

SONY®

INTEGRATED CONTROL PANEL

ICP-X7000

MKS-X7011

MKS-X7017

MKS-X7018

MKS-X7019

MKS-X7020

MKS-X7021

MKS-X7023

MKS-X7024

MKS-X7026

MKS-X7031TB

MKS-X7032

MKS-X7033

MKS-X7035

MKS-X7075

MKS-X2700

MKS-X7700

MKS-X7701

MKS-X7702

MKS-X7040

MKS-X7041

MKS-X7042

PWS-100SC1

PWS-110SC1

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

SERVICE MANUAL

1st Edition (Revised 2)

警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理などを行うと感電や火災、人身事故につながる可能性があります。

危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

AVERTISSEMENT

Ce manuel est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

Model Name	Serial No.
ICP-X7000 (SY)	
MKS-X7011 (SY)	10001 and Higher
MKS-X7017 (SY)	10001 and Higher
MKS-X7018 (SY)	10001 and Higher
MKS-X7019 (SY)	10001 and Higher
MKS-X7020 (SY)	10001 and Higher
MKS-X7021 (SY)	10001 and Higher
MKS-X7023 (SY)	10001 and Higher
MKS-X7024 (SY)	10001 and Higher
MKS-X7026 (SY)	10001 and Higher
MKS-X7031TB (SY)	10001 and Higher
MKS-X7032 (SY)	10001 and Higher
MKS-X7033 (SY)	10001 and Higher
MKS-X7035 (SY)	10001 and Higher
MKS-X7075 (SY)	10001 and Higher
MKS-X2700 (SY)	10001 and Higher
MKS-X2700 (CN)	50001 and Higher
MKS-X7700 (SY)	10001 and Higher
MKS-X7700 (CN)	50001 and Higher
MKS-X7701 (SY)	10001 and Higher
MKS-X7702 (SY)	10001 and Higher
MKS-X7040 (WW)	10001 and Higher
MKS-X7041 (WW)	10001 and Higher
MKS-X7042 (WW)	10001 and Higher
PWS-100SC1 (SY)	140001 and Higher
PWS-100SC1 (CN)	540001 and Higher
PWS-110SC1 (SY)	110001 and Higher
PWS-110SC1 (CN)	510001 and Higher

For MKS-X2700/MKS-X7700/PWS-100SC1/ PWS-110SC1

安全のために、周辺機器を接続する際は、過大電圧を持つ可能性があるコネクタを以下のポートに接続しないでください。

- : MKS-X2700: MVS, UTIL コネクタ
- : MKS-X7700: MVS, UTIL コネクタ
- : PWS-100SC1: LAN コネクタ
- : PWS-110SC1: LAN コネクタ

上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following ports.

- : MKS-X2700: MVS, UTIL connectors
- : MKS-X7700: MVS, UTIL connectors
- : PWS-100SC1: LAN connector
- : PWS-110SC1: LAN connector

Follow the instructions for the above ports.

For ICP-X7000/MKS-X7011/MKS-X7075

CAUTION for LAN port

For safety reason, do not connect the LAN port to any network devices that might have excessive voltage. The LAN port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.

For MKS-X2700/MKS-X77000

CAUTION
DOUBLE POLE/NEUTRAL FUSING

For MKS-X7011/PWS-100SC1/PWS-110SC1

注意

指定以外の電池に交換すると、破裂する危険があります。
必ず指定の電池に交換してください。
使用済みの電池は、国または地域の法令に従って処理してください。

FÖRSIKTIGHET!

Fara för explosion vid felaktigt placerat batteri.
Byt endast mot samma eller likvärdig typ av batteri, enligt tillverkarens rekommendationer.
När du kasserar batteriet ska du följa rådande lagar för regionen eller landet.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

PAS PÅ

Fare for explosion, hvis batteriet ikke udskiftes korrekt.
Udskift kun med et batteri af samme eller tilsvarende type, som er anbefalet af fabrikanten.
Når du bortskaffer batteriet, skal du følge lovgivningen i det pågældende område eller land.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

HUOMIO

Räjähdyksvaara, jos akku vaihdetaan virheellisesti.
Vaihda vain samanlaiseen tai vastaavantyyppiseen, valmistajan suosittelemaan akkuun.
Noudata akun hävittämisesssä oman maasi tai alueesi lakeja.

VORSICHT

Explosionsgefahr bei Verwendung falscher Batterien.
Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.
Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

FORSIKTIG

Ekspløsjonsfare hvis feil type batteri settes i.
Bytt ut kun med samme type eller tilsvarende anbefalt av produsenten.
Kasser batteriet i henhold til gjeldende avfallsregler.

注意

如果更换的电池不正确，就会有爆炸的危险。
只更换同一类型或制造商推荐的电池型号。
处理电池时，必须遵守相关地区或国家的法律。

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Manual Structure

Purpose of this manual

This manual is the Service Manual of following models.

- Integrated Control Panel ICP-X7000 and the optional units
- MKS-X2700, MKS-X7700 and the optional units
- Switcher Control Station PWS-100SC1/PWS-110SC1

This manual describes the information items that premise the service based on the block-level such as service overview, replacement of main parts, spare parts, block diagrams, frame wiring etc. assuming use of system and service engineers.

Related manuals

The following manuals are prepared for ICP-X7000 and the optional boards and units.

- Operation Manual (Supplied with ICP-X7000)
This manual describes the overview, system connection example and specifications of options of ICP-X7000.
- Operation Manual (Supplied with PWS-100SC1/PWS-110SC1)
This manual describes the application and operation of PWS-100SC1/PWS-110SC1.
- User's Guide (Supplied with ICP-X7000)
This manual describes the application and operation of ICP-X7000.
- Installation Manual (Supplied with ICP-X7000)
This manual is intended for use by trained system and service engineers, and describes the information on installing the ICP-X7000.
- Factory Service Manual (Available on request)
Parts list, circuit diagram, and board layouts of the unit are included to provide information required for part-level service.
If this manual is required, please contact your local Sony Sales Office/Service Center.

Trademarks

Trademarks and registered trademarks used in this manual are as follows.

- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

Other system names and product names written in this manual are usually registered trademarks or trademarks of respective development manufacturers.

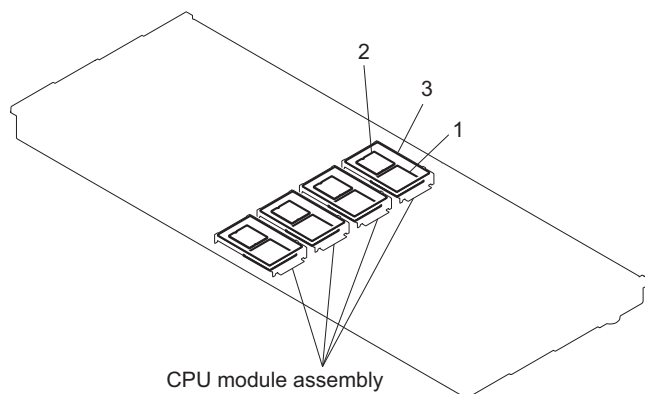
Section 1

Service Overview

1-1. ICP-X7000

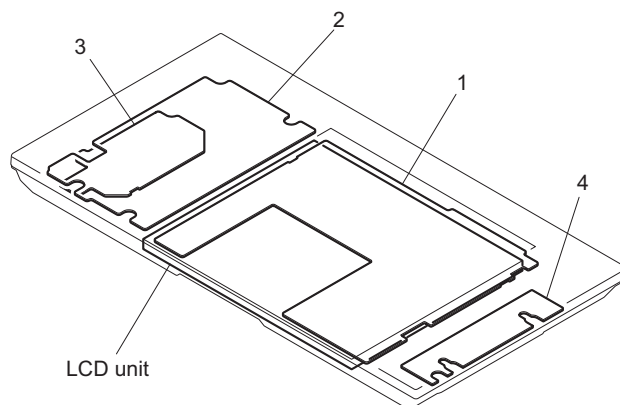
1-1-1. Location of Main Parts and Boards

ICP-X7000



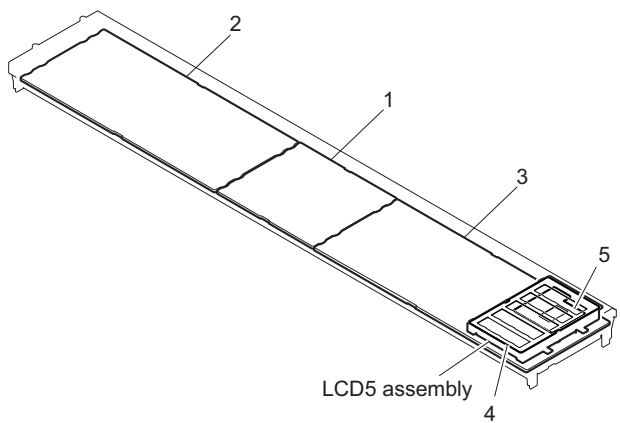
Location No.	Board name	Circuit function
1	PD-123	PoE I/F Board
2	MPU-163	MPU Board
3	PIF-53	PANEL I/F Board

MKS-X7011



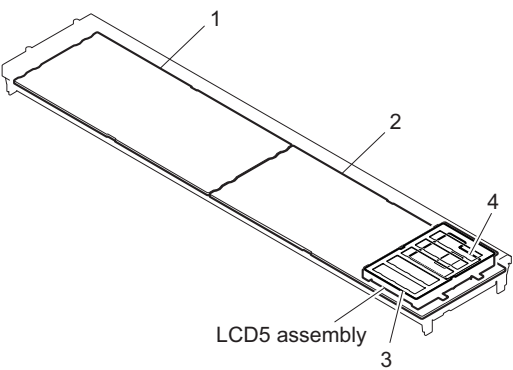
Location No.	Board name	Circuit function
1	CA-91	MENU CPU Board
2	KY-723	MENU SW Board
3	CN-3730	Connector Board
4	VR-349	Volume Board

MKS-X7017



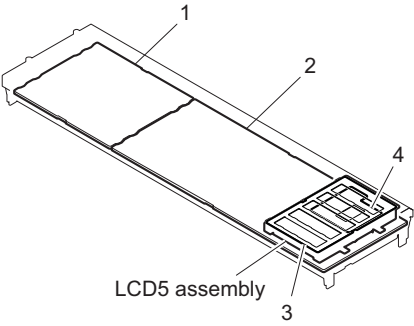
Location No.	Board name	Circuit function
1	KY-724	8 XPT Board
2	KY-725	16 XPT Board
3	KY-726	12 XPT Re-entry Board
4	SW-1648	LCD Switch Board
5	CN-3734	LCD Connector Board

MKS-X7018



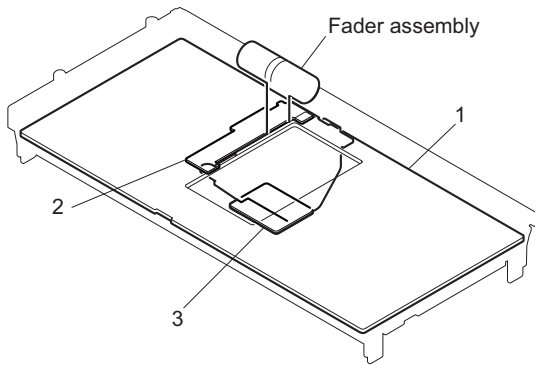
Location No.	Board name	Circuit function
1	KY-725	16 XPT Board
2	KY-726	12 XPT Re-entry Board
3	SW-1648	LCD Switch Board
4	CN-3734	LCD Connector Board

MKS-X7019



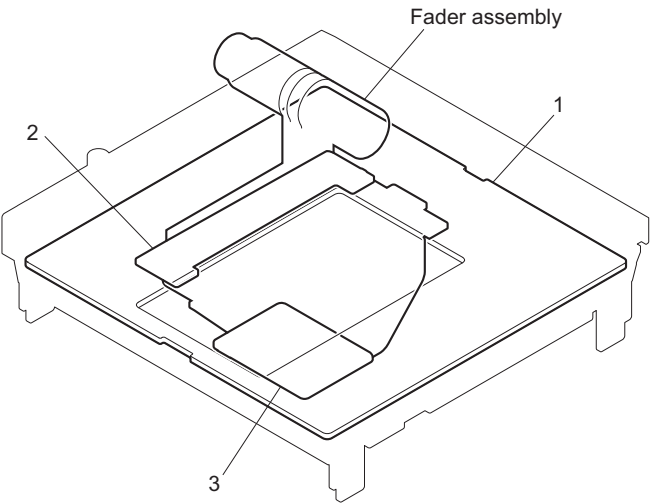
Location No.	Board name	Circuit function
1	KY-724	8 XPT Board
2	KY-726	12 XPT Re-entry Board
3	SW-1648	LCD Switch Board
4	CN-3734	LCD Connector Board

MKS-X7020



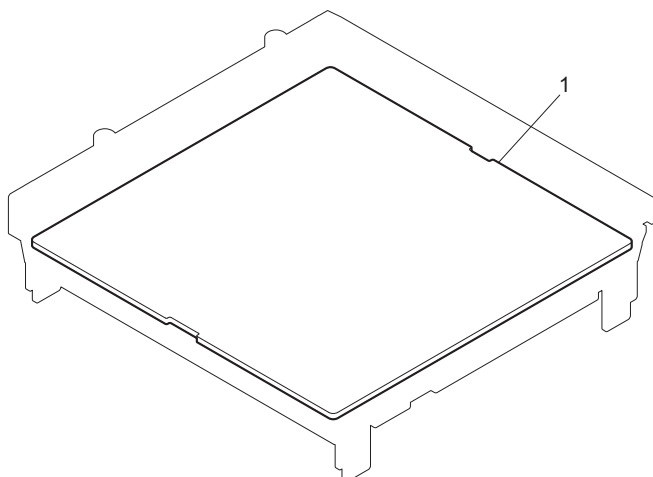
Location No.	Board name	Circuit function
1	KY-728	TRANSITION Board
2	LE-401	Bar Element Board
3	CN-3728	Encoder Board

MKS-X7021



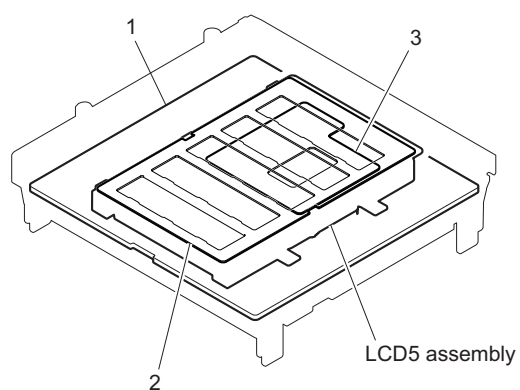
Location No.	Board name	Circuit function
1	KY-755	TRANSITION Board
2	LE-401	Bar Element Board
3	CN-3817	Split Fader Encoder Board
4	CN-3818	Split Detect Board

MKS-X7023



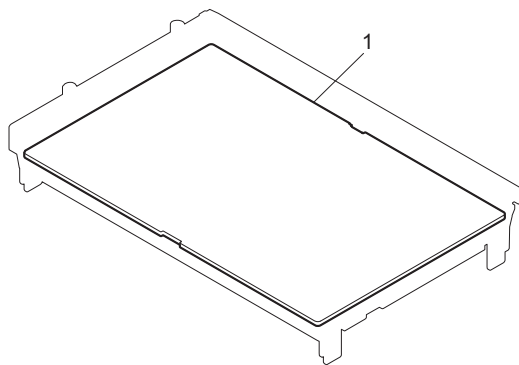
Location No.	Board name	Circuit function
1	KY-756	TRANSITION Board

MKS-X7024



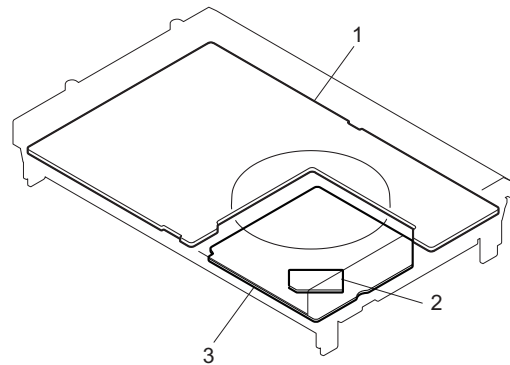
Location No.	Board name	Circuit function
1	KY-727	FLEX PAD Board
2	SW-1648	LCD Switch Board
3	CN-3734	LCD Connector Board

MKS-X7026



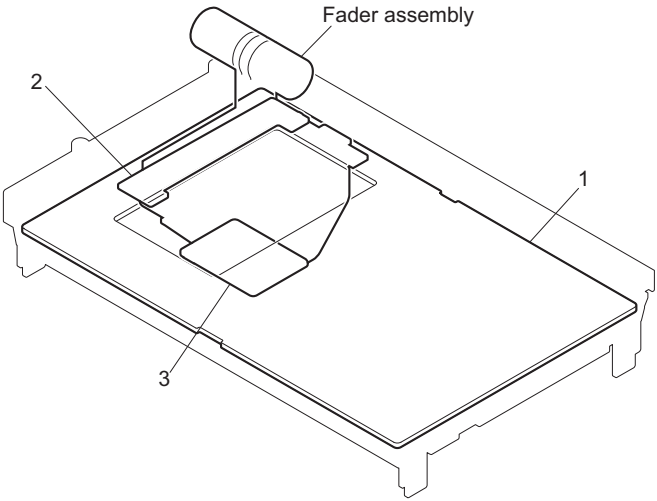
Location No.	Board name	Circuit function
1	KY-733	10-Key Board

MKS-X7031TB



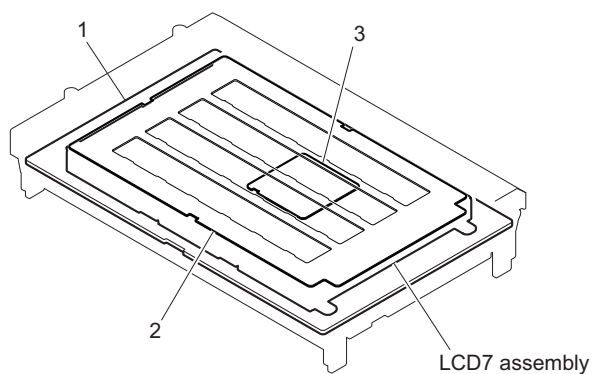
Location No.	Board name	Circuit function
1	KY-731	Track Ball Board
2	VR-356	X-Y Encoder Board
3	VR-357	Z Encoder Board

MKS-X7032



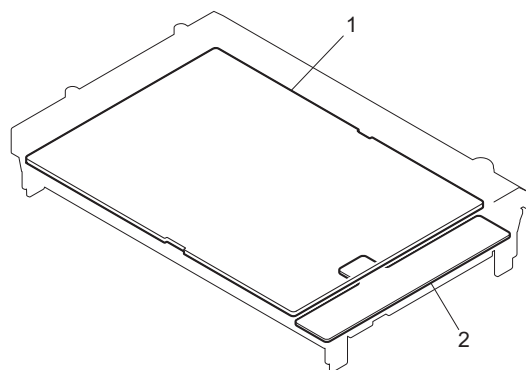
Location No.	Board name	Circuit function
1	KY-757	TRANSITION Board
2	LE-401	Bar Element Board
3	CN-3728	Encoder Board

MKS-X7033



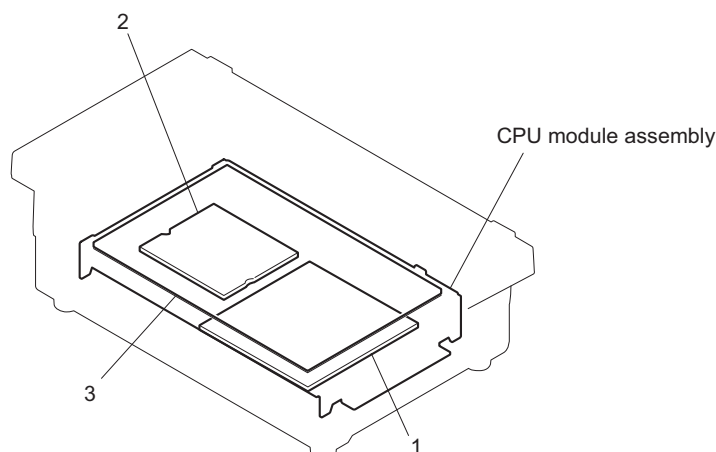
Location No.	Board name	Circuit function
1	KY-729	Shot Box Board
2	SW-1649	LCD Switch Board
3	CN-3735	LCD Connector Board

MKS-X7035



Location No.	Board name	Circuit function
1	KY-732	Key Control Board
2	VR-358	Volume Board

MKS-X7075



Location No.	Board name	Circuit function
1	PD-123	PoE I/F Board
2	MPU-163	MPU Board
3	PIF-53	PANEL I/F Board

1-1-2. Service Tools

Part number	Tool name	Use
3-179-054-02	Key-top Pull-out Tool	For replacing the labels on the key-top (Accessory)
—	Hexagonal Wrench	For adjusting the torque of the fader assembly (Accessory)

1-1-3. Circuit Protection Parts

Circuit Protection Element

This unit is equipped with positive-characteristic thermistors (power thermistors) as circuit protection elements.

The positive-characteristic thermistor limits the electric current flowing through the circuit as the internal resistance increases when an excessive current flows or when the ambient temperature increases.

If the positive-characteristic thermistor works, turn off the main power of the unit and inspect the internal circuit of the unit. After the cause of the fault is eliminated and the positive-characteristic thermistor is cooled down, turn on the main power again. The unit works normally. It takes about one minute to cool down the positive-characteristic thermistor after the main power is turned off.

Model name	Board name	Ref. No.	Address	Part name	Part No.
MKS-X7011	CA-91	TH001	H-4	Thermistor	△1-802-108-11
		TH002	H-2	Thermistor	△1-802-108-11

Replacing Fuses and IC Links

WARNING

Fuses and IC links are essential parts for safe operation. Be sure to use the parts specified in this manual.

Replacing any fuse or IC link with an unspecified one may cause fire or electric shock.

CAUTION

Replacing any fuse or IC link is replaced while power is supplied to the unit may cause electric shock. Before replacing the fuses or IC links, not only turn off the POWER switch but also disconnect the cable that is connected to the AC IN connector.

This unit is equipped with fuses and IC links. The fuses and IC links blow if overcurrent flows in the unit due to an abnormality. In that case, turn off the power of the unit, inspect inside of the unit, and then remove the cause of the overcurrent. After that, replace the defective parts.

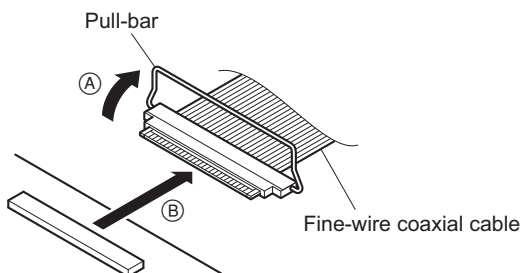
Model name	Board name	Ref. No.	Address	Part name	Part No.
ICP-X7000 MKS-7075	PD-123	F001	A-1 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F002	A-1 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F003	A-1 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-7011	CA-91	F001	G-3 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
	CN-3730	F001	C-2 (Side B)	Fuse (5 A/125 V)	△1-533-627-21

1-1-4. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

- Be very careful when handling the fine-wire coaxial cable so that fine wires are not disconnected.
- When disconnecting the fine-wire coaxial cable, be sure to hold the connector. Do not attempt to pull the cable.
- Check that the contact surface of the fine-wire coaxial cable connector is free from dirt or dust.

Disconnecting



Procedure

1. Raise the pull-bar in the direction of arrow A to unlock it, and then disconnect the fine-wire coaxial cable in the direction of arrow B.

Connecting

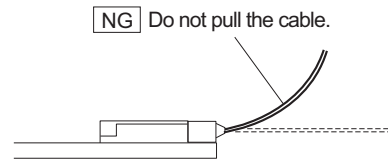
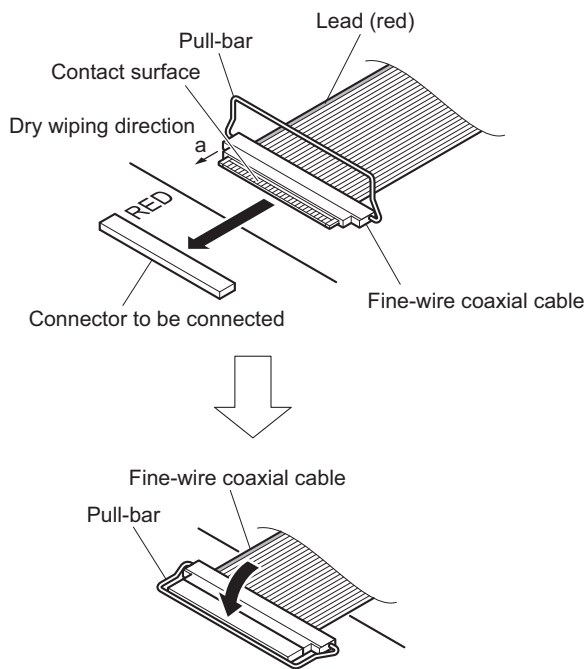
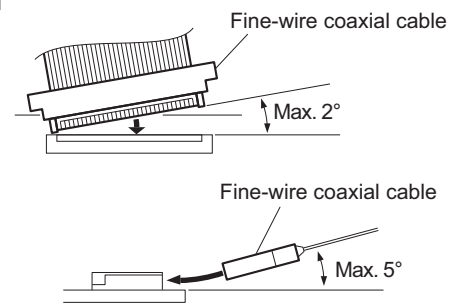


Figure 1



Procedure

1. Wipe the contact surface with a dry wiping cloth in the direction of arrow (a).
2. Align the printed “RED” on the board with the red lead of the fine-wire coaxial cable.
3. Insert the cable connector straight to meet the insertion angle specified in Figure 1.

Note

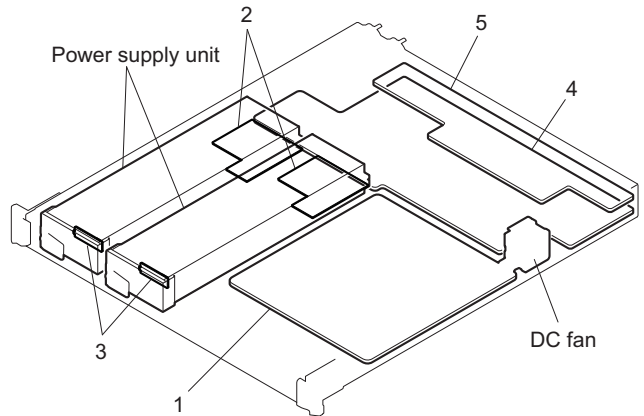
Be careful so that the guide of the cable connector is not caught by the edge of the connector on the board.

4. Turn the pull-bar in the direction of arrow and lock it.

1-2. MKS-X2700/MKS-X7700

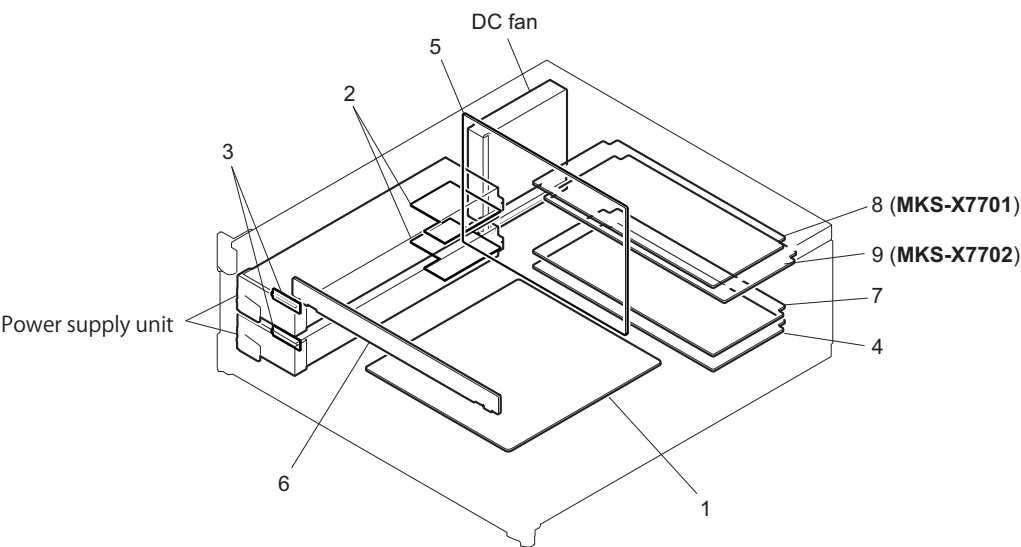
1-2-1. Location of Main Parts and Boards

MKS-X2700



Location No.	Board name	Circuit function
1	CA-90	SIU CPU Board
2	CN-3727	Connector Board
3	LE-402	Power Indicator Board
4	CN-3757	Rear Board
5	CNB-33	Rear Board

MKS-X7700 (With MKS-X7701, MKS-X7702)



Location No.	Board name	Circuit function
1	CA-90	SIU CPU Board
2	CN-3727	Connector Board
3	LE-402	Power Indicator Board
4	CN-3756	Rear Board

Continued

Location No.	Board name	Circuit function
5	MB-1212	Mother Board
6	FP-250	Front LED Board
7	CNB-32A	SIO Board
8	CNO-42 (MKS-X7701)	GPI Board
9	CNB-32 (MKS-X7702)	SIO Board

1-2-2. Circuit Protection Parts

Replacing Fuses and IC Links

WARNING

Fuses and IC links are essential parts for safe operation. Be sure to use the parts specified in this manual. Replacing any fuse or IC link with an unspecified one may cause fire or electric shock.

CAUTION

Replacing any fuse or IC link is replaced while power is supplied to the unit may cause electric shock. Before replacing the fuses or IC links, not only turn off the POWER switch but also disconnect the cable that is connected to the AC IN connector.

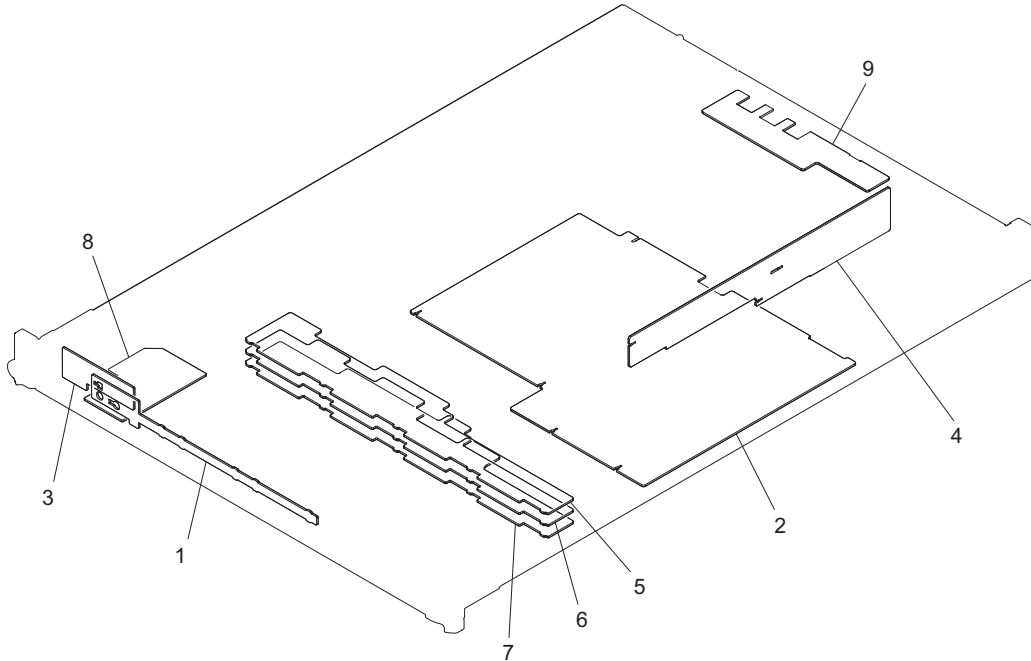
This unit is equipped with fuses and IC links. The fuses and IC links blow if overcurrent flows in the unit due to an abnormality. In that case, turn off the power of the unit, inspect inside of the unit, and then remove the cause of the overcurrent. After that, replace the defective parts.

Model name	Board name	Ref. No.	Address	Part name	Part No.
MKS-X2700 MKS-X7700	CA-90	F201	A-9 (Side A)	Fuse (8 A/125 V)	△1-576-328-21
		F301	A-8 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F302	A-7 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F303	A-6 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-X2700 MKS-X7700	CN-3727	F1	B-1 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		PS1	B-1 (Side A)	IC link (1 A)	△1-576-124-21
MKS-X7700	CN-3756	F101	A-2 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F201	B-3 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-X2700	CN-3757	F101	E-5 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F201	H-7 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-X7702	CNB-32	F201	A-2 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F202	A-4 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F203	A-3 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-X7700	CNB-32A	F201	A-2 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
		F203	A-3 (Side A)	Fuse (5 A/125 V)	△1-533-627-21
MKS-X7701	CNO-42	F001	A-2 (Side A)	Fuse (2 A/125 V)	△1-533-999-21
MKS-X2700	HN-423	F001	A-1 (Side A)	Fuse (5 A/125 V)	△1-533-627-21

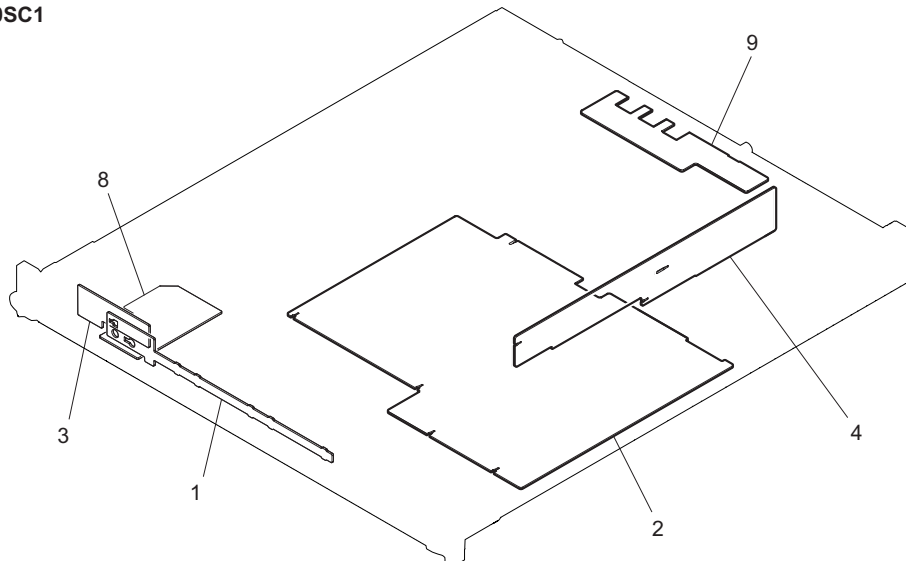
1-3. PWS-100SC1/PWS-110SC1

1-3-1. Location of Boards and Circuit Configuration

PWS-100SC1



PWS-110SC1



Location No.	Board Name	Circuit Function
1	LED-527	Front Panel LED
2	MB-1204	PCIe Switch, Storage Block
3	SW-1627	Power SW Panel
4	RC-110	PCI Express Riser Card
5	IF-1257	HDD (SATA) Interface (PWS-100SC1 only)
6	IF-1258	HDD (SATA) Interface (PWS-100SC1 only)
7	IF-1259	HDD (SATA) Interface (PWS-100SC1 only)
8	DIO-98	USB3.0 Output

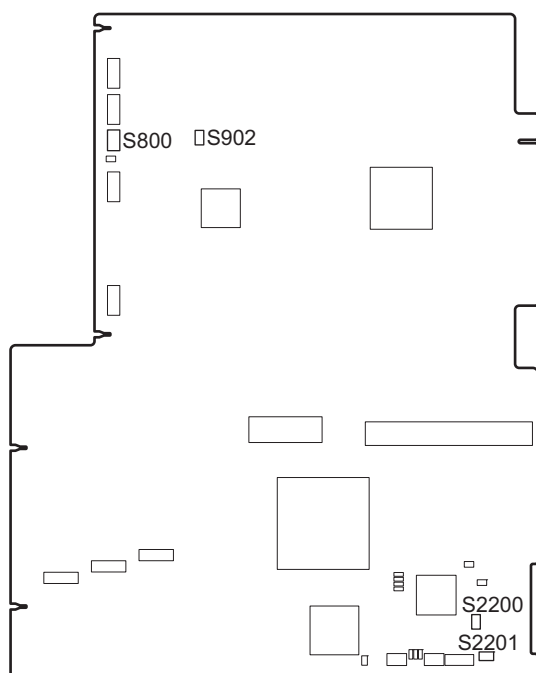
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Location No.	Board Name	Circuit Function
9	CN-3698	Rear Connector

1-3-2. Onboard Switch Settings, LED Functions, and Sensor Functions

Onboard Switch Settings

MB-1204 Board

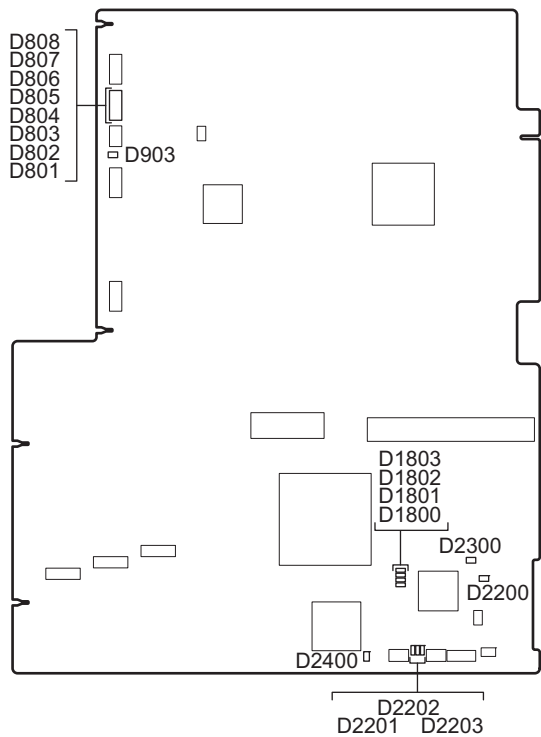


MB-1204 board (side A)

Ref. No.	Bit	Name	Description	Factory Setting
S800	1-8	-	Factory use	OFF (ALL)
S902	-	RESET	Factory use	-
S2200	-	RESET	Factory use	-
S2201	1	CFG	ON : RAID doesn't work OFF : RAID works	OFF (ALL)
	2		ON: Activates IC1000 in the Backup Mode. OFF: Activates IC1000 in the Normal Mode.	
	3		ON: Activates IC2400 in the Backup Mode. OFF: Activates IC2400 in the Normal Mode	
	4		Factory use	

Functions of Onboard LEDs

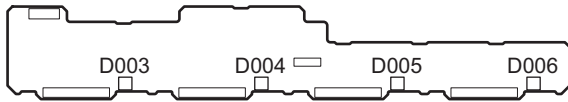
MB-1204 Board



MB-1204 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D801	-	Orange	Factory use	Indeterminate
D802				
D803				
D804				
D805				
D806				
D807				
D808				
D903	-	Green	Lights when the IC900 configuration has been successfully completed.	Lit
D1800	-	Green	Factory use	Off
D1801				
D1802				
D1803				
D2200	CFG DONE	Green	Lights when the IC2200 configuration has been successfully completed.	Lit
D2201	CFG0	Green	Factory use	Blinks
D2202	CFG1	Green	Factory use	Off
D2203	CFG2	Green	Factory use	Lit
D2300	FLASH BUSY	Green	Factory use	Off
D2400	IMX6	Green	Factory use	Blinks

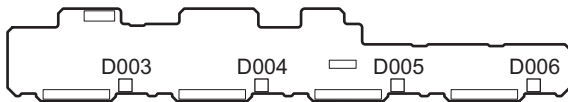
IF-1257 Board (PWS-100SC1 only)



IF-1257 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

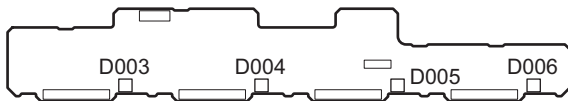
IF-1258 Board (PWS-100SC1 only)



IF-1258 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

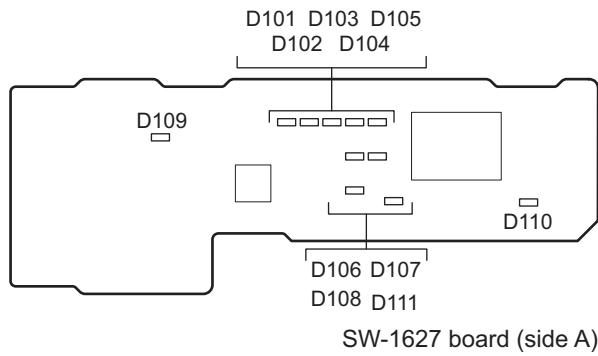
IF-1259 Board (PWS-100SC1 only)



IF-1259 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

SW-1627 Board



Ref. No.	Name	Color	Description	Normal State
D101	ERROR LED	Red	Indicates an abnormality in fan assembly FAN1* ¹ Normal: Off Abnormal: Red	Off
D102		Red	Indicates an abnormality in fan assembly FAN2* ¹ Normal: Off Abnormal: Red	Off
D103		Red	Indicates an abnormality in fan assembly FAN3* ¹ Normal: Off Abnormal: Red	Off
D104		Red	Indicates an abnormality in fan assembly FAN4* ¹ Normal: Off Abnormal: Red	Off
D105		Red	Indicates an abnormality in fan assembly FAN5* ¹ Normal: Off Abnormal: Red	Off
D106		Red	Indicates an abnormality in power supply A unit* ¹ (in the right slot viewed from the rear) Normal: Off Abnormal: Red	Off
D107		Red	Indicates an abnormality in power supply B unit* ¹ (in the left slot viewed from the rear) Normal: Off Abnormal: Red	Off
D108		Red	Indicates an abnormality in internal temperature Normal: Off Abnormal: Red	Off
D109	POWER	Green/Red	Power ON/standby indicator	Lit green : Operating Lit red: Standby Off: Power cable dis- connected
D110	ACCESS	Blue	Storage access indicator	Lit: Access in progress Off: No access

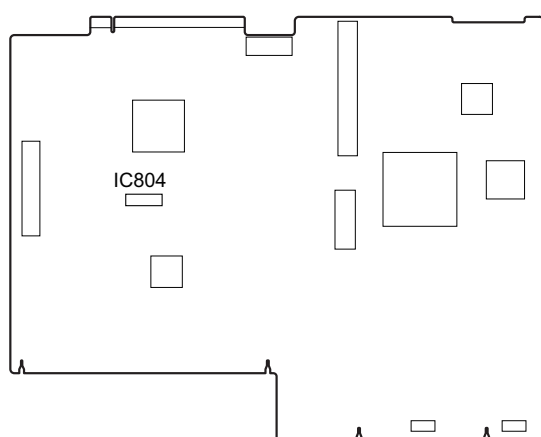
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*1: For location of Fan 1 to 5, Power unit A and B, refer to "5-3. Location of Main Parts"

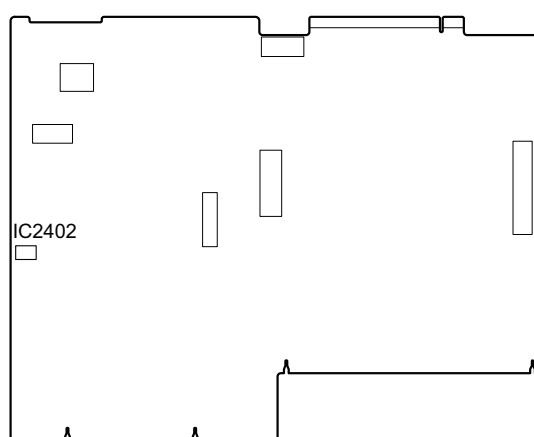
Ref. No.	Name	Color	Description	Normal State
D111	SYSTEM	Green/ Orange/Red	System indicator Indicates the unit state.	Lit green: Working normally Blinking green (1 Hz): Startup or shutdown in progress Blinking orange (1 Hz): A warning occurred. Blinking red (4 Hz): An error occurred.

Functions of Onboard Sensors

MB-1204 Board



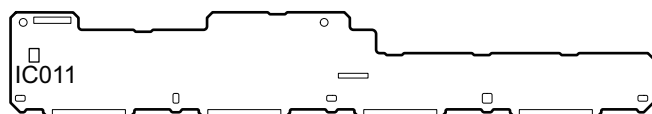
MB-1204 board (side A)



MB-1204 board (side B)

Board Name	Ref. No.	Function
MB-1204	IC804	Temperature sensor
	IC2402	Temperature sensor

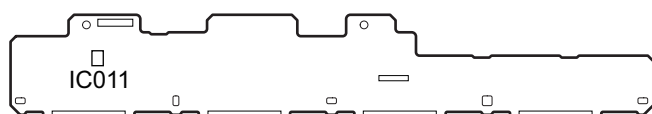
IF-1257 Board (PWS-100SC1 only)



IF-1257 board (side A)

Board Name	Ref. No.	Function
IF-1257	IC011	Temperature sensor

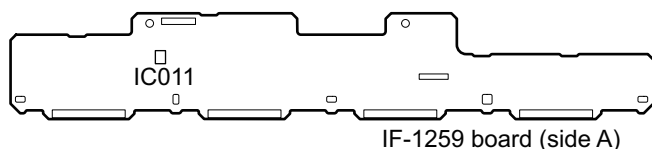
IF-1258 Board (PWS-100SC1 only)



IF-1258 board (side A)

Board Name	Ref. No.	Function
IF-1258	IC011	Temperature sensor

IF-1259 Board (PWS-100SC1 only)



IF-1259 board (side A)

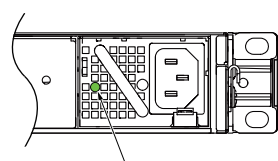
Board Name	Ref. No.	Function
IF-1259	IC011	Temperature sensor

1-3-3. LED Indicator of Power Unit

Power unit is equipped with one LED that indicates the state of power unit.

Lights in green: All outputs (+12V and +5Vsub) are normal.

Off: At least one of the outputs is abnormal.



LED indicator

This figure shows PWS-100SC1.

1-3-4. Tools and Fixtures

It is recommended to use the equipment listed below or the equivalents.

Name	Part No.	Usage
Torque screwdriver's bit (M2)	J-6325-380-A	Screw tightening
Torque screwdriver's bit (M3)	J-6323-430-A	Screw tightening
Torque screwdriver (0.3 N • m)	J-6325-400-A	Screw tightening
Torque screwdriver (0.6 N • m)	J-6252-510-A	Screw tightening
Torque screwdriver (1.2 N • m)	J-6252-520-A	Screw tightening

1-3-5. Circuit Protection Part List

Circuit Protection Element

This unit is equipped with positive-characteristic thermistors (power thermistors) as circuit protection elements.

The positive-characteristic thermistor limits the electric current flowing through the circuit as the internal resistance increases when an excessive current flows or when the ambient temperature increases.

If the positive-characteristic thermistor works, turn off the main power of the unit and inspect the internal circuit of the unit. After the cause of the fault is eliminated and the positive-characteristic thermistor is cooled down, turn on the main

power again. The unit works normally. It takes about one minute to cool down the positive-characteristic thermistor after the main power is turned off.

Board Name	Ref. No.	Part No.	Holding Current
DIO-98	TH200	△ 1-533-817-21	1.1 A/8.0 V
	TH201	△ 1-533-817-21	1.1 A/8.0 V
IF-1257 (PWS-100SC1 only)	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
IF-1258 (PWS-100SC1 only)	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
IF-1259 (PWS-100SC1 only)	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
MB-1204	TH101	△ 1-804-616-11	1.1 A/6.0 V
	TH102	△ 1-804-987-21	2.5 A/15 V
	TH103	△ 1-804-616-11	1.1 A/6.0 V
	TH600	△ 1-804-987-21	2.5 A/15 V
	TH601	△ 1-804-987-21	2.5 A/15 V
	TH602	△ 1-804-987-21	2.5 A/15 V

Replacing Fuses

WARNING

The fuse is essential parts for safe operation. Replace it with one whose part number is listed in the manual. If the components are replaced with any parts other than the specified ones, this may cause a fire or electric shock.

CAUTION

Replacing any fuse is replaced while power is supplied to the unit may cause electric shock. Before replacing any fuse, turn off the POWER switch and also disconnect the cable from the AC IN connector.

This unit is equipped with fuses.

The fuses blow if an excessive current flows due to abnormality inside the equipment. If fuses blow, turn off the main power of the unit once, and inspect inside of the unit and remove the cause of excessive current. After that, replace the fuses.

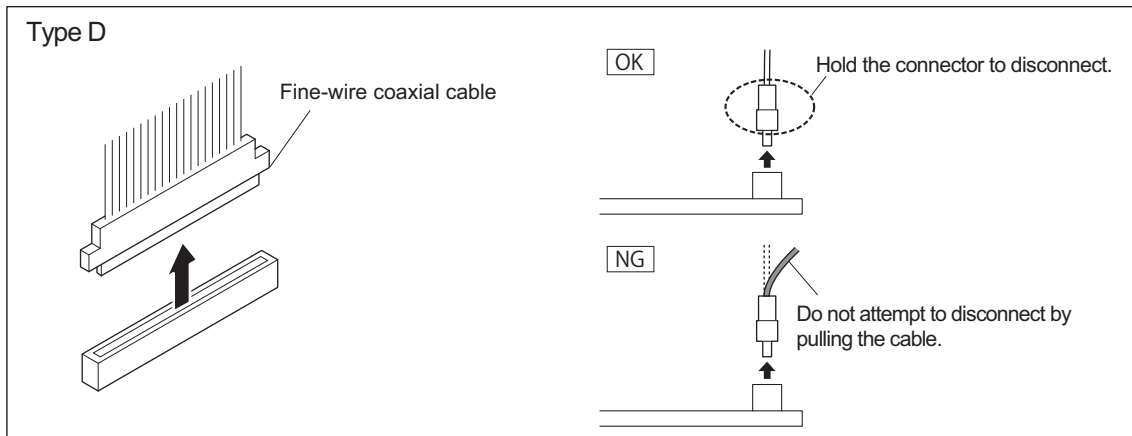
Board Name	Ref. No.	Name	Part No.
MB-1204	F200	FUSE 15 A/65 V	△1-576-566-21
	F201	FUSE 15 A/65 V	△1-576-566-21
	F202	FUSE 2.5 A/125 V	△1-533-804-21
RC-110	F100, F101	FUSE 5 A/125 V	△1-533-627-21

1-3-6. Coaxial Cable

Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

- Be very careful when handling the fine-wire coaxial cable so that fine wires are not disconnected.
- When disconnecting the fine-wire coaxial cable, be sure to hold the connector. Do not attempt to pull the cable.
- Check that the contact surface of the fine-wire coaxial cable connector is free from dirt or dust.



Disconnecting

1. Hold the connector between your finger tips and disconnect the fine-wire coaxial cable vertically.

Connecting

1. Hold the connector between your finger tips and connect the fine-wire coaxial cable vertically.

1-4. Lead-free Solder

All boards mounted in this unit use lead-free solder. Be sure to use lead-free solder when repairing the boards of this unit. A lead free mark (LF) indicating that the solder contains no lead is printed on each board. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Note

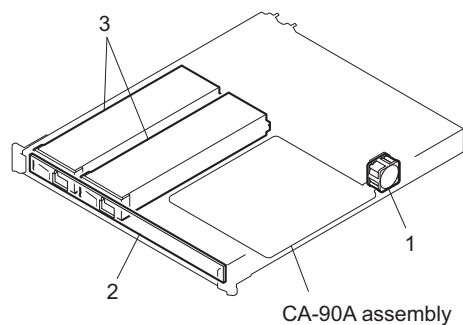
- The lead-free solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

Section 2

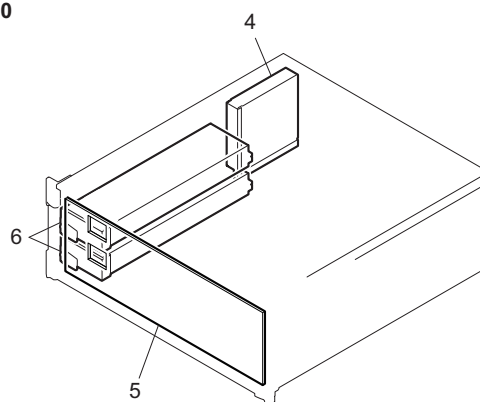
Periodic Maintenance and Inspection

2-1. Periodic Replacement Parts

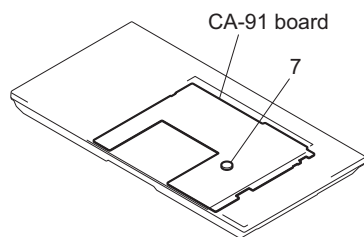
MKS-X2700



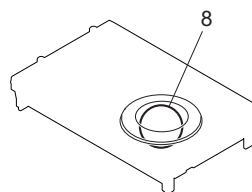
MKS-X7700



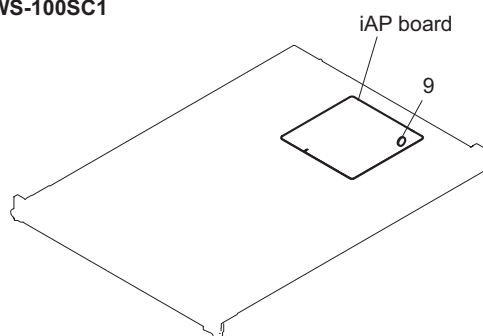
MKS-X7011



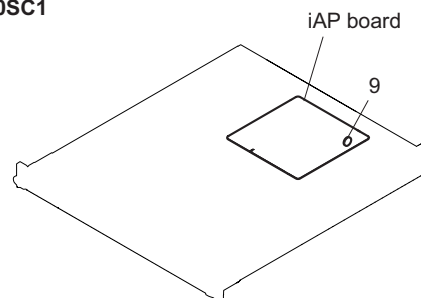
MKS-7031TB



PWS-100SC1



PWS-110SC1



The following parts require periodic maintenance.

Refer to the period indicated in the following list for maintenance.

This section describes the recommended replacement parts and recommended replacement time.

This table does not describe the guarantee period of part.

The replacement period of each part is changed according to the environment and condition.

Model	Location No.	Part name	Sony Part No.	Maintenance	Cleaning/ Replacement Suggested period	Reference Section
MKS-X2700	1	DC fan (Square 40)	△1-787-737-21	Cleaning/ Replacement	Once in a month/ Alarm indication	“4-3-1. DC Fan (MKS-X2700)”
	2	Filter	4-562-437-01	Cleaning	Once in two months	“2-2-2. Front Panel”

Continued

Model	Lo- cati- on No.	Part name	Sony Part No.	Mainte- nance	Cleaning/ Replacement Suggested peri- od	Reference Sec- tion
	3	Power supply unit	△A-2070-692-A	Replacement	Once in five years	“4-4-1. Replacement of Switching Regulator (MKS-X2700)”
MKS- X7700	4	DC fan (Square120)	△1-855-201-11	Cleaning/ Re- placement	Once in a month/ Alarm indication	“4-3-2. DC Fan (MKS-X7700)”
	5	Filter	4-549-458-01	Cleaning	Once in two months	“2-2-2. Front Panel”
	6	Power supply unit	△A-2070-692-A	Replacement	Once in five years	“4-4-2. Replacement of Switching Regulator (MKS-X7700)”
ICP- X7000, MKS- X7075	—	AC adaptor	△1-493-042-12	Replacement	Once in five years	—
MKS- X7011	7	Lithium battery (BR2032 TYPE)	△1-853-478-11	Replacement	Once in five years ^{*1}	“3-3-13. Lithium Battery (MKS-X7011)”
	—	AC adaptor	△1-493-042-12	Replacement	Once in five years	—
MKS- X7031TB	8	Track ball	4-558-357-01	Cleaning	Once in a month	“2-2-5. Track Ball”
PWS-100 SC1/ PWS-110 SC1	9	Lithium battery (CR2032 TYPE)	△1-528-174-72	Replacement	Replace about ev- ery 4.5 years ^{*1} (When used for 12 hours a day.)	“5-13. Lithium Bat- tery”

*1: The battery drains when the power is not supplied to this unit.

2-2. Cleaning

2-2-1. Cleaning for Control Panel

Wipe the panel (MKS-X7017/MKS-X7018/MKS-X7019/MKS-X7011/MKS-X7020/MKS-X7024/MKS-X7026/MKSX7031TB/MKS-X7033/MKS-X7035), switches, and faders with a dried cleaning cloth. Use a cleaning cloth moistened with water or lukewarm water for persistent stain.

Note

Be sure to use a wrung cloth for wiping the control panel since water droplet causes the malfunction. Do not use any chemical, solvent, or cleaner, or wipe it hard to avoid damaging it.

2-2-2. Front Panel

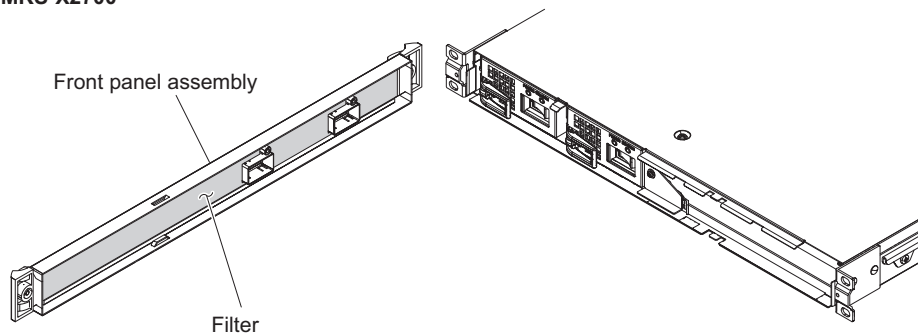
The filter on the rear of the front panel of MKS-X2700/MKS-X7700 can easily accumulate the dust. Be sure to remove dust by cleaning as follows.

Procedure

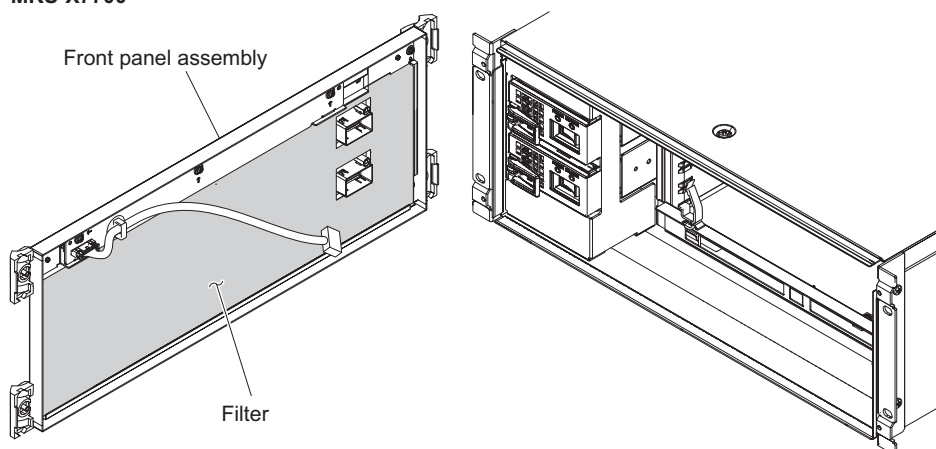
1. Remove the front panel. (Refer to [“4-2. Removing Cabinet”](#))
2. Remove the dust accumulated on the filter with a vacuum cleaner.

Cleaning the filter by washing in water is recommended when there is a heavy accumulation of dust. Be sure to dry the filter completely after it has been washed.

MKS-X2700



MKS-X7700



2-2-3. Fan

CAUTION

Before cleaning the fans, be sure to turn off the power switch and disconnect the power cable.
Cleaning the fans with power turned on may result in electric shock or damage to boards.

Note

The MKS-X2700 is cooled with the fan on the right side of rear side. The MKS-X7700 is cooled with the fan on the left side of rear side.

If dust accumulates on the air vents of the fans and air flow is blocked, internal temperature of the unit increases, which may affect the performance and life of the unit.

It is recommended that the fans be cleaned monthly.

Normal state

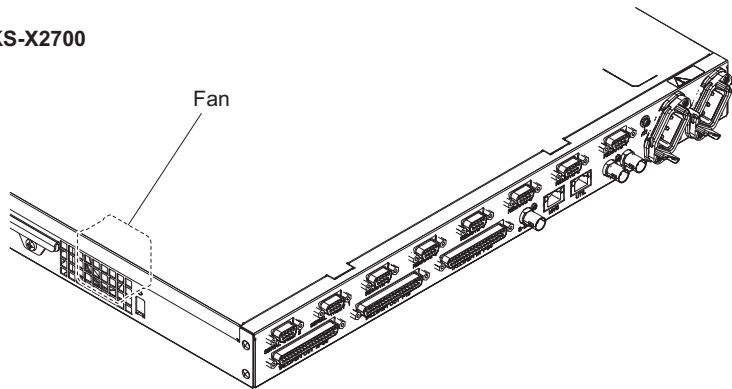
1. Remove dust on the fan and surrounding parts with a vacuum cleaner or the like.

When heavy dust cannot be removed

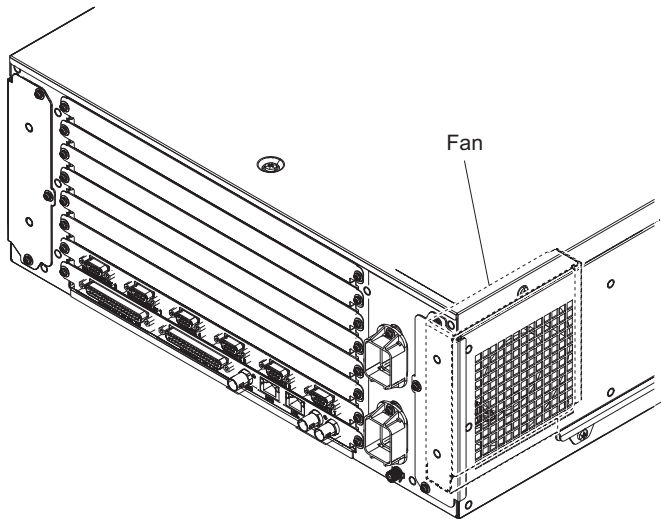
1. Remove the relevant fan following the fan replacement method. (MKS-X2700: Refer to [“4-3-1. DC Fan \(MKS-X2700\)”](#), MKS-X7700: Refer to [“4-3-2. DC Fan \(MKS-X7700\)”](#).)

2. Clean the frame and blades of the fan with a cleaning cloth moistened with cleaning fluid.
 - Cleaning cloth (Sony part No.: 3-184-527-01)
 - Cleaning fluid (Sony part No.: 9-919-573-01)

MKS-X2700



MKS-X7700



2-2-4. Fan (Power Supply Unit)

DC fan is used in the power supply unit of the MKS-X2700/MKS-X7700.

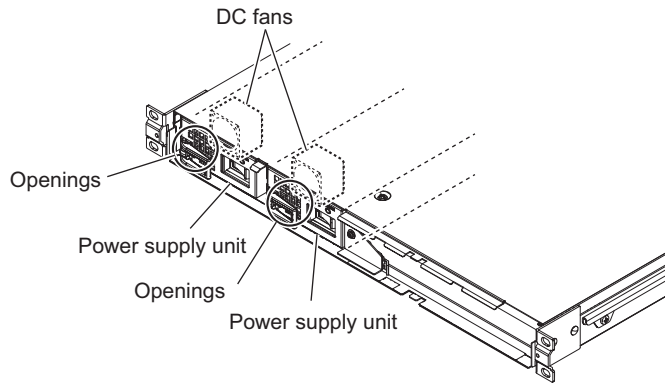
If dust has accumulated on the openings and the surrounding, perform the cleaning in the following procedure.

Procedure

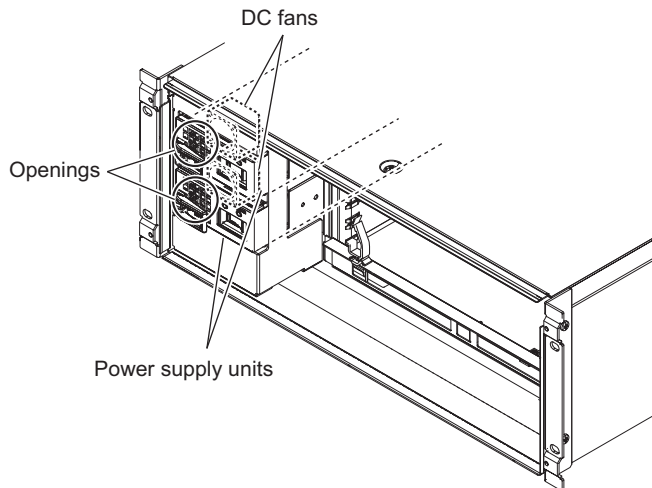
1. Remove the front panel. (Refer to [“4-2. Removing Cabinet”](#))

2. Remove dust on the openings and the surrounding by using a vacuum cleaner or the like.

MKS-X2700



MKS-X7700



2-2-5. Track Ball

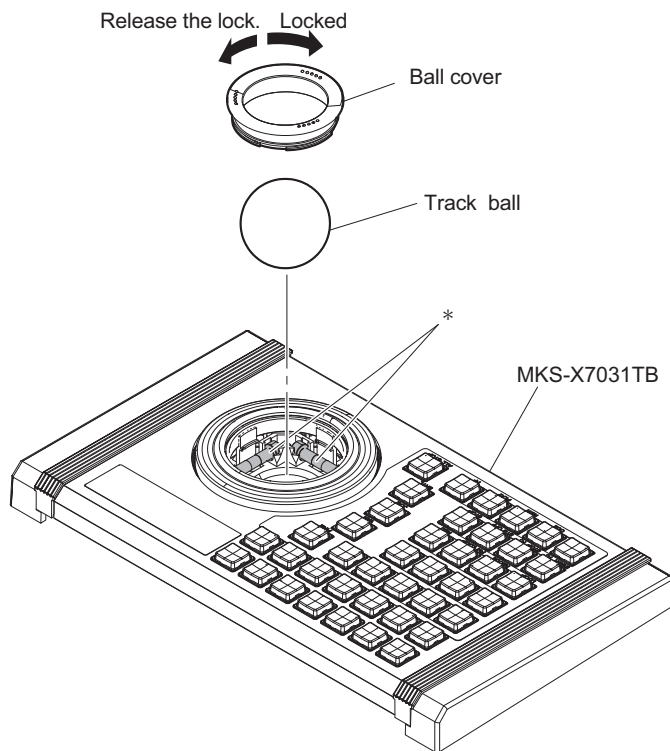
If the track ball of the MKS-X7031TB becomes dirty, it may result in adverse effects, typically the image does not move even though the track ball is manipulated.

Cleaning the track ball every month is recommended.

Procedure

1. Rotate the ball cover counter-clockwise and release the lock. Then remove the ball cover.
2. Remove the track ball.
3. Clean the track ball and the portion shown by the asterisk (*) in the illustration with a soft cloth.
4. Install the track ball and the ball over.

5. Rotate the ball cover clockwise until it is locked.



Section 3

Replacement of Main Parts (Panel)

Note

Be sure to set the POWER switch to OFF and unplug the power cord before starting any of the replacement work.
If the replacement work is attempted with the power ON, it may result in electric shock or damage of circuits.

3-1. Tightening Torque

Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque

M3: $0.80 \pm 0.12 \text{ N}\cdot\text{m}$

M4: $1.4 \pm 0.2 \text{ N}\cdot\text{m}$

Tip

When using the torque driver with the notation of $\text{cN}\cdot\text{m}$, interpret it as follows.

Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$

3-2. Removing Cabinet

3-2-1. MKS-X7017/X7018/X7019

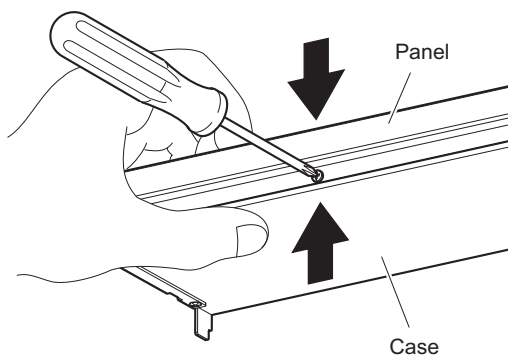
Tip

This section describes the replacement procedure of MKS-X7017. This replacement procedure applies to MKS-X7018/X7019.

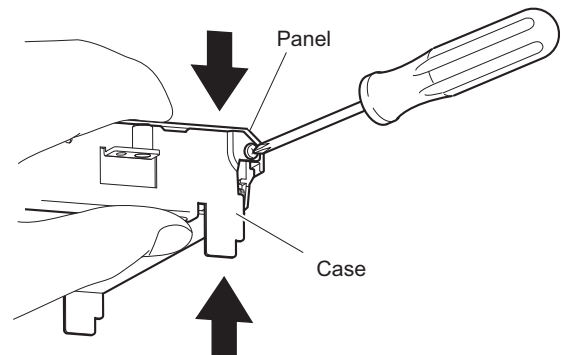
Procedure

1. Disconnect the flexible flat cable from the connector (CN1700) on the KY-726 board.
2. Remove the screws (MKS-X7017/X7018 : eight screws, MKS-X7019 : six screws), then remove the panel assembly.
3. Install the panel assembly.
 - (1) Draw the panel and the case close to each other.

Center of the panel



Side of the panel



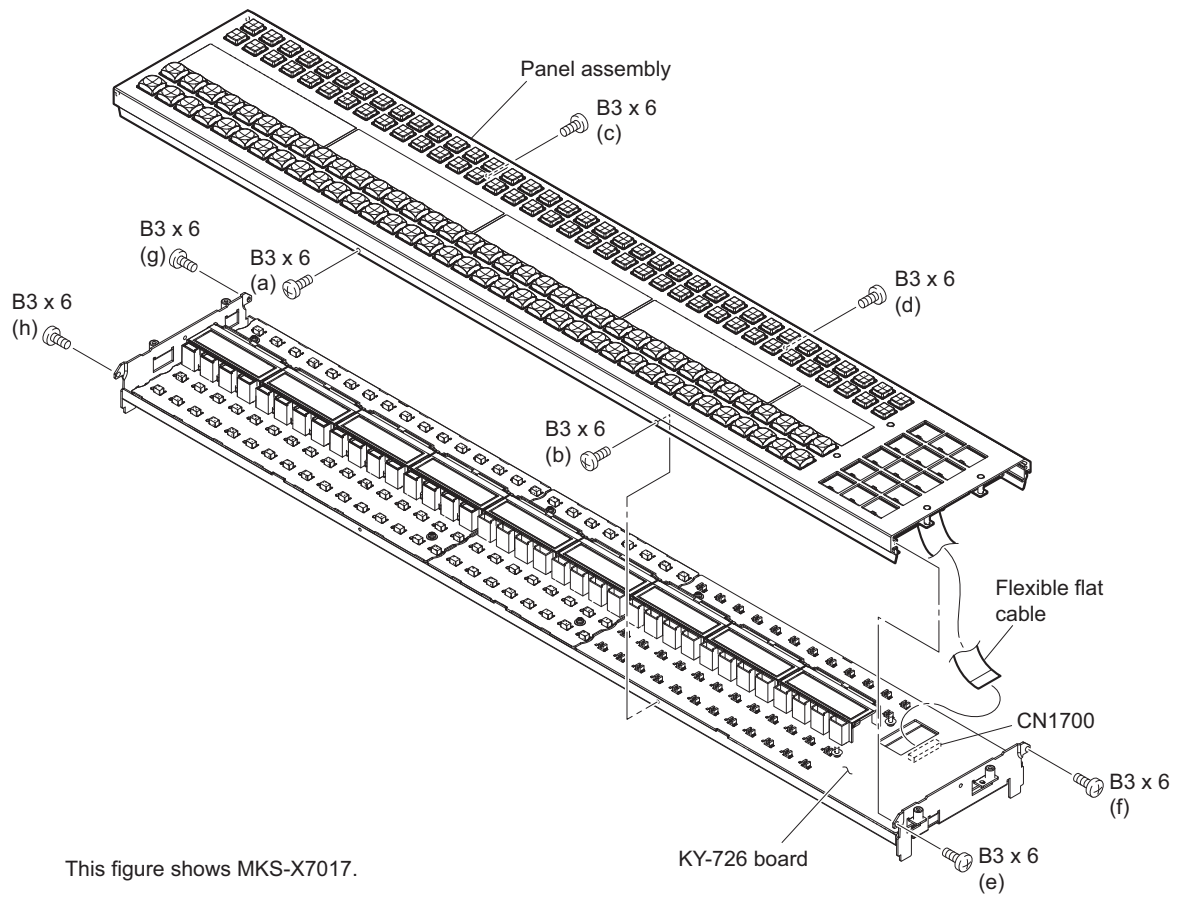
- (2) Press the panel and the case with fingers and tighten screws (a) to (h) sequentially in alphabetical order.

Note

The MKS-X7019 unit has six screws. Tighten the two center screws, and then tighten the side screws (e) to (h) beginning with screws corresponding to longitudinal holes.

- (3) Connect the flexible flat cable to the connector (CN1700) on the KY-726 board.
4. Turn on the unit.

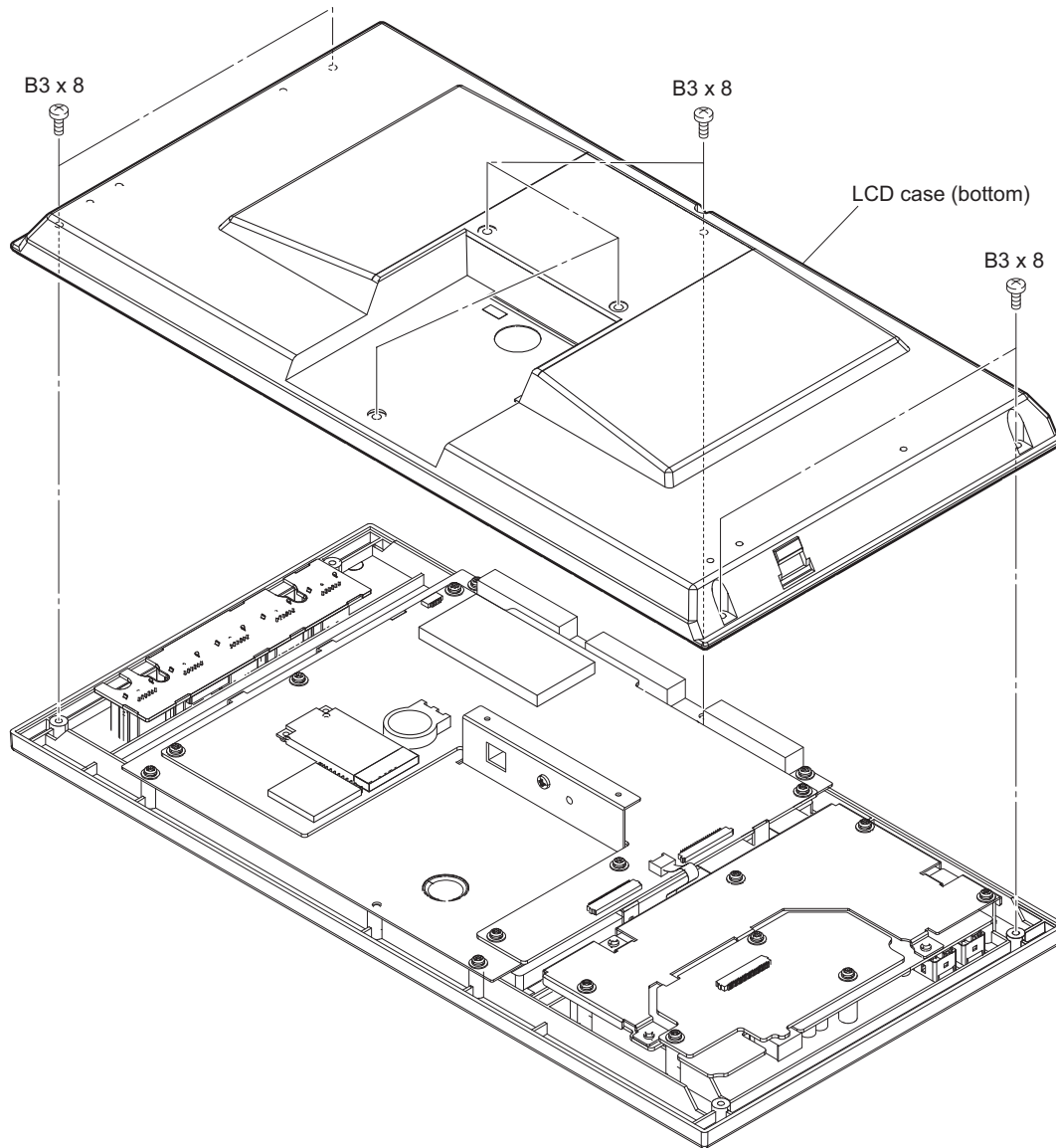
5. Check the switch operation.



3-2-2. MKS-X7011

Procedure

1. Remove the eight screws, then remove the LCD case (bottom).

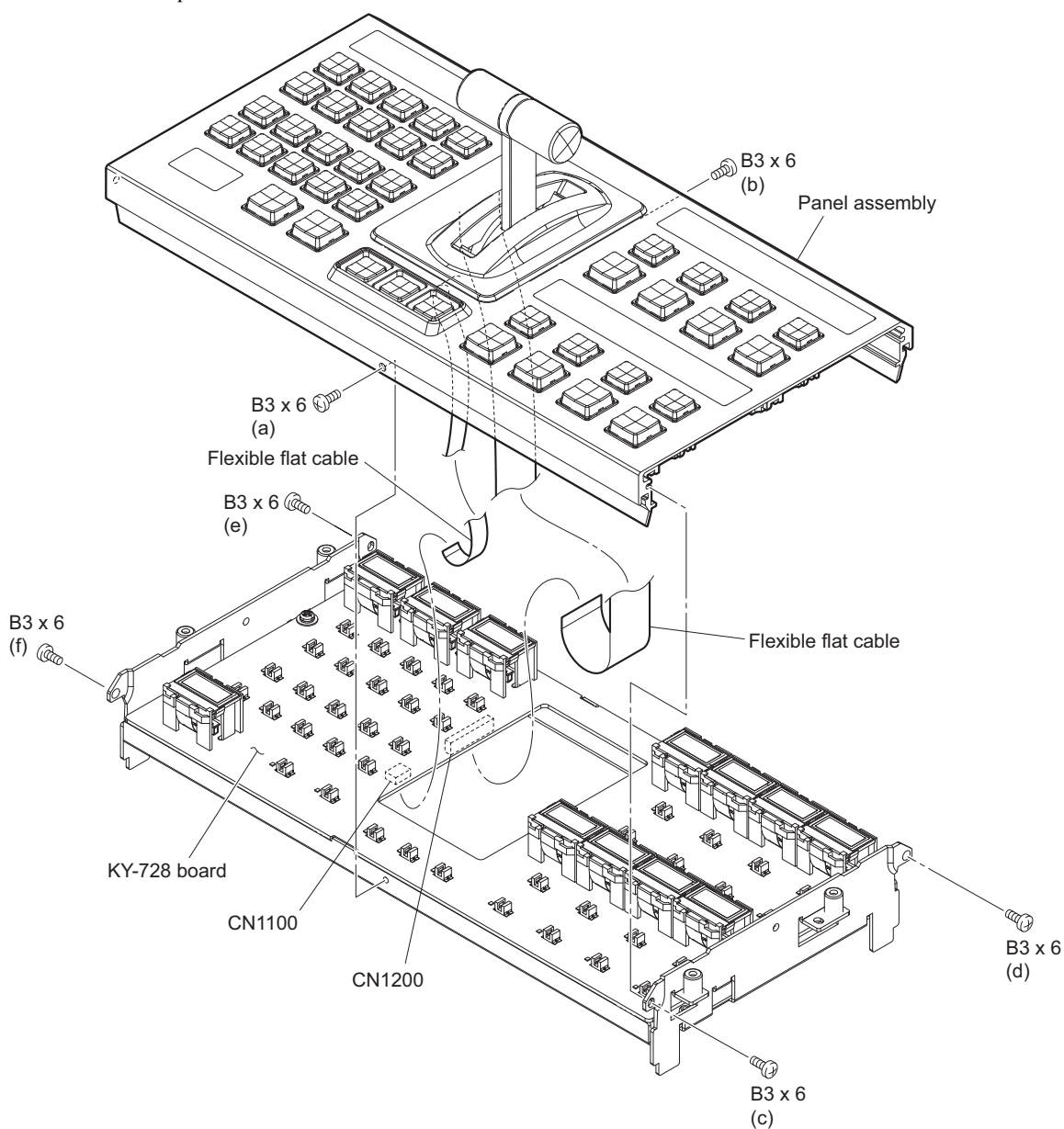


2. Install the removed parts by reversing the steps of removal.

3-2-3. MKS-X7020

Procedure

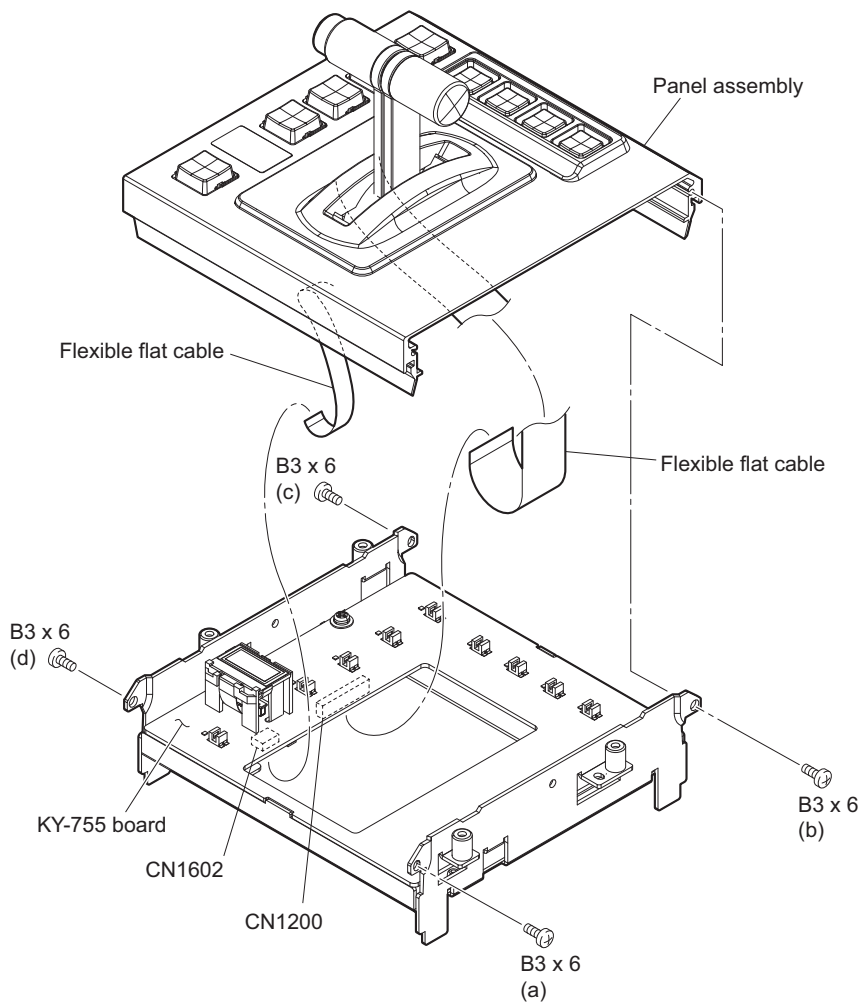
1. Remove the panel assembly.
 - (1) Disconnect the two flexible flat cables from the connectors (CN1100, CN1200) on the KY-728 board.
 - (2) Remove the six screws, then remove the panel assembly.
2. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (f) sequentially in alphabetical order.
 - (3) Connect the two flexible flat cables to the connectors (CN1100, CN1200) on the KY-728 board.
3. Turn on the unit.
4. Check the switch operation.



3-2-4. MKS-X7021

Procedure

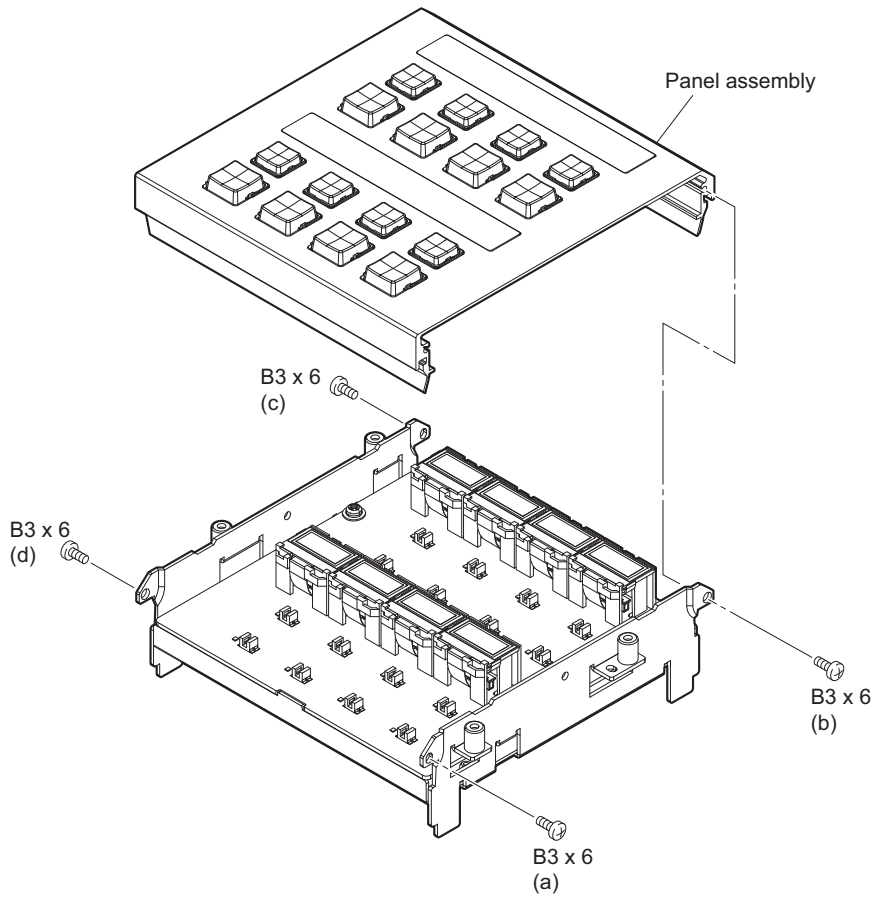
1. Remove the panel assembly.
 - (1) Disconnect the two flexible flat cables from the connectors (CN1200, CN1602) on the KY-755 board.
 - (2) Remove the four screws, then remove the panel assembly.
2. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (d) sequentially in alphabetical order.
 - (3) Connect the two flexible flat cables to the connectors (CN1200, CN1602) on the KY-755 board.
3. Turn on the unit.
4. Check the switch operation.



3-2-5. MKS-X7023

Procedure

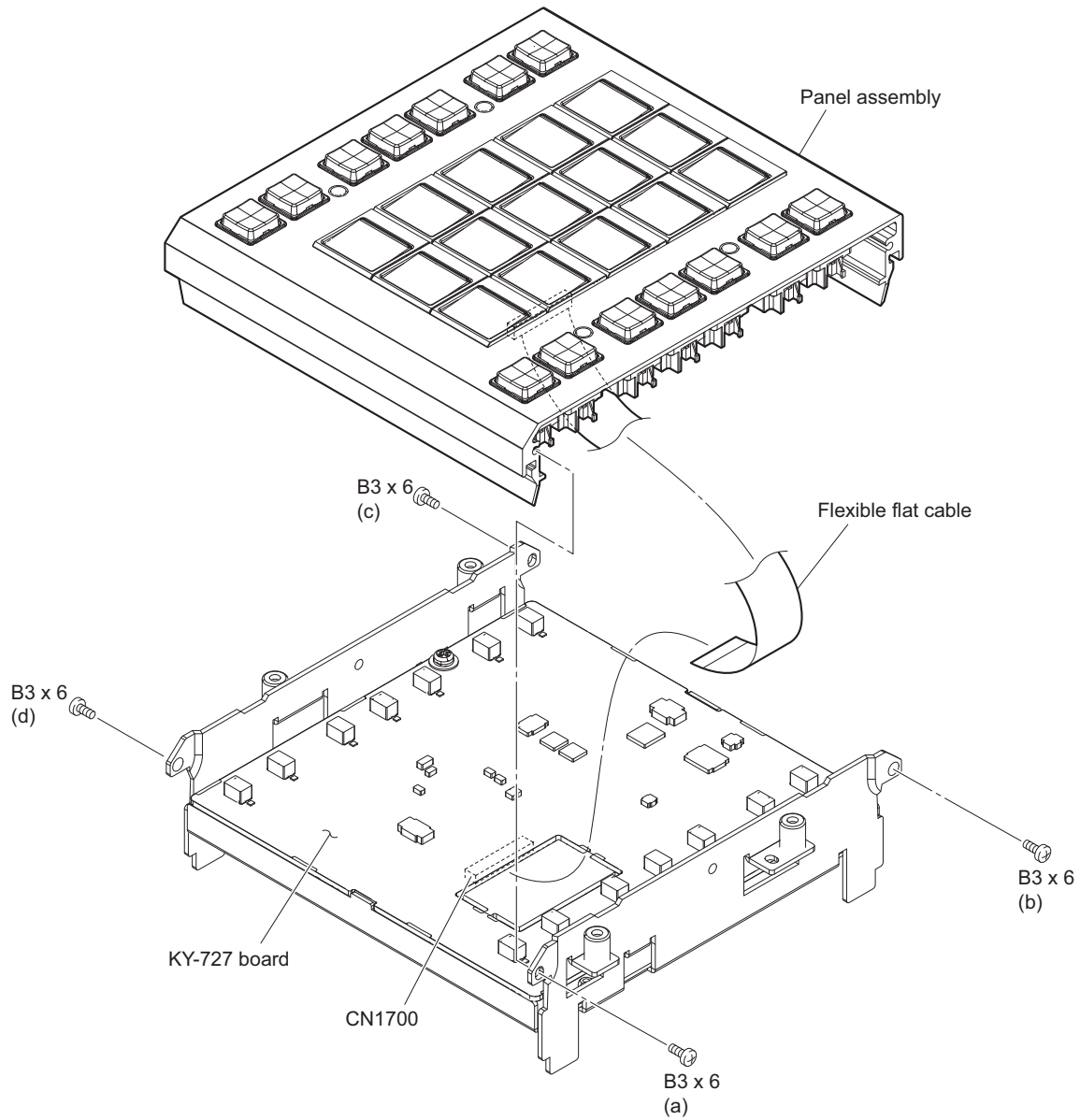
1. Remove the four screws, then remove the panel assembly.
2. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (d) sequentially in alphabetical order.
3. Turn on the unit.
4. Check the switch operation.



3-2-6. MKS-X7024

Procedure

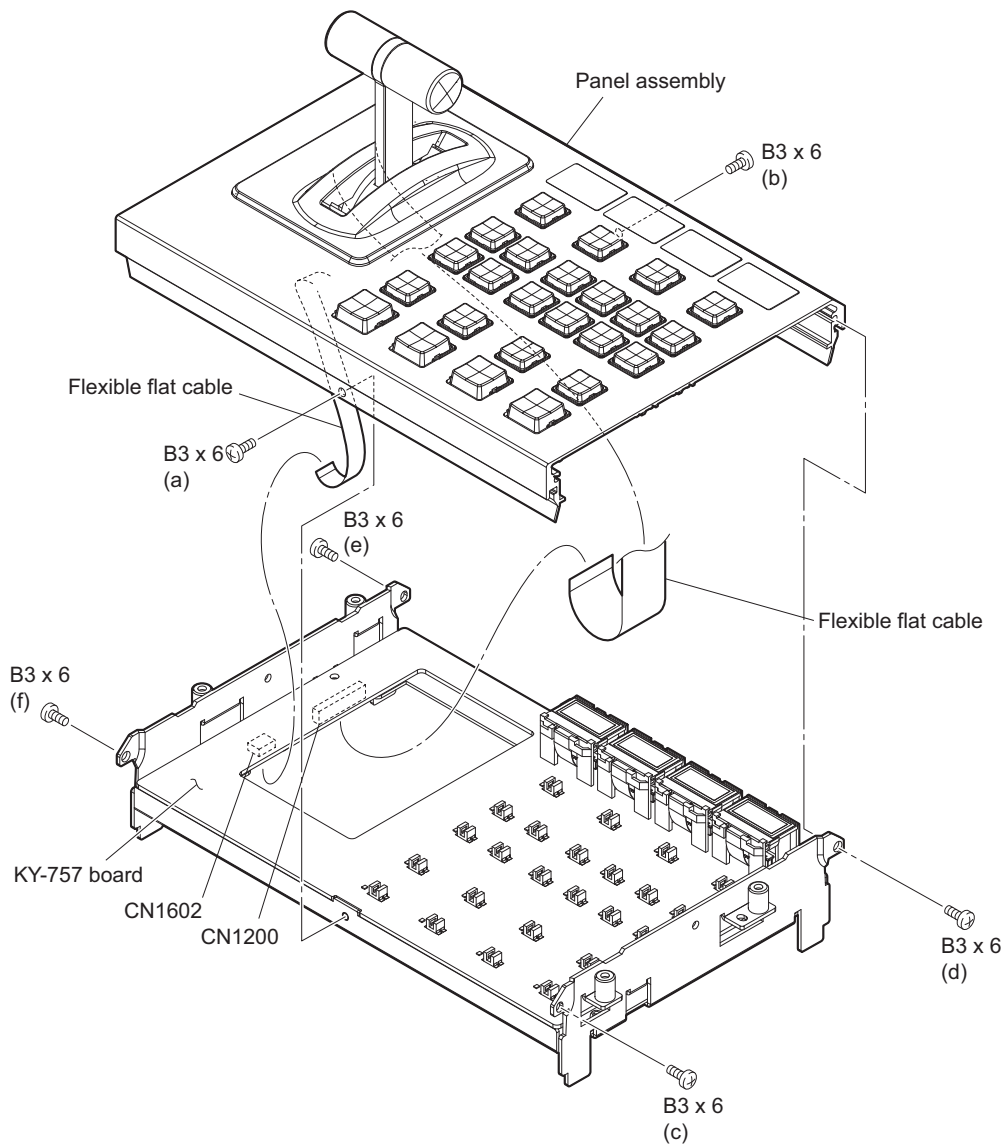
1. Disconnect the flexible flat cable from the connector (CN1700) on the KY-727 board.
2. Remove the four screws, then remove the panel assembly.
3. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (d) sequentially in alphabetical order.
 - (3) Connect the flexible flat cable to the connector (CN1700) on the KY-727 board.
4. Turn on the unit.
5. Check the switch operation.



3-2-7. MKS-X7032

Procedure

1. Remove the panel assembly.
 - (1) Disconnect the two flexible flat cables from the connectors (CN1200, CN1602) on the KY-757 board.
 - (2) Remove the six screws, then remove the panel assembly.
2. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (f) sequentially in alphabetical order.
 - (3) Connect the two flexible flat cables to the connectors (CN1200, CN1602) on the KY-757 board.
3. Turn on the unit.
4. Check the switch operation.



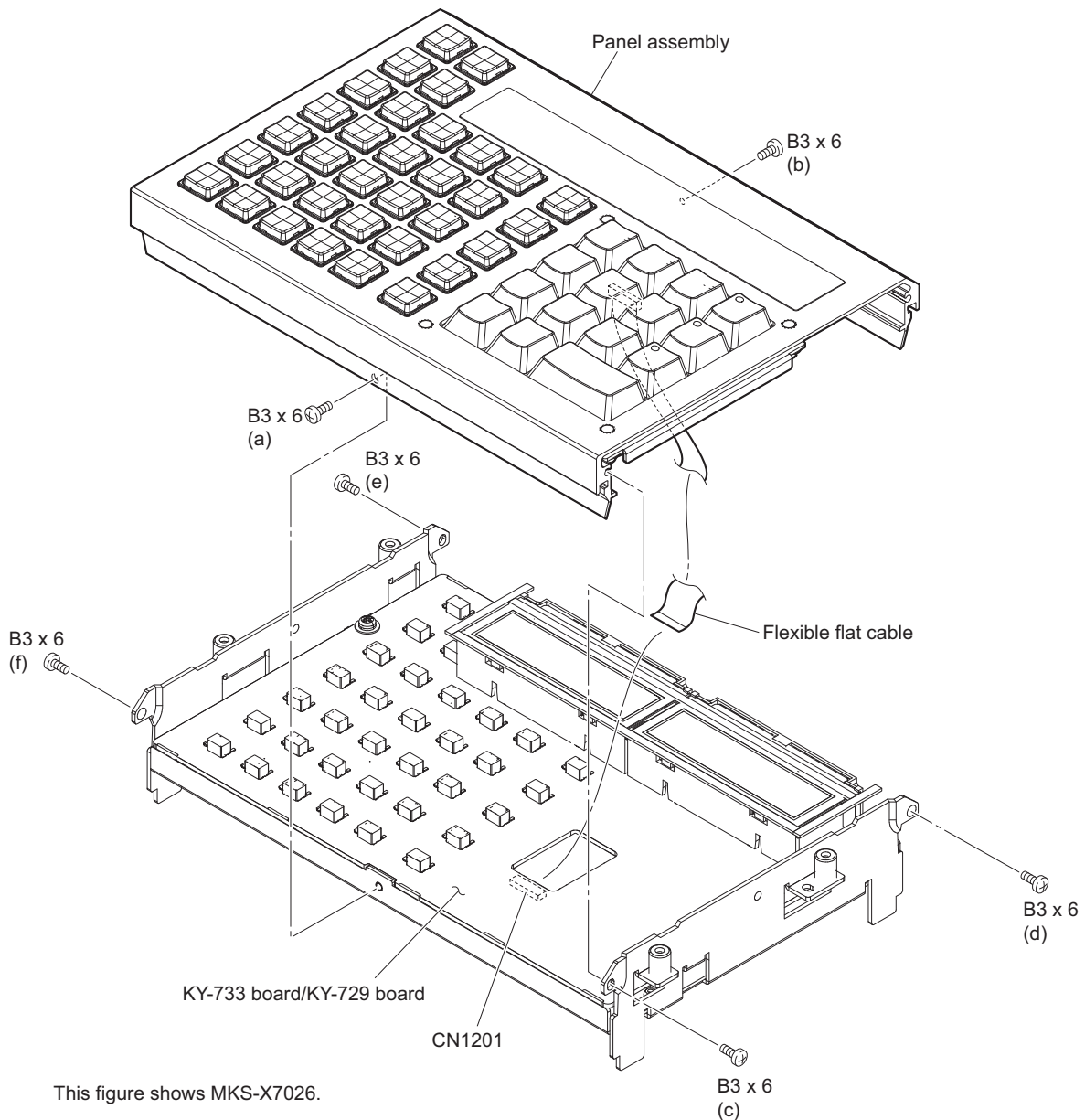
3-2-8. MKS-X7026/X7033

Tip

- This section describes the replacement procedure of MKS-X7026. This replacement procedure applies to MKS-X7033.
- The following lists boards of each module.
MKS-X7026: KY-733 board
MKS-X7033: KY-729 board

Procedure

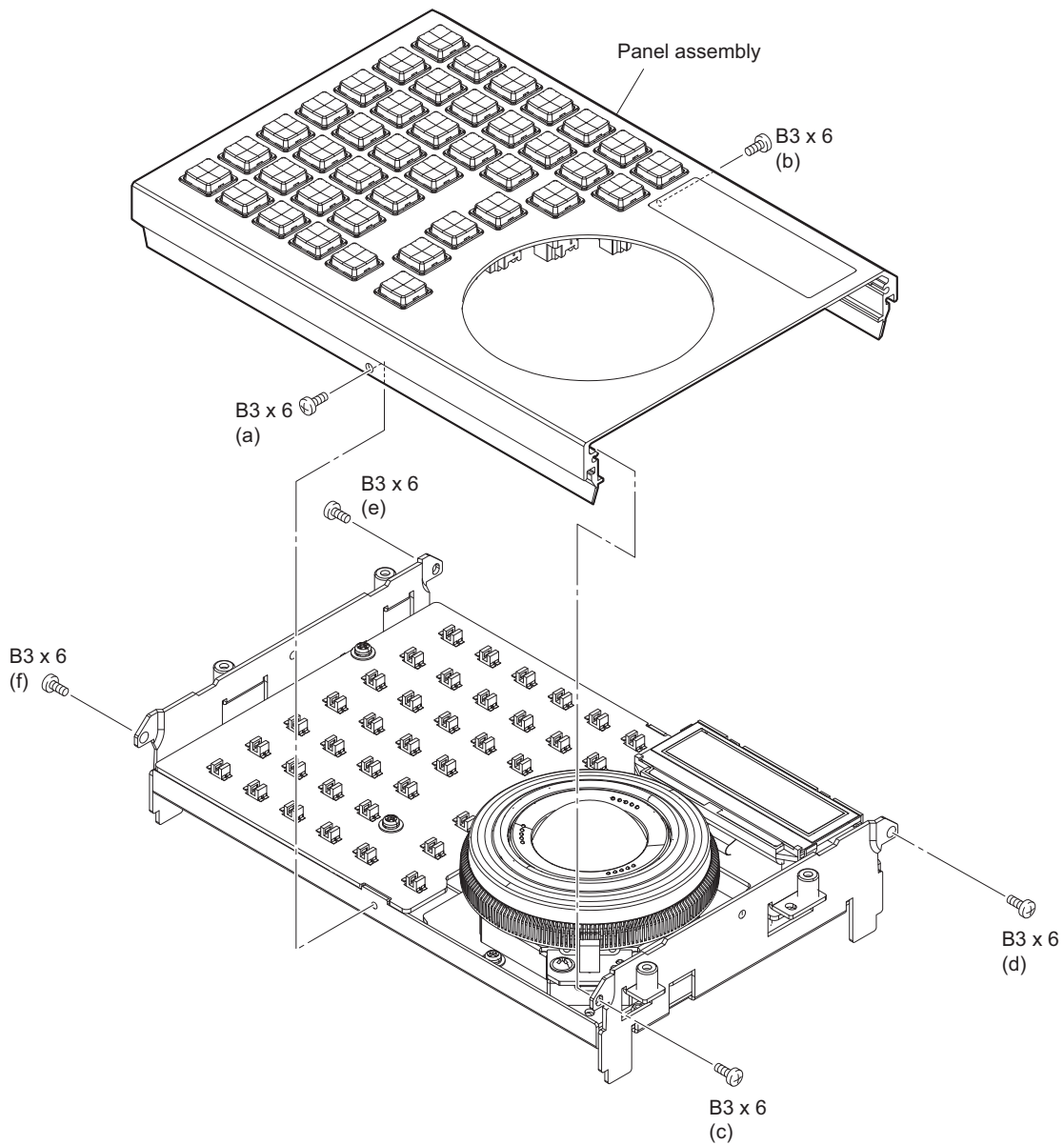
1. Disconnect the flexible flat cable from the connector (CN1201) on the KY-733/KY-729 boards.
2. Remove the six screws, then remove the panel assembly.
3. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (f) sequentially in alphabetical order.
 - (3) Connect the flexible flat cable to the connector (CN1201) on the KY-733/KY-729 board.
4. Turn on the unit.
5. Check the switch operation.



3-2-9. MKS-X7031TB

Procedure

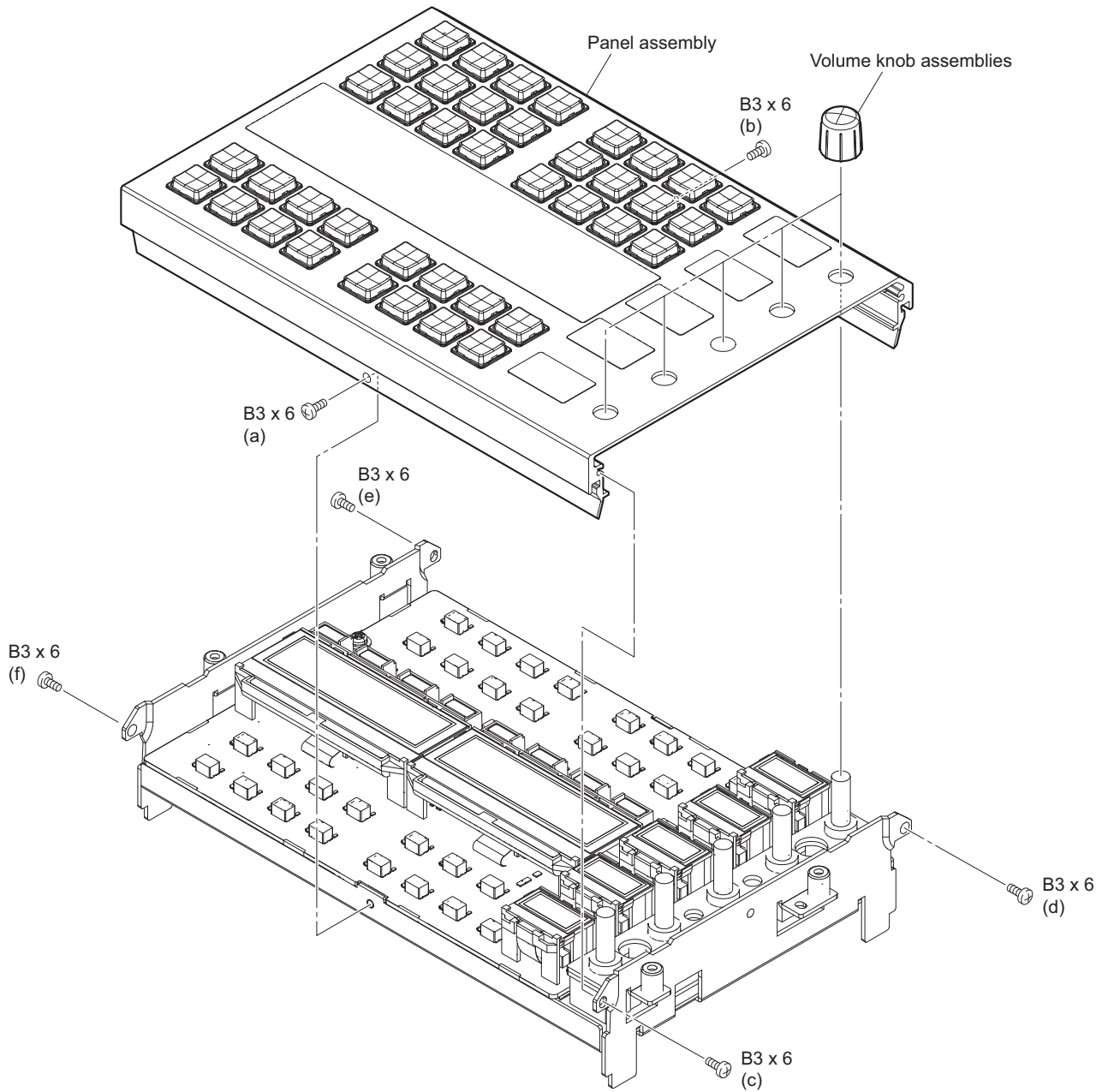
1. Remove the six screws, then remove the panel assembly.
2. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (f) sequentially in alphabetical order.
3. Turn on the unit.
4. Check the switch operation.



3-2-10. MKS-X7035

Procedure

1. Remove the five volume knob assemblies.
2. Remove the six screws, then remove the panel assembly.
3. Install the panel assembly.
 - (1) Draw the panel and the case close to each other. (Refer to “3-2-1. MKS-X7017/X7018/X7019”)
 - (2) Press the panel and the case with fingers and tighten screws (a) to (f) sequentially in alphabetical order.
4. Install the five volume knob assemblies.
5. Turn on the unit.
6. Check the switch operation.



3-3. Replacement of Main Parts

3-3-1. Fader Assembly (MKS-X7020/MKS-X7032)

Tip

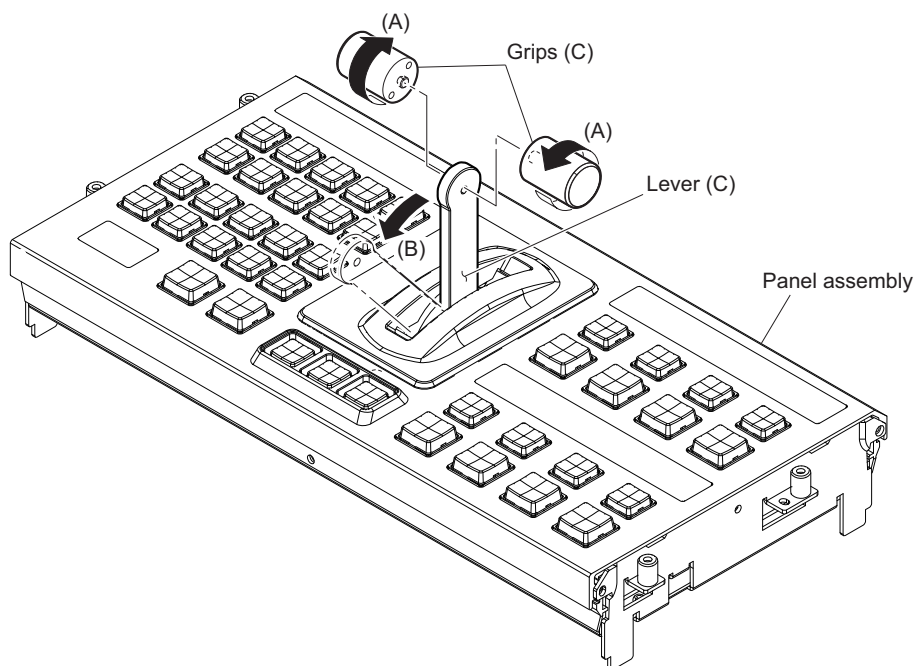
After the fader assembly has been replaced, make adjustments torque of the fader assembly as needed. (Refer to “3-3-2. Adjusting the Torque of the Fader Assembly (MKS-X7020/MKS-X7032)”)

Preparation

1. Remove the panel assembly. (Refer to “3-2-3. MKS-X7020”/“3-2-7. MKS-X7032”)

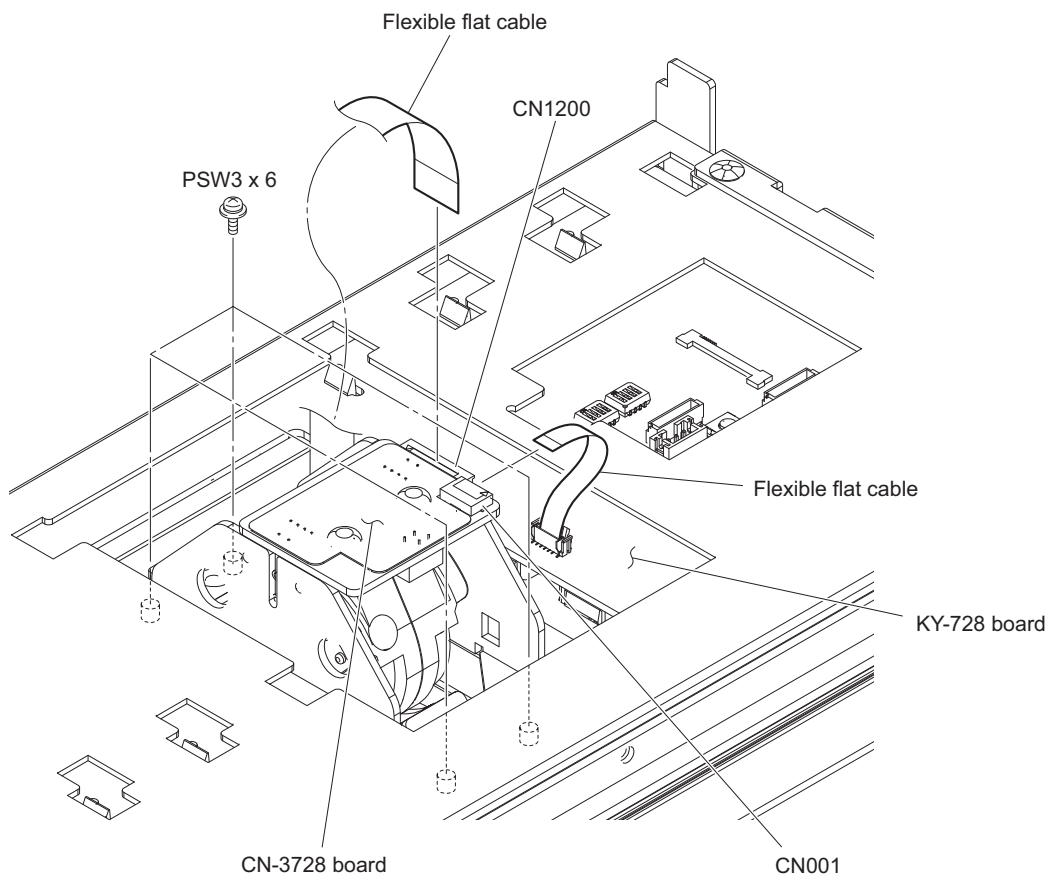
Procedure

1. Rotate the grips (C) in the direction of arrow (A) and remove the grips (C).
2. Turn the lever (C) in the direction of arrow (B).

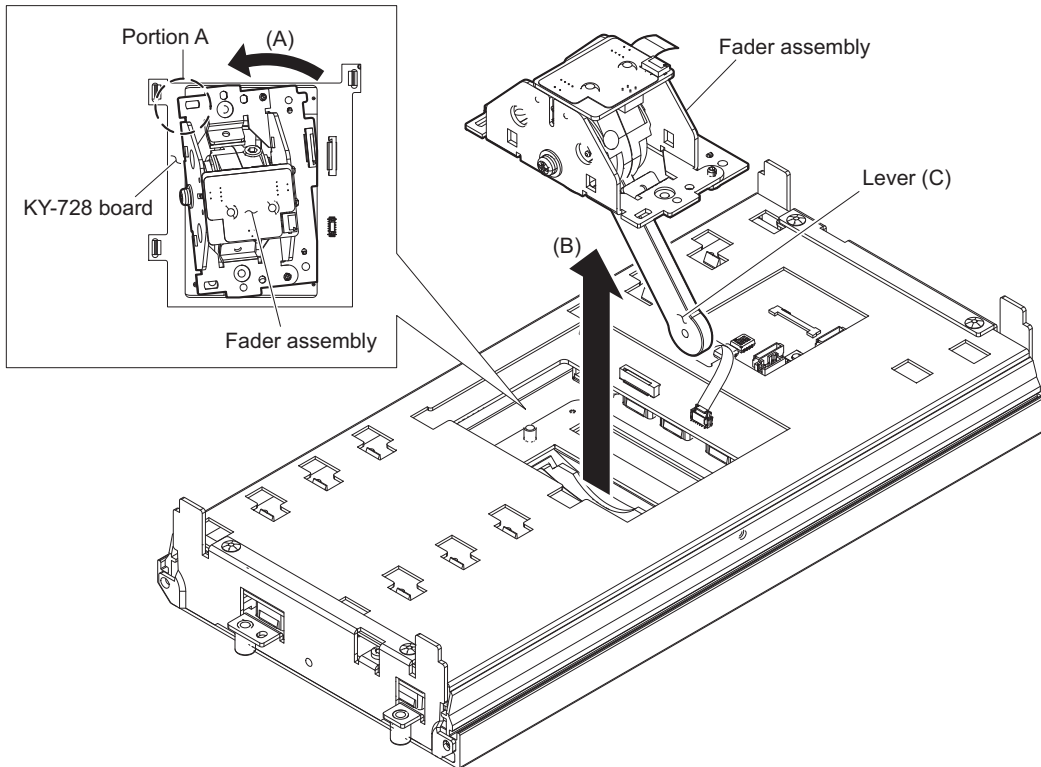


3. Disconnect the flexible flat cables.

- (1) Disconnect the flexible flat cable from the connector (CN1200) on the KY-728 board.
- (2) Disconnect the flexible flat cable from the connector (CN001) on the CN-3728 board.
- (3) Remove the four screws.



4. Remove the fader assembly.
- (1) Lift portion A above the KY-728 board.
 - (2) Turn the fader assembly in the direction of arrow (A) and remove it in the direction of arrow (B).



5. Install the removed parts by reversing the steps of removal.

Tip

When installing the fader assembly, turn the lever (C) in the direction of arrow (B) as shown in step 2 and then install the fader assembly.

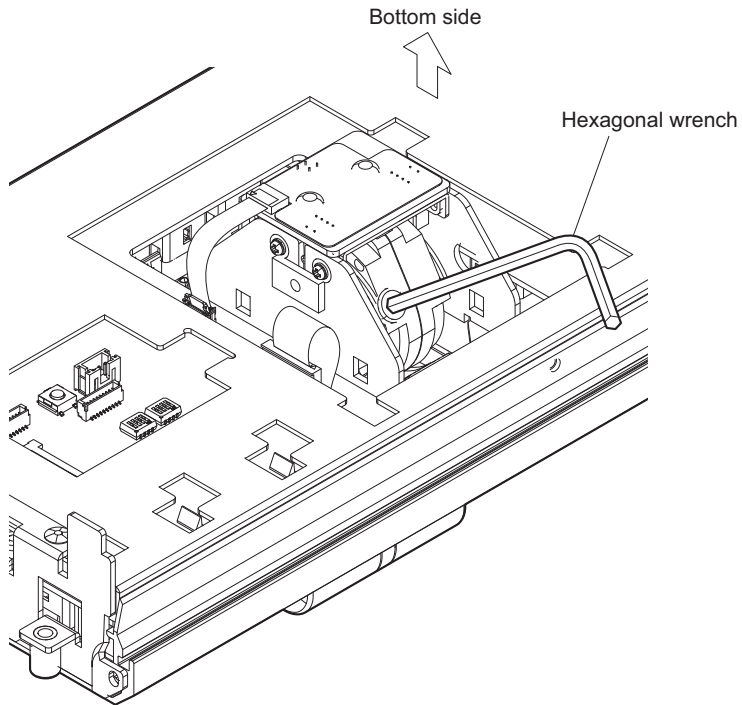
3-3-2. Adjusting the Torque of the Fader Assembly (MKS-X7020/MKS-X7032)

Preparation

1. Remove the panel assembly. (Refer to “3-2-3. MKS-X7020”/“3-2-7. MKS-X7032”)

Procedure

1. Insert the supplied hexagonal wrench (4 mm sides) into the hole and rotate to adjust to torque.



Note

- Rotate clockwise: Fader lever operation becomes firmer.
- Rotate counterclockwise: Fader lever operation becomes freer.

3-3-3. Fader Assembly (MKS-X7021)

Tip

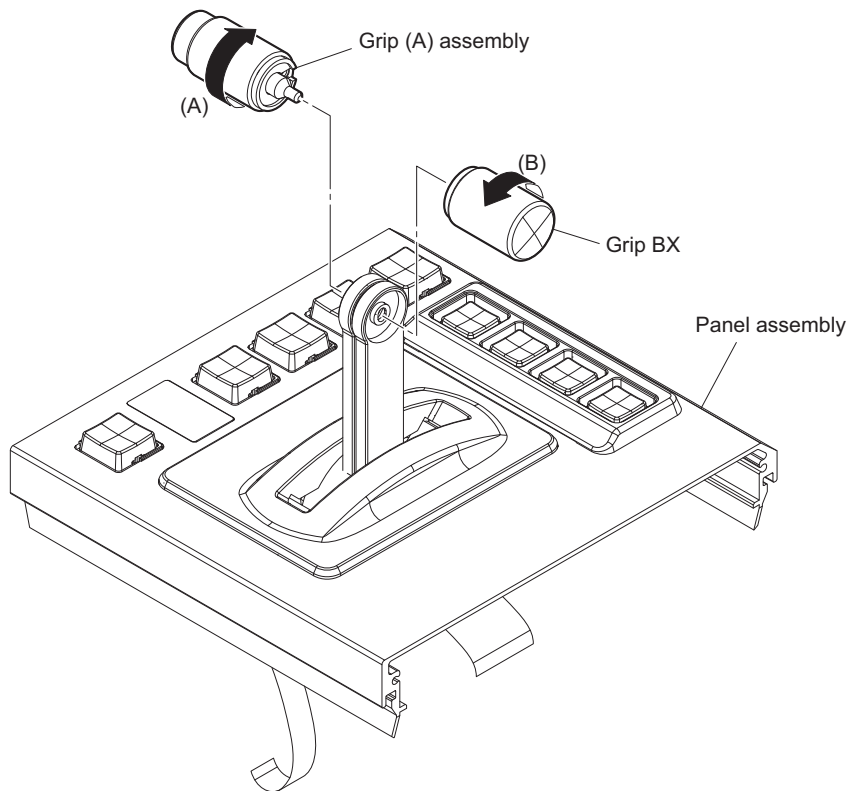
After the fader assembly has been replaced, make adjustments torque of the fader assembly as needed. (Refer to [“3-3-4. Adjusting the Torque of the Fader Assembly \(MKS-X7021\)”](#))

Preparation

1. Remove the panel assembly. (Refer to [“3-2-4. MKS-X7021”](#))

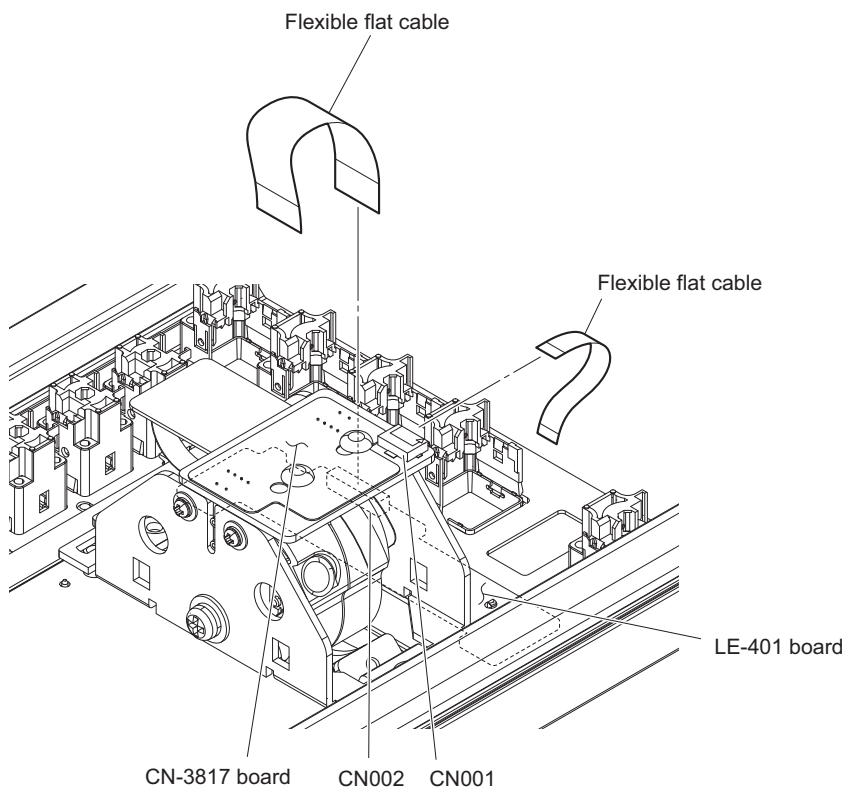
Procedure

1. Rotate the grip (A) assembly in the direction of arrow (A) and remove the grip (A) assembly.
2. Turn the grip BX in the direction of arrow (B), and remove the grip BX.

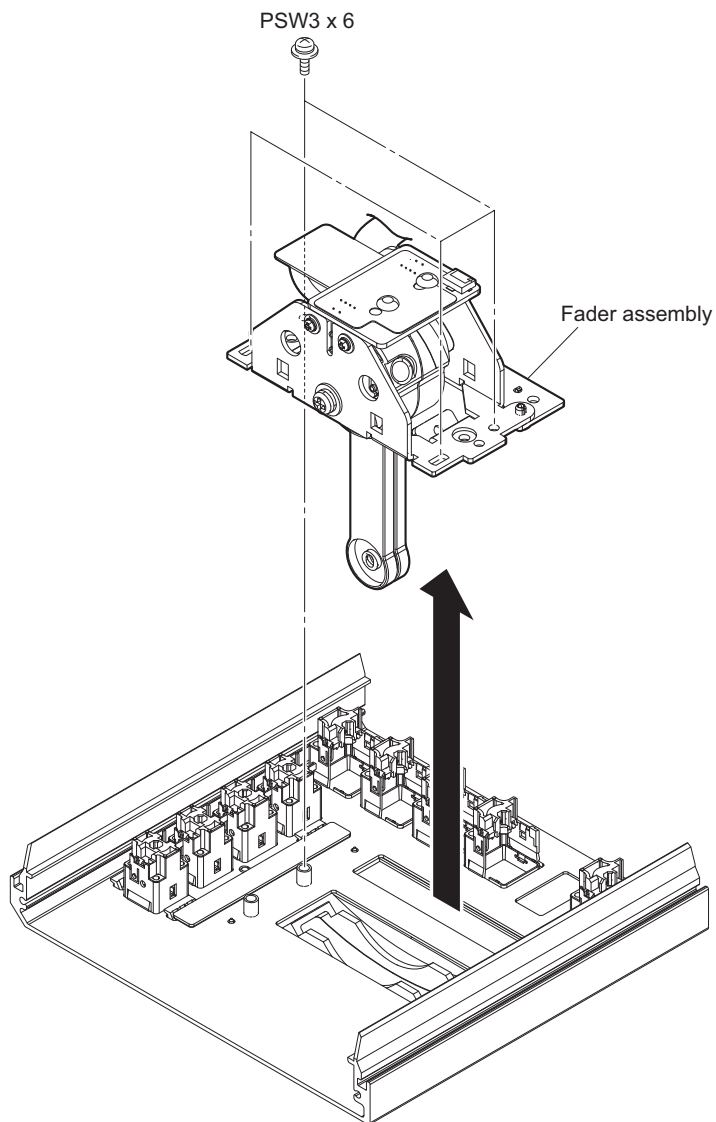


3. Disconnect the flexible flat cables.

- (1) Disconnect the flexible flat cable from the connector (CN002) on the LE-401 board.
- (2) Disconnect the flexible flat cable from the connector (CN001) on the CN-3817 board.
- (3) Remove the four screws.



4. Remove the four screws, and remove the fader assembly in the direction of the arrow.



5. Install the removed parts by reversing the steps of removal.

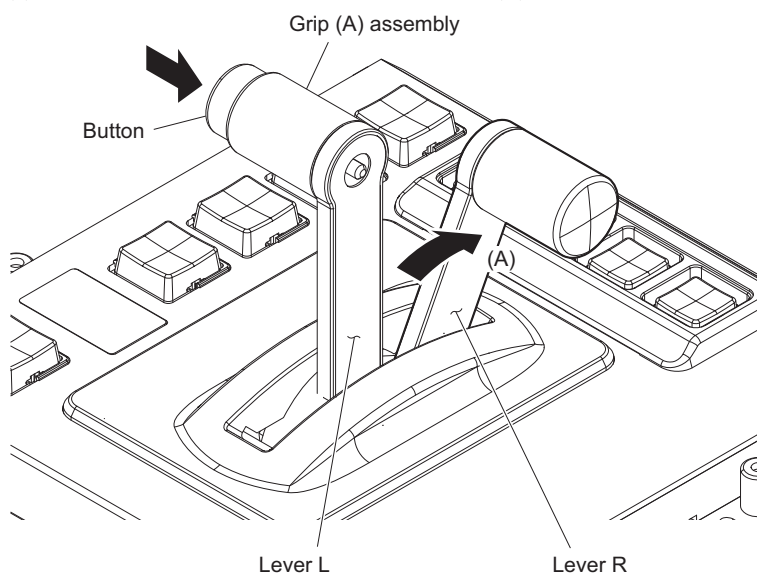
3-3-4. Adjusting the Torque of the Fader Assembly (MKS-X7021)

Preparation

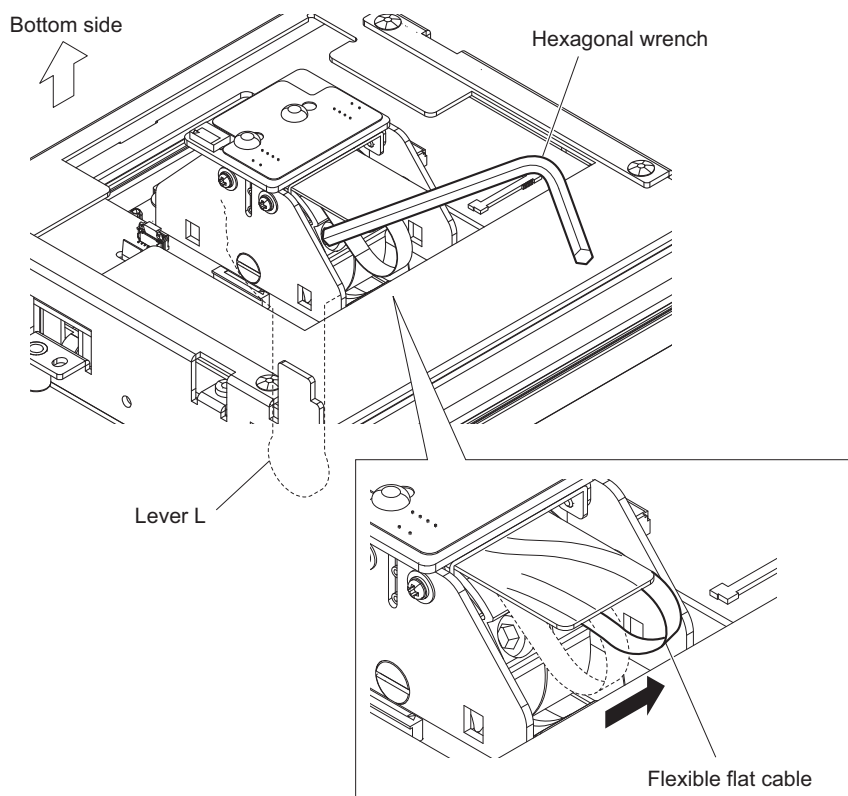
1. Remove the panel assembly. (Refer to “3-2-4. MKS-X7021”)

Procedure

1. Separate the lever R and the lever L.
 - (1) Push the button of the grip (A) assembly.
 - (2) Turn the lever R in the direction of the arrow (A).

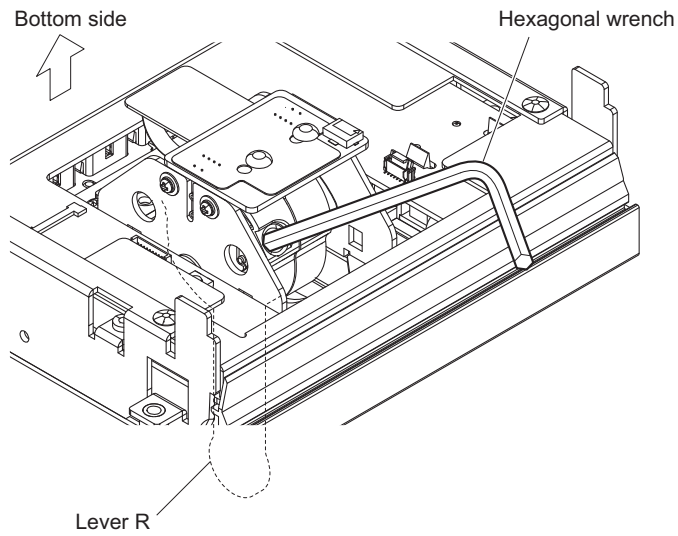


2. Adjust the torque of the lever L.
 - (1) Move the flexible flat cable of the fader assembly in the direction of the arrow, while taking care not to damage it.
 - (2) Insert the supplied hexagonal wrench (4 mm sides) into the hole and rotate to adjust to torque.



3. Adjust the torque of the lever R.

(1) Insert the supplied hexagonal wrench (4 mm sides) into the hole and rotate to adjust to torque.



Note

- Rotate clockwise: Fader lever operation becomes firmer.
- Rotate counterclockwise: Fader lever operation becomes freer.

3-3-5. SW Case (12) Assembly/SW Case (15) Assembly

Tip

The SW case (12) assembly and the SW case (15) assembly are installed in the following modules. These assemblies can be replaced with the same procedure.

Applicable modules

- MKS-X7011: Menu Panel
- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module
- MKS-X7019: 20 XPT Module
- MKS-X7020: Standard Transition Module
- MKS-X7021: Simple Transition Module
- MKS-X7023: Key Transition Module
- MKS-X7024: FlexiPad Module
- MKS-X7026: 10-Key Pad Module
- MKS-X7031TB: Track Ball Module
- MKS-X7032: Key Fader Module
- MKS-X7033: Utility/Shot Box Module
- MKS-X7035: Key Control Module

Preparation

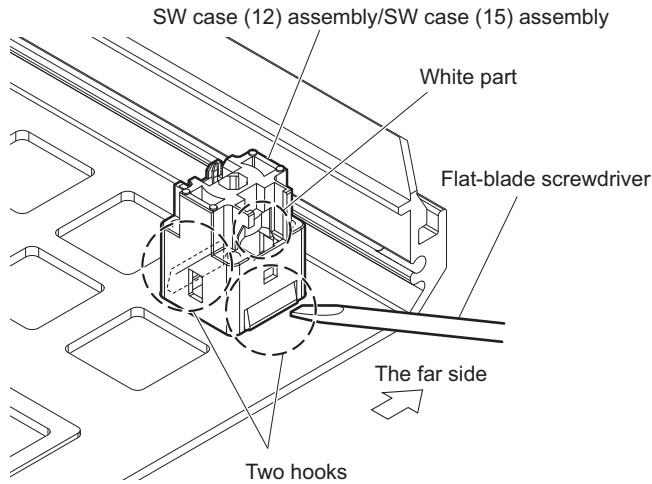
1. Remove the panel assembly. (Refer to “[3-2-1. MKS-X7017/X7018/X7019](#)”/“[3-2-2. MKS-X7011](#)”/“[3-2-3. MKS-X7020](#)”/“[3-2-6. MKS-X7024](#)”/“[3-2-8. MKS-X7026/X7033](#)”/“[3-2-9. MKS-X7031TB](#)”)

Procedure

1. Remove the cap (12) assembly, diffuser plate (12) and cap (15), and the diffuser plate (15).
(Refer to “1-7-1. Removing and Installing Cap/Diffusion Plate of Switch without Switch Guard” in the installation manual.)

2. Remove the SW case (12) assembly/SW case (15) assembly.

- (1) Release the two hooks with a flat-blade screwdriver, then remove SW case (12) assembly/SW case (15) assembly.



This figure shows MKS-X7019.

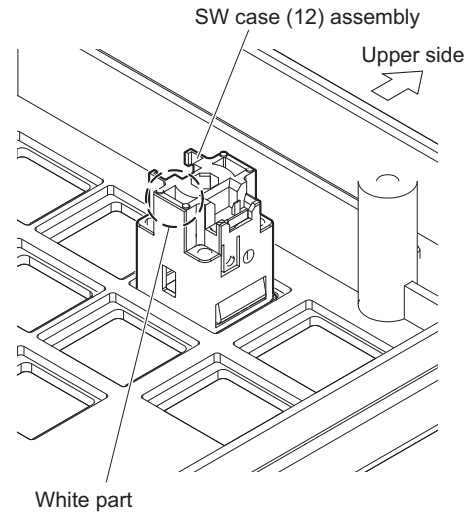
Note

The orientation of the SW case assembly of MKS-X7011 is different from other modules. Install the SW case (12) assembly/SW case (15) assembly paying attention to the orientation of white part of the button (C12)/button (C15) in the SW case assembly.

Tip

Only the SW case (15) assembly (with click) of the MKS-X7021 is other part different from other SW case (15) assemblies, both SW case (15) assemblies can be replaced with the same procedure.

3. Install the removed parts by reversing the steps of removal.



This figure shows MKS-X7011.

3-3-6. Key Top Assembly

Tip

The key top assemblies are installed in the following modules. These assemblies can be replaced with the same procedure.

Applicable modules

- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module
- MKS-X7019: 20 XPT Module
- MKS-X7024: FlexiPad Module
- MKS-X7033: Utility/Shot Box Module

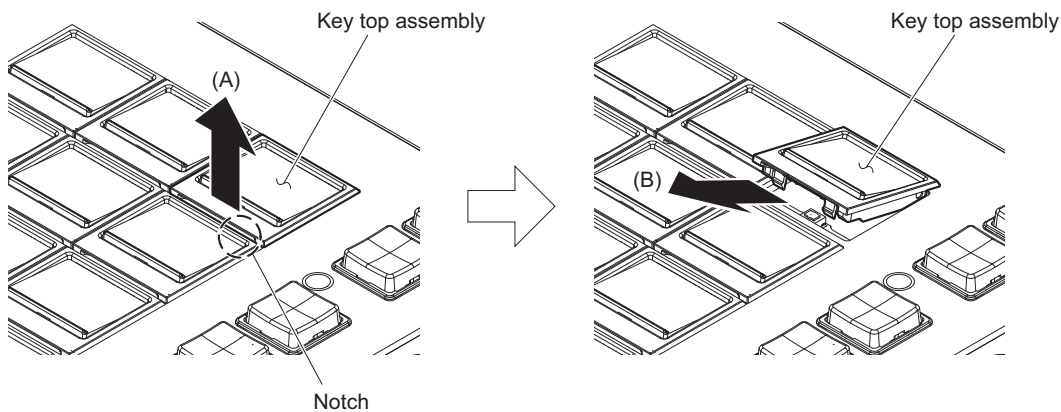
Preparation

1. Remove the panel assembly. (Refer to “3-2-1. MKS-X7017/X7018/X7019”/“3-2-6. MKS-X7024”/“3-2-8. MKS-X7026/X7033”)

Removal

Procedure

1. Remove the key top assembly.
 - (1) Hook the claw to the notch and lift the key top assembly in the direction of arrow (A).
 - (2) Pull the key top assembly in the direction of arrow (B) to remove it.

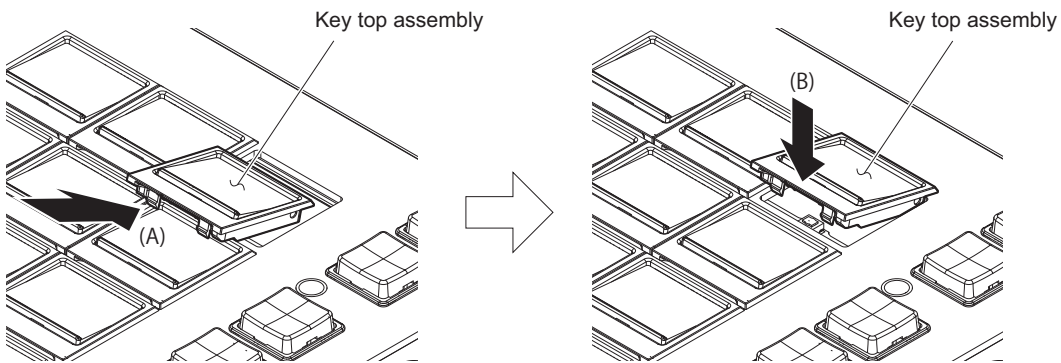


This figure shows MKS-X7024.

Installation

Procedure

1. Install the key top assembly.
 - (1) Insert the key top assembly in the direction of arrow (A) paying attention to its orientation.
 - (2) Push the key top assembly in the direction of arrow (B) until a click is heard to install it.



This figure shows MKS-X7024.

3-3-7. OLED Display (2.7 INCH)

Tip

The OLED displays (2.7 INCH) are installed in the following modules. These parts can be replaced with the same procedure.

Applicable modules

- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module
- MKS-X7019: 20 XPT Module
- MKS-X7026: 10-Key Pad Module
- MKS-X7031TB: Track Ball Module
- MKS-X7035: Key Control Module

Preparation

1. Remove the panel assembly. (Refer to [“3-2-1. MKS-X7017/X7018/X7019”](#)/[“3-2-8. MKS-X7026/X7033”](#)/[“3-2-9. MKS-X7031TB”](#))

Removal**Tip**

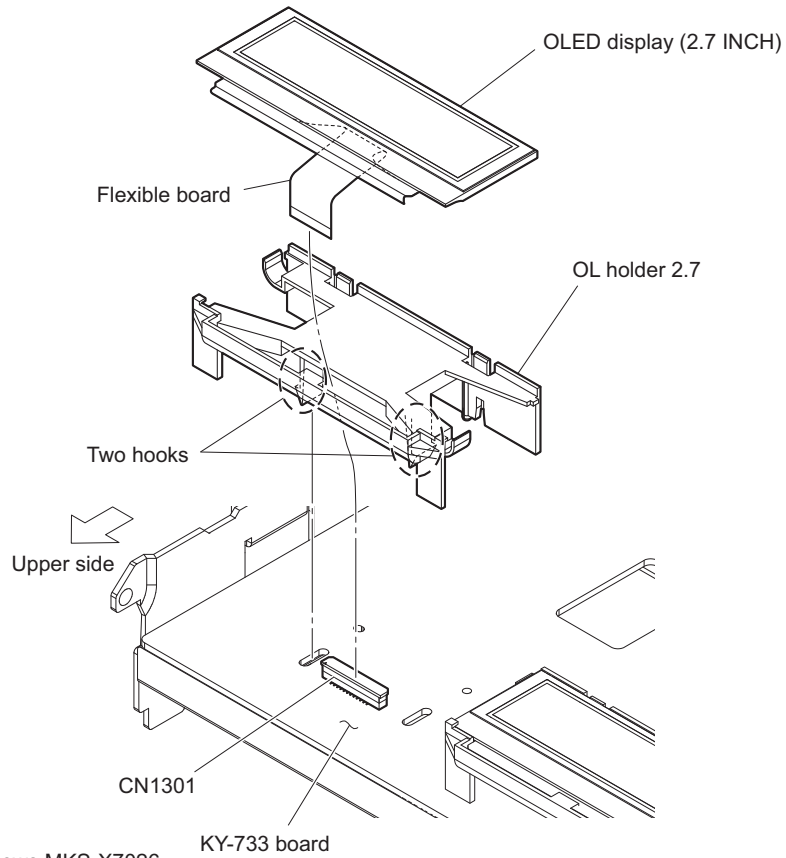
The two claws can be released with a finger from the holes on the back of the module. If you cannot insert your finger well, use a tool.

Note

When using a tool, be careful not to damage the board.

Procedure

1. Remove the OLED display (2.7 INCH).
 - (1) Release the two hooks and remove the OLED display (2.7 INCH).
 - (2) Disconnect the flexible board from the connector (CN1301) on the KY-733 board, then remove the OLED display (2.7 INCH).



This figure shows MKS-X7026.

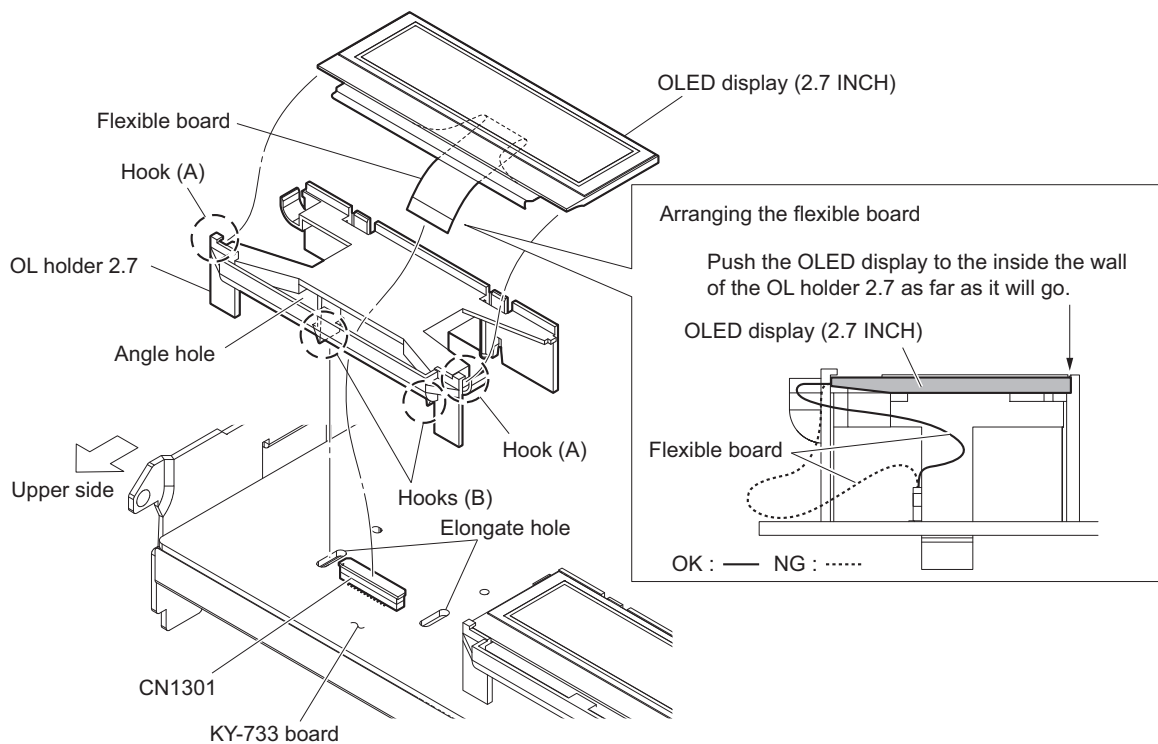
Installation

Procedure

1. Install the OLED display (2.7 INCH).
 - (1) Pass the flexible board through the rectangular hole of the OL holder 2.7.
 - (2) Insert the OLED display (2.7 INCH) to the two hooks (A) of the OL holder 2.7, and install the OLED display (2.7 INCH).
 - (3) Connect the flexible board to the connector (CN1301) on the KY-733 board.
 - (4) Insert the hooks (B) of the OL holder 2.7 into the elongate holes in the KY-733 board.

Note

- When installing the OLED display (2.7 INCH), arranging the flexible board as shown below.
- Arranging the flexible board improperly as shown below may result in a failure.
- The OLED display (2.7 INCH) has a hollow structure. If its central area is pressed, it may be broken.



This figure shows MKS-X7026.

3-3-8. OLED Display (0.8 INCH)

Tip

The OLED displays (0.8 INCH) are installed in the following modules. These parts can be replaced with the same procedure.

Applicable modules

- MKS-X7020: Standard Transition Module
- MKS-X7021: Simple Transition Module
- MKS-X7023: Key Transition Module
- MKS-X7032: Key Fader Module
- MKS-X7035: Key Control Module

Preparation

1. Remove the panel assembly. (Refer to [“3-2-3. MKS-X7020”](#)/[“3-2-9. MKS-X7031TB”](#))

Removal

Tip

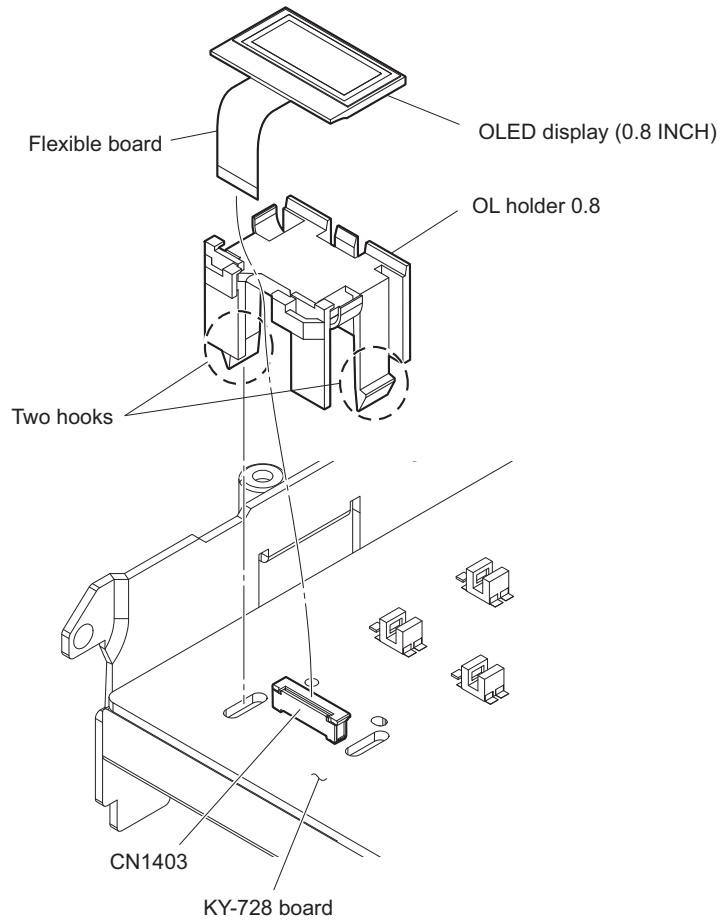
The two claws can be released with a finger from the holes on the back of the module. If you cannot insert your finger well, use a tool.

Note

When using a tool, be careful not to damage the board.

Procedure

1. Remove the OLED display (0.8 INCH).
 - (1) Release the two hooks and remove the OLED display (0.8 INCH).
 - (2) Disconnect the flexible board from the connector (CN1403) on the KY-728 board, then remove the OLED display (0.8 INCH).



This figure shows MKS-X7020.

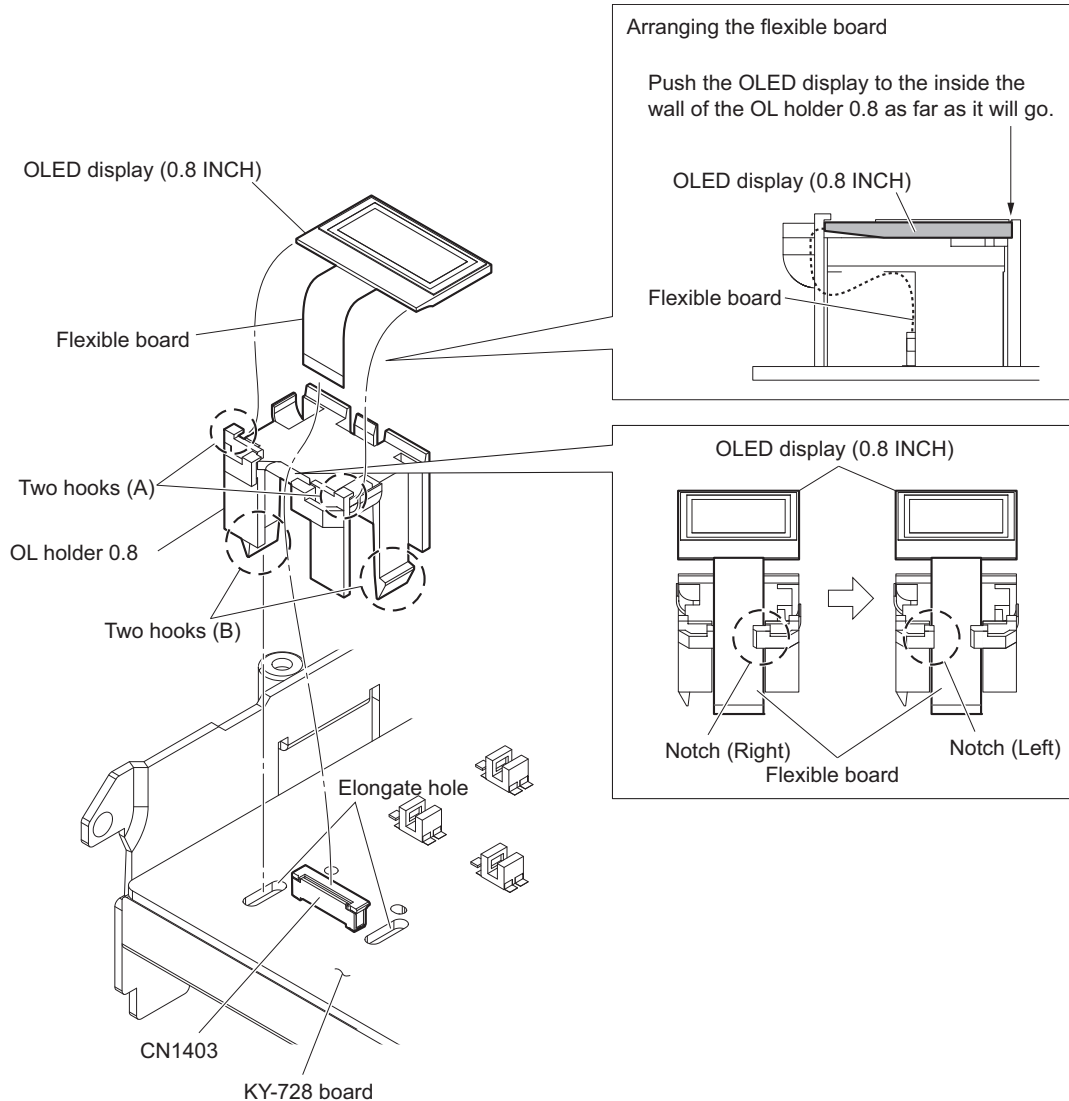
Installation

Procedure

1. Install the OLED display (0.8 INCH).
 - (1) Connect the flexible board to the connector (CN1403) on the KY-728 board.
 - (2) Insert the hooks (B) of the OL holder 0.8 into the elongate holes in the KY-728 board, and install the OL holder 0.8.
 - (3) Insert the flexible board into the right notch and then into the left notch of the OL holder 0.8.
 - (4) Insert the OLED display (0.8 INCH) to the two hooks (A) of the OL holder 0.8, and install the OLED display (0.8 INCH).

Note

- The OLED display (0.8 INCH) has a hollow structure. If its central area is pressed, it may be broken.



This figure shows MKS-X7020.

3-3-9. LCD5 Assembly

Tip

The LCD5 assemblies are installed in the following modules. These assemblies can be replaced with the same procedure.

Applicable modules

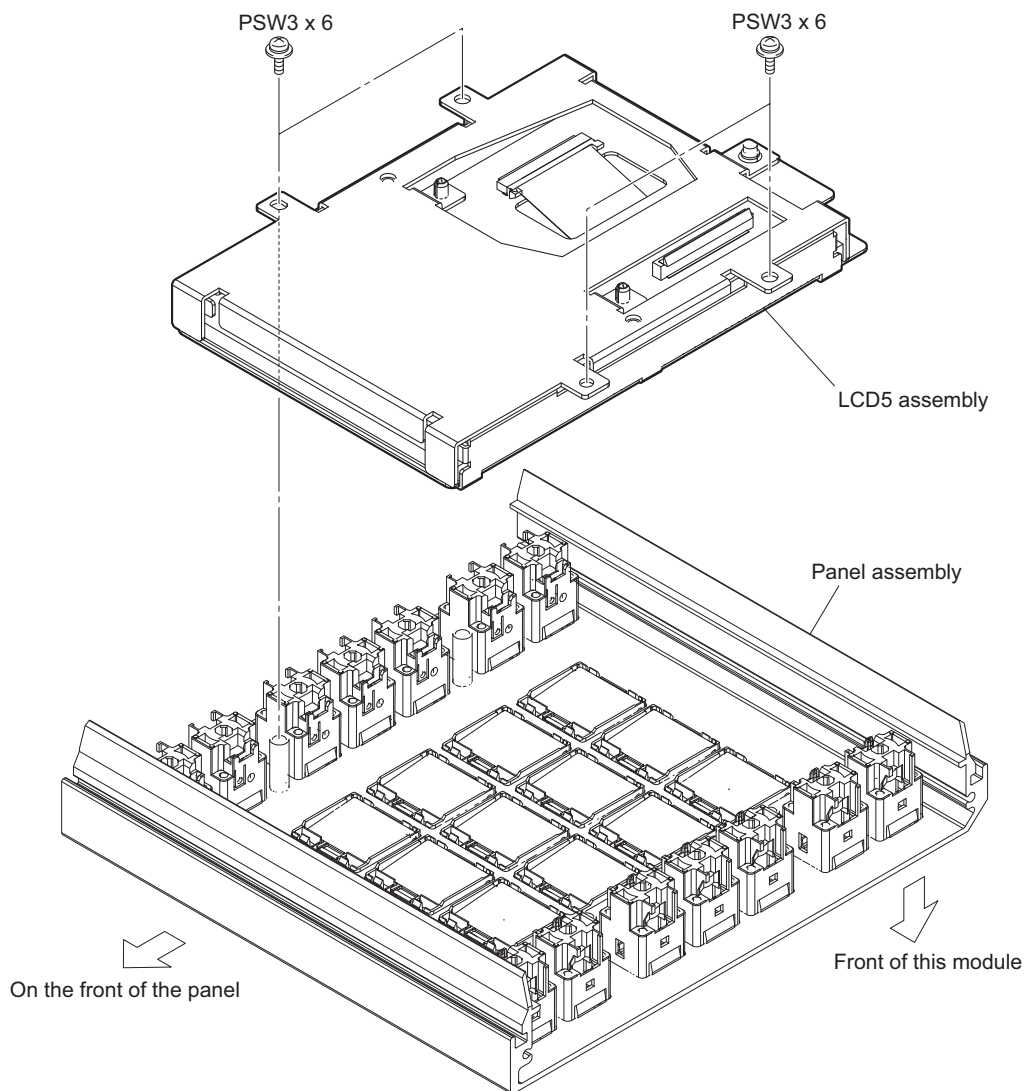
- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module
- MKS-X7019: 20 XPT Module
- MKS-X7024: FlexiPad Module

Preparation

1. Remove the panel assembly. (Refer to “3-2-1. MKS-X7017/X7018/X7019”/“3-2-6. MKS-X7024”)

Procedure

1. Remove the four screws from the back side of the panel assembly, then remove the LCD5 assembly.



This figure shows MKS- X7024.

Note

Install the LCD5 assembly with its directed as shown in the figure.

2. Install the removed parts by reversing the steps of removal.

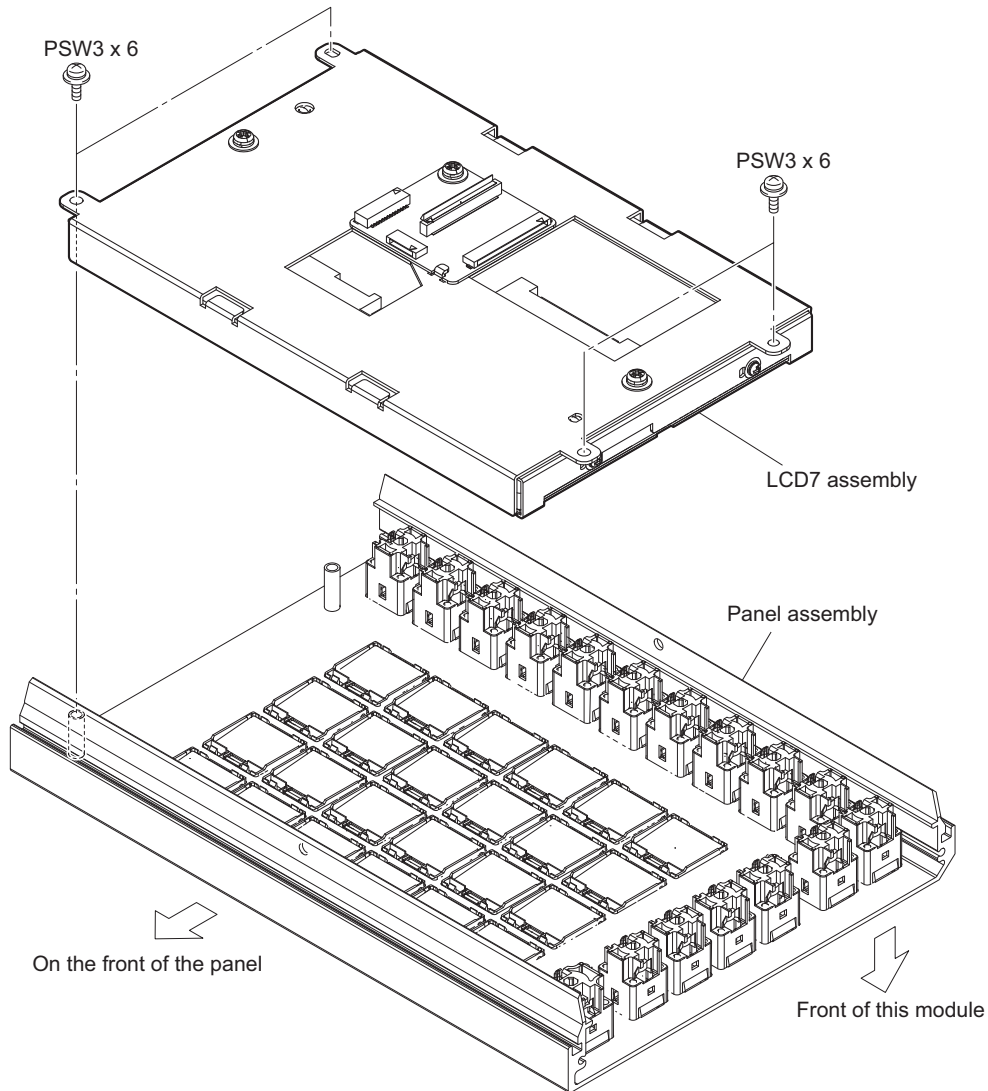
3-3-10. LCD7 Assembly (MKS-X7033)

Preparation

1. Remove the panel assembly. (Refer to “3-2-8. MKS-X7026/X7033”)

Procedure

1. Remove the four screws from the back side of this module, and remove the LCD7 assembly.



2. Install the removed parts by reversing the steps of removal.

3-3-11. CPU Module Assembly

Tip

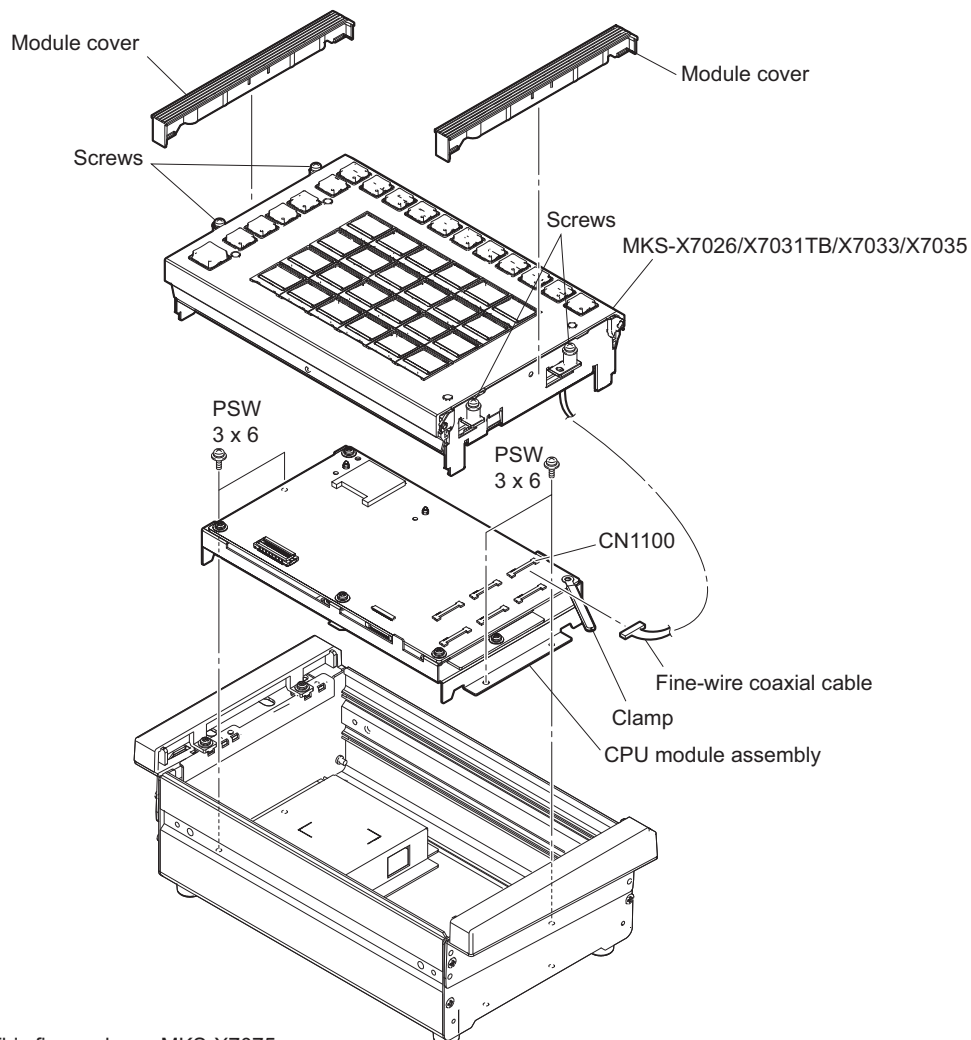
The CPU module assemblies are installed in the following modules. These assemblies can be replaced with the same procedure.

Applicable modules

- ICP-X7000: Integrated Control Panel Pack
- MKS-X7075: Extension Adaptor

Procedure

1. Remove the CPU module assembly.
 - (1) Remove the two module covers.
 - (2) Loosen the four screws and remove the operation module.
 - (3) Open the clamp, and disconnect the fine-wire coaxial cable from the connector (CN1100) of the CPU module assembly.
 - (4) Remove the four screws, then remove CPU module assembly.



This figure shows MKS-X7075.

2. Install the removed parts by reversing the steps of removal.

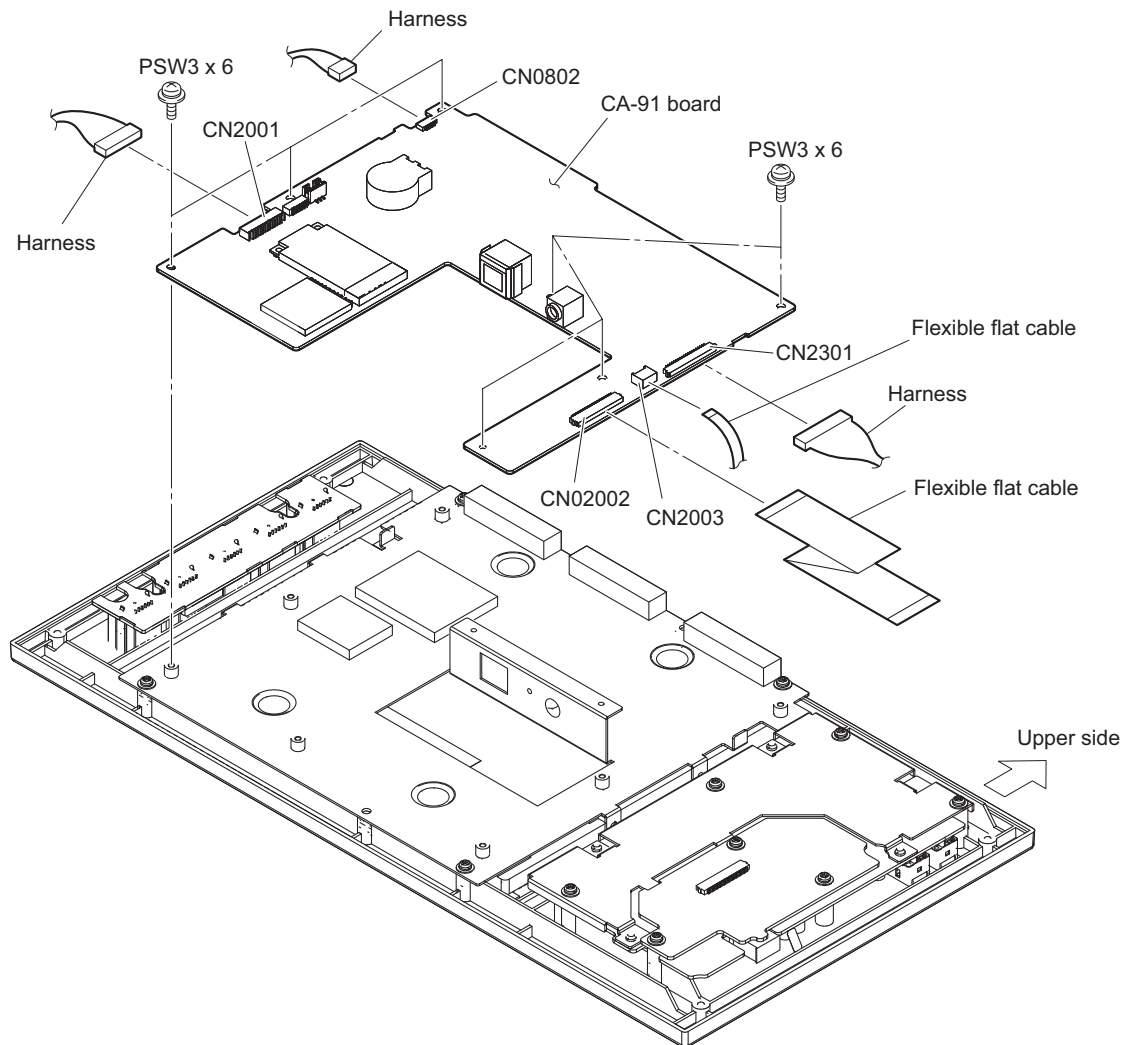
3-3-12. LCD Unit (MKS-X7011)

Preparation

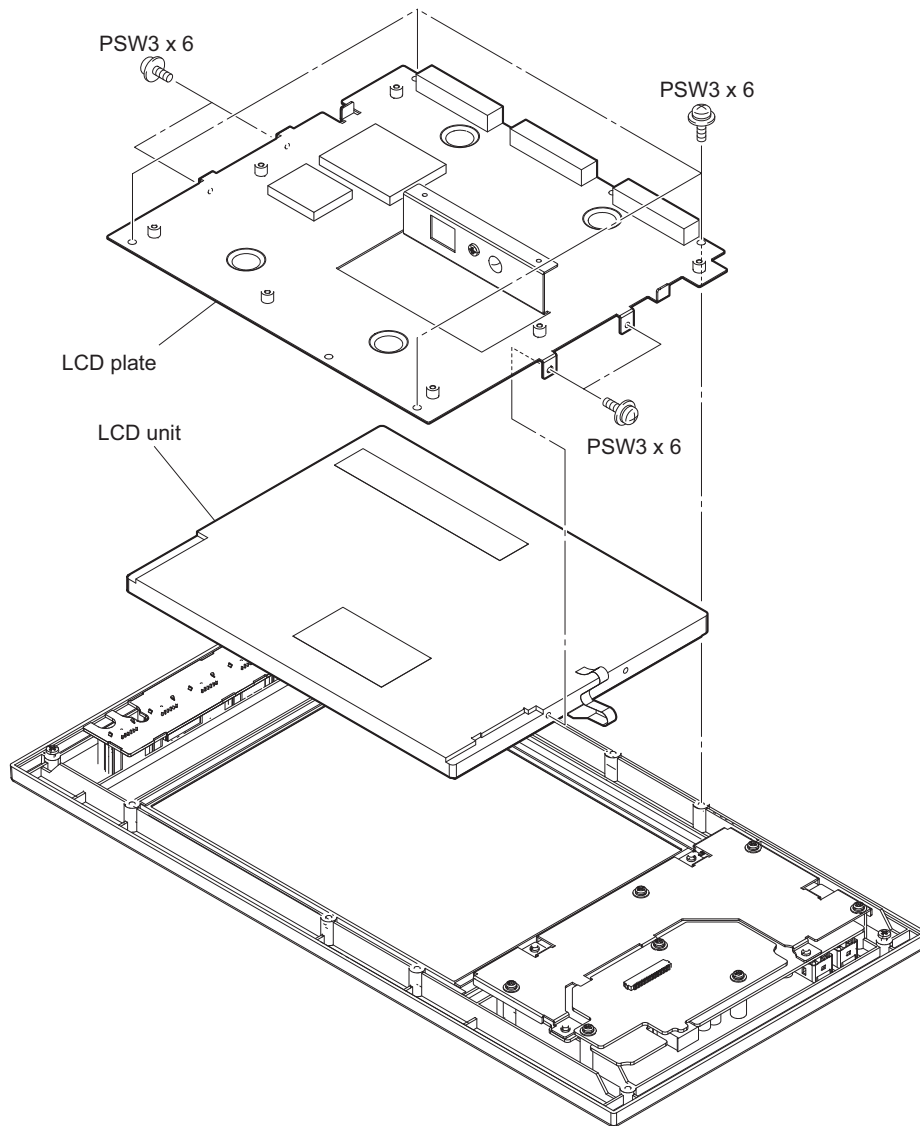
1. Remove the LCD case (bottom). (Refer to “3-2-2. MKS-X7011”)

Procedure

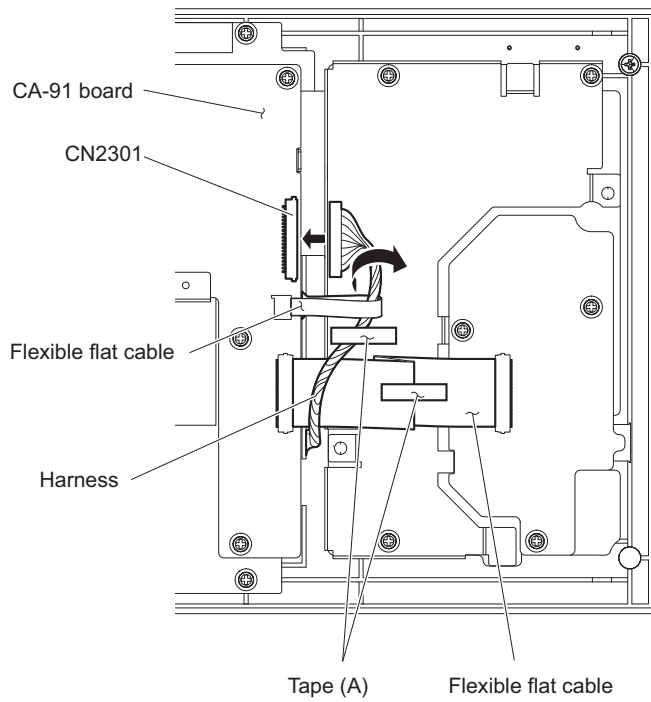
1. Remove the CA-91 board.
 - (1) Disconnect the two flexible flat cables from the connectors (CN2002, CN2003) on the CA-91 board.
 - (2) Disconnect the three harnesses from the connectors (CN0802, CN2001, CN2301) on the CA-91 board.
 - (3) Remove the seven screws, then remove the CA-91 board.



2. Remove the LCD unit.
 - (1) Remove the four screws, then remove the LCD plate.
 - (2) Remove the four screws, then remove the LCD unit.



3. Install the removed parts by reversing the steps of removal.
- (1) When connecting the harness, lay it above the flexible flat cable, twist it 2.5 turns clockwise, and then connect it to the connector (CN2301) on the CA-91 board.
 - (2) Fix the flexible flat cable and the harness with tape (A) as shown below.



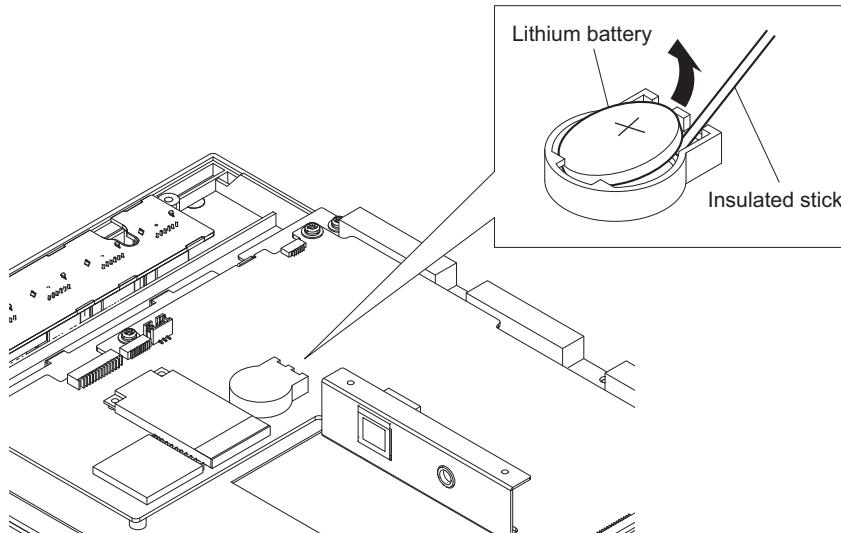
3-3-13. Lithium Battery (MKS-X7011)

Preparation

1. Remove the cabinet. (Refer to “3-2-2. MKS-X7011”)

Procedure

1. Remove the lithium battery with an insulated stick.



Note

When installing the lithium battery, not to mistake the orientation of the lithium battery.

2. Install the removed parts by reversing the steps of removal.

Note

After replacing the lithium battery, set the date and time again. (Refer to "Section 18. System Setup" on the Users guide.)

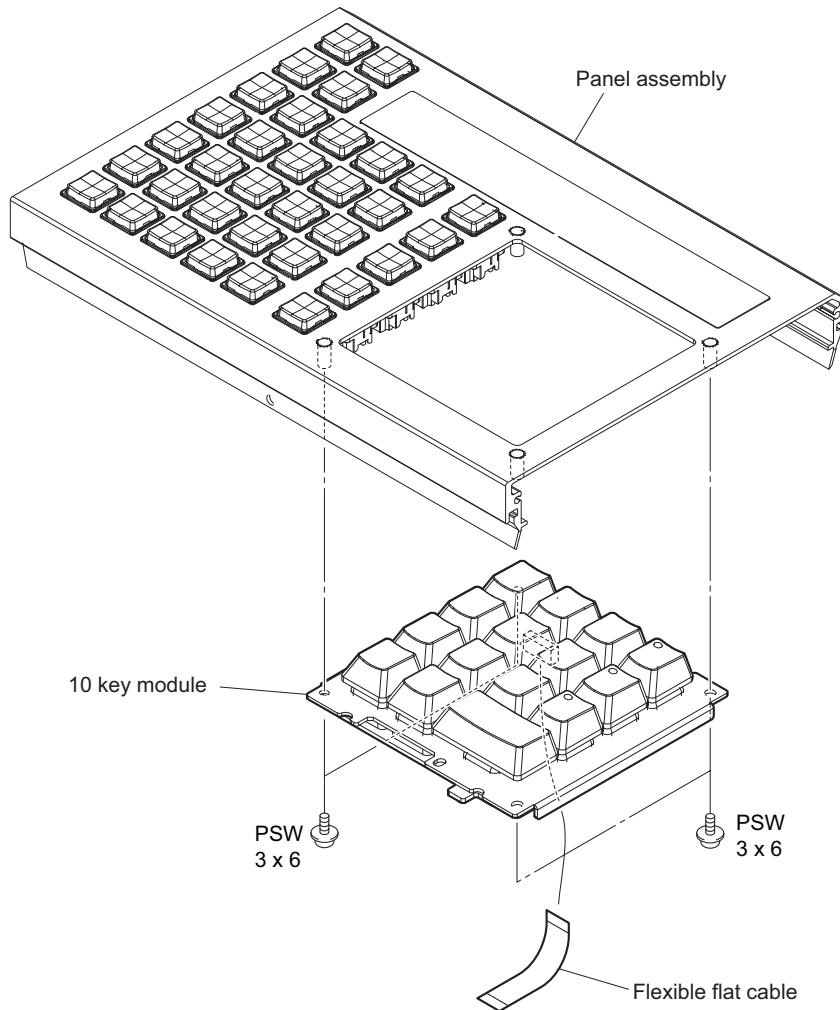
3-3-14. 10 Key Module (MKS-X7026)

Preparation

1. Remove the cabinet. (Refer to “3-2-8. MKS-X7026/X7033”)

Procedure

1. Disconnect the flexible flat cable from the connector of the 10 key module.
2. Remove the four screws, then remove the 10 key module.



3. Install the removed parts by reversing the steps of removal.

3-4. Replacing Boards

3-4-1. CA-91 Board (MKS-X7011)

Preparation

1. Remove the LCD case (bottom). (Refer to [“3-2-2. MKS-X7011”](#))

Procedure

1. Remove the CA-91 board. (Refer to [“3-3-12. LCD Unit \(MKS-X7011\)”](#))
2. Install the removed parts by reversing the steps of removal.

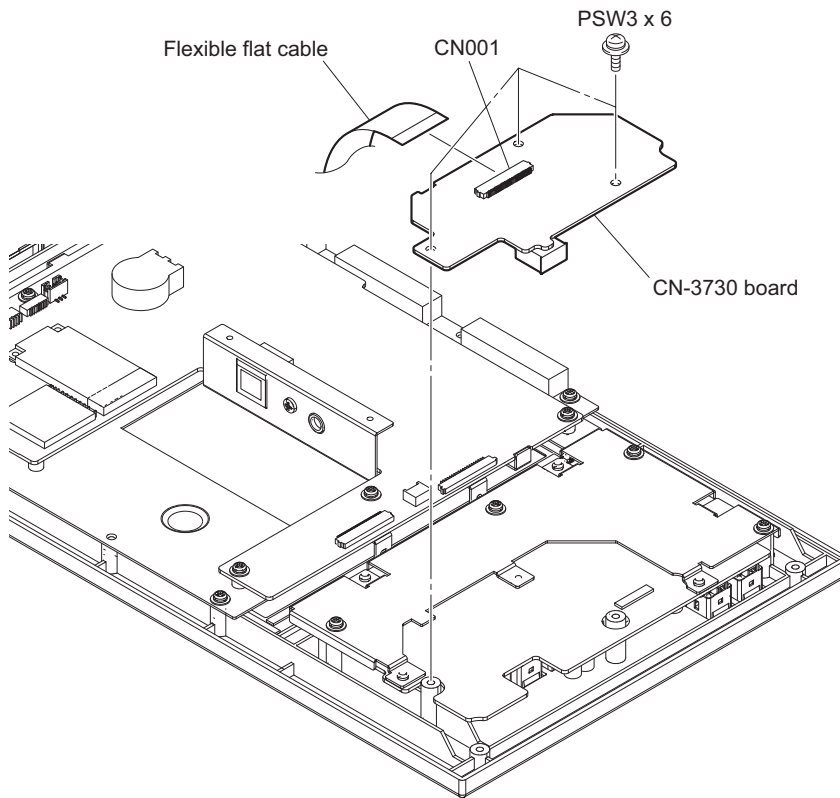
3-4-2. CN-3730 Board (MKS-X7011)

Preparation

1. Remove the LCD case (bottom). (Refer to “3-2-2. MKS-X7011”)

Procedure

1. Remove the CN-3730 board.
 - (1) Disconnect the flexible flat cable.
 - (2) Remove the three screws, then remove the CN-3730 board.



2. Install the removed parts by reversing the steps of removal.

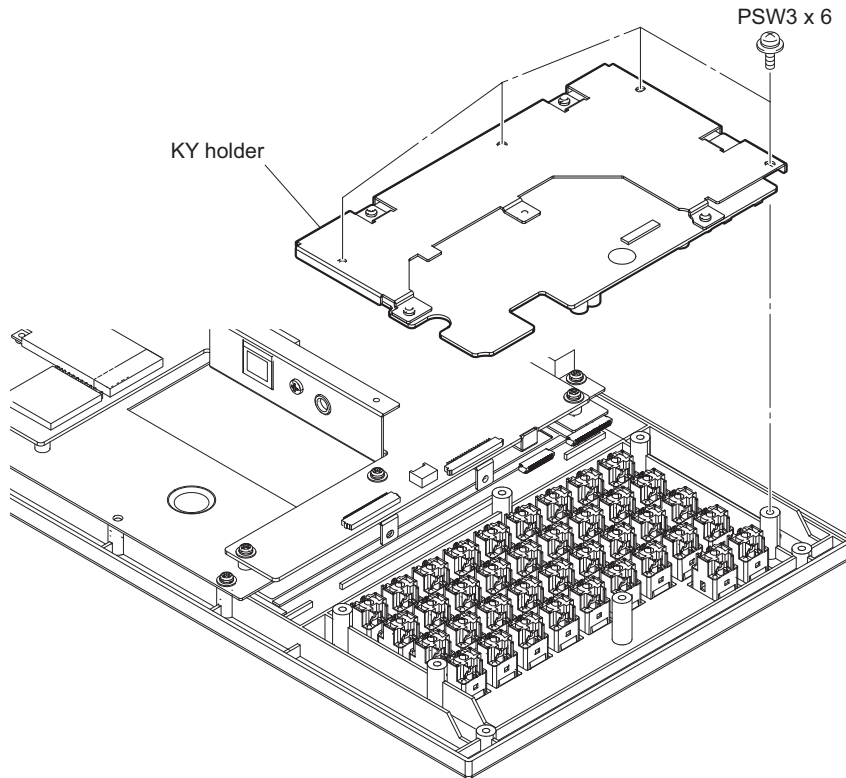
3-4-3. KY-723 Board (MKS-X7011)

Preparation

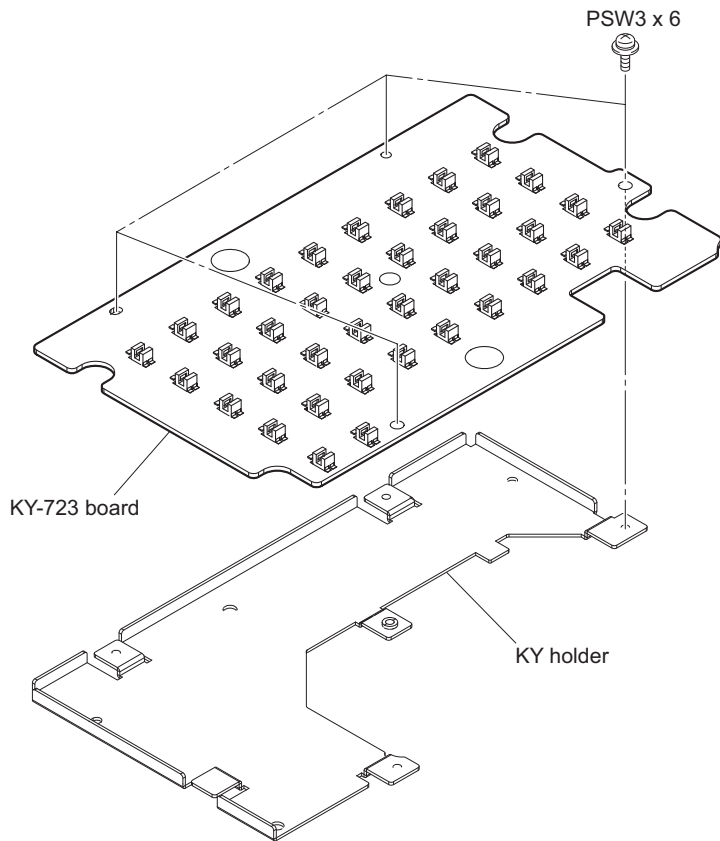
1. Remove the LCD case (bottom). (Refer to “3-2-2. MKS-X7011”)
2. Remove the CN-3730 board. (Refer to “3-4-2. CN-3730 Board (MKS-X7011)”)

Procedure

1. Remove the four screws, then remove the KY holder.



2. Remove the four screws, then remove the KY-723 board.



3. Install the removed parts by reversing the steps of removal.

3-4-4. KY-724 Board

Tip

The KY-724 boards are installed in the following modules. These boards can be replaced with the same procedure.

Applicable modules

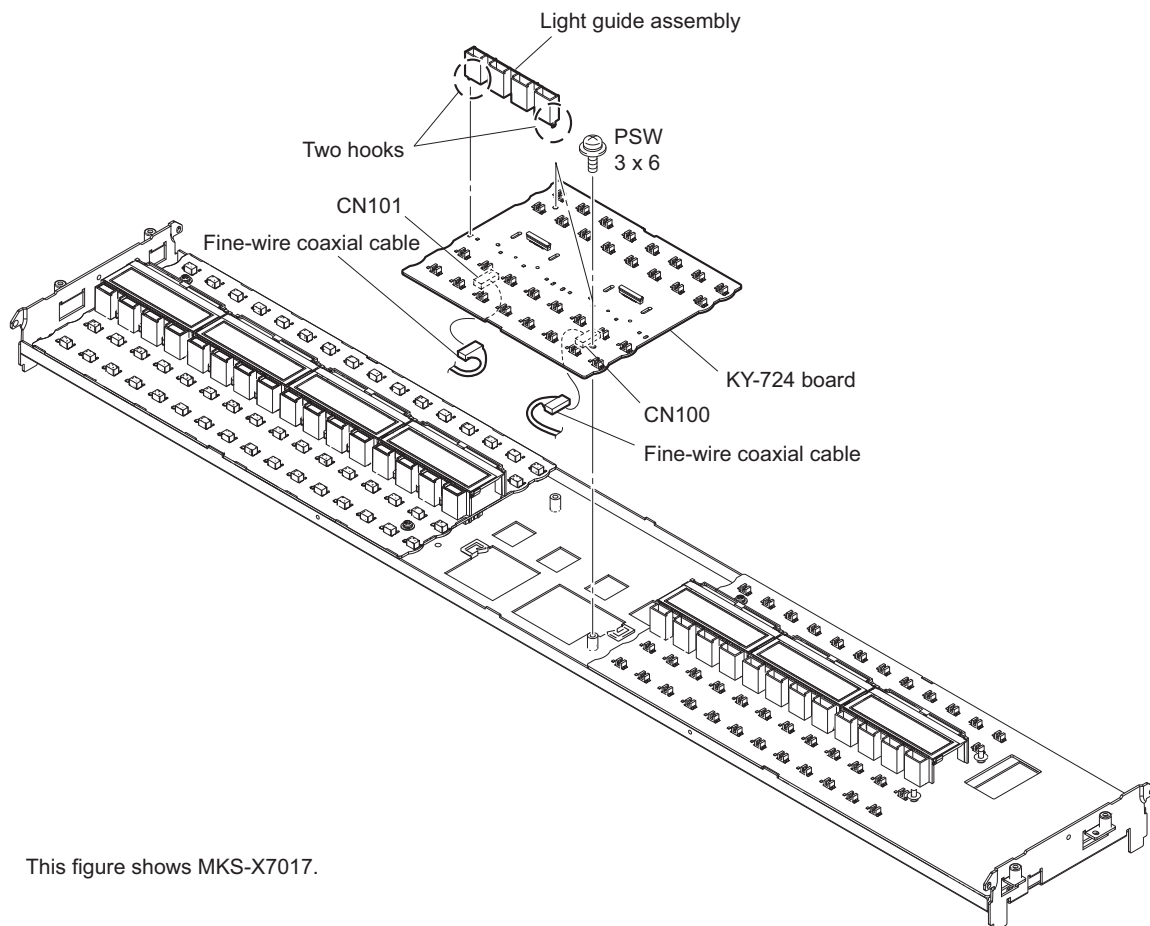
- MKS-X7017: 36 XPT Module
- MKS-X7019: 20 XPT Module

Preparation

1. Remove the panel assembly. (Refer to “[3-2-1. MKS-X7017/X7018/X7019](#)”)

Procedure

1. Remove the KY-724 board.
 - (1) Disconnect the two fine-wire coaxial cables from the connectors (CN100, CN101) on the KY-724 board.
 - (2) Remove the OLED display (2.7 INCH). (Refer to “[3-3-7. OLED Display \(2.7 INCH\)](#)”)
 - (3) Release the two hooks and remove the light guide assembly.
 - (4) Remove the two screws, then remove the KY-724 board.



2. Install the removed parts by reversing the steps of removal.

3-4-5. KY-725 Board

Tip

The KY-725 boards are installed in the following modules. These boards can be replaced with the same procedure.

Applicable modules

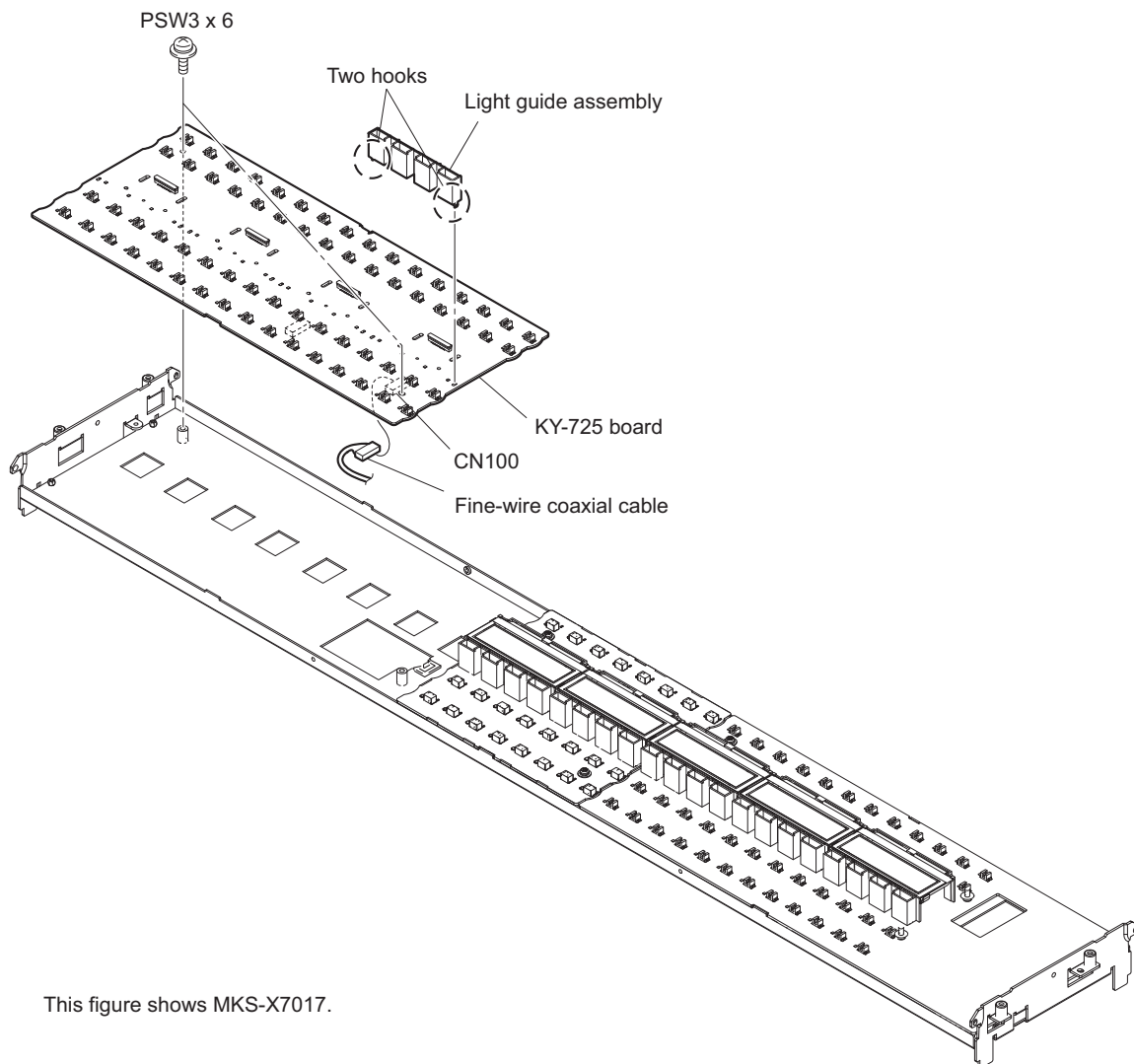
- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module

Preparation

1. Remove the panel assembly. (Refer to “[3-2-1. MKS-X7017/X7018/X7019](#)”)

Procedure

1. Remove the KY-725 board.
 - (1) Disconnect the fine-wire coaxial cable from the connector (CN100) on the KY-725 board.
 - (2) Remove the OLED display (2.7 INCH). (Refer to “[3-3-7. OLED Display \(2.7 INCH\)](#)”)
 - (3) Release the two hooks and remove the light guide assembly.
 - (4) Remove the two screws, then remove the KY-725 board.



2. Install the removed parts by reversing the steps of removal.

3-4-6. KY-726 Board

Tip

The KY-726 boards are installed in the following modules. These boards can be replaced with the same procedure.

Applicable modules

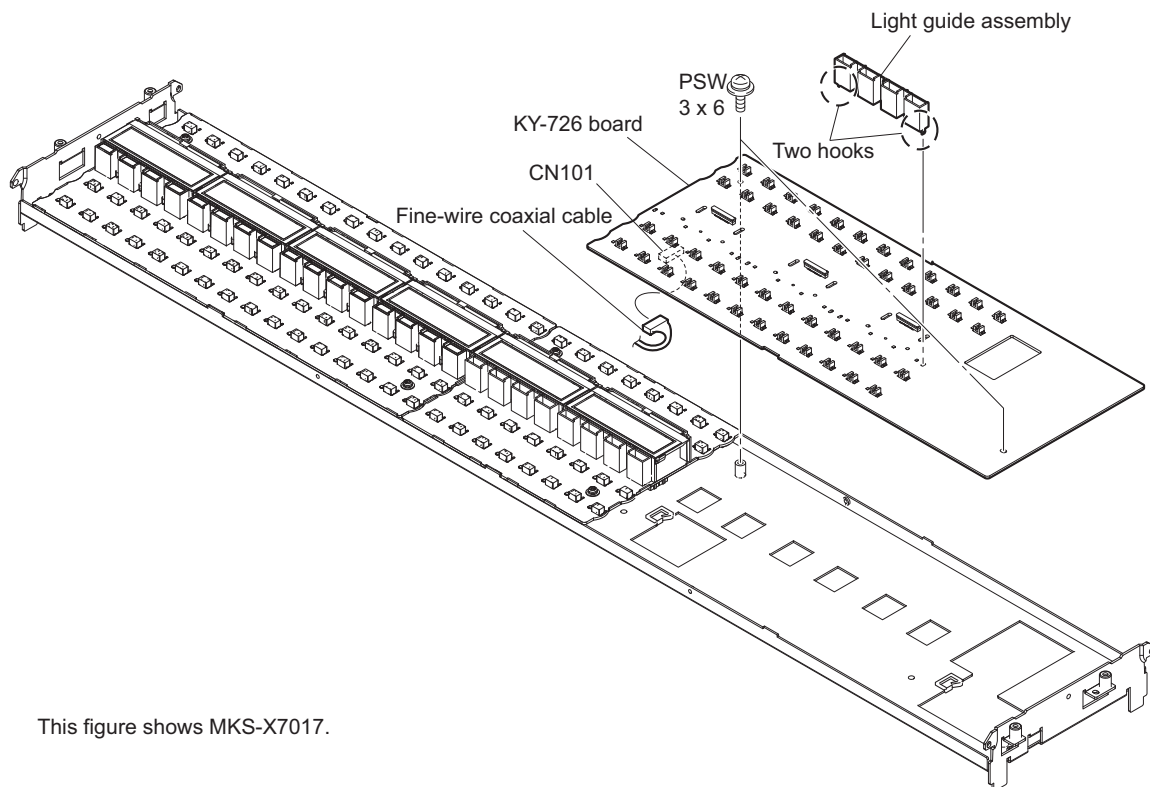
- MKS-X7017: 36 XPT Module
- MKS-X7018: 28 XPT Module
- MKS-X7019: 20 XPT Module

Preparation

1. Remove the panel assembly. (Refer to “[3-2-1. MKS-X7017/X7018/X7019](#)”)

Procedure

1. Remove the KY-726 board.
 - (1) Disconnect the fine-wire coaxial cable from the connector (CN101) on the KY-726 board.
 - (2) Remove the OLED display (2.7 INCH). (Refer to “[3-3-7. OLED Display \(2.7 INCH\)](#)”)
 - (3) Release the two hooks and remove the light guide assembly.
 - (4) Remove the two screws, then remove the KY-726 board.



2. Install the removed parts by reversing the steps of removal.

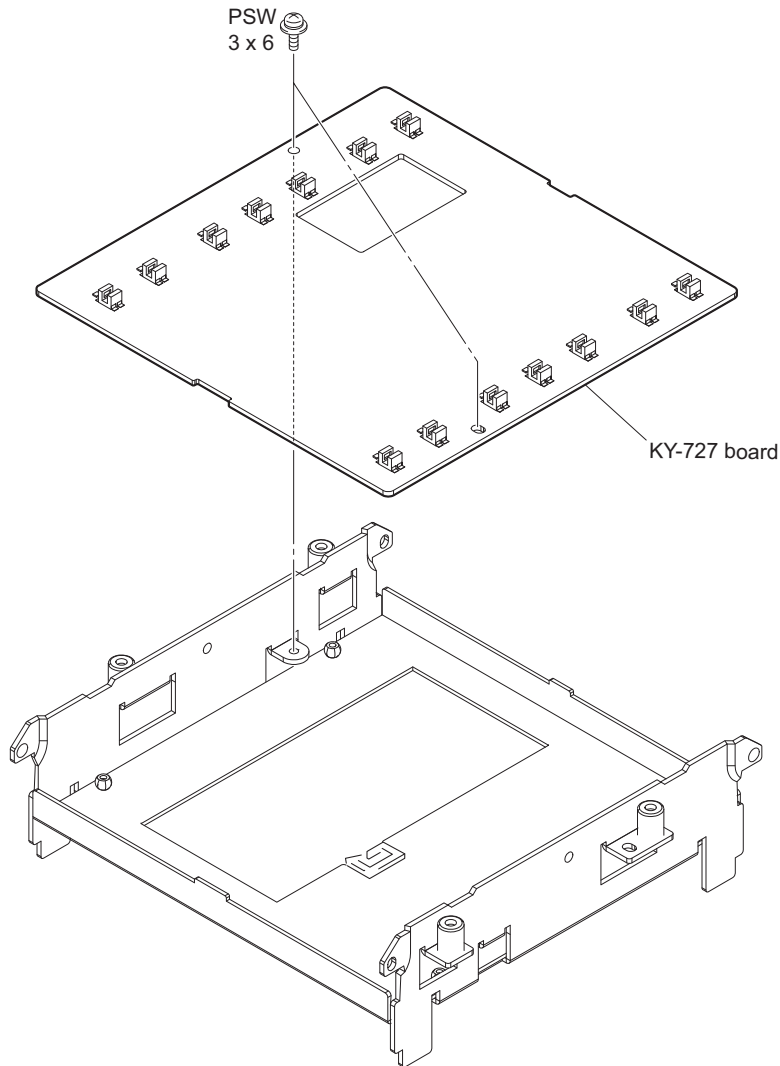
3-4-7. KY-727 Board (MKS-X7024)

Preparation

1. Remove the panel assembly. (Refer to “3-2-6. MKS-X7024”)

Procedure

1. Remove the two screws, then remove the KY-727 board.



2. Install the removed parts by reversing the steps of removal.

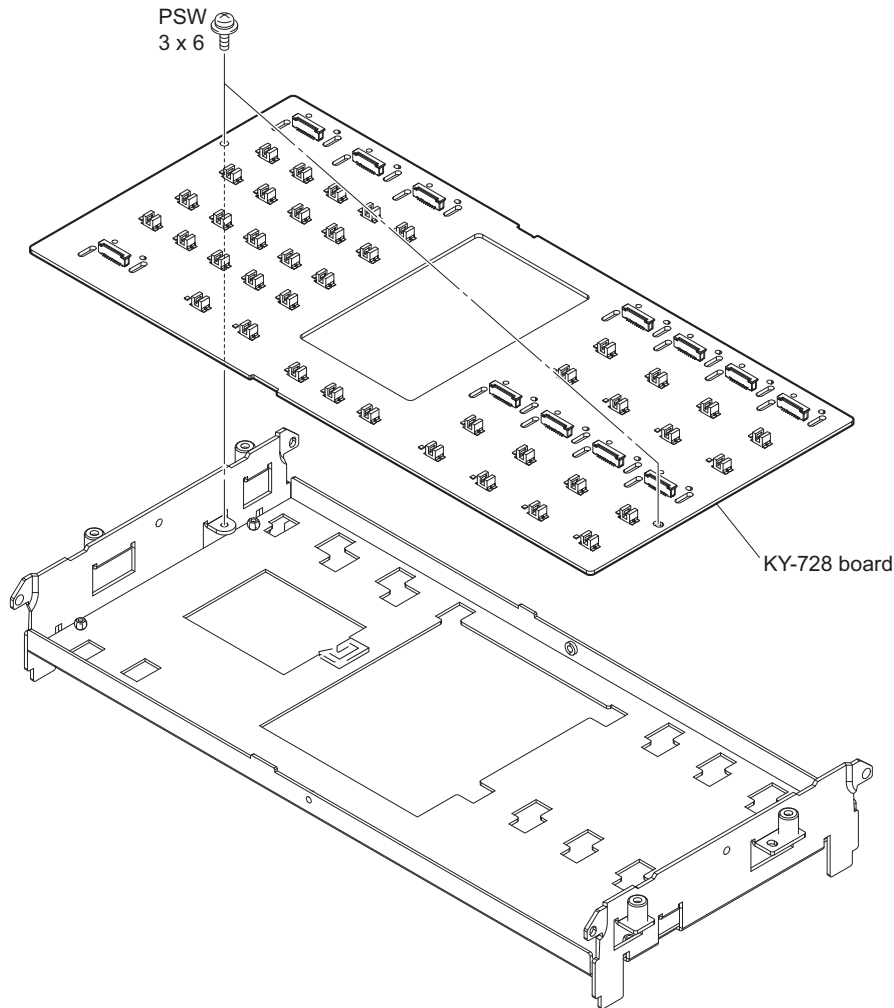
3-4-8. KY-728 Board (MKS-X7020)

Preparation

1. Remove the panel assembly. (Refer to “3-2-3. MKS-X7020”)

Procedure

1. Remove the KY-728 board.
 - (1) Remove the OLED display (0.8 INCH). (Refer to “3-3-8. OLED Display (0.8 INCH)”)
 - (2) Remove the two screws, then remove the KY-728 board.



2. Install the removed parts by reversing the steps of removal.

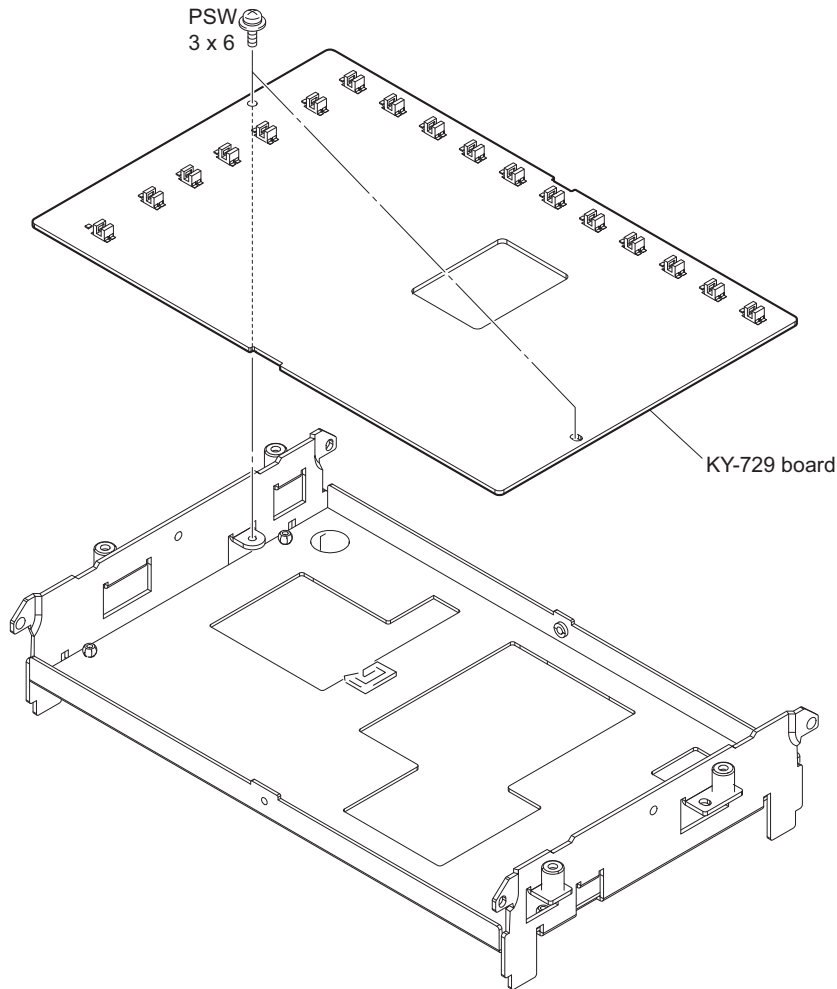
3-4-9. KY-729 Board (MKS-X7033)

Preparation

1. Remove the panel assembly. (Refer to “3-2-8. MKS-X7026/X7033”)

Procedure

1. Remove the two screws, then remove the KY-729 board.



2. Install the removed parts by reversing the steps of removal.

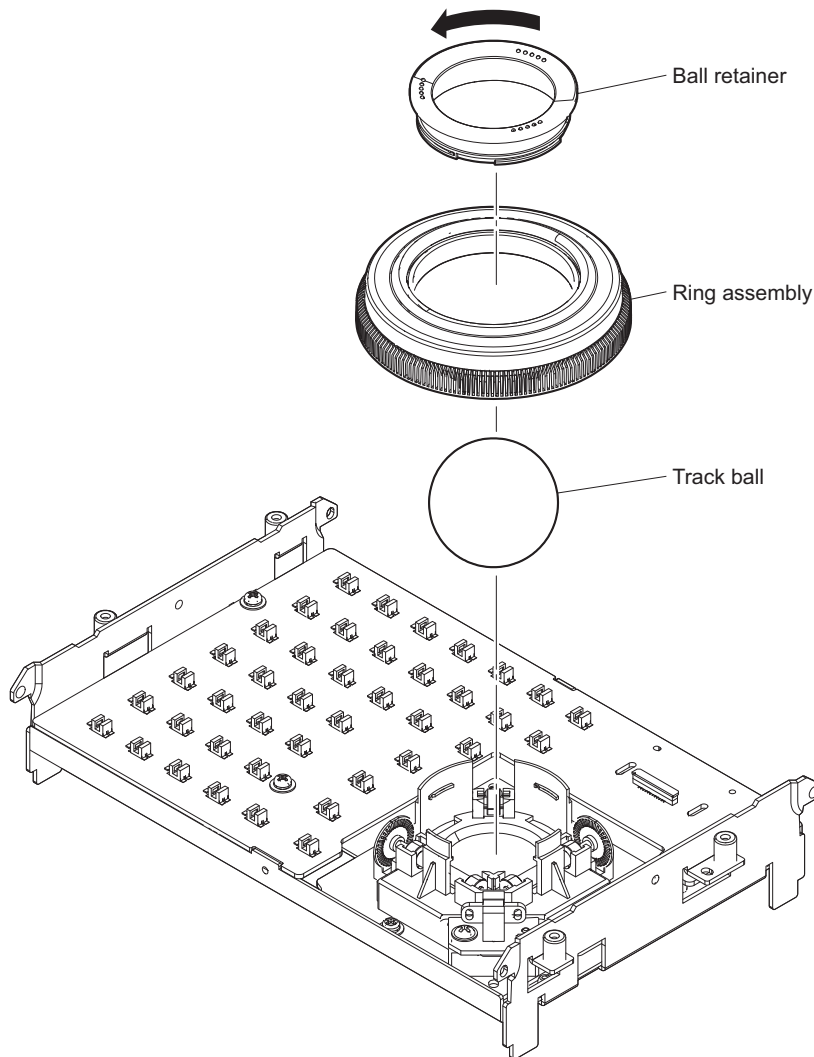
3-4-10. KY-731 Board (MKS-X7031TB)

Preparation

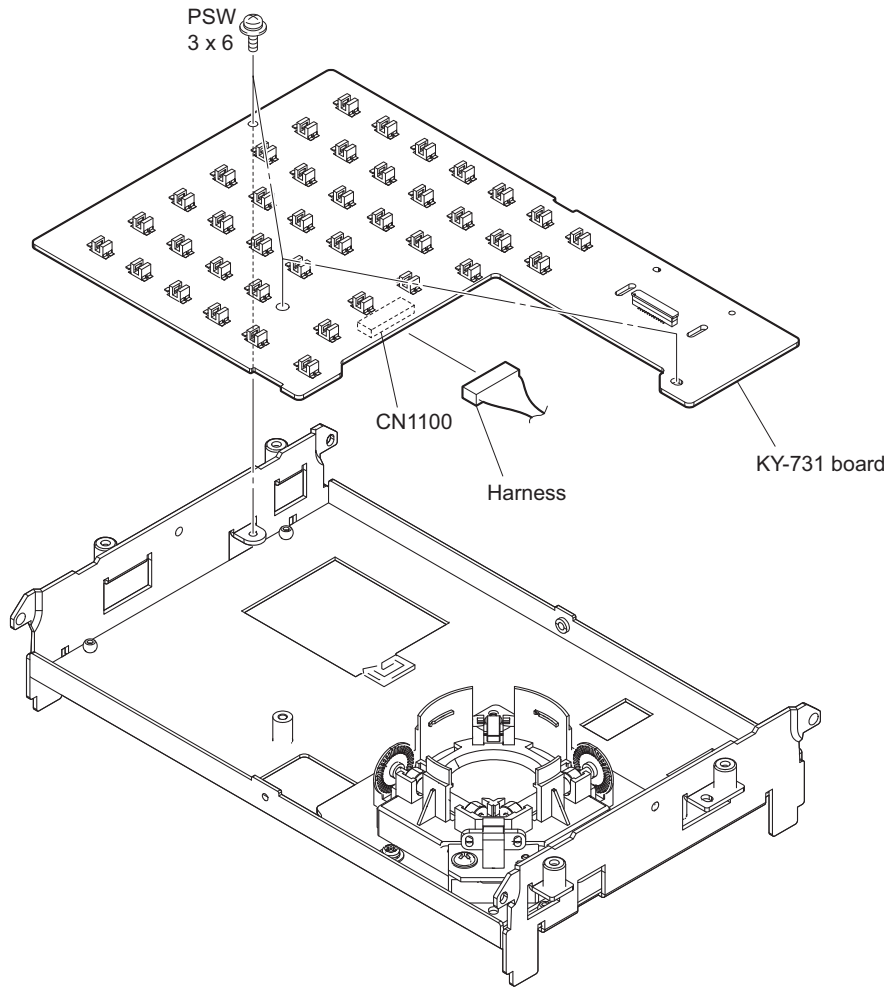
1. Remove the panel assembly. (Refer to “3-2-9. MKS-X7031TB”)

Procedure

1. Remove the track ball.
 - (1) Turn the ball retainer counterclockwise and release the rock.
 - (2) Remove the ball retainer.
 - (3) Remove the ring assembly.
 - (4) Remove the track ball.



2. Remove the KY-731 board.
 - (1) Disconnect the harness from the connector (CN1100) on the KY-731 board.
 - (2) Remove the OLED display (2.7 INCH). (Refer to “3-3-7. OLED Display (2.7 INCH)”)
 - (3) Remove the three screws, then remove the KY-731 board.



3. Install the removed parts by reversing the steps of removal.

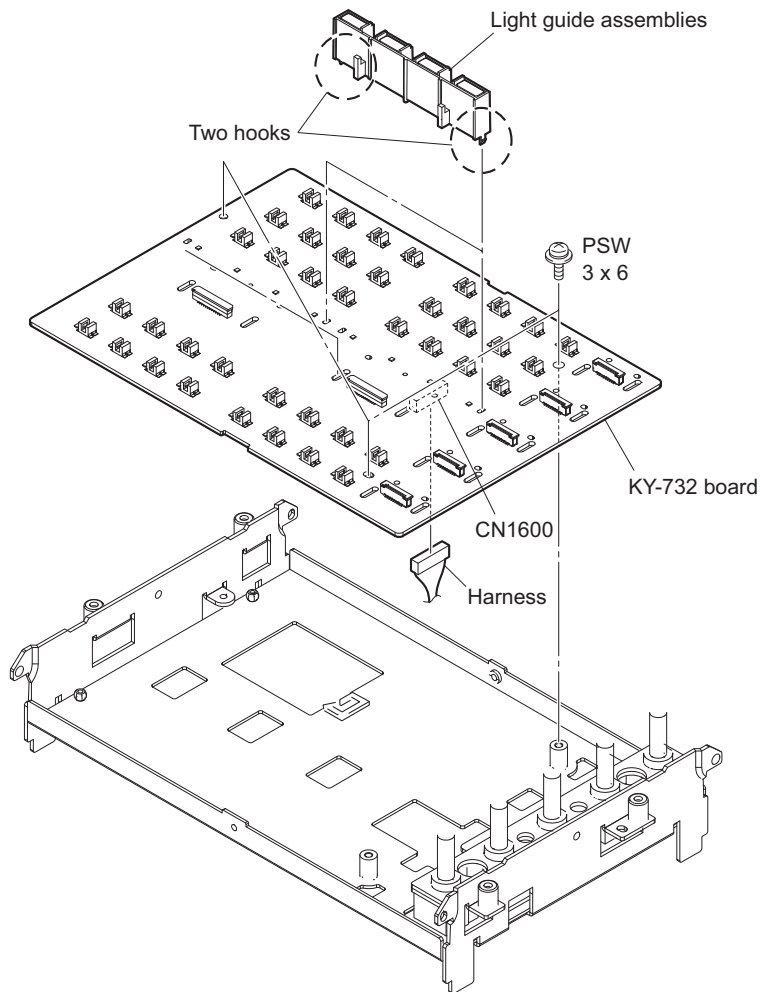
3-4-11. KY-732 Board (MKS-X7035)

Preparation

1. Remove the panel assembly. (Refer to “3-2-10. MKS-X7035”)

Procedure

1. Remove the KY-732 board.
 - (1) Disconnect the harness from the connector (CN1600) on the KY-732 board.
 - (2) Remove the OLED display (2.7 INCH). (Refer to “3-3-7. OLED Display (2.7 INCH)”)
 - (3) Remove the OLED display (0.8 INCH). (Refer to “3-3-8. OLED Display (0.8 INCH)”)
 - (4) Release the two hooks and remove the two light guide assemblies.
 - (5) Remove the three screws, then remove the KY-732 board.



2. Install the removed parts by reversing the steps of removal.

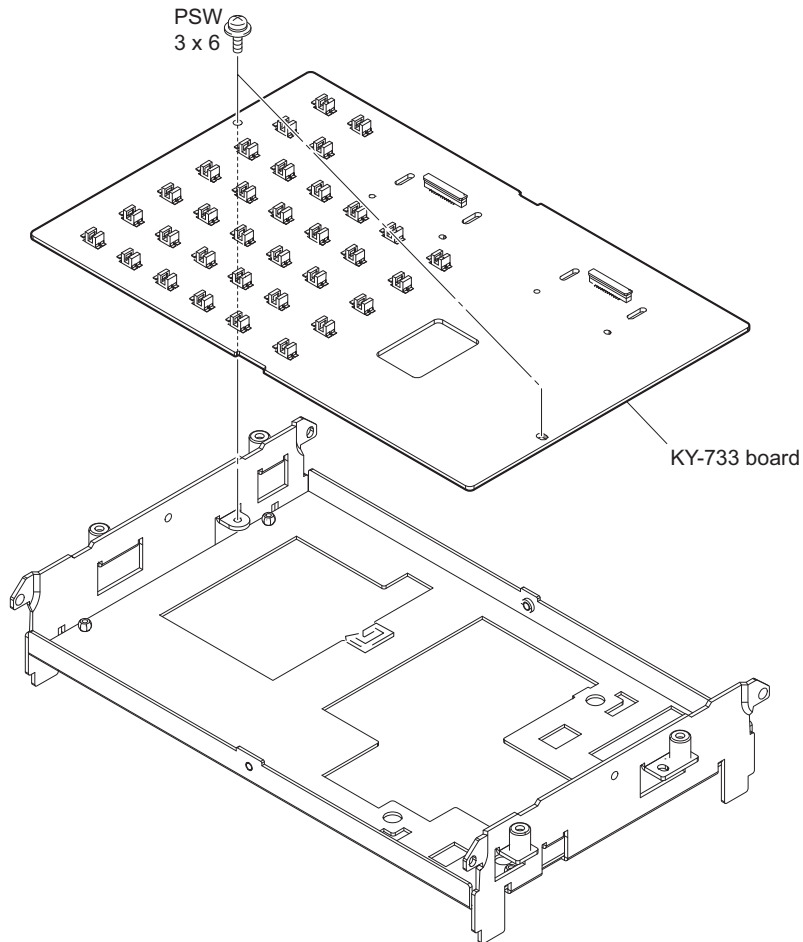
3-4-12. KY-733 Board (MKS-X7026)

Preparation

1. Remove the panel assembly. (Refer to “3-2-8. MKS-X7026/X7033”)

Procedure

1. Remove the KY-733 board.
 - (1) Remove the OLED display (2.7 INCH). (Refer to “3-3-7. OLED Display (2.7 INCH)”)
 - (2) Remove the two screws, then remove the KY-733 board.



2. Install the removed parts by reversing the steps of removal.

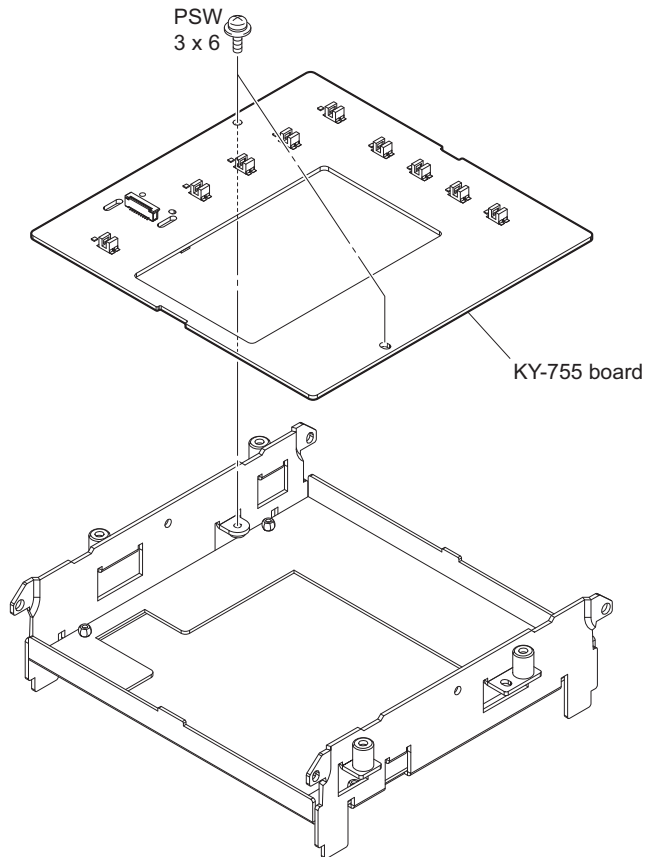
3-4-13. KY-755 Board (MKS-X7021)

Preparation

1. Remove the panel assembly. (Refer to “3-2-4. MKS-X7021”)

Procedure

1. Remove the KY-755 board.
 - (1) Remove the OLED display (0.8 INCH). (Refer to “3-3-8. OLED Display (0.8 INCH)”)
 - (2) Remove the two screws, then remove the KY-755 board.



2. Install the removed parts by reversing the steps of removal.

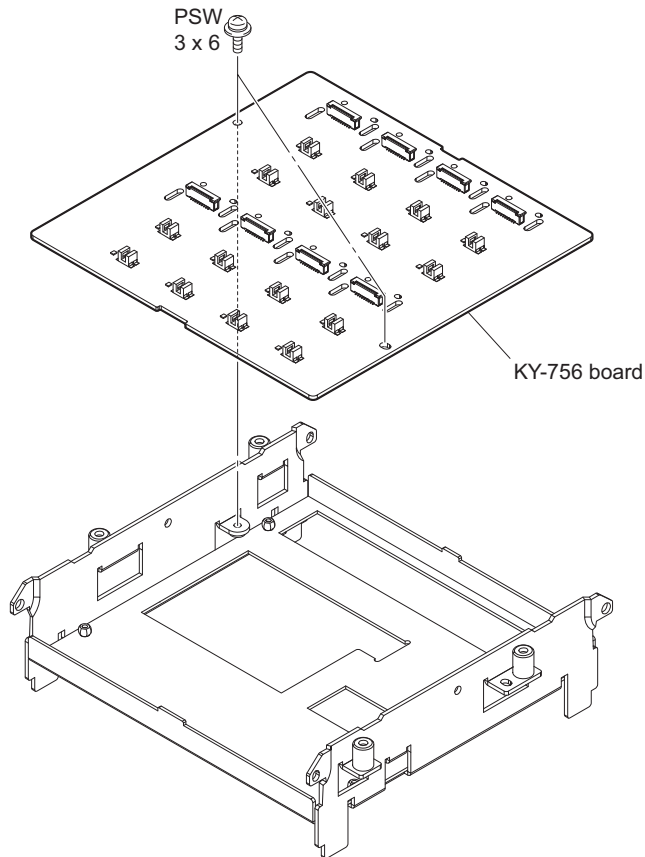
3-4-14. KY-756 Board (MKS-X7023)

Preparation

1. Remove the panel assembly. (Refer to [“3-2-5. MKS-X7023”](#))

Procedure

1. Remove the KY-756 board.
 - (1) Remove the OLED display (0.8 INCH). (Refer to [“3-3-8. OLED Display \(0.8 INCH\)”](#))
 - (2) Remove the two screws, then remove the KY-756 board.



2. Install the removed parts by reversing the steps of removal.

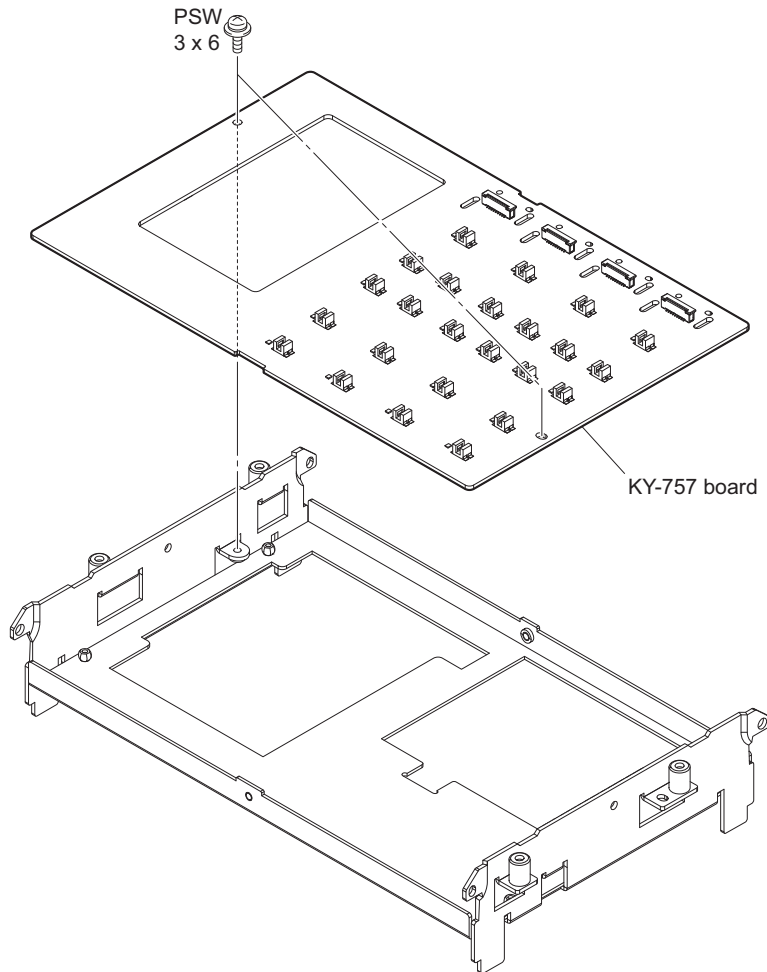
3-4-15. KY-757 Board (MKS-X7032)

Preparation

1. Remove the panel assembly. (Refer to [“3-2-7. MKS-X7032”](#))

Procedure

1. Remove the KY-757 board.
 - (1) Remove the OLED display (0.8 INCH). (Refer to [“3-3-8. OLED Display \(0.8 INCH\)”](#))
 - (2) Remove the two screws, then remove the KY-757 board.



2. Install the removed parts by reversing the steps of removal.

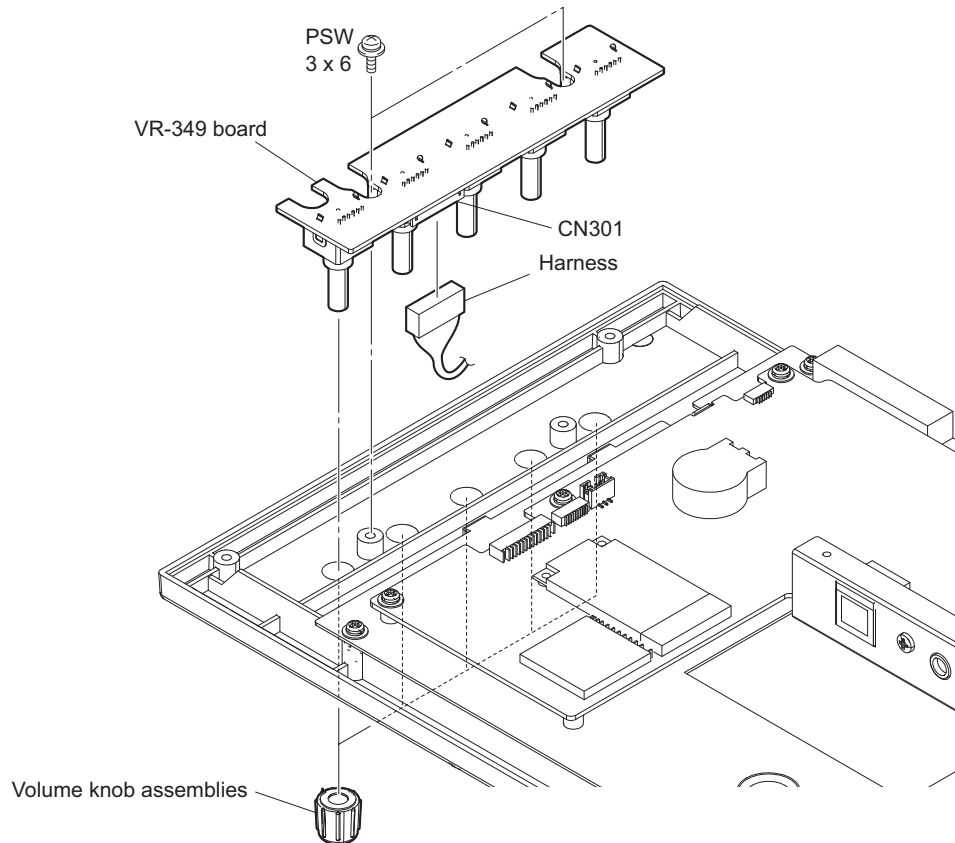
3-4-16. VR-349 Board (MKS-X7011)

Preparation

1. Remove the LCD case (bottom). (Refer to “3-2-2. MKS-X7011”)

Procedure

1. Remove the VR-349 board.
 - (1) Remove the five volume knob assemblies.
 - (2) Remove the two screws, then remove the VR-349 board.
 - (3) Disconnect the harness from the connector (CN301) on the VR-349 board.



2. Install the removed parts by reversing the steps of removal.

Section 4

Replacement of Main Parts (System Interface Unit)

Note

Be sure to set the POWER switch to OFF and unplug the power cord before starting any of the replacement work.
If the replacement work is attempted with the power ON, it may result in electric shock or damage of circuits.

4-1. Tightening Torque

Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque

M3: $0.80 \pm 0.12 \text{ N}\cdot\text{m}$

M4: $1.4 \pm 0.2 \text{ N}\cdot\text{m}$

Tip

When using the torque driver with the notation of $\text{cN}\cdot\text{m}$, interpret it as follows.

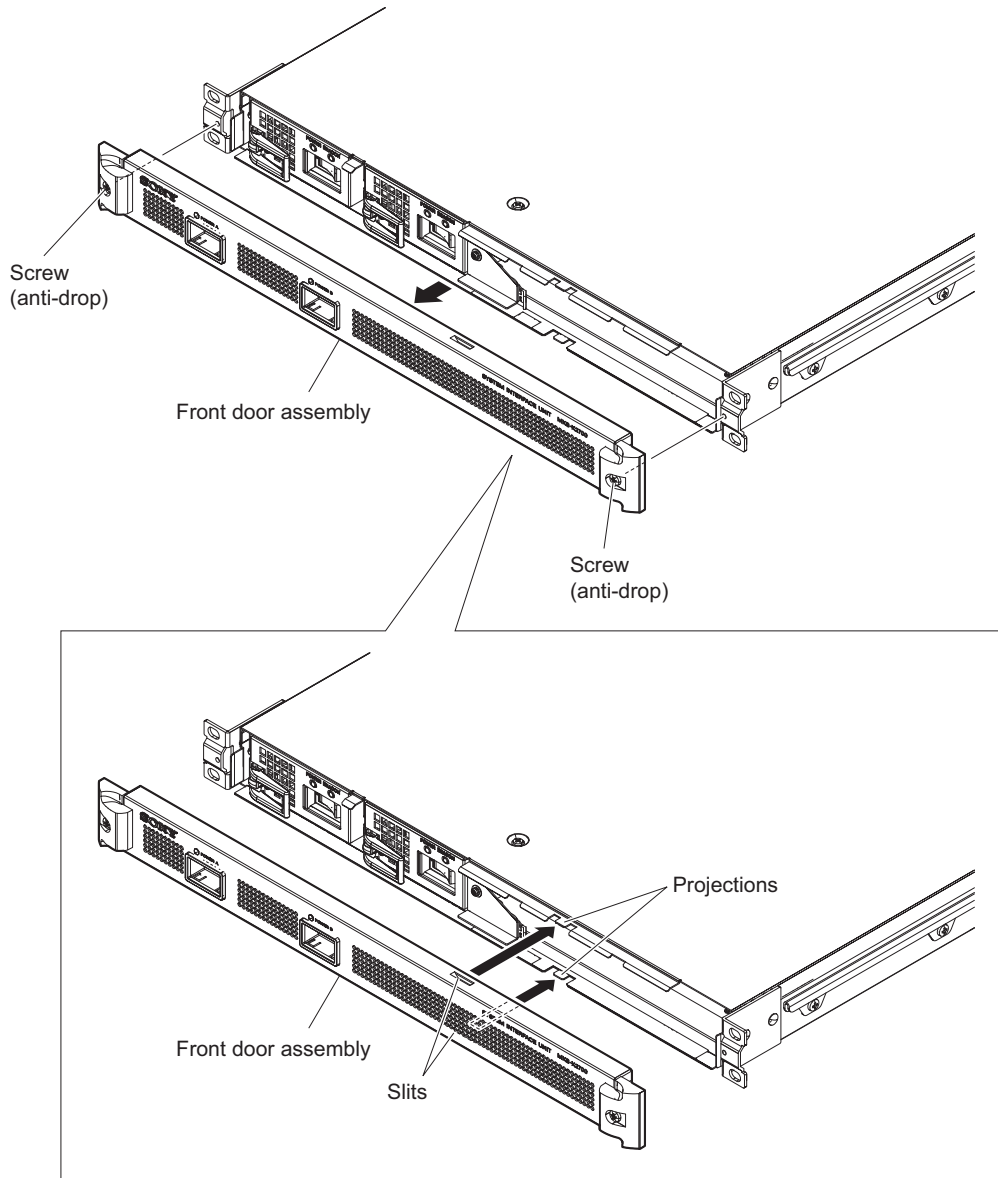
Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$

4-2. Removing Cabinet

4-2-1. MKS-X2700

Procedure

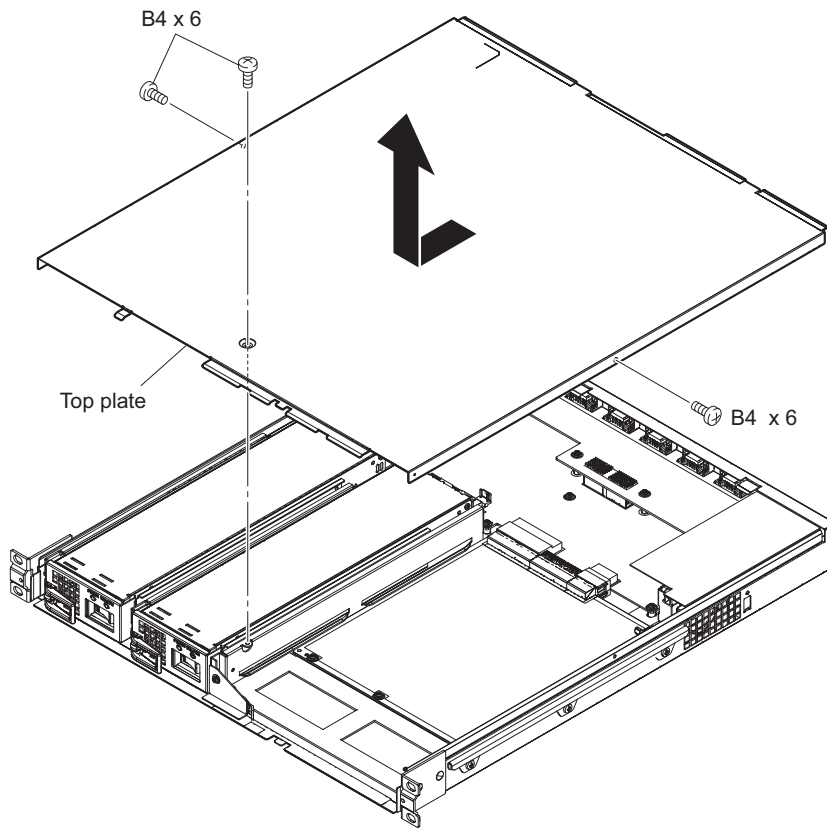
1. Loosen the two screws (anti-drop) and remove the front door assembly.



Note

When installing the front door assembly, insert the two projections of the chassis into the two slits in the front door assembly.

2. Remove the three screws, then remove the top plate in the direction of the arrow.

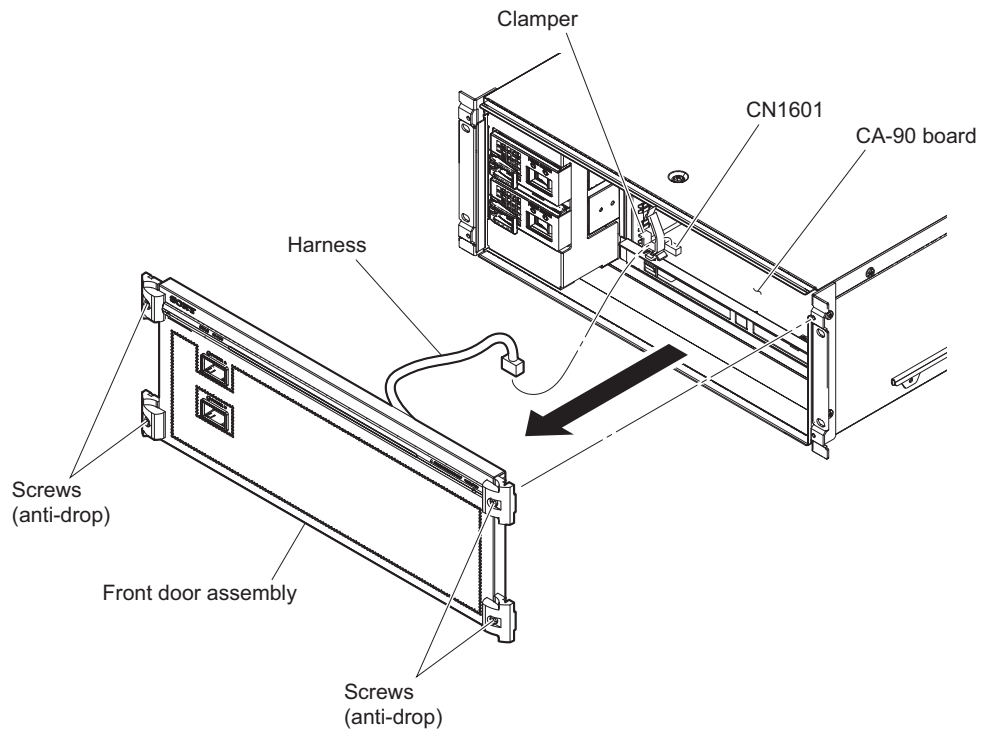


3. Install the removed parts by reversing the steps of removal.

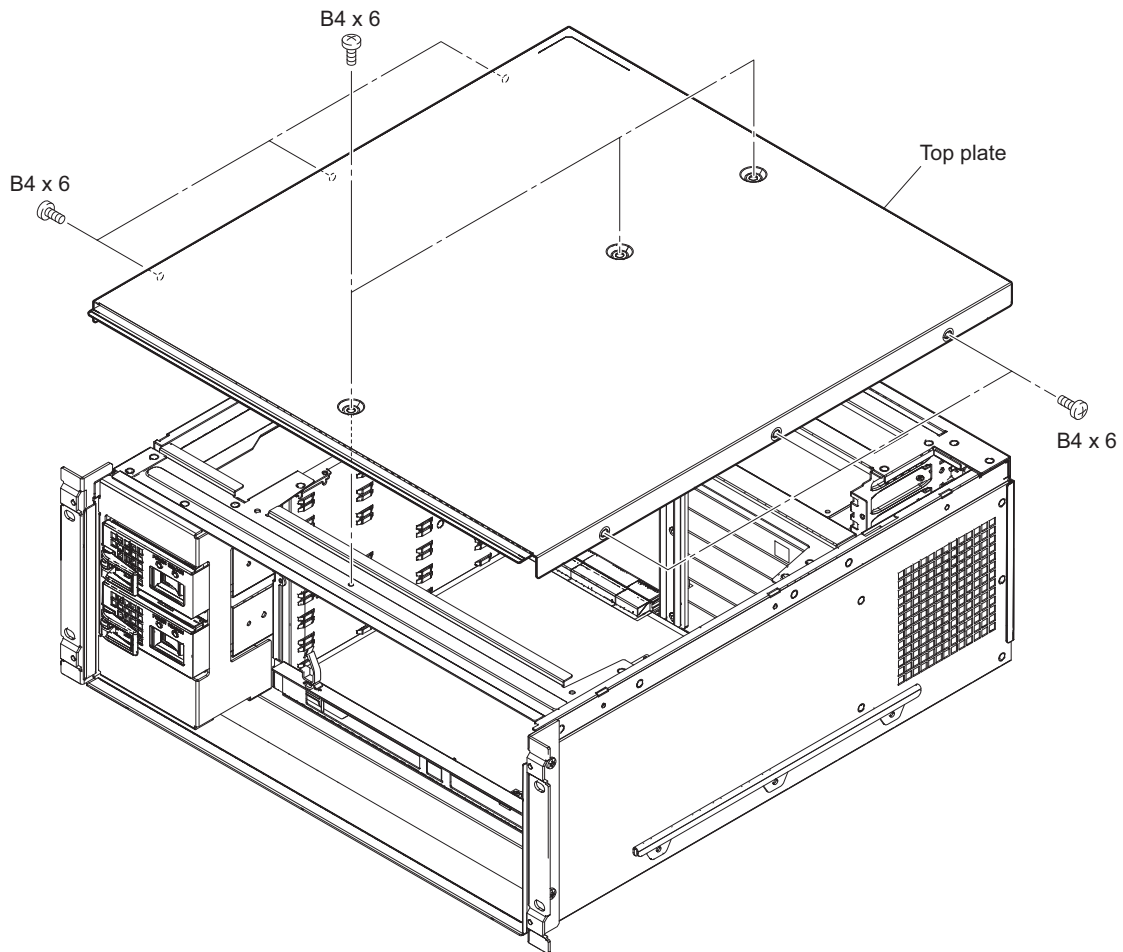
4-2-2. MKS-X7700

Procedure

1. Remove the front door assembly.
 - (1) Loosen the four screws (anti-drop) and draw the front door assembly in the direction of the arrow.
 - (2) Open the clamber.
 - (3) Disconnect the harness from the connector (CN1601) on the CA-90 board, then remove the front door assembly.



2. Remove the nine screws, then remove the top plate.



3. Install the removed parts by reversing the steps of removal.

4-3. Replacement of Main Parts

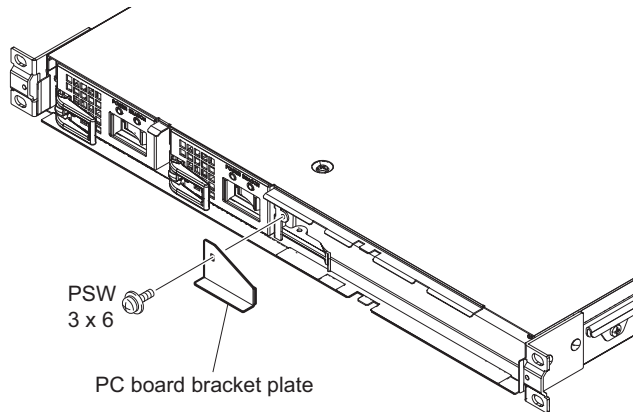
4-3-1. DC Fan (MKS-X2700)

Preparation

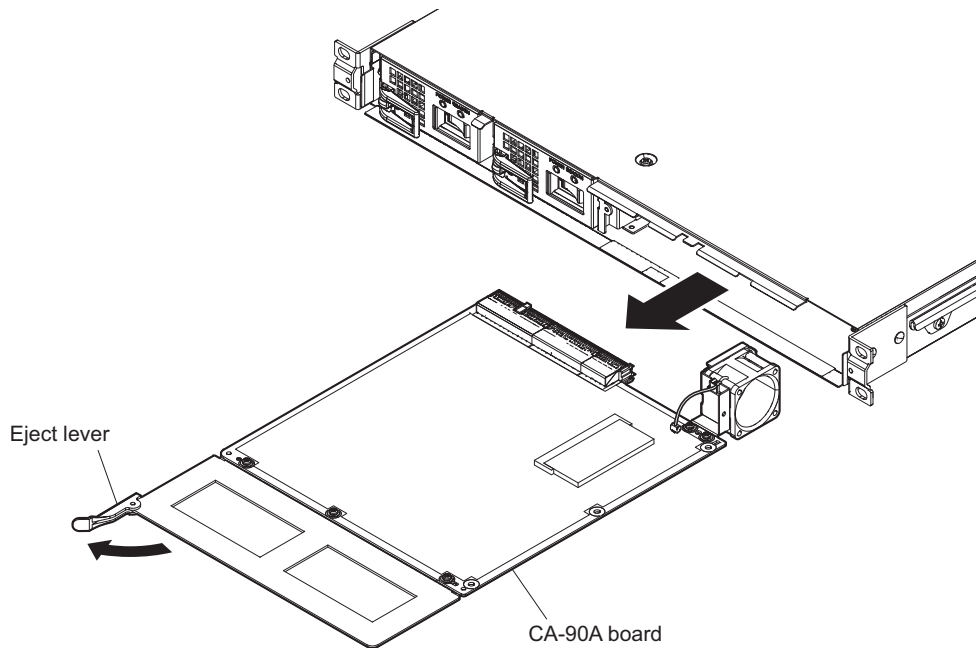
1. Remove the front door assembly. (Refer to “4-2-1. MKS-X2700”)

Procedure

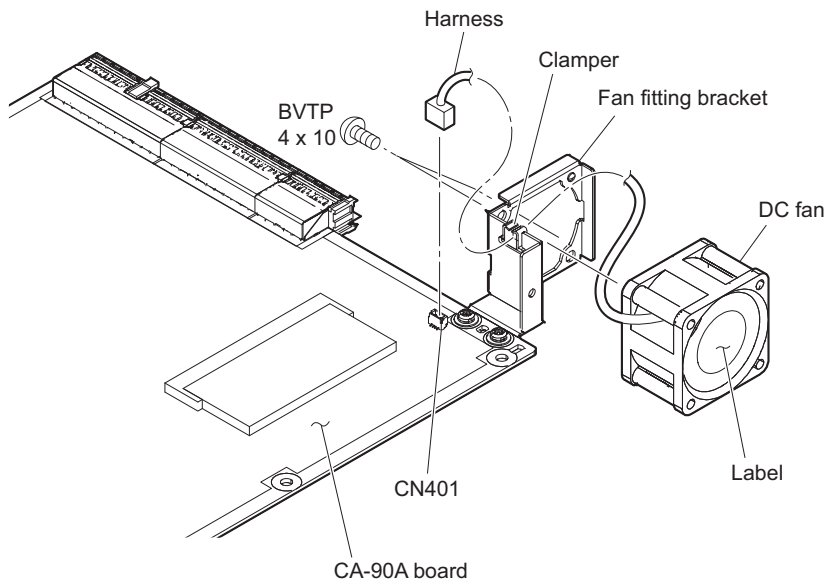
1. Remove the screw, then remove the PC board bracket plate.



2. Open the eject lever in the direction of the arrow, and draw the CA-90A board.



3. Remove the DC fan.
 - (1) Disconnect the harness from the connector (CN401) on the CA-90A board.
 - (2) Remove the harness from the clamper.
 - (3) Remove the two screws, then remove the DC fan.



Note

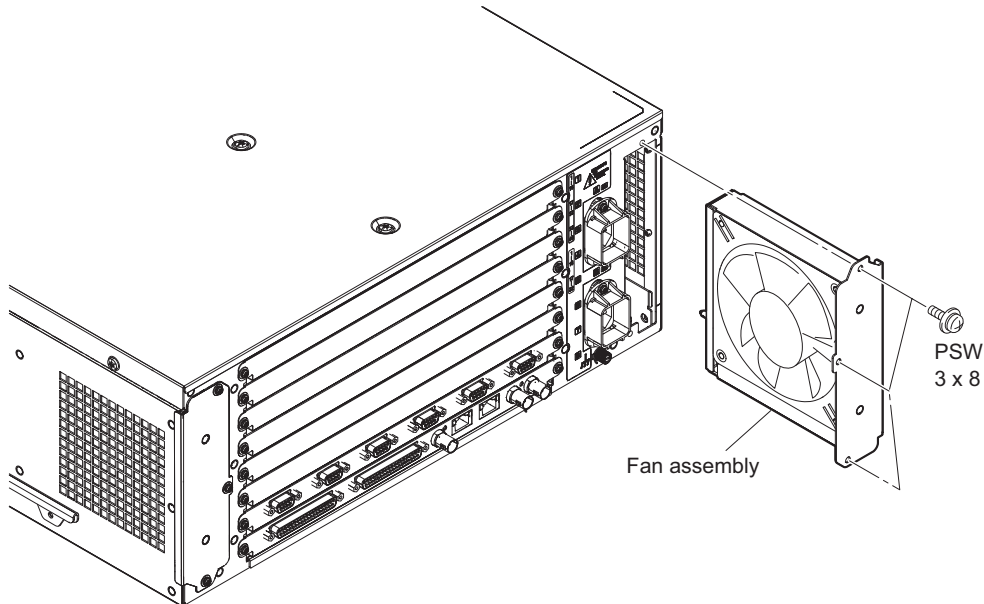
When attaching the DC fan, pay attention to the position of label and harness.

4. Install the removed parts by reversing the steps of removal.

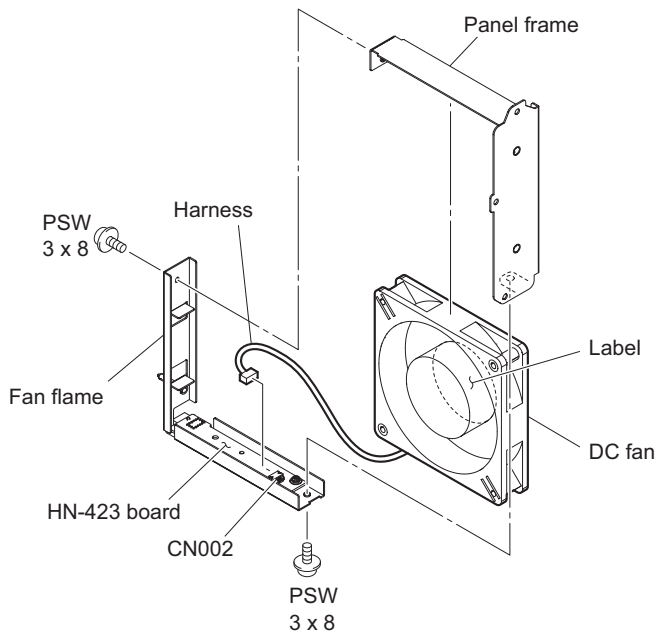
4-3-2. DC Fan (MKS-X7700)

Procedure

1. Remove the three screws, then remove the fan assembly.



2. Remove the DC fan.
 - (1) Remove the two screws, then remove the panel frame.
 - (2) Remove the DC fan from the fan frame.
 - (3) Disconnect the harness from the connector (CN002) on the board HN-423 board.



Note

When attaching the DC fan, pay attention to the position of label and harness.

3. Install the removed parts by reversing the steps of removal.

4-4. Replacing Power Unit

4-4-1. Replacement of Switching Regulator (MKS-X2700)

Tip

Two switching regulators are installed this unit. Both switching regulators can be replaced with the same procedure.

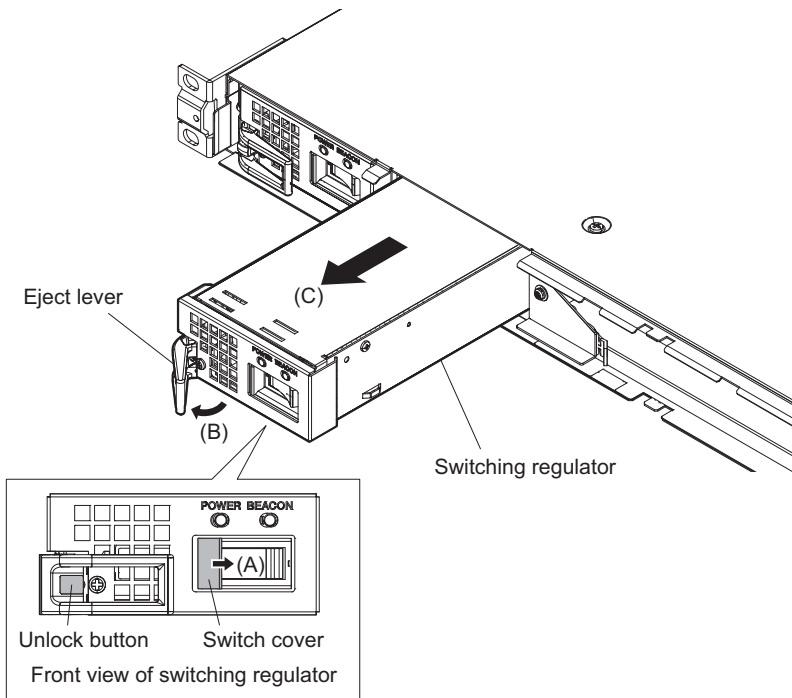
Preparation

1. Remove the front door assembly. (Refer to “4-2-1. MKS-X2700”)

Removal

Procedure

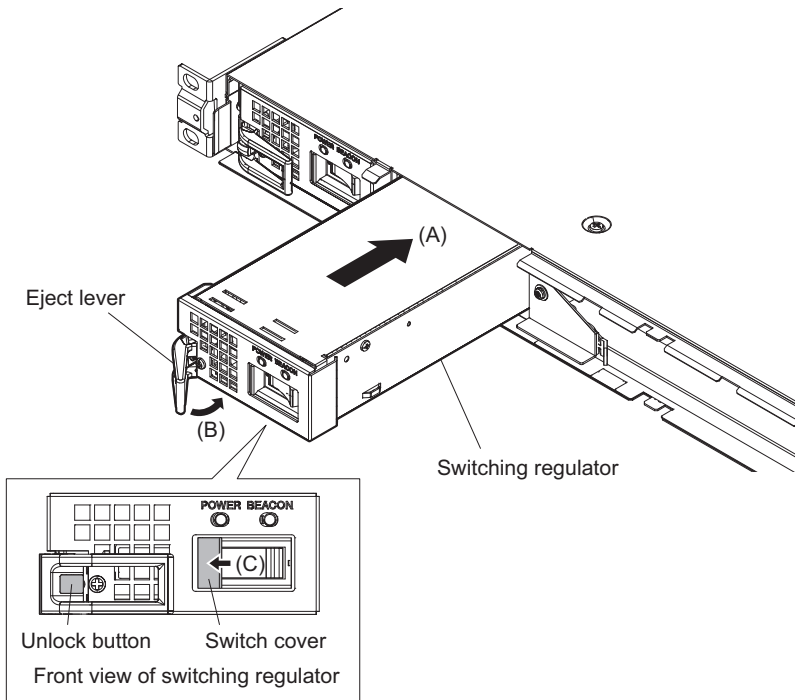
1. Remove the switching regulator.
 - (1) Slide the switch cover in the direction of the arrow (A) and unlock the eject levers.
 - (2) Push the unlock button and then pull the eject levers in the direction of the arrow (B).
 - (3) Remove the switching regulator in the direction of the arrow (C).



Installation

Procedure

1. Install the switching regulator.
 - (1) Open the eject levers of the new switching regulator and push it into the slot as far as it will go in the direction of the arrow (A).
 - (2) Close the eject lever in the direction of the arrow (B).
 - (3) Slide the switch cover in the direction of the arrow (C) and lock the eject levers.



4-4-2. Replacement of Switching Regulator (MKS-X7700)

Tip

Two switching regulators are installed this unit. Both switching regulators can be replaced with the same procedure.

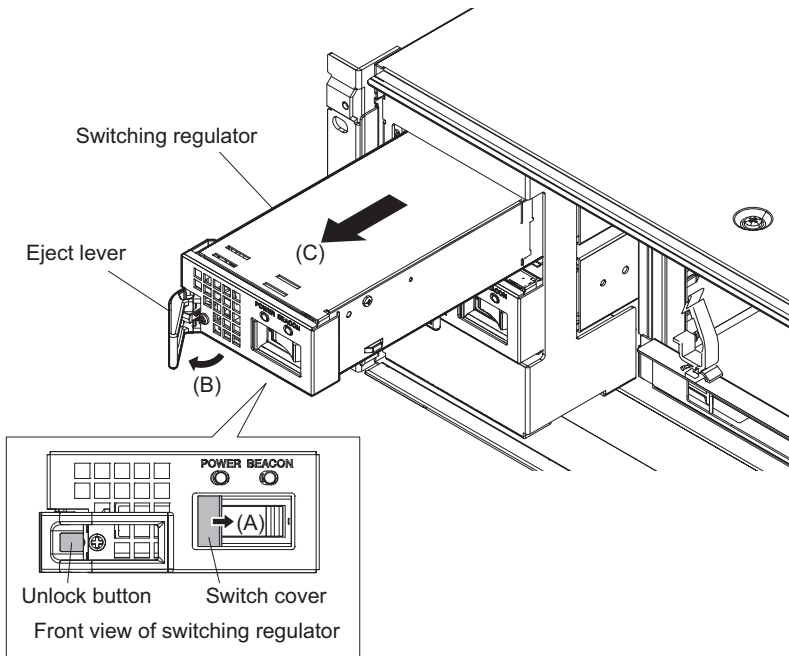
Preparation

1. Remove the front door assembly. (Refer to “4-2-2. MKS-X7700”)

Removal

Procedure

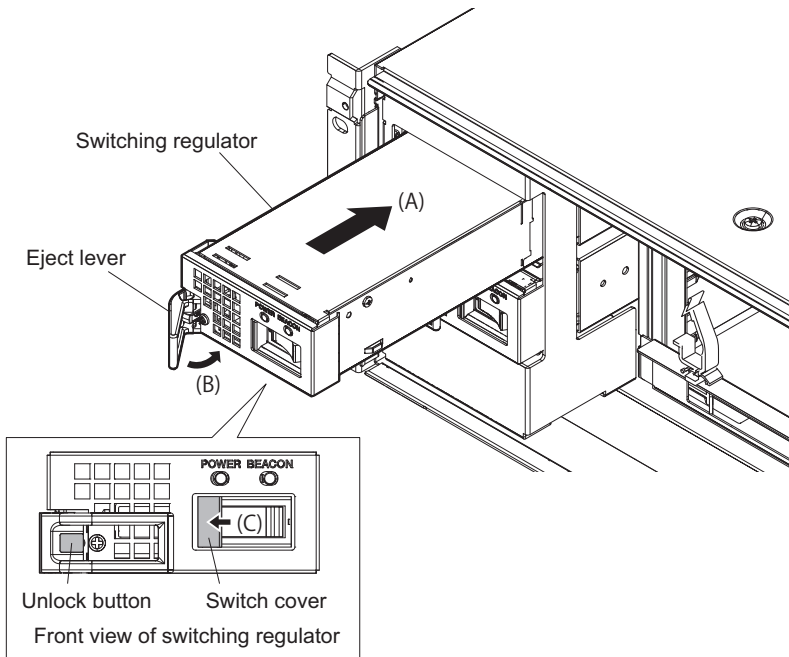
1. Remove the switching regulator.
 - (1) Slide the switch cover in the direction of the arrow (A) and unlock the eject levers.
 - (2) Push the unlock button and then pull the eject levers in the direction of the arrow (B).
 - (3) Remove the switching regulator in the direction of the arrow (C).



Installation

Procedure

1. Install the switching regulator.
 - (1) Open the eject levers of the new switching regulator and push it into the slot as far as it will go in the direction of the arrow (A).
 - (2) Close the eject lever in the direction of the arrow (B).
 - (3) Slide the switch cover in the direction of the arrow (C) and lock the eject levers.



4-5. Replacing Boards

4-5-1. CA-90A Board (MKS-X2700)

Preparation

1. Remove the front door assembly. (Refer to [“4-2-1. MKS-X2700”](#))

Procedure

1. Remove the CA-90A board. (Refer to [“4-3-1. DC Fan \(MKS-X2700\)”](#))
2. Install the removed parts by reversing the steps of removal.

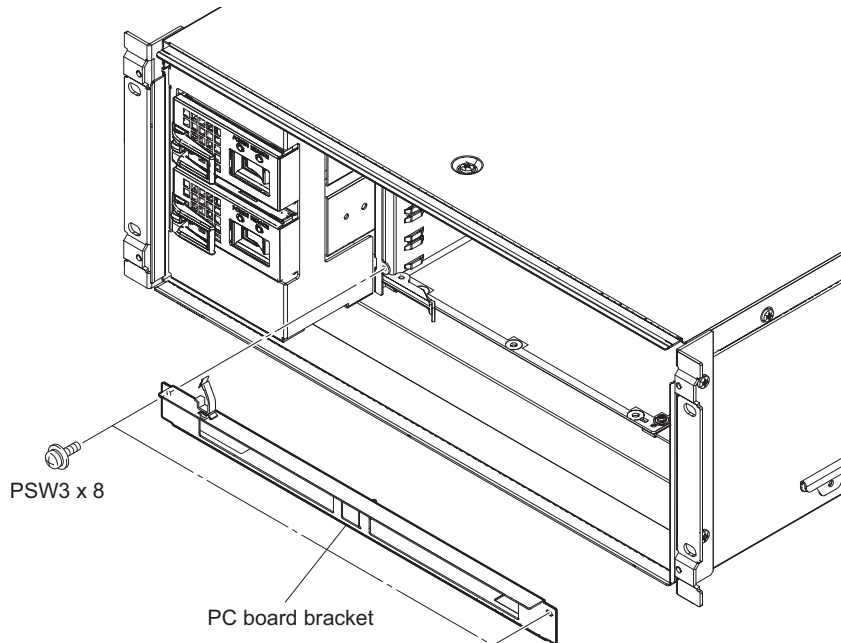
4-5-2. CA-90 Board (MKS-X7700)

Preparation

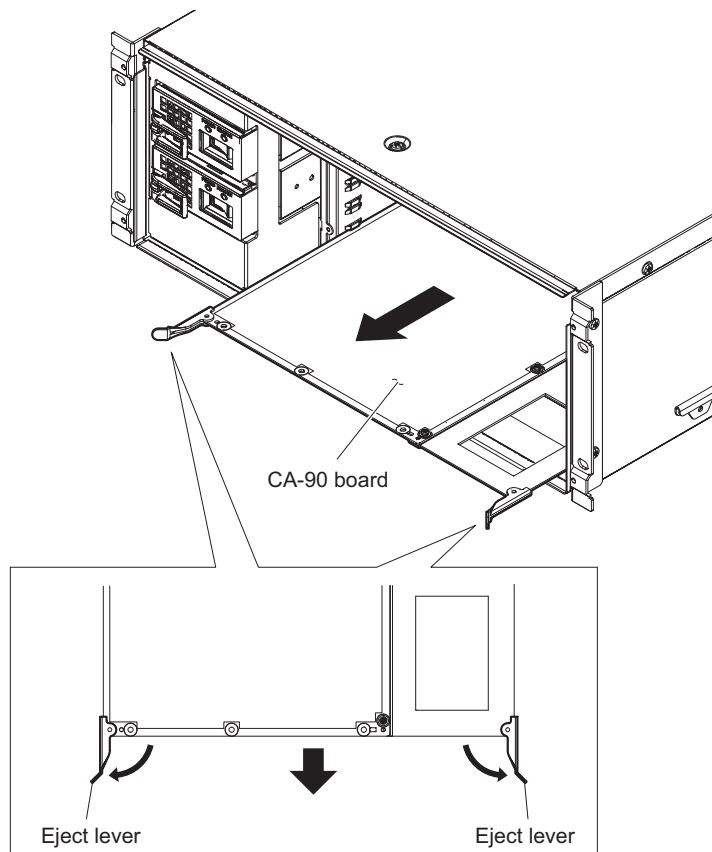
1. Remove the front door assembly. (Refer to “4-2-2. MKS-X7700”)

Procedure

1. Remove the two screws, then remove the PC board bracket.



2. Open the eject levers in the direction of the arrow, and draw the CA-90 board.



3. Install the removed parts by reversing the steps of removal.

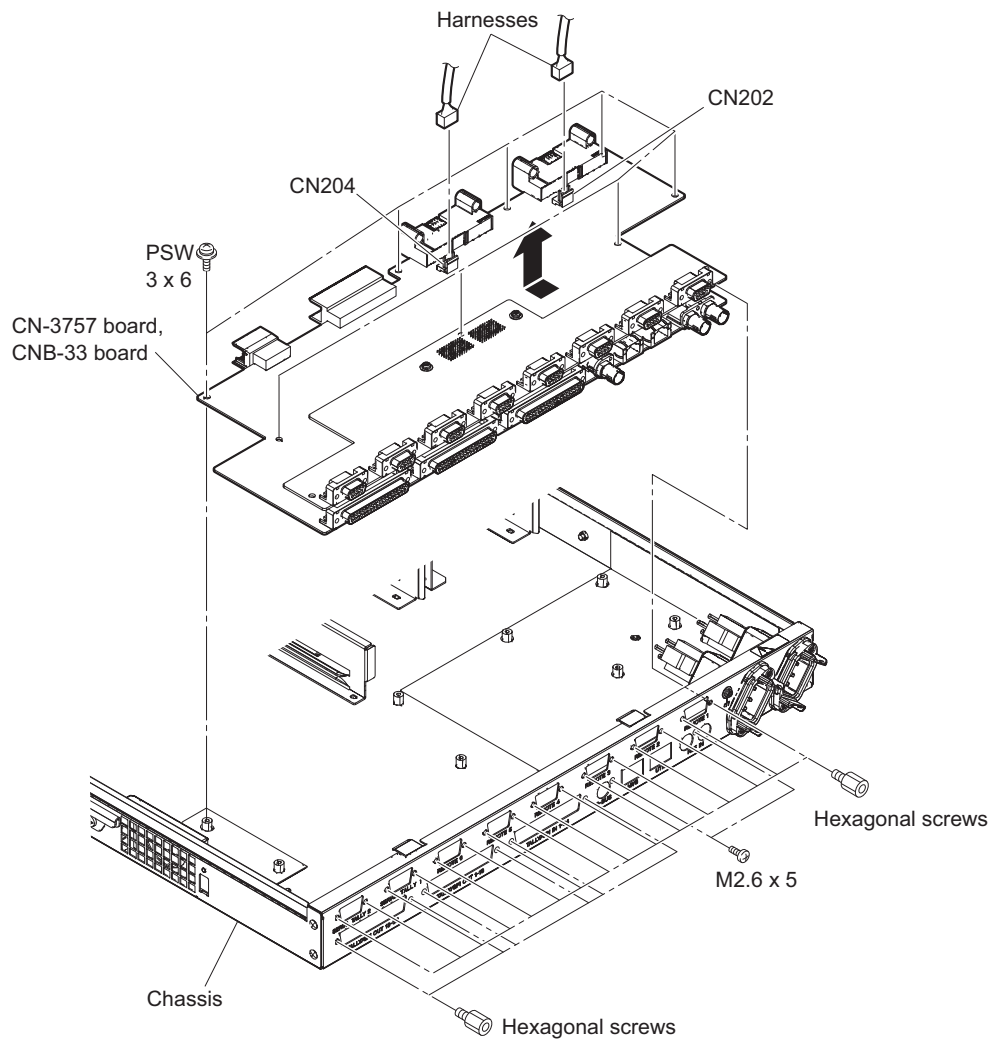
4-5-3. CNB-33 Board, CN-3757 Board (MKS-X2700)

Preparation

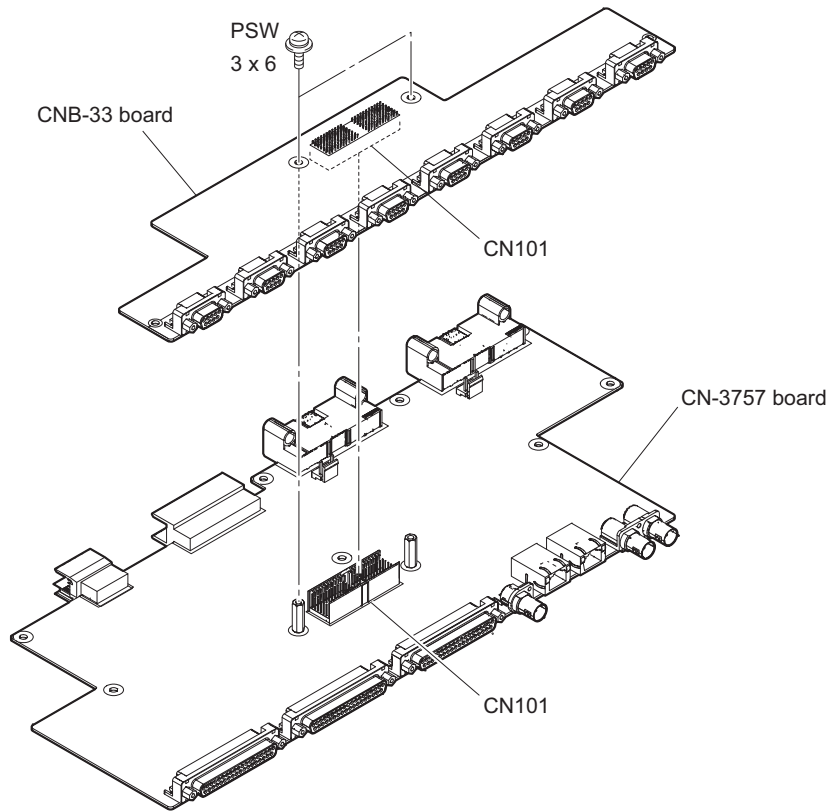
1. Remove the cabinet. (Refer to “4-2-1. MKS-X2700”)
2. Remove the switching regulator. (Refer to “4-4-1. Replacement of Switching Regulator (MKS-X2700)”)
3. Remove the CA-90A board. (Refer to “4-3-1. DC Fan (MKS-X2700)”)

Procedure

1. Remove the CNB-33 board and CN-3757 board.
 - (1) Disconnect the two harnesses from the connector (CN202, CN204) on the CN-3757 board.
 - (2) Remove the 22 hexagonal screws and the two screws (M2.6 x 5).
 - (3) Remove the eight screws (PSW3 x 6).
 - (4) Remove the CNB-33 board and the CN-3757 board together from the chassis in the direction of arrow.



2. Remove the CNB-33 board.
 - (1) Remove the two screws.
 - (2) Remove the CNB-33 board from the connector (CN101) on the CN-3757 board.

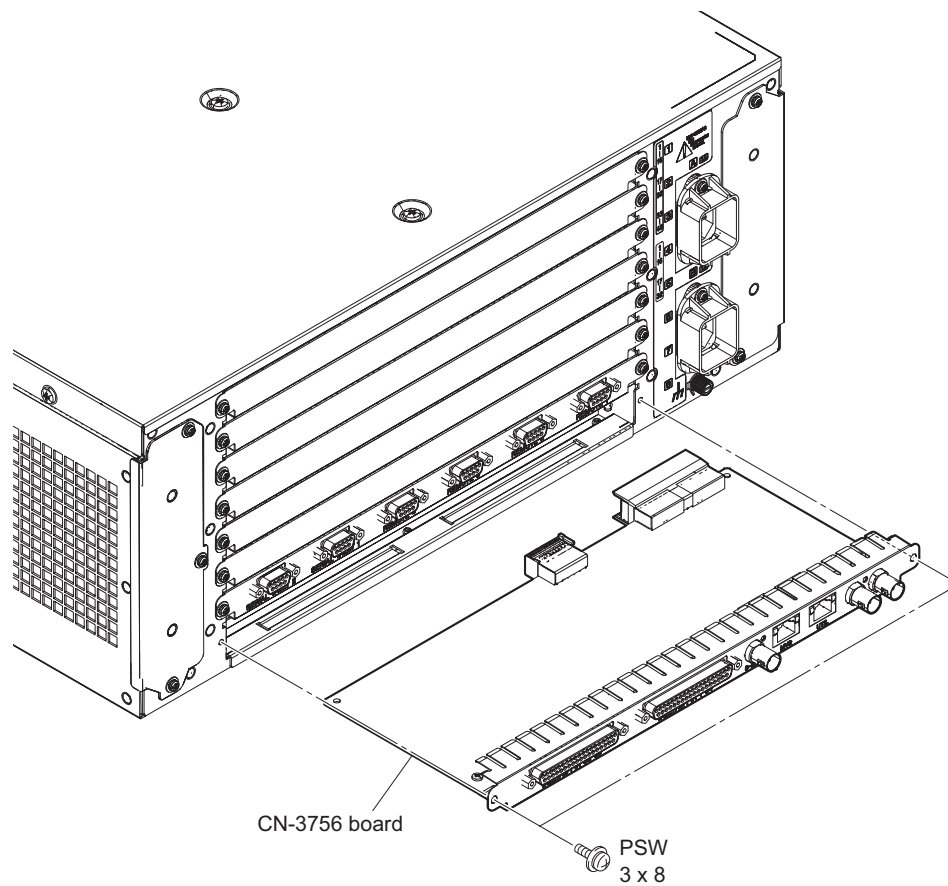


3. Install the removed parts by reversing the steps of removal.

4-5-4. CN-3756 Board (MKS-X7700)

Procedure

1. Remove the two screws, then remove the CN-3756 board.

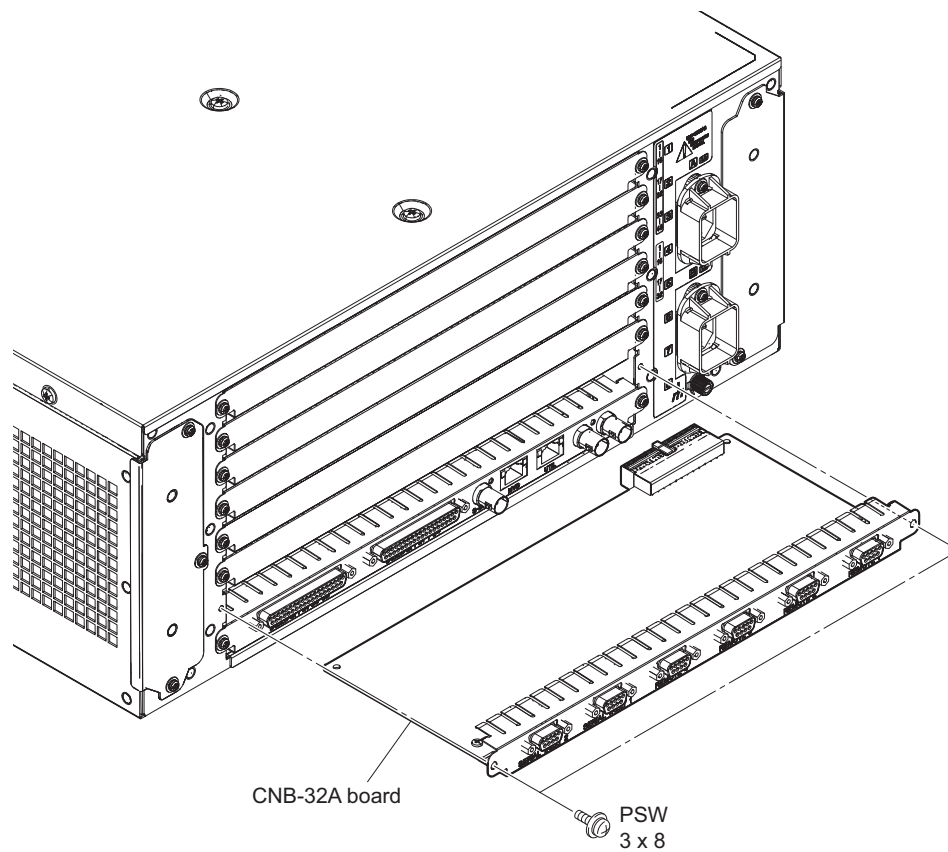


2. Install the removed parts by reversing the steps of removal.

4-5-5. CNB-32A Board (MKS-X7700)

Procedure

1. Remove the two screws, then remove the CNB-32A board.



2. Install the removed parts by reversing the steps of removal.

Section 5

Replacement of Main Parts (PWS-100SC1/PWS-110SC1)

Note

Be sure to set the POWER switch to OFF and unplug the power cord before starting any of the replacement work.
If the replacement work is attempted with the power ON, it may result in electric shock or damage of circuits.

5-1. Precautions before Work

5-1-1. Non-reusable Parts

- Radiation sheet (CPU)

Radiation sheet (CPU) is not reusable. Prepare new parts in advance.

5-1-2. Tightening Torque

Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque

M2: 0.30 ± 0.02 N·m

M2.6: 0.53 ± 0.07 N·m

M3: 0.80 ± 0.12 N·m

M4: 1.4 ± 0.2 N·m

Tip

When using the torque driver with the notation of cN·m, interpret it as follows.

Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$

5-2. Procedures after Replacement

5-2-1. Lithium Battery

When the lithium battery is replaced, the date and time in the internal clock need to be set. Set the date and time in the following procedures.

Required Equipment

- PC (Personal Computer): The PC that can be connected to the PWS-100SC1/PWS-110SC1 by a network connection and can be used a web browser.

Procedure

1. Connect the PC to the same network as the PWS-100SC1/PWS-110SC1.
2. Turn on the PWS-100SC1/PWS-110SC1.
3. Launch web browser on the PC, and enter the “http:// (address of PWS-100SC1 or PWS-110SC1) /xwc” in the address bar to access.
4. Enter the following user name and password on the displayed login screen to log in.
User name: setup
Password: sjx30260
5. Select the [Time setting] menu.
6. Click the [Change Timezone], and set the time zone.
7. Click the [Clock adjust], and set the date and time.

5-2-2. After Replacing the iAP Board Assembly

When the iAP board assembly was replaced, the BIOS must be upgraded.

Before upgrading the BIOS, replace the battery with a new one because the battery on the iAP board assembly from parts center may have drained.

Required equipment

- Bootable USB memory (Refer to “[5-2-3. Example of Creating Bootable USB Memory](#)”)

Note

For obtaining the BIOS upgrade file required to create bootable USB memory, contact your local Sony Sales Office/Service Center.

- A USB mouse
- A USB keyboard
- A monitor

Required part

- Lithium battery (CR2032)

Preparation

1. Replace the lithium battery (CR2032) on the iAP board assembly for repair with a new one.
2. Connect the power cord to the power connector on the rear panel to supply AC power.
3. Connect the USB mouse and the USB keyboard to the USB connectors.
4. Connect the monitor to the Display Port or the HDMI connector.
5. Connect the bootable USB memory to the USB connector.

Tip

Every USB connector is available.

Procedure

1. Turn on the unit.

Note

If the iAP board assembly mounted in this unit has never been used before, go to step 8.

Since the highest priority is placed on the USB memory in the BIOS priority setting written in the iAP board, the USB memory is accessed on a priority basis after the unit is turned on.

2. Before a window appears on the monitor, press the F2 key on the keyboard to open the BIOS window.

Tip

If the BIOS window does not open and the unit has started as usual, press the Ctrl key, Alt key, and Delete key at the same time to restart the unit, and then press the F2 key on the keyboard again.

3. Move to the [BOOT] menu by using the arrow keys on the keyboard, then the following information is displayed on the monitor.

```
Boot Option Priorities
Boot Option #1 [SATA PM TOSHIBA...]
Boot Option #2 [Sony Storage Media...]
...[SATA PM TOSHIBA...]
```

4. Change the arrangement of lines by using the arrow keys on the keyboard so that "... [SATA PM TOSHIBA...]" shown on the monitor comes to the top of the line.
5. Select "Save&Exit" shown on the monitor by using the arrow keys on the keyboard.
6. Select "Save Changes and Reset" on the monitor, then "Save configuration and reset?" appears. Select "Yes" by using the arrow keys on the keyboard, and then press the Enter key.
7. The unit restarts automatically.
8. The DOS in the bootable USB memory runs.
When "Enter new date (mm-dd-[cc]yy) : -" appears on the monitor, press the Enter key.
When "Enter new time : -" appears after that, press the Enter key.
A command prompt "c : \" appears on the monitor.
9. Enter "update" following the command prompt "c : \" and then press the Enter key.
The BIOS upgrade starts. After the update is completed, a command prompt "c : \" appears.
10. Turn off the unit.
11. Remove the bootable USB memory.
12. Turn on the unit.
13. Before a window appears on the monitor, press the F2 key on the keyboard.

Tip

If the BIOS window does not open and the unit has started as usual, press the Ctrl key, Alt key, and Delete key at the same time to restart the unit, and then repress the F2 key on the keyboard.

14. In the [Project Version] column of the [Main] menu on the BIOS setup window, make sure that the version Updated by the above procedure is shown.
15. Turn off the unit.
16. Set the clock time. (Refer to ["5-2-1. Lithium Battery"](#))

5-2-3. Example of Creating Bootable USB Memory

This section describes how to create general bootable USB memory that is available in a PC environment.

An example of creating such bootable USB memory by using software FreeDOS and Win 32 Disk Imager on a Windows PC is shown below.

Procedure

1. Run the Win 32 Disk Imager.

2. On the Win 32 Disk Imager window, configure the software as follows.

Image File: FreeDOS-1.1-USB-Boot.img

Device: USB memory to be written

3. Click [Write] to write the DOS image to the USB flash memory.
4. Click [Exit] to exit the application programs.
5. Copy necessary files to the USB flash memory.

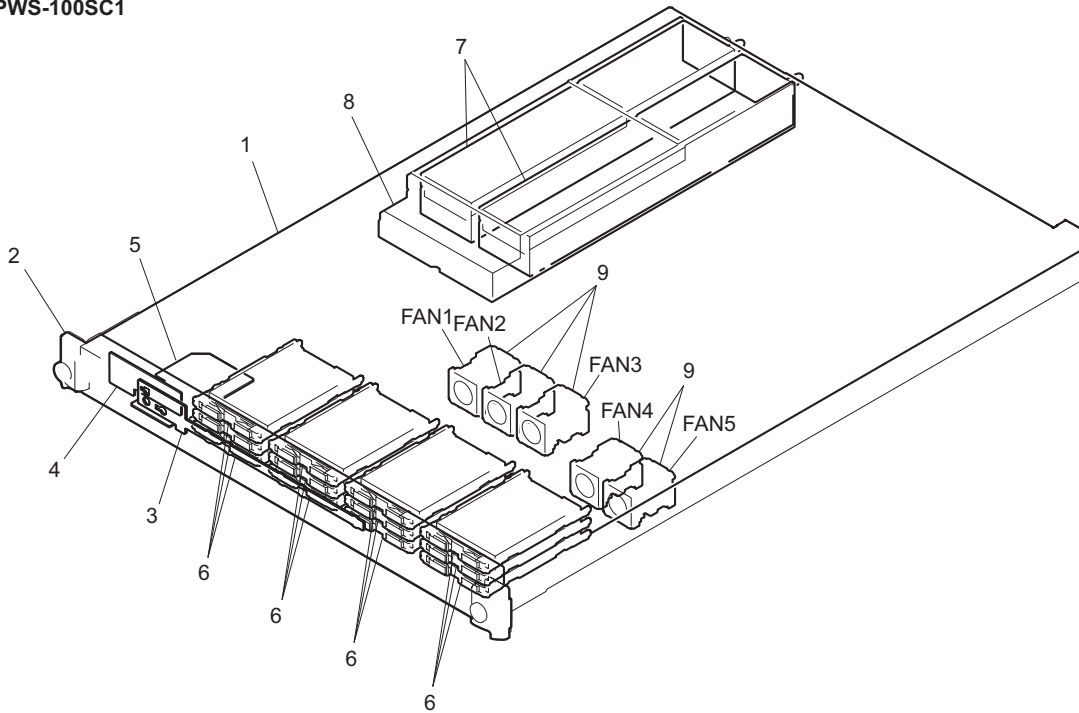
Example) The following three files are necessary for BIOS Update.

- Update.bat
- AFUDOS.exe
- AxxxPxxx.ROM

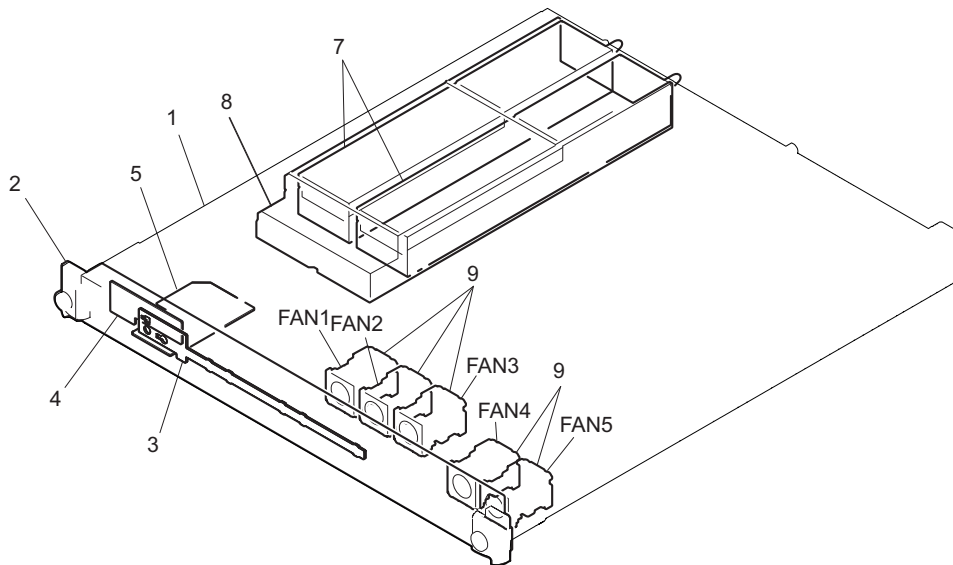
5-3. Location of Main Parts

This section describes replacement procedures of the parts listed below.

PWS-100SC1

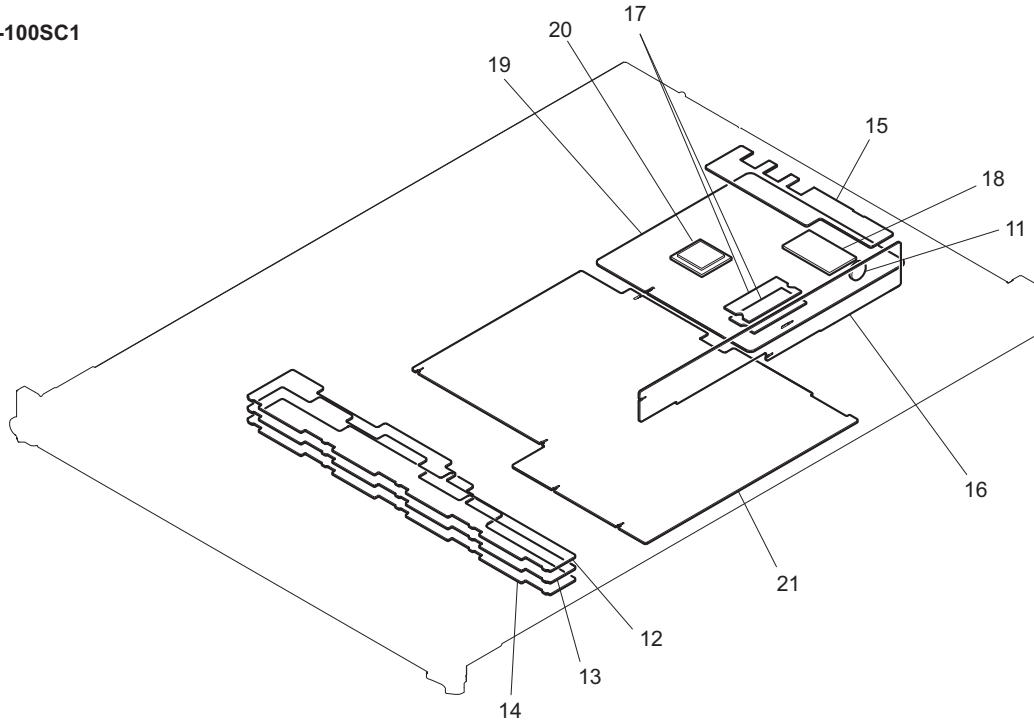


PWS-110SC1

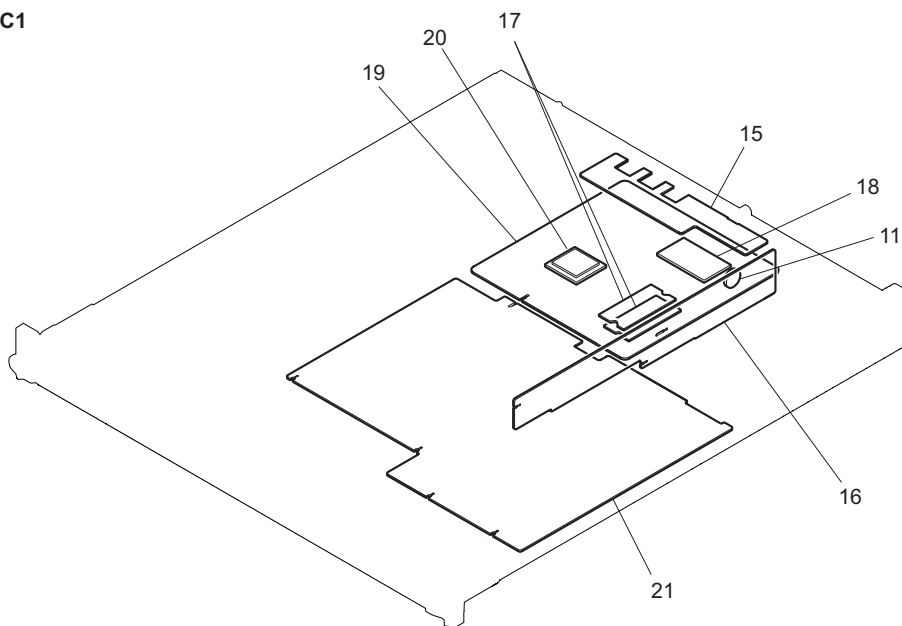


No.	Part Name	Procedure
1	Top Panel Assembly	“5-4. Top Panel Assembly”
2	Front Panel Assembly	“5-5. Front Panel Assembly”
3	LED-527 Board	“5-6. LED-527 Board”
4	SW-1627 Board	“5-7. SW-1627 Board”
5	DIO-98 Board	“5-8. DIO-98 Board”
6	ST Blank Assembly (PWS-100SC1 only)	“5-9. ST Blank Assembly (PWS-100SC1 only)”
7	Power Unit	“5-10. Power Unit”
8	Hot-Swap Unit	“5-11. Hot-Swap Unit”
9	Fan Assembly (FAN1 to 5)	“5-12. Fan Assembly”

PWS-100SC1



PWS-110SC1



No.	Part Name	Procedure
11	Lithium Battery	“5-13. Lithium Battery”
12	IF-1257 board (PWS-100SC1 only)	“5-14. IF-1257 Board (PWS-100SC1 only)”
13	IF-1258 board (PWS-100SC1 only)	“5-15. IF-1258 Board (PWS-100SC1 only)”
14	IF-1259 board (PWS-100SC1 only)	“5-16. IF-1259 Board (PWS-100SC1 only)”
15	CN-3698 Board	“5-17. CN-3698 Board”
16	RC-110 Board	“5-18. RC-110 Board”
17	Memory Module (204pin SO-DIMM)	“5-19. Memory Module (204pin SO-DIMM)”
18	SSD Module (mSATA Assembly)	“5-20. SSD Module (mSATA Assembly)”
19	iAP Board Assembly	“5-21. iAP Board Assembly”
20	CPU	“5-22. CPU”

Continued

No.	Part Name	Procedure
21	MB-1204 Board	“5-23. MB-1204 Board”

5-4. Top Panel Assembly

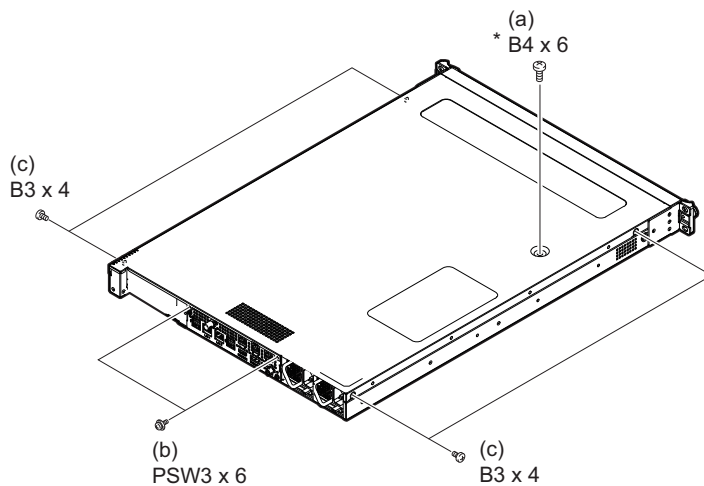
5-4-1. PWS-100SC1

Procedure

1. Remove the screw (B4 x 6), four screws (B3 x 4), and two screws (PSW3 x 6).

Tip

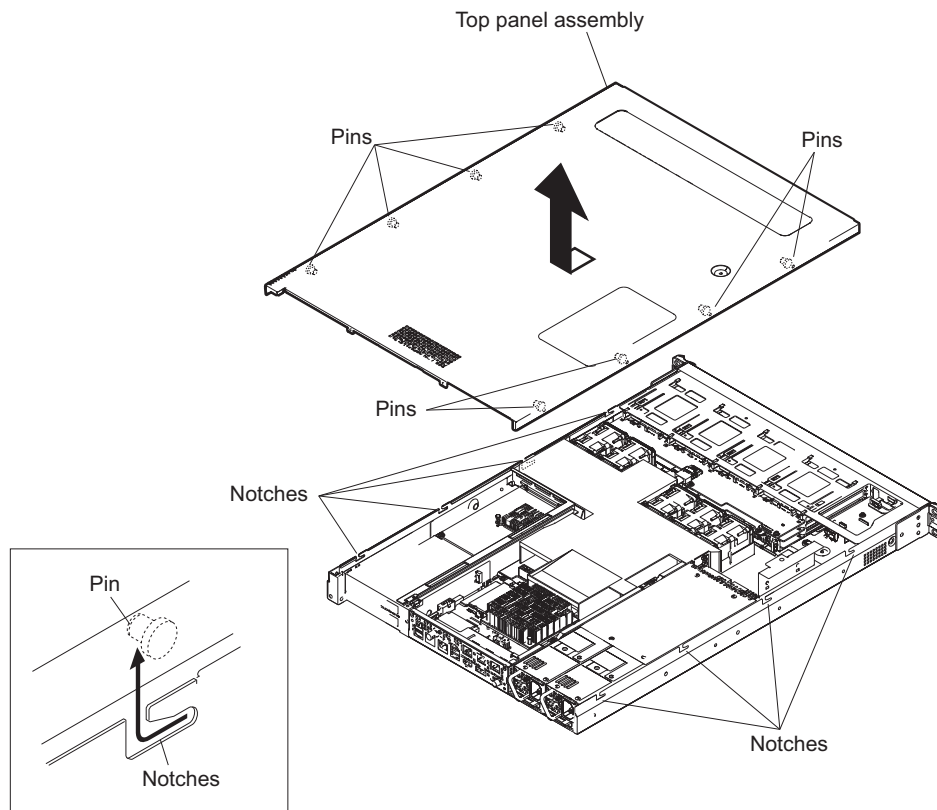
The initial products use the one screw of * mark only.



Note

When installing the top panel assembly, tighten the screws in the following sequence: (a), (b), (c).

2. Remove the eight pins of the top panel assembly from the eight notches of the main unit, and then remove the top panel assembly in the direction of the arrow.

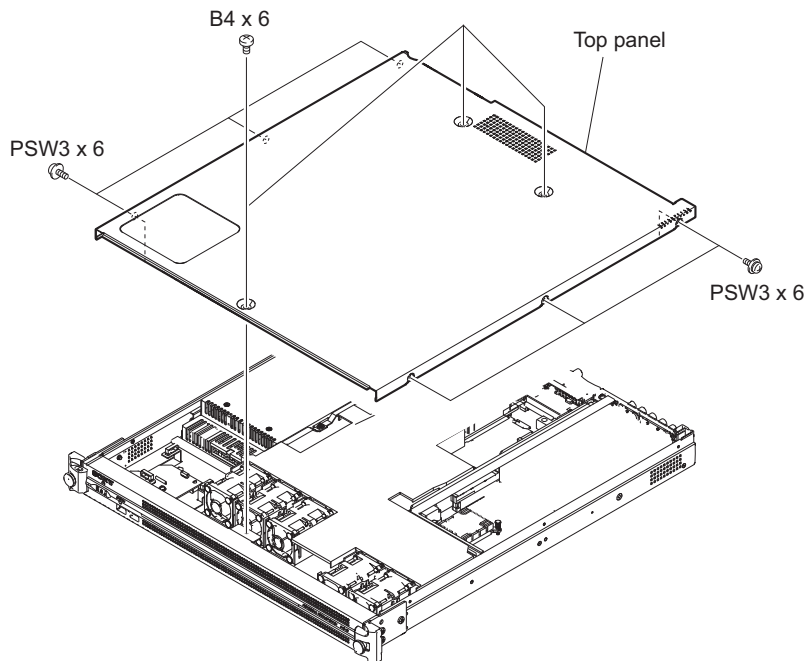


3. Install the removed parts by reversing the steps of removal.

5-4-2. PWS-110SC1

Procedure for removal

1. Remove the three screws (B4 x 6) and six screws (PSW3 x 6), and then the top panel.

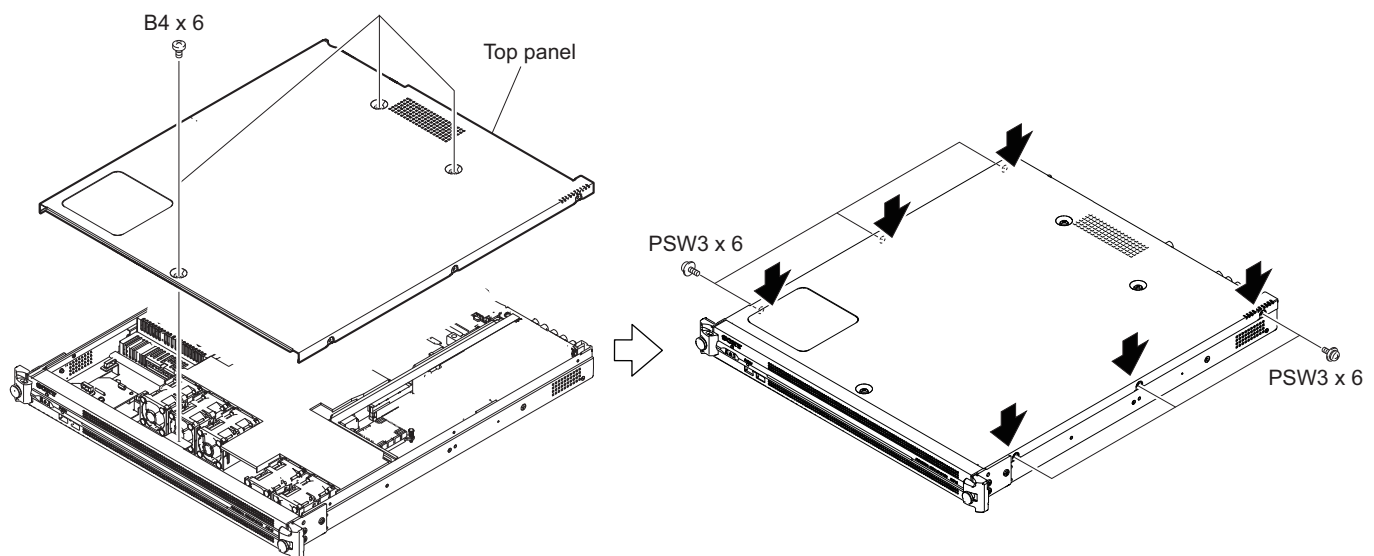


Procedure for installation

2. Attach the top panel, and then tighten the three screws (B4 x 6).
3. Tighten the six screws (PSW3 x 6).

Note

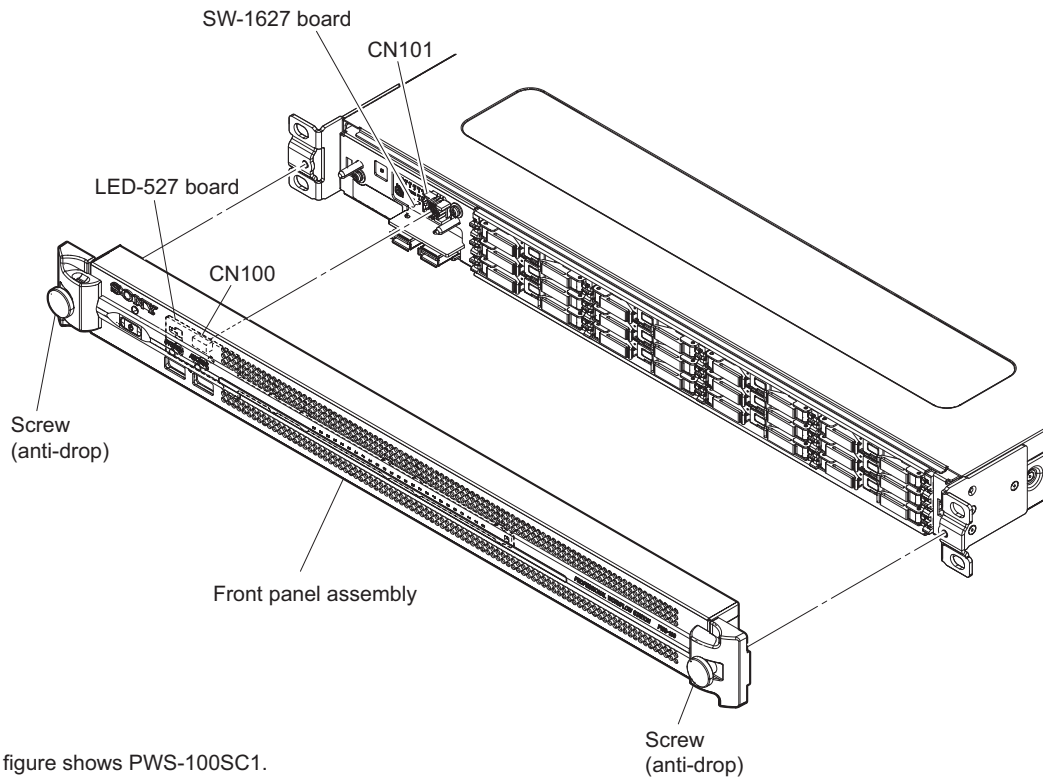
Press and hold down the top panel, and then tighten each screw.



5-5. Front Panel Assembly

Procedure

1. Loosen the two screws (anti-drop).
2. Disconnect the connector (CN100) on the LED-527 board from the connector (CN101) on the SW-1627 board and remove the front panel assembly.



3. Install the removed parts by reversing the steps of removal.

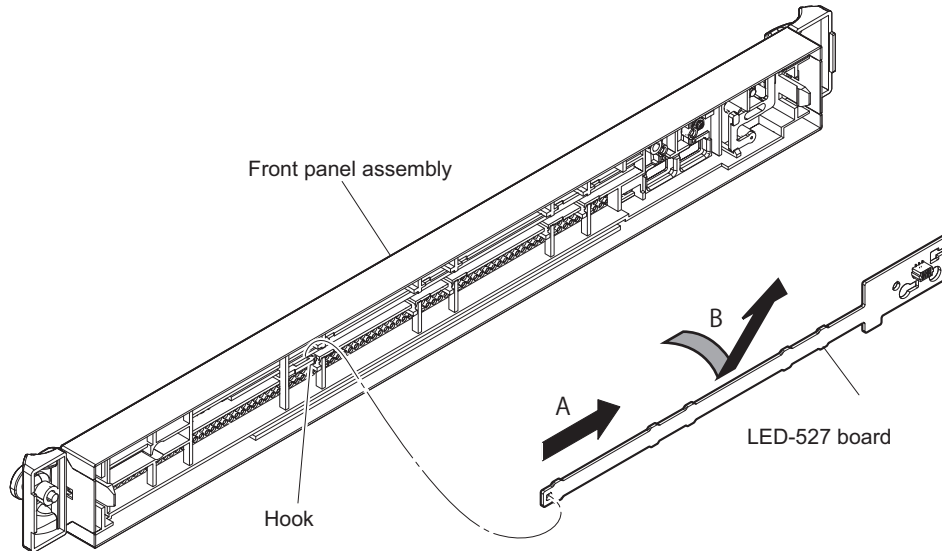
5-6. LED-527 Board

Preparation

1. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

Procedure

1. Release the hook, then slide the LED-527 board in the direction of the arrow A.
2. Tilt the LED-527 board in the direction of arrow B and remove the LED-527 board.



3. Install the removed parts by reversing the steps of removal.

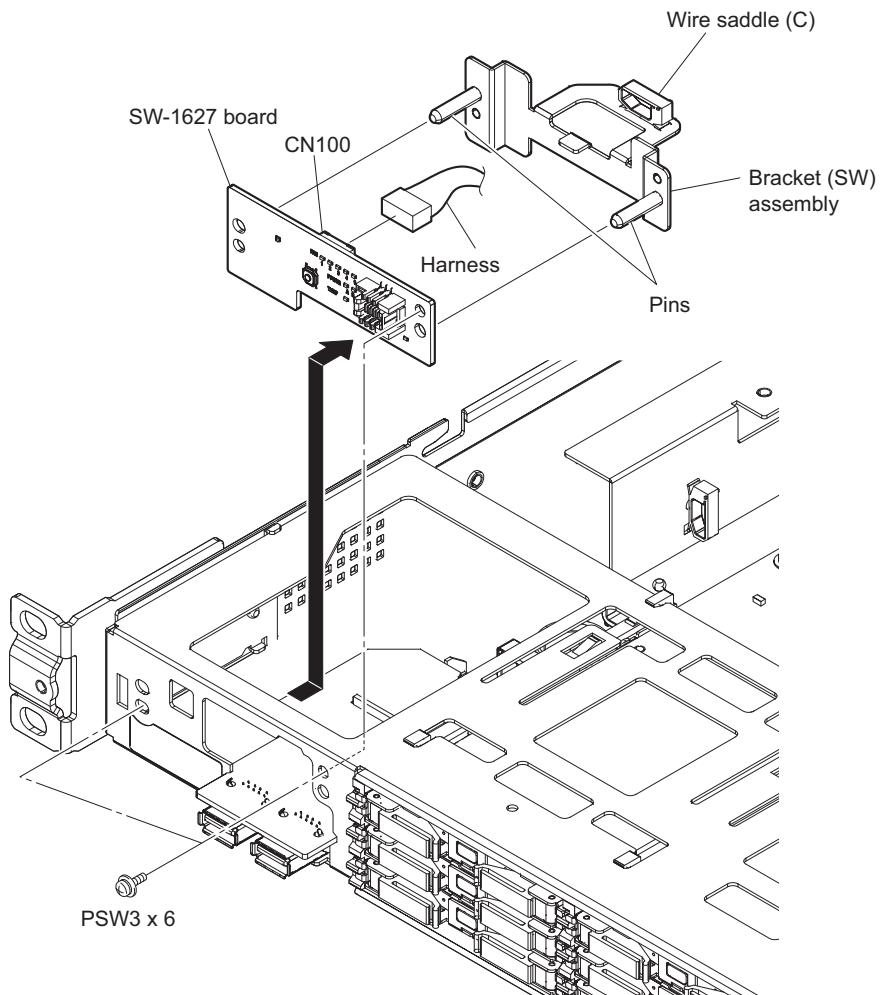
5-7. SW-1627 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

Procedure

1. Open the wire saddle (C) and disconnect the harness from the connector (CN100) on the SW-1627 board.
2. Remove the two screws, then remove the bracket (SW) assembly in the direction of the arrow.
3. Remove the SW-1627 board from the two pins of the bracket (SW) assembly.



This figure shows PWS-100SC1.

4. Install the removed parts by reversing the steps of removal.

5-8. DIO-98 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”)
3. Remove the bracket (SW) assembly. (Refer to “5-7. SW-1627 Board”)

Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN200) on the DIO-98 board.

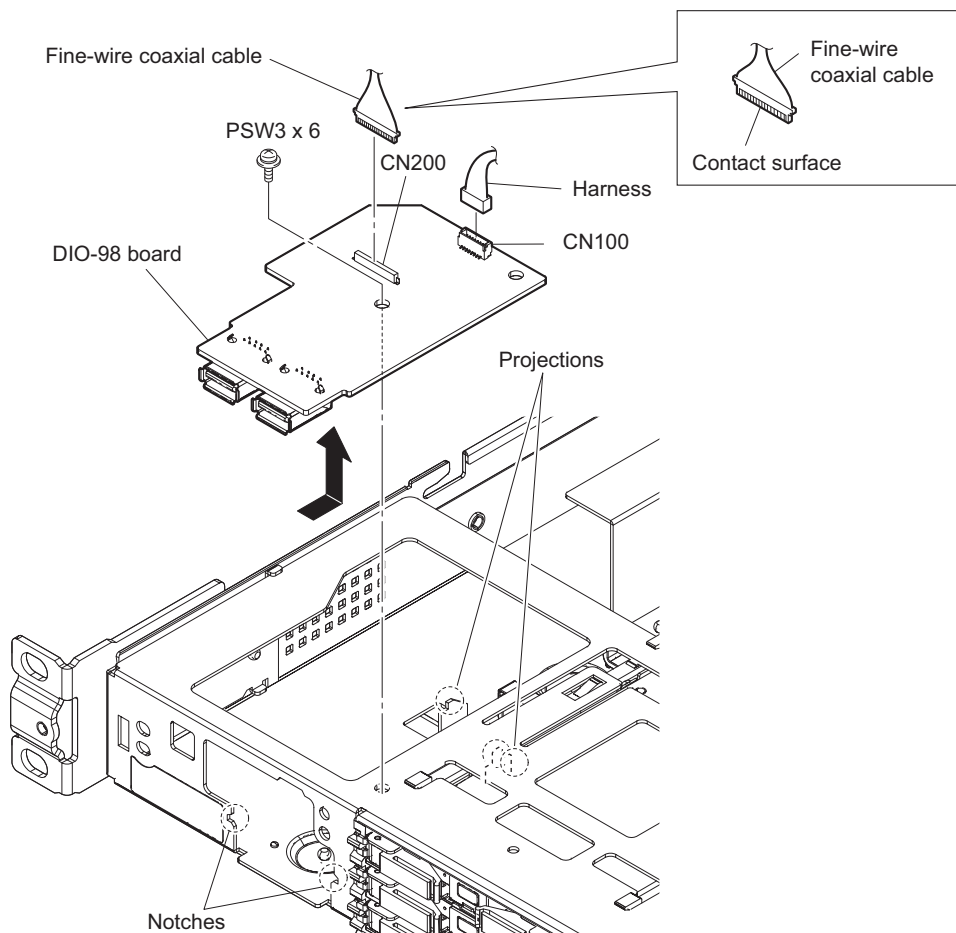
Note

When disconnecting the fine-wire coaxial cable, hold its connector between your fingers.

2. Disconnect the harness from the connector (CN100) on the DIO-98 board.
3. Remove the screw.
4. Lift the DIO-98 board off the two projections of the chassis.
5. Remove the DIO-98 board in the direction of the arrow.

Note

Be careful not to touch the bottom of the DIO-98 board to the chassis and not to break the board.



This figure shows PWS-100SC1.

Note

- Install the fine-wire coaxial cable in the direction shown in the figure when installing the fine-wire coaxial cable.
- Install DIO-98 board according to the two notches when installing the DIO-98 board.

6. Install the removed parts by reversing the steps of removal.

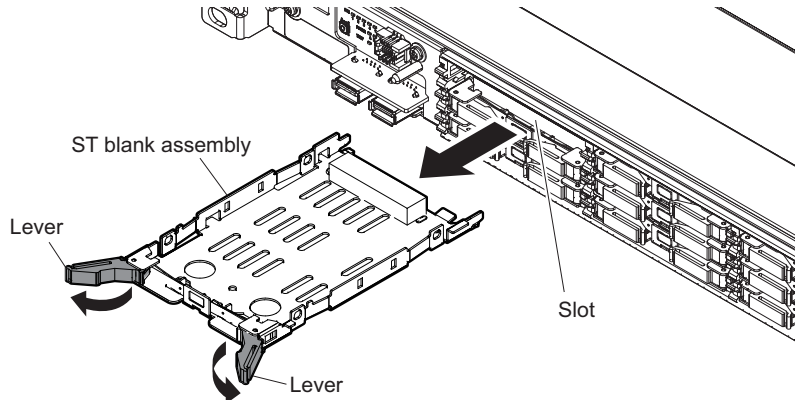
5-9. ST Blank Assembly (PWS-100SC1 only)

Preparation

1. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

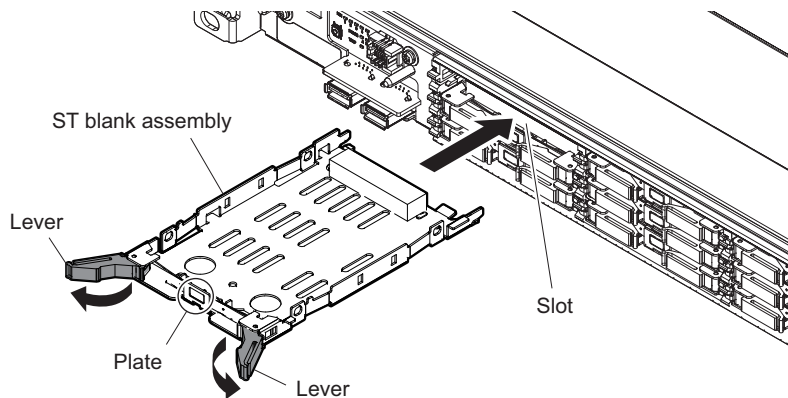
Procedure for removal

1. Open the lever of the ST blank assembly in the direction of the arrow and remove the ST blank assembly from a slot.

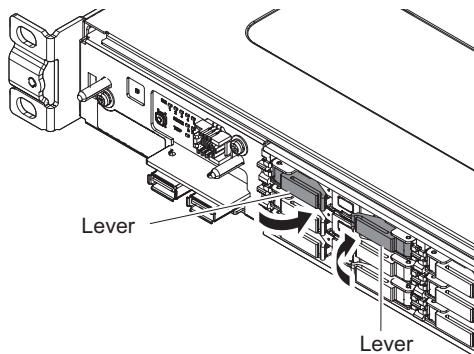


Procedure for installation

2. Open the lever of the ST blank assembly and insert the ST blank assembly into the slot.
3. When the ST blank assembly hits the end of the slot, push its plate.



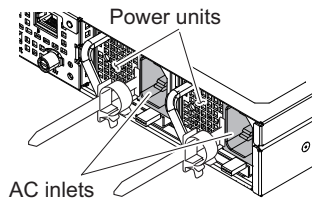
4. Turn the levers in the direction of arrows.



5-10. Power Unit

Note

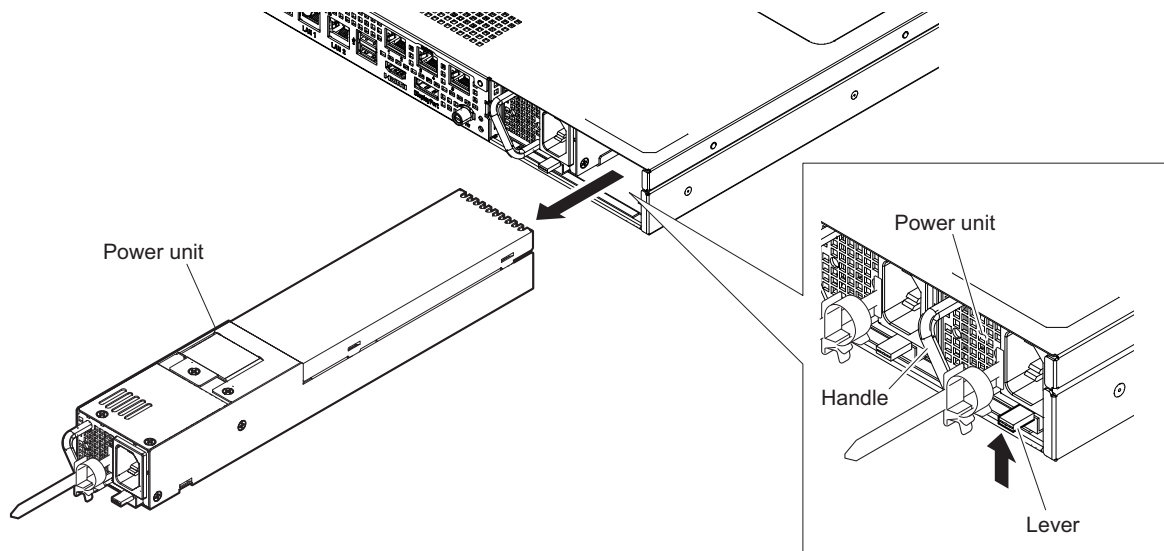
Before removing or installing the power units, be sure to unplug the power cords from the AC inlets.



5-10-1. PWS-100SC1

Removing Procedure.

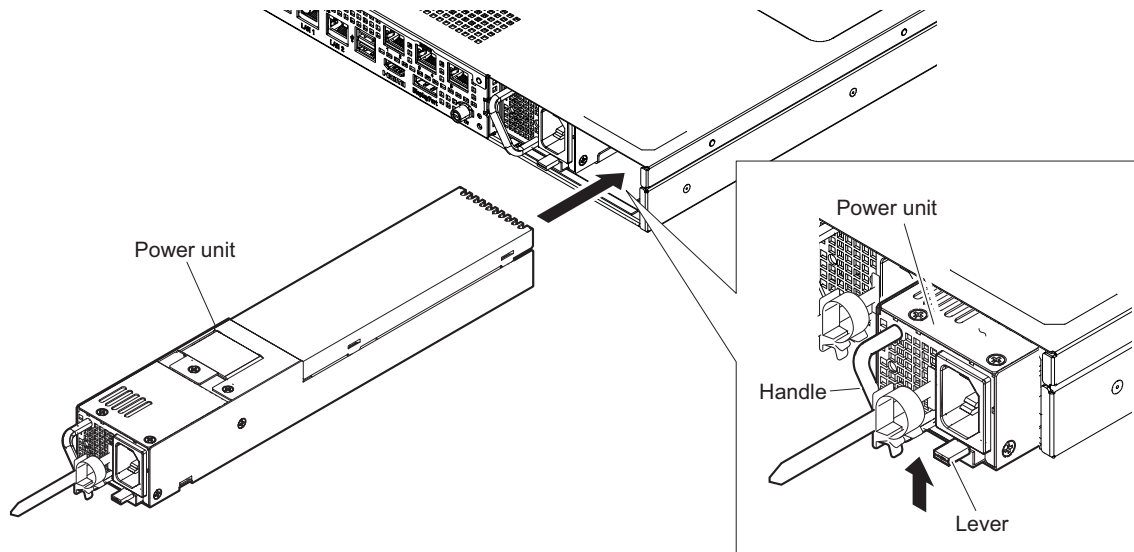
1. Pull up the lever in the direction of the arrow to unlock the power unit, and then pull the handle to draw out the power unit.



Installing Procedure

2. Pull up the lever in the direction of arrow, and then insert the power unit.

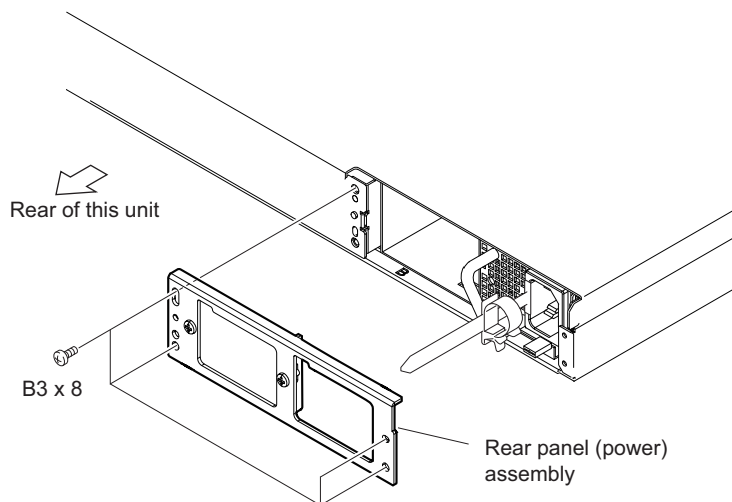
3. Confirm that the power unit has been locked. (The power unit cannot be drawn out by pulling the handle without pulling up the lever.)



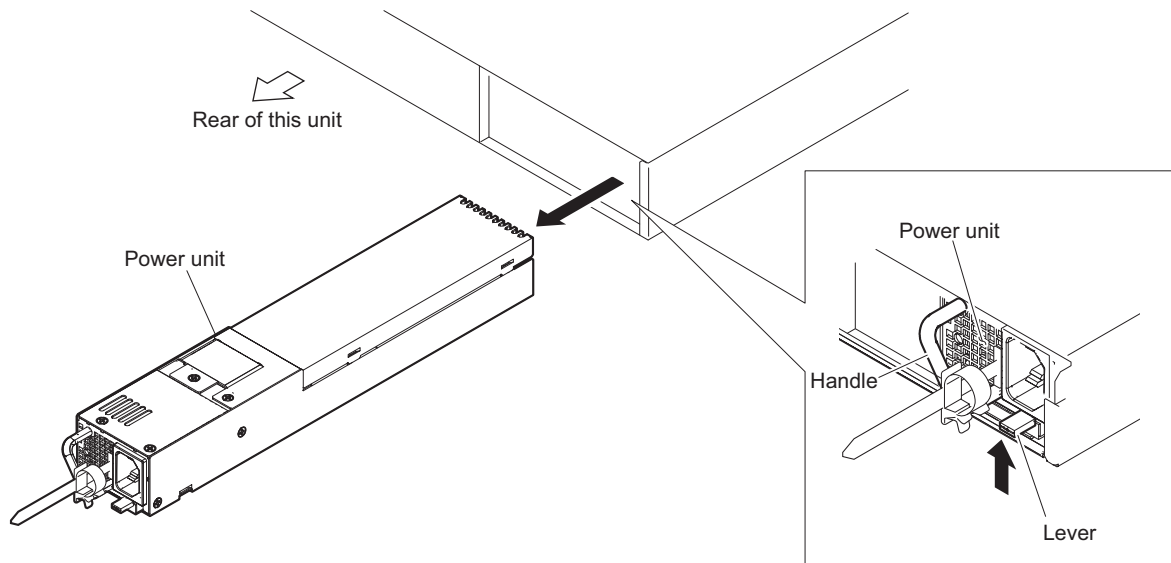
5-10-2. PWS-110SC1

Removing Procedure

1. Remove the four screws, and then remove the rear panel (power) assembly.

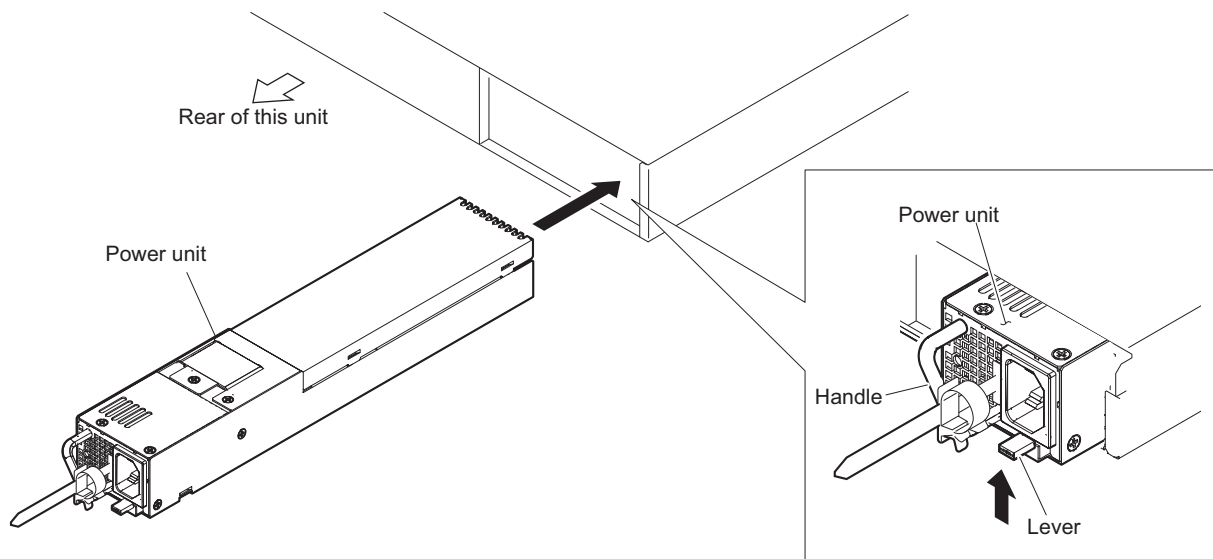


2. Pull up the lever in the direction of the arrow to unlock the power unit, and then pull the handle to draw out the power unit.



Installing Procedure

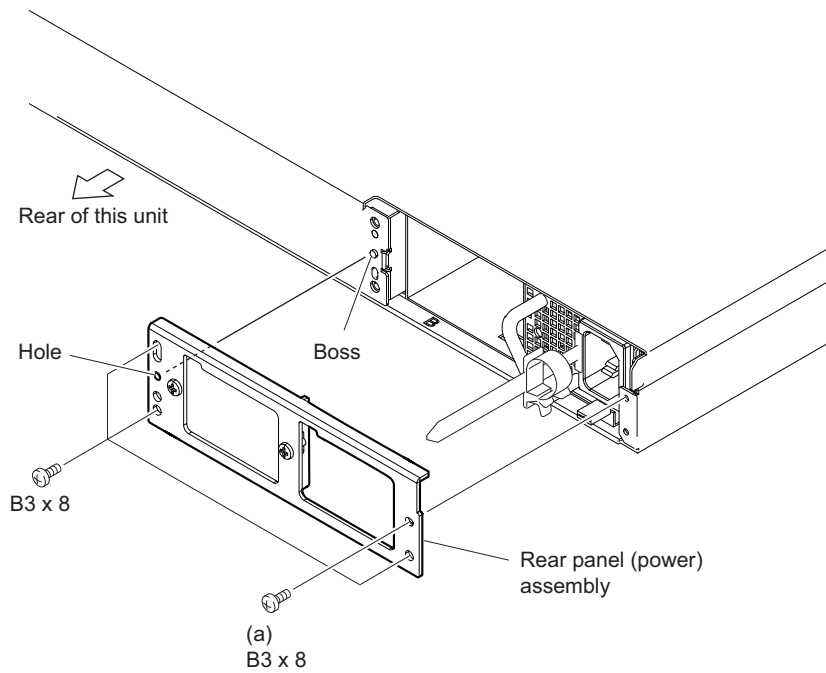
3. Pull up the lever in the direction of the arrow, and then insert the power unit.
4. Confirm that the power unit has been locked. (The power unit cannot be drawn out by pulling the handle without pulling up the lever.)



5. Align the hole to the boss, attach the rear panel (power), and then tighten the four screws.

Note

First tighten the screw (a), and then tighten the other three screws. (Refer to the figure below.)



5-11. Hot-Swap Unit

Preparation

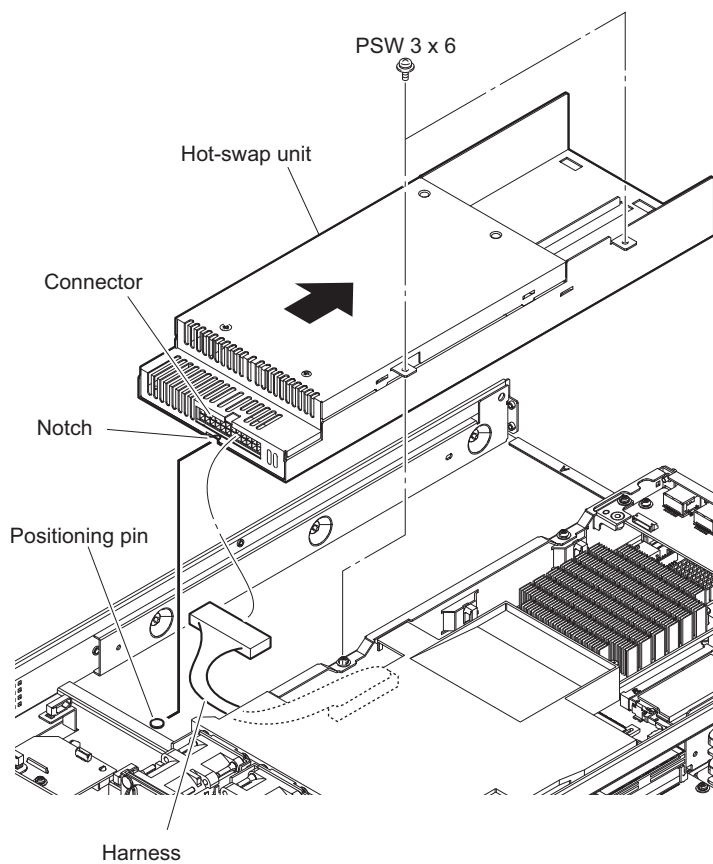
1. Remove the top panel assembly.(Refer to“5-4. Top Panel Assembly”)
2. Remove the Power unit assembly.(Refer to“5-10. Power Unit”)

Procedure

1. Disconnect the harness from the connector of the hot-swap unit.
2. Remove the two screws (PSW 3 x 6).
3. Slide the hot-swap unit in the direction of the arrow, then release the positioning pin from the notch of the hotswap unit.

Note

Do not pull up the hot-swap unit without releasing the notch of the hot-swap unit from the positioning pin. Doing so may damage the positioning pin.



4. Install the removed parts by reversing the steps of removal.

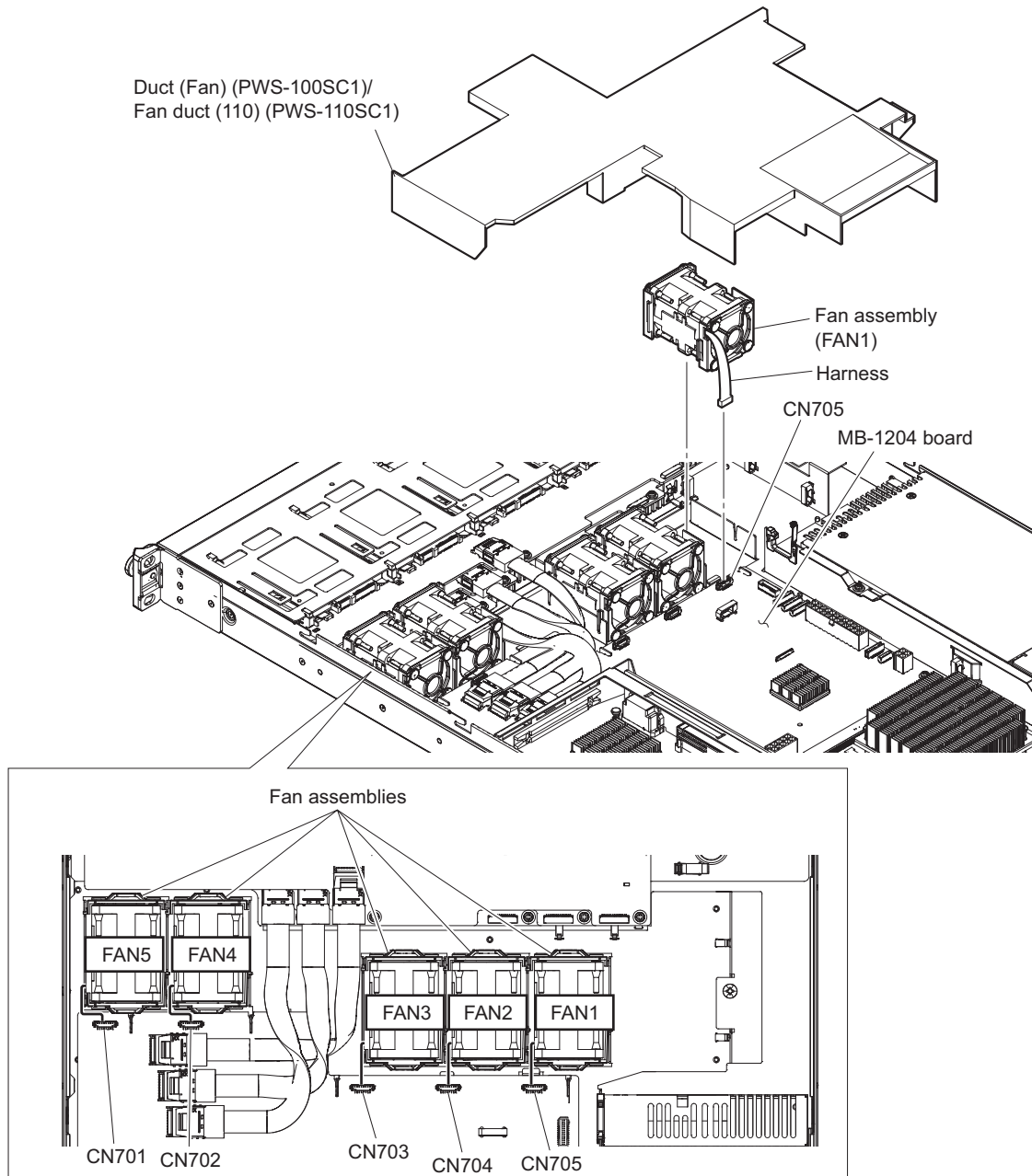
5-12. Fan Assembly

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Remove the duct (fan) (fan duct (110) is used in the PWS-110SC1)..
2. Disconnect the harness from the connector (CN705) on the MB-1204 board and remove the fan assembly (FAN1).
3. Remove other fan assemblies (FAN2 to FAN5) in the same way as in step 2.



This figure shows PWS-100SC1.

4. Install the removed parts by reversing the steps of removal.

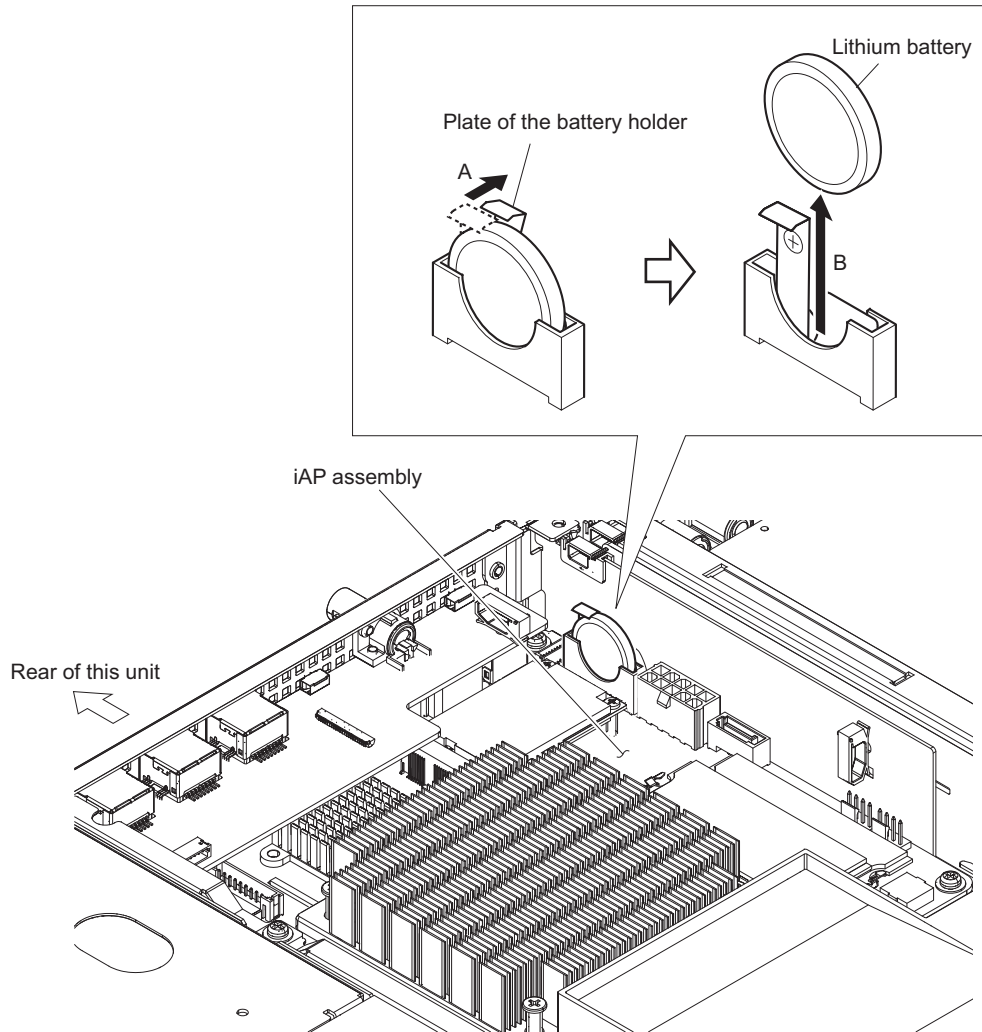
5-13. Lithium Battery

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Pull back the plate of the battery holder in the direction of arrow A and remove the lithium battery in the direction of arrow B.



2. Install the removed parts by reversing the steps of removal.

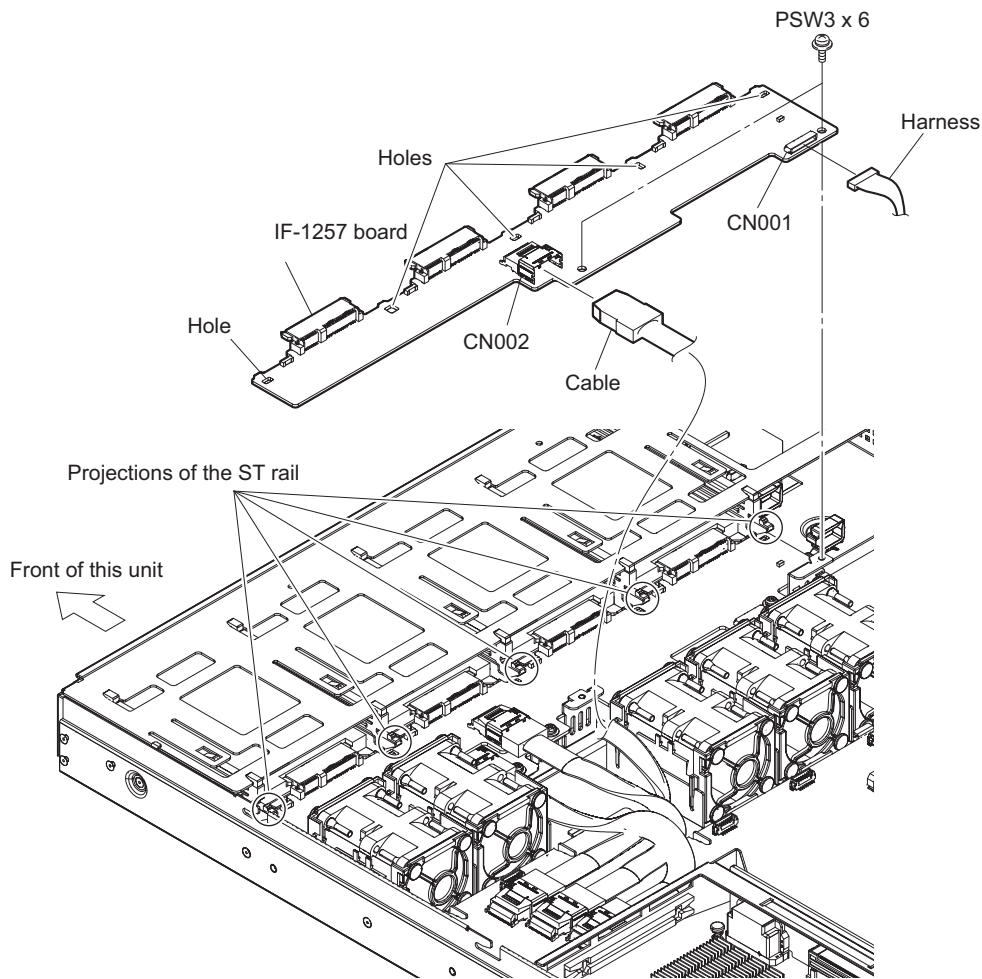
5-14. IF-1257 Board (PWS-100SC1 only)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the duct (fan). (Refer to “5-12. Fan Assembly”.)
4. Remove the ST blank assemblies of slot No. 1 to 4. (Refer to “5-9. ST Blank Assembly (PWS-100SC1 only)”)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1257 board, then disconnect the cable from the connector (CN002) on the IF-1257 board.
2. Remove the two screws and detach the IF-1257 board.



Note

When attaching the IF-1257 board, align the five projections of the ST rail with the five holes of IF-1257 board.

3. Install the removed parts by reversing the steps of removal.

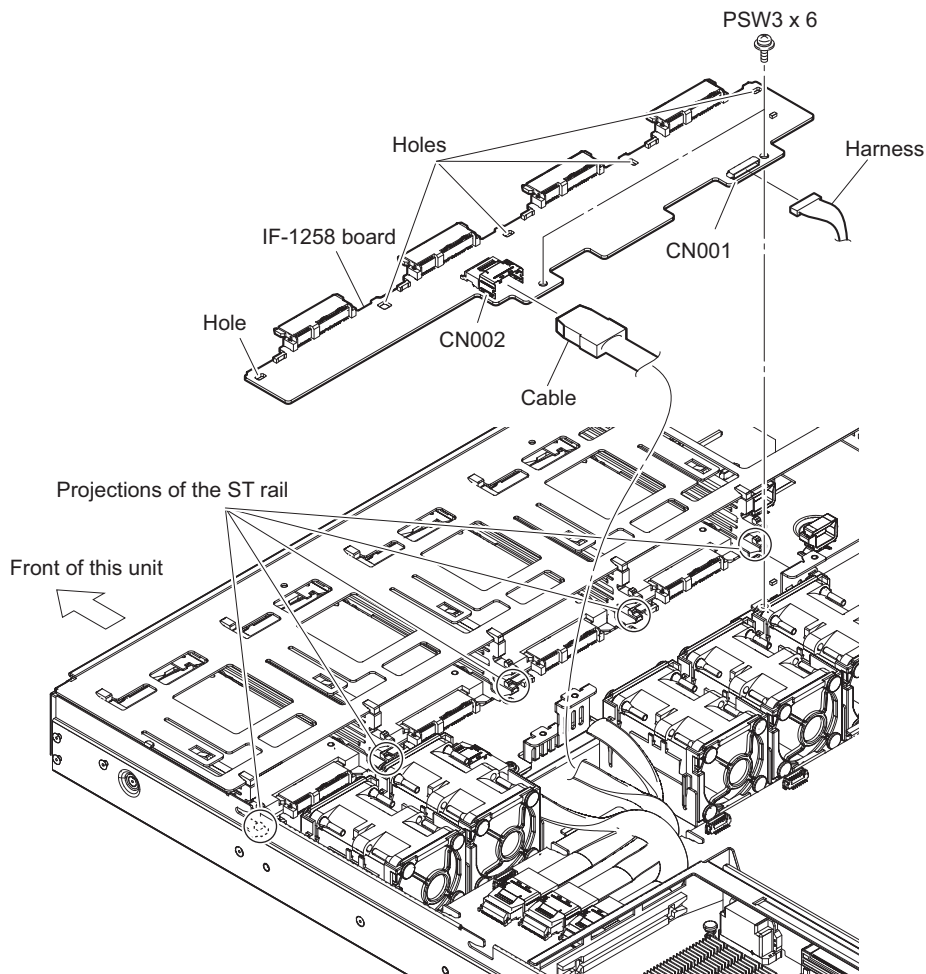
5-15. IF-1258 Board (PWS-100SC1 only)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the duct (fan). (Refer to “5-12. Fan Assembly”.)
4. Remove the ST blank assemblies of slot No. 1 to 8. (Refer to “5-9. ST Blank Assembly (PWS-100SC1 only)”)
5. Remove the IF-1257 board. (Refer to “5-14. IF-1257 Board (PWS-100SC1 only)”.)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1258 board, then disconnect the cable from the connector (CN002) on the IF-1258 board.
2. Remove the two screws and detach the IF-1258 board



Note

When attaching the IF-1258 board, align the five projections of the ST rail with the five holes of IF-1258 board.

3. Install the removed parts by reversing the steps of removal.

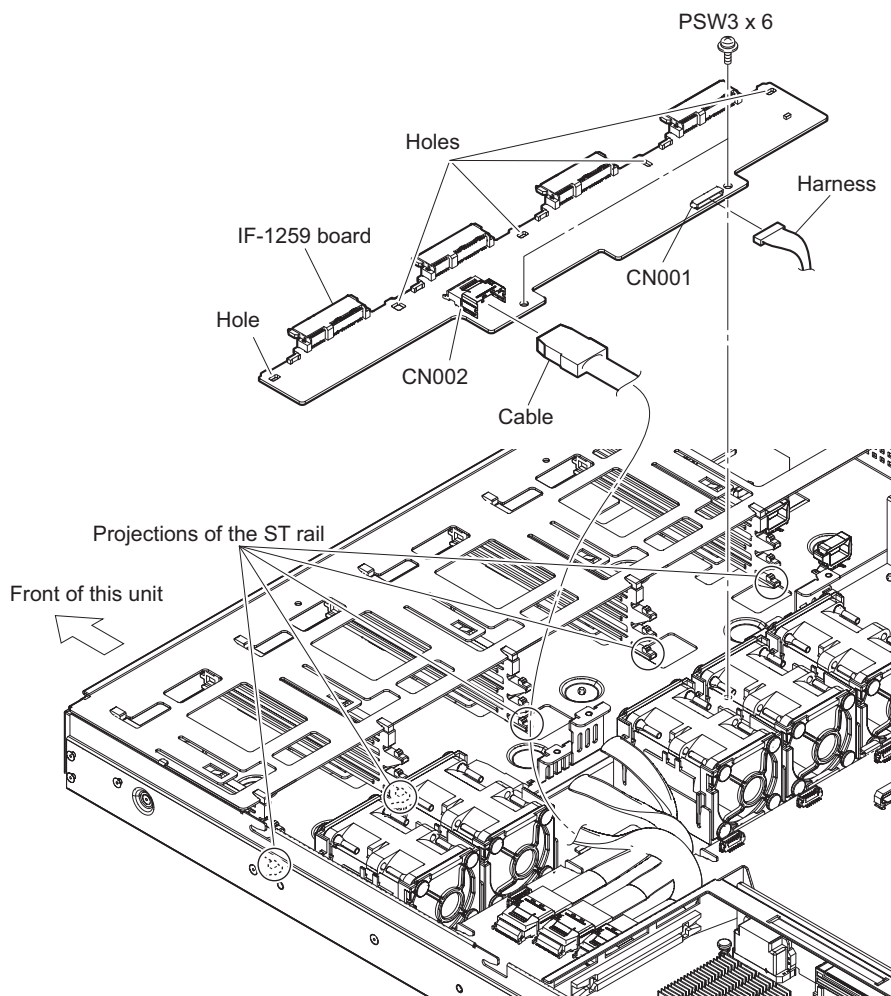
5-16. IF-1259 Board (PWS-100SC1 only)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”)
3. Remove the duct (fan). (Refer to “5-12. Fan Assembly”)
4. Remove the ST blank assemblies of slot No. 1 to 12. (Refer to “5-9. ST Blank Assembly (PWS-100SC1 only)”)
5. Remove the IF-1257 board. (Refer to “5-14. IF-1257 Board (PWS-100SC1 only)”)
6. Remove the IF-1258 board. (Refer to “5-15. IF-1258 Board (PWS-100SC1 only)”)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1259 board, then disconnect the cable from the connector (CN002) on the IF-1259 board.
2. Remove the two screws and detach the IF-1259 board..



Note

When attaching the IF-1259 board, align the five projections of the ST rail with the five holes of IF-1259 board.

3. Install the removed parts by reversing the steps of removal.

5-17. CN-3698 Board

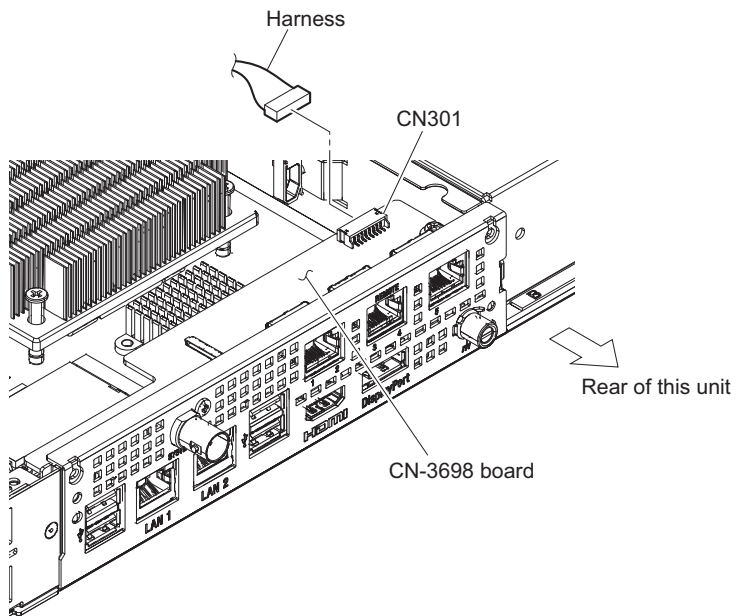
5-17-1. PWS-100SC1

Preparation

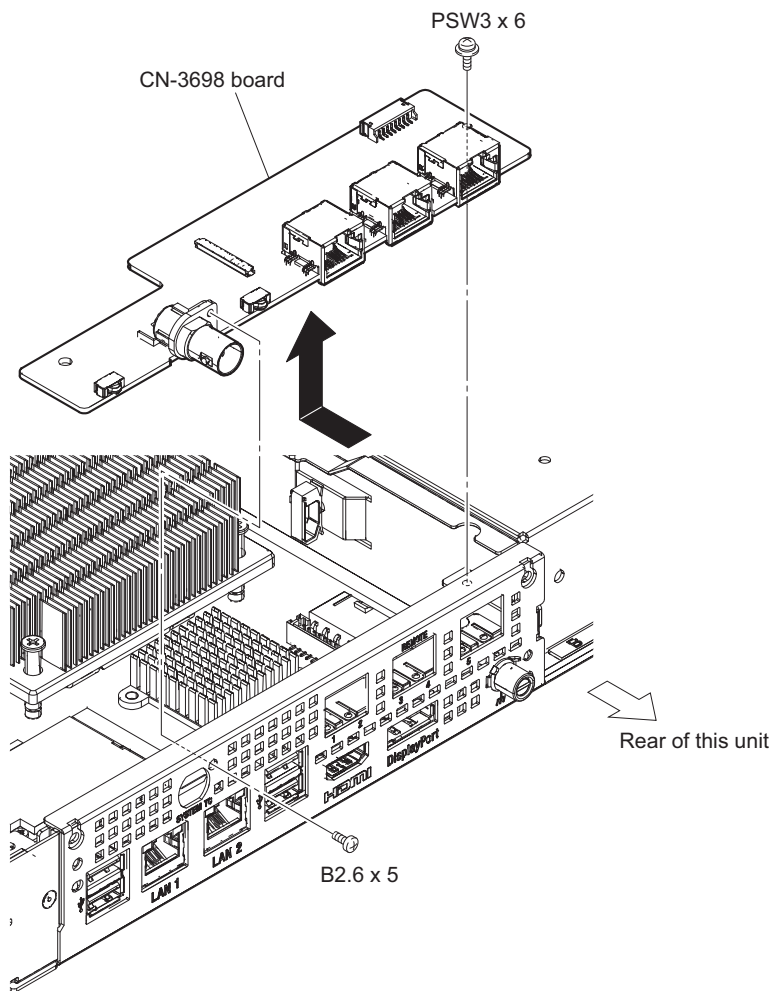
1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#))

Procedure

1. Disconnect the harness from the connector (CN301) on the CN-3698 board.



2. Remove the screw (B2.6 x 5) and the screw (PSW3 x 6) to detach the CN-3698 board in the direction of the arrow.



3. Install the removed parts by reversing the steps of removal.

5-17-2. PWS-110SC1

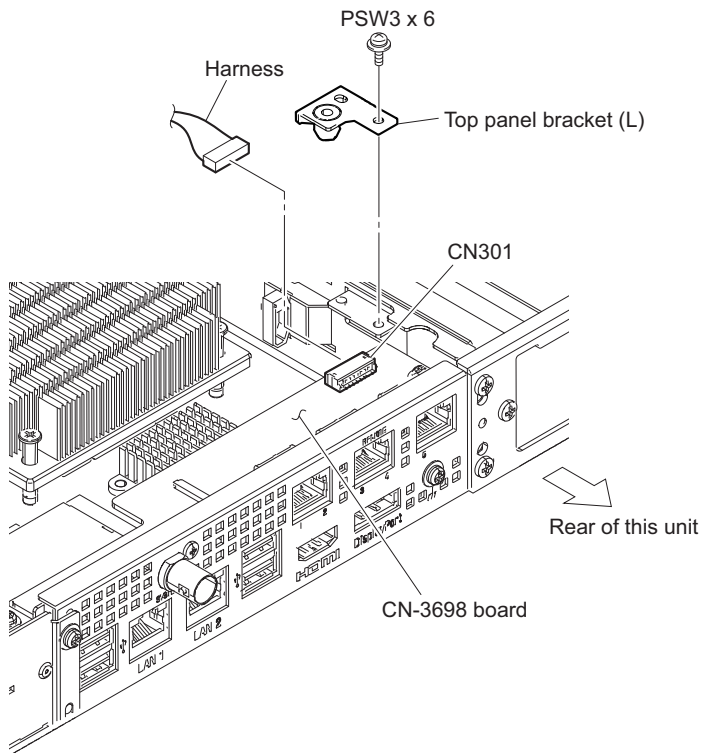
Preparation

1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#))

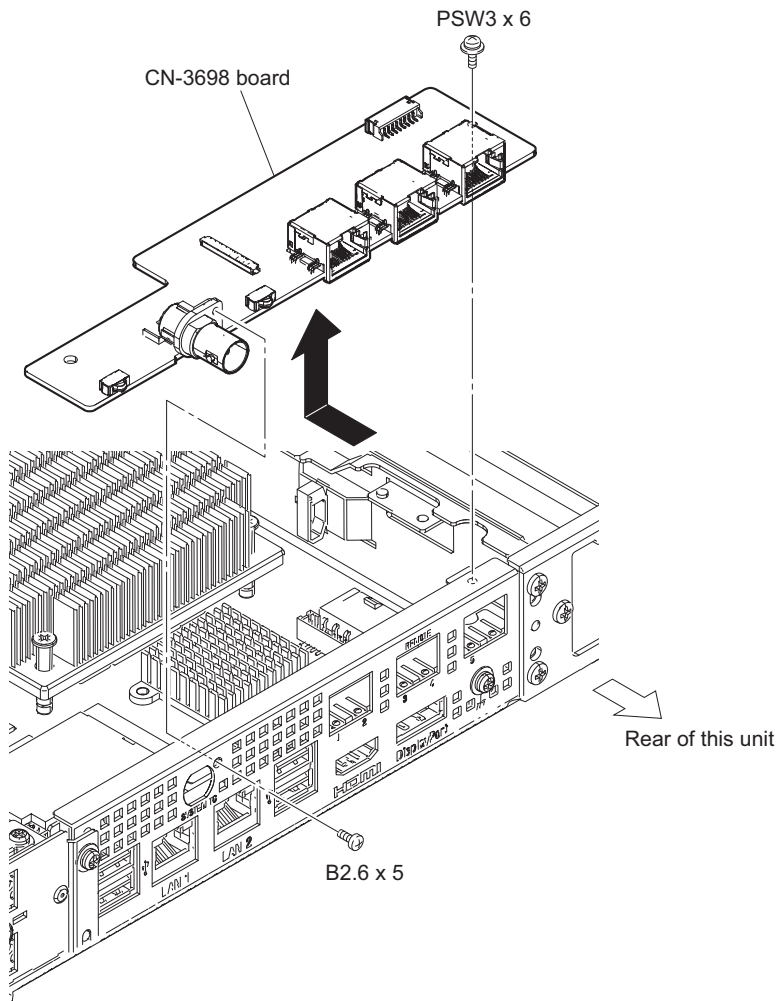
Procedure

1. Remove the screw, and then remove the top panel bracket (L).

2. Disconnect the harness from the connector (CN301) on the CN-3698 board.



3. Remove the screw (B2.6 x 5) and the screw (PSW3 x 6) to detach the CN-3698 board in the direction of the arrow.



4. Install the removed parts by reversing the steps of removal.

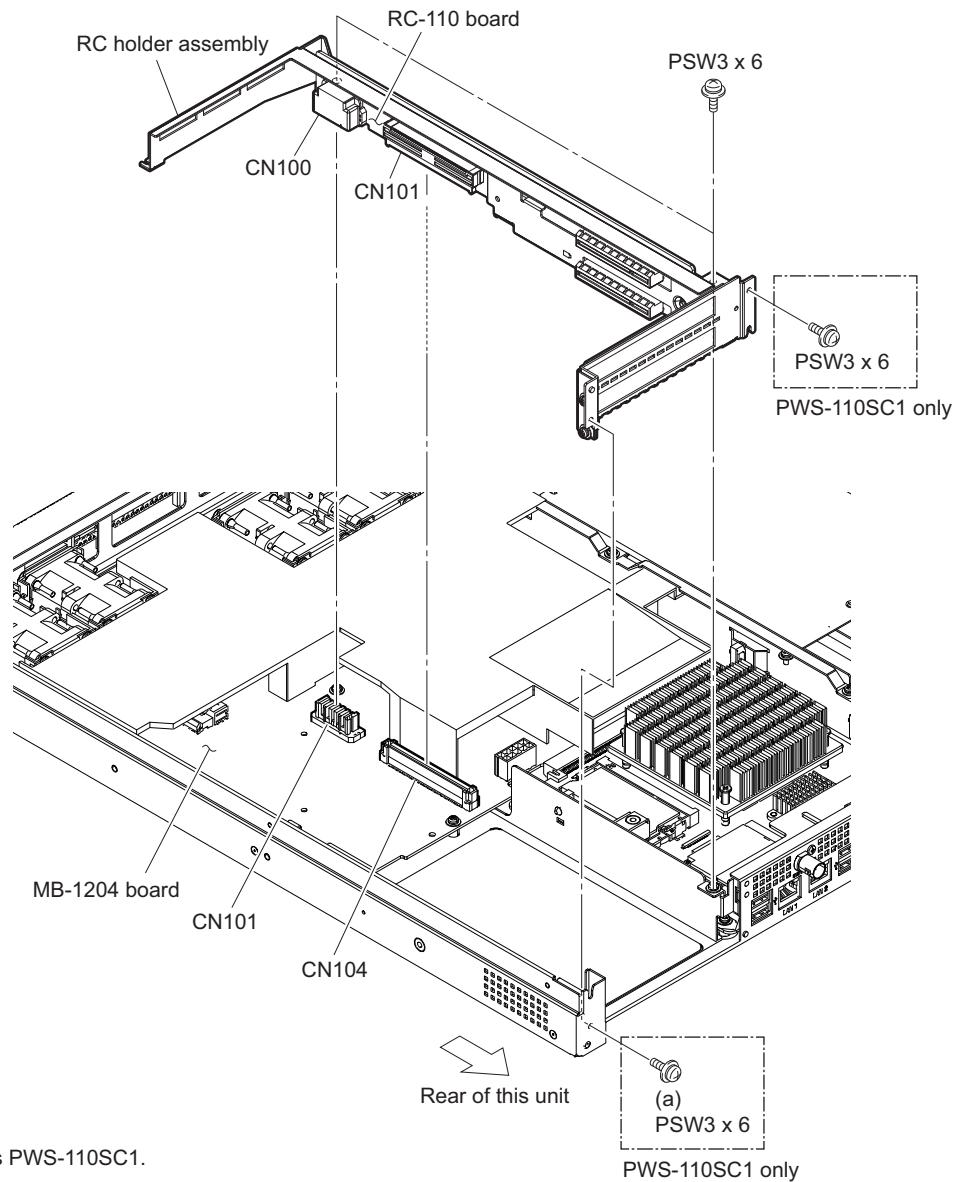
5-18. RC-110 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Remove the screws (PWS-100SC1:two screws, PWS-110SC1:four screws).
2. Remove RC holder assembly from the connectors (CN101, CN104) on the MB-1204 board.

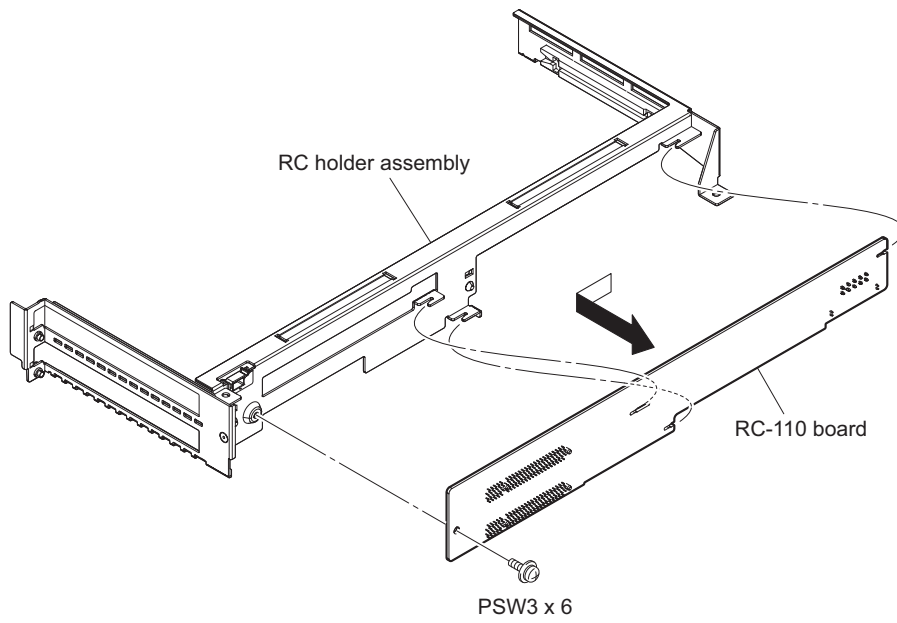


This figure shows PWS-110SC1.

Note

When installing the RC holder assembly, tighten the screws in the following sequence: (a), others. (PWS-110SC1 only)

3. Remove the screw to detach the RC-110 board in the direction of the arrow.



4. Install the removed parts by reversing the steps of removal.

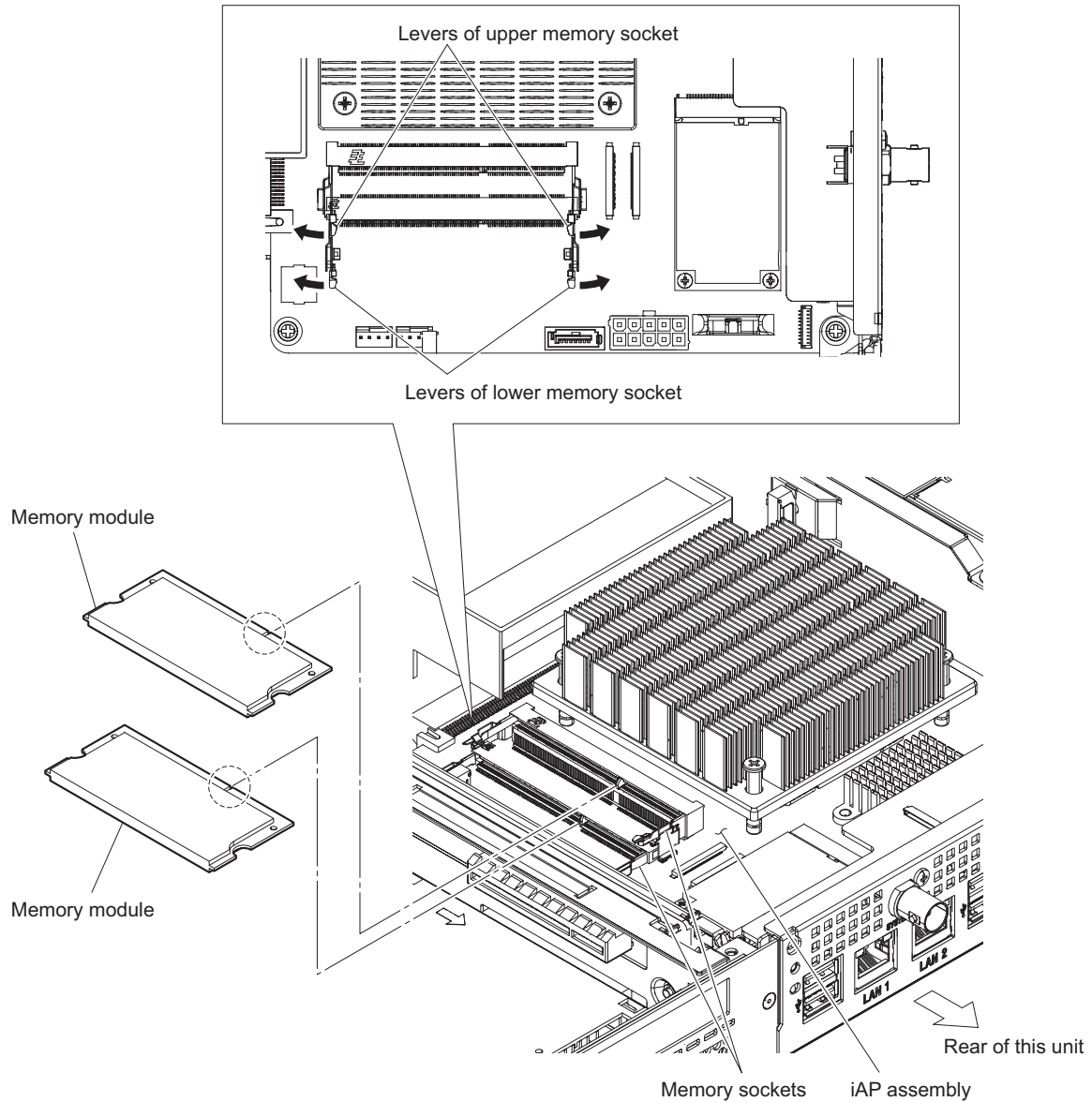
5-19. Memory Module (204pin SO-DIMM)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Pull the levers of the upper memory socket outward from the socket and remove the memory module.
2. Pull the levers of the lower memory socket outward from the socket and remove the memory module.



Note

Insert the memory modules securely into the memory sockets of the iAP assembly when installing them.

3. Install the removed parts by reversing the steps of removal.

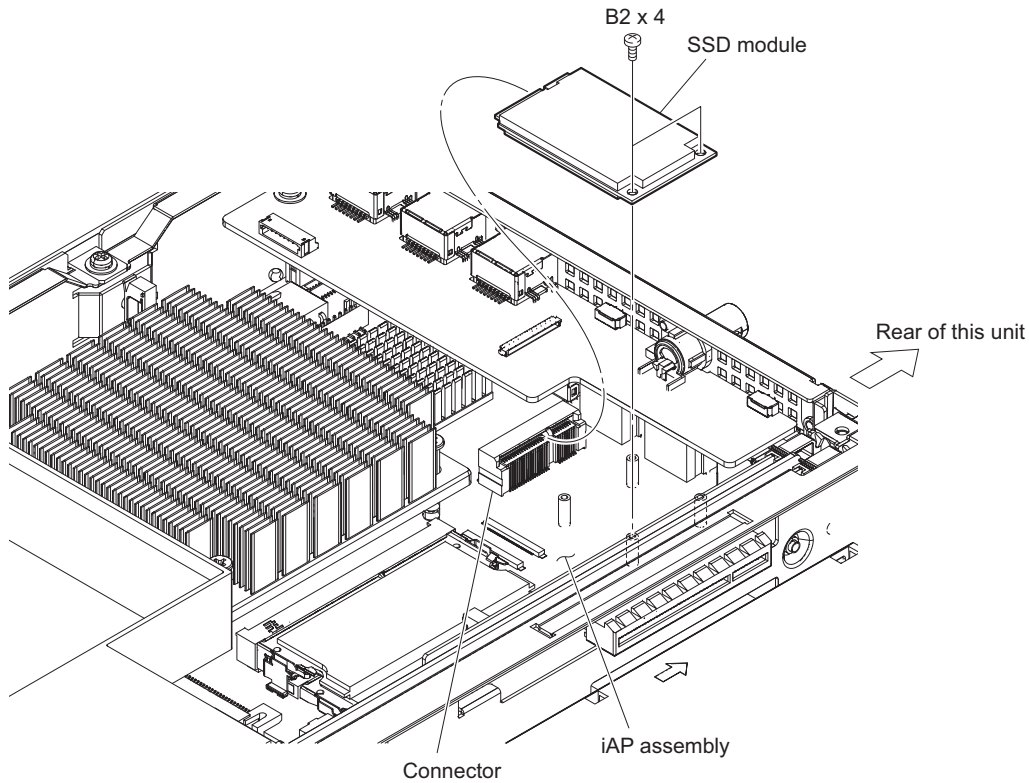
5-20. SSD Module (mSATA Assembly)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Remove two screws and then remove the SSD module from the connector of the iAP assembly.



Note

Insert the SSD module securely into the connector of the iAP assembly when installing it.

2. Install the removed parts by reversing the steps of removal.

5-21. iAP Board Assembly

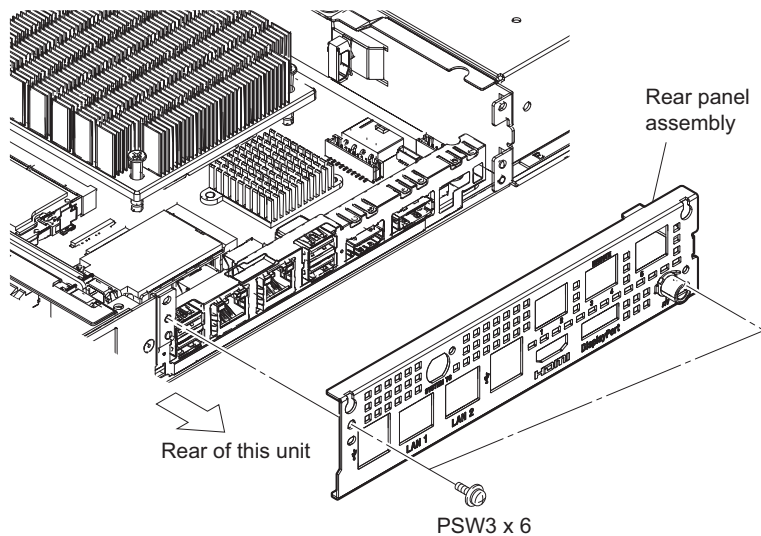
5-21-1. PWS-100SC1

Preparation

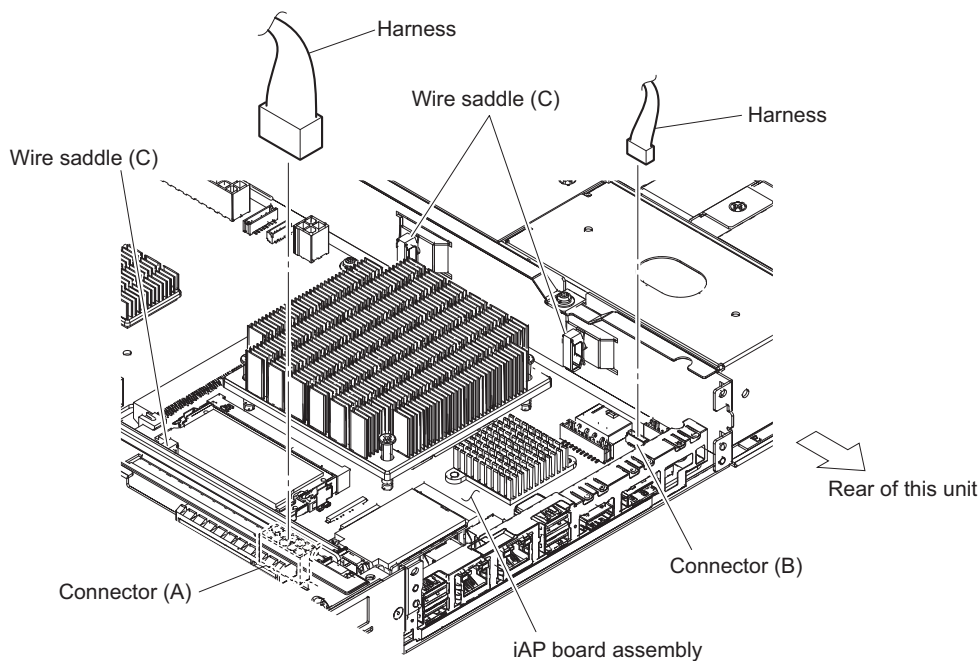
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the fan duct. (Refer to “5-12. Fan Assembly”)
3. Remove the CN-3698 board. (Refer to “5-17. CN-3698 Board”)

Procedure

1. Remove the two screws and then detach the rear panel assembly.

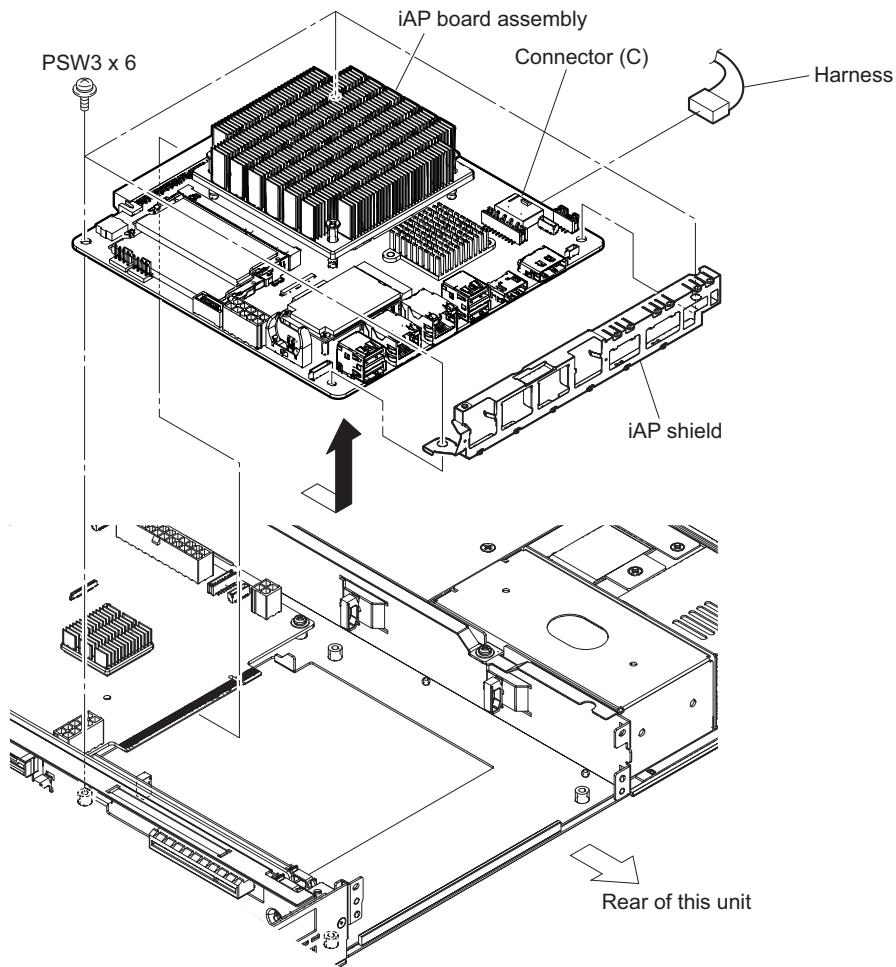


2. Open the three pieces of wire saddle (C) and disconnect the two harnesses from the connector (A) and the connector (B) of the iAP board assembly.



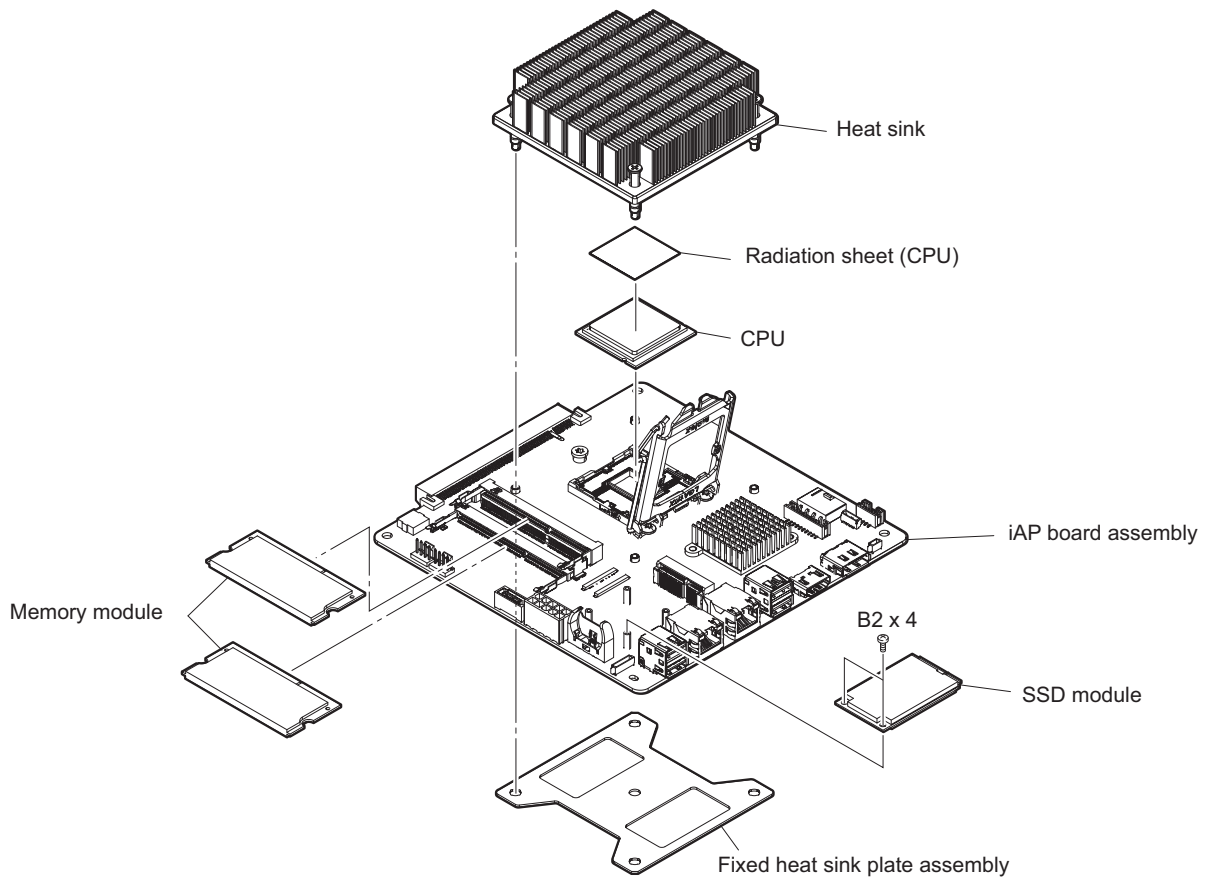
3. Remove the four screws and detach the iAP board assembly in the direction indicated of the arrow.
4. Disconnect the harness from the connector (C) of the iAP board assembly.

5. Remove the iAP shield.



6. Remove the heat sink, the fixed heat sink plate assembly, the radiation sheet (CPU), and the CPU. (Refer to “[5-22. CPU](#)”)
7. Remove the two memory modules. (Refer to “[5-19. Memory Module \(204pin SO-DIMM\)](#)”)

8. Remove the SSD module. (Refer to “5-20. SSD Module (mSATA Assembly)”)



9. Install the removed parts by reversing the steps of removal.

5-21-2. PWS-110SC1

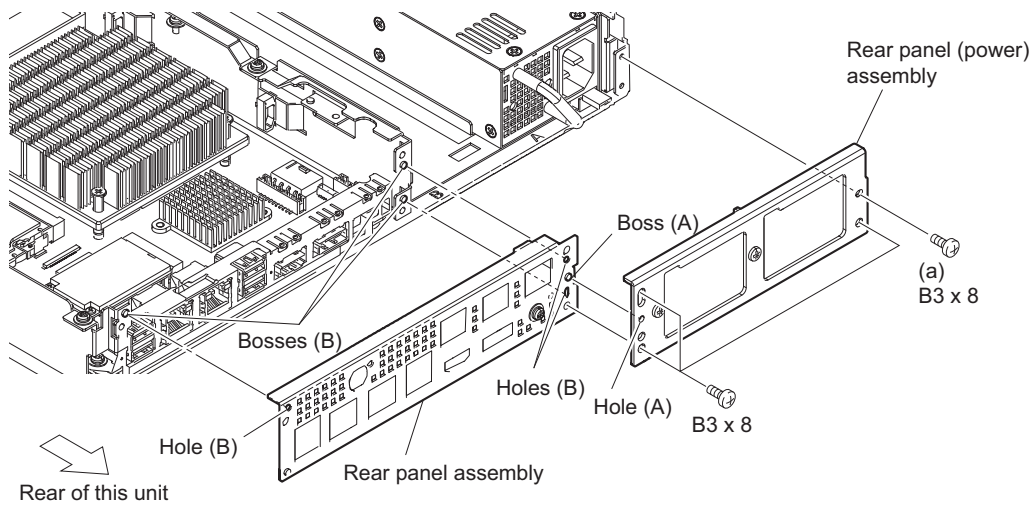
Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the fan duct (110). (Refer to “5-12. Fan Assembly”)
3. Remove the CN-3698 board. (Refer to “5-17. CN-3698 Board”)
4. Remove the RC holder assembly. (Refer to “5-18. RC-110 Board”)

Procedure

1. Remove the four screws, and then remove the rear panel (power) assembly.

2. Remove the rear panel assembly.



Note

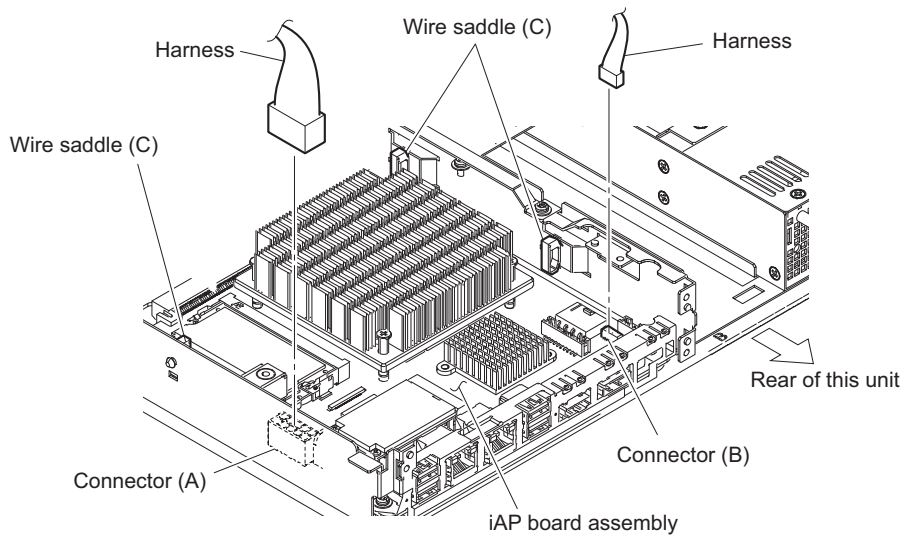
When installing the rear panel (power) assembly, observe the following instructions.

- Align the boss (A) with the hole (A).
- First tighten the screw (a) shown in the illustration, and then tighten the other three screws.

Note

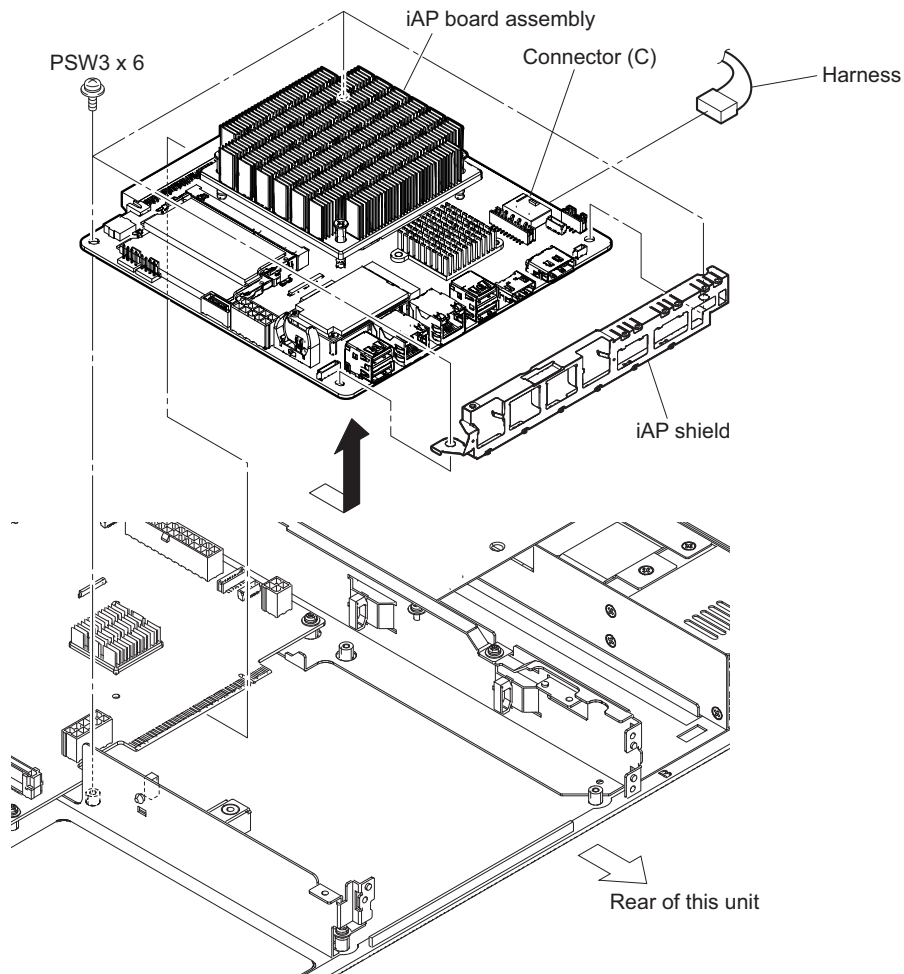
When installing the rear panel assembly, align the three bosses (B) with the three holes (B).

3. Open the three pieces of wire saddle (C) and disconnect the two harnesses from the connector (A) and the connector (B) of the iAP board assembly.



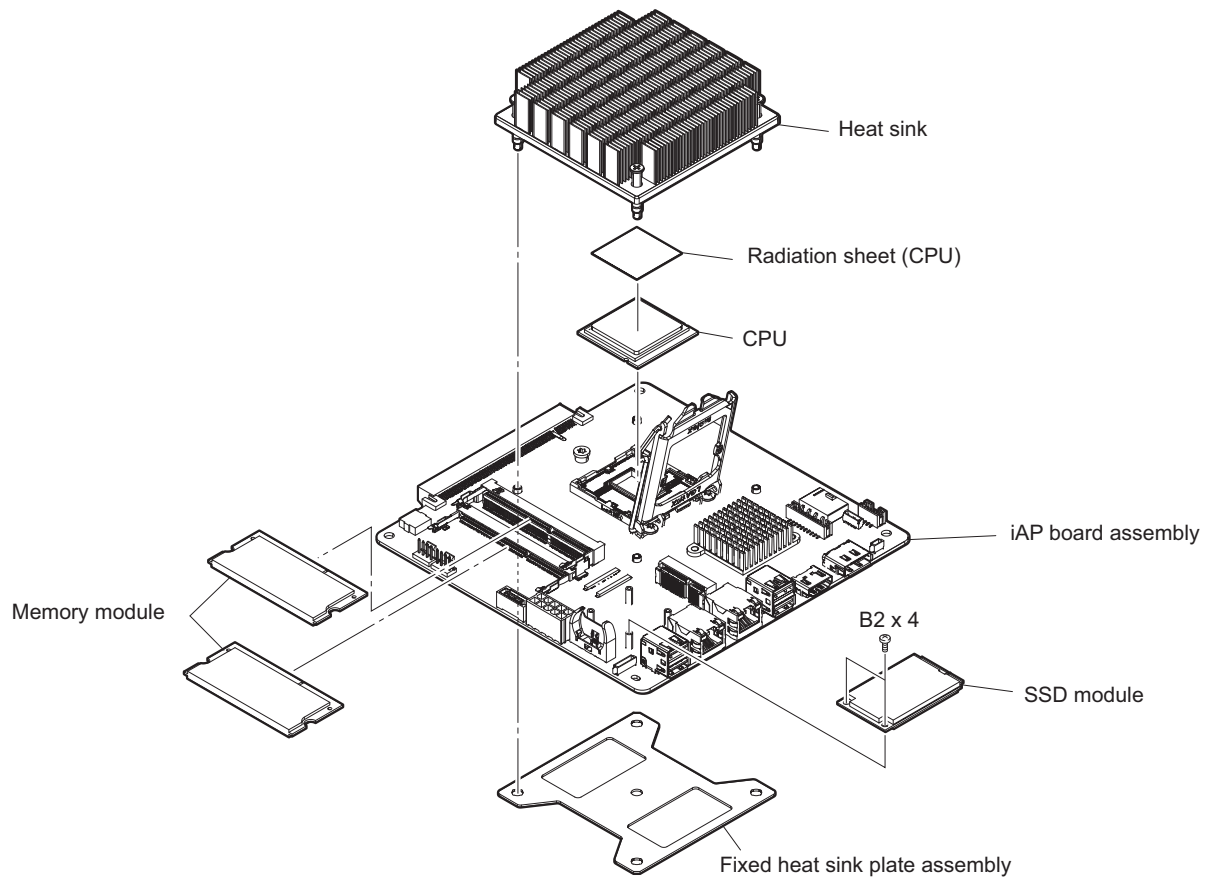
4. Remove the four screws and detach the iAP board assembly in the direction indicated of the arrow.
5. Disconnect the harness from the connector (C) of the iAP board assembly.

6. Remove the iAP shield.



7. Remove the heat sink, the fixed heat sink plate assembly, the radiation sheet (CPU), and the CPU. (Refer to [“5-22. CPU”](#))
8. Remove the two memory modules. (Refer to [“5-19. Memory Module \(204pin SO-DIMM\)”](#))

9. Remove the SSD module. (Refer to “5-20. SSD Module (mSATA Assembly)”)



10. Install the removed parts by reversing the steps of removal.

5-22. CPU

Note

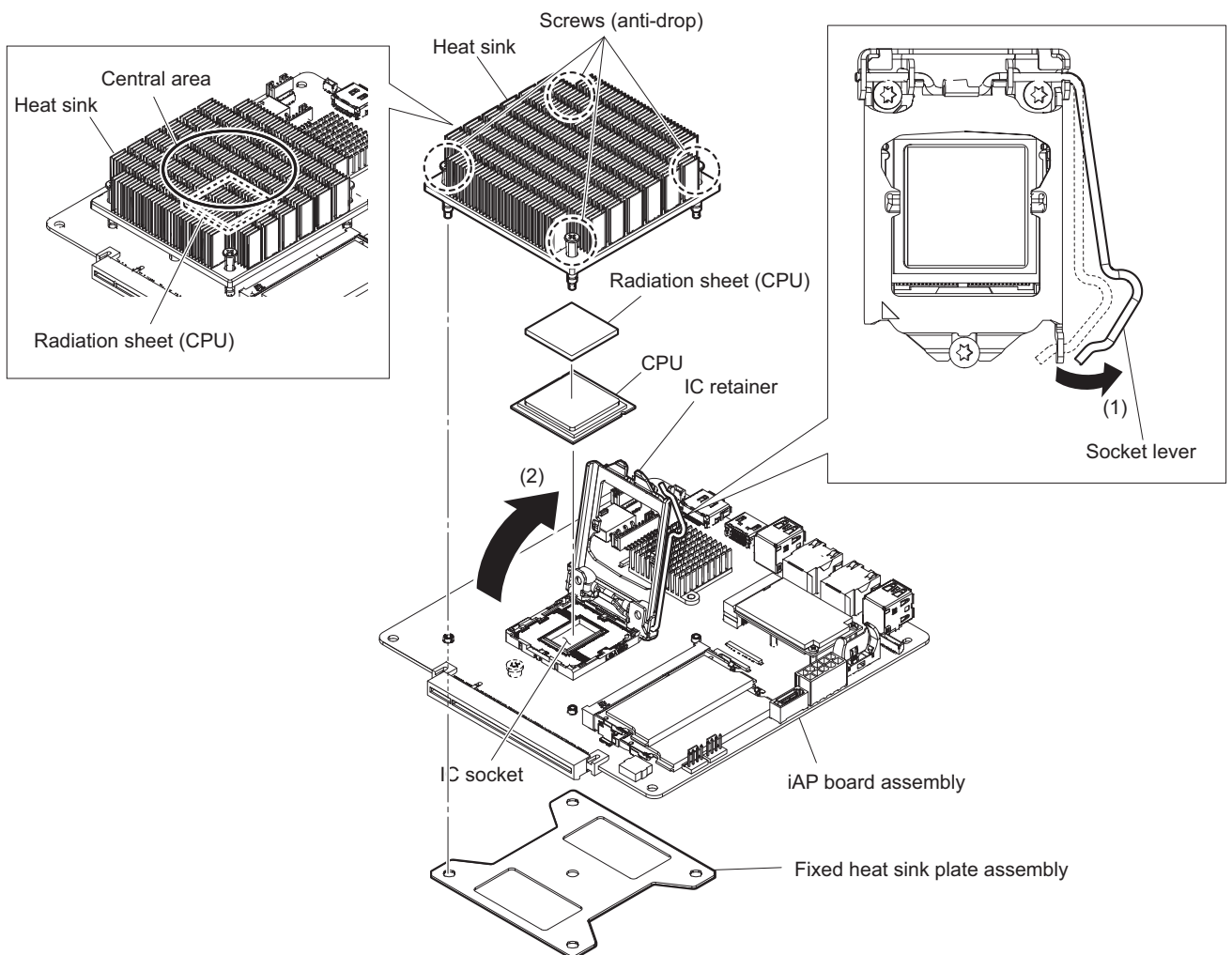
- The radiation sheet (CPU) may have cured and adhered to the heat sink. In that case, heat the central area of the heat sink to 50 to 60°C with a hair drier to soften the radiation sheet (CPU).
- The radiation sheet (CPU) is not reusable. Prepare new parts in advance.

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the duct (fan) (fan duct (110) is used in the PWS-110SC1). (Refer to “5-12. Fan Assembly”)
3. Remove the CN-3698 board. (Refer to “5-17. CN-3698 Board”)
4. Remove the iAP board assembly. (Refer to “5-21. iAP Board Assembly”)

Removing CPU

1. Loosen the four screws (anti-drop).
2. Heat the central area of the heat sink to 50 to 60°C with a hair drier to soften the radiation sheet (CPU).
3. Remove the heat sink and the fixed heat sink plate assembly.
4. Remove the radiation sheet (CPU).
5. Release the lock of the socket lever in the direction of the arrow (1), then open the IC retainer in the direction of the arrow (2).
6. Remove the CPU from the IC socket.

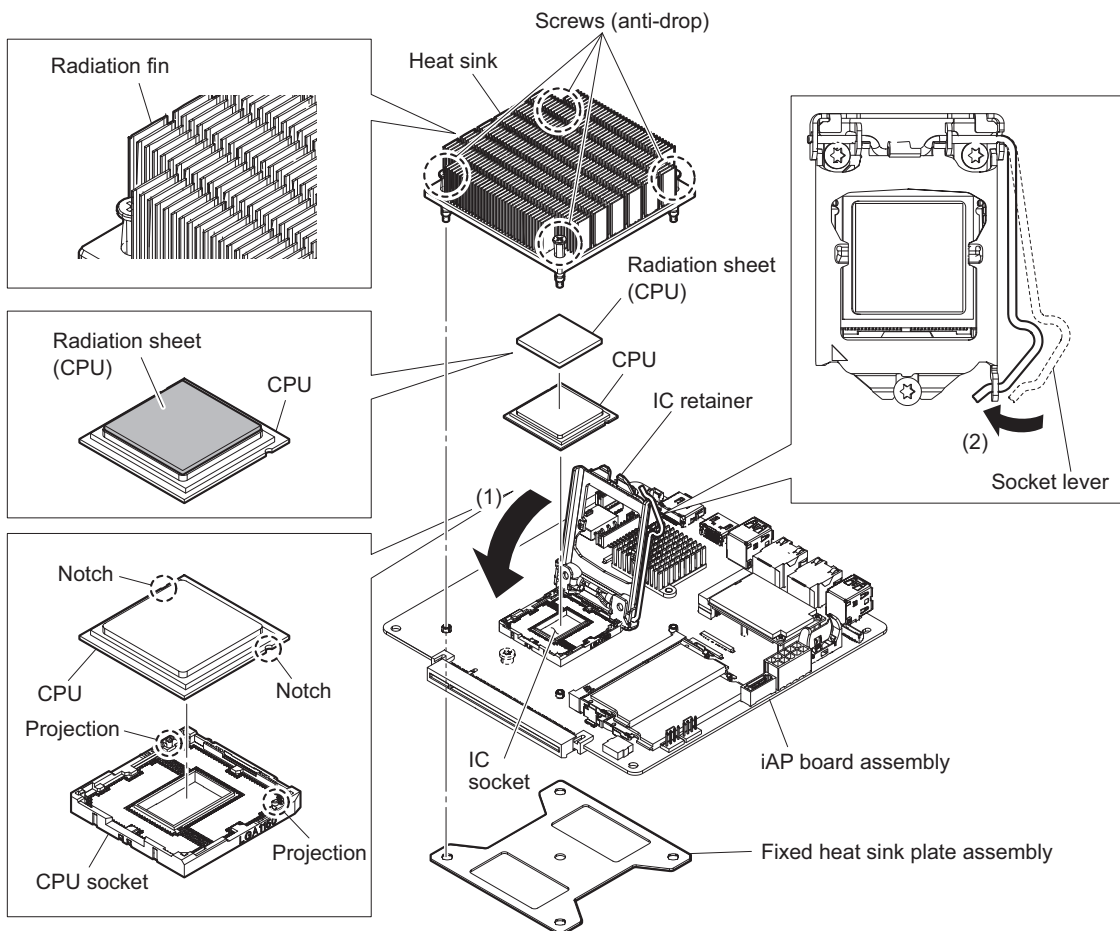


Installing CPU

7. Install the CPU to the IC socket.
8. Close the IC retainer in the direction of the arrow (1) , then lock the socket lever in the direction of the arrow (2).
9. Attach the radiation sheet (CPU) to the CPU.
10. Install the heat sink and the fixed heat sink plate assembly with four screws (anti-drop).

Note

- When installing the CPU, align the projections of the CPU socket with the notches of CPU.
- When attaching the radiation sheet (CPU), note that the radiation sheet (CPU) stays within the CPU.
- Install the heat sink with its radiation fin directed as shown in the figure.



11. Assemble this unit by reversing the steps of "Preparation".

5-23. MB-1204 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the RC holder assembly. (Refer to “5-18. RC-110 Board”)
3. Remove the CN-3698 board. (Refer to “5-17. CN-3698 Board”)
4. Remove the iAP board assembly. (Refer to “5-21. iAP Board Assembly”)

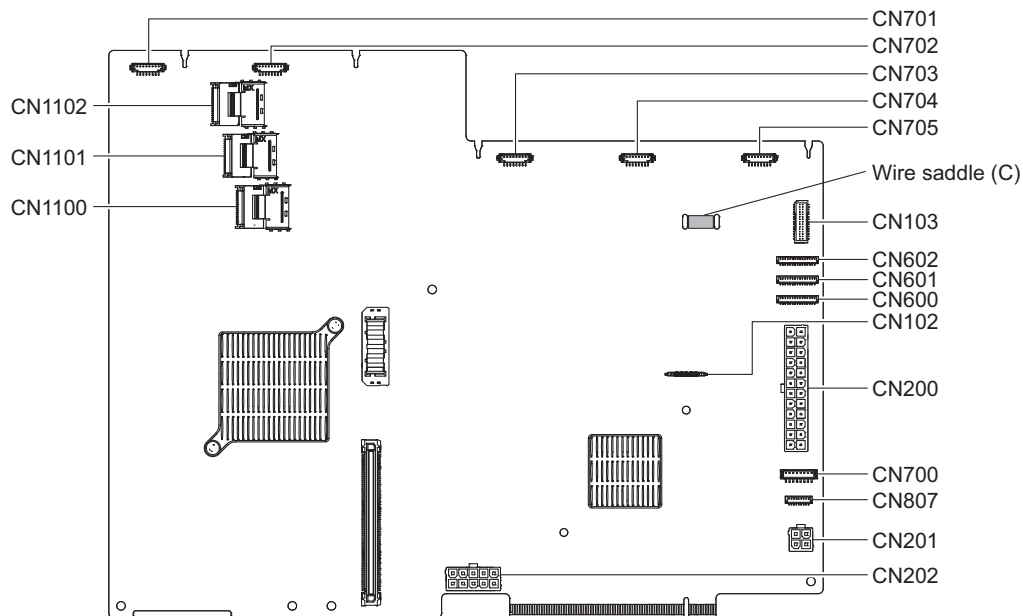
Procedure

1. Open the wire saddle (C) and disconnect the fine-wire coaxial cable from the connector (CN102) on the MB-1204 board.

Note

Hold the connector block between your fingers when pulling out the fine-wire coaxial cable.

2. Disconnect all harnesses connected to the MB-1204 board.

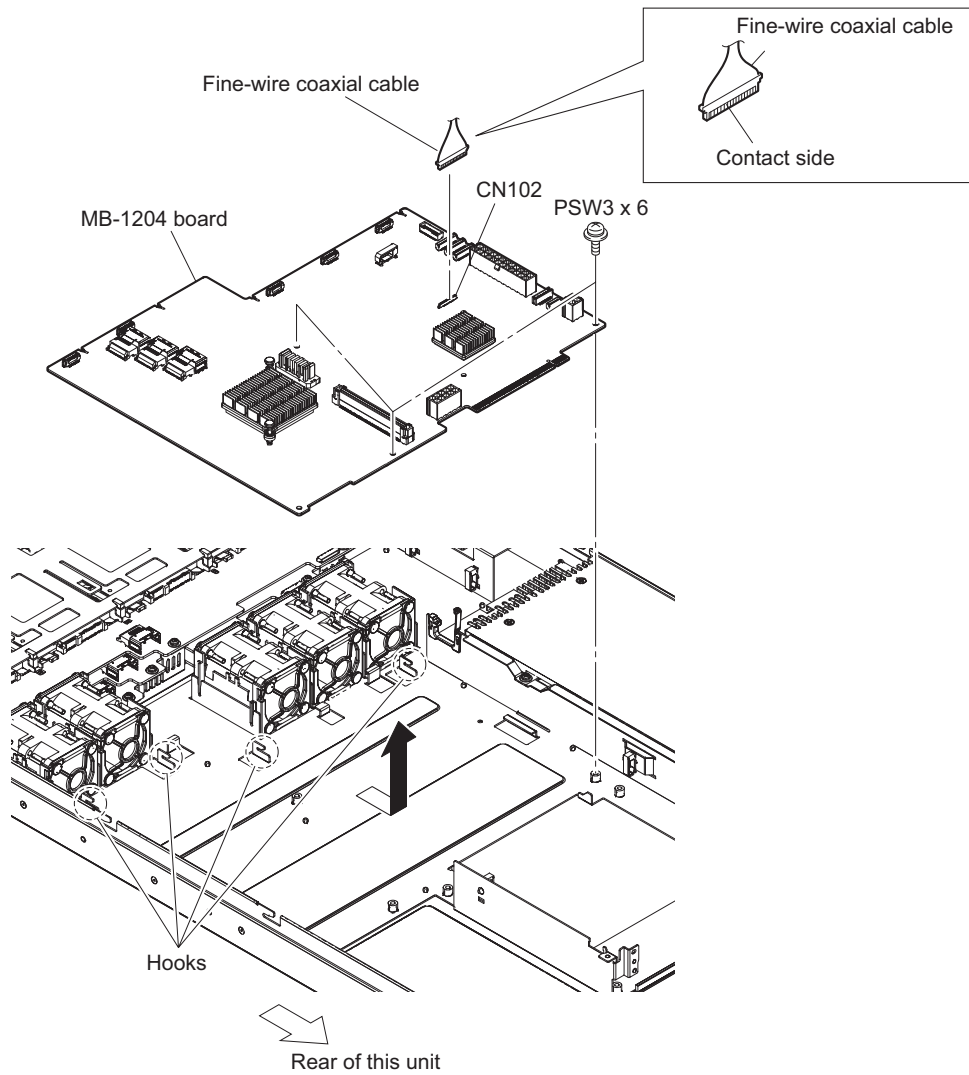


This figure shows PWS-100SC1.

- Slide the PCI board support in the direction of the arrow A, and then remove the PCI board support.

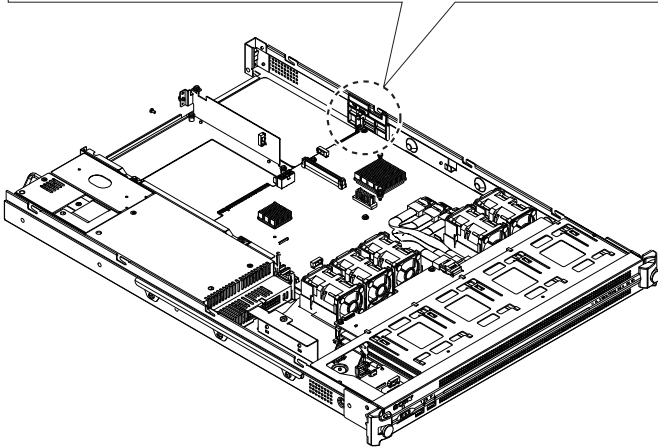
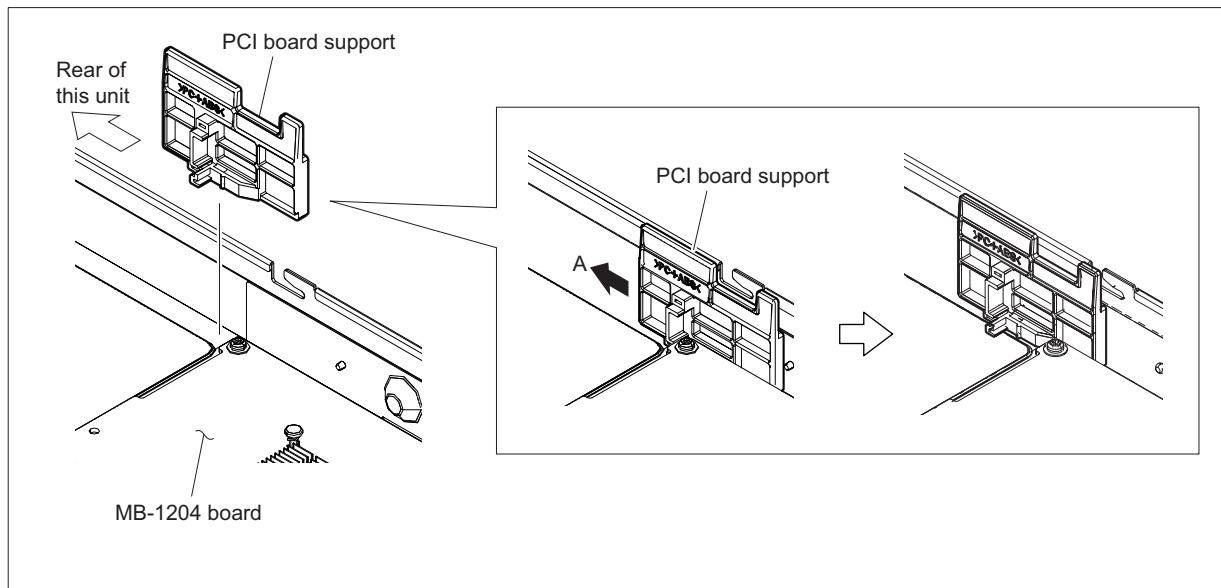
Note

The PCI board support is hard to slide because it is locked tightly enough not to disengage by vibration.



This figure shows PWS-100SC1.

4. Remove the three screws and release the four hooks, then remove the MB-1204 board in the direction of the arrow.



This figure shows PWS-100SC1.

Note

Install the fine-wire coaxial cable in the direction shown in the figure when installing the cable.

5. Install the removed parts by reversing the steps of removal.

Section 6

Circuit Description

6-1. ICP-X7000 (Control Panel)

Each module comprises the following boards. This circuit description describes functions of each board separately.

MKS-X7017 (36 XPT Module)

- CN-3734 board (Refer to “6-1-2. CN-3734 Board (MKS-X7017/X7018/X7019/X7024)”.)
- KY-724 board (Refer to “6-1-5. KY Boards”.)
- KY-725 board (Refer to “6-1-5. KY Boards”.)
- KY-726 board (Refer to “6-1-5. KY Boards”.)
- SW-1648 board (Refer to “6-1-10. SW-1648 Board (MKS-X7017/X7018/X7019/X7024)”.)

MKS-X7018 (28 XPT Module)

- CN-3734 board (Refer to “6-1-2. CN-3734 Board (MKS-X7017/X7018/X7019/X7024)”.)
- KY-725 board (Refer to “6-1-5. KY Boards”.)
- KY-726 board (Refer to “6-1-5. KY Boards”.)
- SW-1648 board (Refer to “6-1-10. SW-1648 Board (MKS-X7017/X7018/X7019/X7024)”.)

MKS-X7019 (20 XPT Module)

- CN-3734 board (Refer to “6-1-2. CN-3734 Board (MKS-X7017/X7018/X7019/X7024)”.)
- KY-724 board (Refer to “6-1-5. KY Boards”.)
- KY-726 board (Refer to “6-1-5. KY Boards”.)
- SW-1648 board (Refer to “6-1-10. SW-1648 Board (MKS-X7017/X7018/X7019/X7024)”.)

MKS-X7020 (Standard Transition Module)

- CN-3728 board (Refer to “6-1-1. CN-3728 Board (MKS-X7020/X7032) and CN-3817 Board (MKS-X7021)”.)
- KY-728 board (Refer to “6-1-5. KY Boards”.)
- LE-401 board (Refer to “6-1-6. LE-401 Board (MKS-X7020/MKS-X7021/MKS-X7032)”.)

MKS-X7021 (Simple Transition Module)

- CN-3817 board (Refer to “6-1-1. CN-3728 Board (MKS-X7020/X7032) and CN-3817 Board (MKS-X7021)”.)
- CN-3818 board (Refer to “6-1-4. CN-3818 Board (MKS-X7021)”.)
- KY-755board (Refer to “6-1-5. KY Boards”.)
- LE-401 board (Refer to “6-1-6. LE-401 Board (MKS-X7020/MKS-X7021/MKS-X7032)”.)

MKS-X7023 (Key Transition Module)

- KY-756 board (Refer to “6-1-5. KY Boards”.)

MKS-X7024 (FlexiPad Module)

- CN-3734 board (Refer to “6-1-2. CN-3734 Board (MKS-X7017/X7018/X7019/X7024)”.)
- KY-727 board (Refer to “6-1-5. KY Boards”.)
- SW-1648 board (Refer to “6-1-10. SW-1648 Board (MKS-X7017/X7018/X7019/X7024)”.)

MKS-X7026 (10-Key Pad Module)

- KY-733 board (Refer to “6-1-5. KY Boards”.)

MKS-X7031TB (Track Ball Module)

- KY-731 board (Refer to “6-1-5. KY Boards”.)
- VR-356 board (Refer to “6-1-12. VR-356 Board (MKS-X7031TB)”.)
- VR-357 board (Refer to “6-1-13. VR-357 Board (MKS-X7031TB)”.)

MKS-X7032 (Key Fader Module)

- CN-3728 board (Refer to “6-1-1. CN-3728 Board (MKS-X7020/X7032) and CN-3817 Board (MKS-X7021)”.)
- KY-757 board (Refer to “6-1-5. KY Boards”.)
- LE-401 board (Refer to “6-1-6. LE-401 Board (MKS-X7020/MKS-X7021/MKS-X7032)”.)

MKS-X7033 (Utility/Shot Box Module)

- CN-3735 board (Refer to “6-1-3. CN-3735 Board (MKS-X7033)”.)
- KY-729 board (Refer to “6-1-5. KY Boards”.)
- SW-1649 board (Refer to “6-1-11. SW-1649 Board (MKS-X7033)”.)

MKS-X7035 (Key Control Module)

- KY-732 board (Refer to “6-1-5. KY Boards”.)

- VR-358 board (Refer to “[6-1-14. VR-358 Board \(MKS-X7035\)](#)”).)

MKS-X7075 (Extension Adaptor)

- MPU-163 board (Refer to “[6-1-7. MPU-163 Board \(MKS-X7075\)](#)”).)
- PD-123 board (Refer to “[6-1-8. PD-123 Board \(MKS-X7075\)](#)”).)
- PIF-53 board (Refer to “[6-1-9. PIF-53 Board \(MKS-X7075\)](#)”).)

6-1-1. CN-3728 Board (MKS-X7020/X7032) and CN-3817 Board (MKS-X7021)

This board reads the gradient of the fader with the photo-encoder and outputs a pulse signal.

The CN-3728 board is for single fader, and the CN-3817 board is for split fader.

6-1-2. CN-3734 Board (MKS-X7017/X7018/X7019/X7024)

This board relays signals among the switch board (KY-726 board or KY-727 board), the SW-1648 board, and the 5-inch LCD panel.

6-1-3. CN-3735 Board (MKS-X7033)

This board relays signals among the KY-729 board, the SW-1649 board, and the 7-inch LCD panel.

6-1-4. CN-3818 Board (MKS-X7021)

This board is mounted on the drum of the split fader, to detect the split ON/OFF of the split fader.

6-1-5. KY Boards

- KY-724 board (MKS-X7017/X7019)
- KY-725 board (MKS-X7017/X7018)
- KY-726 board (MKS-X7017/X7018/X7019)
- KY-727 board (MKS-X7024)
- KY-728 board (MKS-X7020)
- KY-729 board (MKS-X7033)
- KY-731 board (MKS-X7031TB)
- KY-732 board (MKS-X7035)
- KY-733 board (MKS-X7026)
- KY-755 board (MKS-X7021)
- KY-756 board (MKS-X7023)
- KY-757 board (MKS-X7032)

These boards are used to communicate with the PIF-53 board, and display the status of devices on the panel and detect them.

Types and quantity of devices to be installed vary from board to board, but the basic circuit configuration is identical.

When 12 VDC is supplied from the PIF-53 board, the power monitoring IC (IC606) is activated to monitor 12 VDC.

When 12 VDC reaches the specified voltage, the DC/DC converters (IC600 to IC605) are activated and the KY board starts working.

Device FPGA (Type A: IC100 / Type B: IC101) processes the control from the PIF-53 board. Type B, which is an FPGA having the LCD panel control function added to Type A, is mounted on the KY-726 board, KY-727 board, and KY-729

board. The Device FPGA (IC100 or IC101) that has individual board information controls devices that are different from board to board.

IC701, IC703, and IC800 drive current for the RGB LEDs on a time-division basis based on the signal from the Device FPGA (IC100 or IC101) to control lighting of the matrix-array LEDs.

The photocoupler detects ON or OFF of the matrix-array LED switches. IC901 and IC906 serialize the detected signal and send the serial signal to the Device FPGA (IC100 or IC101).

The OLED panel is lit by 16.4 VDC or 12 VDC generated by the DC/DC converters (IC1300 or IC1400).

The 18-bit RGB parallel data from the Device FPGA (IC101) on the KY-726 board and the KY-727 board is sent to the 5-inch LCD panel. The PWM controller in the Device FPGA (IC101) sends PWM signals to IC1700 by the control of the PIF-53 board. IC1700 controls brightness of the LCD backlight with the received pulse width.

On the KY-729 board, the 18-bit RGB parallel data from the Device FPGA (IC101) is converted to LVDS data in IC1800 and the LVDS data is sent to the 7-inch LCD panel. The PWM controller in the Device FPGA (IC101) sends PWM signals to the 7-inch LCD panel by the control of the PIF-53 board to control brightness of the LCD backlight.

6-1-6. LE-401 Board (MKS-X7020/MKS-X7021/MKS-X7032)

The LED-401 board contains matrix-array LEDs, and is connected to the KY boards (KY-728 board of MKS-X7020, KY-755 board of MKS-X7021, KY-757 board of MKS-7032).

Lighting of the matrix-array LEDs is controlled by the output signal from the KY boards (KY-728 board of MKS-X7020, KY-755 board of MKS-X7021, KY-757 board of MKS-7032).

6-1-7. MPU-163 Board (MKS-X7075)

This board is a panel CPU board, and performs communication with the processor and controls the panel.

This board is supplied the power voltage of 5 VDC generated by the PIF-53 board.

The DC/DC converter (IC002) generates 3.3 VDC from 5 VDC to activate the power control IC (IC001) for the CPU (IC003).

The power status signals of the DC/DC converters (IC001, IC002) are connected to the Boot PLD (IC300) on the PIF-53 board to be a cause of the reset releasing trigger.

The flash memory (IC008) stores NBL, Linux, and applications. The CPU (IC003) booted according to these kinds of data starts panel processing.

The EEPROM (IC401) stores setup data and maintenance information that are necessary for CPU operations.

The Ethernet is connected to the CPU (IC003) from the PD-123 board through the PIF-53 board, and used for communication with the processor and peripheral devices.

6-1-8. PD-123 Board (MKS-X7075)

This board is a power supply board of ICP-X7000 and MKS-X7075.

There are two power input channels: DC input from the AC adaptor and PoE input.

When the AC adaptor is connected to the DC input jack (J001), 12 VDC is supplied from the AC adaptor, and the AC EXIST signal becomes high level and is sent to the Panel Interface FPGA (IC700) on the PIF-53 board.

The power supplied through the PoE is supplied from the Ethernet connector (J002) through the ideal diode bridge (IC001, Q001 to Q008) to the PoE PD controller (IC002). Ethernet data is sent through the transformer (T002) to the PIF-53 board.

The PoE PD controller (IC002) makes negotiation with the hub as power sourcing equipment (PSE) based on the PoE specifications to control the initial sequence for supplying power. IC002 also supplies power to the flyback transformer (T001) output side according to the Q010 ON/OFF state.

IC007 and Q023 smooth the flyback transformer (T001) output voltage to 12 VDC.

The DC power monitoring IC (IC008) monitors the DC input voltage. When the DC input voltage is 9 V or higher, IC008 regards the voltage as normal and sends the power status signal to the Panel Interface FPGA (IC700) on the PIF-53 board.

The PoE power monitoring IC (IC009) monitors 12 VDC through the PoE and sends the power status signal to the Boot PLD (IC300) on the PIF-53 board.

12 VDC output from the DC input and 12 VDC output through the PoE are OR-connected (ORing) in IC005 and IC006. Either power output is supplied to the PIF-53 board through CN002 as the main power.

6-1-9. PIF-53 Board (MKS-X7075)

This board relays signals among the panel CPU board (MPU-163 board), the power supply board (PD-123 board), and the switch boards (KY boards).

When 12 VDC is supplied from the PD-123 board, the power monitoring IC (IC101) is activated to monitor 12 VDC. When 12 VDC reaches the specified voltage, the DC/DC converter (IC100) generates 5 VDC and supplies various local power voltages.

When local power voltages is supplied, the Boot PLD (IC300) is activated to start configuration of the Panel Interface FPGA (IC700). Upon completion of the configuration, the Boot PLD (IC300) releases reset of the MPU-163 board to boot the panel CPU.

The CPU (MPU-163 board) is connected to the Panel Interface FPGA (IC700) with the local bus. The CPU (MPU-163 board) controls the KY board through the Panel Interface FPGA (IC700).

The Panel Interface FPGA (IC700) contains six control lines, and sends data to and receives data from the KY board with the dedicated harnesses. IC700 also controls ON/OFF of 12 VDC to be supplied to the KY board.

The CPU (ICMPU-163 board) monitors the board temperature with the temperature monitoring IC (IC602).

6-1-10. SW-1648 Board (MKS-X7017/X7018/X7019/X7024)

This board contains matrix-array switches, and is connected to the CN-3734 board.

This board detects ON or OFF of the matrix-array switches, and outputs detection signals.

6-1-11. SW-1649 Board (MKS-X7033)

This board contains matrix-array switches, and is connected to the CN-3735 board.

This board detects ON or OFF of the matrix-array switches, and outputs detection signals.

6-1-12. VR-356 Board (MKS-X7031TB)

This board contains a Z-ring, and is connected to the VR-357 board.

This board reads the number of revolutions of the Z-ring with the photo-encoder, and outputs a pulse signal.

6-1-13. VR-357 Board (MKS-X7031TB)

This board contains a trackball, and is connected to the KY-731 board.

This board reads the revolutions of the trackball with the photo-encoders on the X axis and Y axis, and outputs a pulse signal.

6-1-14. VR-358 Board (MKS-X7035)

This board contains five adjustment knobs and is connected to the KY-723 board.

This board outputs the pulse signal from each adjustment knob.

6-2. MKS-X7011 (Menu Panel)

Menu panel comprises the following boards. This circuit description describes functions of each board separately.

- CA-91 board (Refer to “6-2-1. CA-91 Board”.)
- CN-3730 board (Refer to “6-2-2. CN-3730 Board”.)
- KY-723 board (Refer to “6-2-3. KY-723 Board”.)
- VR-349 board (Refer to “6-2-4. VR-349 Board”.)

6-2-1. CA-91 Board

This board is the CPU board of MKS-X7011.

There are two power input channels: DC input from the AC adaptor and PoE input.

When the AC adaptor is connected to the DC input jack (J1401), 12 VDC is supplied from the AC adaptor, and the AC EXIST signal becomes high level and is sent to the System Control FPGA (IC002).

The power supplied through the PoE is supplied from the Ethernet connector (J1301) through the ideal diode bridge (IC1301, Q1301 to Q1308) to the PoE PD controller (IC1302). Ethernet data is sent through the transformer (T1301) to the Ether PHY (IC1101).

The PoE PD controller (IC1302) makes negotiation with the hub as power sourcing equipment (PSE) based on the PoE specifications to control the initial sequence for supplying power. IC1302 also supplies power to the flyback transformer (T1302) output side according to the Q1313 ON/OFF state.

IC1401 and Q1401 smooth the flyback transformer (T1302) output voltage to 12 VDC.

The DC power monitoring IC (IC1409) monitors the DC input voltage. When the DC input voltage is 9 V or higher, IC1409 regards the voltage as normal and sends the power status signal to the System Control FPGA (IC002).

The PoE power monitoring IC (IC1410) monitors 12 VDC through the PoE and sends the power status signal to the System Control FPGA (IC002).

12 VDC output from DC input and 12 VDC output through the PoE are OR-connected (ORing) in IC1402 and IC1403. Either power output is supplied to this board as the main power.

When 12 VDC is supplied, the power monitoring IC (IC1408) is activated to monitor 12 VDC. When 12 VDC reaches the specified voltage, the DC/DC converter (IC1411) generates 5 VDC and supplies various local power voltages.

When supply of local power voltages is started, the System Control FPGA (IC002) is activated to start configuration of the CPU (IC001).

The CPU (IC001) starts working by the SPI ROM (IC907, IC908) read data. After the initial boot of the CPU, it acquires application image from the PWS-100SC1 or PWS-110SC1, and runs Linux.

Detection signals of LED switches on the KY-723 board and signals of the adjustment knobs on the VR-349 board are converted to USB signals in the System Control FPGA (IC002). LCD touch panel signals are converted to USB signals in the Touch Panel I/F (IC1701). The converted USB signals are sent to the CPU (IC001) through the USB HUB (IC902) and USB PHY (IC901).

The 18-bit RGB parallel data from the CPU (IC001) is converted to LVDS data in IC0803, and the LVDS data is sent to the LCD panel.

The PWM controller in the System Control FPGA (IC002) sends PWM signals to IC0805 by the control of the CPU (IC001). IC0805 controls brightness of the LCD backlight with the received pulse width.

6-2-2. CN-3730 Board

This board relays signals between the CPU board (CA-91 board) and the switch board (KY-723 board). This board contains a USB connector (Type A).

This board connected to the CA-91 board through a flexible cable transmits USB signals, and relays the 12 VDC signal and control signals with the KY-723 board.

The regulator (IC002) on this board generates 3.3 VDC from the 5 VDC supplied from the KY-723 board.

6-2-3. KY-723 Board

This board lights the LED switches and detects their states. This board contains a buzzer.

IC202 and IC204 drive current for the RGB LEDs on a time-division basis based on the signal from the System Control FPGA (IC002) on the CA-91 board to control lighting of the matrix-array LEDs.

The photocoupler detects ON or OFF of the matrix-array LED switches. IC302 and IC307 serialize the detected signal and send the serial signal to the System Control FPGA (IC002) on the CA-91 board.

The buzzer is controlled by the signal that is output from the System Control FPGA (IC002) on the CA-91 board when the LCD's touch panel is touched.

6-2-4. VR-349 Board

This board contains five adjustment knobs and is connected to the CA-91 board.

This board outputs the pulse signal from each adjustment knob.

6-3. MKS-X2700/X7700 (System Interface Unit)

System interface unit comprises the following boards. This circuit description describes functions of each board separately.

MKS-X2700

- CA-90 board (Refer to “6-3-1. CA-90 Board (MKS-X2700/X7700)”.)
- CN-3757 board (Refer to “6-3-3. CN-3757 Board (MKS-X2700)”.)
- CNB-33 board (Refer to “6-3-4. CNB-33 Board (MKS-X2700)”.)

MKS-X7700

- CA-90 board (Refer to “6-3-1. CA-90 Board (MKS-X2700/X7700)”.)
- CN-3756 board (Refer to “6-3-2. CN-3756 Board (MKS-X7700)”.)
- CNB-32A board (Refer to “6-3-6. CNB-32A Board (MKS-X7700)”.)
- FP-250 board (Refer to “6-3-8. FP-250 Board (MKS-X7700)”.)
- HN-423 board (Refer to “6-3-9. HN-423 Board (MKS-X7700)”.)
- MB-1212 board (Refer to “6-3-10. MB-1212 Board (MKS-X7700)”.)

MKS-X7701 (Option: Tally/GPI Output Board)

- CNO-42 board (Refer to “6-3-7. CNO-42 Board (MKS-X7701)”.)

MKS-7702 (Option: Serial Interface Board)

- CNB-32 board (Refer to “6-3-5. CNB-32 Board (MKS-X7702)”.)

6-3-1. CA-90 Board (MKS-X2700/X7700)

This board is CPU board of MKS-X2700/X7700, and has the following functions.

- Total control of the main unit
- Control for communication with the control panel
- MVS LAN, UTIL LAN
- Generates a clock signal in synchronization with the reference signal and a timing signal.
- RS-422A communication, S-BUS communication
- TALLY/GPI input/output

The SCU CPU (IC3) performs communication with the control panel.

The SCU CPU (IC3) acquires information on power, fan, board mount, etc. through the Address DEC1 (IC1). IC3 also controls peripheral functions such as fan.

The MVS LAN and UTIL LAN signals are connected to the SCU CPU (IC3) through the GbE PHY (IC701, IC801) on the CN board (MKS-X7700: CN-3756 board, MKS-X2700: CN-3757 board).

The reference clock signal and the timing signal are generated by the clock generator (IC1704), and are supplied to the CADEC2 (IC4) through the buffer (IC1703, IC1710).

RS-422A communication is functionally classified into two types: REMOTE signal and SERIAL TALLY signal, which are controlled by the SIU_FPGA (IC5).

The S-BUS communication is controlled by the SIU_FPGA (IC5).

TALLY/GPI input/output signals are controlled by the SCU CPU (IC3) through the Address DEC2 (IC4).

TALLY/GPI input signals are serialized on the GPI input board (MKS-X7700: CN-3756 board, MKS-X2700: CN-3757 board), and the serial signal is input to the Address DEC2 (IC4) in which the input signal is deserialized and processed. TALLY/GPI output signals are serialized in Address DEC2 (IC4), and the serial signal is sent to GPI output board (MKS-X7700: CNO-42 board, MKS-X2700: CN-3757 board). The received serial signal is deserialized on the GPI output board (MKS-X7700: CNO-42 board, MKS-X2700: CN-3757 board) and is output.

6-3-2. CN-3756 Board (MKS-X7700)

This board contains the MVS connector, UTIL connector, S-BUS connector, REF IN connector and TALLY/GPI IN connectors, and is installed in Slot 8 of MKS-X7700.

The MVS LAN and UTIL LAN signals are connected to the CA-90 board through the GbE PHY (IC701, IC801).

TALLY/GPI input signals are serialized in IC601 to IC610, and the serial signal is input to the CA-90 board.

When 12 VDC is supplied from the MB-1212 board, local power voltages (+5 V, +3.3 V) are supplied from the DC/DC converters (IC201 to IC203).

6-3-3. CN-3757 Board (MKS-X2700)

This board contains the MVS connector, UTIL connector, S-BUS connector, REF IN connector, TALLY/GPI IN connectors and TALLY/GPI OUT connectors, and relays signals among the CA-90 board, the CNB-33 board, and the power unit. This board also relays AC input to the power unit.

The MVS LAN and UTIL LAN signals are connected to the CA-90 board through the GbE PHY (IC701, IC801).

TALLY/GPI input signals are serialized in IC506 to IC510, and the serial signal is input to the CA-90 board.

TALLY/GPI output signals from the CA-90 board are deserialized in IC901 to IC905, and the deserialized signals are output from the relay (RY1001 to RY1036).

When 12 VDC is supplied from the power unit, local power voltages (+5 V, +3.3 V) are supplied from the DC/DC converters (IC201 to IC203).

6-3-4. CNB-33 Board (MKS-X2700)

This board is serial interface board.

This board contains two SERIAL TALLY connectors (RS-422A) for controlling the switcher and six REMOTE connectors (RS-422A) for controlling external equipment such as VTR.

Eight control signals (UART signals) processed by the SIU_FPGA (IC5) on the CA-90 board are converted by the RS-422A standard compliant driver/receiver (IC204 to IC209, IC303, IC304), and the converted signals are connected to external devices through the D-sub 9-pin connectors (CN201 to CN206, CN301, CN302).

The local power voltage (+3.3 V) is supplied from the CN-3757 board.

6-3-5. CNB-32 Board (MKS-X7702)

This board is option MKS-X7702 (serial interface board).

This board contains six REMOTE connectors (RS-422A) for controlling external equipment such as VTR. This board is installed in any slot of Slots 1 to 6 of MKS-X7700.

The SIU_FPGA (IC1) incorporates the SoC CPU (NIOS2), 8-bit dual-port RAM, and SIO (Serial Input/Output) block. The SoC CPU sends/receives various kinds of information to/from the SCU CPU (IC3) on the CA-90 board to control the SIO block through the dual-port RAM.

Six control signals (UART signals) processed by the SIO block in the SIU_FPGA (IC1) are converted by the RS-422A standard compliant driver/receiver (IC504 to IC509), and the converted signals are connected to external devices through the D-sub 9-pin connectors (CN501 to CN506).

When 12 VDC is supplied from the MB-1212 board, local power voltages (+3.3 V, +2.5 V, and +1.2 V) are supplied from the DC/DC converters (IC205 to IC207).

6-3-6. CNB-32A Board (MKS-X7700)

This board is serial interface board installed on the MKS-X7700 as the standard.

This board contains two SERIAL TALLY connectors (RS-422A) for controlling the switcher and four REMOTE connectors (RS-422A) for controlling external equipment such as VTR. This board is installed in Slot 7 of MKS-X7700. Six control signals (UART signals) processed by the SIU_FPGA (IC5) on the CA-90 board are converted by the RS-422A standard compliant driver/receiver (IC504 to IC509), and the converted signals are connected to external devices through the D-sub 9-pin connectors (CN501 to CN506).

When 12 VDC is supplied from the MB-1212 board, local power voltage (+3.3 V) is supplied from the DC/DC converter (IC207).

6-3-7. CNO-42 Board (MKS-X7701)

This board is option MKS-X7701 (Tally/GPI Output Board).

This board contains three TALLY/GPI OUT connectors. This board is installed in any slot of Slots 1 to 6 of MKS-X7700. TALLY/GPI output signals from the CA-90 board are deserialized in IC604 to IC610, and the deserialized signals are output from the relay (RY401 to RY454).

When 12 VDC is supplied from the MB-1212 board, local power voltage (+3.3 V) is supplied from the DC/DC converter (IC206).

6-3-8. FP-250 Board (MKS-X7700)

This board displays the MKS-X7700 status. This board contains 25 LEDs, and is connected to the CA-90 board. Lighting of these LEDs is controlled by the CENTER signal from the CA-90 board.

6-3-9. HN-423 Board (MKS-X7700)

This board is connected the fan, and relays power and control signals for fan.

6-3-10. MB-1212 Board (MKS-X7700)

This board relays signals among the CA-90 board, the HN-423 board, slots 1 to 6 (option: MKS-X7701/MKS-X7702), slot 7 (CNB-32A board), slot 8 (CN-3756 board), and the power unit. This board also relays AC input to the power unit.

Section 7

Spare Parts

7-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked △ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

1. 安全重要部品

△警告

△印のついた部品は安全性を維持するために重要な部品です。したがって、交換する時は必ず指定の部品を使ってください。

2. 部品の共通化

ソニーから供給する補修用部品は、セットに使われているものと異なることがあります。これは部品の共通化、改良等によるものです。

3. 部品の在庫

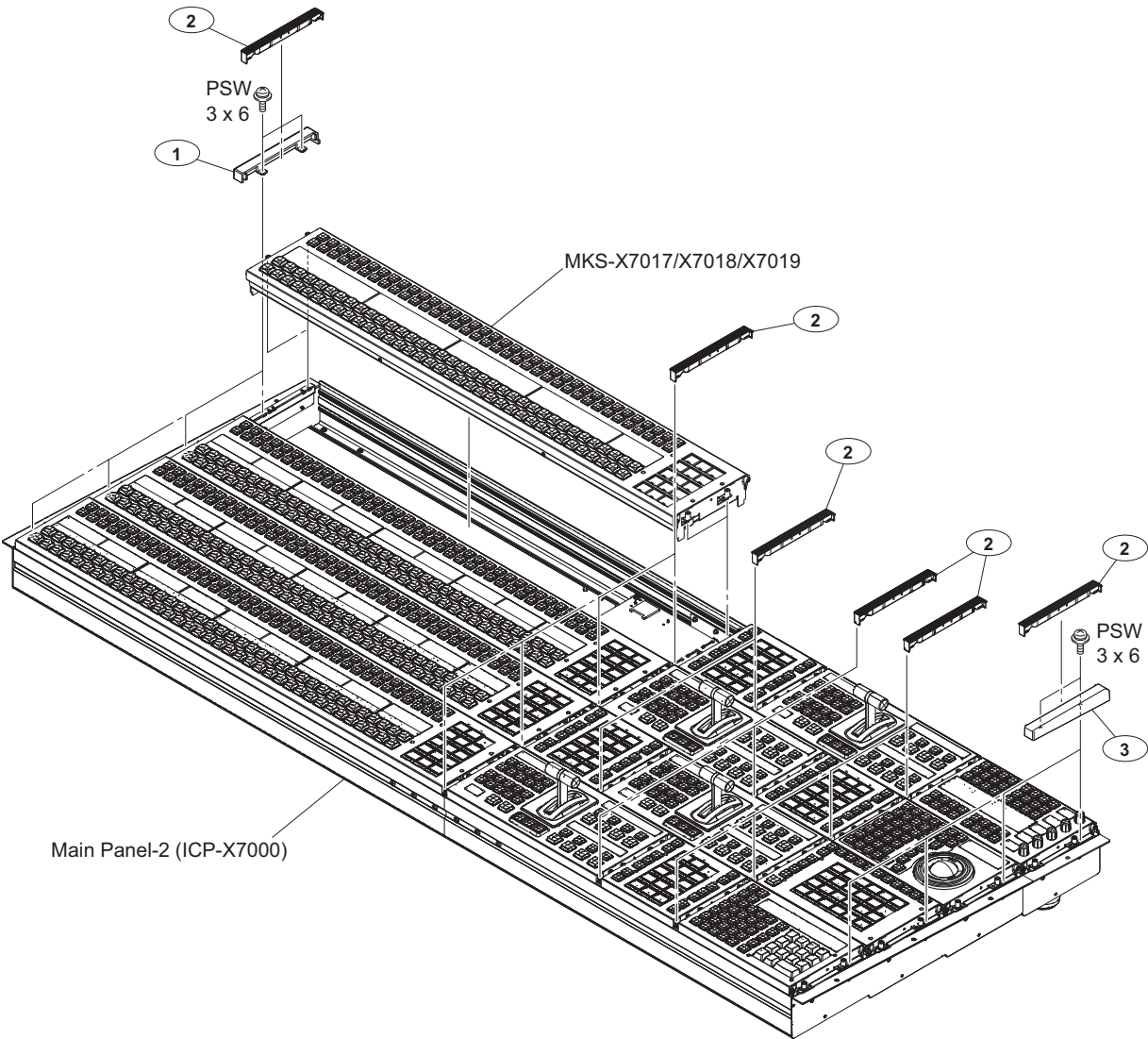
部品表の SP (Supply code) 欄に “o” で示される部品は在庫していないことがあります。納期が長くなる場合があります。

4. ハーネス

部品番号の記載されていないハーネスは、サービス部品として登録されていません。

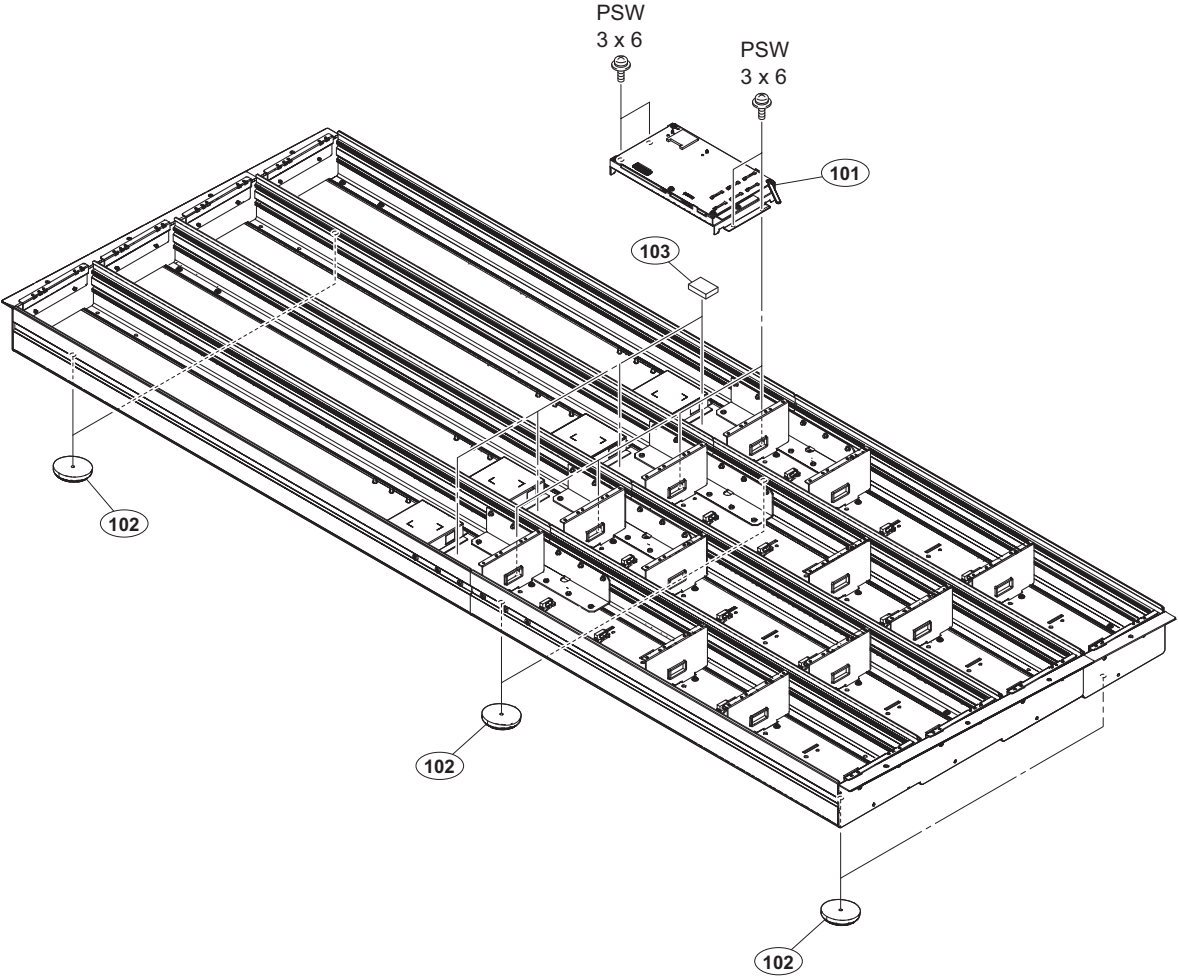
7-2. Exploded Views (Panel)

Main Panel-1 (ICP-X7000)



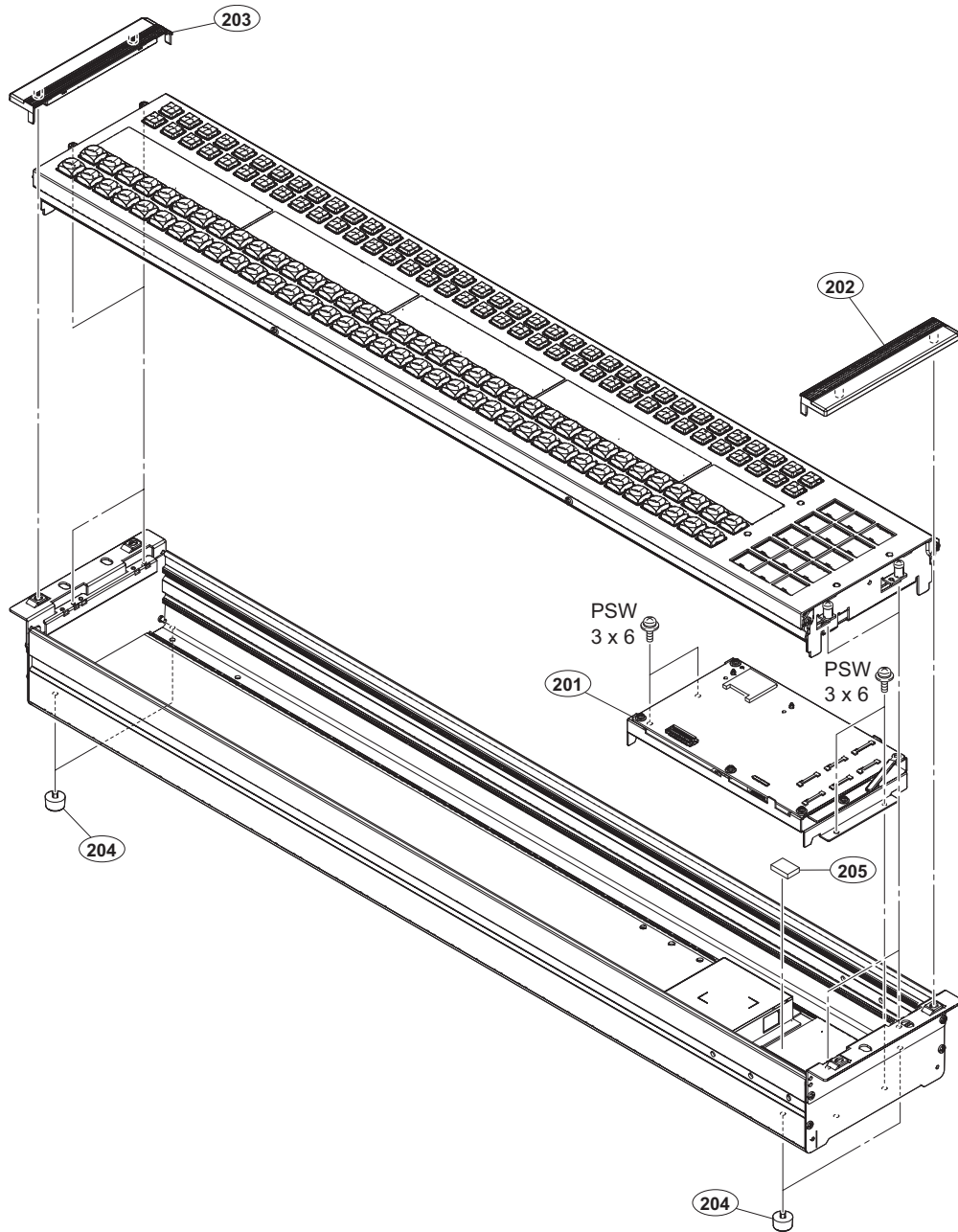
No.	Part No.	SP Description
1	4-559-096-01 s	CAP (L), SIDE
2	4-559-099-01 s	COVER, MODULE
3	4-559-100-01 s	CAP (R), SIDE
	7-682-947-01 s	SCREW +PSW 3X6

Main Panel-2 (ICP-X7000)



No.	Part No.	SP Description
101	A-2070-615-A s	MODULE ASSY (RP), CPU
102	X-4918-919-1 s	LEG ASSY
103	4-559-592-01 s	SHEET (7 (15X24)), RADIATION
	7-682-947-01 s	SCREW +PSW 3X6

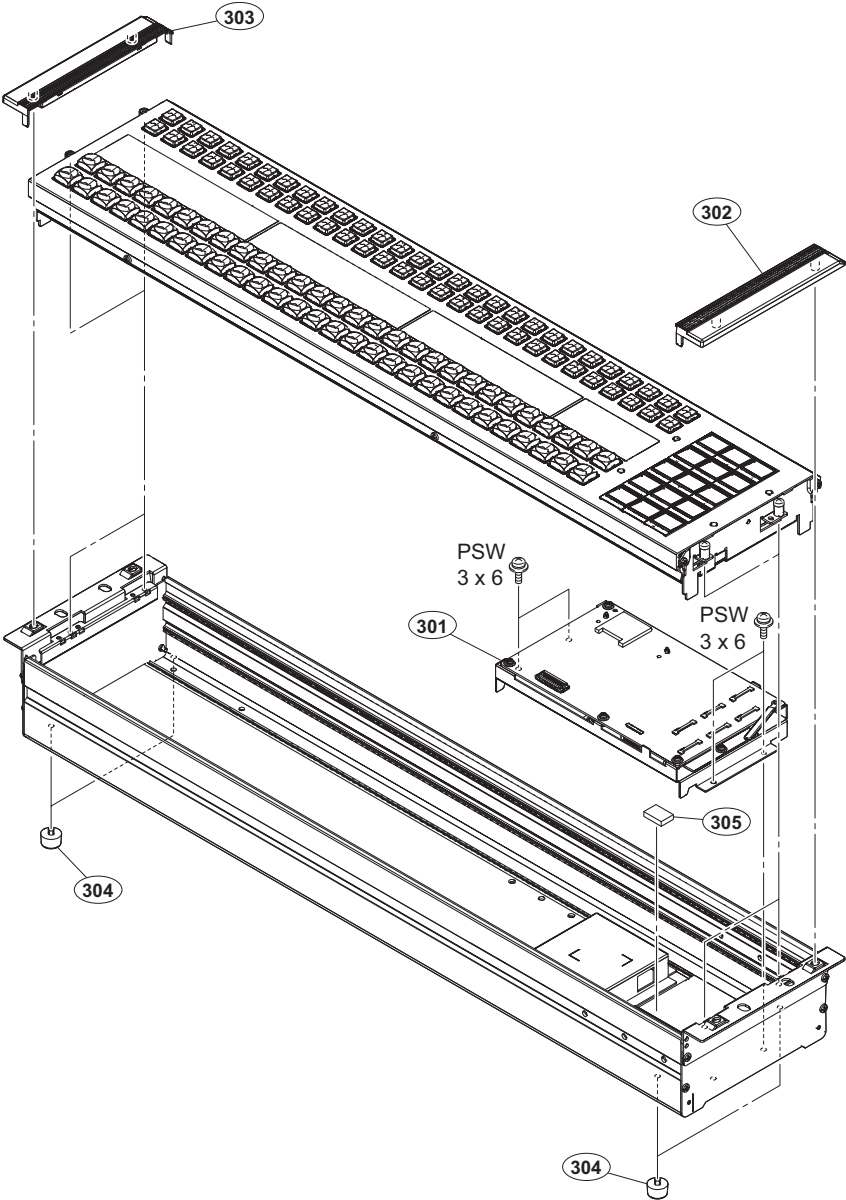
AUX36 Panel (ICP-X7000)



No.	Part No.	SP Description
201	A-2070-615-A s	MODULE ASSY (RP), CPU
202	4-559-097-01 s	COVER (R), PANEL
203	4-559-098-01 s	COVER (L), PANEL
204	4-559-589-01 s	FOOT
205	4-559-592-01 s	SHEET (7 (15X24)), RADIATION

7-682-947-01 s SCREW +PSW 3X6

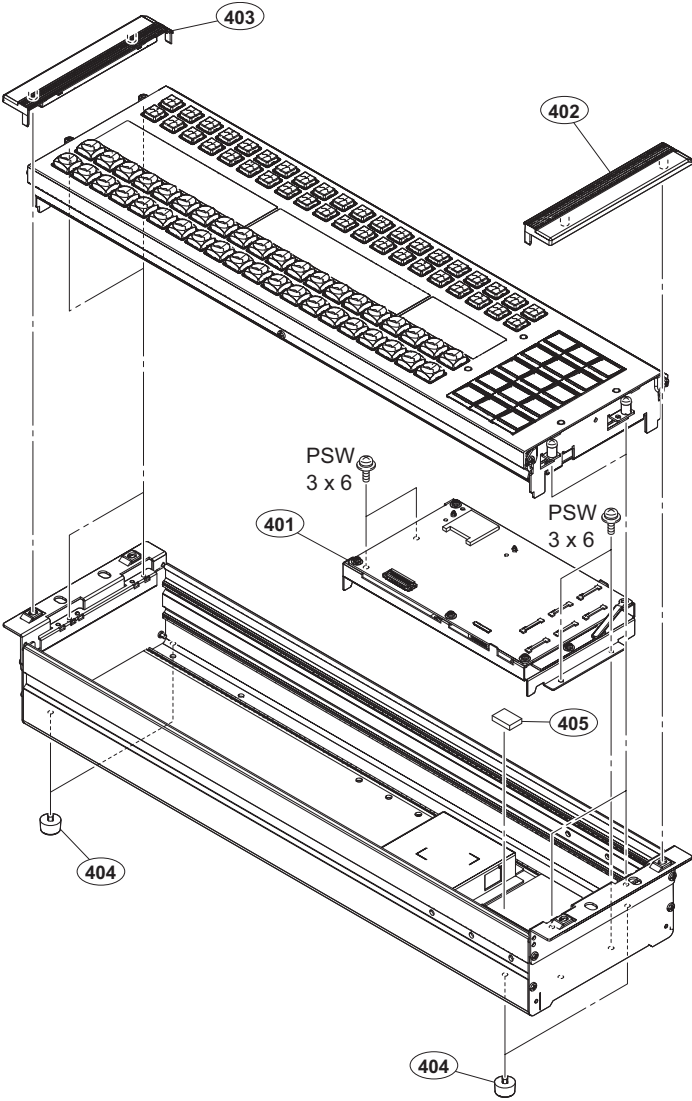
AUX28 Panel (ICP-X7000)



No.	Part No.	SP Description
301	A-2070-615-A s	MODULE ASSY (RP), CPU
302	4-559-097-01 s	COVER (R), PANEL
303	4-559-098-01 s	COVER (L), PANEL
304	4-559-589-01 s	FOOT
305	4-559-592-01 s	SHEET (7 (15X24)), RADIATION

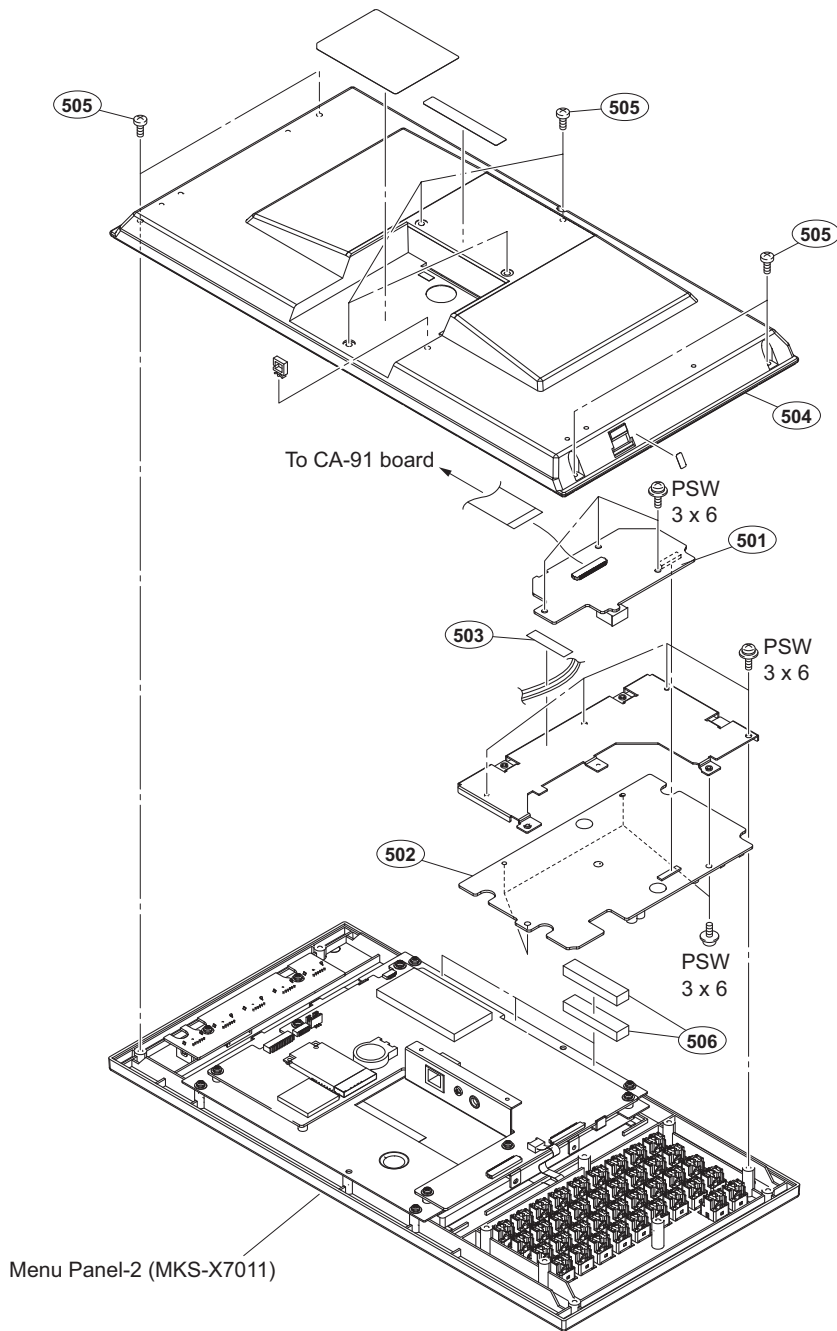
7-682-947-01 s SCREW +PSW 3X6

AUX20 Panel (ICP-X7000)



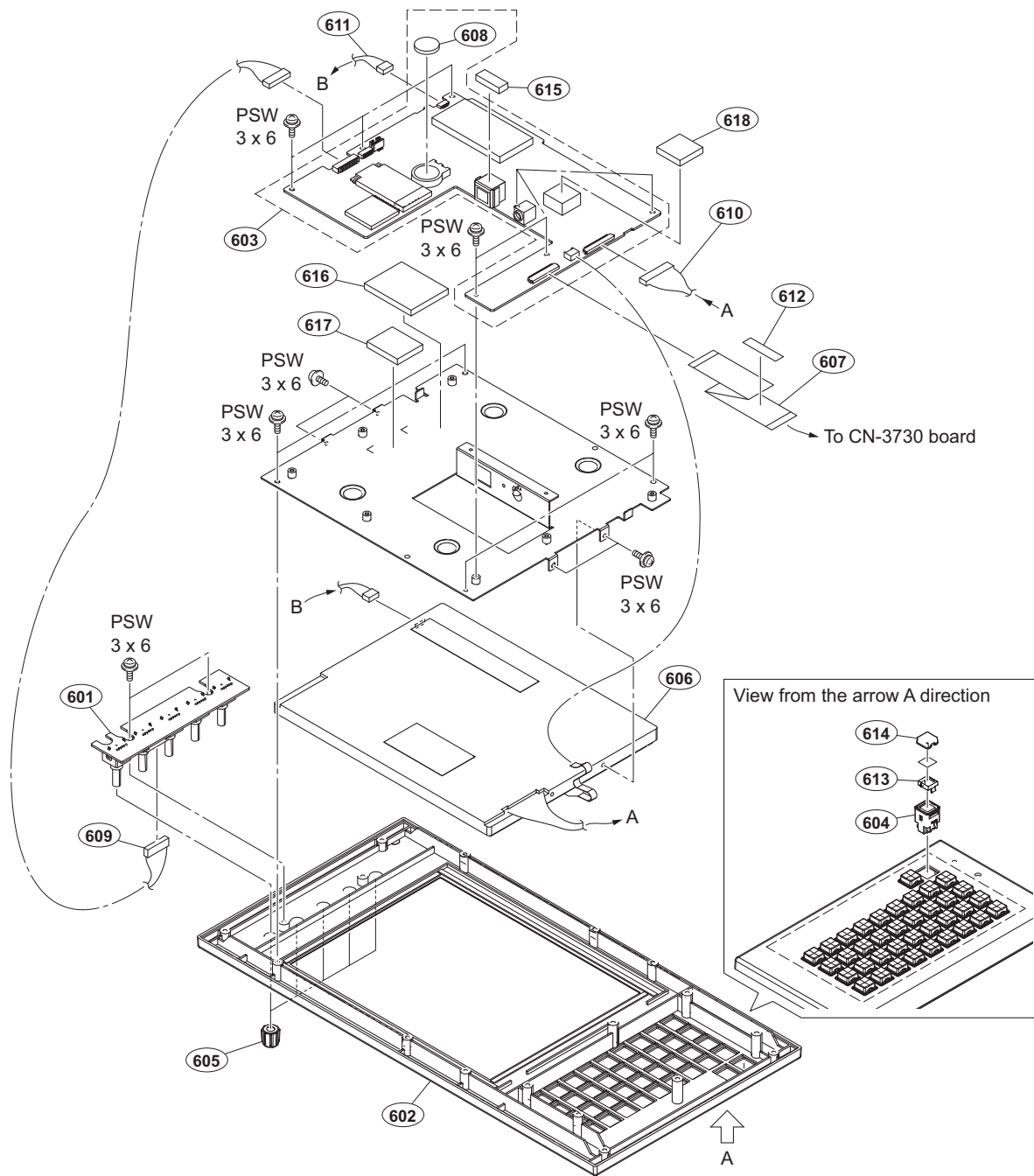
No.	Part No.	SP Description
401	A-2070-615-A s	MODULE ASSY (RP), CPU
402	4-559-097-01 s	COVER (R), PANEL
403	4-559-098-01 s	COVER (L), PANEL
404	4-559-589-01 s	FOOT
405	4-559-592-01 s	SHEET (7 (15X24)), RADIATION
	7-682-947-01 s	SCREW +PSW 3X6

Menu Panel-1 (MKS-X7011)



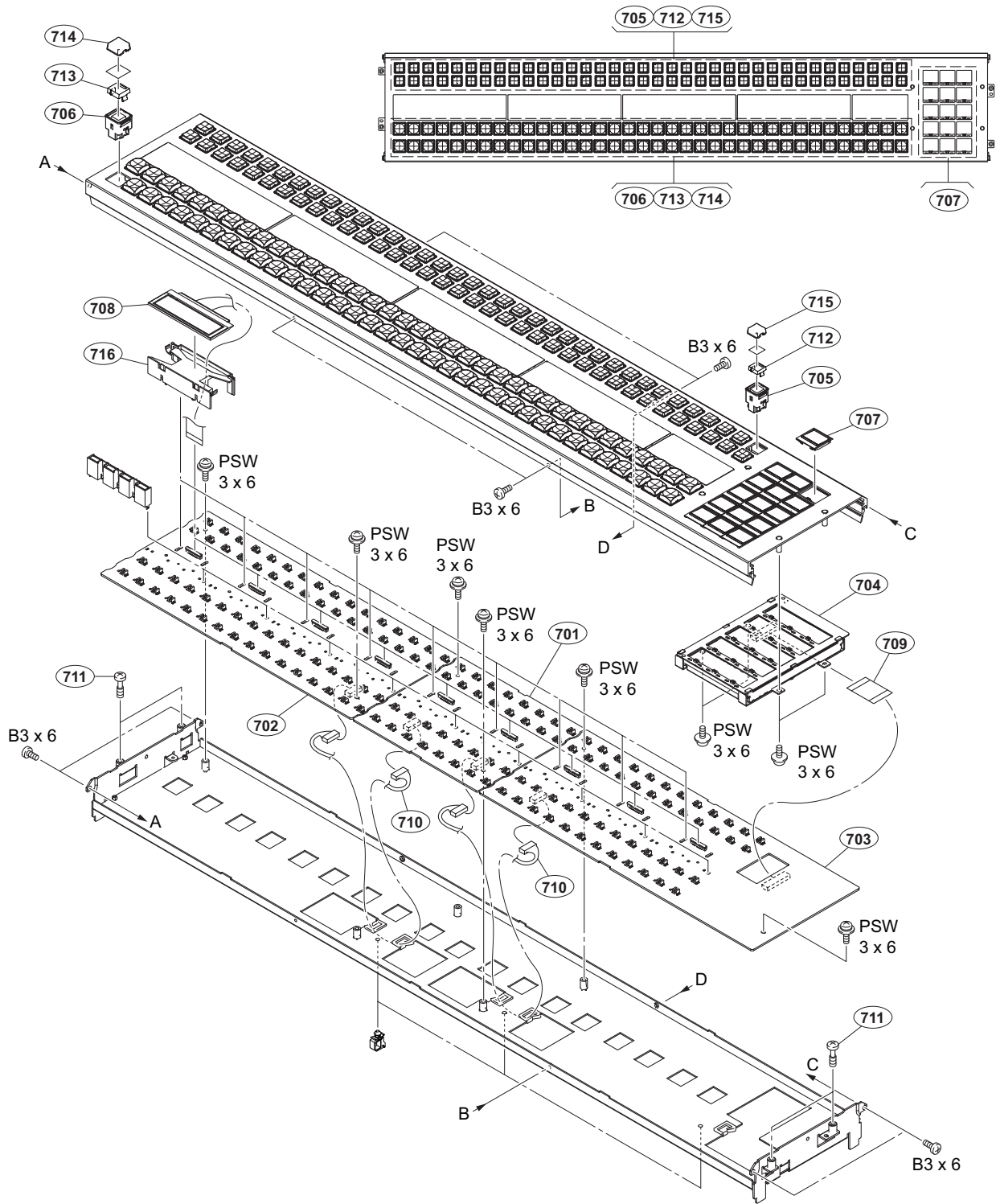
No.	Part No.	SP Description
501	A-2067-457-A s	MOUNTED CIRCUIT BOARD, CN-3730
502	A-2067-482-A s	MOUNTED CIRCUIT BOARD, KY-723
503	3-080-272-01 s	TAPE (A)
504	⚠ 3-636-819-11 s	CASE (BOTTOM), LCD
505	3-725-295-11 s	SCREW, (+) (B3)
506	4-564-356-01 s	SHEET (5 (11X50)), RADIATION
	7-682-947-01 s	SCREW +PSW 3X6

Menu Panel-2 (MKS-X7011)



No.	Part No.	SP Description	No.	Part No.	SP Description
601	A-1883-263-A	s MOUNTED CIRCUIT BOARD, VR-349	616	4-564-357-01	s SHEET (3 (40X45)), RADIATION
602	△ A-1923-009-A	s CASE (TOP), LCD	617	4-564-358-01	s SHEET (4 (27X32)), RADIATION
603	A-2067-481-A	s MOUNTED CIRCUIT BOARD, CA-91	618	4-565-191-01	s SHEET (8 (25X25)), RADIATION
604	X-2587-734-3	s CASE (C12) ASSY, SWITCH			
605	X-3608-600-2	s ASSY, KNOB VOLUME			
				7-682-947-01	s SCREW +PSW 3X6
606	△ 1-811-681-11	s LCD UNIT			
607	1-831-122-11	s CABLE, FLEXIBLE FLAT (50 CORE)			
608	△ 1-853-478-11	s LITHIUM BATTERY (BR2032 TYPE)			
609	1-962-351-12	s HARNESS, SUB (VR-N)			
610	1-968-735-11	s HARNESS (LCD-DATA)			
611	1-968-736-12	s HARNESS (LCD-BACKLIGHT)			
612	3-080-272-01	s TAPE (A)			
613	3-853-743-04	s PLATE, DIFFUSION (12)			
614	4-145-369-01	s CAP (12)			
615	4-278-409-02	s MAIN GASKET C			

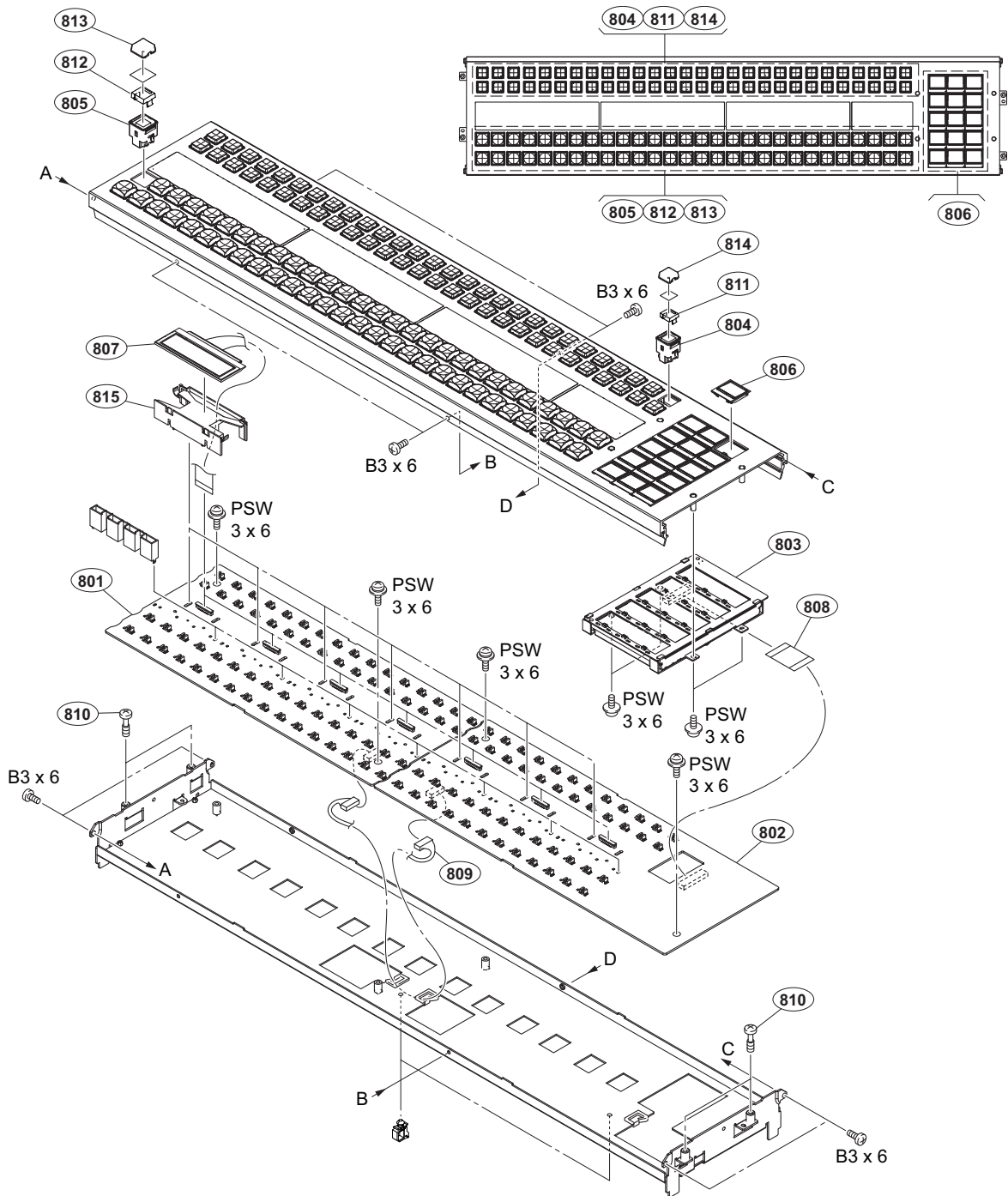
36 XPT Module (MKS-X7017)



No.	Part No.	SP Description
701	A-2059-776-A s	MOUNTED CIRCUIT BOARD, KY-724
702	A-2059-777-A s	MOUNTED CIRCUIT BOARD, KY-725
703	A-2059-778-A s	MOUNTED CIRCUIT BOARD, KY-726
704	△ A-2070-687-A s	LCD5 ASSY (RP)
705	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
706	X-2587-735-4 s	CASE (C15) ASSY, SWITCH
707	X-2589-707-1 s	KEY TOP ASSY
708	1-811-682-11 s	DISPLAY, OLED (2.7INCH)
709	1-831-121-11 s	CABLE, FLEXIBLE FLAT (50 CORE)
710	1-970-673-11 s	HARNESS (PANEL IF S)

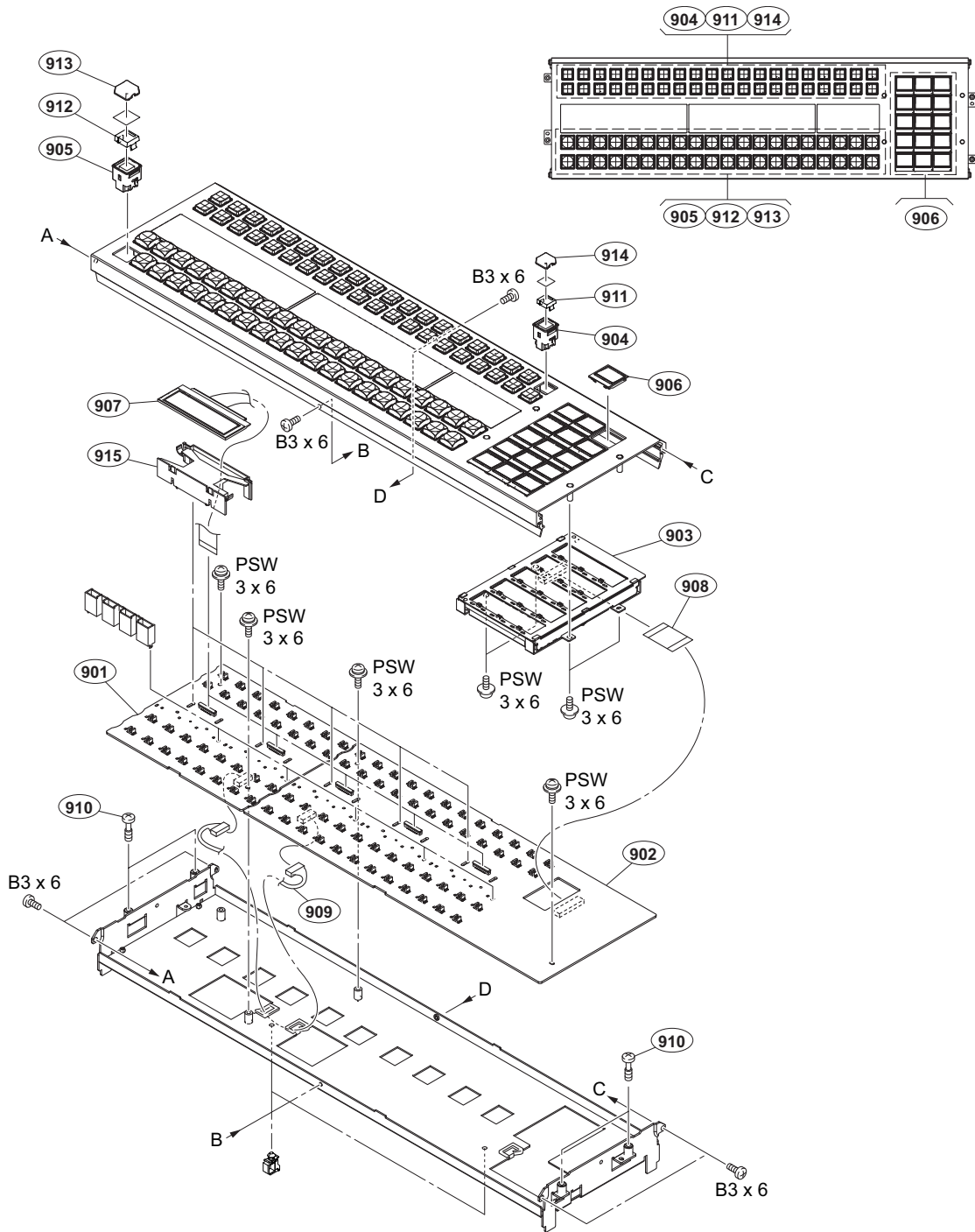
No.	Part No.	SP Description
711	3-637-896-04 s	SCREW, STEP (+B3X14)
712	3-853-743-04 s	PLATE, DIFFUSION (12)
713	3-853-744-04 s	PLATE, DIFFUSION (15)
714	4-145-368-01 s	CAP (15X)
715	4-145-369-01 s	CAP (12)
716	4-442-506-03 s	OL HOLDER2.7
	7-682-547-03 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

28 XPT Module (MKS-X7018)



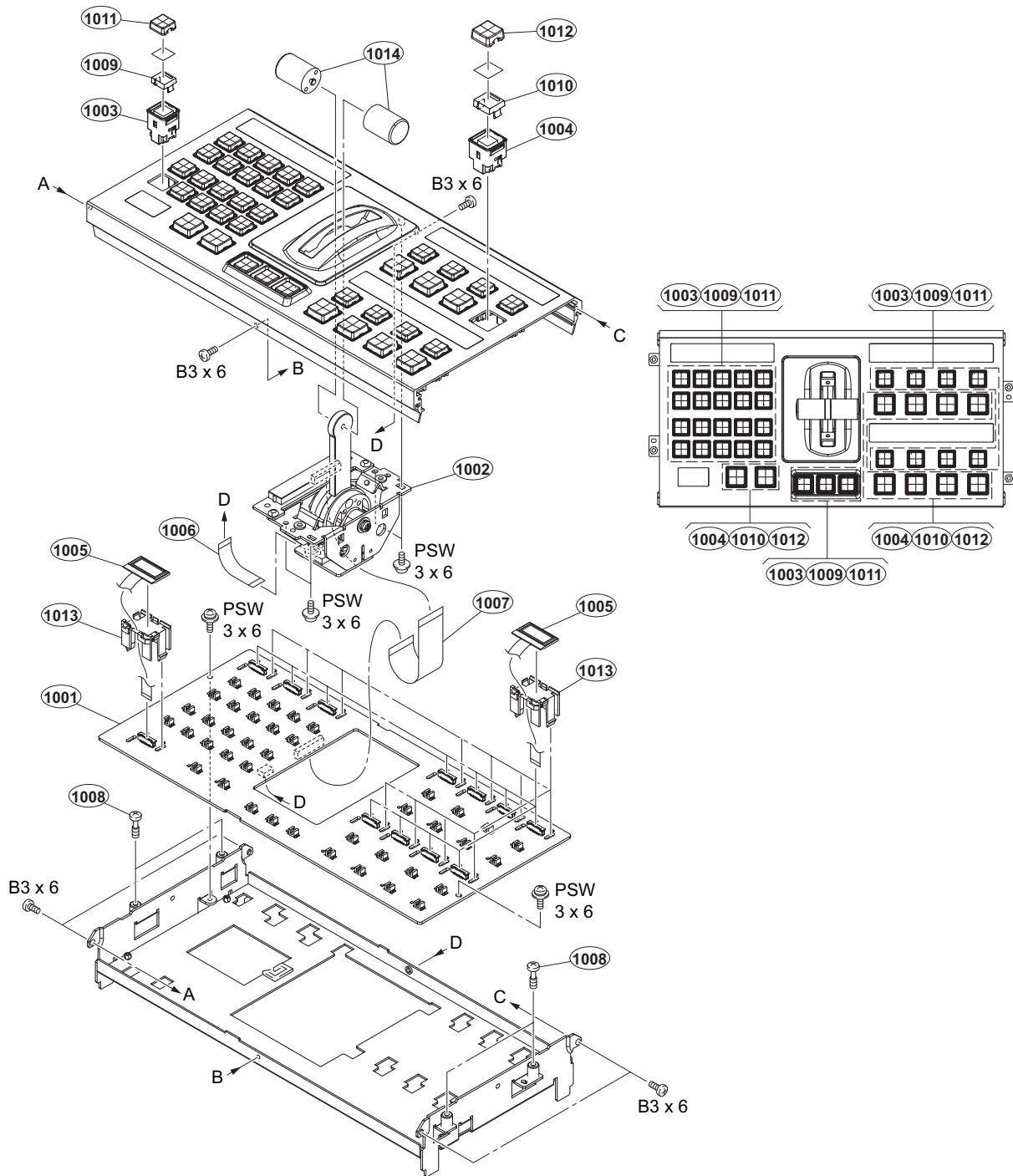
No.	Part No.	SP Description	No.	Part No.	SP Description
801	A-2059-777-A	s MOUNTED CIRCUIT BOARD, KY-725	815	4-442-506-03	s OL HOLDER2.7
802	A-2059-778-A	s MOUNTED CIRCUIT BOARD, KY-726			
803	⚠ A-2070-687-A	s LCD5 ASSY (RP)			
804	X-2587-734-3	s CASE (C12)ASSY, SWITCH		7-682-547-03	s SCREW +B 3X6
805	X-2587-735-4	s CASE (C15) ASSY, SWITCH		7-682-947-01	s SCREW +PSW 3X6
806	X-2589-707-1	s KEY TOP ASSY			
807	1-811-682-11	s DISPLAY, OLED (2.7INCH)			
808	1-831-121-11	s CABLE, FLEXIBLE FLAT (50 CORE)			
809	1-970-673-11	s HARNESS (PANEL IF S)			
810	3-637-896-04	s SCREW,STEP (+B3X14)			
811	3-853-743-04	s PLATE,DIFFUSION (12)			
812	3-853-744-04	s PLATE,DIFFUSION (15)			
813	4-145-368-01	s CAP (15X)			
814	4-145-369-01	s CAP (12)			

20 XPT Module (MKS-X7019)



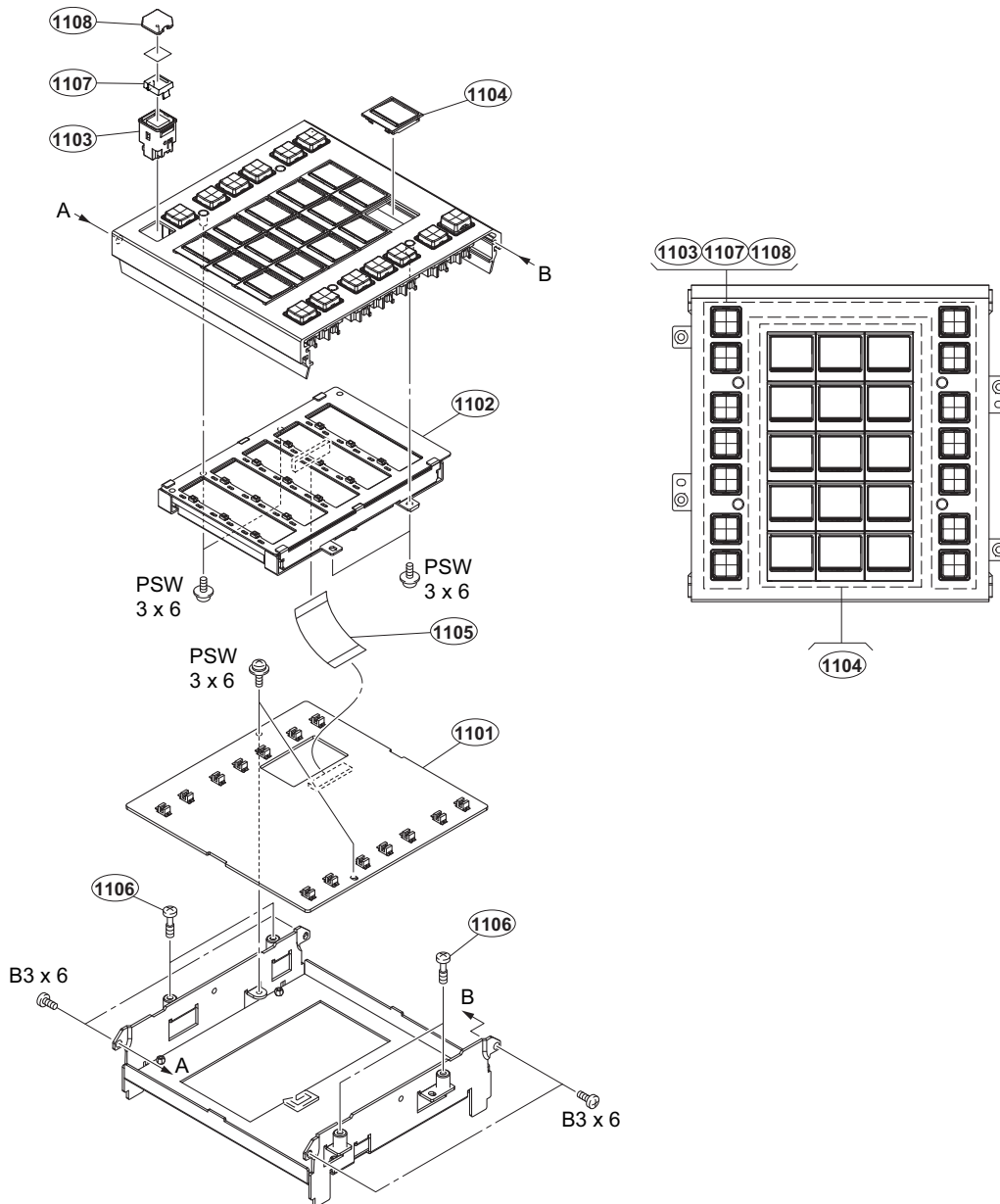
No.	Part No.	SP Description	No.	Part No.	SP Description
901	A-2059-776-A s	MOUNTED CIRCUIT BOARD, KY-724	914	4-145-369-01 s	CAP (12)
902	A-2059-778-A s	MOUNTED CIRCUIT BOARD, KY-726	915	4-442-506-03 s	OL HOLDER2.7
903	⚠ A-2070-687-A s	LCD5 ASSY (RP)			
904	X-2587-734-3 s	CASE (C12) ASSY, SWITCH			
905	X-2587-735-4 s	CASE (C15) ASSY, SWITCH			
				7-682-547-03 s	SCREW +B 3X6
				7-682-947-01 s	SCREW +PSW 3X6
906	X-2589-707-1 s	KEY TOP ASSY			
907	1-811-682-11 s	DISPLAY, OLED (2.7INCH)			
908	1-831-121-11 s	CABLE, FLEXIBLE FLAT (50 CORE)			
909	1-970-673-11 s	HARNESS (PANEL IF S)			
910	3-637-896-04 s	SCREW,STEP (+B3X14)			
911	3-853-743-04 s	PLATE,DIFFUSION (12)			
912	3-853-744-04 s	PLATE,DIFFUSION (15)			
913	4-145-368-01 s	CAP (15X)			

Standard Transition Module (MKS-X7020)



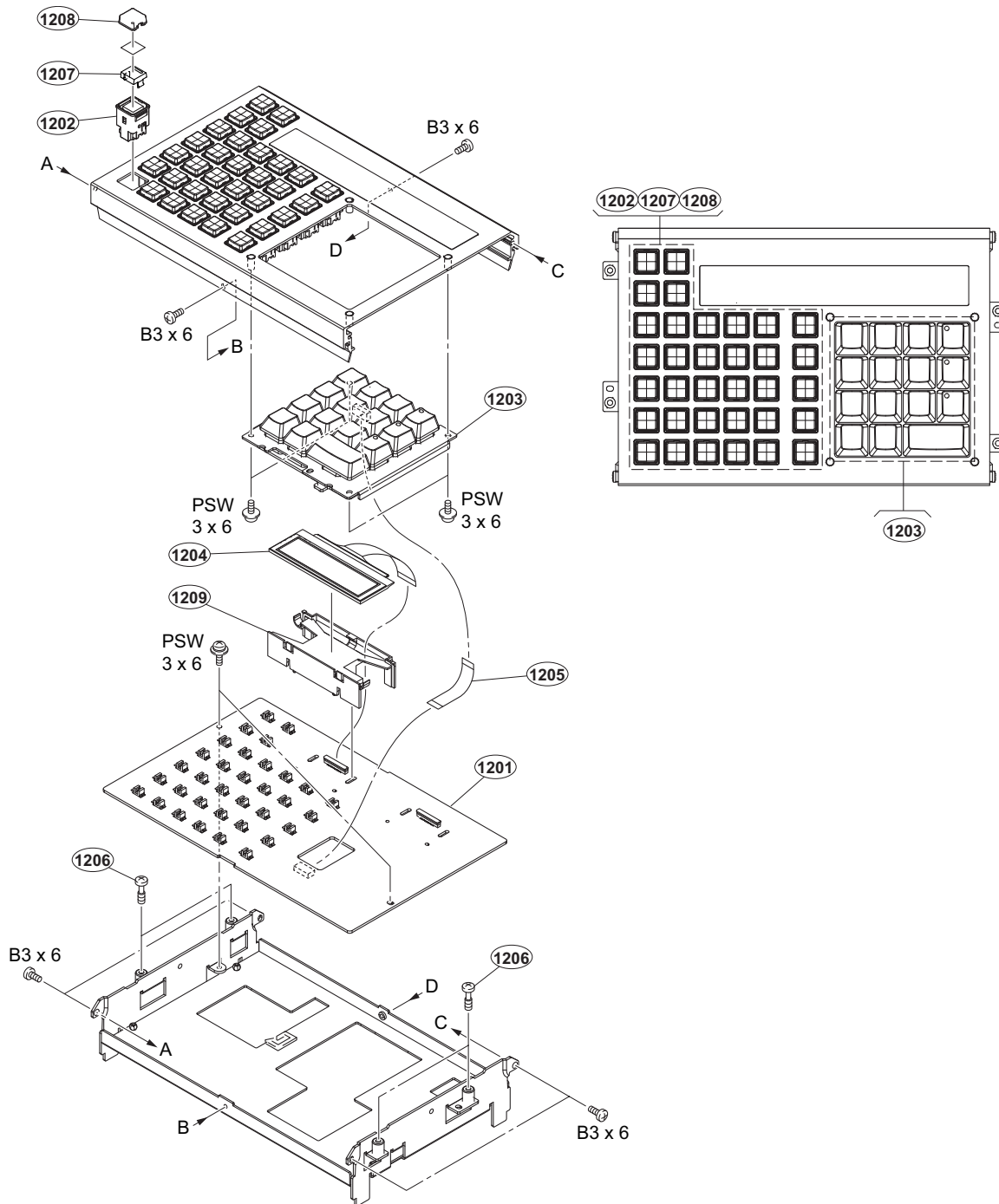
No.	Part No.	SP Description	No.	Part No.	SP Description
1001	A-2059-780-A	s MOUNTED CIRCUIT BOARD, KY-728	1014	4-474-738-02	s GRIP (C)
1002	A-2070-693-A	s FADER ASSY (X7000)			
1003	X-2587-734-3	s CASE (C12) ASSY, SWITCH			
1004	X-2587-735-4	s CASE (C15) ASSY, SWITCH			
1005	1-812-074-11	s OLED DISPLAY (0.8 INCH)			
1006	1-831-078-11	s CABLE, FLEXIBLE FLAT (10 CORE)			
1007	1-831-104-11	s CABLE, FLEXIBLE FLAT (24 CORE)			
1008	3-637-896-04	s SCREW, STEP (+B3X14)			
1009	3-853-743-04	s PLATE, DIFFUSION (12)			
1010	3-853-744-04	s PLATE, DIFFUSION (15)			
1011	4-145-369-01	s CAP (12)			
1012	4-145-371-01	s CAP (15)			
1013	4-442-505-04	s OL HOLDER 0.8			

FlexiPad Module (MKS-X7024)



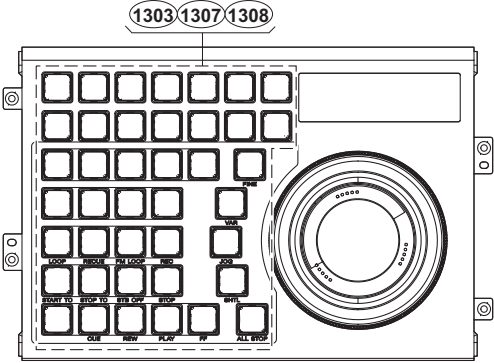
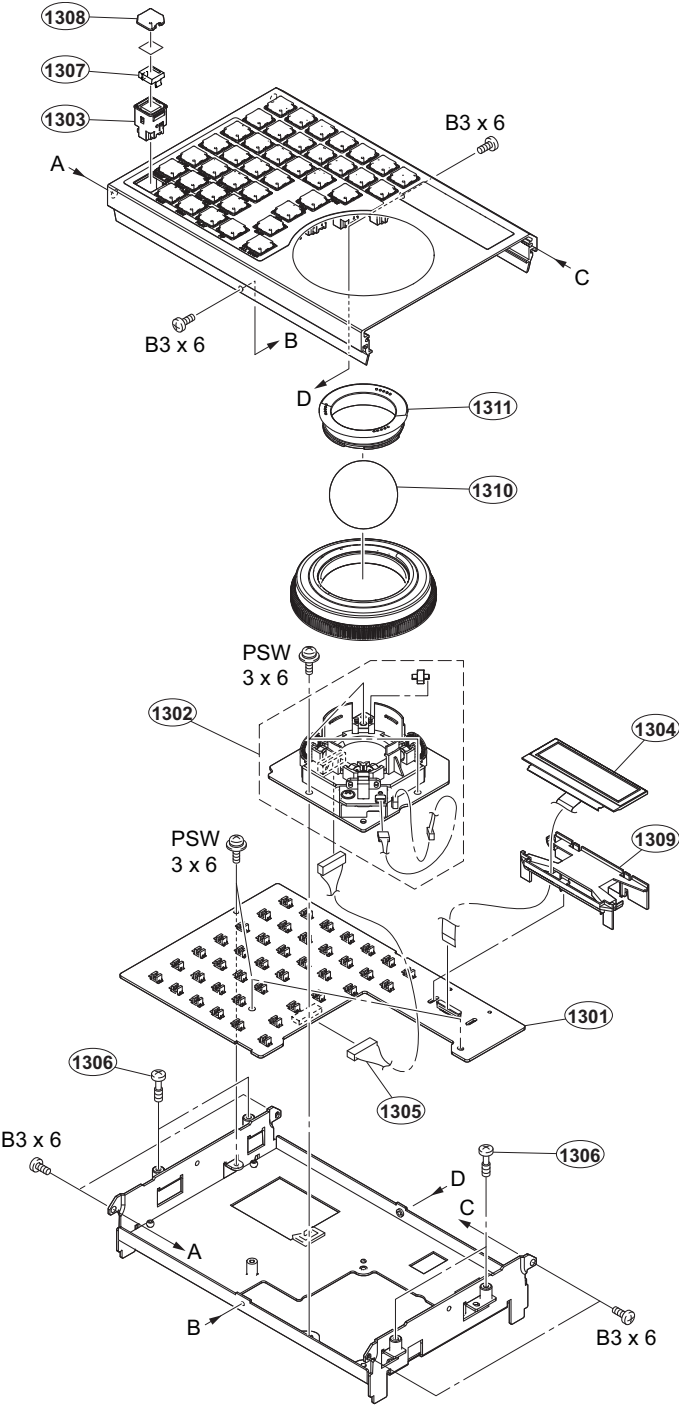
No.	Part No.	SP Description
1101	A-2059-779-A s	MOUNTED CIRCUIT BOARD, KY-727
1102	⚠ A-2070-687-A s	LCD5 ASSY (RP)
1103	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1104	X-2589-707-1 s	KEY TOP ASSY
1105	1-831-121-11 s	CABLE, FLEXIBLE FLAT (50 CORE)
1106	3-637-896-04 s	SCREW, STEP (+B3X14)
1107	3-853-743-04 s	PLATE, DIFFUSION (12)
1108	4-145-369-01 s	CAP (12)
	7-682-547-03 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

10-Key Pad Module (MKS-X7026)



No.	Part No.	SP Description
1201	A-2067-005-A s	MOUNTED CIRCUIT BOARD, KY-733
1202	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1203	1-458-871-11 s	10 KEY MODULE
1204	1-811-682-11 s	DISPLAY, OLED (2.7INCH)
1205	1-846-576-11 s	CABLE, FLEXIBLE FLAT (20P)
1206	3-637-896-04 s	SCREW, STEP (+B3X14)
1207	3-853-743-04 s	PLATE, DIFFUSION (12)
1208	4-145-369-01 s	CAP (12)
1209	4-442-506-03 s	OL HOLDER 2.7
	7-682-547-03 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

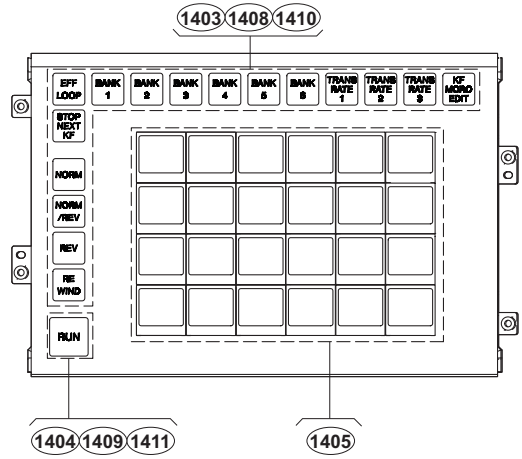
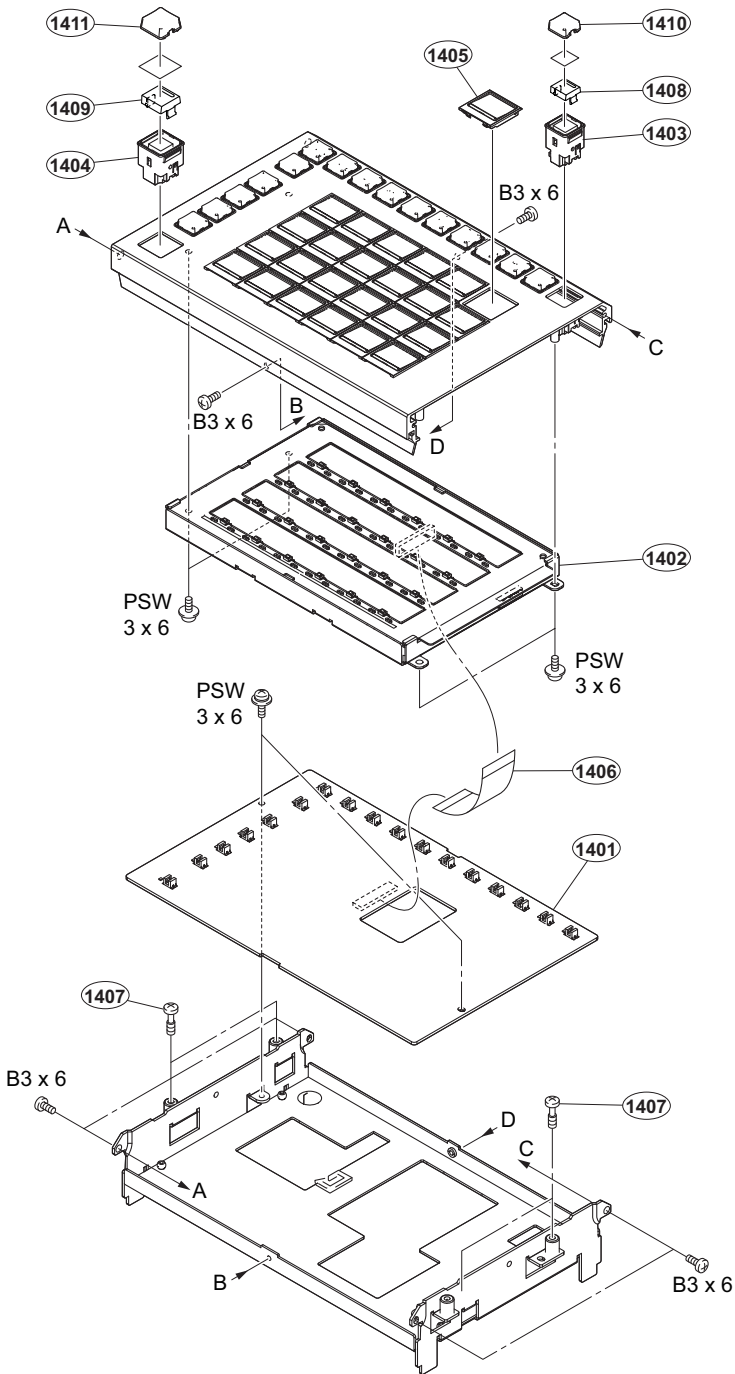
Track Ball Module (MKS-X7031TB)



No.	Part No.	SP Description
1301	A-2067-003-A s	MOUNTED CIRCUIT BOARD, KY-731
1302	A-2070-737-A s	BASE ASSY (RP), TRACK BALL
1303	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1304	1-811-682-11 s	DISPLAY, OLED (2.7INCH)
1305	1-970-675-11 s	HARNESS, SUB (TRACK BALL)
1306	3-637-896-04 s	SCREW, STEP (+B3X14)
1307	3-853-743-04 s	PLATE, DIFFUSION (12)
1308	4-145-369-01 s	CAP (12)
1309	4-442-506-03 s	OL HOLDER 2.7
1310	4-558-357-01 s	BALL, TRACK
1311	4-558-358-01 s	RETAINER, BALL
	7-682-547-03 s	SCREW +B 3X6

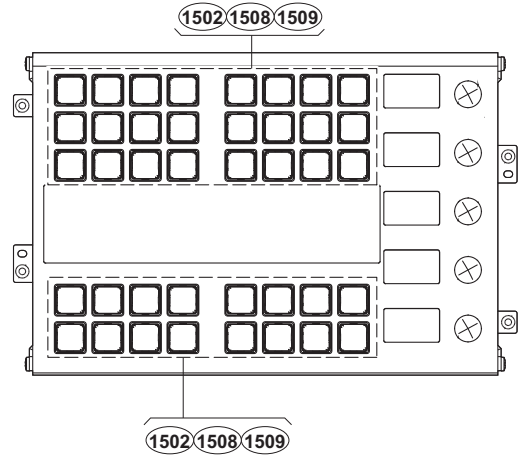
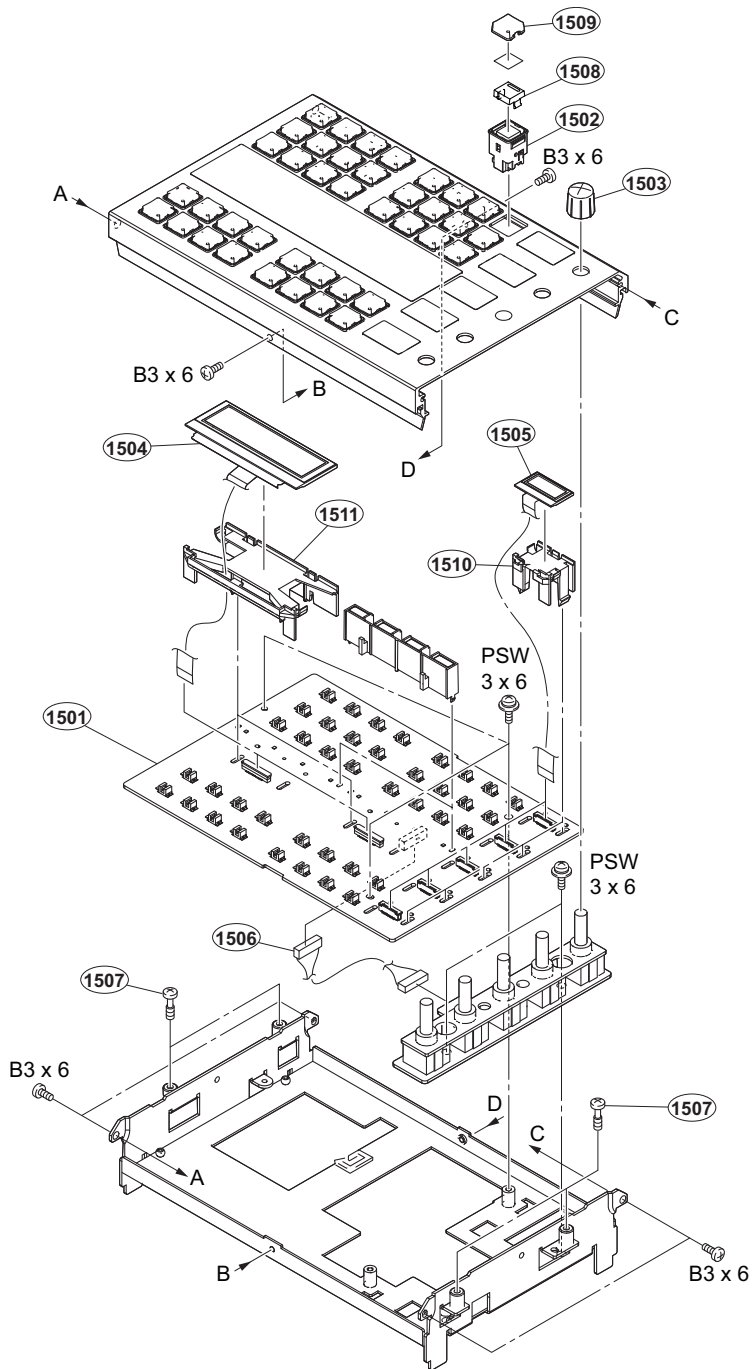
No.	Part No.	SP Description
	7-682-947-01 s	SCREW +PSW 3X6

Utility Shotbox Module (MKS-X7033)



No.	Part No.	SP Description
1401	A-2067-002-A	s MOUNTED CIRCUIT BOARD, KY-729
1402	⚠ A-2070-688-A	s LCD7 ASSY
1403	X-2587-734-3	s CASE (C12) ASSY, SWITCH
1404	X-2587-735-4	s CASE (C15) ASSY, SWITCH
1405	X-2589-707-1	s KEY TOP ASSY
1406	1-831-121-11	s CABLE, FLEXIBLE FLAT (50 CORE)
1407	3-637-896-04	s SCREW, STEP (+B3X14)
1408	3-853-743-04	s PLATE, DIFFUSION (12)
1409	3-853-744-04	s PLATE, DIFFUSION (15)
1410	4-145-369-01	s CAP (12)
1411	4-145-371-01	s CAP (15)
	7-682-547-03	s SCREW +B 3X6
	7-682-947-01	s SCREW +PSW 3X6

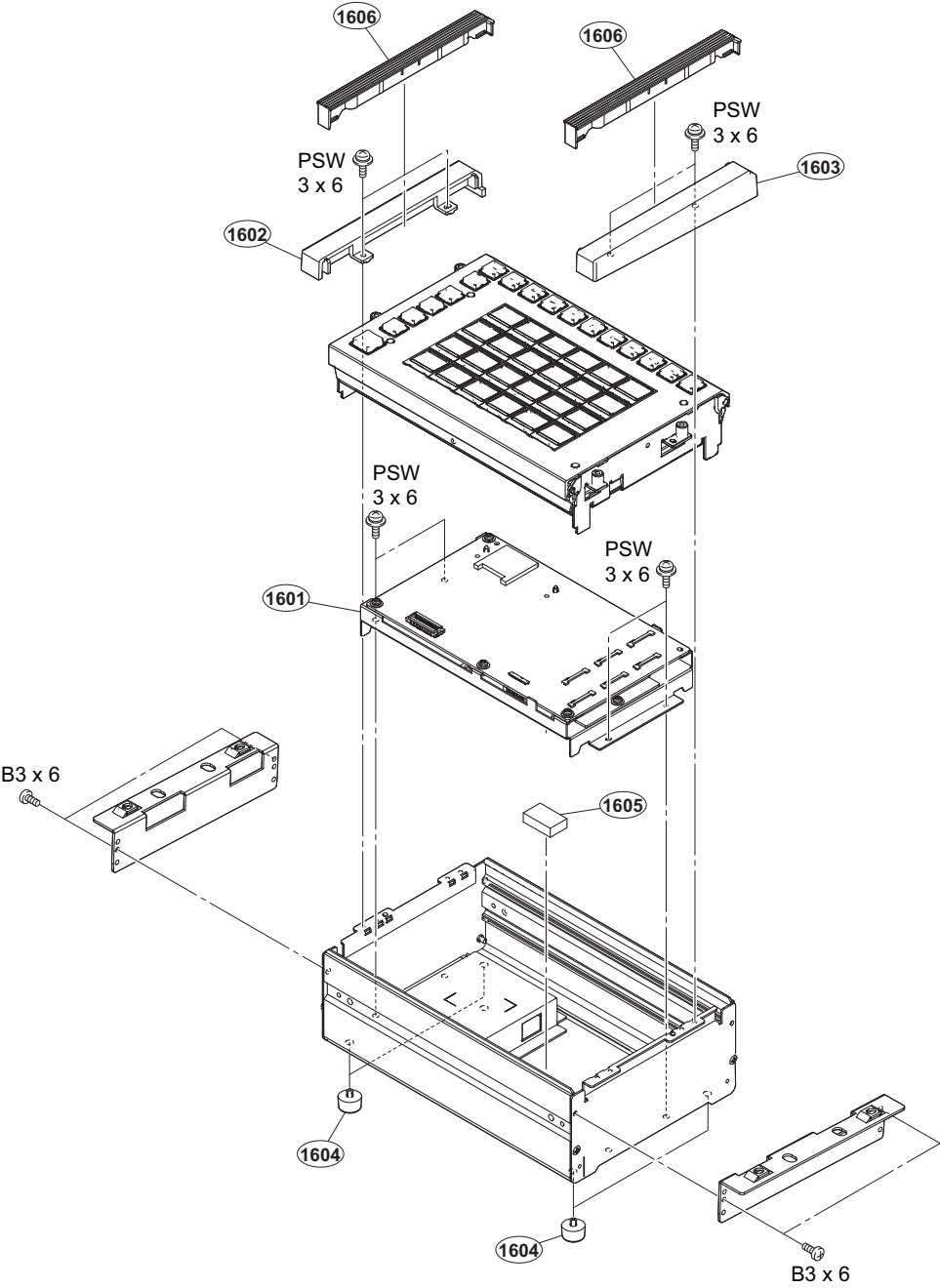
Key Control Module (MKS-X7035)



No.	Part No.	SP Description
1501	A-2067-004-A s	MOUNTED CIRCUIT BOARD, KY-732
1502	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1503	X-3608-600-2 s	ASSY, KNOB VOLUME
1504	1-811-682-11 s	DISPLAY, OLED (2.7 INCH)
1505	1-812-074-11 s	OLED DISPLAY (0.8 INCH)
1506	1-970-671-11 s	HARNESS, SUB (ENC DATA)
1507	3-637-896-04 s	SCREW, STEP (+B3X14)
1508	3-853-743-04 s	PLATE, DIFFUSION (12)
1509	4-145-369-01 s	CAP (12)
1510	4-442-505-04 s	OL HOLDER 0.8
1511	4-442-506-03 s	OL HOLDER 2.7

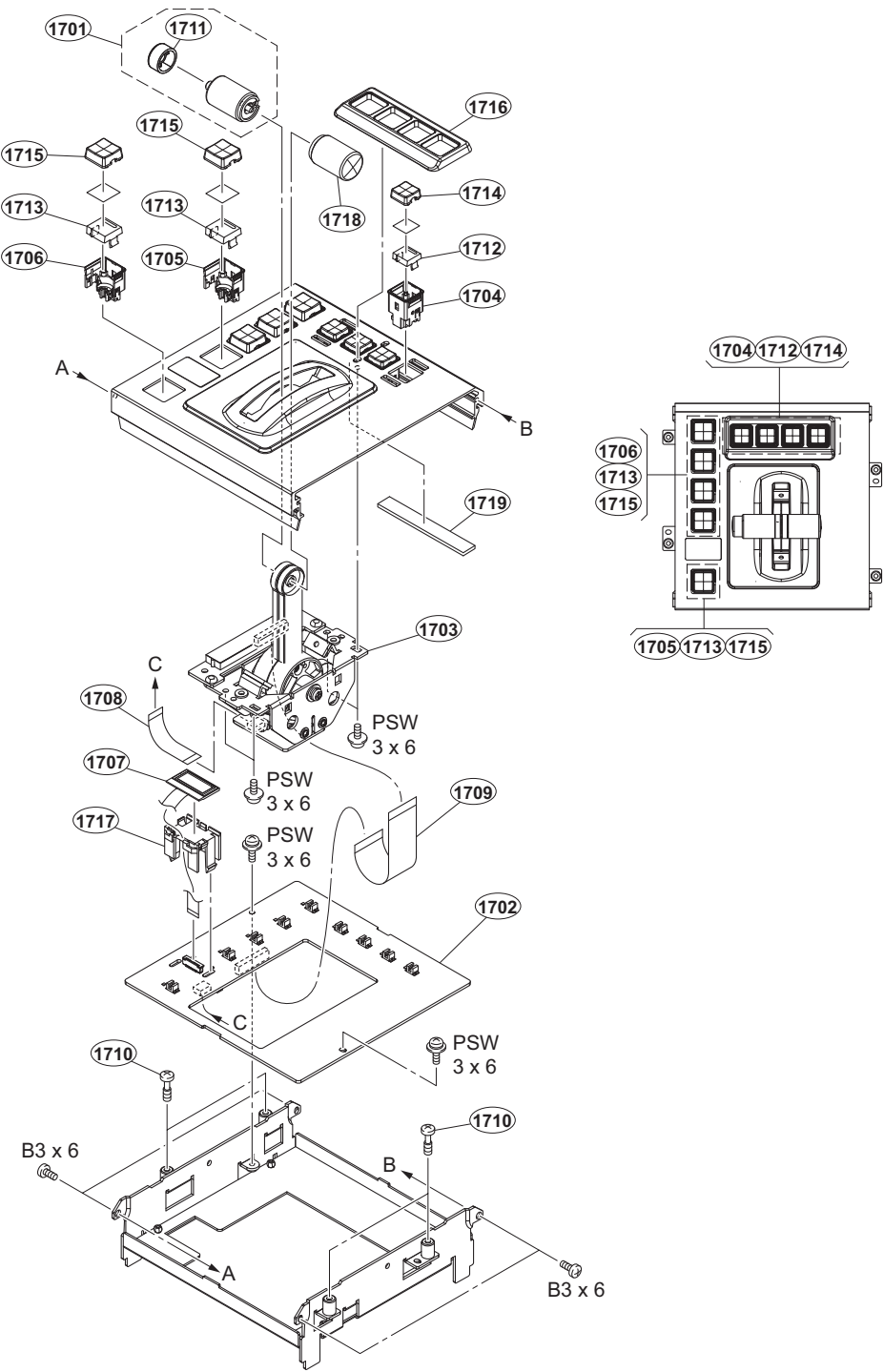
7-682-547-03 s SCREW +B 3X6
7-682-947-01 s SCREW +PSW 3X6

Extension Adaptor (MKS-X7075)



No.	Part No.	SP Description
1601	A-2070-615-A s	MODULE ASSY, CPU
1602	4-559-096-01 s	CAP (L), SIDE
1603	4-559-100-01 s	CAP (R), SIDE
1604	4-559-589-01 s	FOOT
1605	4-559-592-01 s	SHEET (7 (15X24)), RADIATION
1606	4-559-099-01 s	COVER, MODULE
	7-682-547-04 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

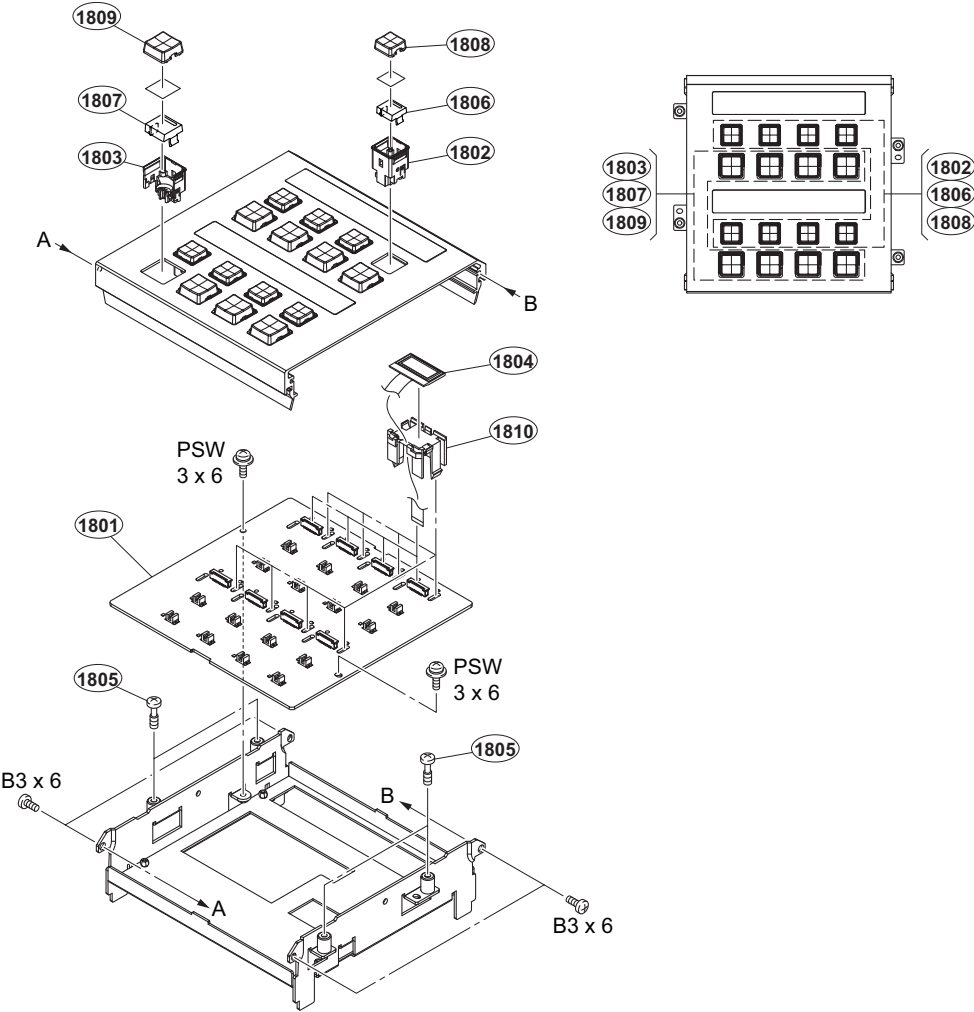
Simple Transition Module (MKS-X7021)



No.	Part No.	SP Description
1701	A-1153-398-A s	ASSY, GRIP (A)
1702	A-2103-217-A s	MOUNTED CIRCUIT BOARD, KY-755
1703	A-2103-220-A s	SP FADER ASSY (X7000) (RP)
1704	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1705	X-2587-735-4 s	CASE (C15) ASSY, SWITCH
1706	X-2587-912-1 s	CASE (C15) ASSY, SW, LT, CLICK
1707	1-812-074-11 s	OLED DISPLAY (0.8 INCH)
1708	1-831-078-11 s	CABLE, FLEXIBLE FLAT (10 CORE)
1709	1-831-104-11 s	CABLE, FLEXIBLE FLAT (24 CORE)
1710	3-637-896-04 s	SCREW, STEP (+B3X14)
1711	3-637-926-03 s	KNOB
1712	3-853-743-04 s	PLATE, DIFFUSION (12)

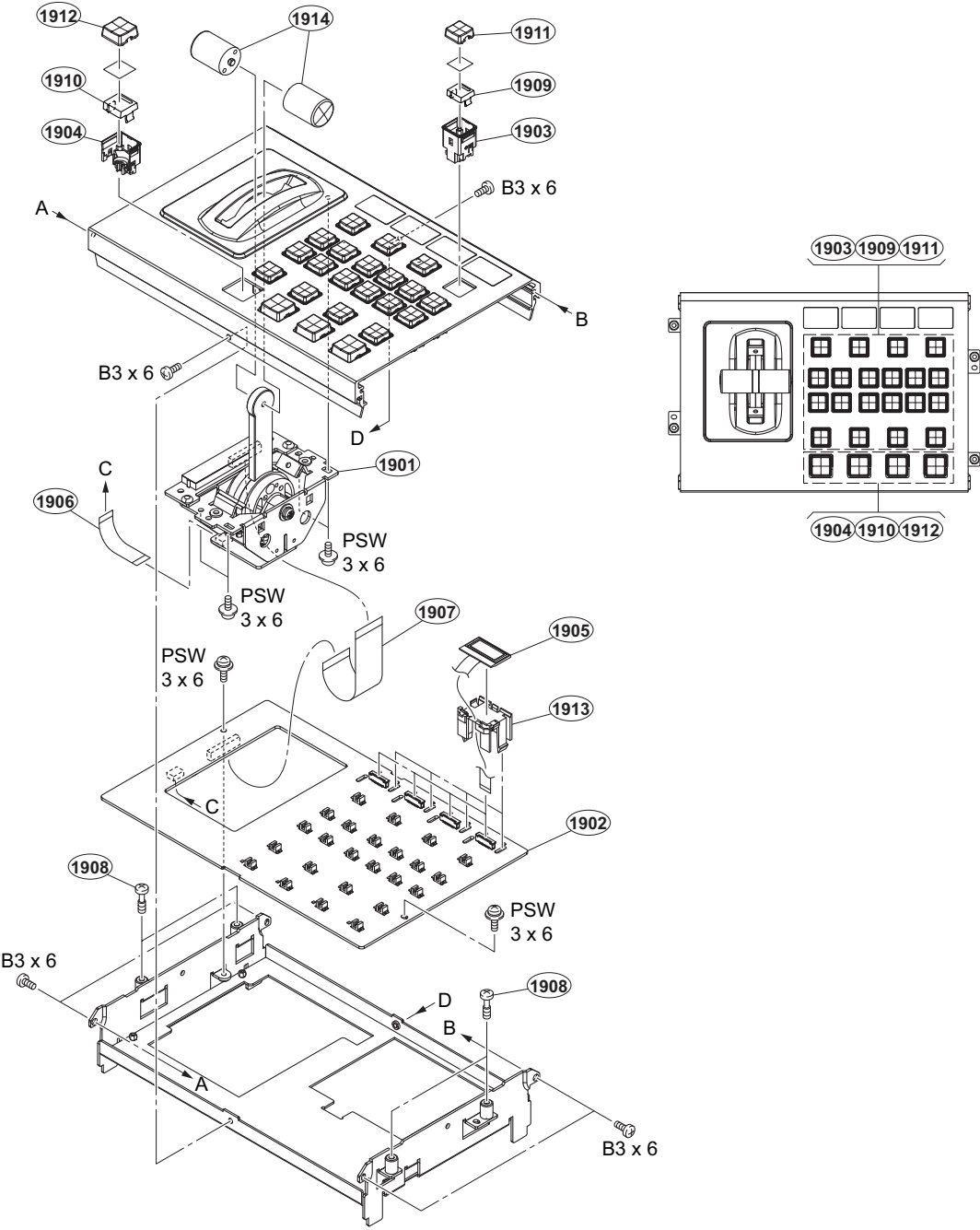
No.	Part No.	SP Description
1713	3-853-744-04 s	PLATE, DIFFUSION (15)
1714	4-145-369-01 s	CAP (12)
1715	4-145-371-01 s	CAP (15)
1716	4-442-504-01 s	GUARD (4), SWITCH
1717	4-442-505-04 s	OL HOLDER 0.8
1718	4-576-949-01 s	GRIP BX
1719	4-579-866-01 s	GUARD PLATE
	7-682-547-03 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

Key Transition Module (MKS-X7023)



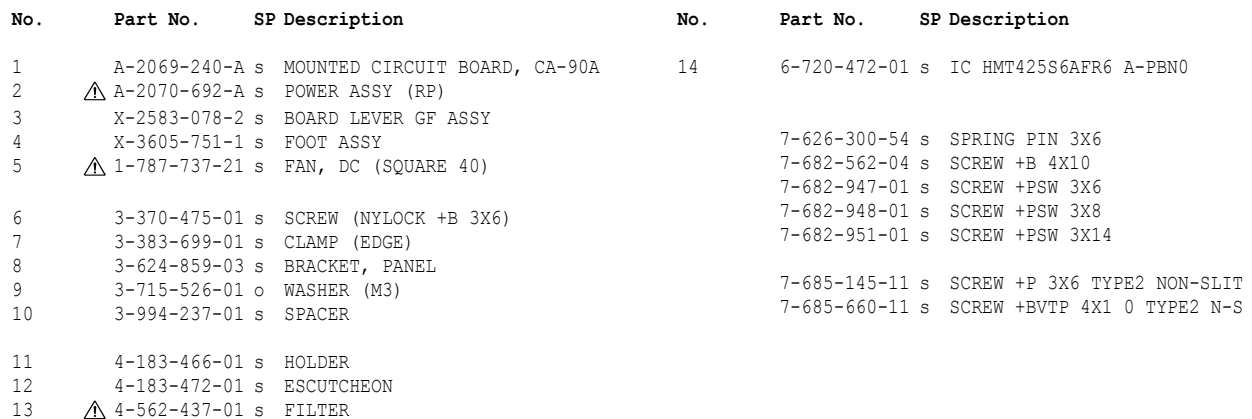
No.	Part No.	SP Description
1801	A-2103-218-A s	MOUNTED CIRCUIT BOARD, KY-756
1802	X-2587-734-3 s	CASE (C12) ASSY, SWITCH
1803	X-2587-735-4 s	CASE (C15) ASSY, SWITCH
1804	1-812-074-11 s	OLED DISPLAY (0.8 INCH)
1805	3-637-896-04 s	SCREW, STEP (+B3X14)
1806	3-853-743-04 s	PLATE, DIFFUSION (12)
1807	3-853-744-04 s	PLATE, DIFFUSION (15)
1808	4-145-369-01 s	CAP (12)
1809	4-145-371-01 s	CAP (15)
1810	4-442-505-04 s	OL HOLDER 0.8
	7-682-547-03 s	SCREW +B 3X6
	7-682-947-01 s	SCREW +PSW 3X6

Key Fader Module (MKS-X7032)

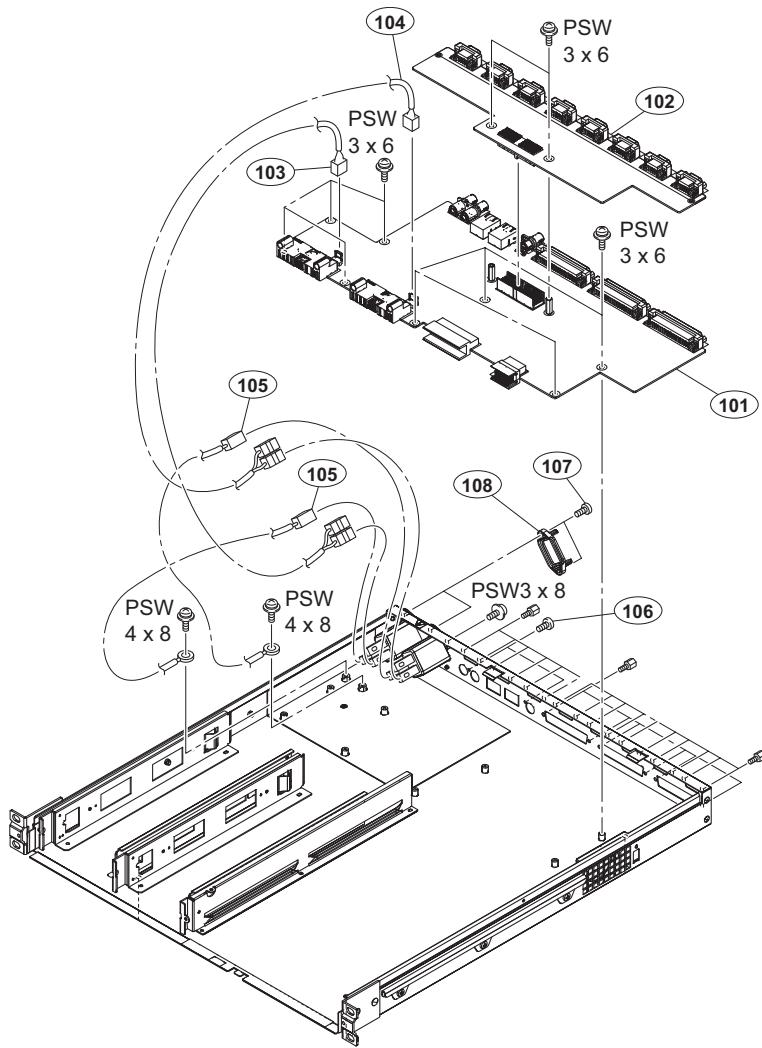


No.	Part No.	SP Description	No.	Part No.	SP Description
1901	A-2070-693-A	s FADER ASSY (X7000) (RP)		7-682-947-01	s SCREW +PSW 3X6
1902	A-2103-219-A	s MOUNTED CIRCUIT BOARD, KY-757			
1903	X-2587-734-3	s CASE (C12) ASSY, SWITCH			
1904	X-2587-735-4	s CASE (C15) ASSY, SWITCH			
1905	1-812-074-11	s OLED DISPLAY (0.8 INCH)			
1906	1-831-078-11	s CABLE, FLEXIBLE FLAT (10 CORE)			
1907	1-831-104-11	s CABLE, FLEXIBLE FLAT (24 CORE)			
1908	3-637-896-04	s SCREW, STEP (+B3X14)			
1909	3-853-743-04	s PLATE, DIFFUSION (12)			
1910	3-853-744-04	s PLATE, DIFFUSION (15)			
1911	4-145-369-01	s CAP (12)			
1912	4-145-371-01	s CAP (15)			
1913	4-442-505-04	s OL HOLDER 0.8			
1914	4-474-738-02	s GRIP (C)			
	7-682-547-03	s SCREW +B 3X6			

System Interface Unit-1 (MKS-X2700)

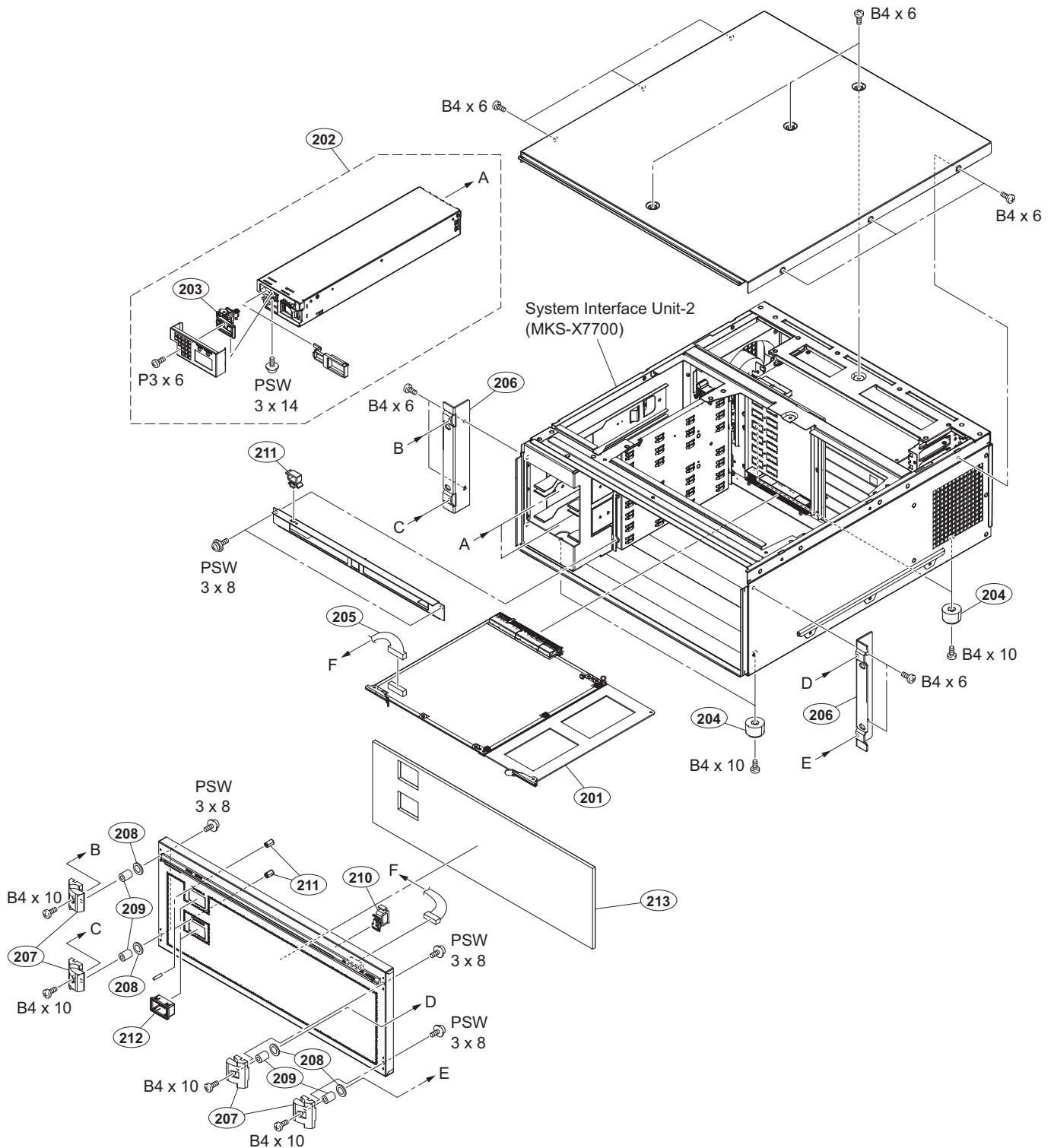


System Interface Unit-2 (MKS-X2700)



No.	Part No.	SP Description
101	A-2067-487-A s	MOUNTED CIRCUIT BOARD, CN-3757
102	A-2067-488-A s	MOUNTED CIRCUIT BOARD, CNB-33
103	1-970-501-11 s	HARNESS, SUB (INLET-CN-A)
104	1-970-502-11 s	HARNESS, SUB (INLET-CN-B)
105	1-970-503-11 s	HARNESS, SUB (INLET-FG)
106	3-637-901-02 s	SCREW M2.6X5
107	4-382-854-11 s	SCREW (M3X10), P, SW (+)
108	4-443-071-02 s	HOLDER (NEW 2), PLUG
	7-682-947-01 s	SCREW +PSW 3X6
	7-682-948-01 s	SCREW +PSW 3X8
	7-682-961-01 s	SCREW +PSW 4X8

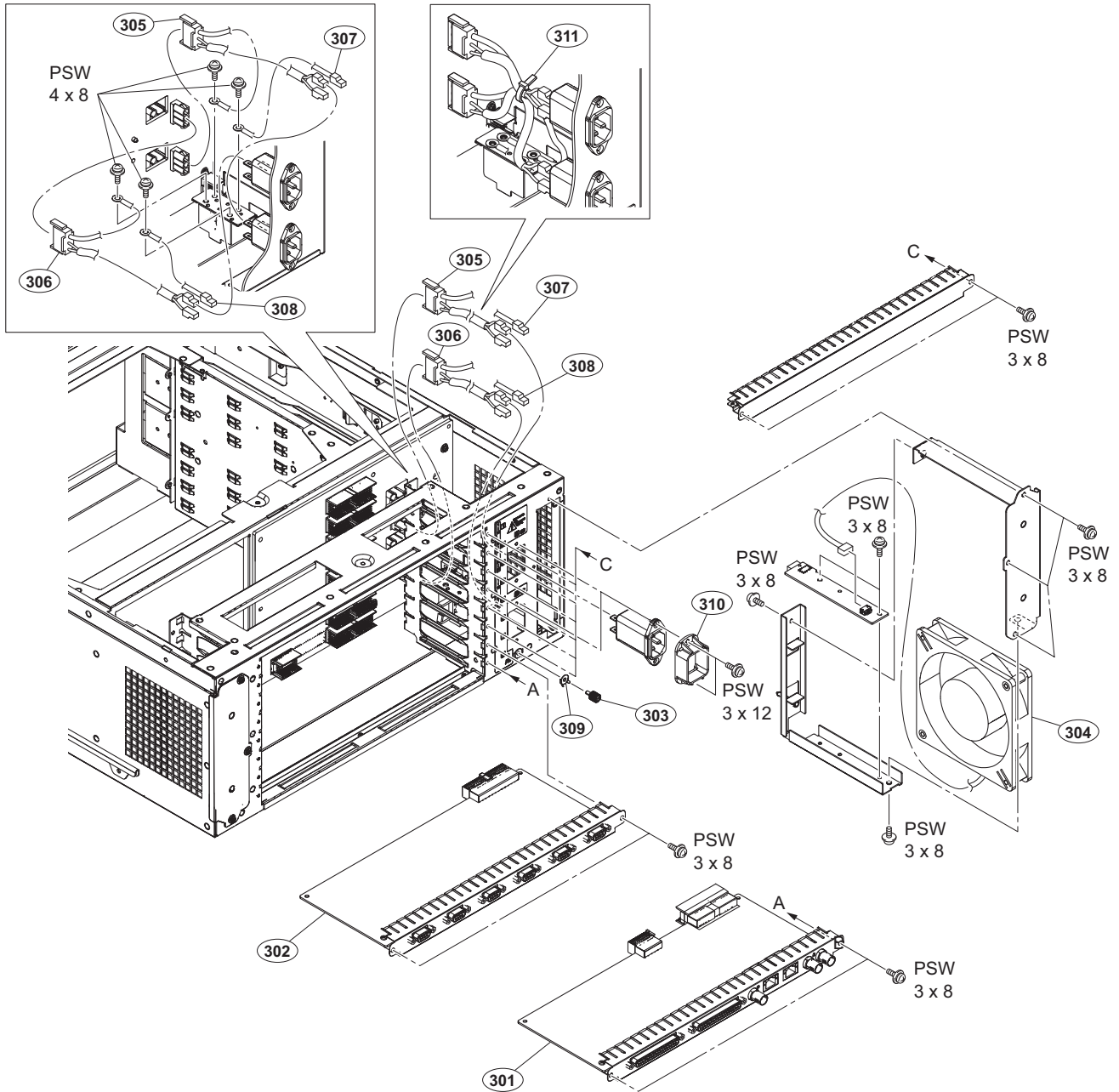
System Interface Unit-1 (MKS-X7700)



No.	Part No.	SP Description
201	A-2067-484-A s	MOUNTED CIRCUIT BOARD, CA-90
202	⚠ A-2070-692-A s	POWER ASSY (RP)
203	X-2583-078-2 s	BOARD LEVER GF ASSY
204	X-3605-751-1 s	FOOT ASSY
205	1-970-510-11 s	HARNESS, SUB (CA-CN)
207	3-623-997-11 s	BRACKET (4U), RACK MOUNT
208	3-624-859-03 s	BRACKET, PANEL
209	3-650-537-01 s	WASHER
210	3-994-237-01 s	SPACER

No.	Part No.	SP Description
211	4-123-132-01 s	RE-USE CLAMP (BK)
212	4-183-466-01 s	HOLDER
213	4-183-472-01 s	ESCUTCHEON
214	⚠ 4-549-458-01 s	FILTER
	7-682-560-04 s	SCREW +B 4X6
	7-682-562-04 s	SCREW +B 4X10
	7-682-948-01 s	SCREW +PSW 3X8
	7-682-951-01 s	SCREW +PSW 3X14

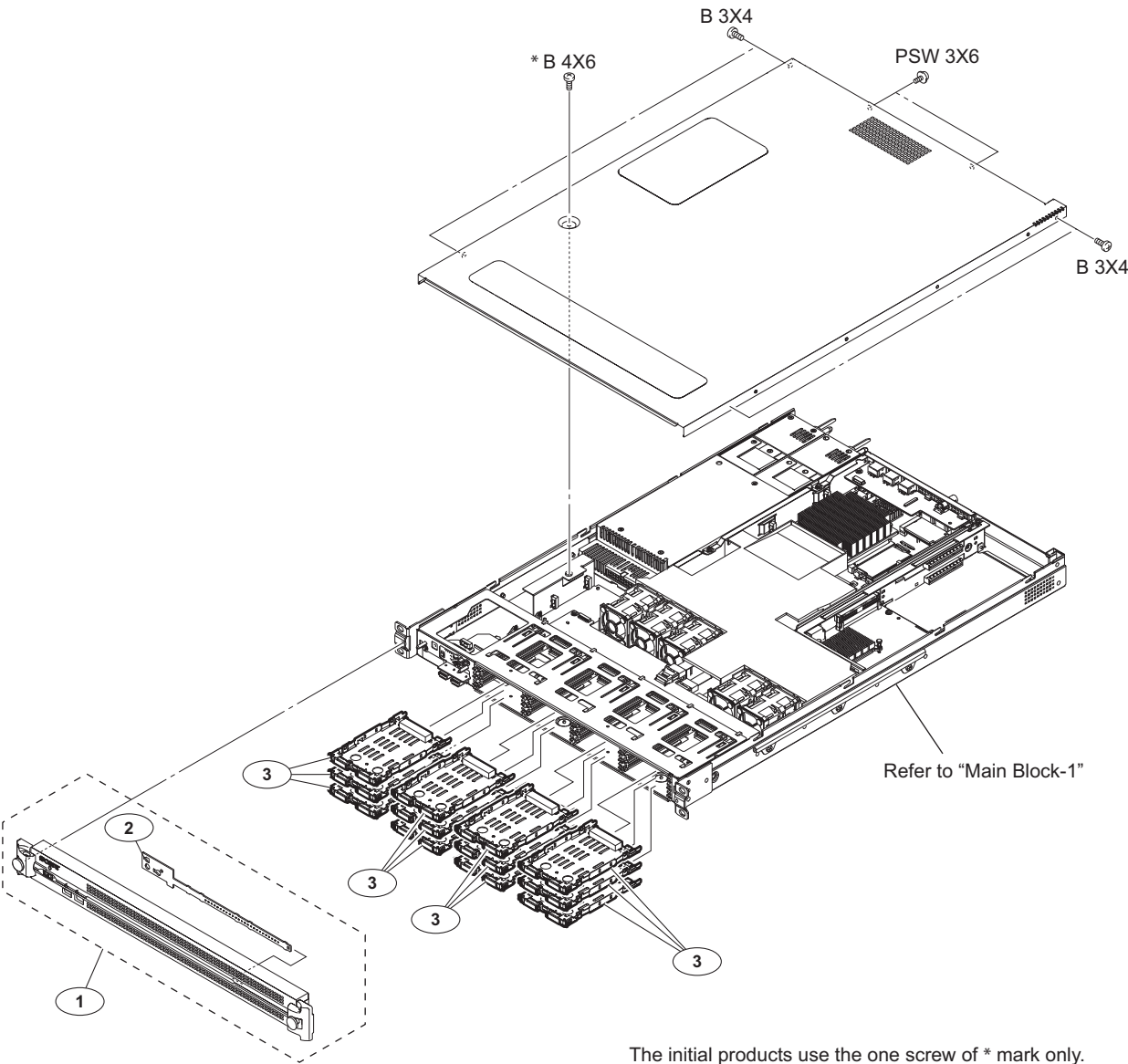
System Interface Unit-2 (MKS-X7700)



No.	Part No.	SP Description
301	A-2067-485-A s	MOUNTED CIRCUIT BOARD, CN-3756
302	A-2067-486-A s	MOUNTED CIRCUIT BOARD, CNB-32A
303	X-2068-004-1 s	TERMINAL ASSY
304	⚠ 1-855-201-11 s	FAN, DC (120 SQUARE)
305	1-968-688-12 s	HARNESS, SUB (INLET-MB-A)
306	1-968-689-12 s	HARNESS, SUB (INLET-MB-B)
307	1-968-690-11 s	HARNESS, SUB (INLET-FG-A)
308	1-968-691-11 s	HARNESS, SUB (INLET-FG-B)
309	2-068-008-01 s	WASHER
310	2-990-241-02 s	HOLDER (A), PLUG
311	3-655-653-01 s	BAND (TAITON), BINDING
	7-682-948-01 s	SCREW +PSW 3X8
	7-682-950-01 s	SCREW +PSW 3X12
	7-682-961-01 s	SCREW +PSW 4X8

7-4. Exploded Views (PWS-100SC1)

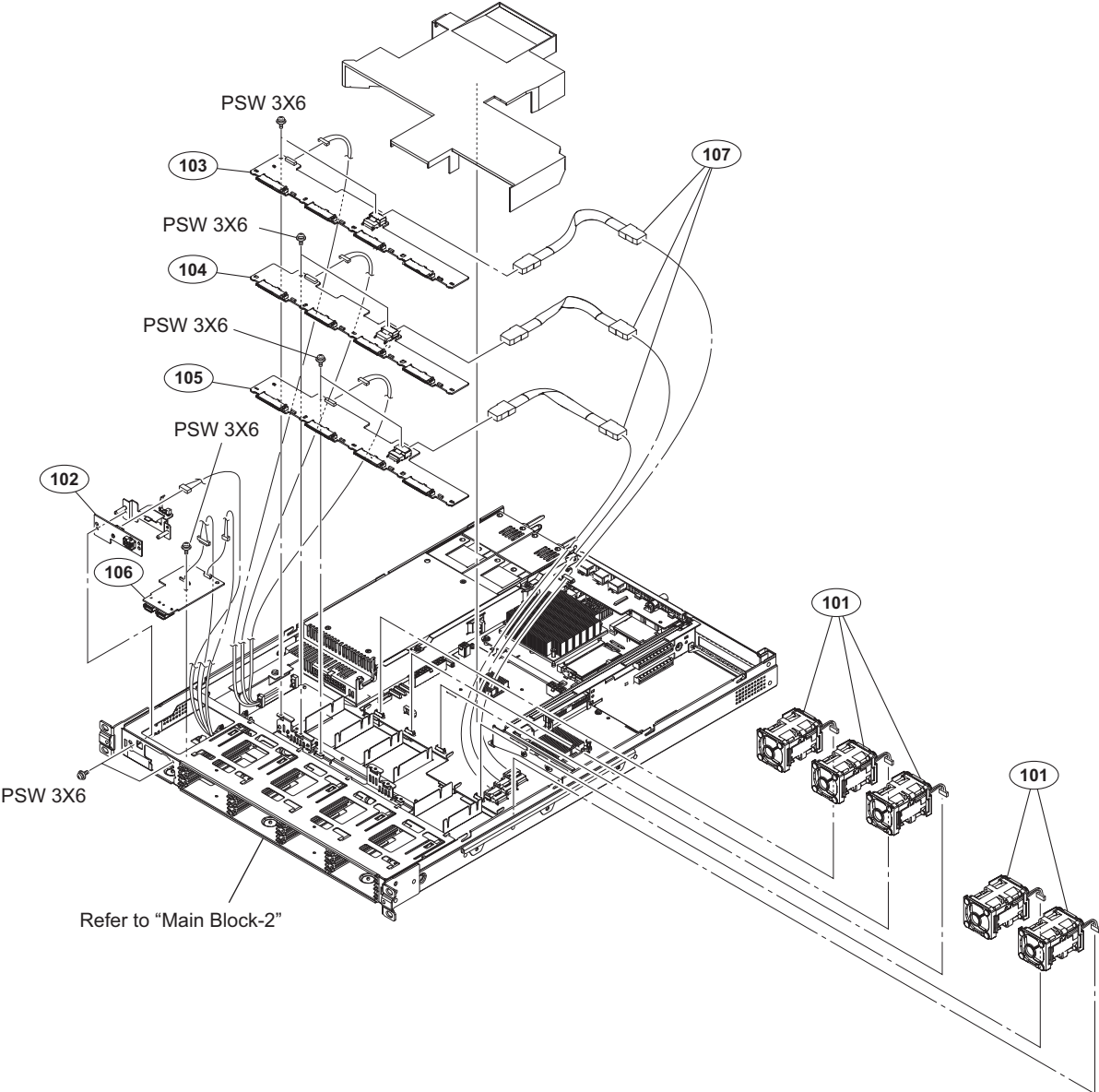
Overall



The initial products use the one screw of * mark only.

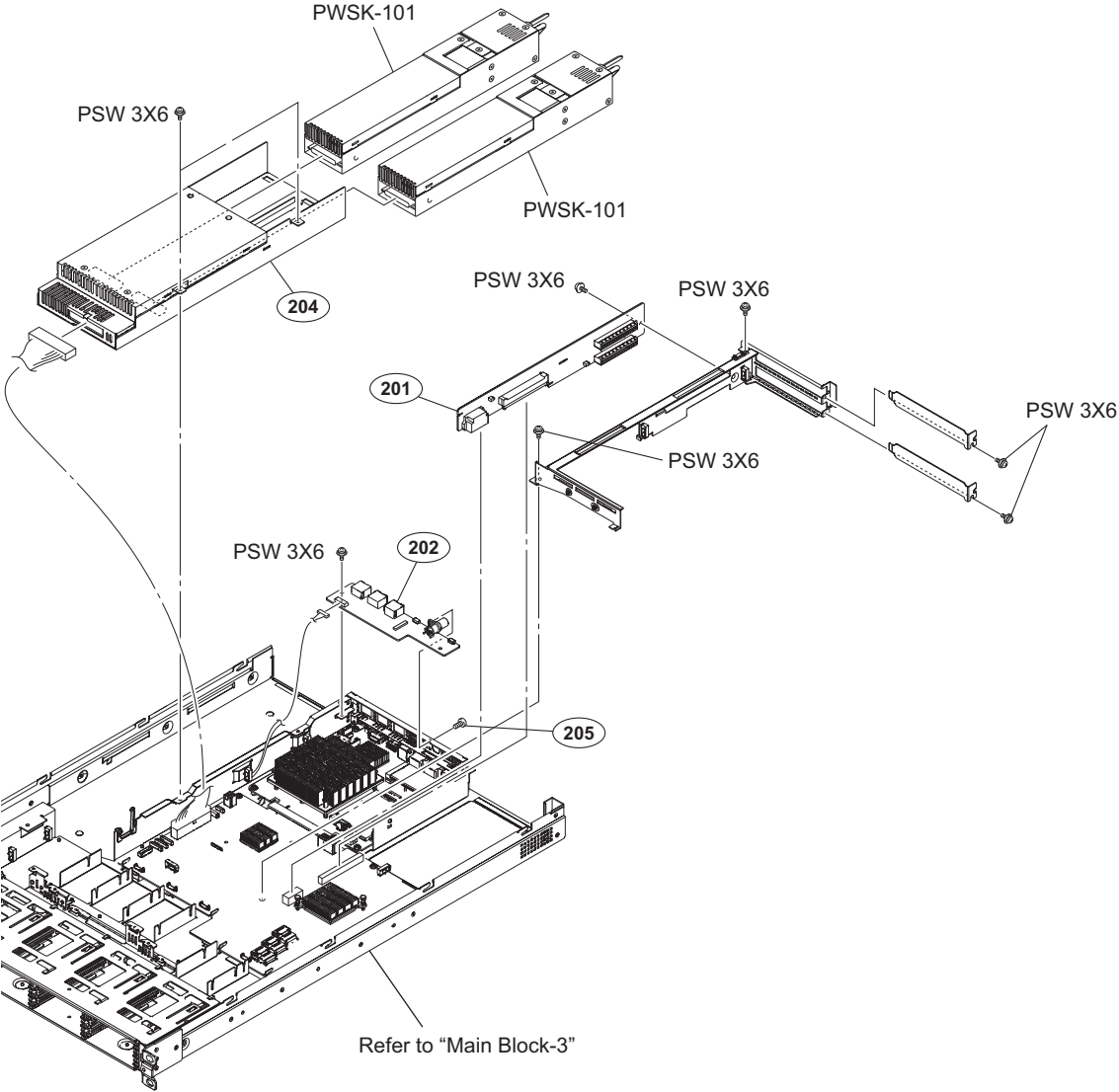
No.	Part No.	SP Description
1	A-2073-066-A s	PANEL ASSY, FRONT
2	A-2040-582-A s	MOUNTED CIRCUIT BOARD, LED-527
3	A-2061-305-A s	ST BLANK ASSY
	7-682-545-09 s	SCREW +B 3X4
	7-682-560-09 s	SCREW +B 4X6
	7-682-947-09 s	SCREW +PSW 3X6

Main Block-1



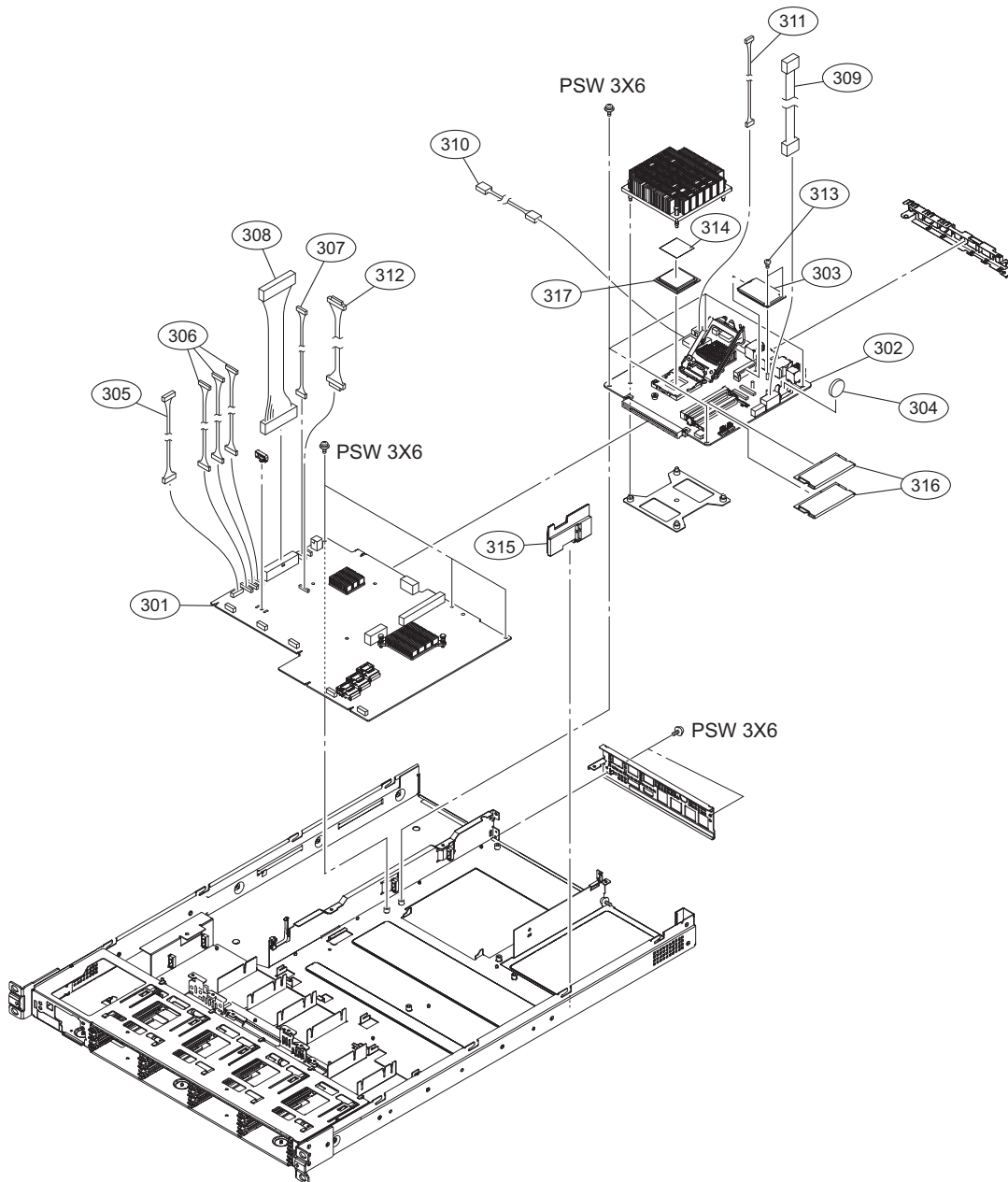
No.	Part No.	SP Description
101	A-1998-530-A s	FAN ASSY
102	A-2040-583-A s	MOUNTED CIRCUIT BOARD, SW-1627
103	A-2040-585-A s	MOUNTED CIRCUIT BOARD, IF-1257
104	A-2040-586-A s	MOUNTED CIRCUIT BOARD, IF-1258
105	A-2040-587-A s	MOUNTED CIRCUIT BOARD, IF-1259
106	A-2040-588-A s	MOUNTED CIRCUIT BOARD, DIO-98
107	1-848-266-11 s	CABLE, MINI SAS
	7-682-947-01 o	SCREW +PSW 3X6

Main Block-2



No.	Part No.	SP Description
201	A-2040-584-A s	MOUNTED CIRCUIT BOARD, RC-110
202	A-2040-589-A s	MOUNTED CIRCUIT BOARD, CN-3698
204	 1-474-591-12 s	OPTION
205	2-655-586-01 s	SCREW +B M2.6 EG
	7-682-247-04 s	SCREW +K 3X6
	7-682-947-01 s	SCREW +PSW 3X6

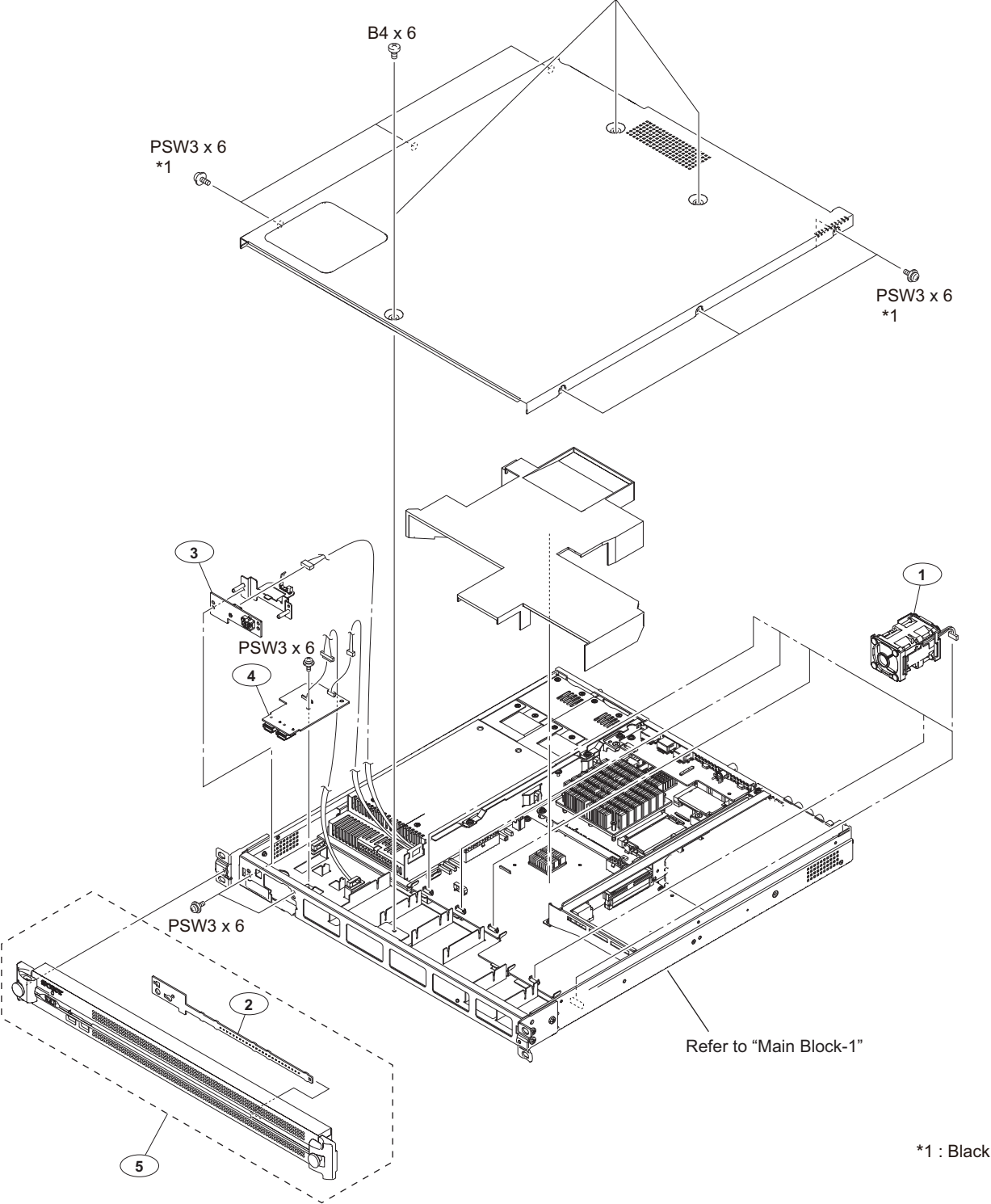
Main Block-3



No.	Part No.	SP Description	No.	Part No.	SP Description
301	A-2040-590-A s	MOUNTED CIRCUIT BOARD, MB-1204	317	6-721-446-01 s	IC CM8063701211600S-R0PK
302	A-2047-105-A s	IAP BOARD (PWS-100) RP ASSY			
303	A-2070-753-A s	MSATA (SC1) ASSY (RP)			
304	1-528-174-33 s	BATTERY, LITHIUM (CR2032 TYPE)		7-682-947-01 s	SCREW +PSW 3X6
305	1-970-059-11 s	HARNESS, SUB (MB-SW/DIO)			
306	1-970-061-11 s	HARNESS, SUB (MB-IF)			
307	1-970-063-11 s	HARNESS, SUB (MB-CN)			
308	⚠ 1-970-064-11 s	HARNESS, SUB (MB-POWER)			
309	1-970-065-11 s	HARNESS, SUB (MB-IAP PW)			
310	1-970-066-11 s	HARNESS, SUB (MB-IAP CPU PW)			
311	1-970-067-11 s	HARNESS, SUB (MB-IAP CTL)			
312	1-970-161-11 s	WIRE, CONNECTOR WITH LEAD			
313	3-729-076-11 s	SCREW (+B) (2X4)			
314	4-473-456-01 s	SHEET(CPU), RADIATION			
315	4-546-058-02 s	SUPPORT, PCI BOARD			
316	6-722-143-01 s	IC HMT451S6BFR8A-PBN0			

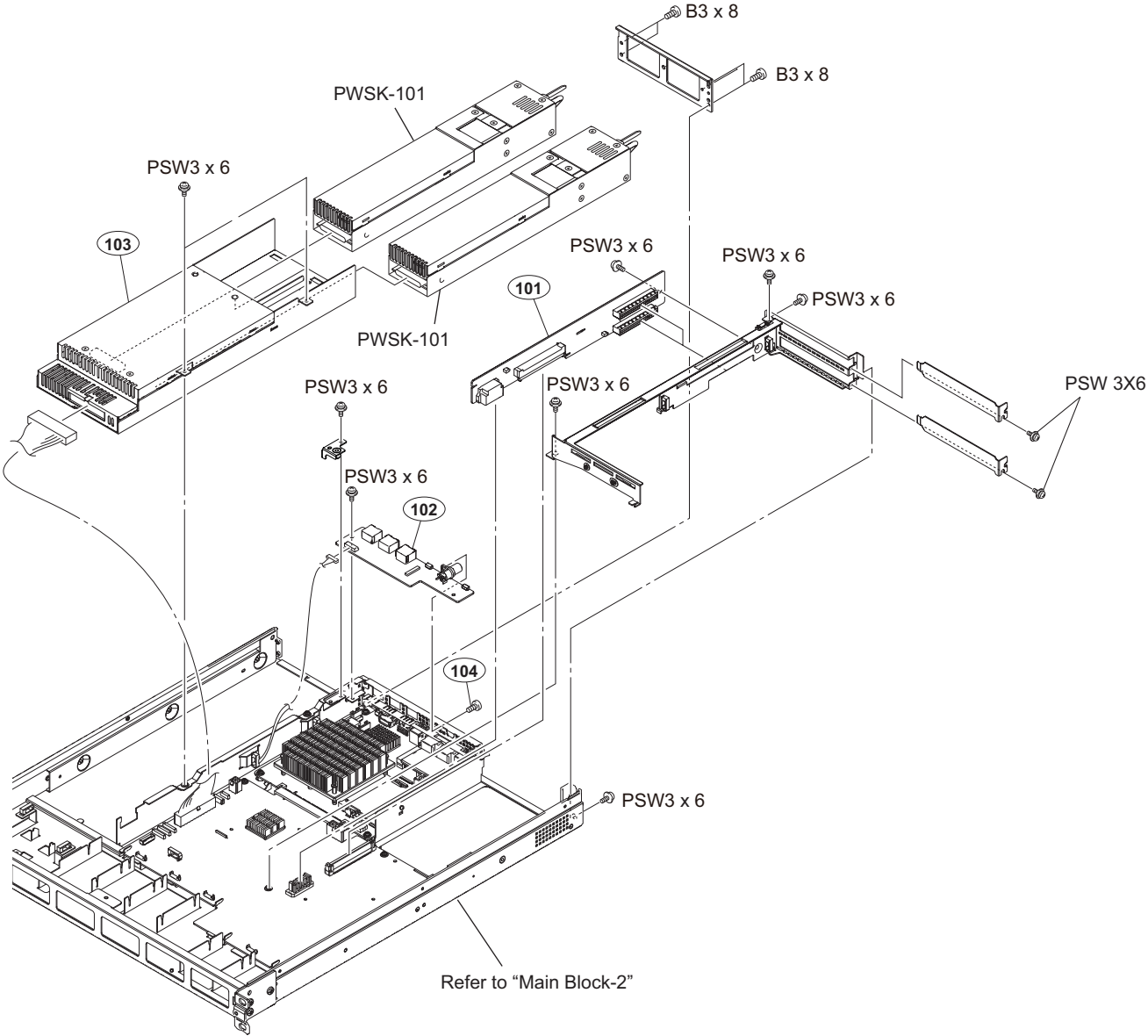
7-5. Exploded Views (PWS-110SC1)

Overall



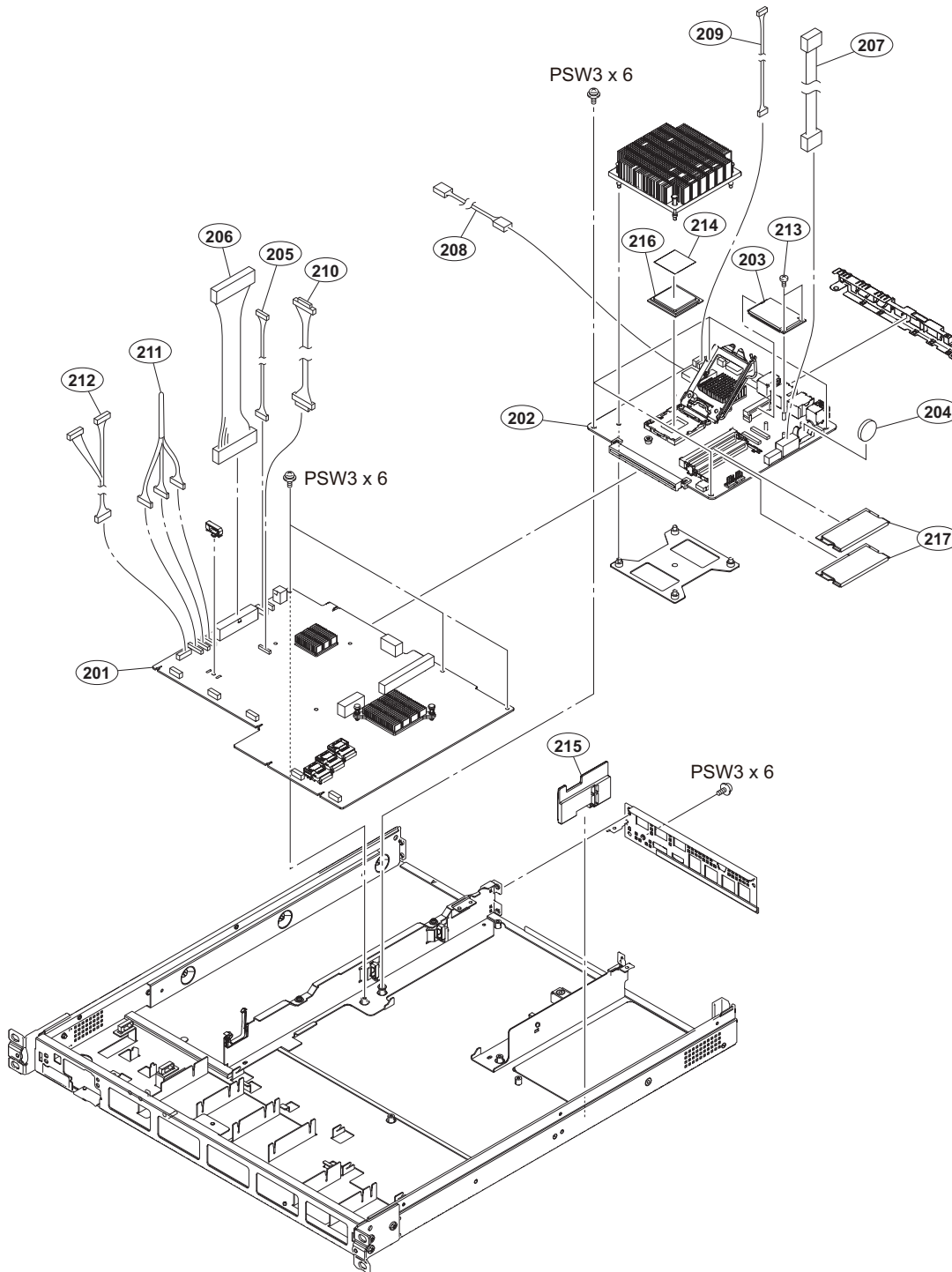
No.	Part No.	SP Description	No.	Part No.	SP Description
1	A-1998-530-A s	FAN ASSY		A-2128-427-A s	PANEL (110SC1) ASSY (CN),FRON [for CN]
2	A-2040-582-A s	LED-527 MOUNT		7-682-560-09 s	SCREW +B 4X6
3	A-2040-583-A s	SW-1627 MOUNT		7-682-947-01 s	SCREW +PSW 3X6
4	A-2040-588-B s	DIO-98 MOUNT		*1 7-682-947-09 s	SCREW +PSW 3X6
5	A-2128-417-A s	PANEL (110) ASSY, FRONT [for SY]			

Main Block-1



No.	Part No.	SP Description
101	A-2040-584-A s	RC-110 MOUNT
102	A-2040-589-A s	CN-3698 MOUNT
103	⚠ 1-474-591-12 s	OPTION
104	2-655-586-01 s	SCREW +B M2.6 EG
	7-682-548-04 s	SCREW +B 3X8
	7-682-947-01 s	SCREW +PSW 3X6

Main Block-2



No.	Part No.	SP Description	No.	Part No.	SP Description
201	A-2040-590-A	s MB-1204 COMPL	213	3-729-076-11	s SCREW (+B) (2X4)
202	A-2047-105-A	s IAP BOARD (PWS-100) RP ASSY	214	4-473-456-01	s SHEET(CPU), RADIATION
203	A-2070-753-A	s MSATA (SC1) ASSY(RP)	215	4-546-058-02	s SUPPORT, PCI BOARD
204	1-528-174-34	s BATTERY, LITHIUM (CR2032 TYPE)	216	6-721-446-01	s IC CM8063701211600S-R0PK
205	1-970-063-11	s HARNESS, SUB (MB-CN)	217	6-722-143-01	s IC HMT451S6BFR8A-PBN0
206	⚠ 1-970-064-11	s HARNESS, SUB (MB-POWER)		7-682-947-01	s SCREW +PSW 3X6
207	1-970-065-11	s HARNESS, SUB (MB-IAP PW)			
208	1-970-066-11	s HARNESS, SUB (MB-IAP CPU PW)			
209	1-970-067-11	s HARNESS, SUB (MB-IAP CTL)			
210	1-970-161-11	s WIRE, CONNECTOR WITH LEAD			
211	1-971-395-11	s HARNESS, SUB (MB-SHORT)			
212	1-971-396-11	s HARNESS, SUB (MB-SW/DIO_B)			

7-6. Supplied Accessories

ICP-X7000

Part No.	SP Description
△ 1-492-005-13	s ADAPTOR, AC
3-179-054-02	s TOOL, CAP PULL
3-853-743-04	s PLATE, DIFFUSION (12)
3-853-744-04	s PLATE, DIFFUSION (15)
3-863-312-11	s SW COVER12
3-863-313-11	s SW COVER15
3-872-255-01	s ADAPTER
4-145-368-01	s CAP (15X)
4-145-369-01	s CAP (12)
4-145-371-01	s CAP (15)
4-558-357-01	s BALL, TRACK
4-559-097-01	s COVER(R), PANEL
4-559-098-01	s COVER(L), PANEL
4-564-812-01	s SHEET (VTR CONTROL)
4-567-371-02	s CD-ROM
△ 4-567-840-03	s OPERATING INSTRUCTIONS
4-568-934-01	s CHIP (2ME), SW
4-568-935-01	s CHIP (AUX), SW
4-568-936-01	s CHIP (COMMON1), SW
4-568-937-01	s CHIP (COMMON2), SW
7-682-947-01	s SCREW +PSW 3X6
7-682-961-01	s SCREW +PSW 4X8

MKS-X2700/X7700

Part No.	SP Description
1-695-542-21	s TERMINATOR 75
1-779-713-12	s CONNECTOR, COAXIAL
4-567-371-02	s CD-ROM
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7011

Part No.	SP Description
△ 1-492-005-13	s ADAPTOR, AC
3-872-255-01	s ADAPTER
4-567-371-02	s CD-ROM
△ 4-567-840-03	s OPERATING INSTRUCTIONS
7-682-947-01	s SCREW +PSW 3X6
7-682-961-01	s SCREW +PSW 4X8

MKS-X7017/X7018/X7019

Part No.	SP Description
1-970-672-11	s HARNESS (PANEL IF M)
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7020/X7024/X7026/X7033/X7035

Part No.	SP Description
1-970-676-11	s HARNESS (PANEL IF L)
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7021/X7023/X7032

Part No.	SP Description
1-970-676-11	s HARNESS (PANEL IF L)
3-704-046-31	s BAG, PREVENTION, ELECTRIFICATION
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7031TB

Part No.	SP Description
1-970-676-11	s HARNESS (PANEL IF L)
4-558-357-01	s BALL, TRACK
4-564-812-01	s SHEET (VTR CONTROL)
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7040/X7041/X7042

Part No.	SP Description
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7075

Part No.	SP Description
△ 1-492-005-13	s ADAPTOR, AC
1-970-672-11	s HARNESS (PANEL IF M)
4-559-097-01	s COVER(R), PANEL
4-559-098-01	s COVER(L), PANEL
4-559-099-01	s COVER, MODULE
4-567-371-02	s CD-ROM
△ 4-567-840-03	s OPERATING INSTRUCTIONS

MKS-X7701

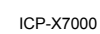
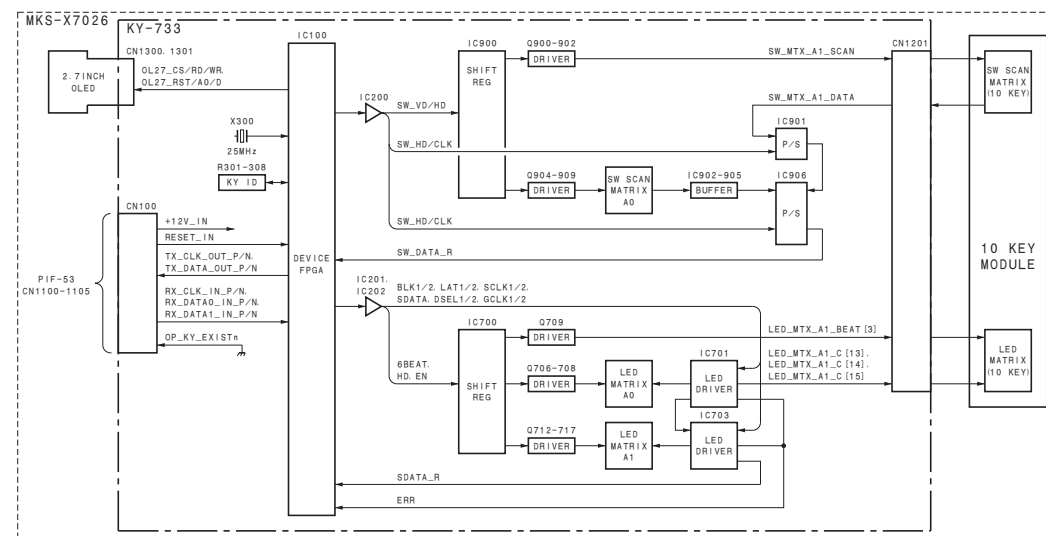
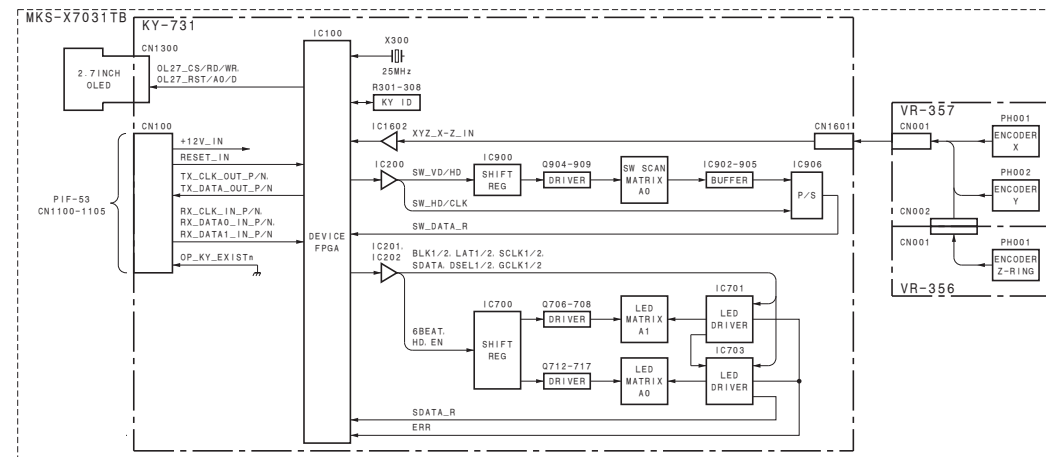
Part No.	SP Description
△ 4-567-840-03	s OPERATING INSTRUCTIONS

PWS-100SC1/PWS-110SC1

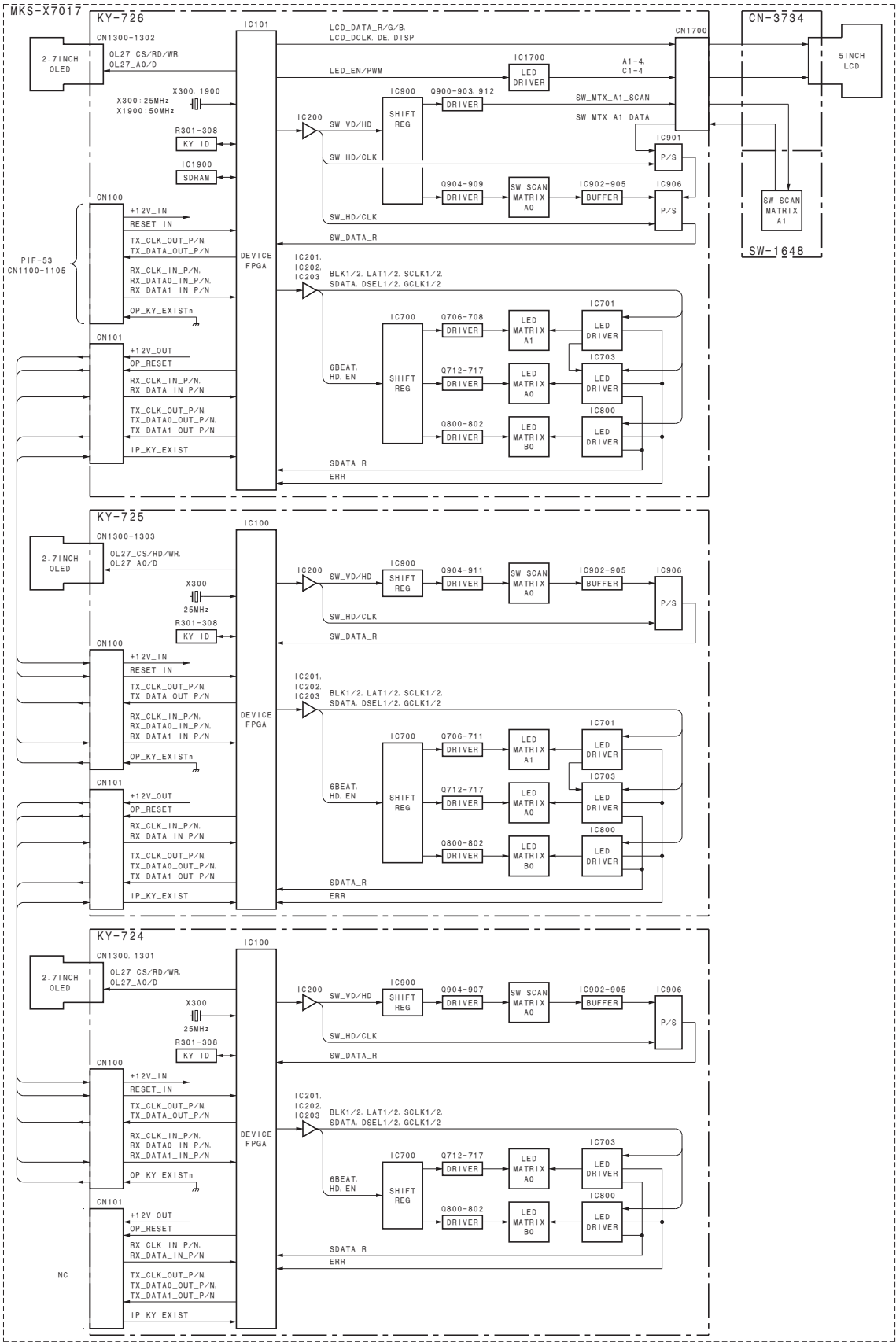
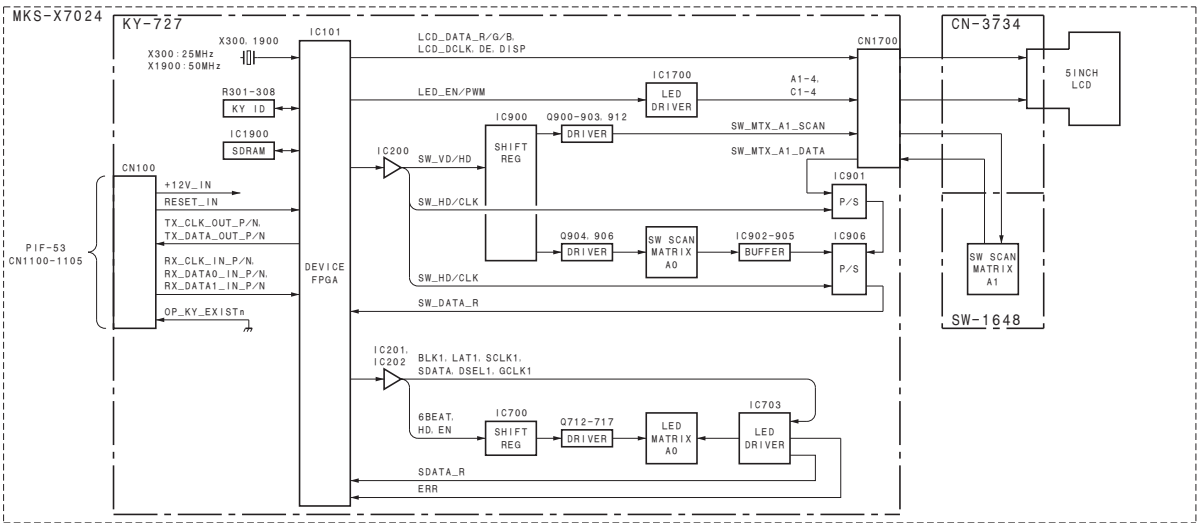
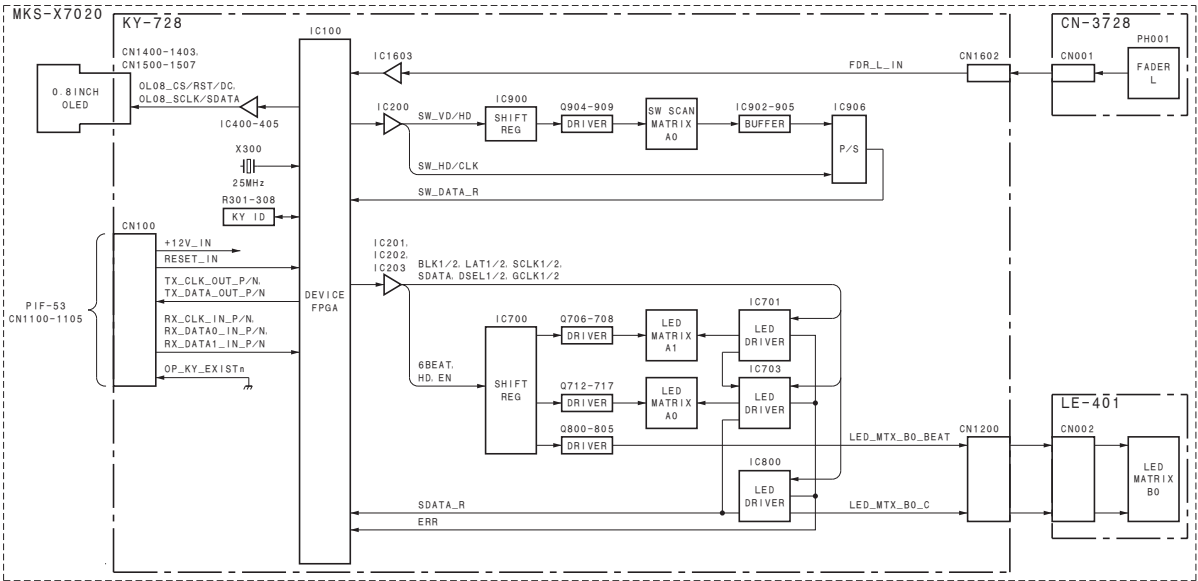
Part No.	SP Description
△ 1-833-005-12	s AC POWER-SUPPLY CORD (CN)
4-567-371-02	s CD-ROM
△ 4-567-841-01	s OPERATING MANUAL

Block Diagrams (ICP-X7000)

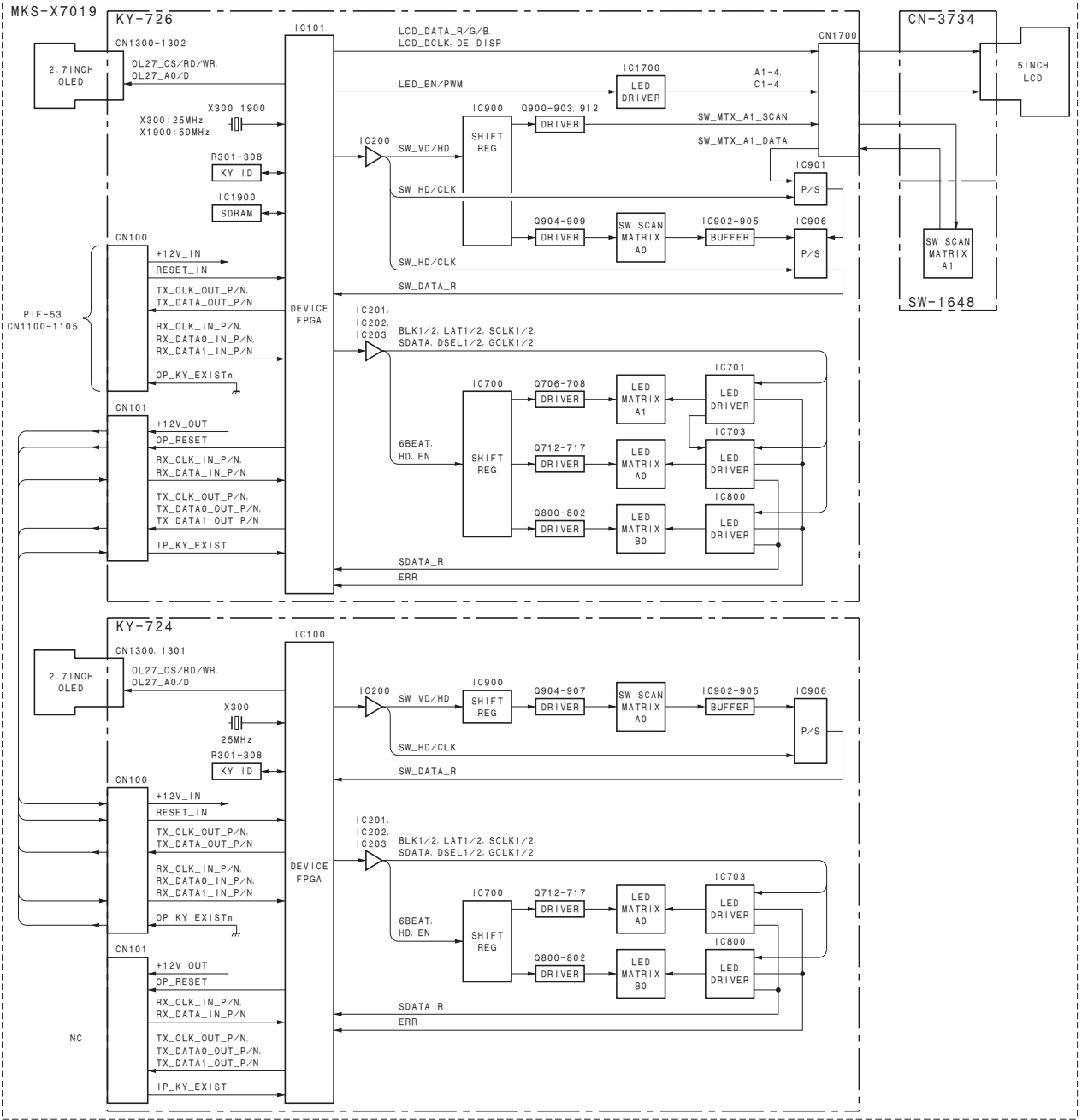
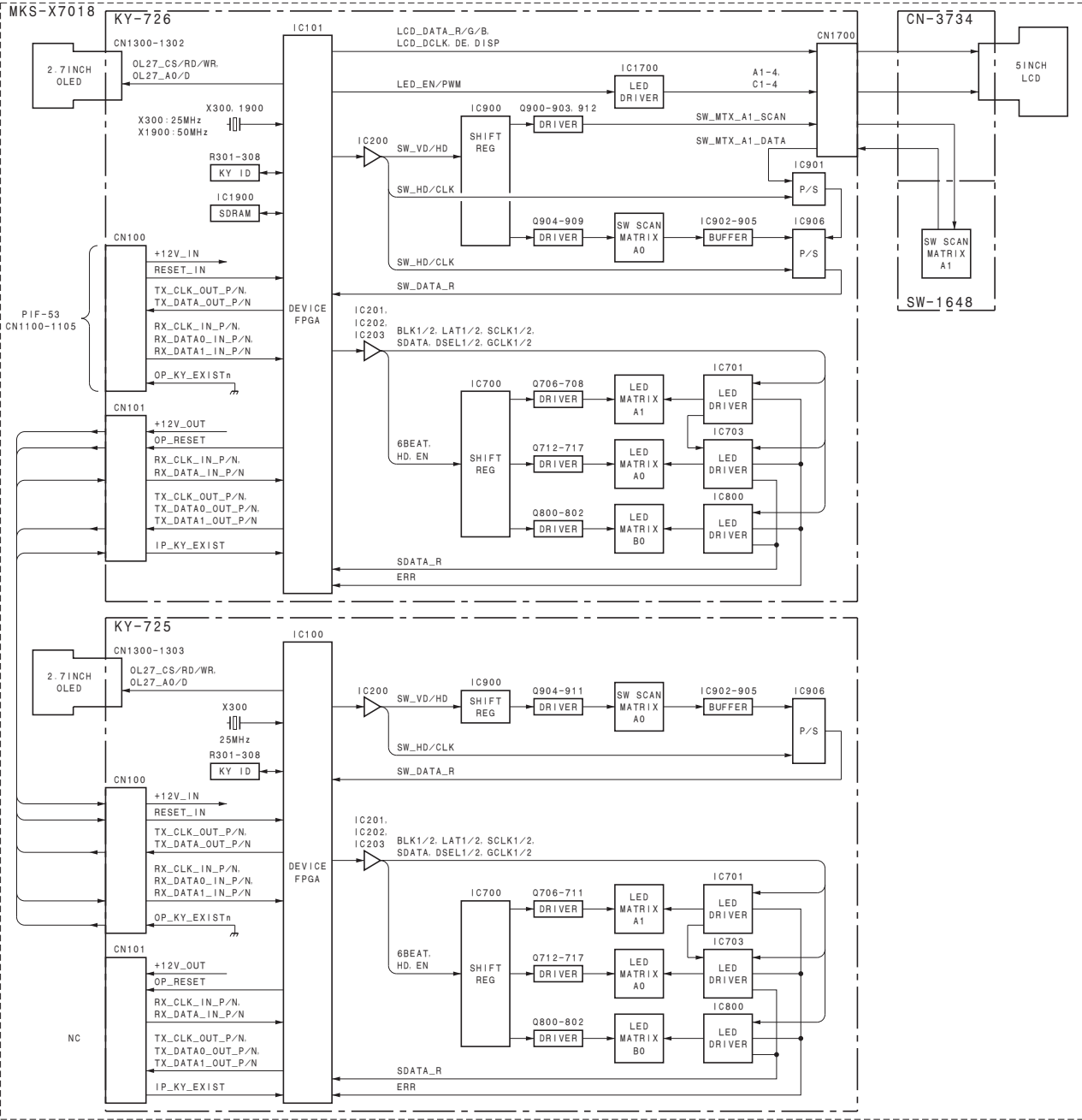
Overall (MKS-X7026/X7031TB/X7033/X7035/X7075)



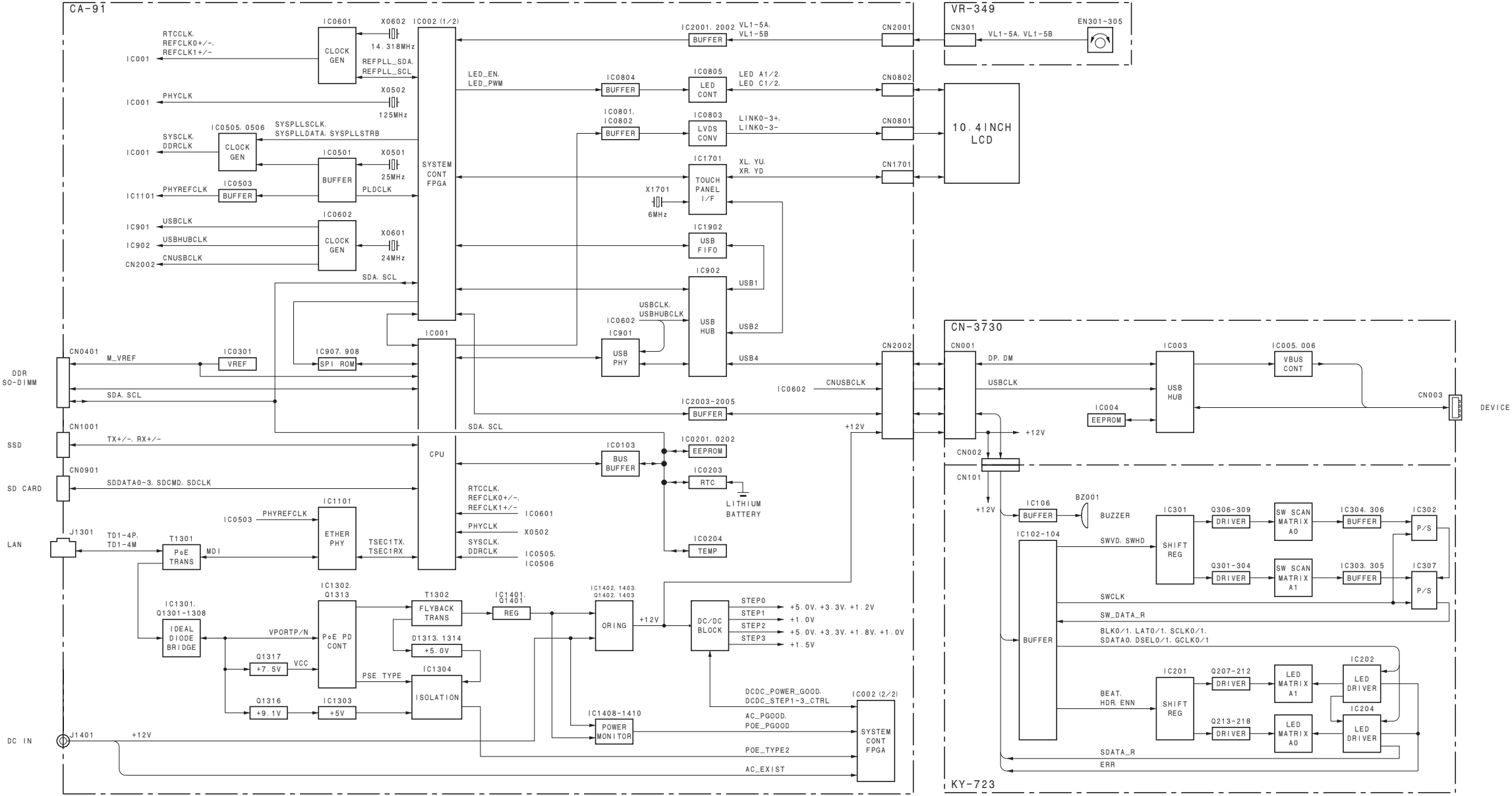
Overall (MKS-X7017/X7020/X7024)



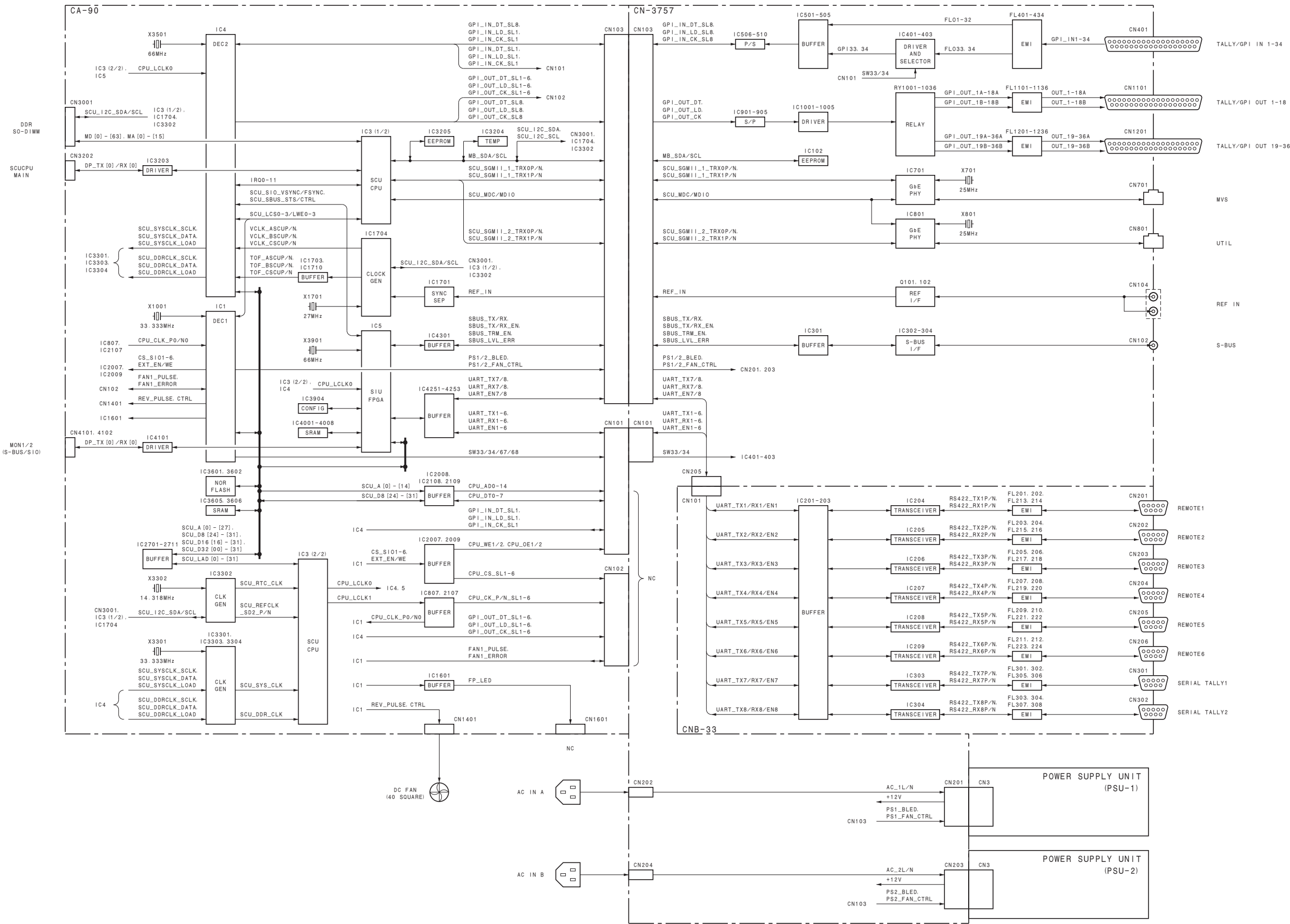
Overall (MKS-X7018/X7019)

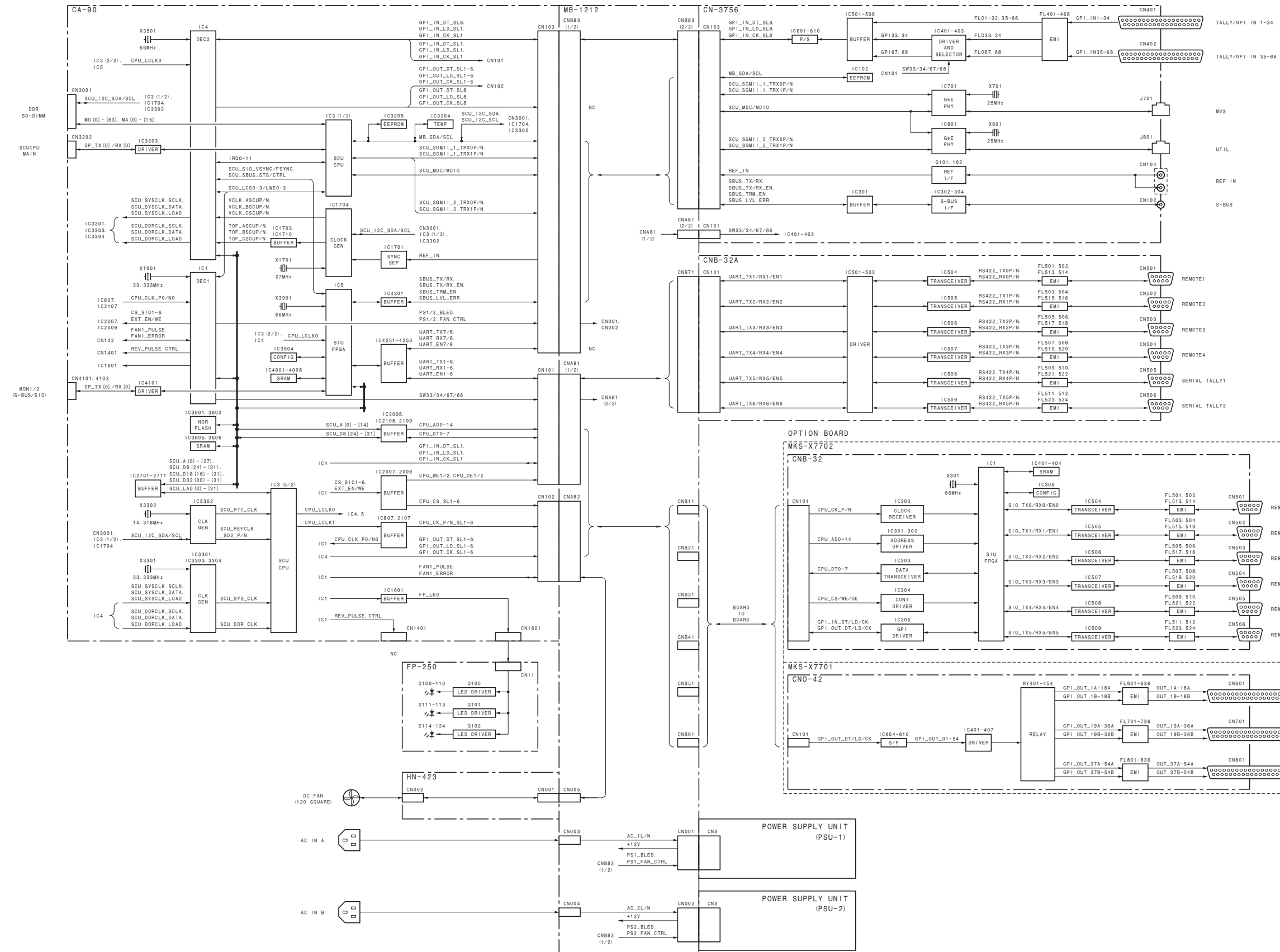


Overall (MKS-X7011)

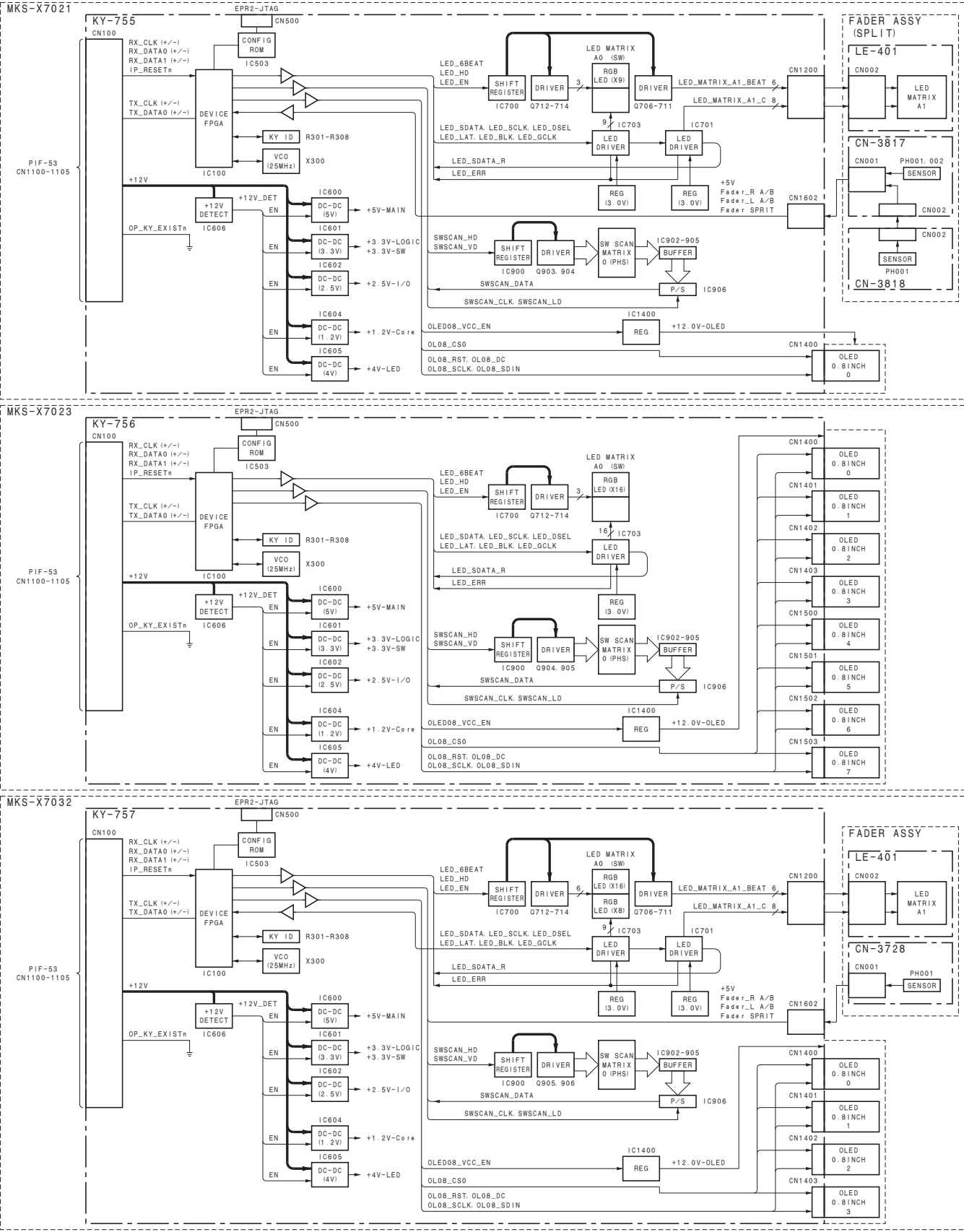


Overall (MKS-X2700)



Overall (MKS-X7700)

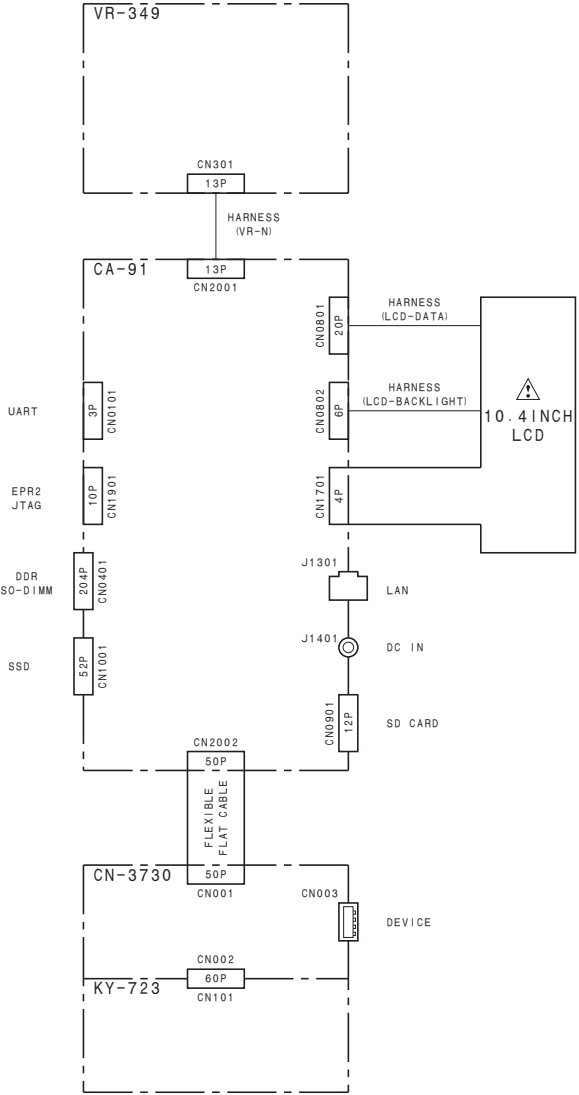
Overall (MKS-X7021/X7023/X7032)



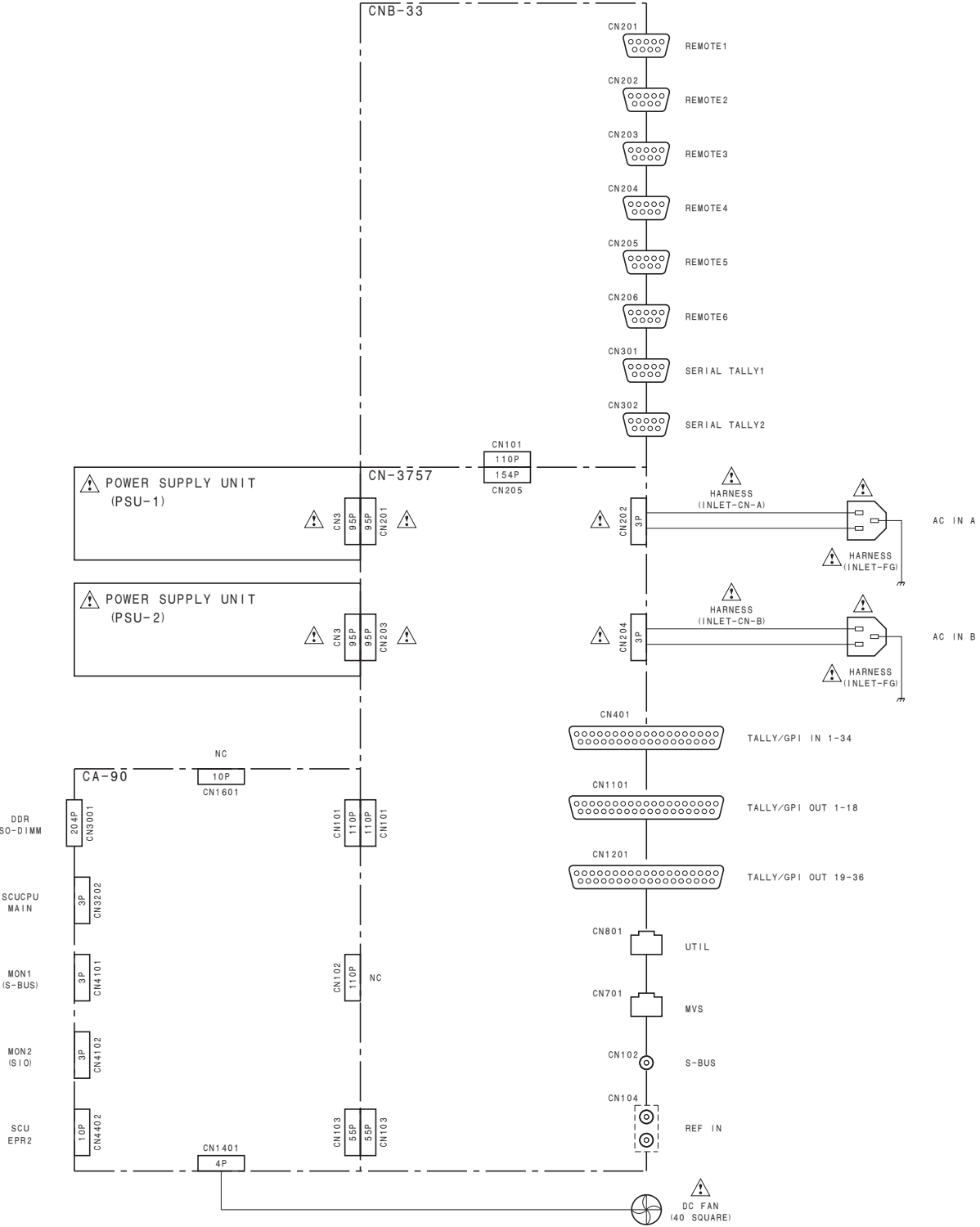
Frame Wiring (MKS-X7017/X7018/X7019/X7020/X7021/X7023/X7024/X7026/X7031TB/X7032/X7033/X7035/X7075)



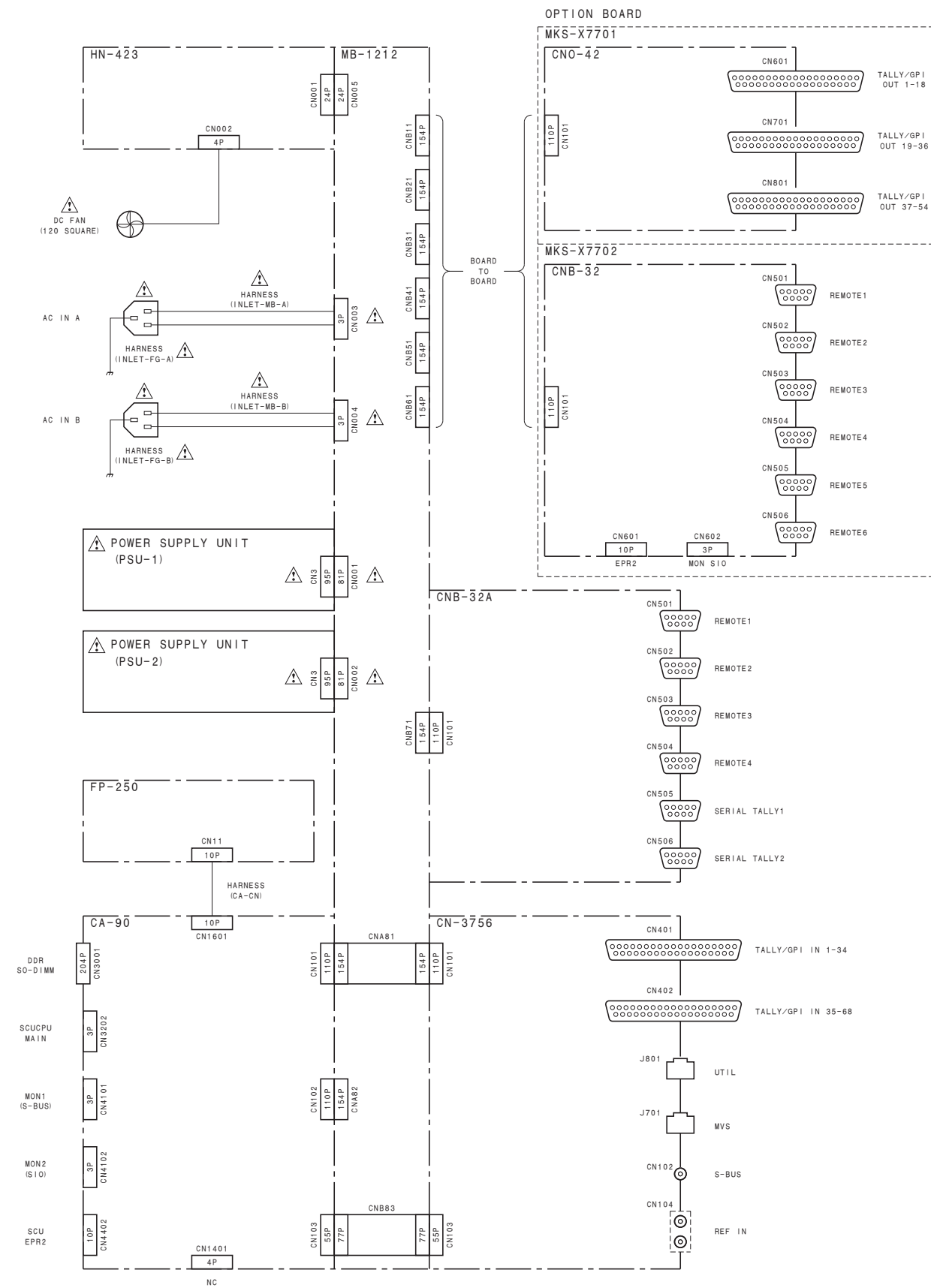
Frame Wiring (MKS-X7011)



Frame Wiring (MKS-X2700)

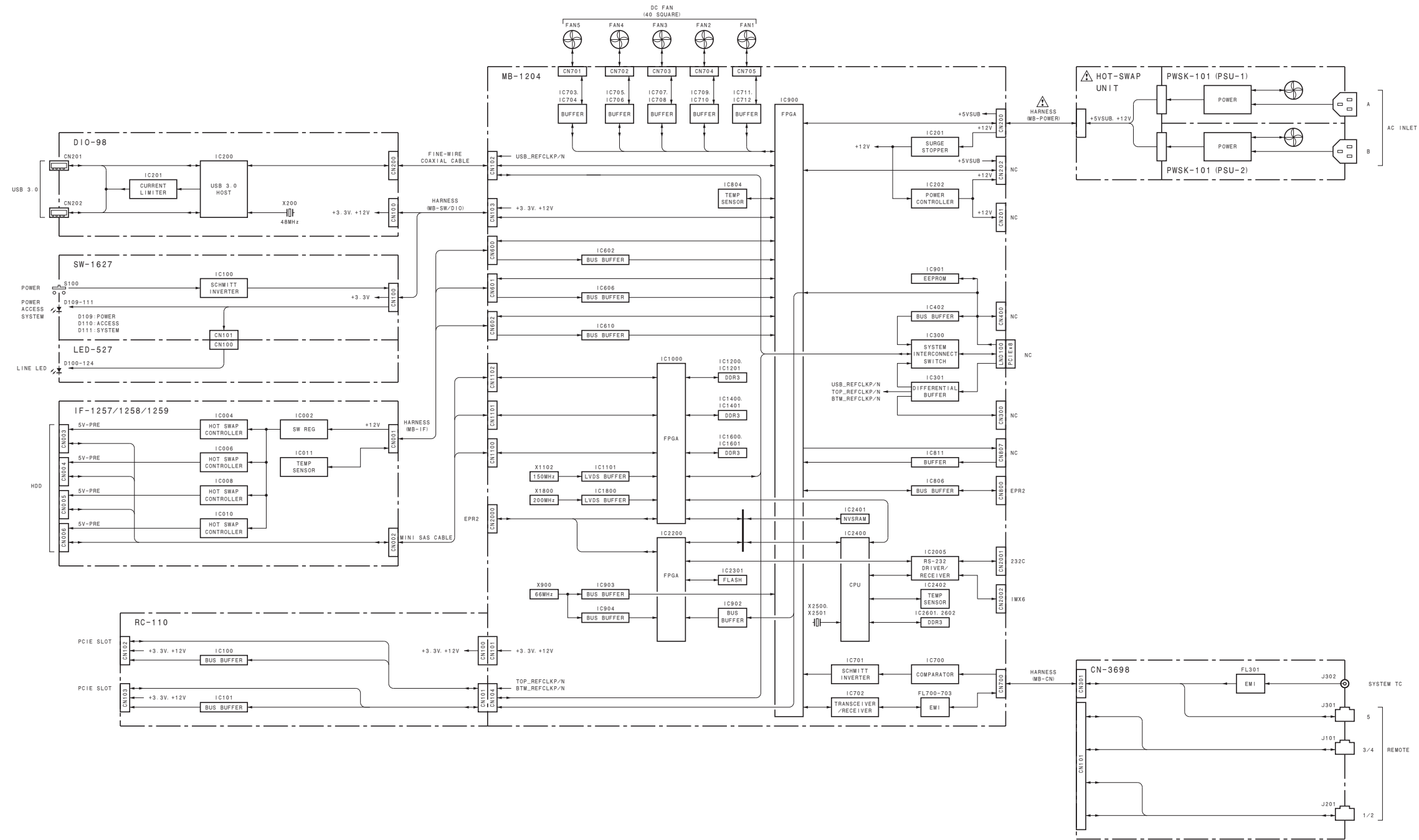


Frame Wiring (MKS-X7700/X7701/X7702)



Block Diagrams and Frame Wiring

Overall (PWS-100SC1)



Overall (PWS-110SC1)

