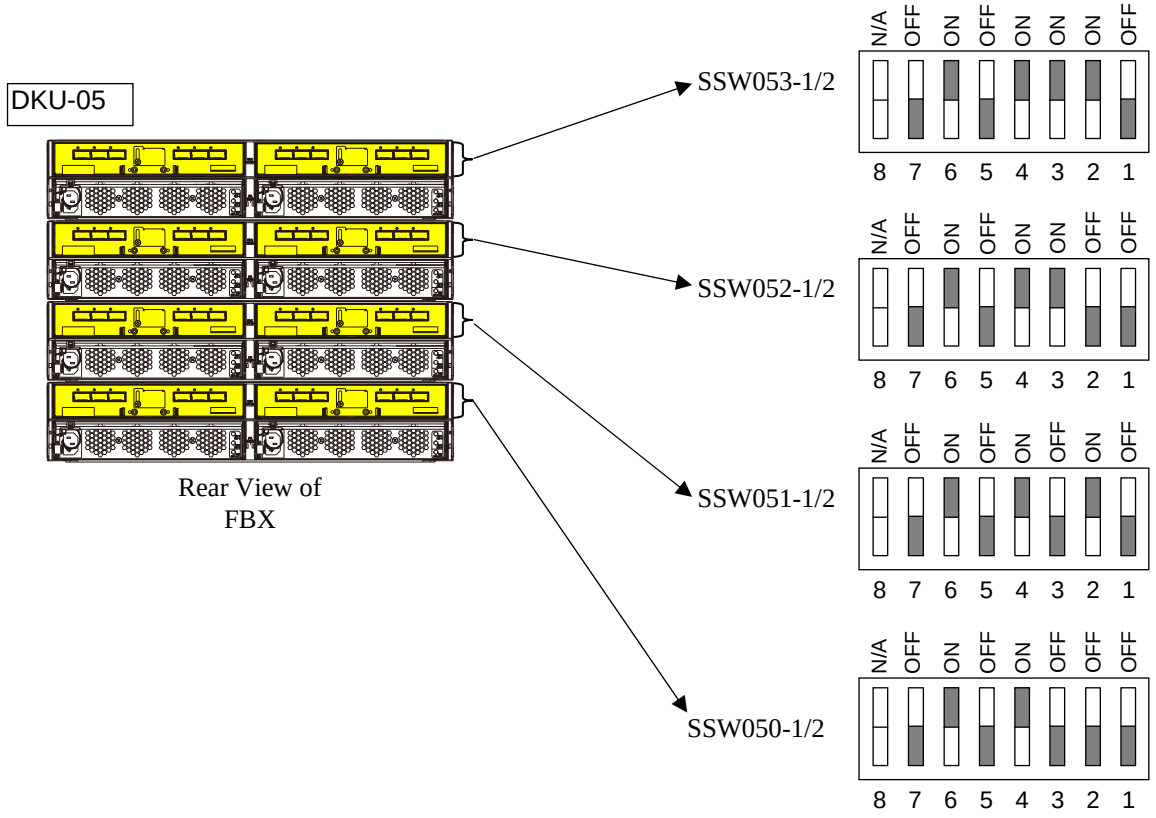


Fig. 6.1.6-7 Switch Setting of SSW (DKU-05)

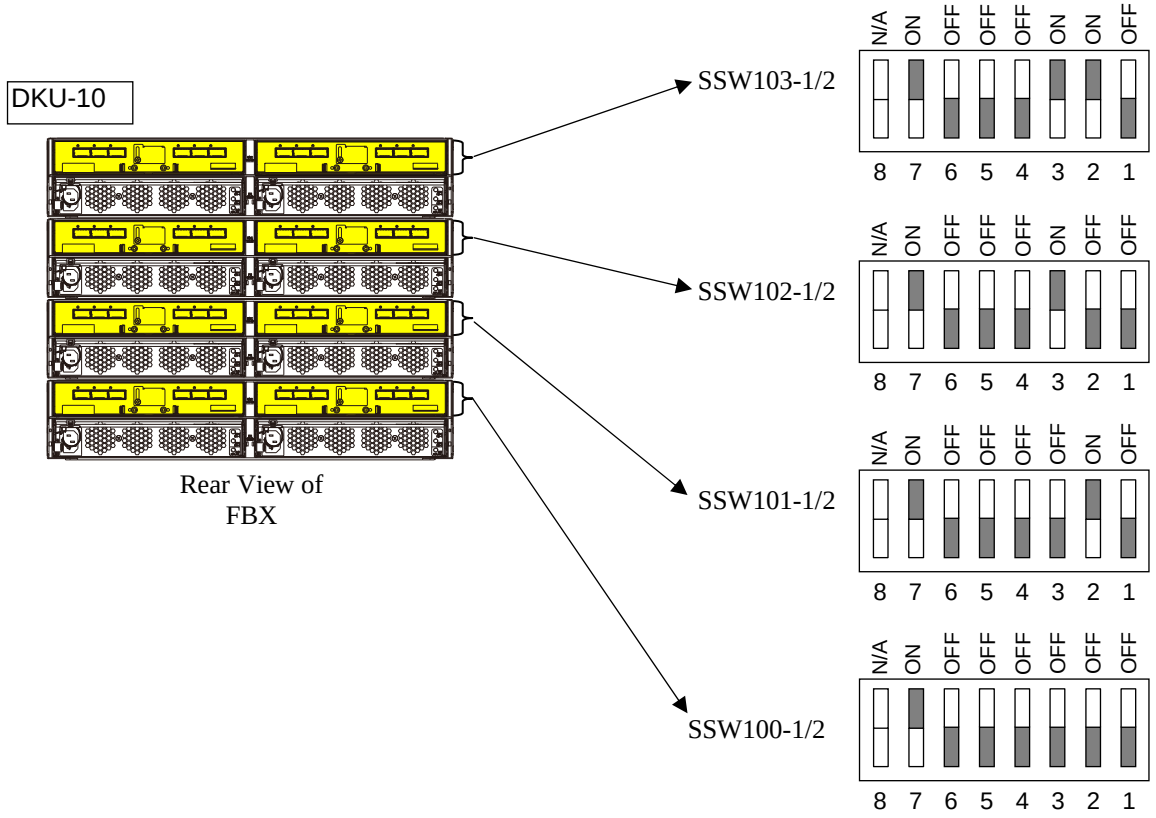


Fig. 6.1.6-8 Switch Setting of SSW (DKU-10)

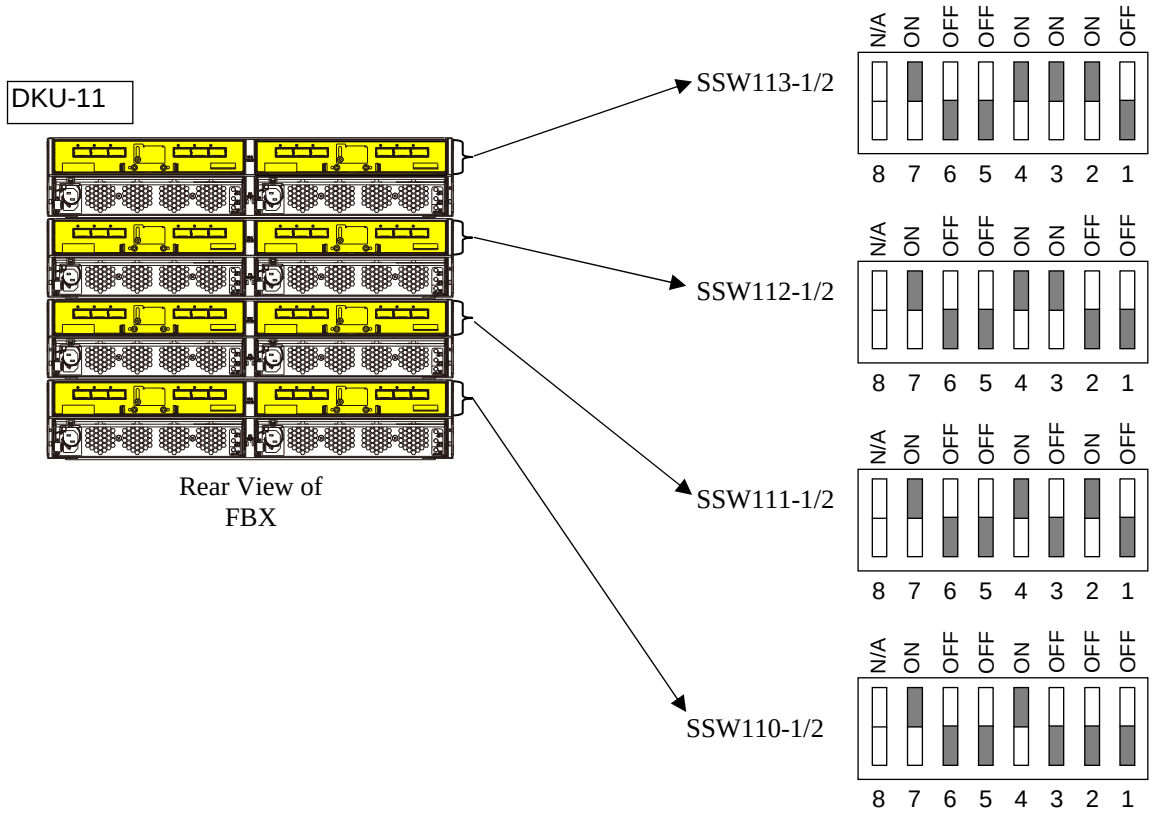


Fig. 6.1.6-9 Switch Setting of SSW (DKU-11)

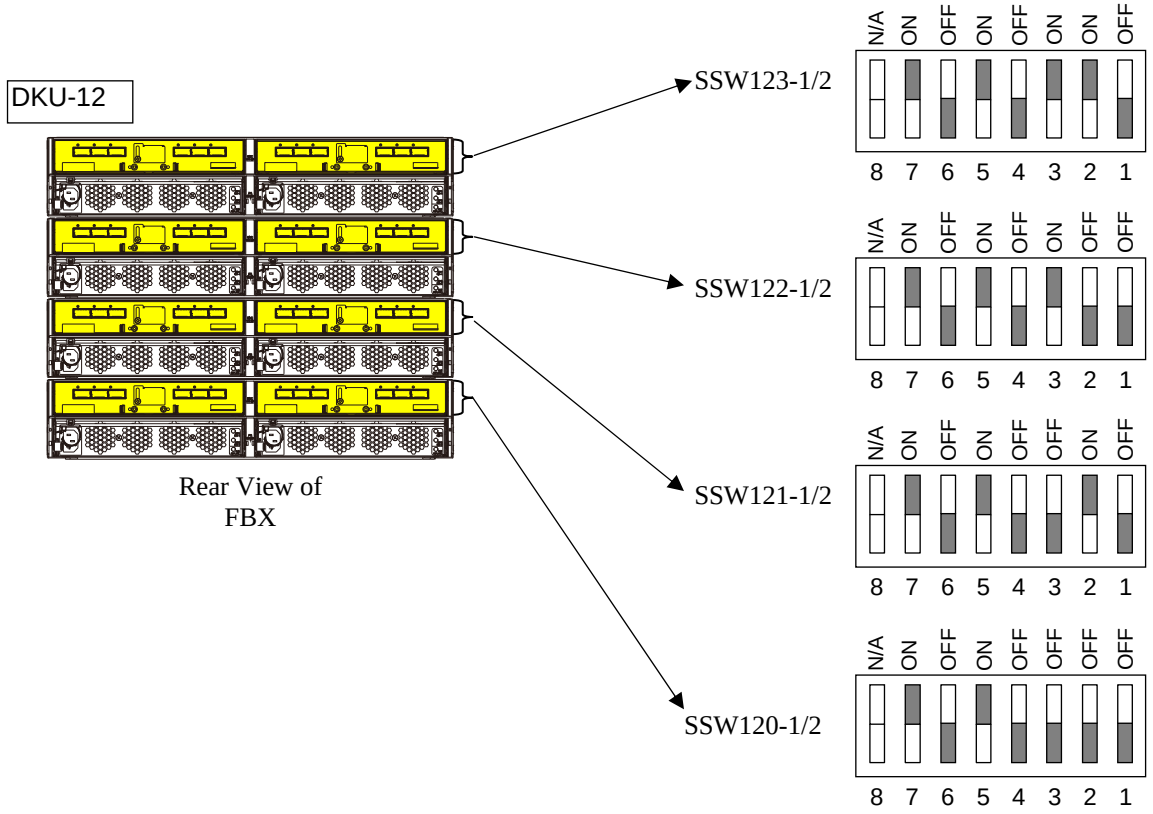


Fig. 6.1.6-10 Switch Setting of SSW (DKU-12)

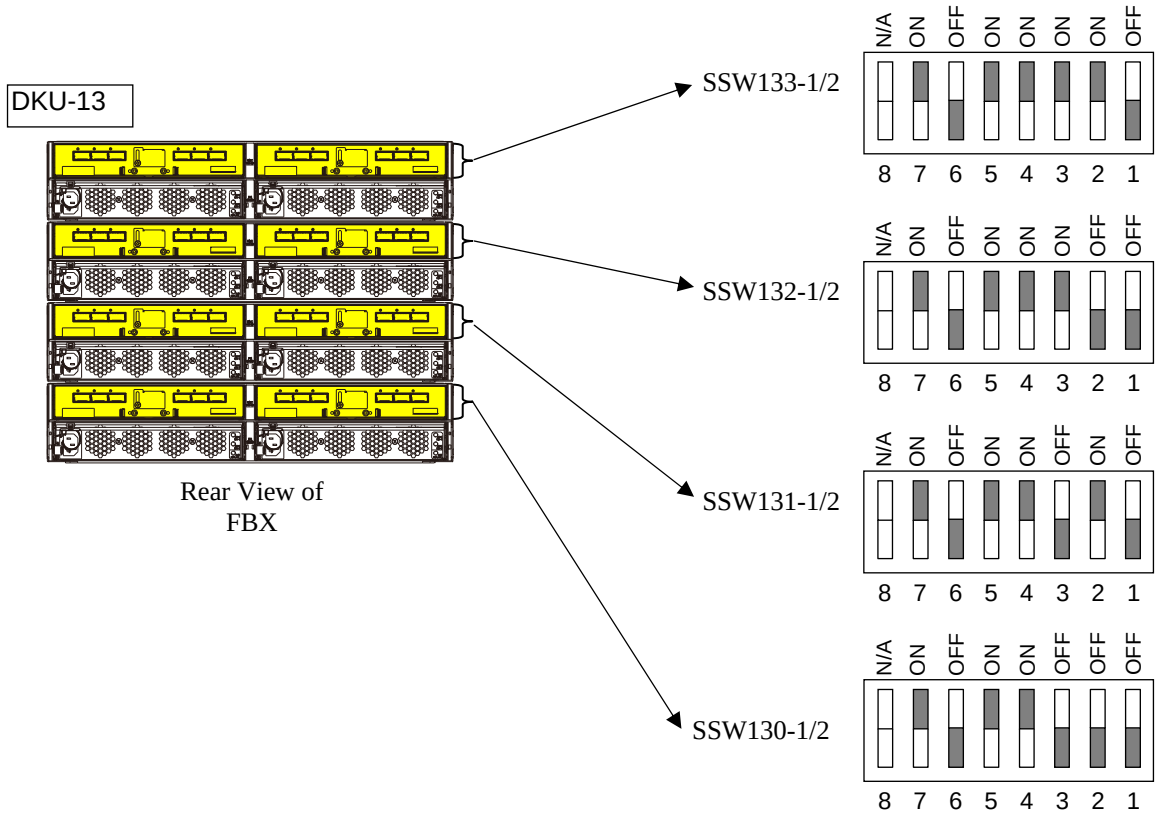


Fig. 6.1.6-11 Switch Setting of SSW (DKU-13)

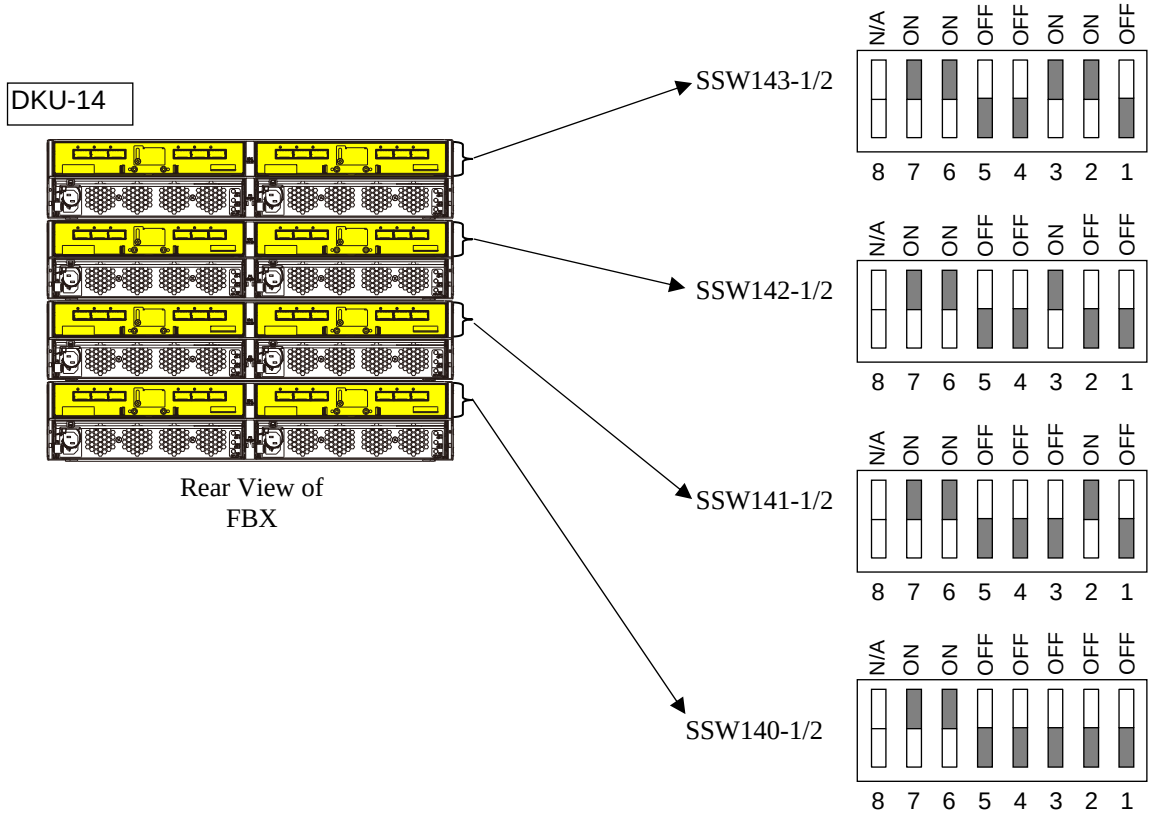


Fig. 6.1.6-12 Switch Setting of SSW (DKU-14)

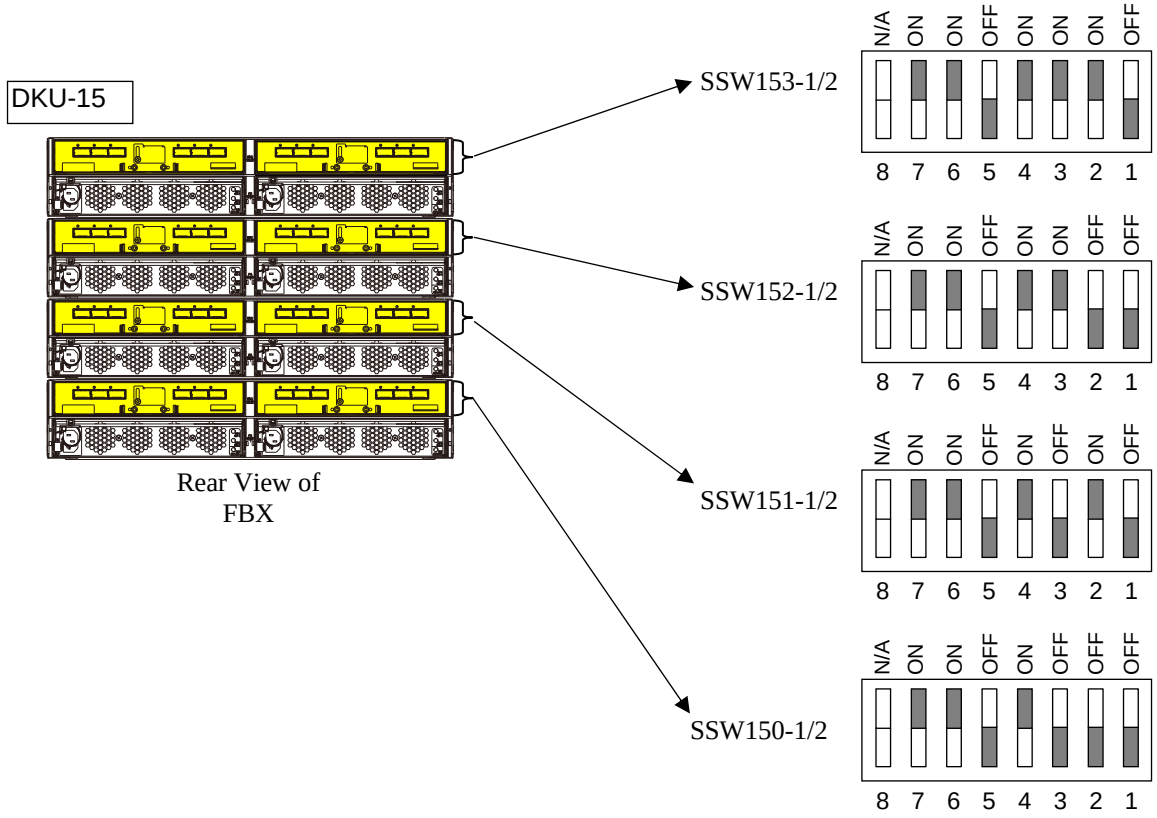


Fig. 6.1.6-13 Switch Setting of SSW (DKU-15)