

SONY®

CAMERA CONTROL NETWORK ADAPTOR

CNA-1

MAINTENANCE MANUAL

1st Edition

Serial No. 10001 and Higher

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.

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。

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.

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.

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.

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.

PAS PÅ

Fare for eksplosion, 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.

HUOMIO

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

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 document is the maintenance manual of Camera Control Network Adaptor CNA-1.

When servicing this unit, parts are replaced on a board basis in principle. Therefore, this manual includes no circuit diagram or board layout.

Related manual

The following manual is provided for this unit in addition to this “Maintenance Manual”.

If you need the manual, contact your local Sony Sales Office/Service Center.

- **Operation Manual (Supplied with this unit)**

This manual contains information required to operate and maintain the unit.

- **Technical Manual**

This is a technical manual for customers to develop systems by using this unit.

Section 1

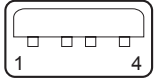
Service Overview

1-1. Connectors and Cables

1-1-1. Connector Input/Output Signals

USB

USB (Series A), 4-pin
Signal standard: USB standard Ver. 2.0



- External View -

No.	Signal	I/O	Specifications
1	VCC	OUT	+5 V DC (100 mA)
2	D-	IN/ OUT	Data-
3	D+	IN/ OUT	Data+
4	GND	-	GND

CCU REMOTE

8-pin, Female

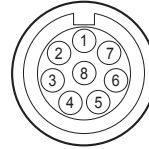


- External View -

No.	Signal	I/O	Specifications
1	TX (+)	OUT	Gateway serial data (+)
2	TX (-)	OUT	Gateway serial data (-)
3	RX (+)	IN	CCU serial data (+)
4	RX (-)	IN	CCU serial data (-)
5	TX GND	-	GND for data
6	POWER (+) IN	IN	+10.5 V to +30.0 V
7	POWER (-) IN	-	GND for power
8	NC	-	No connection

AUX REMOTE

8-pin, Female

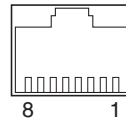


- External View -

No.	Signal	I/O	Specifications
1	TX (+)	OUT	Gateway serial data (+)
2	TX (-)	OUT	Gateway serial data (-)
3	RX (+)	IN	RCP serial data (+)
4	RX (-)	IN	RCP serial data (-)
5	TX GND	-	GND for data
6	POWER (+) OUT	OUT	+10.5 V to +30.0 V
7	POWER (-) OUT	-	GND for power
8	NC	-	No connection

LAN

8-pin, RJ-45, 10Base-T/100Base-TX

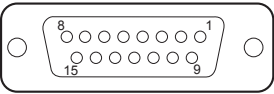


- External View -

No.	Signal	I/O	Specifications
1	TX (+)	OUT	Transmitted data (+)
2	TX (-)	OUT	Transmitted data (-)
3	RX (+)	IN	Received data (+)
4	NC	-	No connection (PoE PW IN)
5	NC	-	No connection (PoE PW IN)
6	RX (-)	IN	Received data (-)
7	NC	-	No connection (PoE PW IN)
8	NC	-	No connection (PoE PW IN)

EXT I/O

D-sub, 15-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	422 TX (+)	OUT	RS-422A TX data (+)
2	422 TX (-)	OUT	RS-422A TX data (-)
3	422 RX (+)	IN	RS-422A RX data (+)
4	422 RX (-)	IN	RS-422A RX data (-)
5	GND	—	GND for data
6	232 TXD	OUT	RS-232C TX data
7	232 RXD	IN	RS-232C RX data
8	GND	—	GND for data
9	RESERVE (GPIO)	IN	GPIO 1 in port
10	RESERVE (GPIO)	IN	GPIO 2 in port
11	RESERVE (GPIO)	IN	GPIO 3 in port
12	RESERVE (GPIO)	OUT	GPIO 4 out port
13	RESERVE (GPIO)	OUT	GPIO 5 out port
14	EXT POWER IN	IN	+10.5 V to +17.0 V
15	GND	—	GND for power

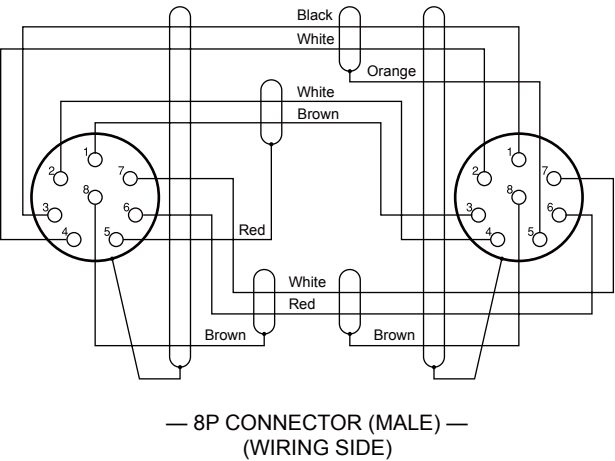
1-1-3. Connection Connectors/Cables

Connection made with the connector panels during installation or service, should be made with the connectors/complete cable assemblies specified in the following list, or equivalent parts.

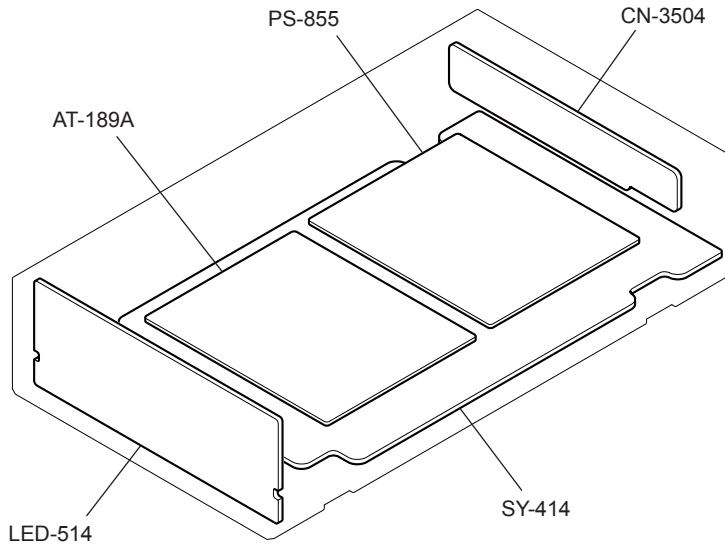
Connector Name	Connector/Cable
CCU REMOTE AUX REMOTE	1-766-848-11 PLUG, 8P Male or CCA cable assembly (optional), CCA-5-10 (10 m), CCA-5-3 (3 m)
LAN	LAN cable (commercially available, shield type, category 5 or higher)
EXT I/O	1-506-582-11 D-sub15P, Male or (D-sub 15P, Female) JAE DA-CI-J10 equivalent

1-1-2. Wiring Diagrams for Cables

CCA-5 Cable (for REMOTE connector)



1-2. Location of Printed Circuit Boards



1-3. Circuit Description

1-3-1. SY-414 Board

The SY-414 board contains multiple local power circuits to supply necessary power voltages to each block.

Input power is changed in the PS-855 board, and a voltage of 10.5 to 30 V is stepped down to 5.5 V by the first switching regulator (IC607) on the SY-414 board.

- IC605 is a switching regulator IC that generates 3.7 V to be supplied to the AT-189A board.
- IC606 is a switching regulator IC that generates 3.3 V to be used in the SY-414 board.
- IC608 is a switching regulator IC that generates 2.5 V for the FPGA on the SY-414 board.
- IC609 is a switching regulator IC that generates 1.2 V for the FPGA on the SY-414 board.
- IC508 is a switching regulator IC that generates 5.0 V for the communication driver IC (IC507) on the SY-414 board.
- IC202 is a switching regulator IC that generates 5.0 V for the LEDs on the LED-514 board.
- IC5 is a switching regulator IC that supplies power to the USB connector on the SY-414 board.
- IC4 is a power IC for charging the RTC backup battery on the SY-414 board.

IC6 is an RTC IC that oscillates 32-KHz clock to be the reference signal of the AT-189A board.

IC3 separates the address bus and the data bus from the AT-189A board.

IC1 and IC2 reset the 3.2 V power system.

IC103 is an LAN control IC. IC105 that contains the MAC address must not be replaced.

IC401 (FPGA) that is the main function of the SY-414 board controls the LEDs on the LED-514 board, CCA cable communication, and the PIO.

IC507 is a driver to the CCA cable. The RS-422 communication system is used.

PH501 and PH502 are photocouplers to receive data through the CCA cable communication.

1-3-2. PS-855 Board

The PS-855 board is a circuit that mainly switches the PoE (Power over Ethernet) power circuit and the external power.

IC101 is a switching regulator IC of the PoE controller, which performs negotiation with the PoE hub and sends information on necessary supply power to the PoE hub.

Furthermore, IC101 functions as a switching regulator when PoE power is input, configuring an insulation switching regulator.

IC102 feeds back the PoE regulator output to IC101.

IC2 to IC4 function as ideal diodes, which check the potential difference of each input and turn on the power circuit of the highest voltage with the FET.

IC103 monitors the PoE power so that it does not rise when the external power is input.

IC001 detects low voltage of the input power.

1-3-3. LED-514 Board

The LED-514 board controls indication of the LEDs on the front panel.

IC1 and IC2 latch LED indication data.

IC3 and IC4 latch data for indication of the 7-segment LED for displaying a device number.

1-3-4. CN-3504 Board

The CN-3504 board is a connector board for the CCA cable.

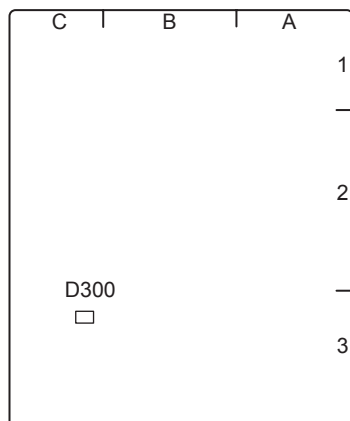
1-3-5. AT-189A Board

The AT-189A board consists of a system control microcomputer (IC200) and a peripheral circuit required for the operation of this system control microcomputer (IC200).

The main program is stored in the flash memory (IC401) on the AT-189A board.

1-4. Functions of Onboard Parts (LED Indicators/Switches)

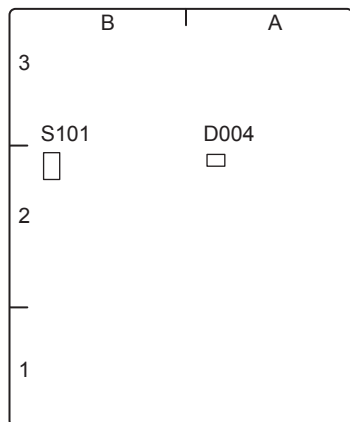
AT-189A Board



AT-189A board (side A)

Ref. No.	Name	Color	Description	Factory setting
D300	–	Green	Factory use	–

PS-855 Board



PS-855 board (side A)

Ref. No.	Name	Color	Description	Factory setting
D004	–	Green	Factory use	–
S101	PoE CLASS	–	PoE CLASS 2: Class 2 0: Class 0	2

SY-414 Board



SY-414 board (side A)

Note

Do not change the settings of switches.

Ref. No.	Name	bit	Color	Description	Factory setting
D1	STATUS	–	Green	Factory use	–
D4	–	–	Green	Factory use	–
S1	JTAG EN	–	–	Factory use	OFF
S2	MODE	1 to 4	–	For writing the ROM data	OFF
S201	–	1 to 8	–	Reserve	OFF

1-5. Notes for Replacing Boards

1-5-1. Actions to be Taken after Replacement of the SY-414 Board

A serial number must be set again after the SY-414 board has been replaced. For details, contact your local Sony Sales Office/Service Center.

1-6. Service Menu

The Service menu consists of the following items.

- Firmware Update
- Diagnosis
- System Control
- Factory Level Installation
- System Information

Camera Control Network Adaptor SONY

Status System CNS Security Log **Service**

1. Firmware Update

Current Version
 Application: V1.00
 OS: V1.00
 FPGA: V1.00

Update File

2. Diagnosis

I/O Test

3. System Control

Reboot ☐ Check this box and click "Reboot" button
 Factory Default ☐ Check this box and click "Factory Default" button

4. Factory Level Installation

Serial Number

5. System Information

Version details
 Application: V1.00-20120411
 Configuration: Sct1.0/Tcf1.0
 OS: V1.00-20120406
 FPGA: V1.00

Uptime Uptime[sec] / Idle-time[sec]
 41.47 0.02

CPU Load average 0.00 0.00 0.00 1/44 308

Network

Statistics									
Inter- Receive					Transmit				
face	bytes	packets	errs	drop	fifo	frame	compressed	multicast	bytes
lo:	280	4	0	0	0	0	0	0	280
eth0:	3829	33	0	0	0	0	0	24	1032

ARP table	IP address	HW type	Flags	HW address	Mask	Device
	192.168.0.252	0x1	0x2	00:50:da:08:76:34	*	eth0

TCP connections

Active Internet connections (w/o servers)				Foreign Address	State
Proto	Recv-Q	Send-Q	Local Address		
tcp	0	0	192.168.0.228:80	192.168.0.252:2175	TIME_WAIT
tcp	0	0	192.168.0.228:80	192.168.0.252:2177	ESTABLISHED

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1-6-1. Service Menu Starting Procedure

1. Connect a personal computer (PC hereinafter) to this unit with the LAN interface through a switching hub or a LAN cable.
2. Run the PC's web browser and enter the following URL in the address bar.
<http://IP address of the unit/service/>

Note

If the IP address remains unchanged from the initial setting, the IP address is as follows.
<http://192.168.1.1/service/>

3. When the authentication window opens, enter a user name and a password.
 User name: service
 Password: cax-237-gateway
4. The Service menu is displayed.

1-6-2. Updating Firmware Programs

This unit contains the following three types of firmware which can be updated individually.

The following lists ROM data files corresponding to each firmware type.

For how to obtain these ROM data files, contact your local Sony Sales Office/Service Center.

- Application: CNA-1_app.pkg
- OS: CNA-1_os.pkg
- FPGA: CNA-1_fpga.pkg

Notes

- Do not turn off the power or unplug the network cable during firmware update. Doing so will prevent the unit from rebooting.
- Though the browser does not respond while firmware is being updated or a ROM data file is being uploaded, do not exit or reload the browser.

Updating procedure

1. Display the Service menu. (Refer to Section 1-6-1.)
2. Click the [Browse] button of item “1. Firmware Update.”
The file selection menu is displayed.
3. Select the ROM data file to be updated.
4. Confirm that the file name is shown in the “Update File” field.
5. Click the [Start Update] button.
6. When the confirmation window opens, click the [OK] button.
7. The firmware update starts.
“UP” is displayed on the DEVICE NO. indicator of the unit and the ALARM indicator blinks during update.
8. Upon completion of update, the unit automatically restarts.

Checking version after update is completed

1. Display the Service menu. (Refer to Section 1-6-1.)
2. Check “Current Version” of item “1. Firmware Update.”

1-6-3. Self-diagnosis

Status of LED indicators of the unit can be checked in the self-diagnosis mode.

Starting and exiting the self-diagnosis mode

1. Display the Service menu. (Refer to Section 1-6-1.)
2. Click the [Start/Stop] button of item “2. Diagnosis.”

Checking indicator status

DEVICE NO. indicator:

Confirm that the DEVICE NO. indicator lights repeatedly in the order of 0 → 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 9 → . (dot).

Other indicators:

Confirm that other indicators light repeatedly in the order of ALARM → ACCESS → MASTER → RCP → MSU → CAM → NETWORK → GATEWAY / ACT → LINK / ACT.

1-6-4. Checking System Information

The following kinds of information are displayed for item “5. System information.” Displayed information is updated to the latest information by reloading the page with the browser’s Update button or by other means.

- Version details
Detailed information on each firmware version is displayed.
- Uptime
Accumulated uptime (unit: second) from power-on is displayed. This uptime is reset when the power is turned off.
- CPU Load average
Each average CPU utilization for 1 minute, 5 minutes, and 10 minutes is displayed.
- Network
The network status is displayed.
Statistics: Statistical information on reception and transmission packets is displayed.
ARP table: A list of MAC addresses of other devices in communication with this unit is displayed.
TCP connections: A list of IP addresses and TCP connection status of other devices in communication with this unit is displayed.

1-7. Recovery Mode

If the unit cannot be started correctly due to an error, start the unit in the recovery mode.

When the unit is started in the recovery mode, “Er” is displayed on the DEVICE NO. indicator of the unit and the ALARM indicator blinks. Furthermore, “Recovery” is displayed in “System Run Level” in item “2. System” of the Status menu.

1-7-1. Recovery Procedure

1. Display the System menu. (Refer to the Operation Manual.)
2. Click the [Reboot] button of item “5. System Control” to reboot the unit.

Note

The unit can also be rebooted from item “3. System Control” of the Service menu.

3. To restart the unit in the recovery mode even after it is restarted in step 2, re-update all firmware programs of the Service menu. (Refer to Section 1-6-2.)

If you want to start the unit in the recovery mode even in this operation, contact your local Sony Sales Office/Service Center.

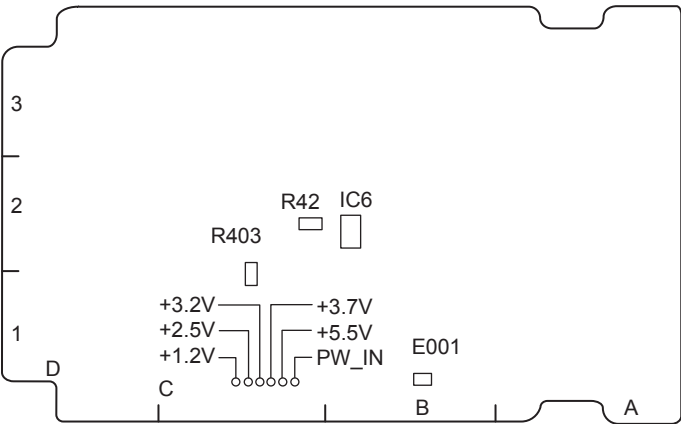
1-8. Troubleshooting

1-8-1. Preparations

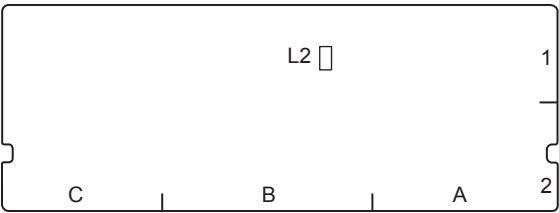
Equipment Required

- Oscilloscope: Tektronix TDS460A or equivalent
- Frequency counter: Advantest TR5821AK or equivalent
- Extended board EX-1247 (for PS-855 board): A-1897-739-A
- Extended board EX-1248 (for AT-189A board): A-1897-740-A

Test Point

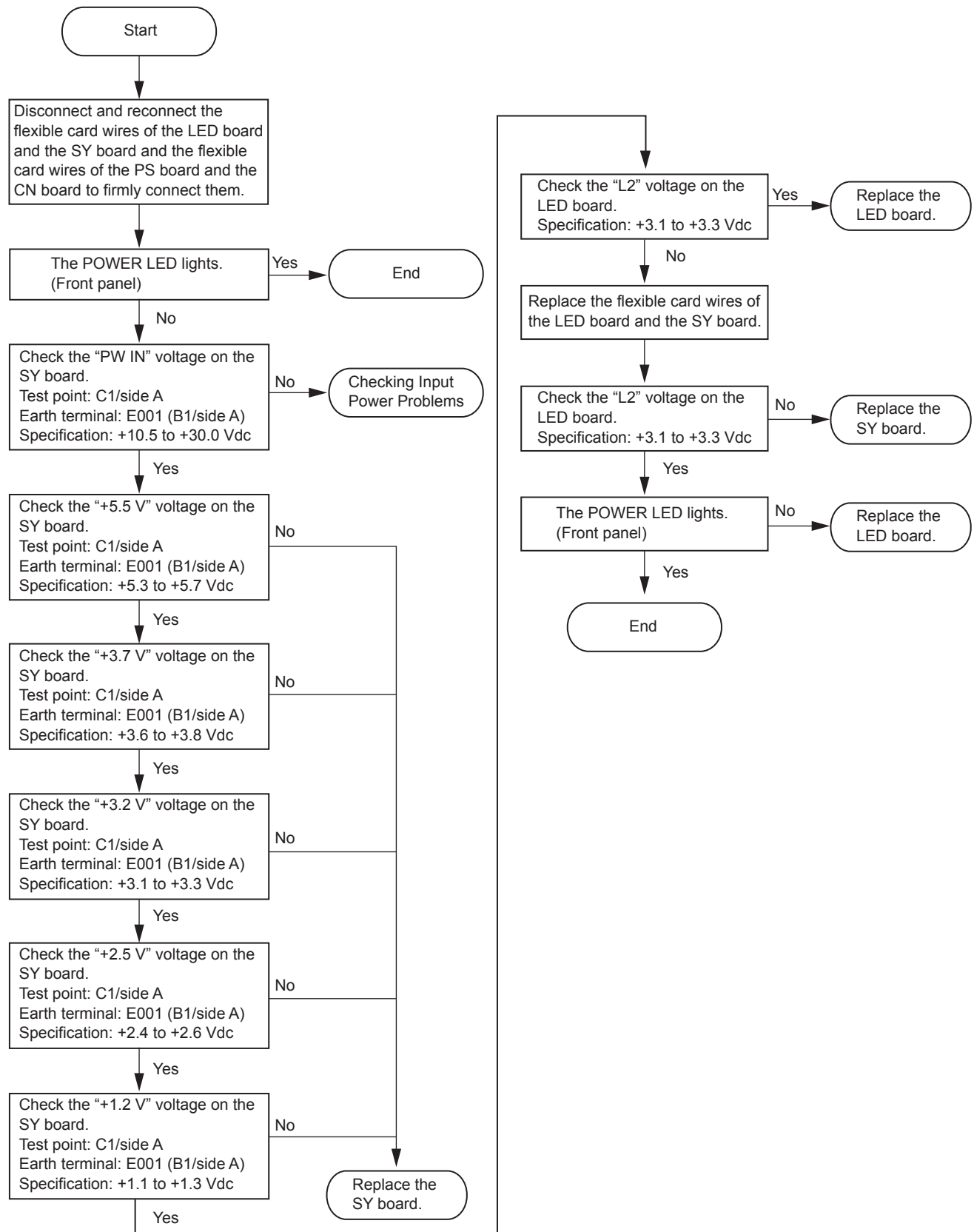


SY-414 board (side A)

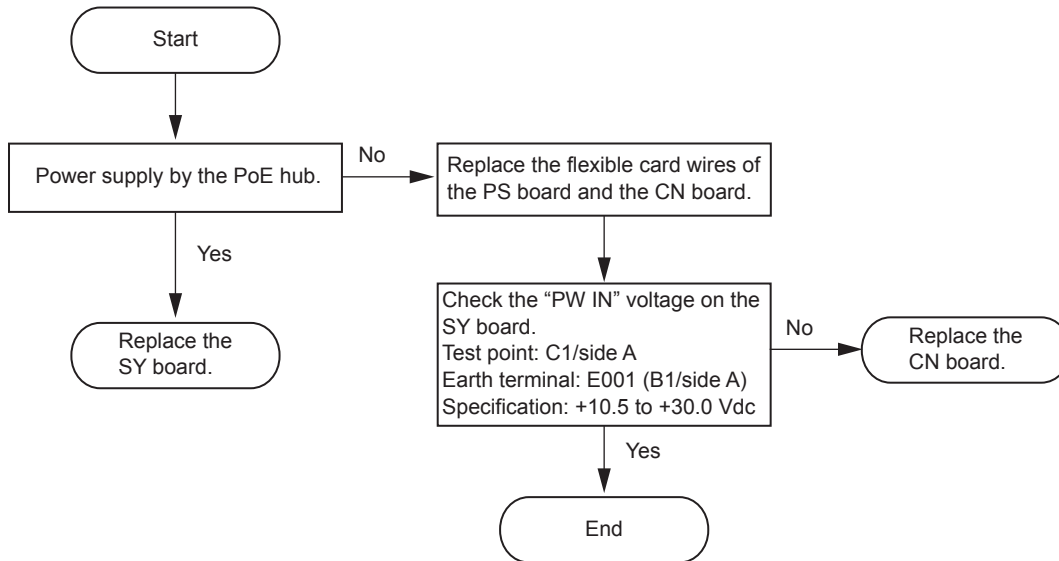


LED-514 board (side B)

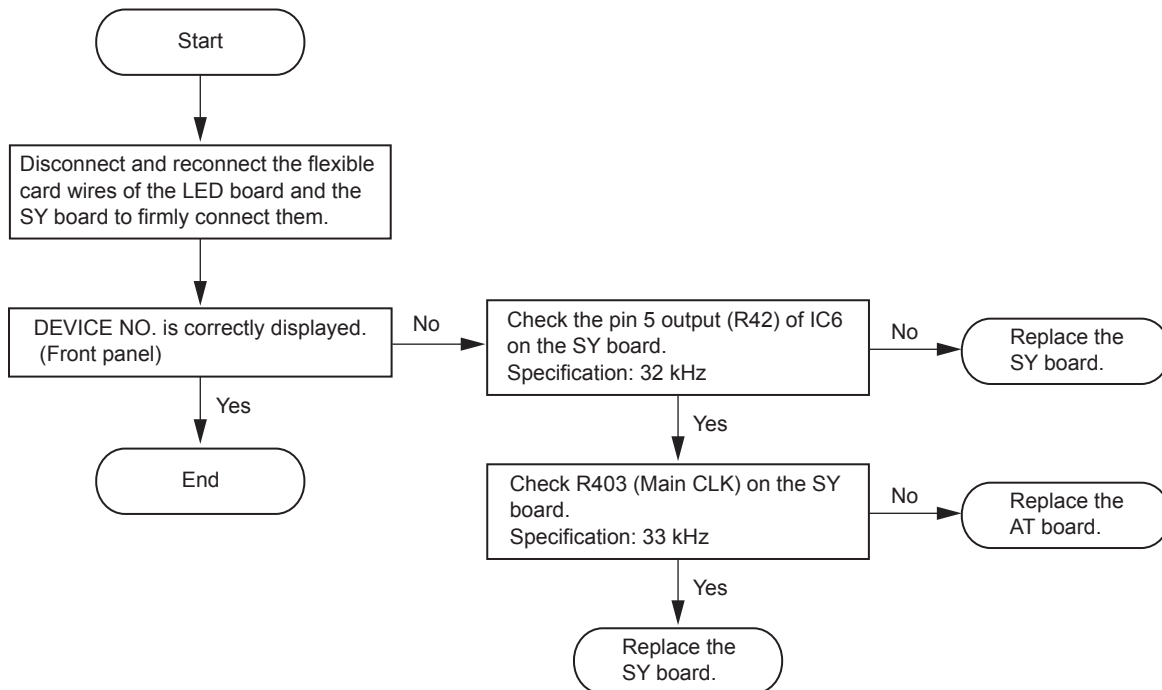
1-8-2. Checking Power Problems



Checking Input Power Problems



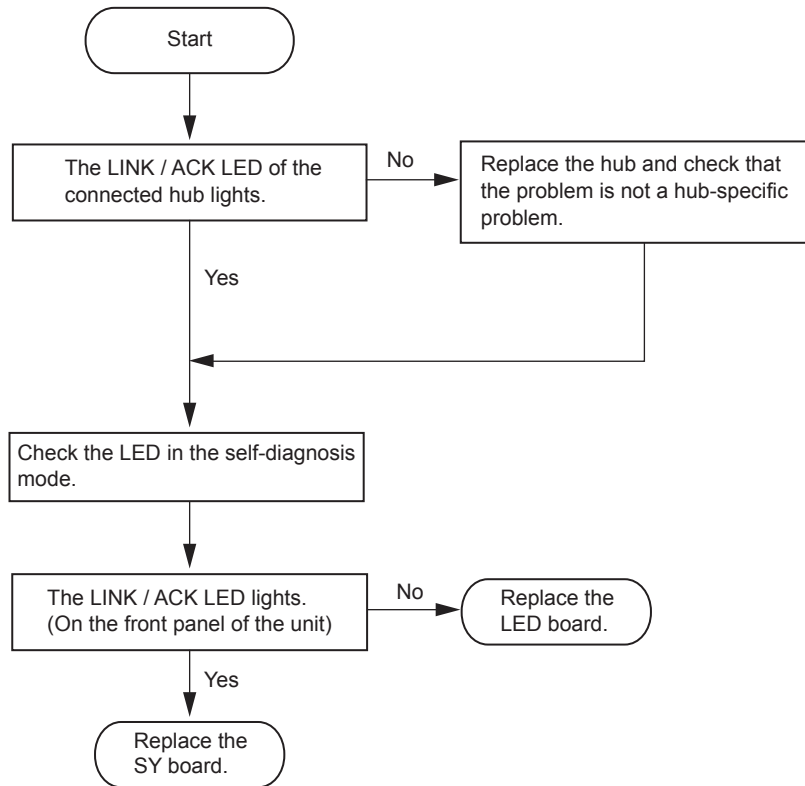
1-8-3. Checking Display Problems



1-8-4. Checking Communication Problems

Note

For details of self-diagnosis mode, refer to “1-6-3. Self-diagnosis”



1-8-5. Checking Hub Problems

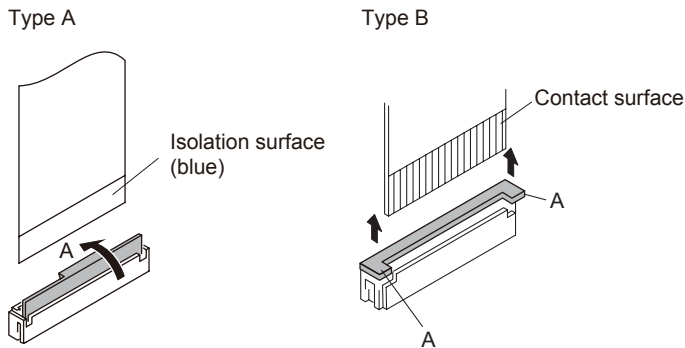
Check the status with the web menu of the unit.

For details, refer to the operation menu.

1-9. Disconnecting/Connecting Flexible Card Wire

Notes

- Be very careful not to fold flexible card wires. Life of flexible card wire will be significantly shortened if it is folded.
- Each flexible card wire has conductor side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductor side and the insulated side, the circuit will not function.
- Insert the flexible card wire straight.
- Check that the conductive surface of the flexible card wire is not contaminated.



Disconnecting

1. Pull the connecting cord.
2. Slide or lift up the portion A in the direction of the arrow to unlock and pull out the flexible card wire.

Connecting

1. Slide or lift up the portion A in the direction of the arrow and securely insert the flexible card wire into the deep end of the connector.
2. Return the portion A to its original position and lock the connector.

1-10. Lead-free Solder

Boards requiring use of lead-free solder are printed with a lead free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Notes

- Be sure to use the lead-free solder for the printed circuit board printed with the lead free mark.
- 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

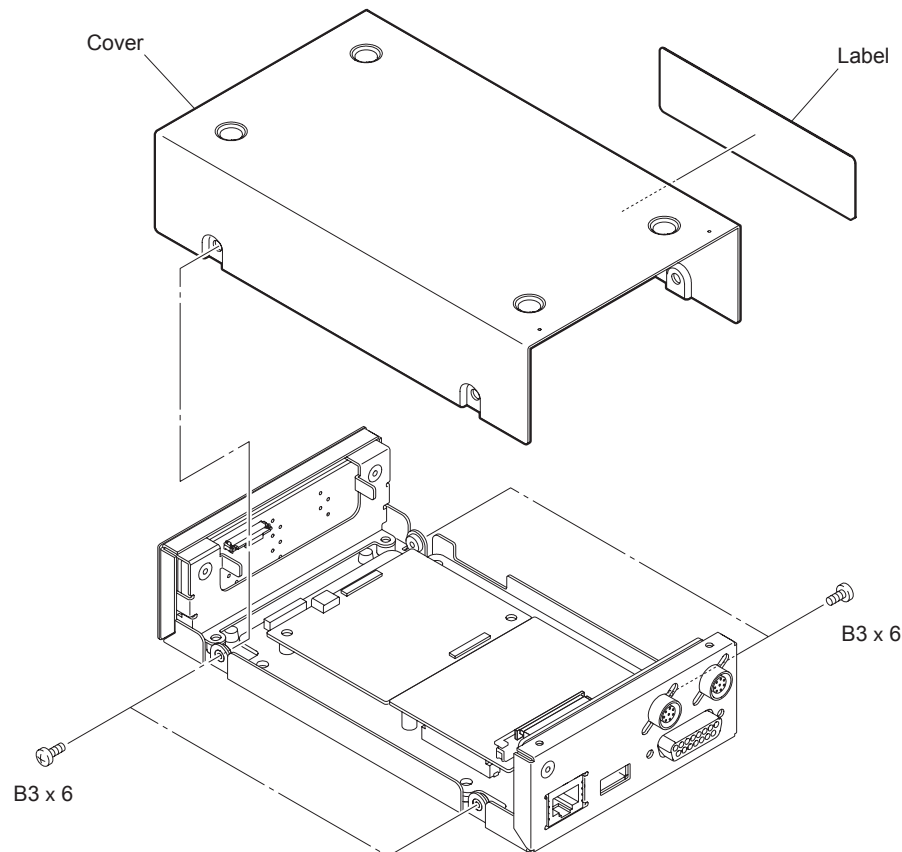
Replacement of Main Parts

This section explains the replacement procedures of periodic replacement parts, main mechanical parts, and mounted circuit boards.

2-1. Cover

Procedure

1. Remove the four screws to detach the cover.
2. Peel the label from the cover.



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

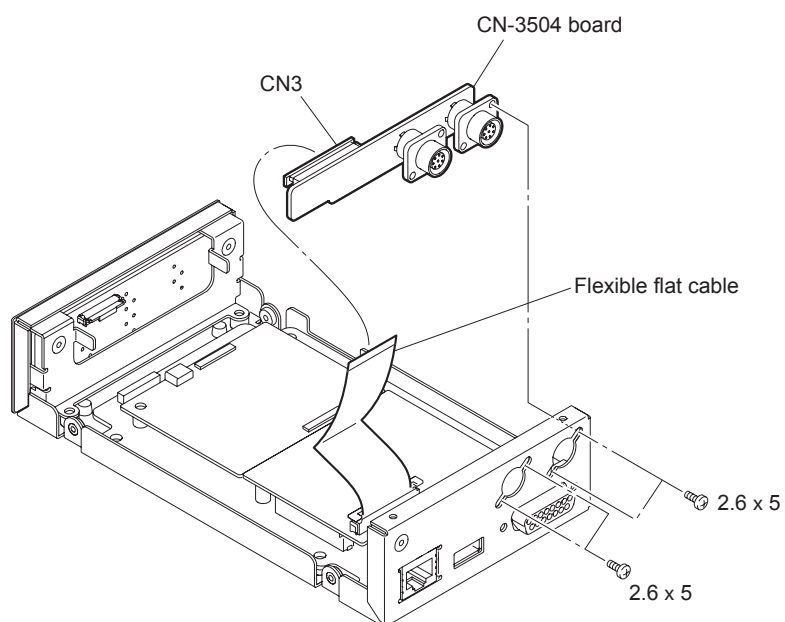
2-2. CN-3504 Board

Preparation

1. Remove the cover. (Refer to “2-1. Cover”.)

Procedure

1. Disconnect the flexible flat cable from the connector (CN3) on the CN-3504 board.
2. Remove the four screws to detach the CN-3504 board



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

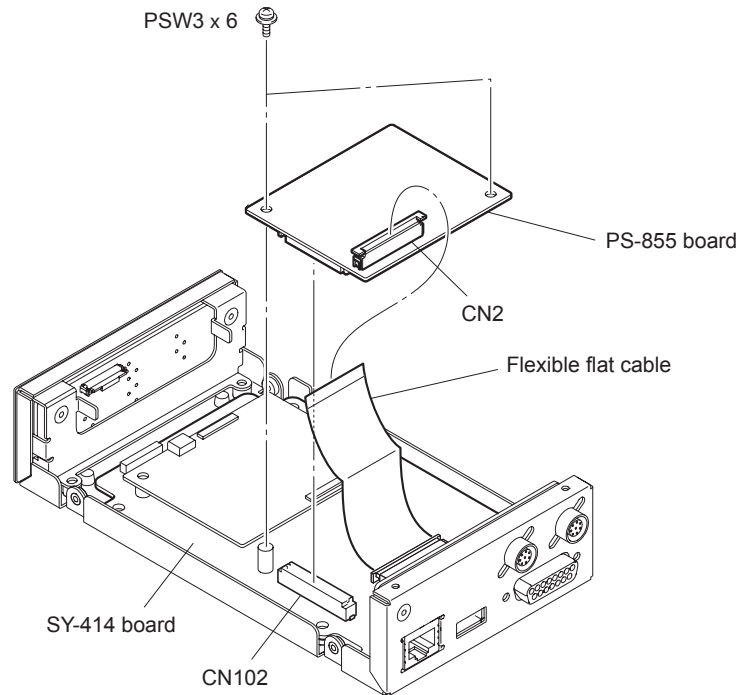
2-3. PS-855 Board

Preparation

1. Remove the cover. (Refer to “2-1. Cover”.)

Procedure

1. Disconnect the Flexible flat cable from the connector (CN2) on the PS-855 board.
2. Remove the two screws to detach the PS-855 board from the connector (CN102) on the SY-414 board.



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

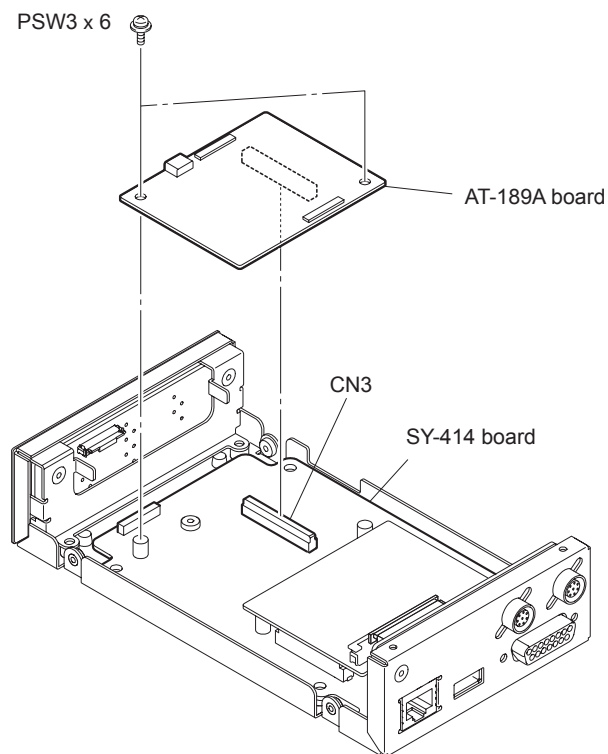
2-4. AT-189A Board

Preparation

1. Remove the cover. (Refer to “2-1. Cover”.)

Procedure

1. Remove the two screws.
2. Disconnect the AT-189A board from the connector (CN3) on the SY-414 board.



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

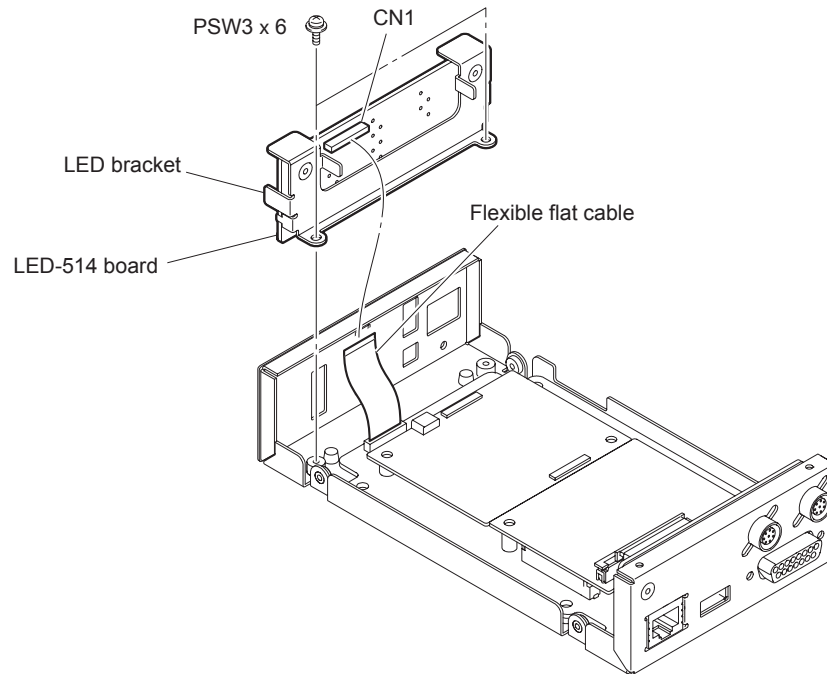
2-5. LED-514 Board

Preparation

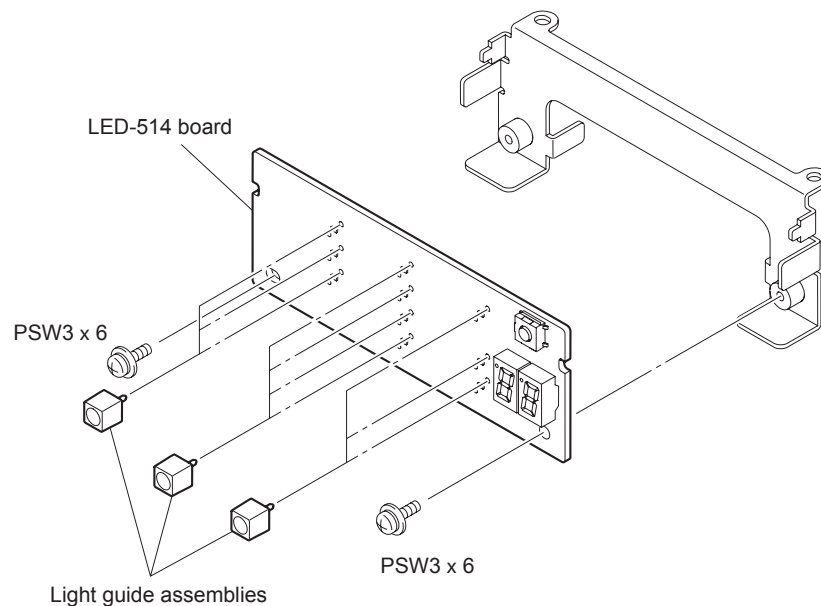
1. Remove the cover. (Refer to “2-1. Cover”.)

Procedure

1. Disconnect the flexible flat cable from the connector (CN1) on the LED-514 board.
2. Remove the two screws to detach the LED bracket.



3. Remove the two screws to detach the LED-514 board.
4. Remove the ten light guide assemblies from the LED-514 board.



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

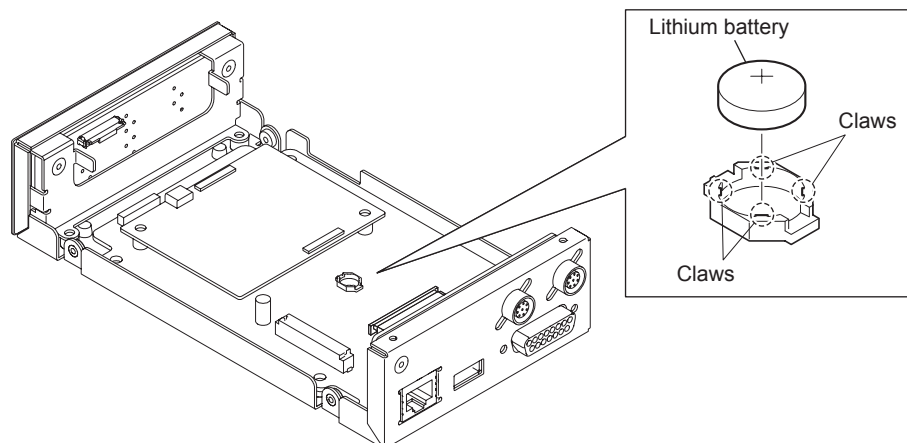
2-6. Lithium Battery

Preparation

1. Remove the cover. (Refer to “2-1. Cover”.)
2. Remove the PS-855 board. (Refer to “2-3. PS-855 Board”.)

Procedure

1. Remove the four claws to detach the lithium battery.



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

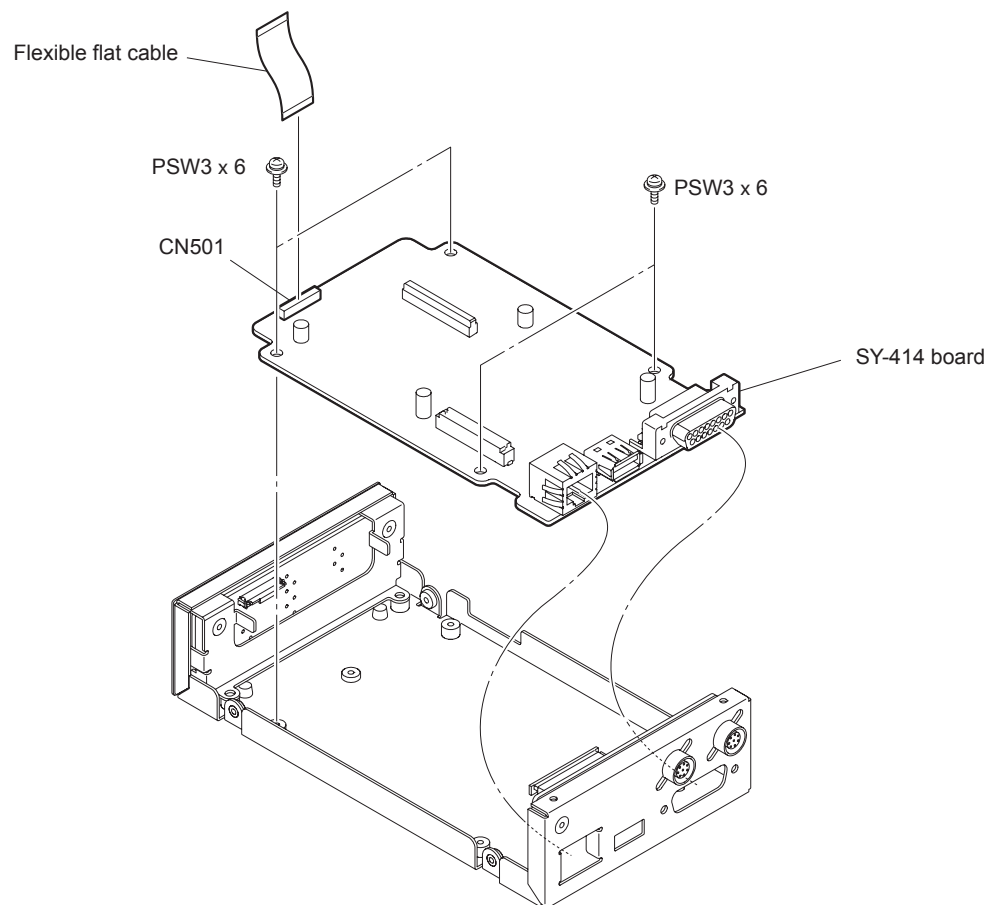
2-7. SY-414 Board

Preparation

1. Remove the cover. (Refer to “2-1. Cover”.)
2. Remove the PS-855 board. (Refer to “2-3. PS-855 Board”.)
3. Remove the AT-189A board. (Refer to “2-4. AT-189A Board”.)

Procedure

1. Disconnect the flexible flat cable from the connector (CN501) on the SY-414 board.
2. Remove the four screws to detach the SY-414 board.



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

Section 3

Spare Parts

3-1. Notes 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.

3-1. 補修部品注意事項

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。

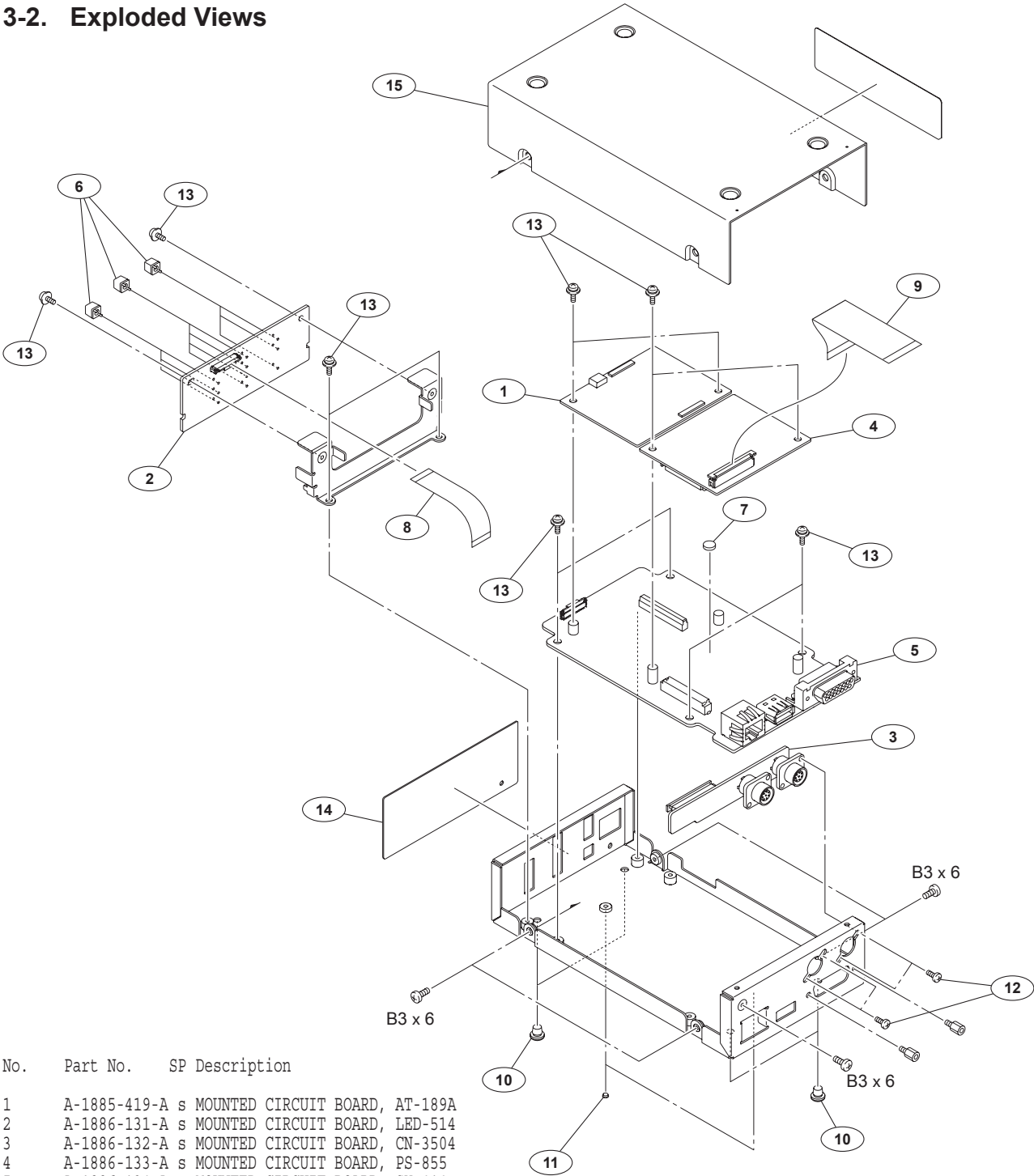
3. 部品の在庫

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、納期が長くなることがあります。

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。

3-2. Exploded Views



No.	Part No.	SP Description
1	A-1885-419-A	s MOUNTED CIRCUIT BOARD, AT-189A
2	A-1886-131-A	s MOUNTED CIRCUIT BOARD, LED-514
3	A-1886-132-A	s MOUNTED CIRCUIT BOARD, CN-3504
4	A-1886-133-A	s MOUNTED CIRCUIT BOARD, PS-855
5	A-1886-134-A	s MOUNTED CIRCUIT BOARD, SY-414
6	X-2584-891-1	s ASSY, LIGHT GUIDE
7	Δ 1-756-134-15	s BATTERY, LITHIUM (SECONDARY)
8	1-831-129-11	s CABLE, FLEXIBLE FLAT (30 CORE)
9	1-836-445-11	s CABLE, FLEXIBLE FLAT (25 CORE)
10	2-362-365-02	s FOOT, RUBBER
11	3-545-657-11	s BUSH
12	3-637-901-11	s SCREW M2.6X5
13	4-382-854-51	s SCREW (M3X6), P, SW (+)
14	4-432-819-01	s PANEL, FRONT
15	4-432-821-03	s COVER

Note: When removing the bush and securing the PLATE, RACK (4-442-116-01) with screws, use screws equivalent to +B3X6 (7-682-547-09).

7-682-547-09 s SCREW +B 3X6

3-3. Electrical Parts List

AT-189A BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1885-419-A	s MOUNTED CIRCUIT BOARD, AT-189A

CN-3504 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1886-132-A	s MOUNTED CIRCUIT BOARD, CN-3504
CN1	1-766-696-11	o CONNECTOR, ROUND TYPE 8P
CN2	1-766-696-11	o CONNECTOR, ROUND TYPE 8P
CN3	1-785-207-51	s HOUSING, CONNECTOR 25P

LED-514 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1886-131-A	s MOUNTED CIRCUIT BOARD, LED-514
CN1	1-778-650-31	s CONNECTOR, FFC/FPC(ZIF) ST 30P
D1	6-501-358-01	s DIODE CL-197HG5-CD-T
D2	6-502-193-01	s DI SML-D12V8WT86SN
D3	6-501-436-01	s DIODE SML412BC6TT86
D4	6-501-358-01	s DIODE CL-197HG5-CD-T
D5	6-501-358-01	s DIODE CL-197HG5-CD-T
D6	6-501-358-01	s DIODE CL-197HG5-CD-T
D9	6-501-358-01	s DIODE CL-197HG5-CD-T
D10	6-501-358-01	s DIODE CL-197HG5-CD-T
D11	6-501-358-01	s DIODE CL-197HG5-CD-T
D12	6-501-358-01	s DIODE CL-197HG5-CD-T
ND1	6-503-067-01	s DI LF-301MKN
ND2	6-503-067-01	s DI LF-301MKN
S1	1-572-595-21	s SWITCH, TACTILE (REFLOW TYPE)

PS-855 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1886-133-A	s MOUNTED CIRCUIT BOARD, PS-855
CN2	1-785-207-51	s HOUSING, CONNECTOR 25P
S101	1-771-796-21	s SWITCH, SLIDE
T101	△ 1-445-816-11	s TRANSFORMER, FLYBACK (FOR POE)

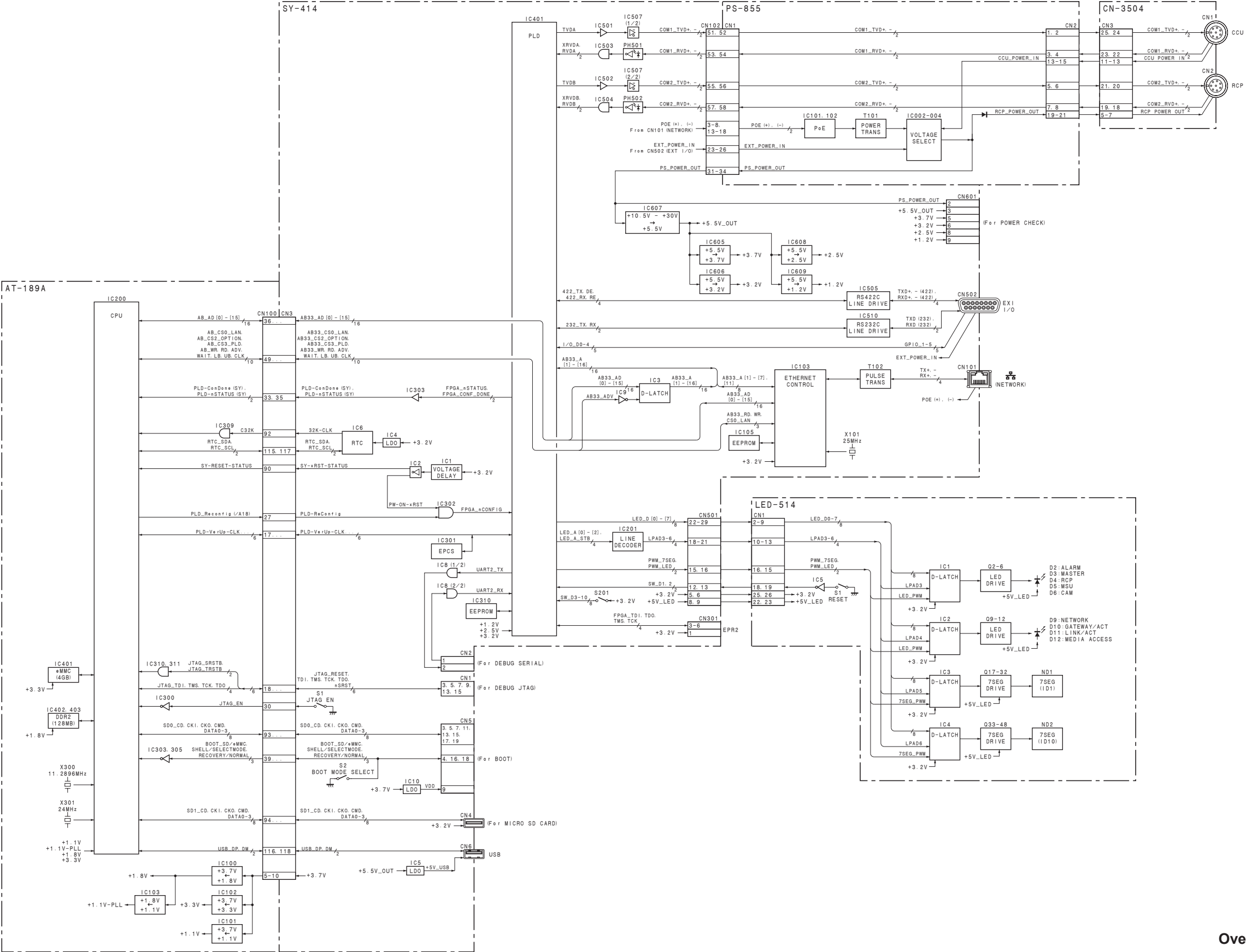
SY-414 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1886-134-A	s MOUNTED CIRCUIT BOARD, SY-414
BT1	1-251-928-21	s SOCKET, BATTERY
CN1	1-778-648-31	s CONNECTOR, FFC/FPC(ZIF) ST 20P
CN2	1-785-946-21	s CONNECTOR 3P
CN6	1-817-109-11	s CONNECTOR, USB (A)
CN101	1-817-196-11	s JACK, MODULAR
CN301	1-784-254-21	s CONNECTOR 10P
CN302	1-784-650-21	s CONNECTOR 2P
CN501	1-778-650-31	s CONNECTOR, FFC/FPC(ZIF) ST 30P
CN502	1-750-889-11	s CONNECTOR, D-SUB (ANGLE TYPE) 15P
CN601	1-784-254-21	s CONNECTOR 10P

3-4. Supplied Accessories

Q'ty	Part No.	SP Description
1pc	△ 4-431-096-01	s OPERATION MANUAL

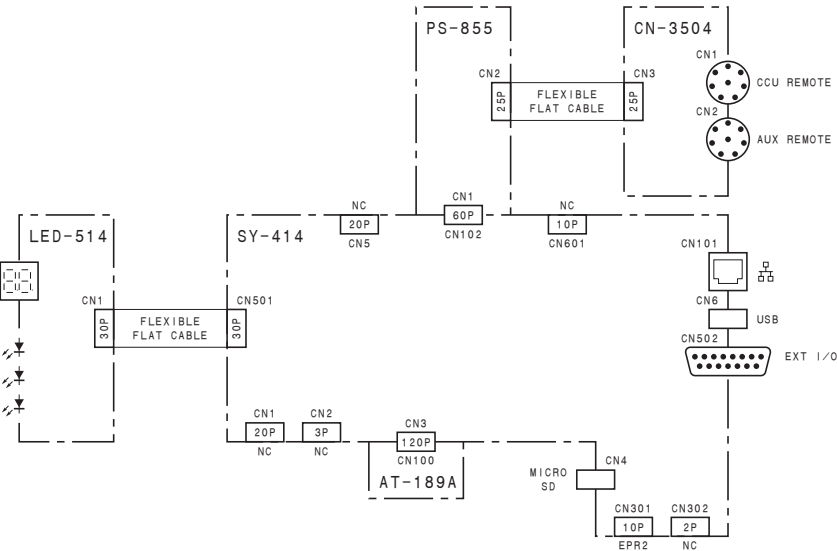
Section 4
Block Diagrams



Overall

Section 5
Schematic Diagrams

Frame Wiring



Frame Wiring

