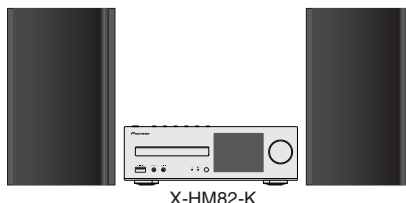


Service Manual



ORDER NO.
RRV4574

NETWORK CD RECEIVER SYSTEM

X-HM82-K

X-HM82-S

X-HM82D-K

X-HM72-K,-S

X-HM72D-K,-S

NETWORK CD RECEIVER

XC-HM82-K,-S

XC-HM82D-K



SPEAKER SECTION

S-HM82GB,S-HM82SA,S-HM72

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Serial No.	Remarks
X-HM82-K, -S	SYXEV8	AC 220 V to 230 V	&&&&#####YY	YY:Europe
X-HM82-S	AXEV5	AC 220 V to 230 V	&&&&#####CN	CN:China
X-HM82D-K	VXEV8	AC 220 V to 230 V	&&&&#####GB	GB:U.K
XC-HM82-K, -S	SYXEV8	AC 220 V to 230 V	&&&&#####YY	YY:Europe
XC-HM82-K	CXEV	AC 120 V	&&&&#####UC	UC:North America
XC-HM82D-K	VXEV8	AC 220 V to 230 V	&&&&#####GB	GB:U.K
X-HM72-K, -S	SYXEV8	AC 220 V to 230 V	&&&&#####YY	YY:Europe
X-HM72D-K	VXEV8	AC 220 V to 230 V	&&&&#####GB	GB:U.K
X-HM72D-S	YXEV8	AC 220 V to 230 V	&&&&#####YY	YY:Europe
S-HM82GB	SYXEV8	—	—	—
S-HM82GB	VXEV8	—	—	—
S-HM82SA	AXEV5	—	—	—
S-HM72	SYXEV8	—	—	—
S-HM72	YXEV8	—	—	—
S-HM72	VXEV8	—	—	—

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SAFETY INFORMATION

A



This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

B This product may contain a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

■

Laser Pickup specifications and Laser characteristics

For CD Wave length (typ) : 790 nm
 Operation output : 3 mW CW, Class 1
 Maximum output : Class 1 (Under fault condition)

C

■

LABEL CHECK

The following caution appears on your unit.

Location: inside of the unit

D

CAUTION: INVISIBLE LASER RADIATION WHEN OPEN
DO NOT STARE INTO BEAM

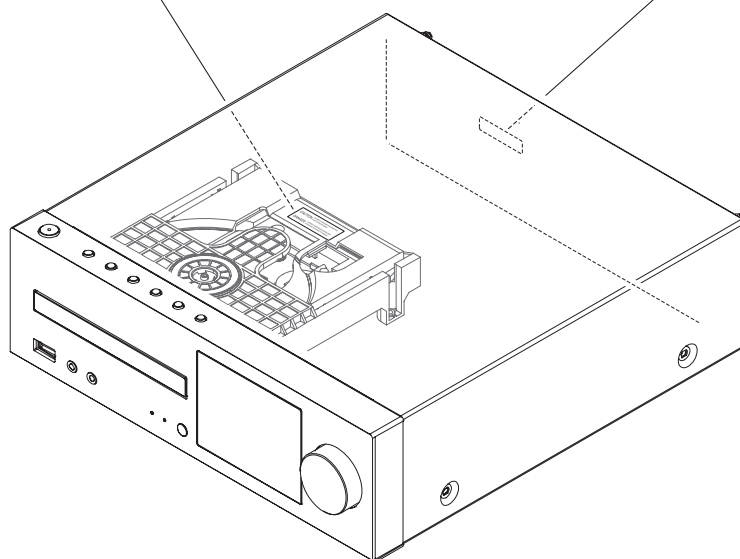
DANGER: INVISIBLE LASER RADIATION WHEN OPEN
AVOID DIRECT EXPOSURE TO THE BEAM

CLASS 1 LASER PRODUCT
APPAREIL À LASER DE CLASSE 1

(Printed on the Chassis Back)

E

F



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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 mm dia.
GYP1007 0.6 mm dia.
GYP1008 0.3 mm dia.

1.2 NOTE ON REPLACING CD MECHA

[Removing the CD Mecha]

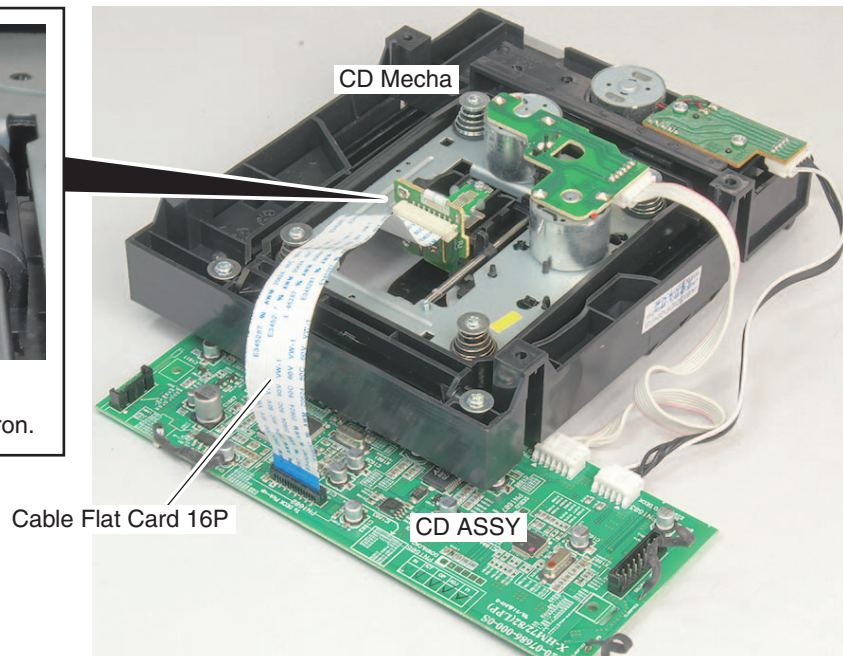
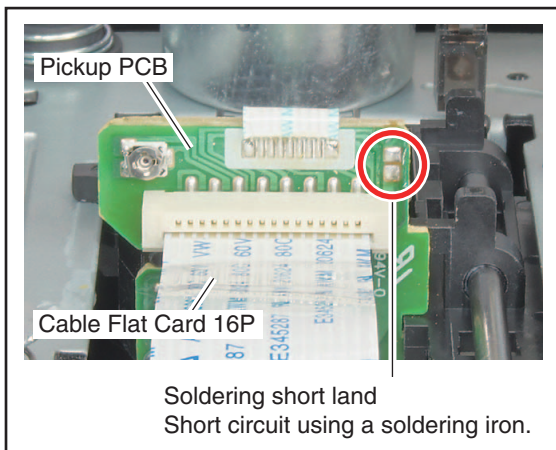
- Before removing the Pickup PCB and Cable Flat Card 16P, short circuit the position shown in Fig. 1 using a soldering iron.
- “To remove the CD Mecha, remove simultaneously with the CD ASSY connected to Cable Flat Card 16P, and then disconnect the Cable Flat Card 16P after short circuit using a soldering iron.”**
- If you remove the Cable Flat Card 16P with no soldering, the Laser may be damaged.**

[Installing the CD Mecha]

Remove the solder on the short circuit position after connecting the Pickup PCB and CD ASSY with Cable Flat Card 16P.

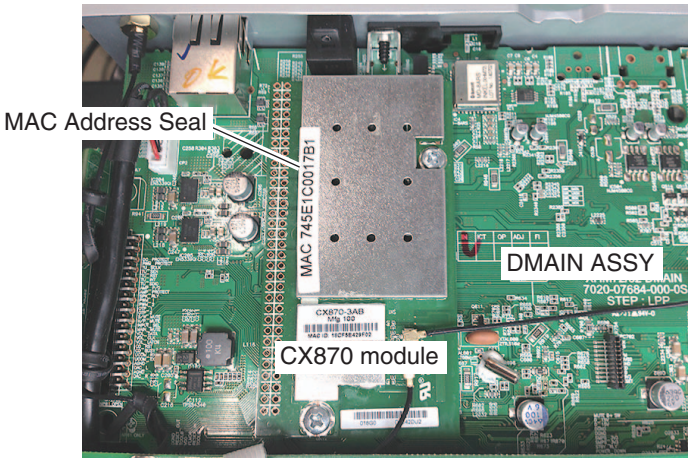
Fig. 1

• Bottom side



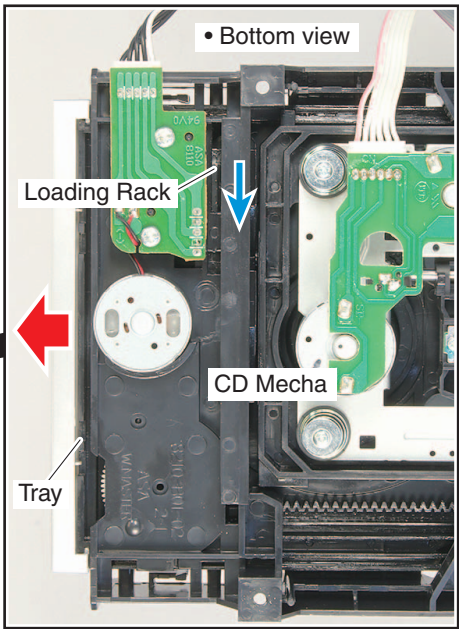
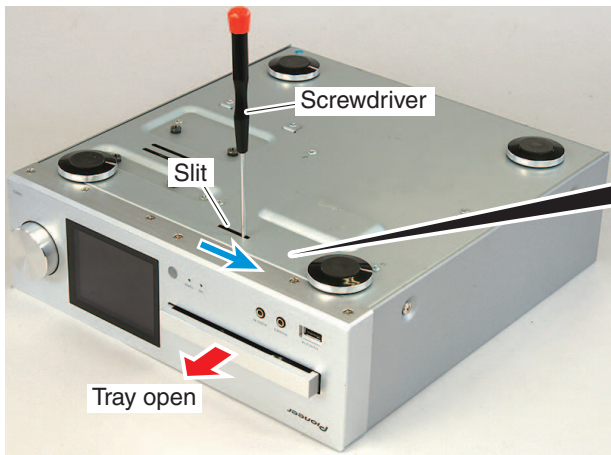
1.3 NOTES ON REPLACING CX870 MODULE

After the CX870 module is replaced, MAC address will be changed.
A new MAC address is shown on the MAC Address Seal affixed to the service part.



1.4 CD DISC EMERGENCY EJECT

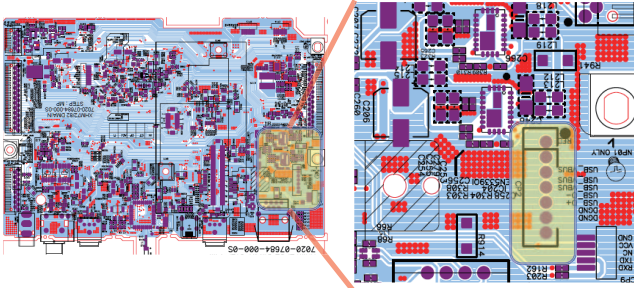
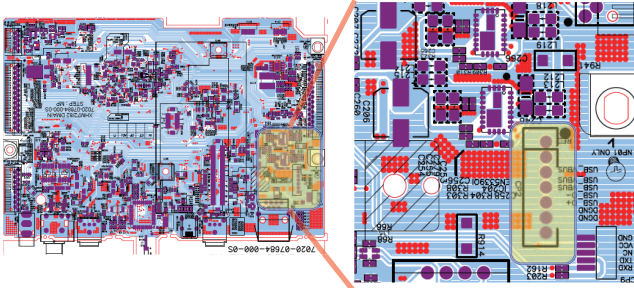
When the Tray cannot be opened because the power cannot be turned on, open the Tray forcibly in the method shown below.
Insert a Screwdriver (thin and long) into the Slit located at the bottom of the unit, and slide the Loading Rack in the direction of blue arrow, as indicated in the photo.
If the Tray pops out a little, fully pull it out by hand.



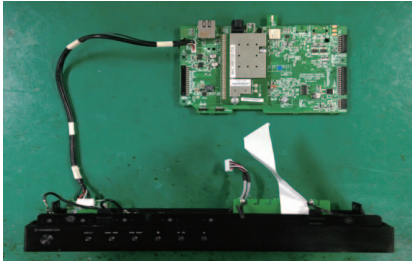
1.5 NOTE ON REPLACING DMAIN ASSY OR USB ASSY

Precautions on repair of DMAIN ASSY and USB ASSY

- A The cord between DMAIN ASSY and USB ASSY was changed as shown below at the initial phase of production.
Please make sure to use correct combinations of pair replacement below.
The unit or external device connected to USB terminal may be damaged in case of wrong connection.
- Description of change**
- The number of power supply cores of internal wire rod is increased by 1 Pin for the improvement of externally supplied power supply voltage (5V) of USB terminal and the number of total cores is changed from 6 Pins to 7 Pins.
(There is no actual harm even if the number of cores is 6 Pin)
- * To prevent reverse insertion, the number of connectors is different between DMAIN ASSY side and USB ASSY side.
- For approximately 6000 units at the initial phase, the number of cores is 6 Pins for the reason of production.
When the corresponding ASSY is replaced with a new one, the pair replacement is required as shown below.
- B
- (1) When ASSY is replaced with a new one without identifying the defective point within the independently registered part range at the failure of DMAIN ASSY
CN. Wire 2mm USB and USB ASSY need to be also replaced as a pair.
 - (2) When the ASSY is replaced with a new one without identifying the defective point within the independently registered part range at the failure of USB ASSY
DMAIN ASSY and CN. Wire 2mm USB need to be also replaced as a pair.
- * The main component of USB ASSY is USB terminal, however, ASSY does not need to be replaced with a new one when the terminal is defective because the part is independently registered.
- (3) When CN. Wire 2mm USB is replaced with a new one at the failure of CN. Wire 2mm USB.
- C DMAIN ASSY and USB ASSY need to be also replaced as a pair.

	DMAIN ASSY	
	PCB	CONNECTOR
Before change		
After change		

Method of CN. Wire 2mm USB CONNECTION



	CN. Wire 2mm USB	USB ASSY	
		CONNECTOR	PCB
Before change			
After change			

2. SPECIFICATIONS

2.1 ACCESSORIES

Remote control unit		8300773200010S	A
AAA size IEC R03 dry cell batteries x2		G670001R50242S	
AM loop antenna (X-HM82, XC-HM82 and X-HM72 only)		E601019000010-IL	
FM wire antenna (X-HM82, XC-HM82 and X-HM72 only)		E605010140010-IL	
DAB/FM wire antenna (X-HM82D, XC-HM82D and X-HM72D only)		E60501050020-IL	
WLAN antenna x2		E600000010040S	■
Speaker x2 (X-HM82, X-HM82D, X-HM72 and X-HM72D only)	X-HM82-K/SYXEV8 : X-HM82-S/SYXEV8 : X-HM82D-K/VXEV8 : X-HM82-S/AXEV5 : X-HM72-K/SYXEV8 : X-HM72-S/SYXEV8 : X-HM72D-K/VXEV8 : X-HM72D-S/YXEV8 :	AZW8134 AZW8135 AZW8133	B
iPhone/iPad stand		4147210221000S	
Warranty card	X-HM82-K/SYXEV8 : X-HM82-S/SYXEV8 : X-HM82D-K/VXEV8 : XC-HM82-K/SYXEV8 : XC-HM82-S/SYXEV8 : XC-HM82D-K/VXEV8 : X-HM72-K/SYXEV8 : X-HM72-S/SYXEV8 : X-HM72D-K/VXEV8 : X-HM72D-S/VXEV8 : X-HM82-S/AXEV5 :	5727000000161S 5727000000540S	■
Quick start guide	X-HM82-K/SYXEV8 : X-HM82-S/SYXEV8 : X-HM82D-K/VXEV8 : XC-HM82-K/SYXEV8 : XC-HM82-S/SYXEV8 : XC-HM82D-K/VXEV8 : X-HM72-K/SYXEV8 : X-HM72-S/SYXEV8 : X-HM72D-K/VXEV8 : X-HM72D-S/YXEV8 : X-HM82-S/AXEV5 : XC-HM82-K/CXEV :	5707000009580S 5707000009610S 5707000009600S	C
Power cord	X-HM82-K/SYXEV8 : X-HM82-S/SYXEV8 : XC-HM82-K/SYXEV8 : XC-HM82-S/SYXEV8 : X-HM72-K/SYXEV8 : X-HM72-S/SYXEV8 : X-HM72D-S/YXEV8 : X-HM82-S/AXEV5 : X-HM82D-K/VXEV8 : XC-HM82D-K/VXEV8 : X-HM72D-K/VXEV8 : XC-HM82-K/CXEV :	L068250251800-IL L068125100230S L068250030010-IL L068125071810S	D
Operating instructions (CD-ROM)	X-HM82-K/SYXEV8 : X-HM82-S/SYXEV8 : X-HM82D-K/VXEV8 : XC-HM82-K/SYXEV8 : XC-HM82-S/SYXEV8 : XC-HM82D-K/VXEV8 : X-HM72-K/SYXEV8 : X-HM72-S/SYXEV8 : X-HM72D-K/VXEV8 : X-HM72D-S/YXEV8 :	6517000002020S	E
Speaker wires x2 (X-HM82, X-HM82D, X-HM72 and X-HM72D only)			■
Non skid pad x8 (X-HM82 and X-HM82D only)			F

2.2 SPECIFICATIONS

A	Amplifier section	
	RMS Power Output	50 W + 50 W (1 kHz, 10 % T.H.D., 4 ohms)
	Guaranteed speaker impedance	4 ohms to 16 ohms
■	Headphones	recommended: 32 ohms
	Tuner section (X-HM72, X-HM82 and XC-HM82 only)	
	Frequency Range (FM)	87.5 MHz to 108 MHz
■	Frequency Range (AM)	522 kHz to 1620 kHz
	Antenna Input (FM)	75 ohms unbalanced
	Antenna (AM)	Loop antenna
B	Tuner section (X-HM72D, X-HM82D and XC-HM82D only)	
	Frequency Range (FM)	87.5 MHz to 108 MHz
	Frequency Range (DAB)	174.928 MHz to 239.200 MHz (BAND III)
■	Antenna Input (FM/DAB)	75 ohms unbalanced
	Bluetooth section	
	Version	Bluetooth Specification Ver. 3.0
■	Output	Bluetooth Specification Class 2
	Estimated line-of-sight transmission distance*	About 10 m
	Frequency range	2.4 GHz
■	Supported Bluetooth profiles	A2DP, AVRCP
	Supported Codec	SBC (Subband Codec), AAC, APT-X
	* The line-of-sight transmission distance is an estimate.	
■	Actual transmission distances supported may differ depending on surrounding conditions.	
	Network section (Wired)	
	LAN terminal	Ethernet jack 10BASE-T/100BASE-TX
C	Network section (Wireless)	
	WLAN standards	IEEE 802.11b, IEEE 802.11g
	Frequency band	2.412 GHz to 2.472 GHz (2.4 GHz ISM Band, 13 Channels) Channel 1 to Channel 13
■	Modulation	802.11b mode (DS-SS: IEEE 802.11b) 802.11g mode (OFDM: IEEE 802.11g)
	Other connectors	
	Power supply	USB connector 5 V, 2.1 A

D

■

E

■

F

Miscellaneous	
Power source	AC 220 V to 230 V, 50 Hz
Power consumption	
Power on	52 W
In standby	0.5 W
In standby (BT Standby on)	0.5 W
In standby (Quick Start Mode on)	3.0 W
In standby (BT Standby on, Quick Start Mode on)	3.3 W
Auto Power Down	15 min (default), 30 min, 60 min, off
Dimensions	
Width	290 mm
Height	98 mm
Depth	333 mm
Weight	4.8 kg
Speaker (X-HM82 and X-HM82D only)	
Type	
2-way type speaker system	
2.5 cm Dome-Tweeter	
12 cm Woofer	
Maximum input power	50 W
Impedance	4 ohms
Dimensions	
Width	156 mm
Height	266 mm
Depth	258 mm
Weight	4.3 kg/each
Speaker (X-HM72 and X-HM72D only)	
Type	
2-way type speaker system	
2.5 cm Dome-Tweeter	
12 cm Woofer	
Maximum input power	50 W
Impedance	4 ohms
Dimensions	
Width	148 mm
Height	263 mm
Depth	213 mm
Weight	3.3 kg/each

Note

- The specifications are applicable when the power supply is 230 V.
- Specifications and the design are subject to possible modifications without notice, due to improvements.
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3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

Items to be checked after servicing

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedure	Check points
1	Confirm whether the customer complain has been solved.	The customer complain must not be reappeared. Audio and operations must be normal.
2	Check the CD playback.	Audio and operations (search etc.) must be normal.
3	Check the USB playback.	Audio and operations must be normal.
4	Check the iPod playback.	Audio and operations must be normal.
5	Check the internet radio or Network audio playback.	Audio and operations must be normal.
6	Check the Wi-fi antenna.	Confirm whether you refer to "5.4 CHECKING TERMINALS" -"2. Checking the Wi-Fi Antenna", and the SSID of the wireless LAN router is displayed.
7	Check the tuner operations.	Audio and operations (station search etc.) must be normal.
8	Check the Line 1 input and Line 2 input playback.	Audio and operations must be normal.
9	Check the Digital In playback	Audio and operations must be normal.
10	Check the Audio In playback	Audio and operations must be normal.
11	Check the Bluetooth playback	Audio and operations must be normal.
12	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio.

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 JIGS LIST

(1) Jigs List

Name	Jig No.	Remarks
Service remote control unit	GGF1381	Service mode
RS-232C update jig	GGF1642	Firmware update
33P board to board extension jig cable	GGD1847	Diagnosis (MAIN ASSY <-> CNT1 ASSY)
29P board to board extension jig cable	GGD1856	Diagnosis (MAIN ASSY <-> CNT2 ASSY)
16P FFC extension jig cable	GGD1774	Diagnosis (CD Mecha <-> CD ASSY)

(2) Cleaning



Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools.

Position to be cleaned	Name	Part No.	Remarks
Pickup lens	Cleaning liquid	GEM1004	Refer to "7. DISASSEMBLY".
	Cleaning paper	GED-008	

F USB ASSY

B DMAIN ASSY

NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 ● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
 Therefore, when replacing, be sure to use parts of identical designation.

LIST OF ASSEMBLIES

Mark	Symbol & Discription	X-HM82-K/ SYXEV8	X-HM82-S/ SYXEV8	XC-HM82-K/ SYXEV8	XC-HM82-S/ SYXEV8	XC-HM82-K/ CXEV	X-HM82-S/ AXEV5
NSP	1..P.C.B. TOTAL ASSY MAIN	7025MU1401010	7025MU1401020	7025MU1401030	7025MU1401040	7025MU1401070	7025MU1401080
	2..MAIN ASSY	7028076851010	7028076851010	7028076851010	7028076851010	7028076851020	7028076851060
	2..FRONT ASSY	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010
	2..KEY ASSY	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010
	2..GUIDE1 ASSY	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010
	2..GUIDE2 ASSY	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010
	2..USB GUIDE ASSY	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010
NSP	1..P.C.B. TOTAL ASSY DMAIN	7025MU1401011	7025MU1401021	7025MU1401031	7025MU1401041	7025MU1401071	7025MU1401081
	2..DMAIN ASSY	7028076841010	7028076841010	7028076841010	7028076841010	7028076841030	7028076841040
NSP	1..P.C.B. TOTAL ASSY CD	7025MU1401012	7025MU1401022	7025MU1401032	7025MU1401042	7025MU1401072	7025MU1401082
	2..CD ASSY	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010
NSP	1..P.C.B. TOTAL ASSY CNT	7025MU1401013	7025MU1401023	7025MU1401033	7025MU1401043	7025MU1401073	7025MU1401083
	2..CNT1 ASSY	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010
	2..CNT2 ASSY	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010
	2..USB ASSY	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010
⚠	1..SMPS ASSY	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120030S	8208001120010S

Mark	Symbol & Discription	X-HM82D-K/ VXEV8	XC-HM82D-K/ VXEV8	X-HM72-K/ SYXEV8	X-HM72-S/ SYXEV8	X-HM72D-K/ VXEV8	X-HM72D-S/ YXEV8
NSP	1..P.C.B. TOTAL ASSY MAIN	7025MU1401090	7025MU1401100	7025MU1401110	7025MU1401120	7025MU1401130	7025MU1401140
	2..MAIN ASSY	7028076851030	7028076851030	7028076851040	7028076851040	7028076851050	7028076851050
	2..FRONT ASSY	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010
	2..KEY ASSY	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010
	2..GUIDE1 ASSY	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010
	2..GUIDE2 ASSY	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010
	2..USB GUIDE ASSY	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010
NSP	1..P.C.B. TOTAL ASSY DMAIN	7025MU1401091	7025MU1401101	7025MU1401111	7025MU1401121	7025MU1401131	7025MU1401141
	2..DMAIN ASSY	7028076841050	7028076841050	7028076841060	7028076841060	7028076841070	7028076841070
NSP	1..P.C.B. TOTAL ASSY CD	7025MU1401092	7025MU1401102	7025MU1401112	7025MU1401122	7025MU1401132	7025MU1401142
	2..CD ASSY	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010
NSP	1..P.C.B. TOTAL ASSY CNT	7025MU1401093	7025MU1401103	7025MU1401113	7025MU1401123	7025MU1401133	7025MU1401143
	2..CNT1 ASSY	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010
	2..CNT2 ASSY	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010
	2..USB ASSY	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010
⚠	1..SMPS ASSY	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S

4. BLOCK DIAGRAM

4.1 OVERALL CONNECTION DIAGRAM

A

B

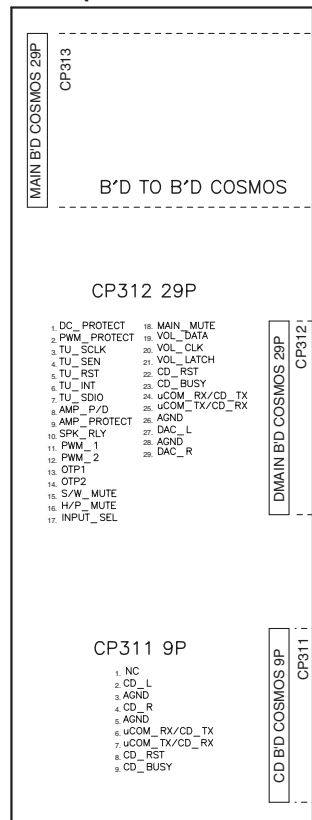
C

D

E

F

I CNT2 ASSY (7028076872010)



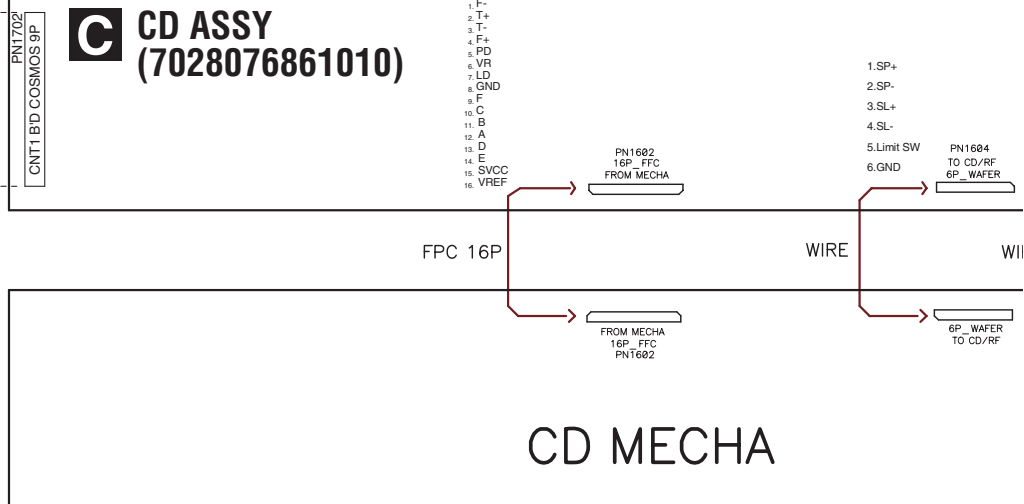
A (A1/4 - A4/4)

MAIN ASSY
(X(XC)-HM82/SYXEV8 : 7028076851010)
(X-HM82/AXEV5 : 7028076851060)
(X(XC)-HM82D/VXEV8 : 7028076851030)
(XC-HM82/CXEV : 7028076851020)
(X-HM72/SYXEV8 : 7028076851040)
(X-HM72D/VXEV8 : 7028076851050)
(X-HM72D/YXEV8 : 7028076851050)

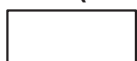
B (B1/3 - B3/3)

DMAIN ASSY
(X(XC)-HM82/SYXEV8 : 7028076841010)
(X-HM82/AXEV5 : 7028076841040)
(X(XC)-HM82D/VXEV8 : 7028076841050)
(XC-HM82/CXEV : 7028076841030)
(X-HM72/SYXEV8 : 7028076841060)
(X-HM72D/VXEV8 : 7028076841070)
(X-HM72D/YXEV8 : 7028076841070)

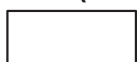
C CD ASSY (7028076861010)



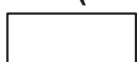
J USB GUIDE ASSY (7028076856010)



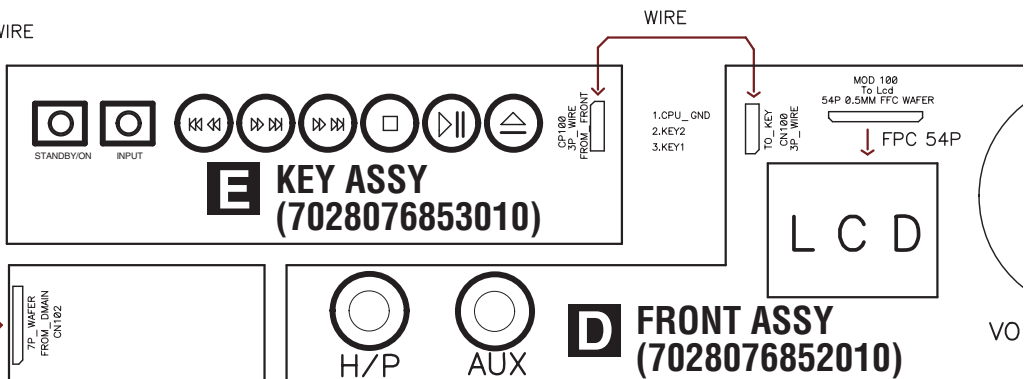
K GUIDE1 ASSY (7028076854010)



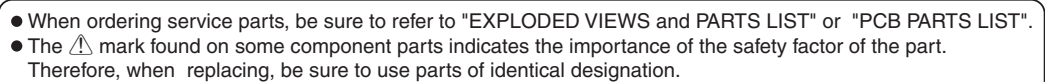
L GUIDE2 ASSY (7028076855010)



E KEY ASSY (7028076853010)

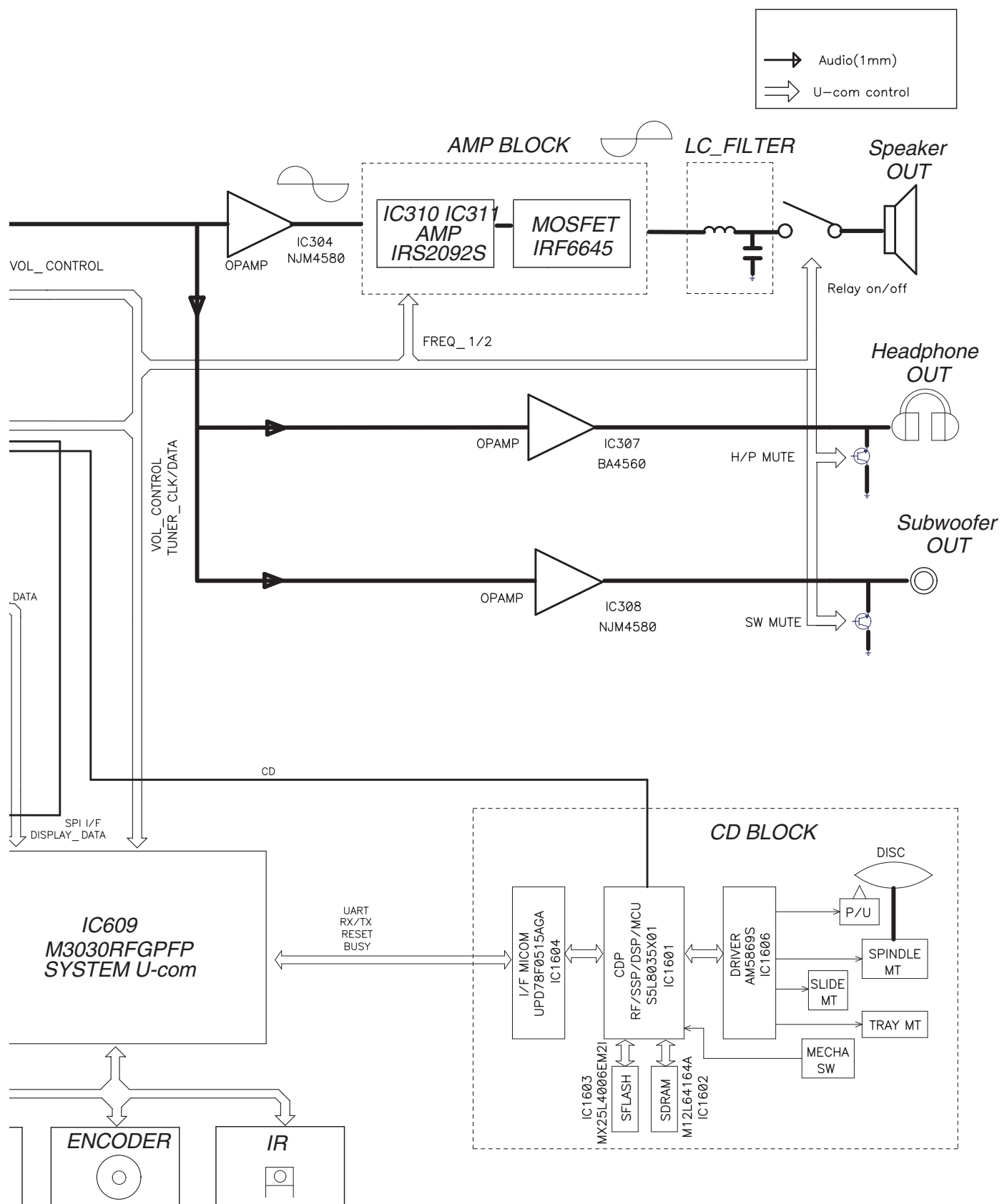


F USB ASSY (7028076873010)



△





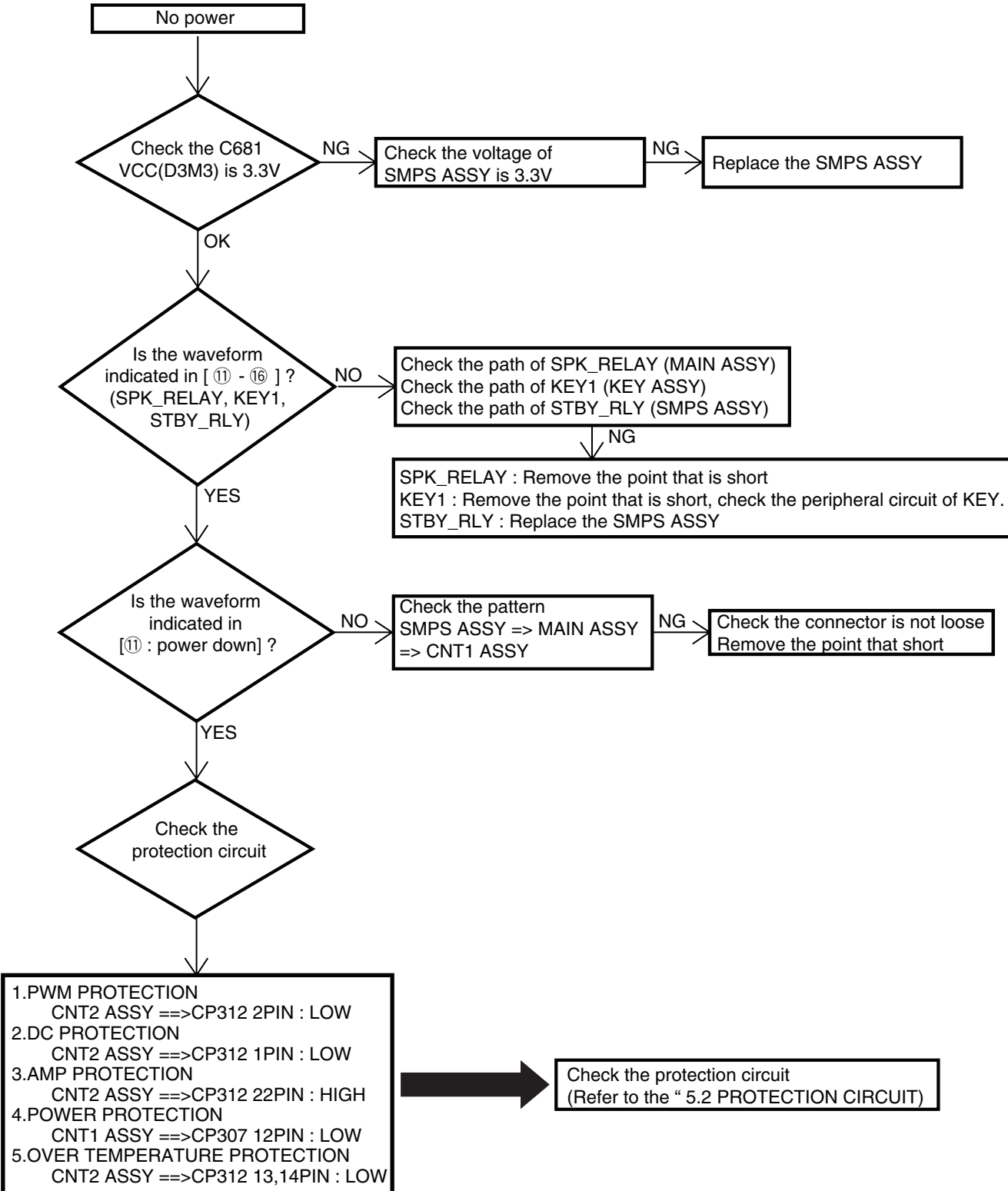
5. DIAGNOSIS

5.1 TROUBLESHOOTING

NO POWER

STEP 1 : DISCHARGE (Refer to the “ Discharge of 7. DISASSEMBLY ”

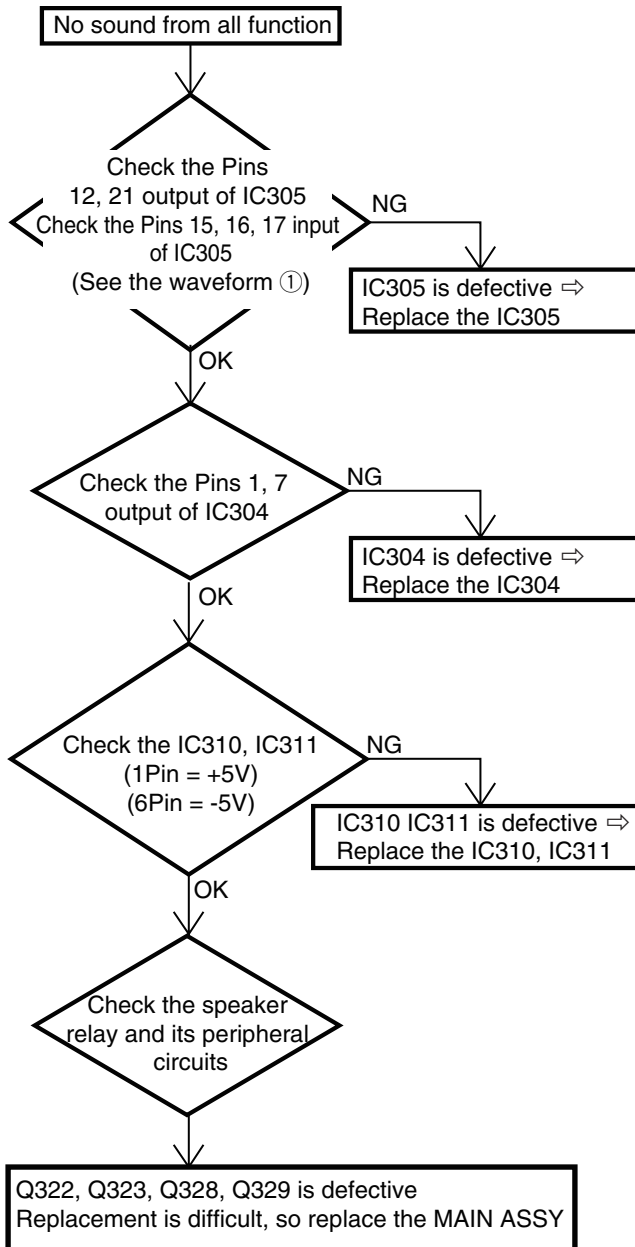
STEP 2 : D3V3 CHECK



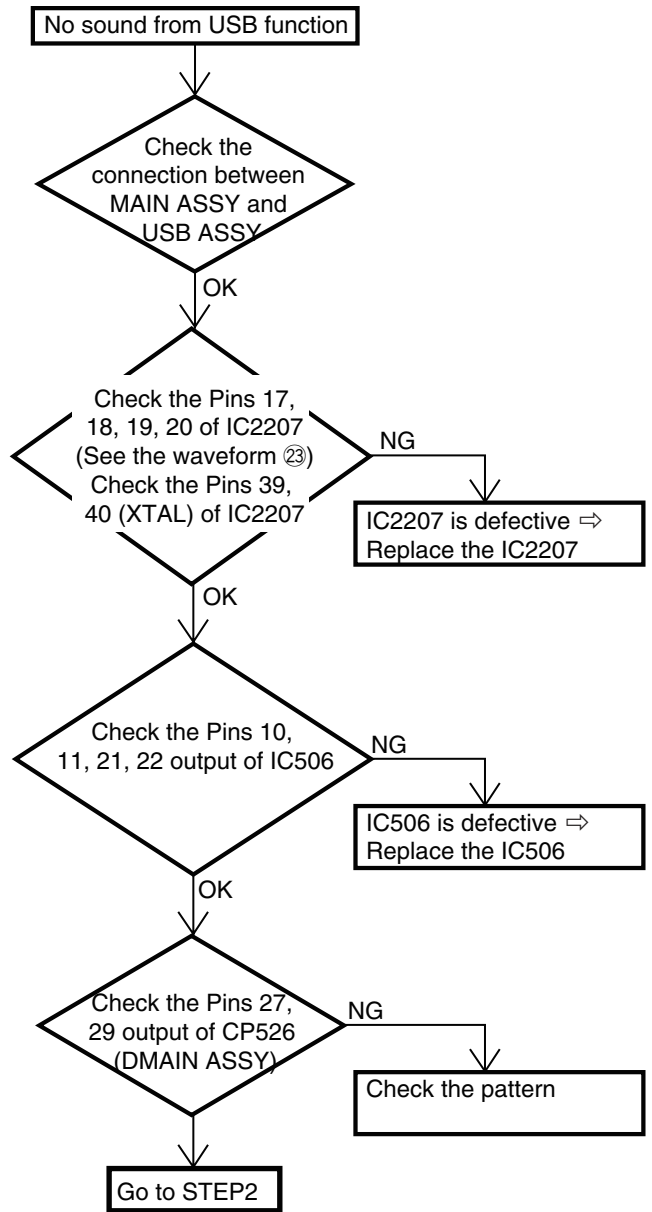
NO SOUND

STEP1 : Find no sound function

STEP2 : No sound from all function
(USB, CD, LINE1/2, H/P, AUX)



STEP 3 : No sound from USB function



STEP4 : No sound from LINE1/2 output

A

No sound from LINE1/2 output

Check the JK300 and
its peripheral circuits

OK

B

Check the Pins 1, 5,
12, 14 input of IC300
Check the Pins 3, 13
output of IC300

NG

IC300 is defective ⇒
Replace the IC300

OK

Go to STEP2

STEP 6 : No sound from H/P output

No sound from H/P output

Check the
7 Pin cable between
CNT1 ASSY and
FRONT ASSY

OK

Check the Pins 1, 7
output signal of IC307
(MAIN ASSY)
Check the Pins 3, 5
input signal of IC307
(MAIN ASSY)

NG

INPUT is defective ⇒
Go to STEP2
OUTPUT is defective ⇒
Replace the IC307

OK

Check the Pins 31,
33 signal of CP320
(MAIN ASSY)

NG

Q309, Q311, Q398, Q407
is defective ⇒
Replace them

OK

Check the Pins 1,
3 signal of CN101
(FRONT ASSY)

NG

Check the connector of
CNT1 ASSYCheck the short of JK101
Check the pattern**STEP5 : No sound from AUX output**

C

No sound from AUX output

Check the 7 Pin cable
between CNT1 ASSY
and FRONT ASSY

OK

D

Check the Pins 5, 7
signal of CN101
(FRONT ASSY)

NG

Check the short of JK100
Check the pattern

OK

E

Check the Pins 27, 29
signal of CP320

NG

Check the connector of
CNT1 ASSY

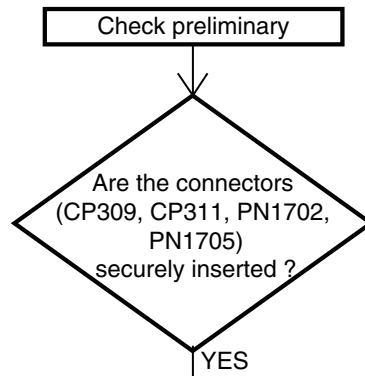
OK

Go to STEP2

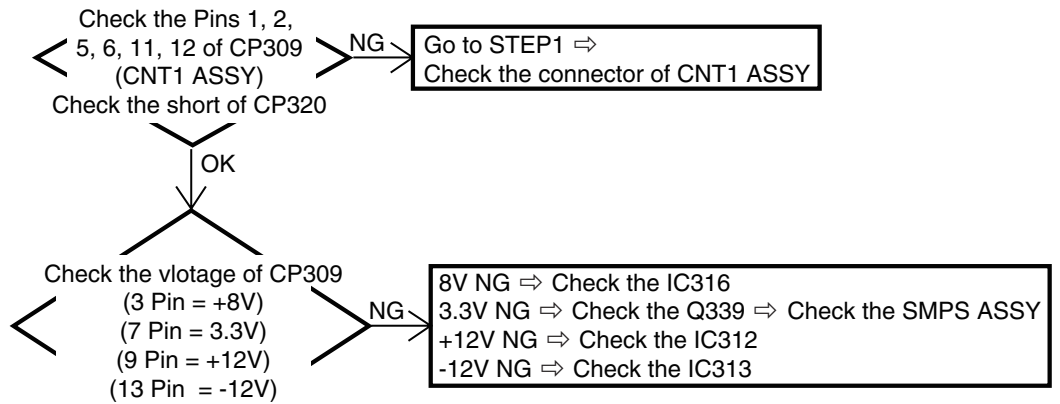
F

NO SOUND FROM CD

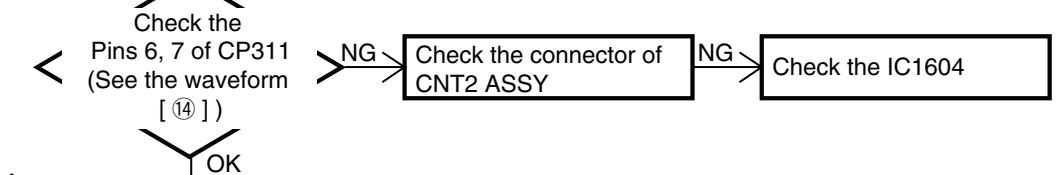
STEP1 : Preliminary check



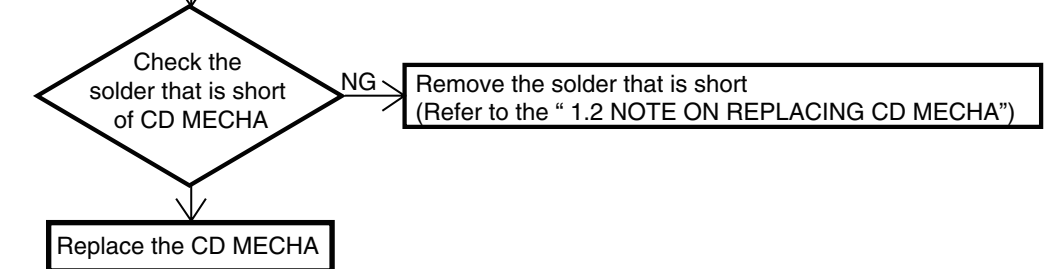
STEP2 : VCC , GND check



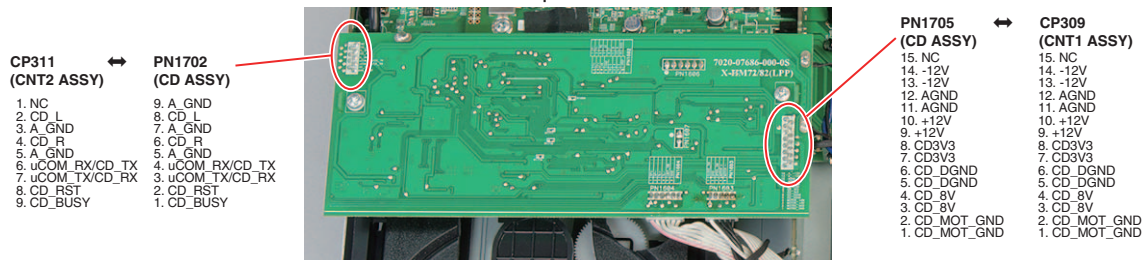
STEP3 : CD ASSY (RX, TX) check



STEP4 : CD MECHA check



Terminal Description of PN1702 and PN1705



5.2 PROTECTION CIRCUIT

If a protection circuit is activated then the unit enters Standby mode, the LED flashes in accordance with the activated protection function, as shown in the table below.

Protection	LED flashing time		Operation Lock
	LED ON	LED OFF	
PWM	900 msec	100 msec	Lock
DC	100 msec	900 msec	Lock
AMP	100 msec	100 msec	—
POWER	500 msec	500 msec	Lock
OVER TEMP1	100 msec	100 msec	—
OVER TEMP2	100 msec	100 msec	—

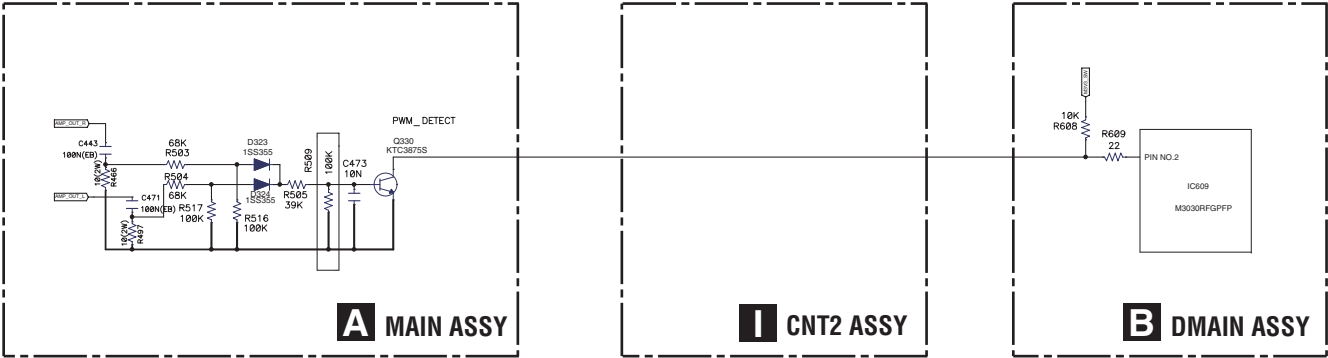
If the DC, POWER, or PWM protection circuit is activated, operation of the unit will be locked.
The buttons that can be used to release operation lock are as follows:

- Simultaneously press the "INPUT" and "▶▶▶▶" (Tune Up, Skip Up) buttons on the front panel, or simultaneously press the "STANDBY/ON" and "■" (STOP) buttons on the front panel.
After operation lock is released and the unit is then turned ON, the unit will perform the following:
- Count the number of activations of protection circuits
 - Cancel flashing of the LED

Description of Each Function

• PWM PROTECTION

- Detect abnormal PWM waveforms in the speaker outputs (AMP_OUT_L, AMP_OUT_R) that result from abnormality in the AMP Block, and apply protection.
Operable with IC609_2Pin "H" -> "L".



Condition 2 : Detect a reduction in the power supply D_3V3_SW, and apply protection.



Operable with IC609_78Pin "L" -> "H".



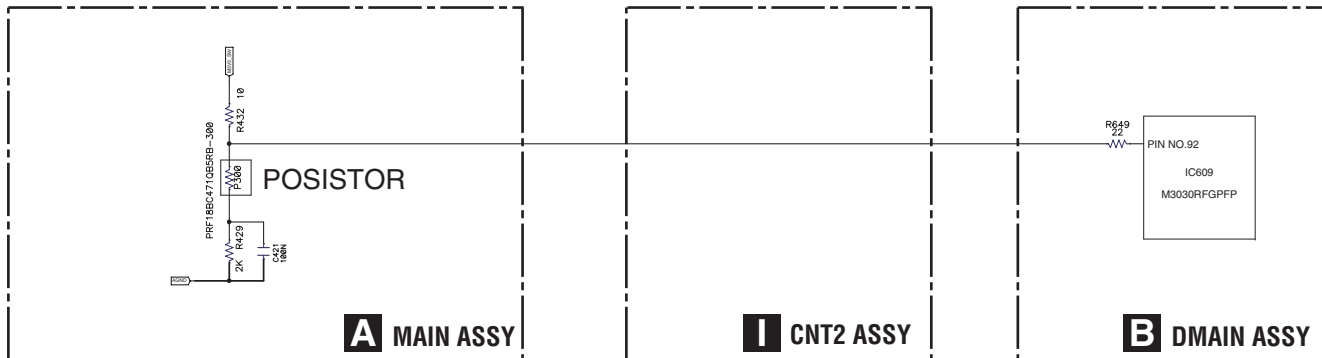
Operable with IC609_4Pin "H" -> "L".



• OVER TEMPERATURE PROTECTION1

Detect abnormal heating of the AMP L channel circuits (mainly: IC310, Q322 and Q323) by means of the PTC thermistor (P300), and apply protection.
Operable with IC609_92Pin "H" -> "L".

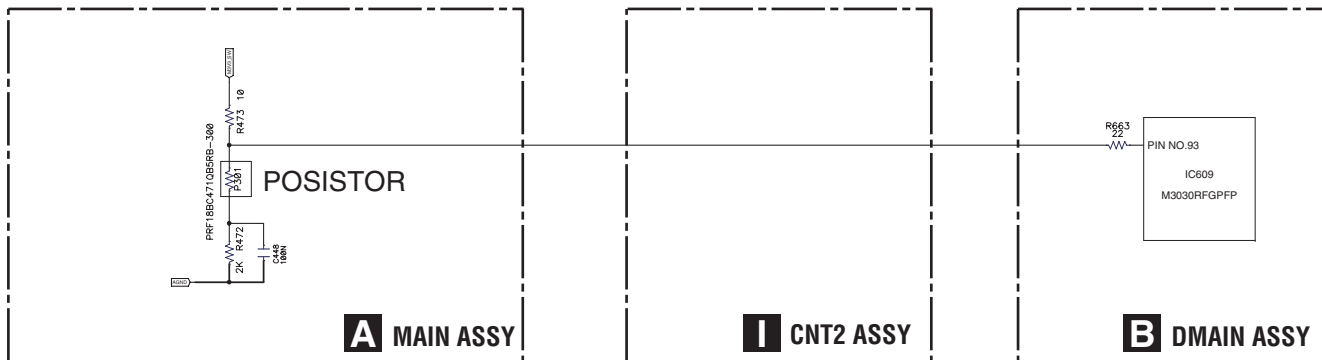
A



• OVER TEMPERATURE PROTECTION2

Detect abnormal heating of the AMP R channel circuits (mainly: IC311, Q328 and Q329) by means of the PTC thermistor (P301), and apply protection.
Operable with IC609_93Pin "H" -> "L".

C



D

E

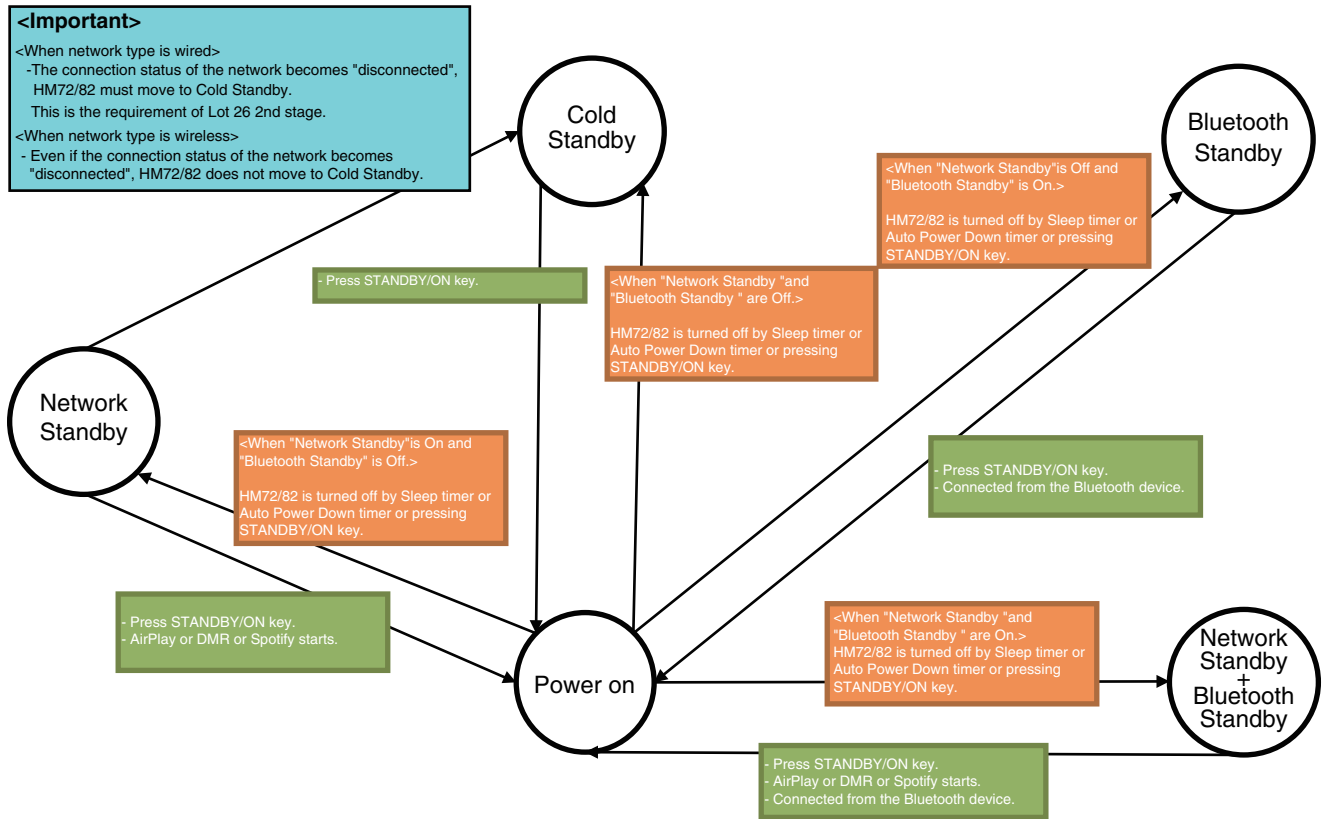
F

5.3 POWER MANAGEMENT

Status Transition Diagram of Network Standby Mode and Bluetooth Standby Mode

When Quick Start Mode in Initial Setup is On, Network Standby is enabled.

When Bluetooth Standby Mode in Initial Setup is On, Bluetooth Standby is enabled.



Status	Detail	Power status of CX870 and Sub Micom	Power status of BT Module
Cold Standby	- "Network Standby" and "Bluetooth Standby" are Off. - LCD is turned Off.	Off	Off
Network Standby	- "Network Standby" is On. "Bluetooth Standby" is Off. - LCD is turned Off.	On	Off
Bluetooth Standby	- "Network Standby" is Off. "Bluetooth Standby" is On. - LCD is turned Off.	Off	On
Network Standby+Bluetooth Standby	- "Network Standby" and "Bluetooth Standby" are On. - LCD is turned Off.	On	On
Power On	- HM72/82 is turned On. - LCD is turned On.	On	In case that BT Audio is selected, On. In other case, Off.

5.4 CHECKING TERMINALS

1. Checking the LAN terminal

Connect the PC and this unit directly then set them up as indicated below. Then, access this unit from the PC via a Web browser. If the indications shown in the figure below are displayed, the LAN terminal is normal. If the LAN terminal is not normal, check the circuit between the LAN terminal and CX870 (Module on DMAIN ASSY).

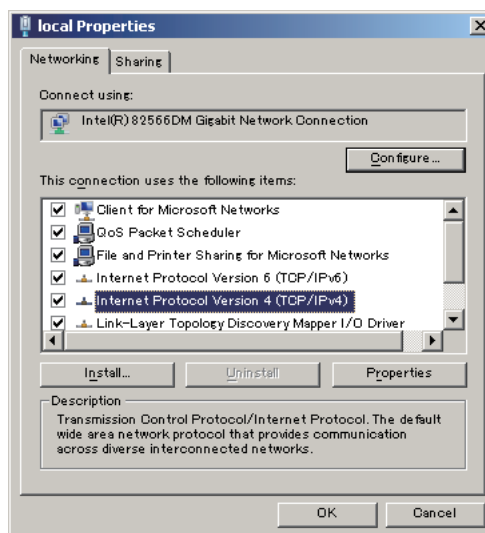
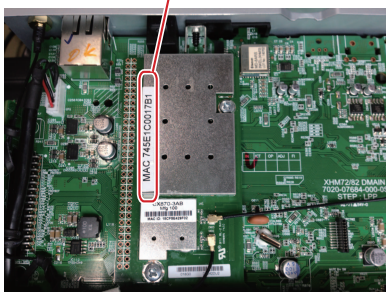
Setup on this unit:

- 1 Connect the PC and this unit then turn the unit on.
- 2 Select the Music Server function then press SETUP.
- 3 Select Network Setting -> Network Configuration -> Wired -> DHCP OFF.
- 4 Set the following items as shown below:
IP address: 192.168.0.1
Subnet mask: 255.255.255.0
Gateway address: 0.0.0.0
DNS (1st): 0.0.0.0
DNS (2nd): 0.0.0.0
Proxy setting: Not to be used
- 5 After setting is finished, reboot the unit.

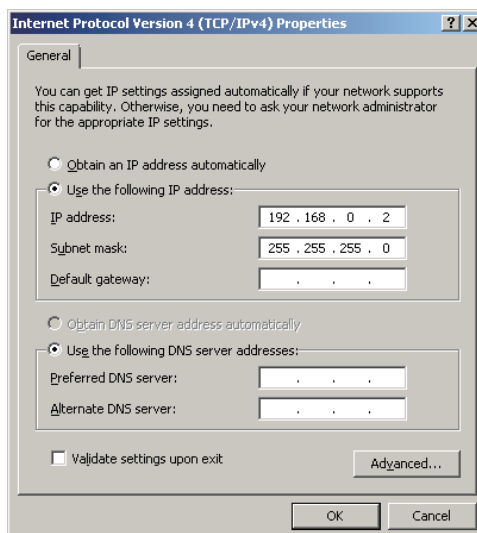
Setup on the PC:

- 1 Click on Start > Settings > Control Panel.
- 2 Open Network Connections then Local Area Connection by double-clicking on its icon.
- 3 Click on Properties to open the Properties window for the local area connection.
- 4 Double-click on Internet Protocol.

MAC Address seal



- 5 Set the items as shown below.



Start the Web browser, input `http://192.168.0.1` as a URL. If the screen as indicated below is displayed, the LAN terminal works properly.

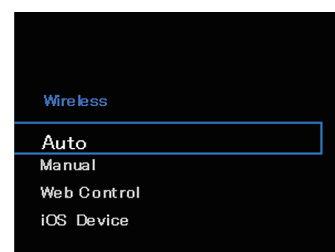
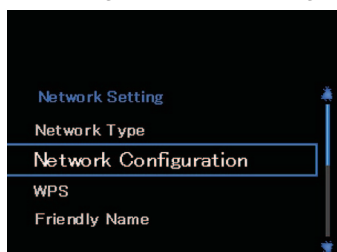


If this screen is displayed, the LAN terminal works properly.

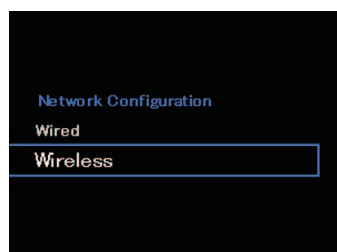
2. Checking the Wi-Fi Antenna

Make preparations on the wireless LAN router then check that the SSID for that router is displayed, following the procedure shown below. If the SSID is displayed on the LCD, the Wi-Fi antenna works properly. If the SSID is not displayed, check the wireless LAN antenna, CX870 (Bco Module), and the cable that connects them. (In the following LCD-display examples, the language setting is English.)

1. Select the Music Server function then press SETUP.
2. Select Network Setting → Network Configuration.
4. Select Auto.



3. Select Wireless.



5. SSID list is displayed.



If the SSID for the prepared router is displayed on the list, the Wi-Fi antenna works properly.

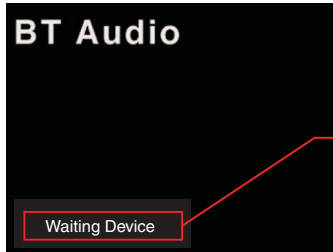
Note:

As the SSID name for a wireless LAN router supports only one-byte alphanumeric, if two-byte characters are used in an SSID name, rename it.

3. Checking the Built-in Bluetooth Module

You can determine that this unit works properly by connecting it to the Bluetooth enabled device according to the steps below:

1. Select BT AUDIO function, designate this unit (device name: XC-HM72/HM82) on the Bluetooth enabled device like the smartphone, and pair them. Then, check that the indication changes as shown in the figure below.



When this unit is connected to the Bluetooth enabled device, the indication will change as follows:
Waiting Device -> Connected .

If the indication does not change to "Connected", possible causes are as follows :

- This unit cannot be detected on the Bluetooth enabled device:
Power might not be supplied to Bluetooth Module. Check the BT_3V3_SW.
- Bluetooth enabled device is connected, but the indication does not turn "Connected" :
Communication between the Bluetooth Module and main microcomputer is not established.
Check the signal lines of BT_KEY4/BT_KEY5/BT_KEY6.

2. If the indication changes properly in Step 1, perform pairing with a player then check the audio output signals.
If no audio signal is output, check ANALOG_L -/+ and ANALOG_R -/+.

4. Checking the USB Terminal

You can determine that this unit works properly by making connection according to the steps below.

1. Select the iPod/USB function then connect an Apple Device (iPod, etc.) to the USB terminal.
If the Apple device is recognized, it is OK.
If " Empty " on the LCD disappears, the device is recognized.
If possible, with the device connected, play a track to check the audio signal for confirmation.

2. Select the iPod function then connect an Apple Device (iPod, etc.) to the USB terminal.
If charging of the Apple device starts, it is OK.

If Apple device does not recognized, refer to the diagnosis flowchart for a case in which the No sound from USB function on "5.1 TROUBLESHOOTING".

5.5 IC INFORMATION

8952HM7100020-IL (UPD78F1166AGF-GAS)(DMAIN ASSY: IC5)

16-bit Single-chip Microcontrollers

• Pin Function

No.	Function Name of Chip	Pin Name	I/O	Pin Function
1	P60/SCL0		O	NC
2	P61/SDA0		O	NC
3	P62		O	NC
4	P63	XRST_NW	O	Network module communication reset
5	P31/TI03/TO03/INTP4	USB_DOCK_OVERLOAD	I	Detect that BridgeCo detected a USB overcurrent. Active: L
6	P64/RD		O	NC
7	P65/WR0		O	NC
8	P66/WR1		O	NC
9	P67/ASTB	USB_START	I	Detect that BridgeCo started USB control. H: Start Active: H
10	P77/EX23/KR7/INTP11		I	NC
11	P76/EX22/KR6/INTP10	MUTE_FLAG	I	USB connection switching request of BridgeCo Active: H
12	P75/EX21/KR5/INTP9	USB_SEL	I	USB connection switching request of BridgeCo Active: H
13	P74/EX20/KR4/INTP8	HSYNC	I	HSYNC monitor of LCD communication
14	P73/EX19/KR3		O	NC
15	P72/EX18/KR2		O	NC
16	P71/EX17/KR1		O	NC
17	P70/EX16/KR0		O	NC
18	P06/WAIT		O	NC
19	P05/CLKOUT		O	NC
20	EVSS1	EVSS1	-	Ground of port block (except P20-P27, P110, P111, P121-P124, P150-P157)
21	P80/EX0		O	NC
22	P81/EX1		O	NC
23	P82/EX2		O	NC
24	P83/EX3		O	NC
25	P84/EX4		O	NC
26	P85/EX5		O	NC
27	P86/EX6		O	NC
28	P87/EX7		O	NC
29	P30/INTP3/RTC1HZ	VFD_CE	I	FL CE
30	EVDD1	EVDD1	-	Positive power supply of port block (except P20-P27, P110, P111, P121-P124, P150-P157)
31	P50/EX8	MODEL	I	HM/CNAP model determining
32	P51/EX9		O	NC
33	P52/EX10		O	NC
34	P53/EX11		O	NC
35	P54/EX12		O	NC
36	P55/EX13		O	NC
37	P56/EX14		O	NC
38	P57/EX15		O	NC
39	P17/EX31/TI02/TO02		O	NC
40	P16/EX30/TI01/TO01/INTP5		O	NC
41	P15/EX29/RTCDIV/RTCCL		O	NC
42	P14/EX28/RxD3	DEBUG_RX	I	232C DEBUG RX
43	P13/EX27/TxD3	DEBUG_TX	O	232C DEBUG TX
44	P12/EX26/SO00/TxD0	TX0_DI_NW	O	Data output of network module communication (Sub->DM860)
45	P11/EX25/SI00/RxD0	RX0_DO_NW	I	Data input of network module communication (DM860->Sub)
46	P10/EX24/SCK00	CLK_NW	O	Clock output of network module communication
47	AVREF1	AVREF1	-	
48	P110/ANO0		O	NC
49	P111/ANO1	CS_NW	O	Chip select output of network module communication
50	AVREF0	AVREF0	-	

• Pin Function

No.	Function Name of Chip	Pin Name	I/O	Pin Function
51	AVSS	AVSS	-	
52	P157/ANI15		O	NC
53	P156/ANI14		O	NC
54	P155/ANI13		O	NC
55	P154/ANI12		O	NC
56	P153/ANI11		O	NC
57	P152/ANI10		O	NC
58	P151/ANI9		O	NC
59	P150/ANI8		O	NC
60	P27/ANI7	SUB_IRQ	O	SUB → MAIN REQUEST output
61	P26/ANI6		O	NC
62	P25/ANI5		O	NC
63	P24/ANI4		O	NC
64	P23/ANI3		O	NC
65	P22/ANI2		O	NC
66	P21/ANI1		O	NC
67	P20/ANI0		O	NC
68	P130		O	NC
69	P131/TI06/TO06		O	NC
70	P04/SCK10/SCL10	CSK_MAIN	I/O	Communication clock of MAIN ↔ SUB
71	P03/SH0/RxD1/SDA10	SCDO_MAIN	I	Communication data of SUB ← MAIN
72	P02/SO10/TxD1	SCDI_MAIN	O	Communication data of SUB → MAIN
73	P01/TO00		O	NC
74	P00/TI00		O	NC
75	P145/TI07/TO07	PWM_LCD	O	Backlight control (PWM) of LCD communication
76	P144/SO20/TxD2		O	NC
77	P143/SI20/RxD2/SDA20		O	NC
78	P142/SCK20/SCL20		O	NC
79	P141/PCLBUZ1/INTP7		O	NC
80	P140/PCLBUZ0/INTP6		O	NC
81	P120/INTP0/EXLVI	MAIN_REQ	I	MAIN REQUEST input
82	P47/INTP2	REQ_NW	I	Request input of network module communication
83	P46/INTP1/TI05/TO05		O	NC
84	P45/SO01		O	NC
85	P44/SI01	VFD_DI	I	FL DATA input
86	P43/SCK01	VFD_CLK	I	FL CLOCK
87	P42/TI04/TO04	REMOKON_TX	O	Remote control signal output
88	P41/TOOL1	TOOL1	-	Clock output for debuggers
89	P40/TOOL0	TOOL0	-	Data input/output for flash memory programmer/debugger External pull-up for using on-chip debugger.
90	RESET	RESET	I	Reset input
91	P124/XT2		O	NC
92	P123/XT1		O	NC
93	FLMD0	FLMD0	-	Pin for flash memory programming mode pull-in (pull-down in open or more than 100kΩ)
94	P122/X2/EXCLK	X2	I	Oscillator connection for main system clock
95	P121/X1	X1	I	Oscillator connection for main system clock
96	REGC	REGC	-	Connect a stable capacitance of the regulator output (2.5V) for internal operation. Connected to VSS via a capacitor (0.47-1μF: a target).
97	VSS	VSS	-	Ground (except P121-P124 and port block)
98	EVSS0	EVSS0	-	Ground of port block (except P20-P27, P110, P111, P121-P124, P150-P157)
99	VDD	VDD	-	Positive power supply (except P121-P124 and port block)
100	EVDD0	EVDD0	-	Positive power supply of port block (except P20-P27, P110, P111, P121-P124, P150-P157)

6. SERVICE MODE

6.1 SERVICE MODE

1. About Service Mode

When the unit enters Service mode, the dedicated Service menu is started. In Service mode, the Service menu is open. You can perform the following tasks on the Service menu:

- Confirmation of the versions of Bco CPU/Main microcomputer/CD IF microcomputer/CD DSP microcomputer /Submicrocomputer/DAB module
- Confirmation of the model information (whether the model name recognized by the software is HM82 or HM82D or HM72 or HM72D)
- Confirmation of the region information (The region recognized by the software will be displayed.)
- Confirmation of the network information
- Updating the Bco CPU or submicrocomputer via USB
- Resetting to factory default

In Service mode, the protection circuits operate in the same manner as in normal operation.

2. How to Enter Service Mode

Turn the unit on then select the Music Server function.

Press the ESC then +10 button on the service remote control unit (GGF1381) to activate Service mode.

* If you press any button between the ESC and +10 buttons on the service remote control unit, the unit will not enter Service mode.

Note: If you enter Service mode with the CD/TUNER function selected, you cannot use cursor operations.

3. How to Quit Service Mode

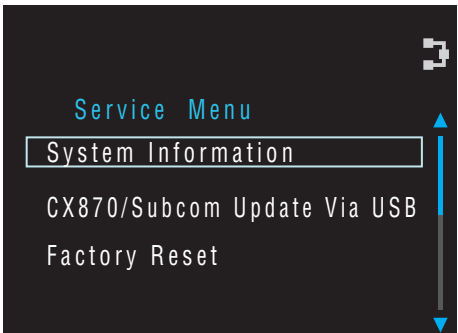
You can quit Service mode in one of the following ways: (1) switching the function, (2) turning the unit off, or (3) pressing the ◀ button while the top-layer screen of the Service menu is displayed.

4. Service Menu

For menu operation, use the cursor (↑/↓/◀/▶) and ENTER buttons on the remote control unit supplied with this unit. To register a selection, use the ENTER button. To return to the previous layer, use the ◀ button.

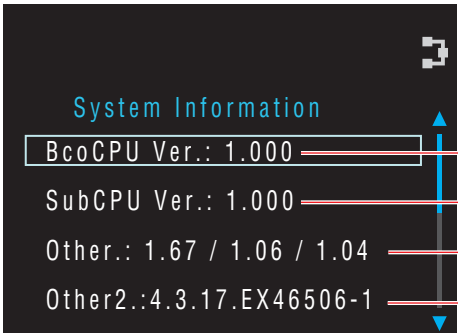
You can perform cursor operation using the buttons on the unit. The top layer of the Service menu is as shown below.

Buttons on the unit	Operation
▶/II (PLAY/PAUSE)	Select
■ (STOP)	Undo
▶▶▶▶ (FWD SKIP)	Cursor down
◀◀◀◀ (REV SKIP)	Cursor up



4.1 System Information

If System Information is selected, the screen shown below will be displayed.



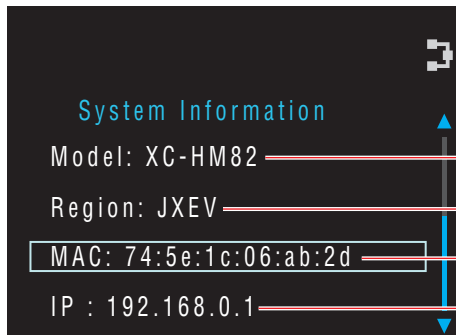
Bco (CX870, module on MAIN ASSY) Version

Subcom uPD78F1166 Version

Maincom / CD IF / CD DSP
M16C / uPD78F0515 / S5L8035

In the case of a DAB model, the version of a DAB module is displayed.

A



Model recognized by the software
XC-HM72/XC-HM72D/XC-HM82/XC-HM82D

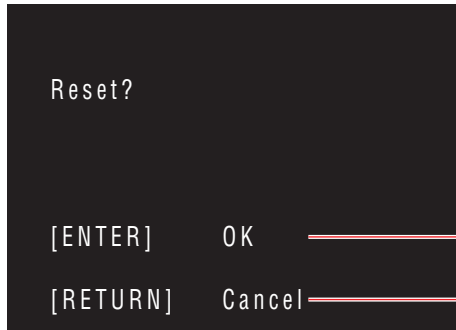
Region recognized by the software

MAC Address: The higher-order values "74:5e:1c" are fixed.

IP Address: "0.0.0.0" if the unit is not connected to LAN

B 4.2 Resetting to Factory Default

If you select Factory Reset then Start on the Service menu, the following screen will be displayed:



After resetting to factory default, the unit will be shut off by itself.

To quit this mode and return to the Service menu

C

5. Canceling a Power-On Prohibition Status Caused by Activation of a Protection Circuit

The protection circuits indicated below are mounted in this unit. If operation of this unit is locked by activation of any protection circuit, you can cancel the lock by either of the two methods indicated below.

You can confirm the number of detected activations of protection circuits in Protect Check mode.

For details, see "6.2 PROTECT CHECK MODE" All LEDs are lit in Protect Check mode.

D Note:

If any of the Music Server, Internet Radio, Spotify, or Favorites functions is selected before this unit is started in Protect Check mode, the selected function screen will be displayed until network connection is established (it may take up to dozens of seconds), then the Protect Check Mode screen will be displayed.

Example: Startup → Pioneer Logo → Music Server screen → Network established → Protection Check screen

Canceling Operation Lock

▶▶▶▶I and INPUT buttons of this unit: To cancel operation lock and turn on the unit

■ and ⏻ STANDBY/ON button of this unit: To cancel operation lock and enter Protect Check mode

E

Protection	Clear Key	Timer LED blink timing		Operation
		ON	OFF	
PWM	Special	900 ms	100 ms	Lock
DC	Special	100 ms	900 ms	Lock
AMP	POWER	100 ms	100 ms	Clear
POWER	Special	500 ms	500 ms	Lock
OVER TEMP1	POWER	100 ms	100 ms	Clear
OVER TEMP2	POWER	100 ms	100 ms	Clear

F

6.2 PROTECT CHECK MODE

Outline

In this mode, detected protection activations are displayed.

Basic Operation

Explanation	Key Sequence	LCD Display
To enter Protect Check mode, simultaneously press the "■ (STOP)" and "STANDBY/ON" buttons during Cold Standby.	Unit "■ (STOP)" + Unit "STANDBY/ON"	↓ Pioneer ↓ PROTECT No Protect ↓ PROTECT DC Protect:000 ↓ PROTECT Power Prot:000 ↓ PROTECT Amp Protec:000 ↓ PROTECT Over Temp1:000 ↓ PROTECT Over Temp2:000
The last protection activation that was detected before Protect Check mode is entered will be displayed.	Unit "▶▶▶▶I"	←
	Unit "▶▶▶▶I"	
	Unit "▶▶▶▶I"	
	Unit "▶▶▶▶I"	
	Unit "▶▶▶▶I"	

	Explanation	Key Sequence	LCD Display
A		Unit "▶▶▶▶▶"	↓ PROTECT Pwm Protec:000
	Not used	Unit "▶▶▶▶▶"	↓ PROTECT BT Protec:000
B		Unit "▶▶▶▶▶"	↓ PROTECT USB Protec:000
	Not used	Unit "▶▶▶▶▶"	↓ PROTECT Clear:Yes?
C	After the counts of detected protection activations for all protection circuits are displayed, the menu for resetting the counters will be displayed.	Unit "▶▶▶▶▶"	↓ PROTECT Clear...
	The counters will be reset when the "▶/ (Play/Pause)" button on the unit is pressed.	Unit "▶/ (Play/Pause)"	↓ PROTECT Clear:Yes?
D		Auto	↓ Power Off
	To turn the unit off, press the "STANDBY/ON" button during Protect Check mode.	Unit "STANDBY/ON"	
E			

Remarks

During Protect Check mode, response to keys other than those described below is disabled.

Unit "▶▶▶▶▶" button

Unit "▶/|| (Play/Pause)" button

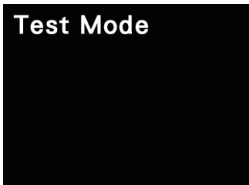
Unit "STANDBY/ON" button

6.3 CHECKING THE LCD

LCD checking is possible in Test mode for use on the production line.

To enter Test mode, select the Music Server function, then press the ESC then FRM/TIM keys on the service remote control unit.

TEST MODE will be displayed. (Although TEST MODE is displayed even if the CD or Tuner function is selected, LCD checking is not possible with those functions selected.)



To quit TEST MODE, perform one of the following operations:

- 1. Switch the input function.
- 2. Turn the unit off.
- 3. Perform factory setting.

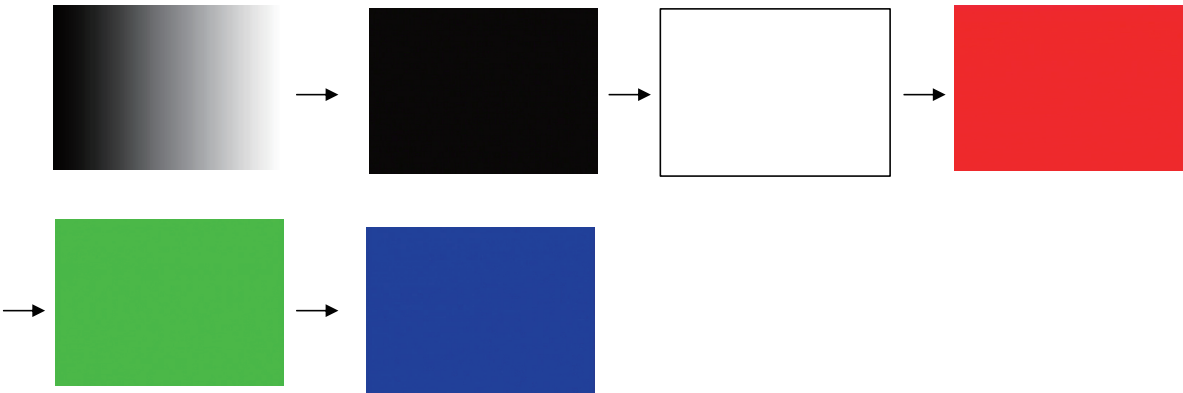
How to perform LCD checking

Each time the **1 key on the remote control unit** with the product is pressed, the screen is changed as shown below:

Ramp > Black > White > Red > Green > Blue

If the **0 key** is pressed, the screen will return to that of Test Mode.

[Screens to be displayed]



6.4 RDS CHARACTERS

This unit can display all the characters that are indicated in the white cells in the table below properly but cannot display the characters in gray cells properly and will indicate such characters as "#." Those are the characters shown below in the RDS standard:

0x5E —
0x60 ||
0x7E —

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	#	p	á	â	ª	º	Á	Â	Ã	ä
	0	10	20	30	40	50	23	70	E1	E2	AA	BA	C1	C2	C3	E3
1	SOH	DC1	!	1	A	Q	a	q	à	ä	α	¹	À	Ä	Å	å
	1	11	21	31	41	51	61	71	E0	E4	3B1	B9	C0	C4	C5	E5
2	STX	DC2	"	2	B	R	b	r	é	ê	©	²	É	Ê	Æ	æ
	2	12	22	32	42	52	62	72	E9	EA	A9	B2	C9	CA	C6	E6
3	ETX	DC3	#	3	C	S	c	s	è	ë	‰	³	È	Ë	OE	oe
	3	13	23	33	43	53	63	73	E8	EB	2030	B3	C8	CB	152	153
4	EOT	DC4	¤	4	D	T	d	t	í	î	Š	±	Í	Î	Ÿ	ŵ
	4	14	A4	34	44	54	64	74	ED	EE	11E	B1	CD	CE	177	175
5	ENQ	NAK	¥	5	E	U	e	u	ì	ï	ě	ĭ	Ì	Ï	Ý	ý
	5	15	25	35	45	55	65	75	EC	EF	11B	130	CC	CF	DD	FD
6	ACK	SYN	&	6	F	V	f	v	ó	ô	ň	ń	Ó	Ô	Õ	õ
	6	16	26	36	46	56	66	76	F3	F4	148	144	D3	D4	D5	F5
7	BEL	ETB	'	7	G	W	g	w	ò	ö	ó	ű	Ò	Ö	Ø	ø
	7	17	27	37	47	57	67	77	F2	F6	151	171	D2	D6	D8	F8
8	BS	CAN	(	8	H	X	h	x	ú	û	π	μ	Ú	Û	Ẁ	ẁ
	8	18	28	38	48	58	68	78	FA	FB	3C0	B5	DA	DB	DE	FE
9	HT	EM	)	9	I	Y	i	y	ù	ü	ϕ	¿	Ù	Ü	Ɔ	η
	9	19	29	39	49	59	69	79	F9	FC	20A0	BF	D9	DC	14A	14B
A	LF	SUB	*	:	J	Z	j	z	Ň	ň	£	÷	Ř	ř	Ř	ř
	A	1A	2A	3A	4A	5A	6A	7A	D1	F1	A3	F7	158	159	154	155
B	VT	ESC	+	;	K	[	k	{	Ç	ç	\$	°	Č	č	Č	č
	B	1B	2B	3B	4B	5B	6B	7B	C7	E7	24	B0	10C	10D	106	107
C	FF	FS	,	<	L	\	l		Ş	ş	←	¼	Š	š	Š	š
	C	1C	2C	3C	4C	5C	6C	7C	15E	15F	2190	BC	160	161	15A	15B
D	CR	GS	—	=	M	]	m	}	β	ǧ	↑	½	Ž	ž	Ž	ž
	D	1D	2D	3D	4D	5D	6D	7D	3B2	11F	2191	BD	17D	17E	179	17A
E	SO	RS	.	>	N	#	n	#	ı	ı	→	¾	Đ	đ	Ƨ	Ƨ
	E	1E	2E	3E	4E	23	6E	23	A1	131	2192	BE	110	111	166	167
F	SI	US	/	?	O		o	DEL	IJ	ij	↓	Š	L	l	Š	
	F	1F	2F	3F	4F	5F	6F	7F	132	133	2193	A7	13F	140	F0	

7. DISASSEMBLY

Note 1 : Do NOT look directly into the pickup lens. The laser beam may cause eye injury.

Note 2 : Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

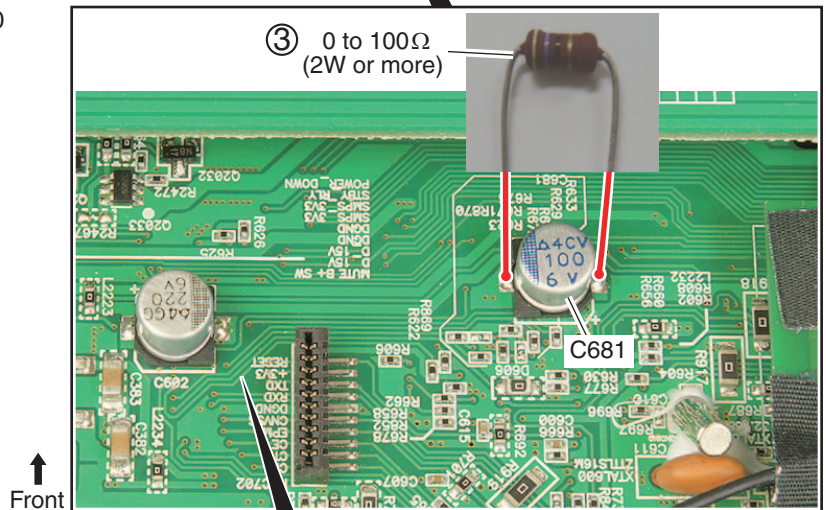
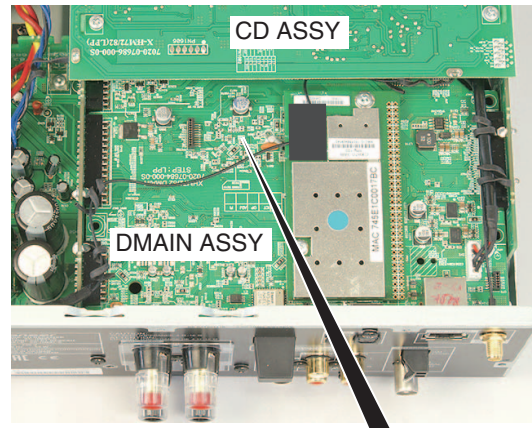
Note 3 : For performing the diagnosis shown below, the following jigs for service is required:

- 16P FFC extension jig cable (GGD1774)
- 33P board to board extension jig cable (GGD1847)
- 29P board to board extension jig cable (GGD1856)

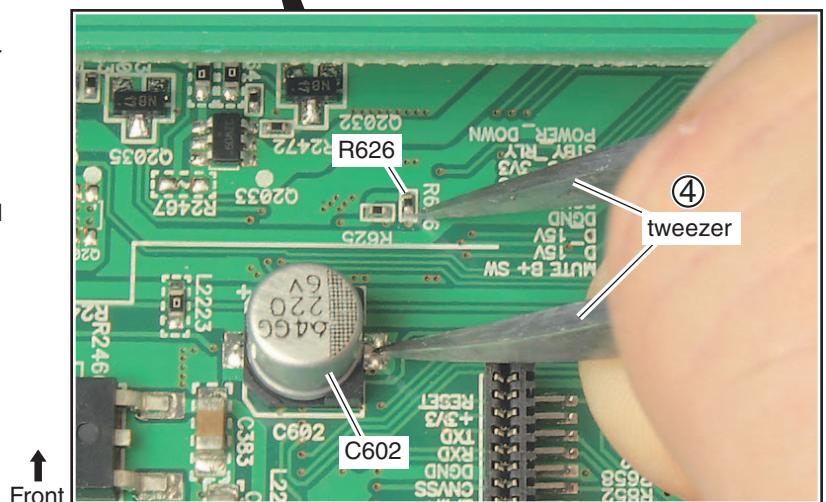
Note 4 : It is necessary to discharge DMAIN ASSY before starting the diagnosis. (Refer to the “Discharge”.)

Discharge

- (1) Disconnect the Power Cord of the product from the power supply.
- (2) Remove the Cabinet Top.
(Refer to the “[1-1] Cabinet Top” of “Disassembly”.)
- (3) Short-circuit +/- side of C681 (M3V3) using 0 to 100Ω (2W or more) resistance.



- (4) Short-circuit R626 (rear side) and GND using the tweezer, and then insert the Power Cord in the power supply.
- (5) After the electric charge of the product is discharged in Step (4), remove the tweezer that have short-circuited R626 and GND and then turn ON the power supply.



Disassembly

[1] Exterior

[1-1] Cabinet Top

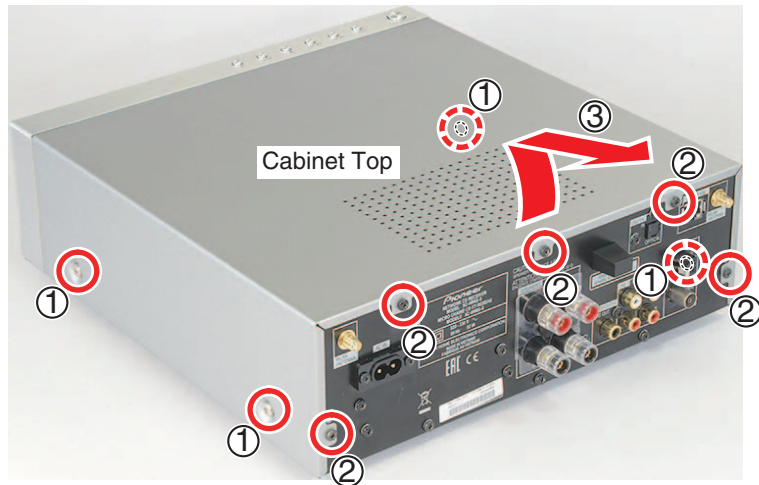
- (1) Remove the four screws.

X-HM82-K/SYXEV8: BCZ40P060FTB
 X-HM82D-K/VXEV8:
 XC-HM82-K/SYXEV8:
 XC-HM82-K/CXEV:
 XC-HM82D-K/VXEV8:
 X-HM72-K/SYXEV8:
 X-HM72D-K/VXEV8:
 X-HM82-S/SYXEV8: BCZ40P060FNI
 X-HM82-S/AXEV5:
 XC-HM82-S/SYXEV8:
 X-HM72-S/SYXEV8:
 X-HM72D-S/VXEV8:

- (2) Remove the five screws.

(BBT30P100FTB)

- (3) Remove the Cabinet Top while lifting the rear side of Cabinet Top.



[1-2] Front Section

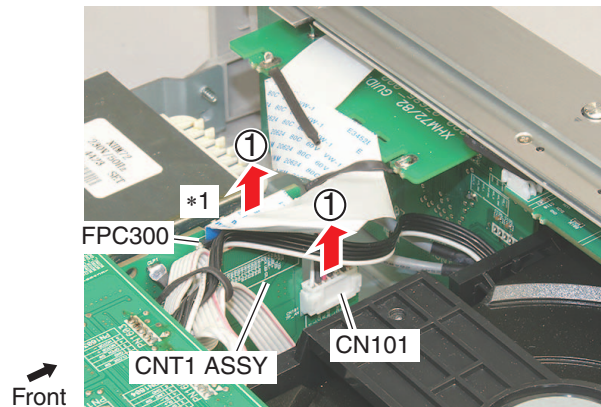
- (1) Disconnect the two connectors.

Note:

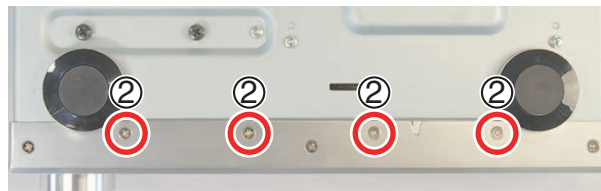
*1: A lock mechanism exists in the connector (FPC300). You should remove it with care.

- (2) Remove the four screws.

X-HM82-K/SYXEV8: B020030083F10-IL
 X-HM82D-K/VXEV8:
 XC-HM82-K/SYXEV8:
 XC-HM82-K/CXEV:
 XC-HM82D-K/VXEV8:
 X-HM72-K/SYXEV8:
 X-HM72D-K/VXEV8:
 X-HM82-S/SYXEV8: B020030084F10-IL
 X-HM82-S/AXEV5:
 XC-HM82-S/SYXEV8:
 X-HM72-S/SYXEV8:
 X-HM72D-S/VXEV8:



Front



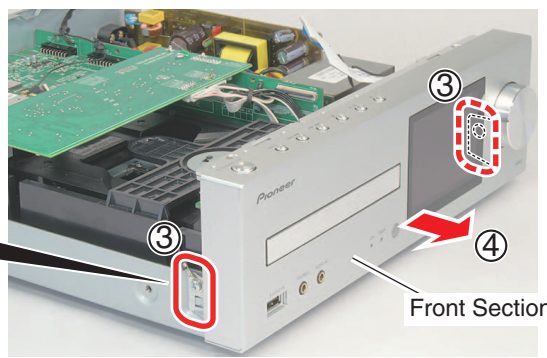
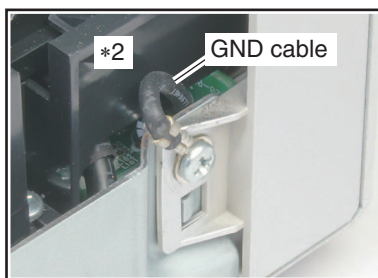
• Bottom view

- (3) Remove the two screws.

(BBZ30P080FTC)

Note on assembling

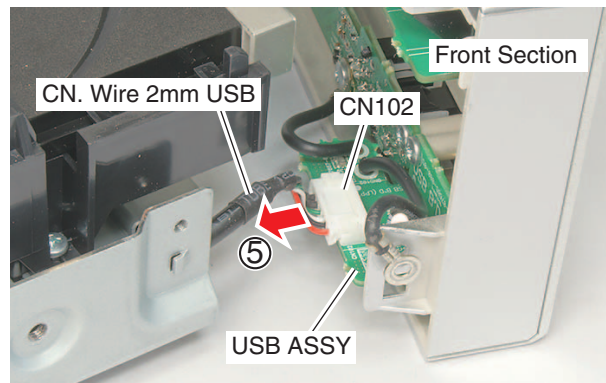
*2: Joint the GND cable on left side only.



- (4) Unhook the two hooks and then remove the Front Section.

- (5) Disconnect the connector.

Note: If you carry out diagnosis, it is not necessary to disconnect.

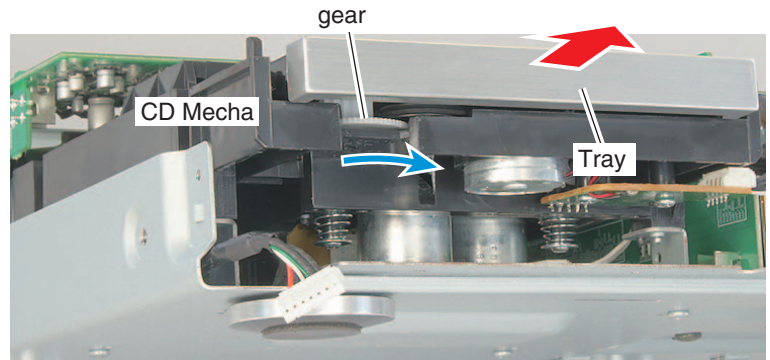


• **How to open the Tray except
▲ OPEN/CLOSE button operation**

If the Tray is not opened and disc cannot be pulled out by operating the ▲ OPEN/CLOSE button, open the Tray forcibly in the method shown below.

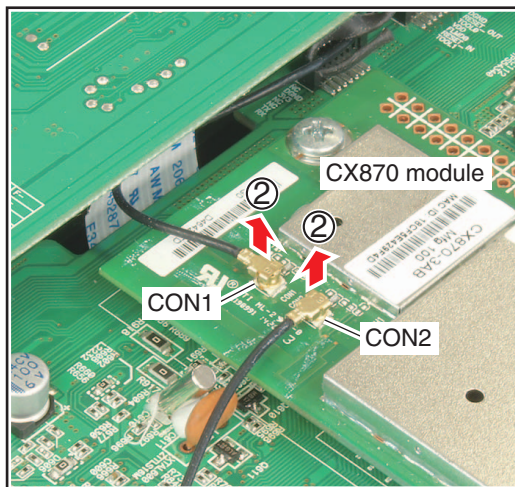
Remove the Front Section and rotate the gear on front side of CD Mecha in clockwise direction.

If the Tray is unlocked, slide it out by hand.



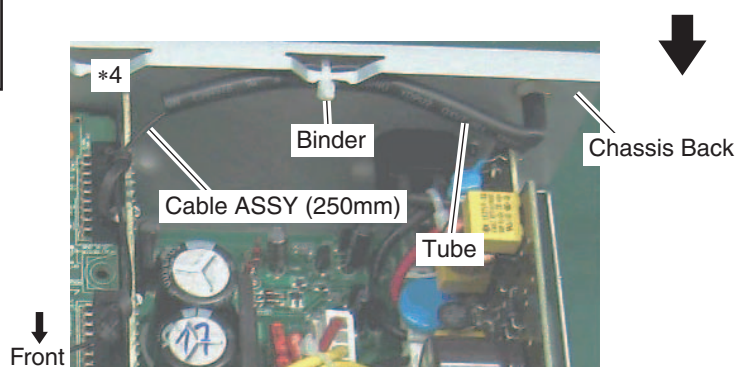
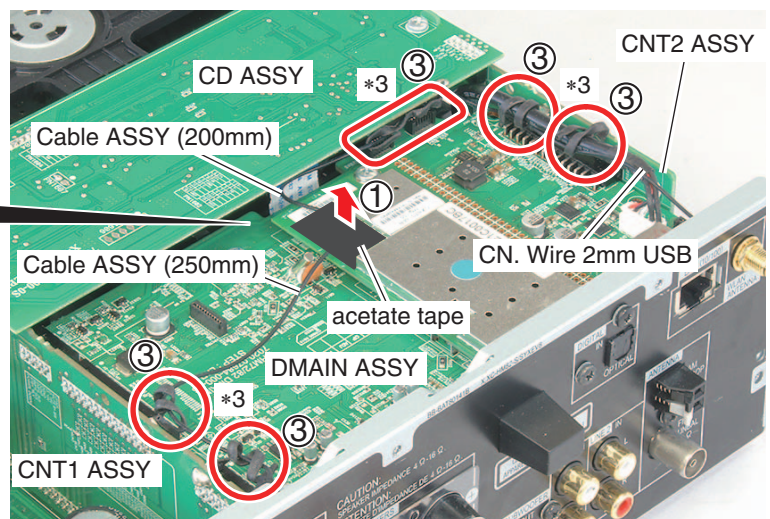
[1-3] Chassis Back

- (1) Remove the acetate tape.
- (2) Disconnect the two connectors.
- (3) Release the cables from the five PCB binders.



Note on assembling

- *3: Don't touch the cables to the Cabinet Top.
- *4: When replacing the Chassis Back or the Cable ASSY (250mm), don't forget to attach the Tube and bind it.

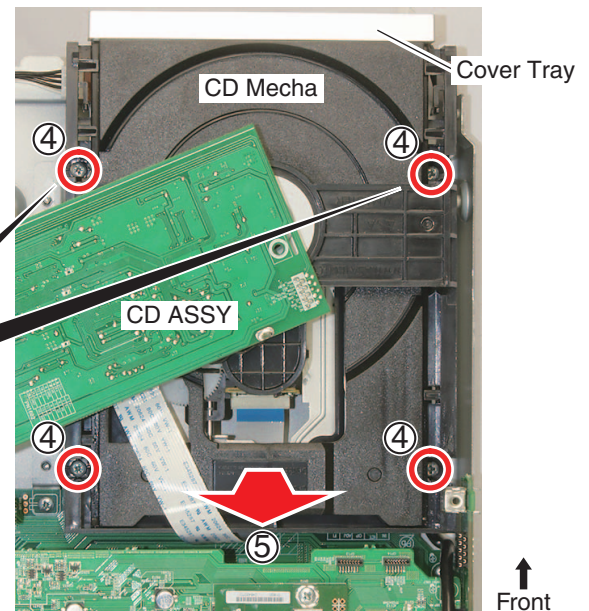
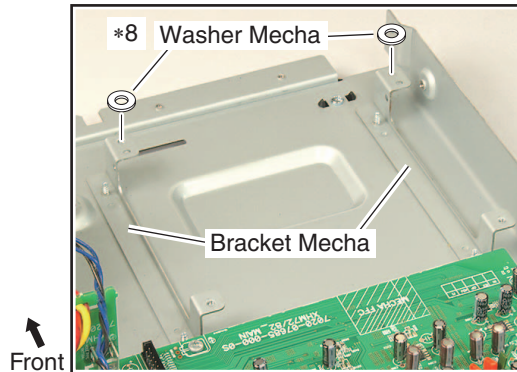


- (4) Remove the four screws. (BBZ30P080FTC)
- (5) Remove the CD Mecha (with the CD ASSY and Cover Tray).

Note: To remove the CD Mecha, remove simultaneously with the CD ASSY connected to Cable Flat Card 16P, and then disconnect the Cable Flat Card 16P after short circuit using a solder iron (refer to below).

Note on assembling

*8: Don't forget to attach the two Washer Mechas.



- (6) Disconnect the two connectors and then remove the Cable Flat Card 16P.

Note: If you carry out diagnosis, connect the 16P FFC extension jig cable (GGD1774).

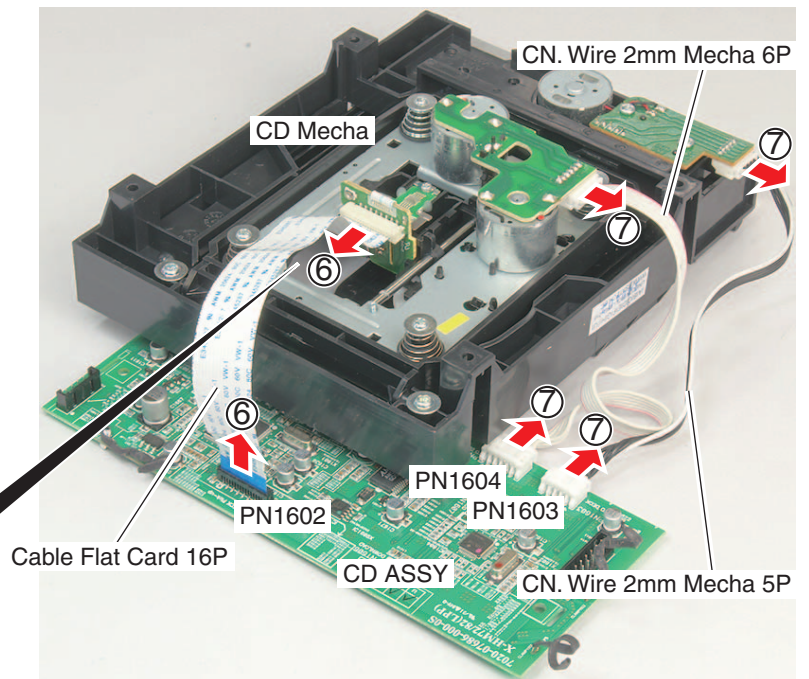
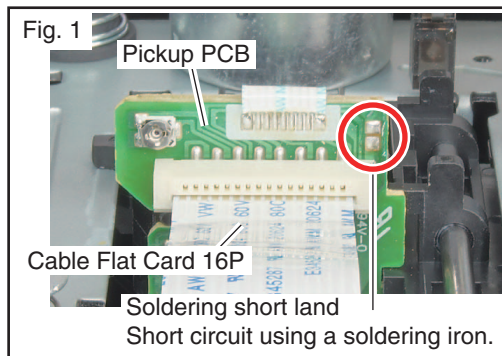
[Removing the CD Mecha]

Before removing the Pickup PCB and the Cable Flat Card 16P, short circuit the position shown in Fig. 1 using a soldering iron.

If you remove the Cable Flat Card 16P with no soldering, the Laser may be damaged.

[Installing the CD Mecha]

Remove the solder on the short circuit position after connecting the Cable Flat Card 16P and CD ASSY.



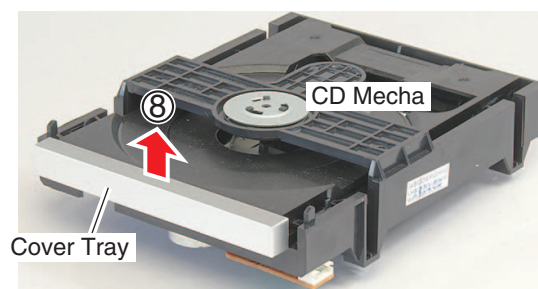
• Bottom side

- (7) Disconnect the four connectors and then remove the CD ASSY and the two cables.

Note: If you carry out diagnosis, it is not necessary to disconnect.

- (8) Remove the Cover Tray.

Note: If you carry out diagnosis, it is not necessary to remove.



[3] DMAIN ASSY, CNT1 ASSY, CNT2 ASSY and CX870 Module

A Remove the Cabinet Top, Front Section and Chassis Back.
(Refer to the "[1] Exterior".)

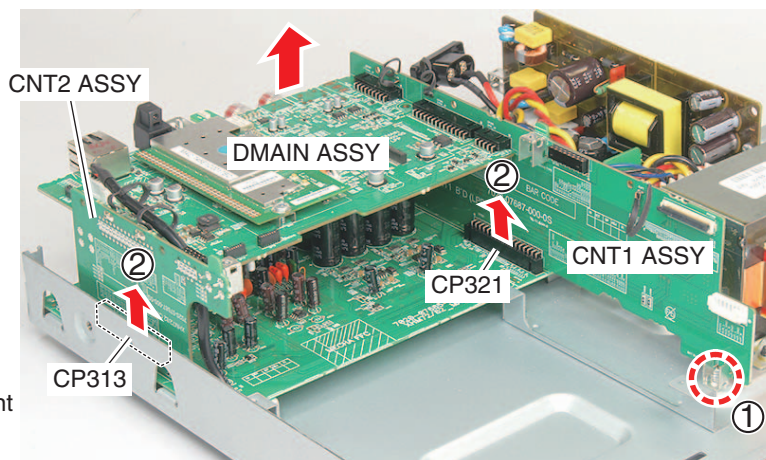
Remove the CD ASSY.

(Refer to the "[2] CD ASSY, CD Mecha".)

Not necessary to remove the CD Mecha.

- (1) Remove the screw of bottom side.
(BBZ30P080FTC)
- (2) Disconnect the two connectors and then remove the DMAIN ASSY, CNT1 ASSY and CNT2 ASSY.

Front

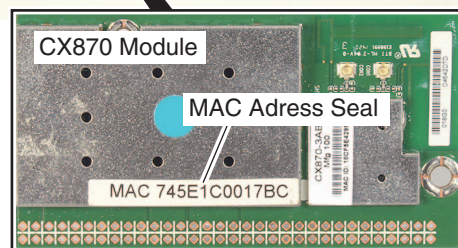
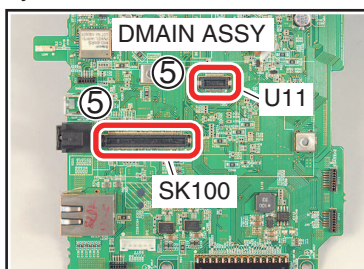
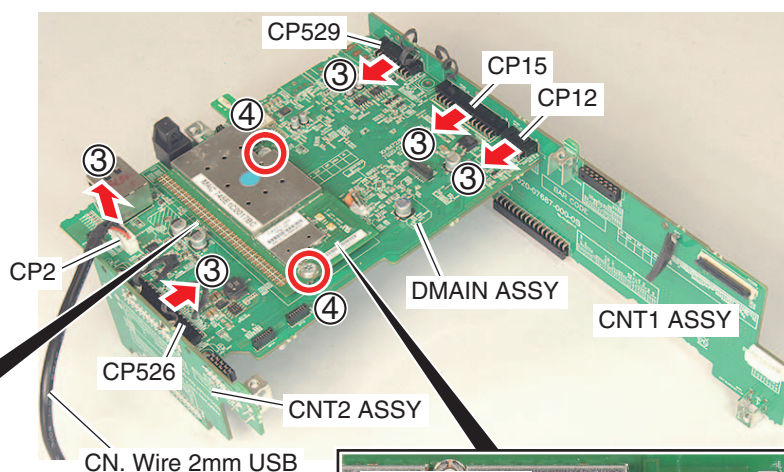


- (3) Disconnect the five connectors and then remove the CNT1 ASSY, CNT2 ASSY and CN. Wire 2mm USB.

Note: If you carry out diagnosis, it is not necessary to disconnect.

- (4) Remove the two screws. (BBZ30P080FTC)
- (5) Disconnect the two connectors and then remove the CX870 Module.

Note: If you carry out diagnosis, it is not necessary to remove.



Note on replacing CX870 Module

After the CX870 Module is replaced, MAC address will be changed.

A new MAC address is shown on the MAC Address Seal affixed to the service part.

[4] Diagnosis

Remove the Cabinet Top, Front Section and Chassis Back.

(Refer to the "[1] Exterior".)

Remove the CD ASSY, CD Mecha.

(Refer to the "[2] CD ASSY, CD Mecha".)

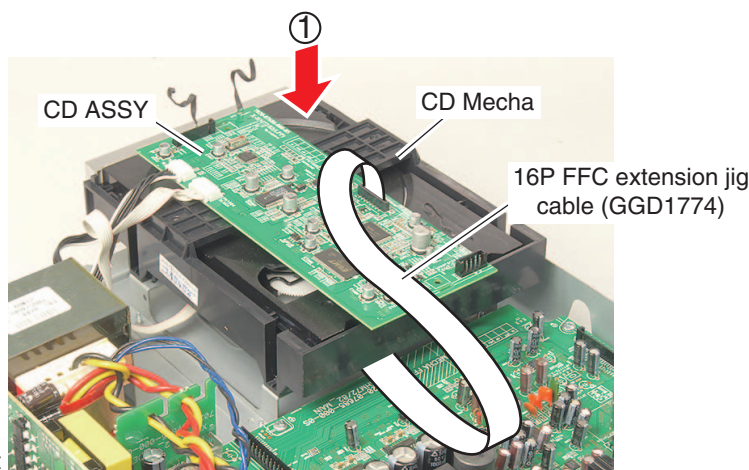
Remove the DMAIN ASSY, CNT1 ASSY and CNT2 ASSY.

(Refer to the "[3] DMAIN ASSY, CNT1 ASSY and CNT2 ASSY".)

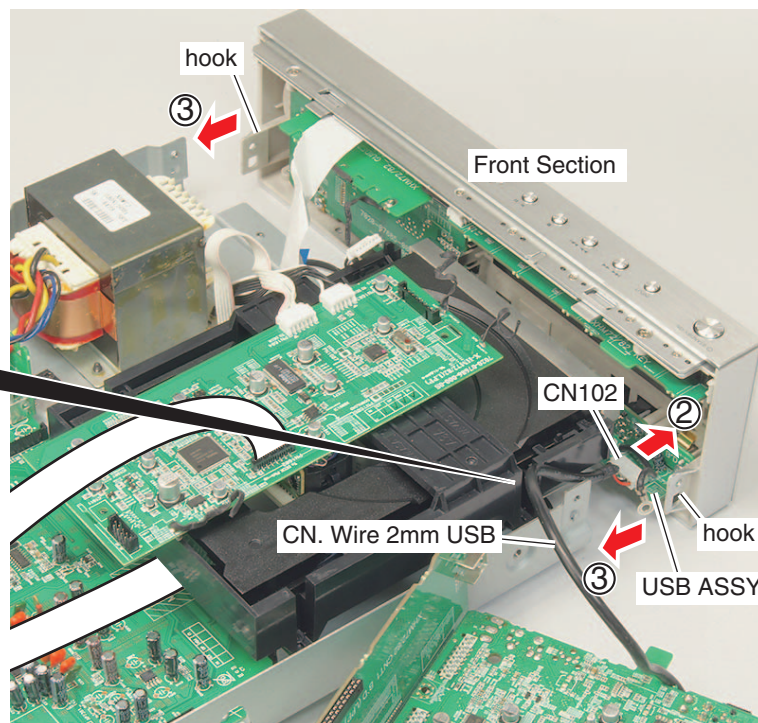
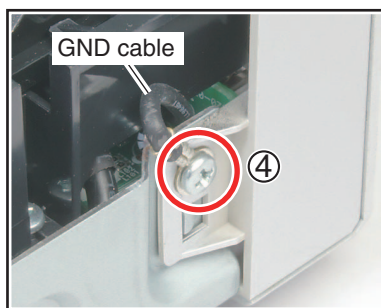
- (1) Allocate the CD Mecha with the CD ASSY connected by 16P FFC extension jig cable (GGD1774).

Not necessary to fix it with screws.

Front

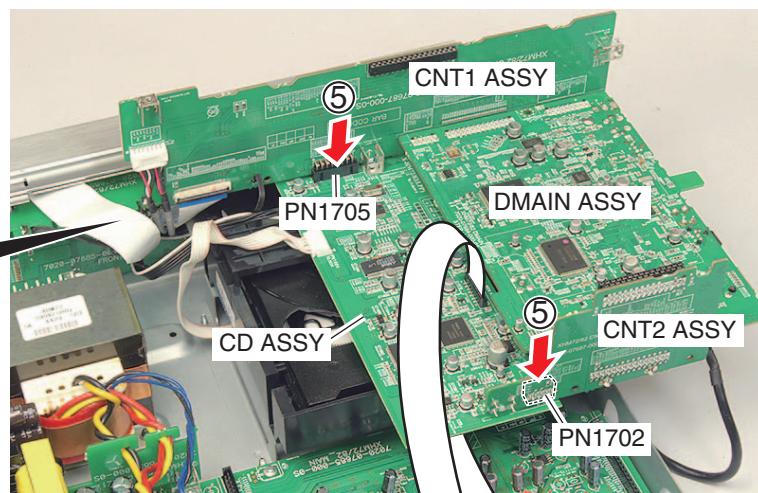
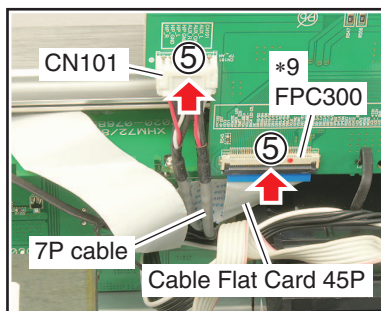


- (2) Connect the connector.
- (3) Attach the Front Section by two hooks.
- (4) Attach the GND cable, using the screw. (BBZ30P080FTC)



- (5) Arrange the unit as shown in the photo and then connect the four connectors.

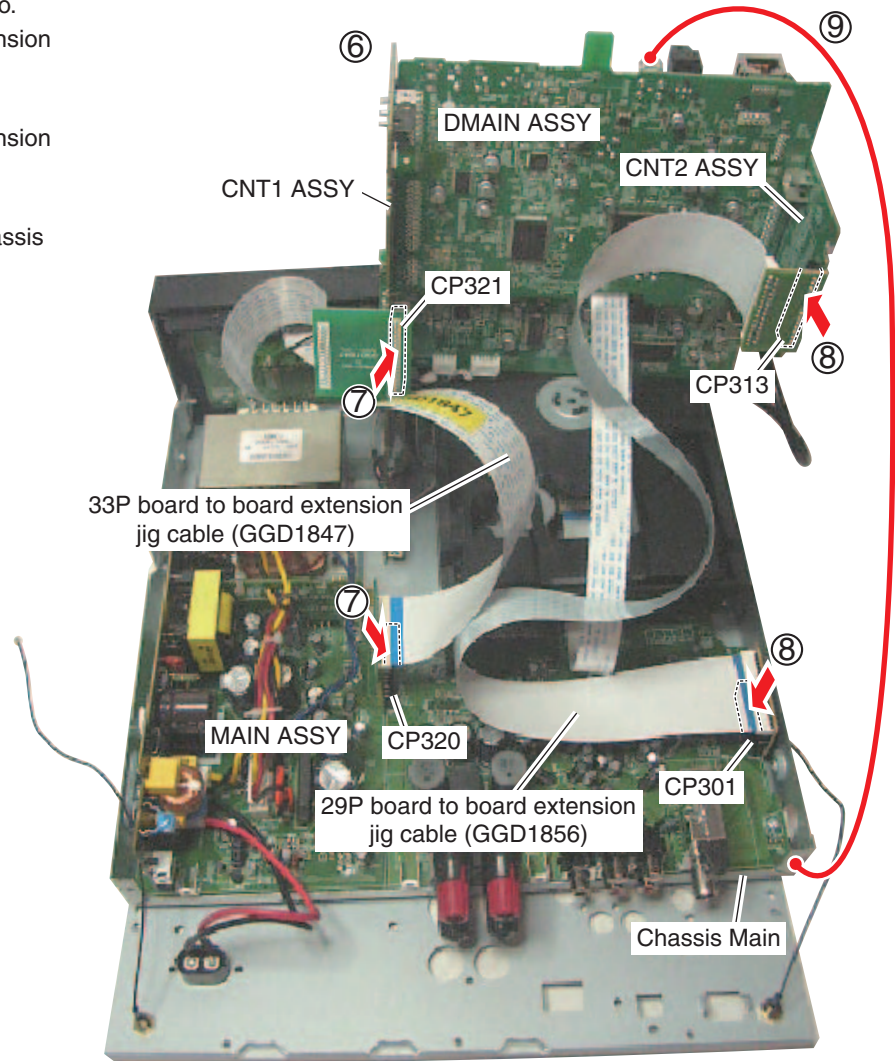
Note: Through the 7P cable (from FORNT ASSY) in the front side of the Cable Flat Card 45P for the allocation (rotation) in the next step.



Note:

*9: A lock mechanism exists in the connector (FPC300). You should connect it with care.

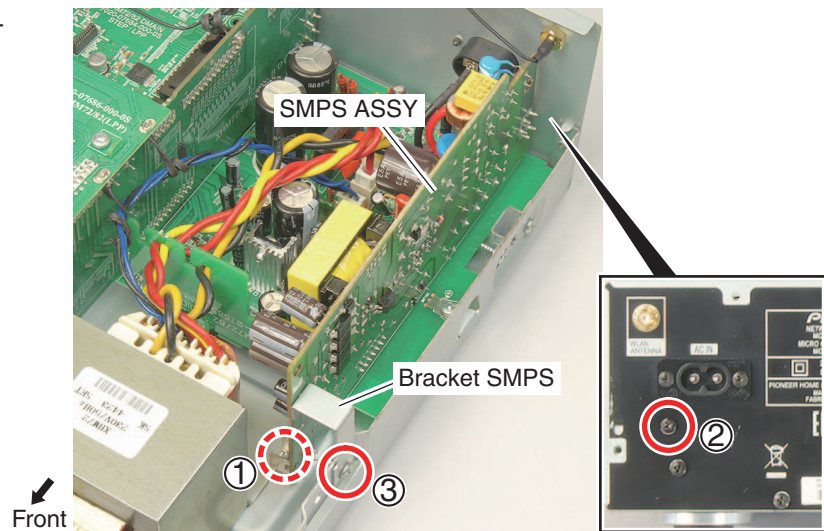
- (6) Arrange the unit as shown in the photo.
- (7) Connect the 33P board to board extension jig cable. (GGD1847)
(MAIN CP320 <-> CNT1 CP321)
- (8) Connect the 29P board to board extension jig cable. (GGD1856)
(MAIN CP301 <-> CNT2 CP313)
- (9) Connect the DMAIN ASSY to the Chassis Main Ground.



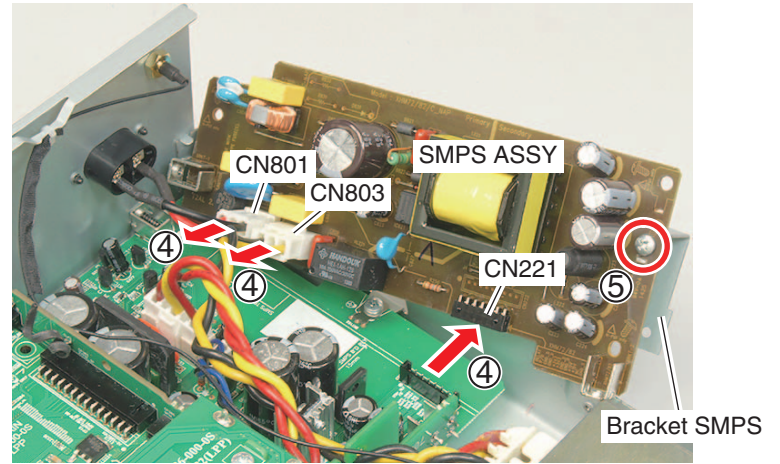
[5] SMPS ASSY

Remove the Cabinet Top.
(Refer to the "[1-1] Cabinet Top".)

- (1) Remove the screw of bottom side.
(BBZ30P080FTC)
- (2) Remove the screw of rear side.
(BBT30P100FTB)
- (3) Remove the screw.
(BBZ30P080FTC)



- (4) Disconnect the three connectors and then remove the SMPS ASSY.
- (5) Remove the screw (BBZ30P080FTC) and then remove the Bracket SMPS.



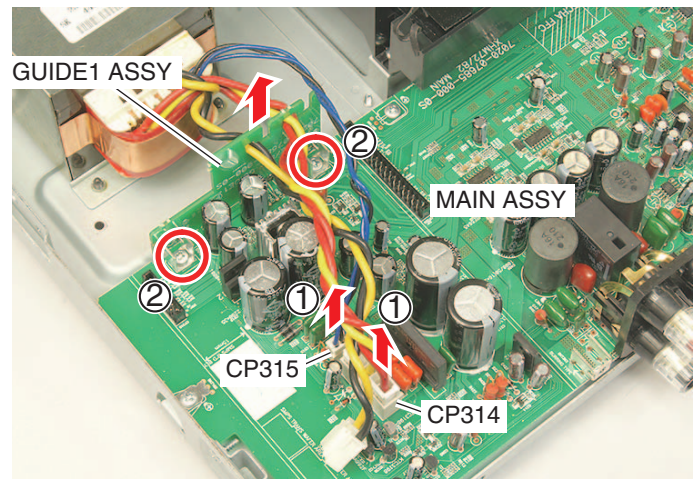
[6] MAIN ASSY

Remove the Cabinet Top and Chassis Back.
(Refer to the “[1] Exterior”.)

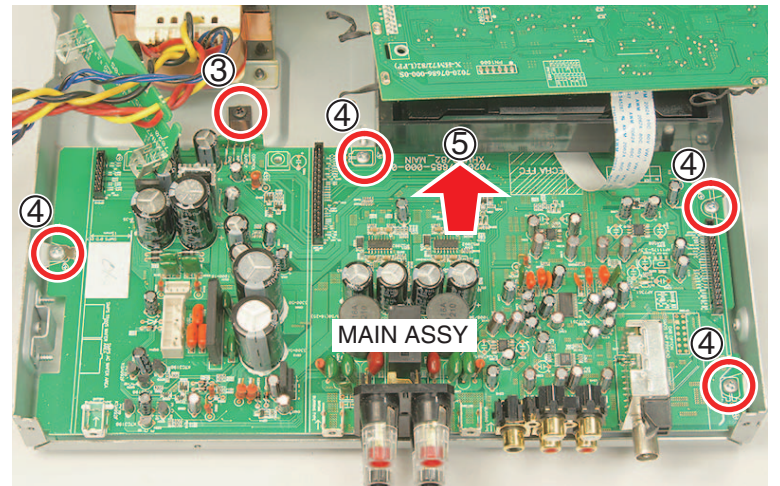
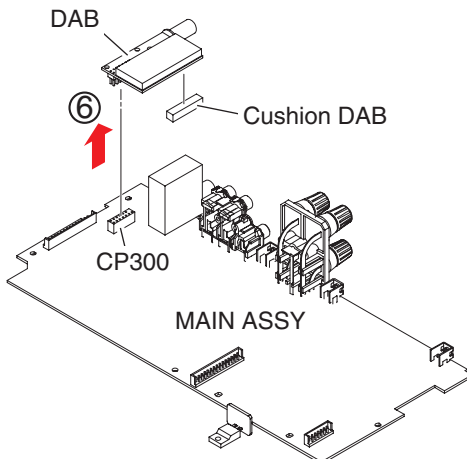
Remove the CD ASSY.
(Refer to the “[2] CD ASSY, CD Mecha”.)
Not necessary to remove the CD Mecha.

Remove the DMAIN ASSY, CNT1 ASSY and CNT2 ASSY.
(Refer to the “[3] DMAIN ASSY, CNT1 ASSY and CNT2 ASSY”.)

- (1) Disconnect the two connectors.
- (2) Remove the two screws (BBZ30P080FTC) and then remove the GUIDE1 ASSY.
- (3) Remove the screw. (B020230063B10-IL)
- (4) Remove the four screws. (BBZ30P080FTC)
- (5) Remove the MAIN ASSY.



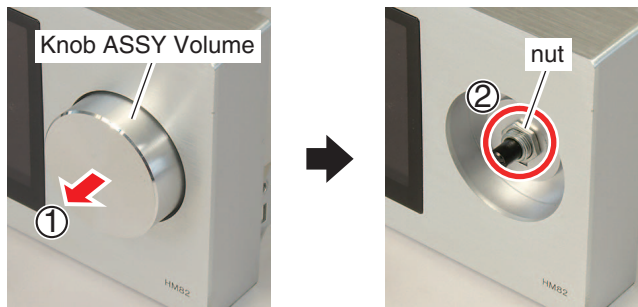
- (6) X-HM82D-K/VXE8,
XC-HM82D-K/VXE8,
X-HM72D-K/VXE8,
X-HM72D-S/YXE8 only:
Remove the DAB and Cushion DAB.



[7] FRONT ASSY, LCD Display

Remove the Cabinet Top and Front Section.
(Refer to the "[1-1] Cabinet Top" and "[1-2] Front Section".)

- (1) Remove the Knob ASSY Volume.
- (2) Remove the nut.

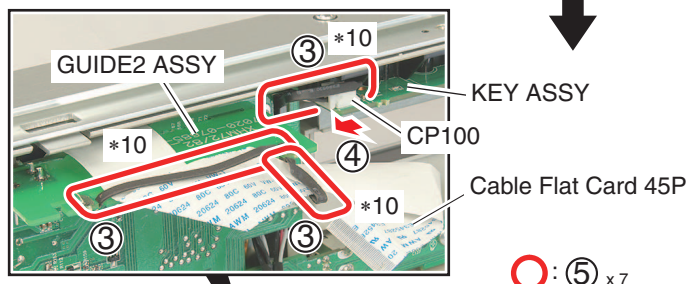


- (3) Release the cables from the three PCB binders.

B Note on assembling

*10: Don't touch the cables to the Cabinet Top.

- (4) Disconnect the connector.



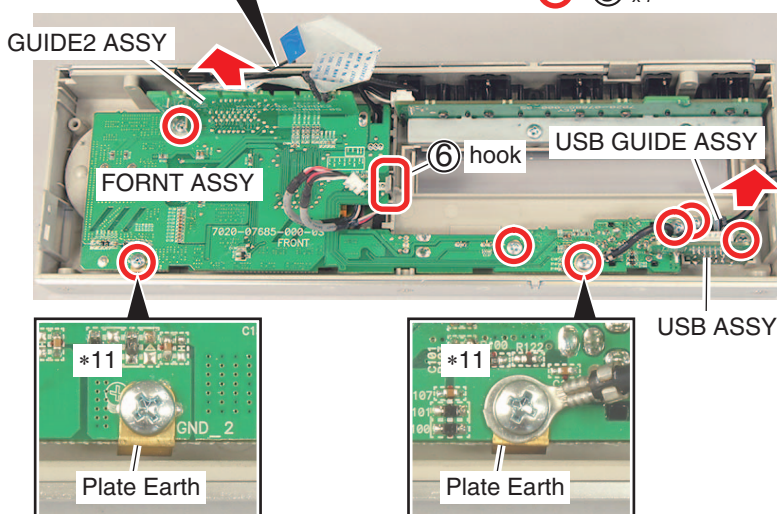
- (5) Remove the seven screws (BBZ30P080FTC) and then remove the GUIDE2 ASSY, USB GUIDE ASSY, USB ASSY and two Plate Earths.

C Note on assembling

*11: Don't forget to attach the two Plate Earths.

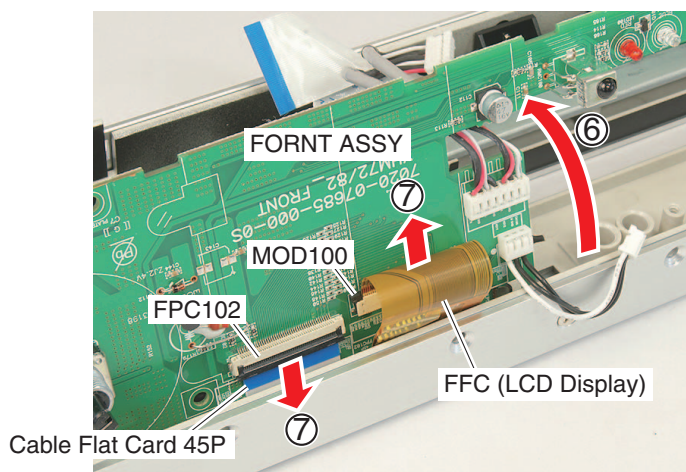
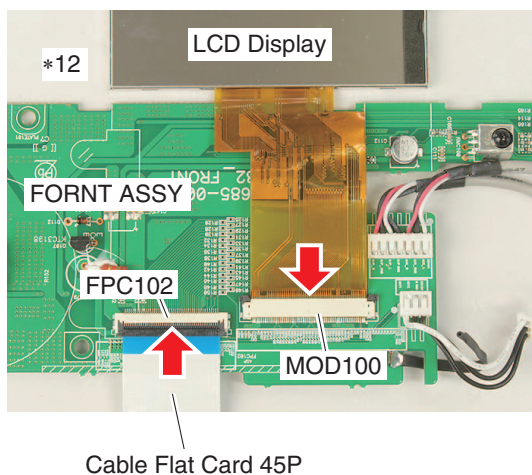
- (6) Unhook the hook and pull up the lower side of FRONT ASSY.
- (7) Disconnect the two connectors.

Note: A lock mechanism exists in the two connectors. You should remove it with care.

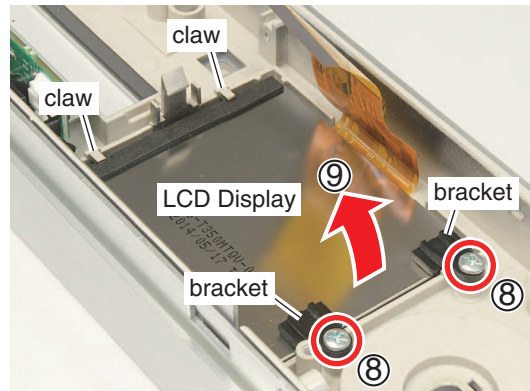


D Note on assembling

*12: At the attachment, it is better to disconnect the LCD Display from the Panel Inner and place it on flat surface and connect the two FFC's. Lock it surely not to insert it at a tilt.

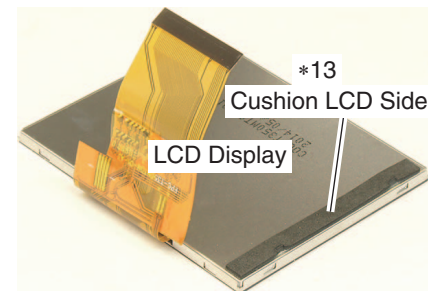
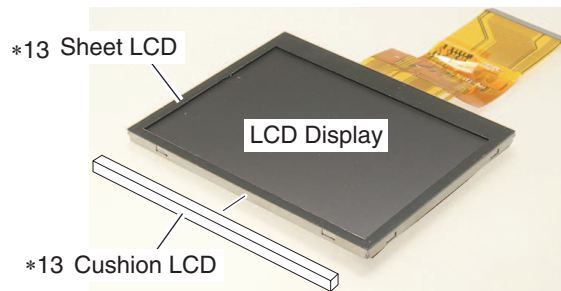


- (8) Remove the two screws (BBZ30P080FTC) and then remove the two brackets (accessory of Panel Inner).
- (9) Pull up the two claws from opposite side and remove the LCD Display.



Note on assembling

*13: When replacing the LCD Display, attach the new Sheet LCD, new Cushion LCD and new Cushion LCD Side.

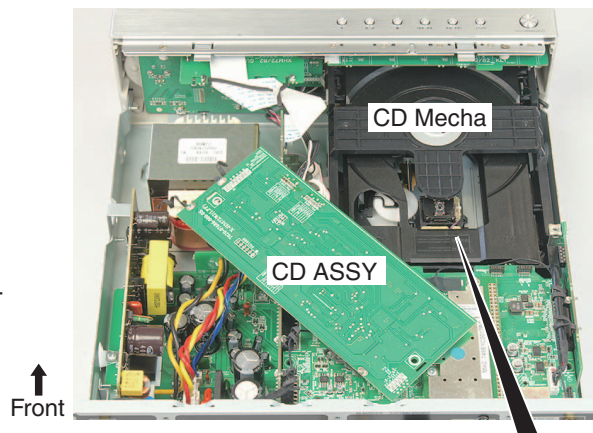


Cleaning the Pickup Lens

Remove the Cabinet Top.
(Refer to the "[1-1] Cabinet Top".)

Remove the CD ASSY.
(Refer to the "[2] CD ASSY, CD Mecha".)

Note: Don't disconnect of the Cable Flat Card 16P from the CD ASSY.
If you disconnect the Cable Flat Card 16P, the Laser may be damaged.

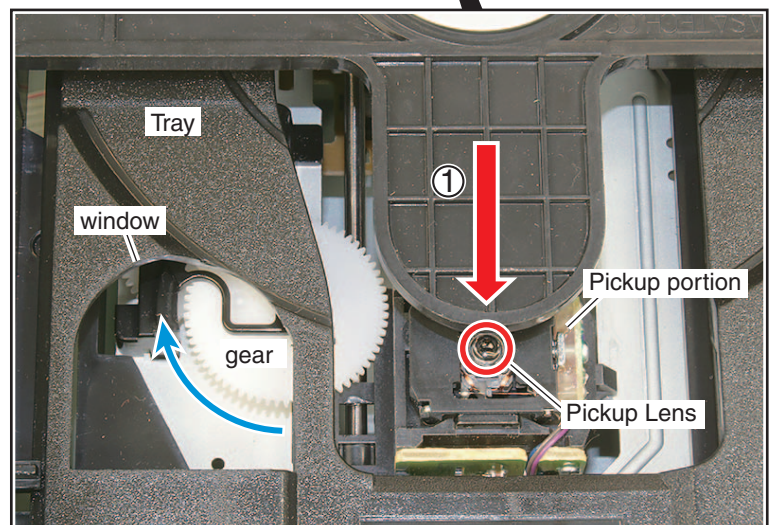


- (1) Rotate the gear of window at Tray in clockwise directly manually and move the Pickup portion to outermost periphery, and then carry out the cleaning.



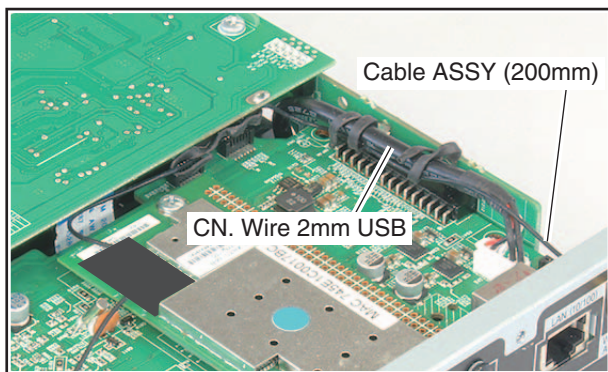
Clean the Pickup Lens when it is stained, using following cleaning materials:

Cleaning liquid : GEM1004
Cleaning paper : GED-008



Styling of cables between units

A



When you attach each unit, make a styling and connection of cables as shown in the photo.

Note: Keep the cables, PCB binders off the Cabinet Top.

When replacing the Cable ASSY (250mm), don't forget to attach the Tube and bind it.

B

Front

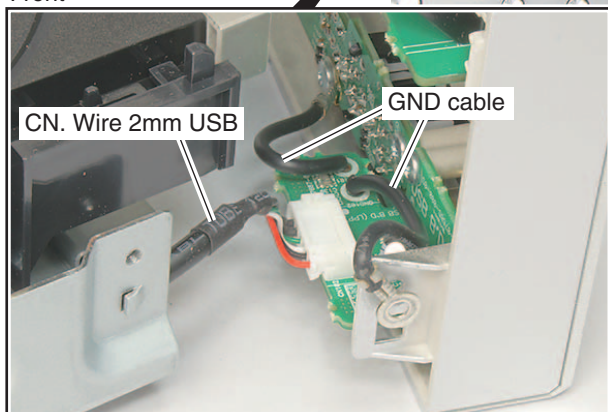
C

D

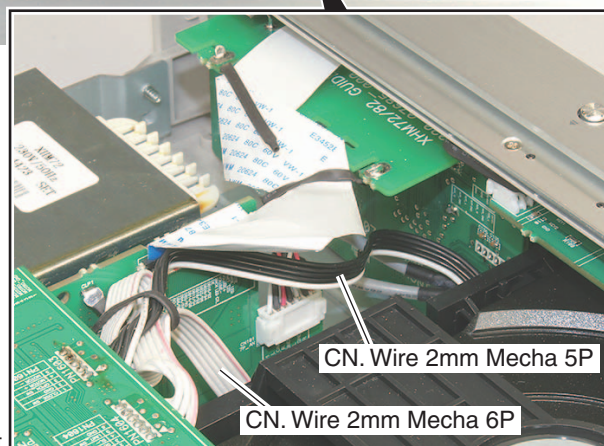
Front

E

F



Front



8. EACH SETTING AND ADJUSTMENT

8.1 UPDATING OF THE FIRMWARE

■ Updating of the MAIN Microcomputer firmware

[Purpose]

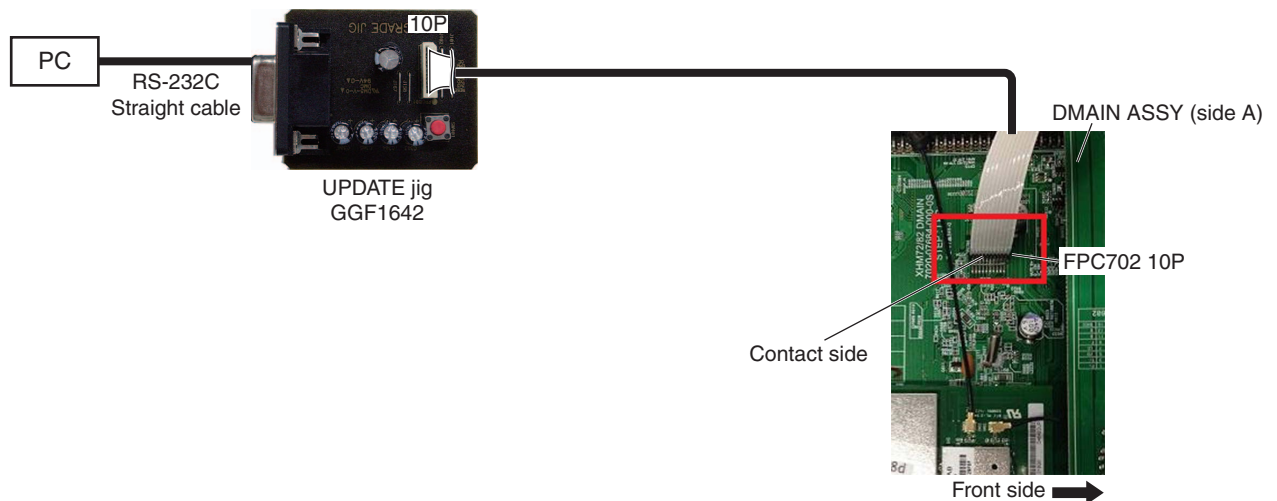
Refer to this section when updating the firmware of each microcomputer is required by the service information, etc.

[Necessary Tools]

- PC with a serial port
- Updating program: FlashSta.exe
- RS-232C straight cable (9pin female ↔ 9pin male)
- RS-232C update jig: GGF1642
- Firmware file: ".mot" file

[Connections]

Remove the cabinet (bonnet) so that the DMAIN ASSY becomes accessible.
Connect as shown in the figure below.
For the contact side of the FFC, see the photo below.



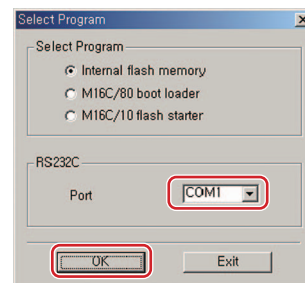
[Procedures]

1. Unplug the Power cord.
Connect the FFC cable. (MAIN microcomputer)
Start up application FlashSta on the PC.



2. Plug the Power cord. (STANDBY mode)
For updating of the MAIN microcomputer, proceed with the following steps in STANDBY mode.

3. Press the OK button.



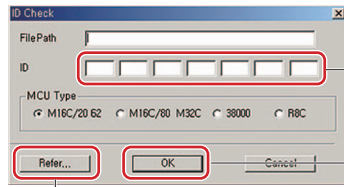
Select for COM port.

[if the following messages are displayed]



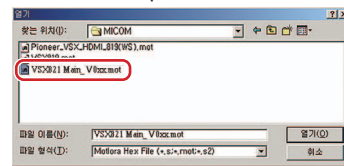
Please push the cancel button and press the JIG's RESET button.
And confirm a connection of FFC.
Please return to procedure 1.

4. Select the update file and enter ID.



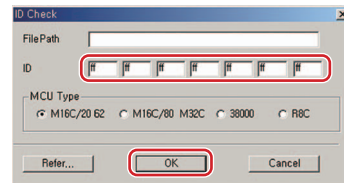
① Selection of upgrade file

① Select the update file



Select "HM7282_Vxxx.mot" file to update the MAIN microcomputer.

② Enter ID.



Press the OK button.

② Enter ID.
Enter "ff" in all field.

③ Press OK button to go to next step.

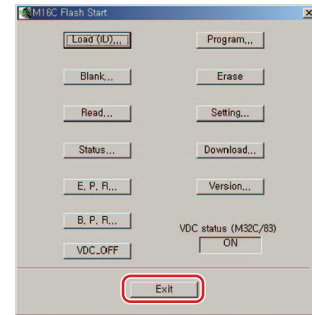


Press the OK button.

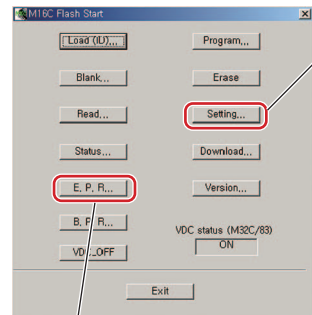
6. Update Finished MAIN microcomputer.



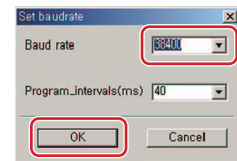
Press the OK button.

Press the Exit button.
Please wait for until this window disappears.7. Turn the unit off. (STANDBY mode)
Disconnect the Power cord.
Disconnect the FFC cable.

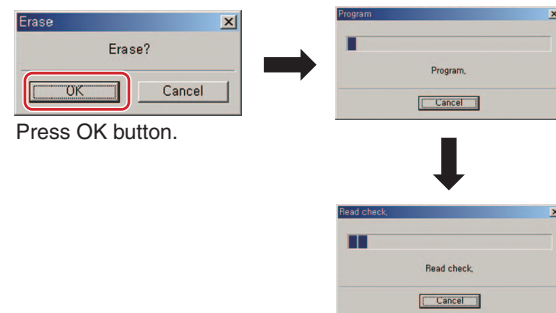
5. Set speed update and update the MAIN microcomputer.



① Set speed of update.

① Set speed of update.
Set Baud rate to 38400.
(Default Baud rate is 9600)

Press the OK button.

② Update the MAIN microcomputer.
E.P.R=>Erase+Program+Read② Update the MAIN microcomputer.
Press the E.P.R ... button

Press OK button.

[Procedure]

- ① Copy either the integrated file (HMx2015APP****HST****.fw) for updating BCO and Subcom or the single file (HMx2015APP****.fw) for updating BCO to a root folder in the USB memory.
*Do not change the released file name when it was released.
- ② Plug the power cord into the receptacle and turn on the power.
- ③ Connect the USB memory in which the update file has been stored to the Product.
- ④ Press iPod/USB button on the remote control unit.
Press “ESC” → “+10” buttons from service remote control unit (GGF1381) and enter into the Service Mode.
- ⑤ Select “CX870/Subcom Update Via USB” on the Service Menu Screen.
- ⑥ Press on the “ENTER” button on the Update Screen, and the update starts.
- ⑦ When update is completed, the progress bar turns green.
 - When the file name is HMx2015APP****.fw
The Product automatically restarts after 10 seconds.
 - When the file name is HMx2015APP****HST****.fw
The Product does not automatically restart.
Check that the progress bar turns green, and unplug the power cord.
- ⑧ Confirm that Subcom, BCO are revised by "System Information" of "6.1 SERVICE MODE" menu.

■ Subcom and BCO update screen

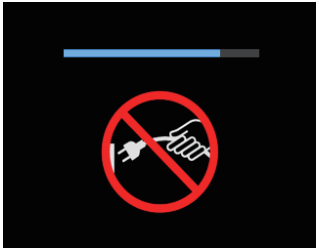
In units of 20%

A

B

C

D

Explanation	Key operation	Display screen	Time
The progress bar turns green following the successful updating. The time required for the blue progress bar to turn green varies by the format of the update file contained in the USB memory. The operation after updating also varies as follows: When the file name is HMx2015 APP****HST****.fw : The Product does not automatically restart. Check that the progress bar turns green, and unplug the power cord. When the file name is HMx2015 APP****.fw : The Product automatically restarts.	Key operation disabled	  	When the file name is HMx2015APP**** HST****.fw : Approx. 3 minutes When the file name is HMx2015APP****.fw : Approx. 1 minute
If update fails, the color of the progress bar changes to red. This screen remains displayed if updating fails. For recovery, unplug the power cord then plug it back in. The unit will start with the previous version of the program. Updating may fail if the updater file has erroneous data.			Unlimited

■ Updating of the CD I/F, CD DSP Microcomputers firmware

For updating firmware for the CD I/F and CD DSP microcomputers, create separate discs for updating each microcomputer then play the disc on the unit.

■ How to Update

- Write a *.UPG file onto a CD-R/RW to create the disc for updating.
Examples of file names (File names vary, depending on the version of firmware.)
For the CD I/F microcomputer: HM72_82CD_IFM_V1_00_110713.UPG
For the CD DSP microcomputer: HM72_82CD_DSP_V102_(20110720_VT).UPG

File writing can be performed, using the writing function of Windows XP.

Note: Create separate discs for updating the CD I/F and CD DSP microcomputers.

If two files for updating these microcomputers are written on one disc, a problem may occur.

NEVER write files other than a .UPG file onto the CD-R/RW for updating.

- Turn the unit ON.
- Set the Function selection to CD.
- Open the disc tray, load the created disc, then close the tray.
- Updating starts automatically.
- After updating is completed, the disc tray will be automatically opened.
- Unload the disc then turn the unit OFF.

8.2 INITIAL SETTING

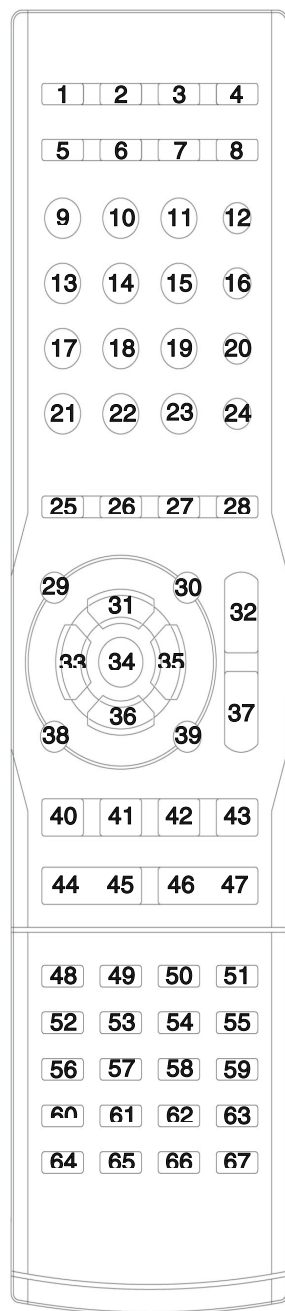
	Setting Name	Initial Setting	Setting Range	NetStandby	Cold	FactoryReset	Storage Place
SETUP system	Dimmer	LEVEL3	LEVEL3 / LEVEL2 / LEVEL1 / LCD Off	Memorized	Memorized	Clear	Maincom
	AutoPowerDown	15min	Off / 15min / 30min / 60min	Memorized	Memorized	Clear	Maincom
	Quick Start Mode	Off	Off / On	Memorized	Memorized	Clear	Maincom
	Bluetooth Standby	Off	Off / On	Memorized	Memorized	Clear	Maincom
	Language	Japanese Chinese English Other countries	English, Japanese Chinese English, French, German, Dutch, Italian, Spanish, Russian FLAT, GAME, CLASSIC, POPS, VOCAL, JAZZ	Memorized	Memorized	Clear	Maincom
SOUND system	SOUND	FLAT	On / Off	Memorized	Memorized	Clear	Maincom
	P.BASS	Off	-5 - +5	Memorized	Memorized	Clear	Maincom
	BASS	0	-5 - +5	Memorized	Memorized	Clear	Maincom
	TREBLE	0	-5 - +5	Memorized	Memorized	Clear	Maincom
	Volume	0	0 - 50	Memorized	Memorized	Clear	Maincom
SYSTEM	FUNCTION	iPod/USB	All functions	Memorized	Memorized	Clear	Maincom
	12h/24h	24h	12h / 24h	Memorized	Memorized	Clear	Maincom
	CLOCK	0:00:00 Sun		Memorized	Memorized	Clear	Maincom
	TIMER	Off / CD / 0:00:00 / EVERYDAY / Vol.0		Memorized	Memorized	Clear	Maincom
	BAND	FM STEREO	FM STEREO / FM MONO / AM	Memorized	Memorized	Clear	Maincom
TUNER	PRESET	Minimum FM frequency	40Preset	Memorized	Memorized	Clear	Maincom
	PresetName	Null	8 characters (ASCII)	Memorized	Memorized	Clear	Maincom
	AM Frequency	Europe	522-1602 (9kStep)	Memorized	Memorized	Clear	Maincom
		Japan	522-1620 (9kStep)				
		Canada	530-1710 (10kStep)				
		China	522-1620 (9kStep)				
	FM Frequency	Europe	87.5-108.00 (50kStep)	Memorized	Memorized	Clear	Maincom
		Japan	76.0-95.00 (100kStep)				
		Canada	87.5-108.00 (100kStep)				
		China	87.5-108.00 (50kStep)				
NETWORK	Network Type	Auto	Wired / Wireless / Auto	Memorized	Memorized	Clear	DM870
	SSID	(Null)	32 characters	Memorized	Memorized	Clear	DM870
	Security	None	None / WEP / WPA2/WPA.AES+TKIP	Memorized	Memorized	Clear	DM870
	WPA Password / WEP Key	(Null)	100 characters	Memorized	Memorized	Clear	DM870
	DHCP	On	On / Off	Memorized	Memorized	Clear	DM870
	IP	0.0.0.0	0.0.0.0 - 255.255.255.255	Memorized	Memorized	Clear	DM870
	SubNetmask	255.0.0.0	0.0.0.0 - 255.255.255.255	Memorized	Memorized	Clear	DM870
	Gateway	0.0.0.0	0.0.0.0 - 255.255.255.255	Memorized	Memorized	Clear	DM870
	DNS1	0.0.0.0	0.0.0.0 - 255.255.255.255	Memorized	Memorized	Clear	DM870
	DNS2	0.0.0.0	0.0.0.0 - 255.255.255.255	Memorized	Memorized	Clear	DM870
	Proxy setting	Don't Use	Don't Use/Use	Memorized	Memorized	Clear	DM870
	Proxy Server	(Null)	128 characters	Memorized	Memorized	Clear	DM870
	Proxy Port	(Null)	0 - 65535	Memorized	Memorized	Clear	DM870
	Friendly Name	*1	63 characters	Memorized	Memorized	Clear	DM870
	AirPlay Password	(Null)	63 characters	Memorized	Memorized	Clear	DM870
BT	Favorite	0 broadcast station	64 broadcast station	Memorized	Memorized	Clear	DM870
	Internet Radio Last Play	(Null)	1 broadcast station	Memorized	Memorized	Clear	DM870
	PIN CODE	0000	0000	Memorized	Memorized	Clear	Maincom
	Paired Bluetooth Device	(Null)	8 unit	Memorized	Memorized	Clear	Maincom

If the AC power cable is unplugged before the settings that have been changed are registered, registration of the changed settings will not be guaranteed.
 *1 The initial setting is the unit's model name; "XC-HM82 *****" if the unit is a high-end model, or "XC-HM72 *****" if the unit is a low-end model.
 3 bytes (low rank) of a MAC Address is set as *****.

8.3 IR BUTTON LIST

IR Button List of Network Hi Micro

The remote control for HM72/82 could be a substitute for that for the past model HM71/81 or HM70.
See below for how to use.



Key No.	HM72/82		HM71/81		HM70
	Key name printing		Key name printing		Key name printing
	English (EU/UK/CA/CH/JP)		English	Japanese	English
			AXD7676	AXD7680	AXD7677
1		STANDBY/ON		STANDBY/ON	電源
2					
3					
4		OPEN/CLOSE		OPEN/CLOSE	開 / 閉
5		DIMMER	NET STANDBY		NET STANDBY
6		TIMER		TIMER	タイマー
7		SLEEP		SLEEP	スリープ
8		INPUT			
9		iPod/USB	iPod		iPod
10		CD		USB	USB
11		BT AUDIO		CD	CD
12		SOUND		SOUND	サウンド
13		M.SERVER	NETWORK		NETWORK
14		NET RADIO		TUNER	TUNER
15		FAVORITES		AUDIO IN	AUDIO IN
16		P.BASS		P.BASS	P.BASS
17		DIG IN		LINE	TIMER
18		AUDIO IN	BT Audio	OPTION	BT Audio
19		LINE 1/2	+Favorite		+Favorite
20		TREBLE		TREBLE	高音
21		TUNER		BAND	BAND
22		BAND		CD DISP	CD DISP
23		CD DISP		DIMMER	ディマー
24		BASS		BASS	低音
25					
26					
27					
28					
29		TOP MENU		TOP MENU	トップメニュー
30		iPod CONTROL		iPod CONTROL	iPod コントロール
31		↑ /TUNE(+)		↑ /TUNE(+)	↑ /TUNE(+)
32		VOLUME +		VOLUME +	音量 +
33		← /PRESET(-)		← /PRESET(-)	← /PRESET(-)
34		ENTER		ENTER	決定
35		→ /PRESET(+)		→ /PRESET(+)	→ /PRESET(+)
36		↓ /TUNE(-)		↓ /TUNE(-)	↓ /TUNE(-)
37		VOLUME -		VOLUME -	音量 -
38		SETUP		SETUP	設定
39		RETURN		RETURN	戻る
40		DAB SCAN		AUTO TUNE	AUTO TUNE
41		RDS DISP		PTY	PTY
42		PTY		RDS DISP	RDS DISP
43		MUTE		MUTE	消音
44		⏮		⏮	⏮
45		⏭		⏭	⏭
46		⏮		⏮	⏮
47		⏭		⏭	⏭
48		1		1	1
49		2		2	2
50		3		3	3
51		TUNER EDIT		TUNER EDIT	TUNER EDIT
52		4		4	4
53		5		5	5
54		6		6	6
55		REPEAT		REPEAT	リピート
56		7		7	7
57		8		8	8
58		9		9	9
59		SHUFFLE		SHUFFLE	シャッフル
60		+10		+10	+10
61		0		0	0
62		+100		+100	+100
63		PLAY MODE		PLAY MODE	PLAY MODE
64		OPTION		ENTER	ENTER
65		CLEAR		CLEAR	CLEAR
66		FOLDER - SORT		FOLDER -	フォルダー -
67		FOLDER + +Favorites		FOLDER +	フォルダー +

The keys with the same indication transmit the same code even if located in different positions.
 The keys of the past models not found on the HM/72/82 remote control are shown in yellow cells.
 The following shows the key indications that vary by model but transmit the same code:

HM72/82	HM71/81			HM70
	AXD7676	AXD7680	AXD7677	
iPod/USB	USB			USB
BT Audio	BT Audio	OPTION		
LINE 1/2	LINE			LINE
/DAB SCAN	/AUTO TUNE			/AUTO TUNE
▶/RDS DISP	▶ /RDS DISP	▶	▶	▶
■/PTY	■ /PTY	■	■	■/PTY
FOLDER - SORT	FOLDER -			FOLDER -
FOLDER + +Favorites	FOLDER +			FOLDER +

■ IR Button List which OPTION Key Supports

The remote control for HM72/82 has some indications or codes different from those for the past model HM71/81 or HM70 equipped with different functions, but it can still transmit the remote control codes of the past models HM71/81 and HM70 by means of the OPTION key on the HM/72/82 remote control.

Combination	Notes
OPTION + STANDBY/ON	This transmits the code of "NET STANDBY" key in HM71/81.
OPTION + iPod/USB	This transmits the code of "iPod" key in HM71/81 and "iPod/iPhone" in HM70.
OPTION + CD DISP	This transmits the code of "DISPLAY" key in HM70.
OPTION + M.SERVER	This transmits the code of "NETWORK" key in HM71/81.
OPTION + NET RADIO	This transmits the code of "NETWORK" key in HM71/81.
OPTION + FAVORITES	This transmits the code of "NETWORK" key in HM71/81.
OPTION + FOLDER+	This transmits the code of "+Favorite" key in HM71/81.

9. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION

X-HM82-K/SYXEV8,
X-HM82-S/SYXEV8,
X-HM82-S/AXEV5,
XC-HM82-K/SYXEV8,
XC-HM82-S/SYXEV8,
XC-HM82-K/CXEV,
X-HM72-K/SYXEV8,
X-HM72-S/SYXEV8 only

X-HM82-S/AXEV5 only

Except X-HM82-S/AXEV5,
XC-HM82-K/CXEV

Except XC-HM82-K/CXEV

X-HM82-S/
AXEV5 only

X-HM82D-K/VXEV8,
XC-HM82-K/SYXEV8,
XC-HM82-S/SYXEV8,
XC-HM82-K/CXEV only

X-HM82-K/SYXEV8,
X-HM82-S/SYXEV8,
X-HM82-S/AXEV5,
X-HM82D-K/VXEV8,
only

X-HM72-K/SYXEV8,
X-HM72-S/SYXEV8,
X-HM72D-K/VXEV8,
X-HM72D-S/YXEV8
only

Refer to
"9.3 SPEAKER SECTION
(S-HM82GB, S-HM82SA)"

Refer to
"9.4 SPEAKER SECTION
(S-HM72)"

(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Remote Control Unit	8300773200010S	 11	Power Cord	See Contrast table (2)
2	Operating Instructions (CD-ROM)	See Contrast table (2)	12	AAA Size IEC R03 Dry Cell Batteries x2	G670001R50242S A
3	Quick Start Guide	See Contrast table (2)	13	Polyethylene Bag	6337040062010-IL
4	FM Wire Antenna	See Contrast table (2)	14	Polyethylene Bag Set (Stand)	6337210282000S
5	AM Loop Antenna	See Contrast table (2)	15	Sheet SP Caution	See Contrast table (2)
6	WLAN Antenna	E600000010040S	16	CN. CATV	See Contrast table (2)
7	Warranty Card	See Contrast table (2)	17	Box Gift Stand	6000212780000S
8	iPhone/iPad Stand	4147210221000S	18	Polyethylene Bag Set (Main Body)	6337210199000S
9	Cushion iPad A	4050215235000S	19	Cushion Snow LR	6230213834000S
10	Cushion iPad B	4050215245000S	20	Box Gift	See Contrast table (2)
			NSP 21	Serial Label	 B
			22	Stard ASSY	4148210221000V
			23	Speaker	See Contrast table (2)

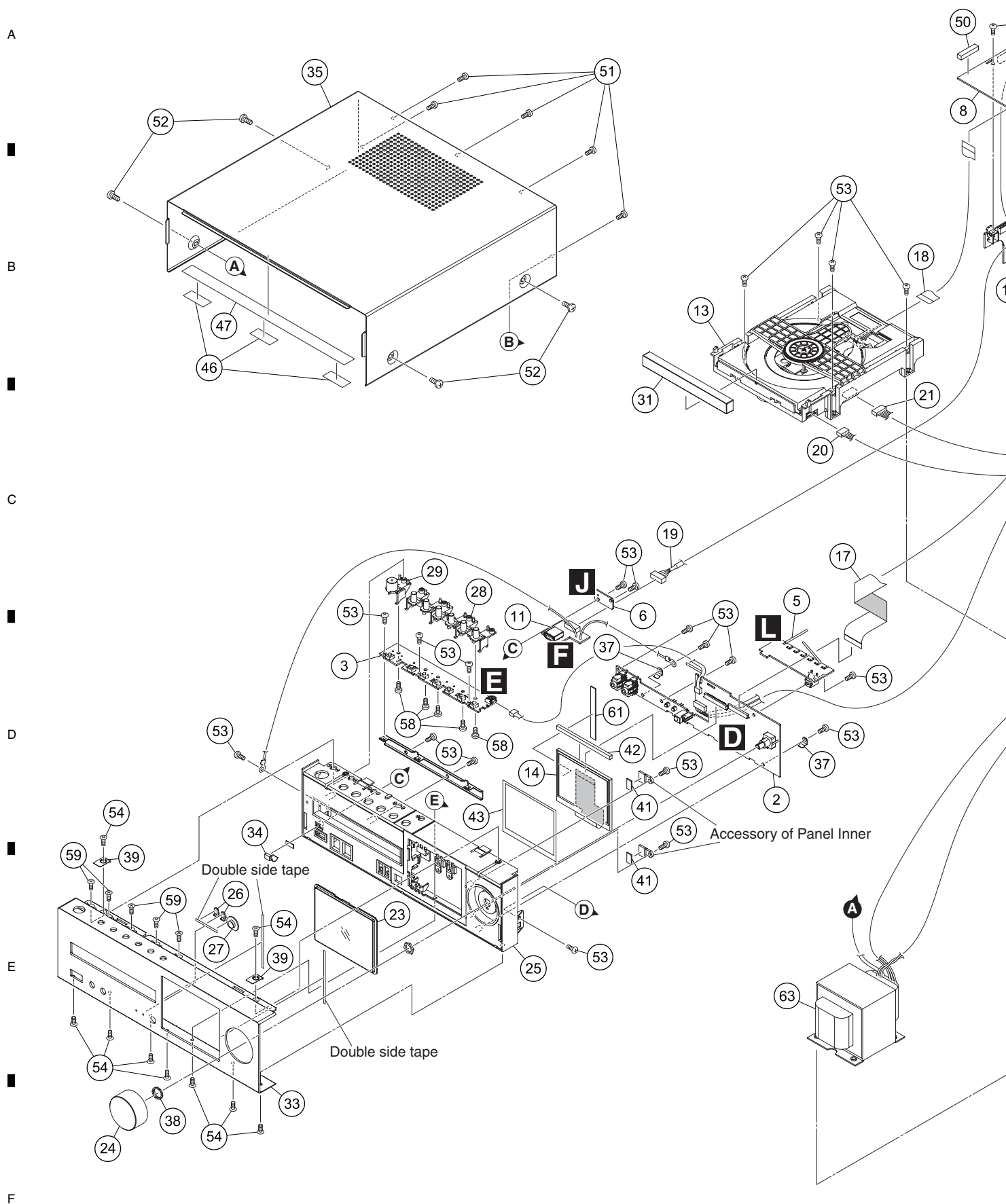
(2) CONTRAST TABLE

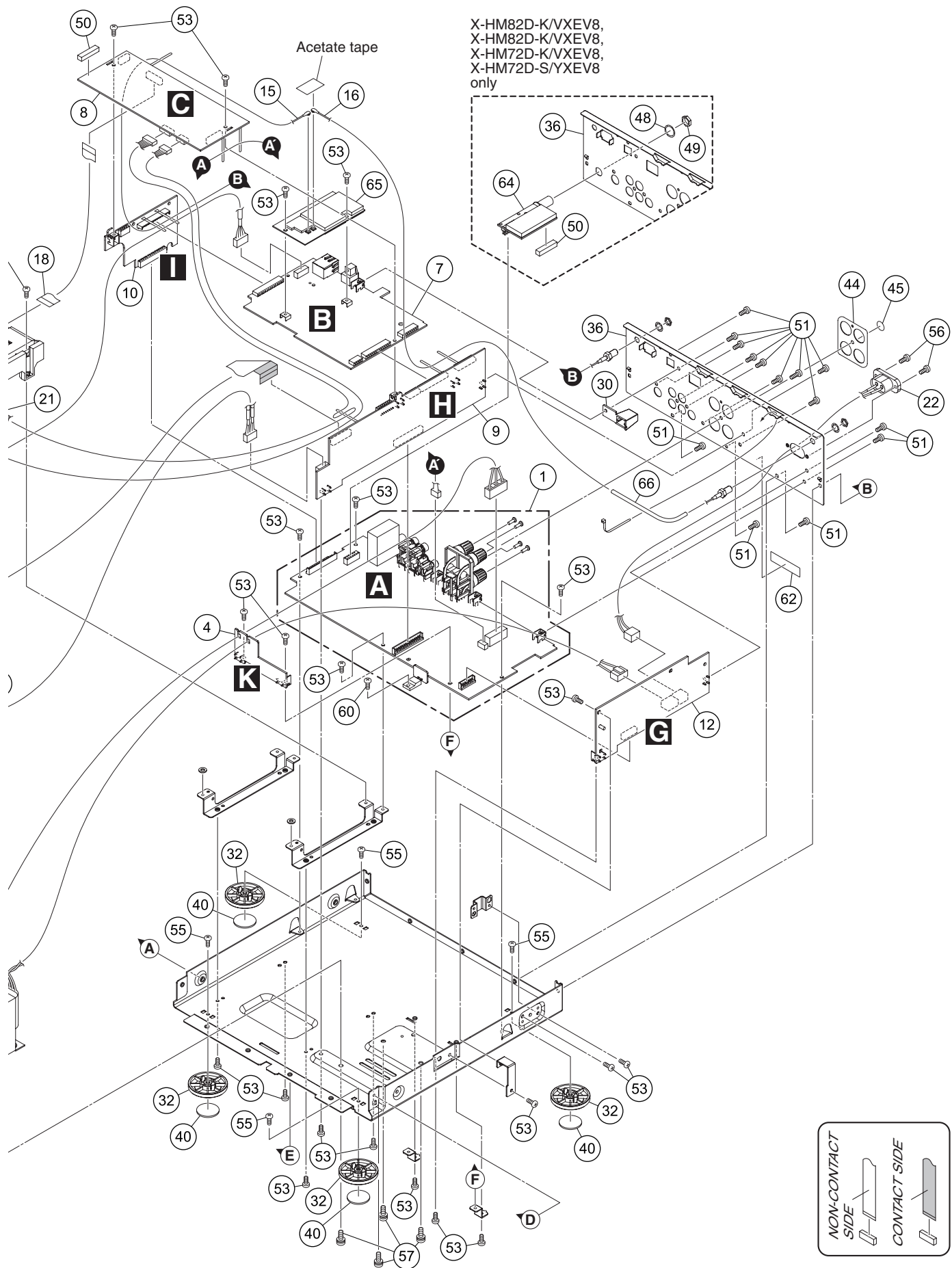
X-HM82-K/SYXEV8, X-HM82-S/SYXEV8, X-HM82-S/AXEV5, X-HM82D-K/VXEV8, XC-HM82-K/SYXEV8, XC-HM82-S/SYXEV8, XC-HM82-K/CXEV, XC-HM82D-K/VXEV8, X-HM72-K/SYXEV8, X-HM72-S/SYXEV8, X-HM72D-K/VXEV8 and X-HM72D-S/YXEV8 are constructed the same except for the following:

Mark	No.	Symbol and Discription	X-HM82-K/ SYXEV8	X-HM82-S/ SYXEV8	X-HM82-S/ AXEV5	X-HM82D-K/ VXEV8	XC-HM82-K/ SYXEV8	XC-HM82-S/ SYXEV8
	2	Operating Instructions (CD-ROM)	6517000002020S	6517000002020S	Not used	6517000002020S	6517000002020S	6517000002020S
	3	Quick Start Guide	5707000009580S	5707000009580S	5707000009610S	5707000009580S	5707000009580S	5707000009580S
	4	FM Wire Antenna	E605010140010-IL	E605010140010-IL	E605010140010-IL	E60501050020-IL	E605010140010-IL	E605010140010-IL
	5	AM Loop Antenna	E601019000010-IL	E601019000010-IL	E601019000010-IL	Not used	E601019000010-IL	E601019000010-IL
	7	Warranty Card	5727000000161S	5727000000161S	5727000000540S	5727000000161S	5727000000161S	5727000000161S
	11	Power Cord	L068250251800-IL	L068250251800-IL	L068125100230S	L068250030010-IL	L068250251800-IL	L068250251800-IL
	15	Sheet SP Caution	Not used	Not used	Not used	Not used	5227000002940S	5227000002940S
	16	CN. CATV	Not used	Not used	L170200060010-IL	Not used	Not used	Not used
	20	Box Gift	6007212760000S	6007212760010S	6007212760020S	6007212760030S	6007212740000S	6007212740010S
	23	Speaker	S-HM82GB	S-HM82GB	S-HM82SA	S-HM82GB	Not used	Not used

Mark	No.	Symbol and Discription	XC-HM82-K/ CXEV	XC-HM82D-K/ VXEV8	X-HM72-K/ SYXEV8	X-HM72-S/ SYXEV8	X-HM72D-K/ VXEV8	X-HM72D-S/ YXEV8
	2	Operating Instructions (CD-ROM)	Not used	6517000002020S	6517000002020S	6517000002020S	6517000002020S	6517000002020S
	3	Quick Start Guide	5707000009600S	5707000009580S	5707000009580S	5707000009580S	5707000009580S	5707000009580S
	4	FM Wire Antenna	E605010140010-IL	E60501050020-IL	E605010140010-IL	E605010140010-IL	E60501050020-IL	E60501050020-IL
	5	AM Loop Antenna	E601019000010-IL	Not used	E601019000010-IL	E601019000010-IL	Not used	Not used
	7	Warranty Card	Not used	5727000000161S	5727000000161S	5727000000161S	5727000000161S	5727000000161S
	11	Power Cord	L068125071810S	L068250030010-IL	L068250251800-IL	L068250251800-IL	L068250030010-IL	L068250251800-IL
	15	Sheet SP Caution	5227000002940S	5227000002940S	Not used	Not used	Not used	Not used
	16	CN. CATV	Not used	Not used	Not used	Not used	Not used	Not used
	20	Box Gift	6007212740040S	6007212740050S	6007212750000S	6007212750010S	6007212750020S	6007212750030S
	23	Speaker	Not used	Not used	S-HM72	S-HM72	S-HM72	S-HM72

9.2 EXTERIOR SECTION





(1) EXTERIOR SECTION PARTS LIST

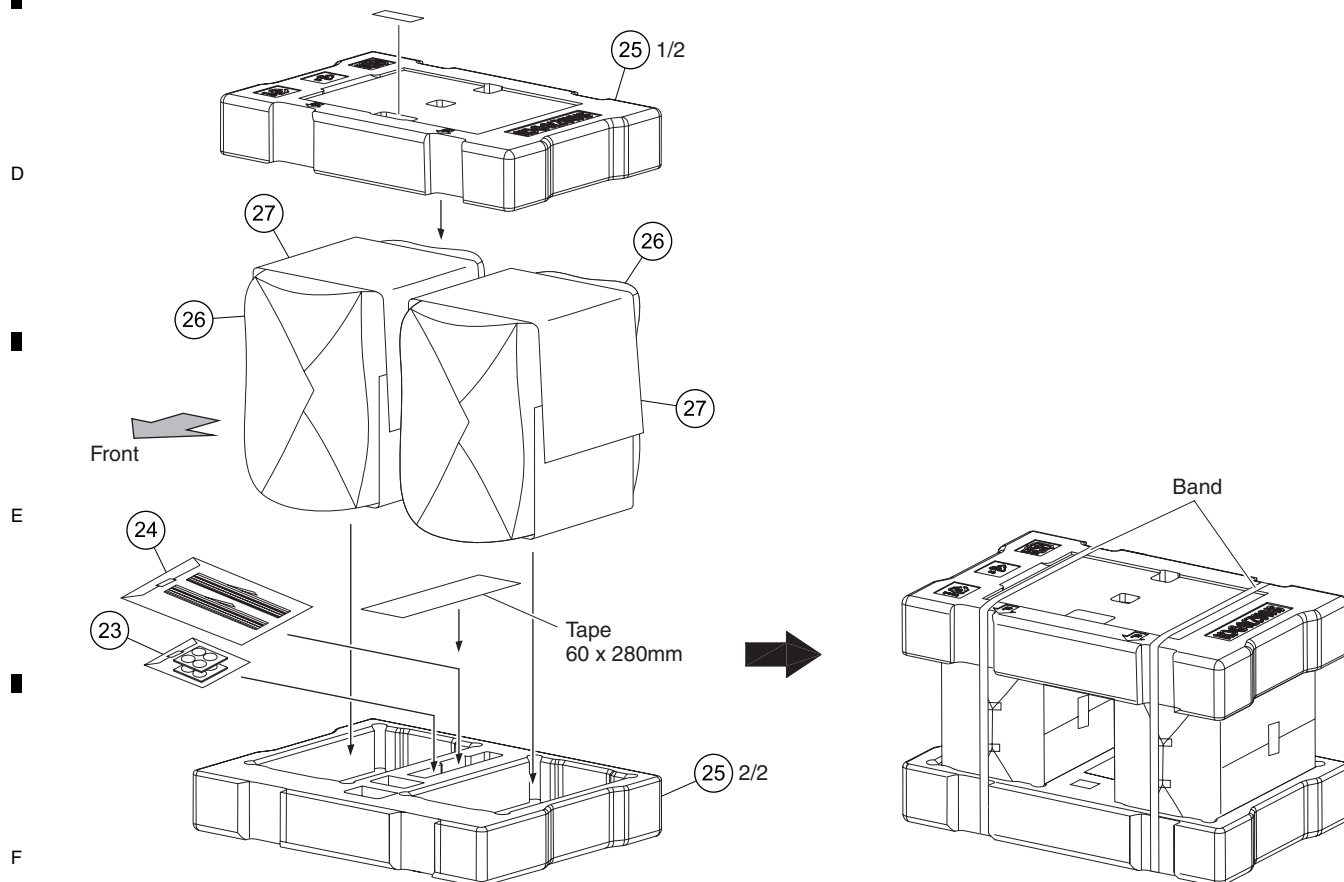
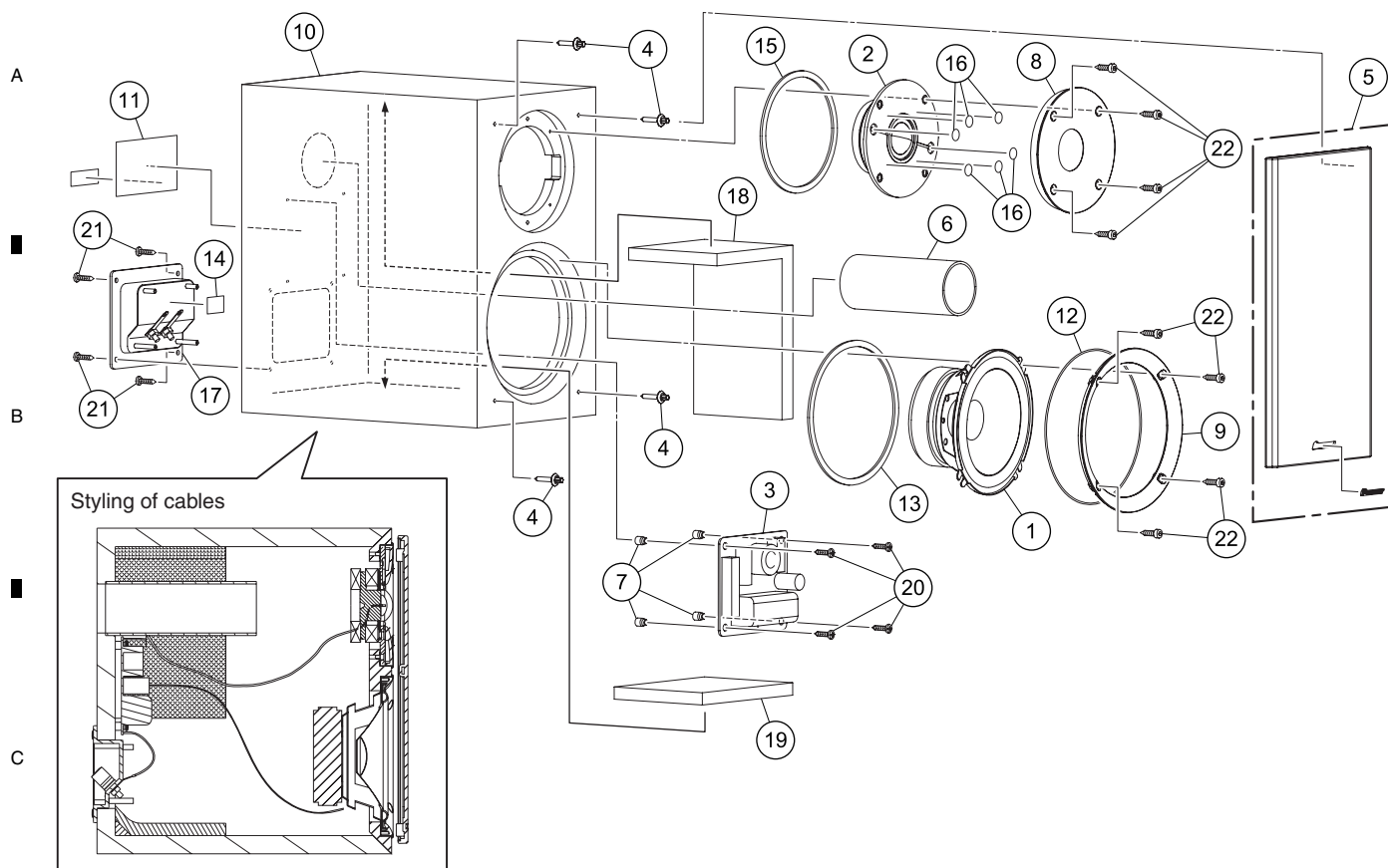
	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>		<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
A	1	MAIN ASSY	See Contrast table (2)		36	Chassis Back	See Contrast table (2)
	2	FRONT ASSY	7028076852010		37	Plate Earth	4470212706000S
	3	KEY ASSY	7028076853010		38	Spring Knob	3720210276000-IL
	4	GUIDE1 ASSY	7028076854010		39	Plate EMC	4470212987000S
	5	GUIDE2 ASSY	7028076855010		40	Cushion Foot	4050215195000S
B	6	USB GUIDE ASSY	7028076856010		41	Cushion LCD	4050213805000-IL
	7	DMAIN ASSY	See Contrast table (2)		42	Cushion LCD	4050215545000S
	8	CD ASSY	7028076861010		43	Sheet LCD	1210212792000S
	9	CNT1 ASSY	7028076871010		44	Sheet Speaker	1210211573000-IL
	10	CNT2 ASSY	7028076872010		45	Cushion Cap Screw	4050211745100SV
C	11	USB ASSY	7028076873010		46	Sheet Top Cover	1210212749000S
	⚠	12 SMPS ASSY	See Contrast table (2)		47	Tape Copper	1220211859000S
	13	CD Mecha	8030000010080-IL		48	Washer	See Contrast table (2)
	14	LCD Display	K550350600010S		49	Nut	See Contrast table (2)
	15	Cable ASSY (200mm)	L308201010040S		50	Cushion DAB	4050214675000
D	16	Cable ASSY (250mm)	L308251010040S		51	Screw 3x10 B-Type BK Dot	BBT30P100FTB
	17	Cable Flat Card 45P	L301171450020S		52	Screw 4x6 C-Type	See Contrast table (2)
	18	Cable Flat Card 16P	N711161622480S		53	Screw 3x8 B-Type ZNW	BBZ30P080FTC
	19	CN. Wire 2mm USB	L002331070060S		54	Screw 3x8 B-Type (Flat)	See Contrast table (2)
	20	CN. Wire 2mm Mecha 5P	L002151050230S		55	Screw 3x6 C-Type ZNW	B020930061B10S
E	21	CN. Wire 2mm Mecha 6P	L002181060070S		56	Screw 3x8 B-Type BK	B020230083B10-IL
	⚠	22 CN. Wire AC In	L000500020110S		57	Screw 4x10 B-Type BK	B028940101B11-IL
	23	Window Display	5077213683000S		58	Screw 2x8 B-Type BK	B020020083B10SV
	24	Knob ASSY Volume	See Contrast table (2)		59	Screw 2x8 B-Type	See Contrast table (2)
	25	Panel Inner	See Contrast table (2)		60	Screw 3x6 B-Type BK (Round)	B020230063B10-IL
F	26	Lens LED	3710211443000S		61	Cushion LCD Side	4050215805000SV
	27	Lens IR	See Contrast table (2)	NSP	62	Serial Label	•••••
	28	Button 6Key	See Contrast table (2)	⚠	63	Power Transformer	See Contrast table (2)
	29	Button Power	See Contrast table (2)		64	DAB	See Contrast table (2)
	30	Cover BT	4310216061100S		65	CX870 Module	8952HM7200020
G	31	Cover Tray	See Contrast table (2)		66	Tube	A700101019010S
	32	Foot	See Contrast table (2)				
	33	Panel Front	See Contrast table (2)				
	34	Shield USB Plate	3070210697000S				
	35	Cabinet Top	See Contrast table (2)				

(2) CONTRAST TABLE

X-HM82-K/SYXEV8, X-HM82-S/SYXEV8, X-HM82-S/AXEV5, X-HM82D-K/VXEV8, XC-HM82-K/SYXEV8, XC-HM82-S/SYXEV8, XC-HM82-K/CXEV, XC-HM82D-K/VXEV8, X-HM72-K/SYXEV8, X-HM72-S/SYXEV8, X-HM72D-K/VXEV8 and X-HM72D-S/YXEV8 are constructed the same except for the following:

Mark	No.	Symbol & Discription	X-HM82-K/ SYXEV8	X-HM82-S/ SYXEV8	X-HM82-S/ AXEV5	X-HM82D-K/ VXEV8	XC-HM82-K/ SYXEV8	XC-HM82-S/ SYXEV8
⚠	1	MAIN ASSY	7028076851010	7028076851010	7028076851060	7028076851030	7028076851010	7028076851010
	7	DMAIN ASSY	7028076841010	7028076841010	7028076841040	7028076841050	7028076841010	7028076841010
	12	SMPS ASSY	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S
	24	Knob ASSY Volume	5088212868000S	5088212868100S	5088212868100S	5088212868000S	5088212868000S	5088212868100S
	25	Panel Inner	3067216281000S	3067216281100S	3067216281100S	3067216281000S	3067216281000S	3067216281100S
	27	Lens IR	3710211453000S	3710211453100S	3710211453100S	3710211453000S	3710211453000S	3710211453100S
	28	Button 6Key	5090215451000S	5097215451100S	5097215451100S	5090215451000S	5090215451000S	5097215451100S
	29	Button Power	5090215461000S	5097215461100S	5097215461100S	5090215461000S	5090215461000S	5097215461100S
	31	Cover Tray	4317216101000S	4317216101100S	4317216101100S	4317216101000S	4317216101000S	4317216101100S
	32	Foot	4007210851000S	4007210851000S	4007210851000S	4007210851000S	4007210851000S	4007210851000S
	33	Panel Front	3067216248000S	3067216248010S	3067216248010S	3067216248000S	3067216248000S	3067216248010S
	35	Cabinet Top	3007212096000S	3007212096010S	3007212096010S	3007212096000S	3007212096000S	3007212096010S
	36	Chassis Back	3207215076000S	3207215076010S	3207215076060S	3207215076100S	3207215076000S	3207215076010S
	48	Washer	Not used	Not used	Not used	1530210152000S	Not used	Not used
	49	Nut	Not used	Not used	Not used	1520210335000S	Not used	Not used
⚠	52	Screw 4x6 C-Type	BCZ40P060FTB	BCZ40P060FNI	BCZ40P060FNI	BCZ40P060FTB	BCZ40P060FTB	BCZ40P060FNI
	54	Screw 3x8 B-Type (Flat)	B020030083F10-IL	B020030084F10-IL	B020030084F10-IL	B020030083F10-IL	B020030083F10-IL	B020030084F10-IL
	59	Screw 2x8 B-Type	B020020083F10SV	B020020084F10SV	B020020084F10SV	B020020083F10SV	B020020083F10SV	B020020084F10SV
	63	Power Transformer	8200660450100S	8200660450100S	8200660450100S	8200660450100S	8200660450100S	8200660450100S
	64	DAB	Not used	Not used	Not used	8952HM7200050	Not used	Not used
Mark	No.	Symbol & Discription	XC-HM82-K/ CXEV	XC-HM82D-K/ VXEV8	X-HM72-K/ SYXEV8	X-HM72-S/ SYXEV8	X-HM72D-K/ VXEV8	X-HM72D-S/ YXEV8
⚠	1	MAIN ASSY	7028076851020	7028076851030	7028076851040	7028076851040	7028076851050	7028076851050
	7	DMAIN ASSY	7028076841030	7028076841050	7028076841060	7028076841060	7028076841070	7028076841070
	12	SMPS ASSY	8208001120030S	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S
	24	Knob ASSY Volume	5088212868000S	5088212868000S	5088212868000S	5088212868100S	5088212868000S	5088212868100S
	25	Panel Inner	3067216281000S	3067216281000S	3067216281000S	3067216281100S	3067216281000S	3067216281100S
	27	Lens IR	3710211453000S	3710211453000S	3710211453000S	3710211453100S	3710211453000S	3710211453100S
	28	Button 6Key	5090215451000S	5090215451000S	5090215451000S	5097215451100S	5090215451000S	5097215451100S
	29	Button Power	5090215461000S	5090215461000S	5090215461000S	5097215461100S	5090215461000S	5097215461100S
	31	Cover Tray	4317216101000S	4317216101000S	4317216101000S	4317216101100S	4317216101000S	4317216101100S
	32	Foot	4007210851000S	4007210851000S	4000210851000S	4000210851000S	4000210851000S	4000210851000S
	33	Panel Front	3067216248000S	3067216248000S	3067216248020S	3067216248030S	3067216248020S	3067216248030S
	35	Cabinet Top	3007212096000S	3007212096000S	3007212096000S	3007212096010S	3007212096000S	3007212096010S
	36	Chassis Back	3207215076050S	3207215076100S	3207215076070S	3207215076080S	3207215076120S	3207215076130S
	48	Washer	Not used	1530210152000S	Not used	Not used	1530210152000-IL	1530210152000-IL
	49	Nut	Not used	1520210335000S	Not used	Not used	1520210335000-IL	1520210335000-IL
⚠	52	Screw 4x6 C-Type	BCZ40P060FTB	BCZ40P060FTB	BCZ40P060FTB	BCZ40P060FNI	BCZ40P060FTB	BCZ40P060FNI
	54	Screw 3x8 B-Type (Flat)	B020030083F10-IL	B020030083F10-IL	B020030083F10-IL	B020030084F10-IL	B020030083F10-IL	B020030084F10-IL
	59	Screw 2x8 B-Type	B020020083F10SV	B020020083F10SV	B020020083F10SV	B020020084F10SV	B020020083F10SV	B020020084F10SV
	63	Power Transformer	8200660450090S	8200660450100S	8200660450100S	8200660450100S	8200660450100S	8200660450100S
	64	DAB	Not used	8952HM7200050	Not used	Not used	8952HM7200050	8952HM7200050

9.3 SPEAKER SECTION (S-HM82GB, S-HM82SA)



(1) SPEAKER SECTION (S-HM82GB, S-HM82SA) PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
	1 Speaker	F000210250000S	16	Non Skip Pad	6240215140000S	
	2 Tweeter	F020210080000S	17	Input Terminal	4470213069000S	A
	3 N.W. ASSY	8178000820010S	NSP 18	Acoustic Absorbent	1200210195000S	
NSP	4 Catch Pin	B400210019000S	NSP 19	ACC Absorbent	1200210205000S	
	5 Grille ASSY	5008210499000S	20	Screw	1500210766000S	
NSP	6 Duct	See Contrast table (2)	21	Screw	1500210776000S	
	7 Foot	4000210949000S	22	Screw	1500210786000S	
	8 Cosmetic Plate (TW)	4470213059000S	23	Packing ASSY	4008210949000S	
	9 Cosmetic Ring (WF)	4700210219000S	24	Accessories Set	8178000820020S	
NSP	10 Cabinet	See Contrast table (2)	25	Protector	6230214084000S	
NSP	11 Model Label	See Contrast table (2)	26	Sheet	See Contrast table (2)	B
	12 Gasket	4400210979000S	27	Sheet	See Contrast table (2)	
	13 Gasket	4400210989000S				
	14 Gasket	4400210999000S				
	15 Packing	4050215889000S				

(2) CONTRAST TABLE

S-HM82GB and S-HM82SA are constructed the same except for the following:

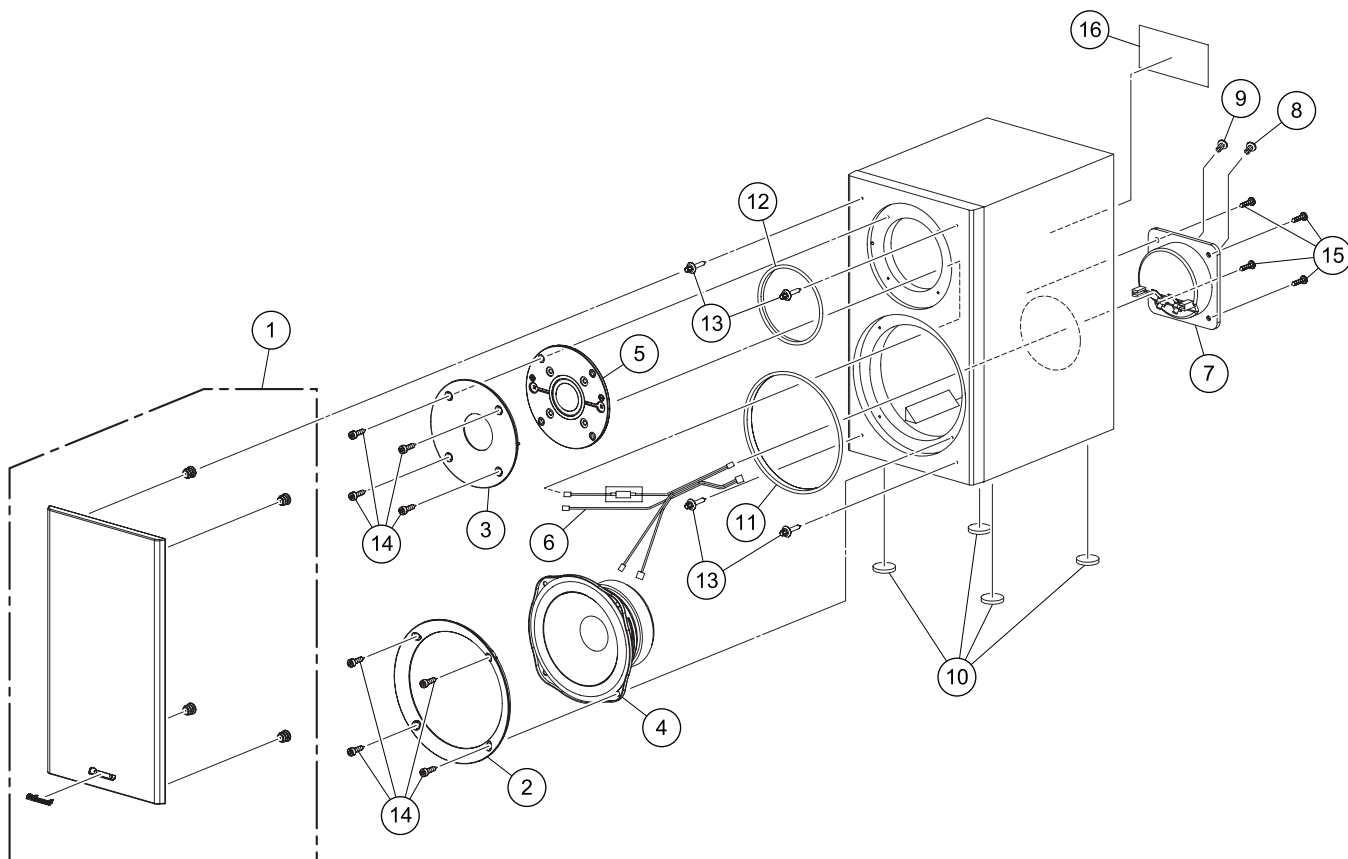
Mark No.	Symbol & Discription	S-HM82GB	S-HM82SA	
NSP 6	Duct	1830210290000S	1830210300000S	
NSP 10	Cabinet	1280210097000S	1280210107000S	C
NSP 11	Model Label	5507000018480S	5507000018450S	
26	Sheet	1210212909000S	1210212929000S	
27	Sheet	1210212919000S	Not used	

9.4 SPEAKER SECTION (S-HM72)

A

B

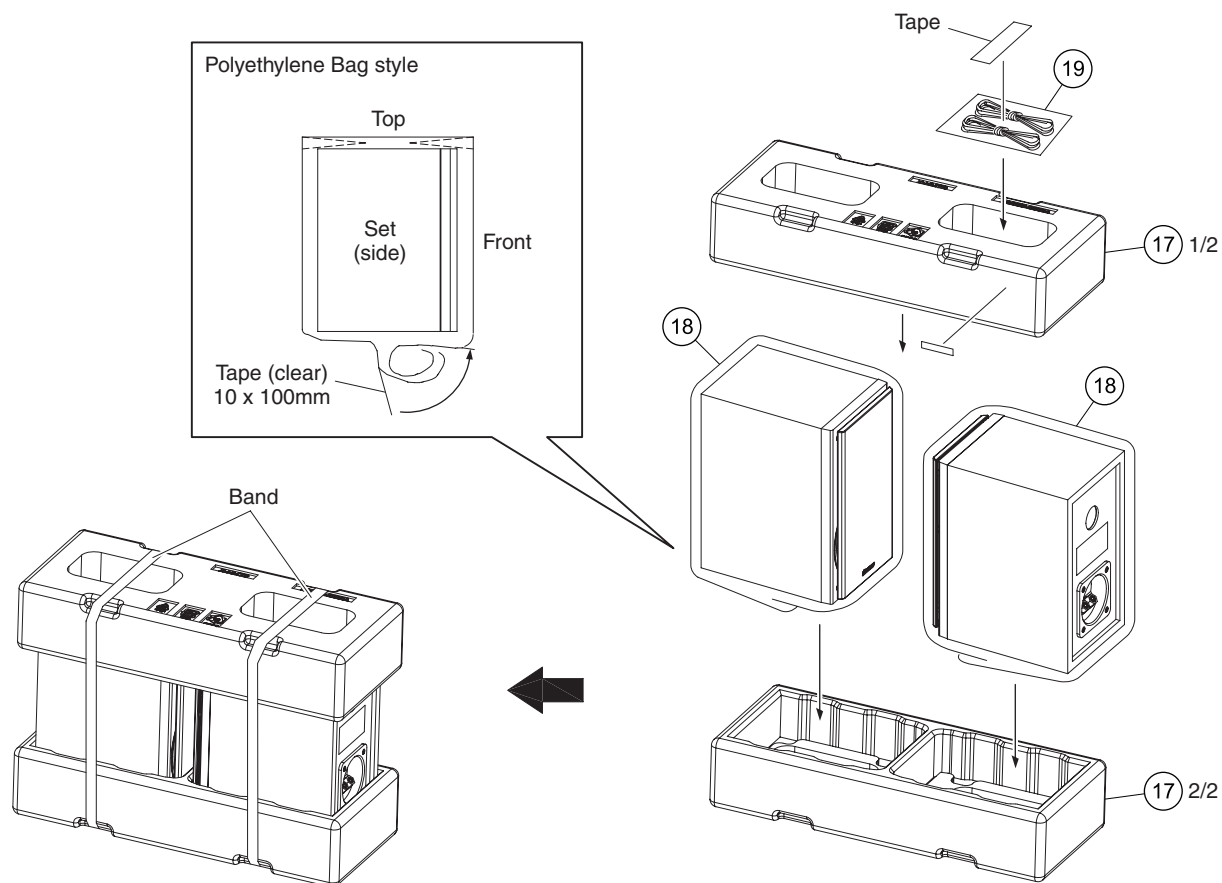
C



D

E

F



SPEAKER SECTION (S-HM72) PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Frame Net ASSY	8952SHM700019-IL	11	Felt 1T	8952SHM700034-IL
2	Deco Unit	8952SHM810010-IL	12	Felt 1.5T	8952SHM710016
3	Deco Tweeter	8952SHM810011-IL	13	Screw Special	8952SHM700037-IL
4	Unit Woofer	8952SHM720001	14	Screw Wrench	8952SHM700038-IL
5	Tweeter	8952SHM720002	15	Screw (Bind Head)	8952SHM700039-IL
6	Network ASSY	8952SHM720004	16	Label Main	
7	Terminal Network ASSY	8952SHM700027-IL	17	Snow Cushion	8952SHM720005
8	Cap Terminal BK	8952SHM700028-IL	18	Polyethylene Bag	8952SHM700044-IL
9	Cap Terminal RED	8952SHM700029-IL	19	Wire SPK ASSY	8952SHM700042-IL
10	Foot Cushion				

A

B

C

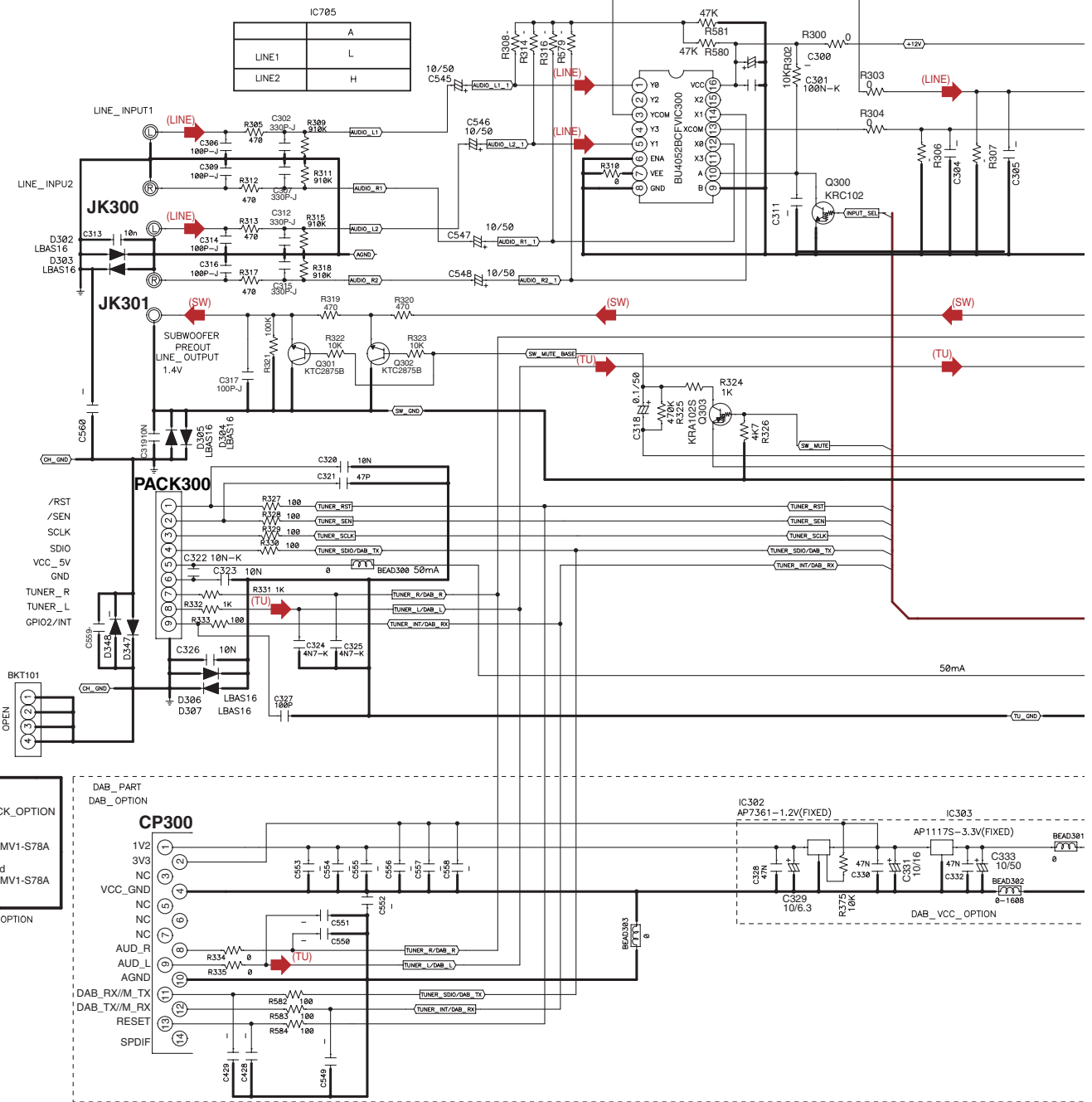
D

E

F

10. SCHEMATIC DIAGRAM

10.1 MAIN ASSY (1/4)

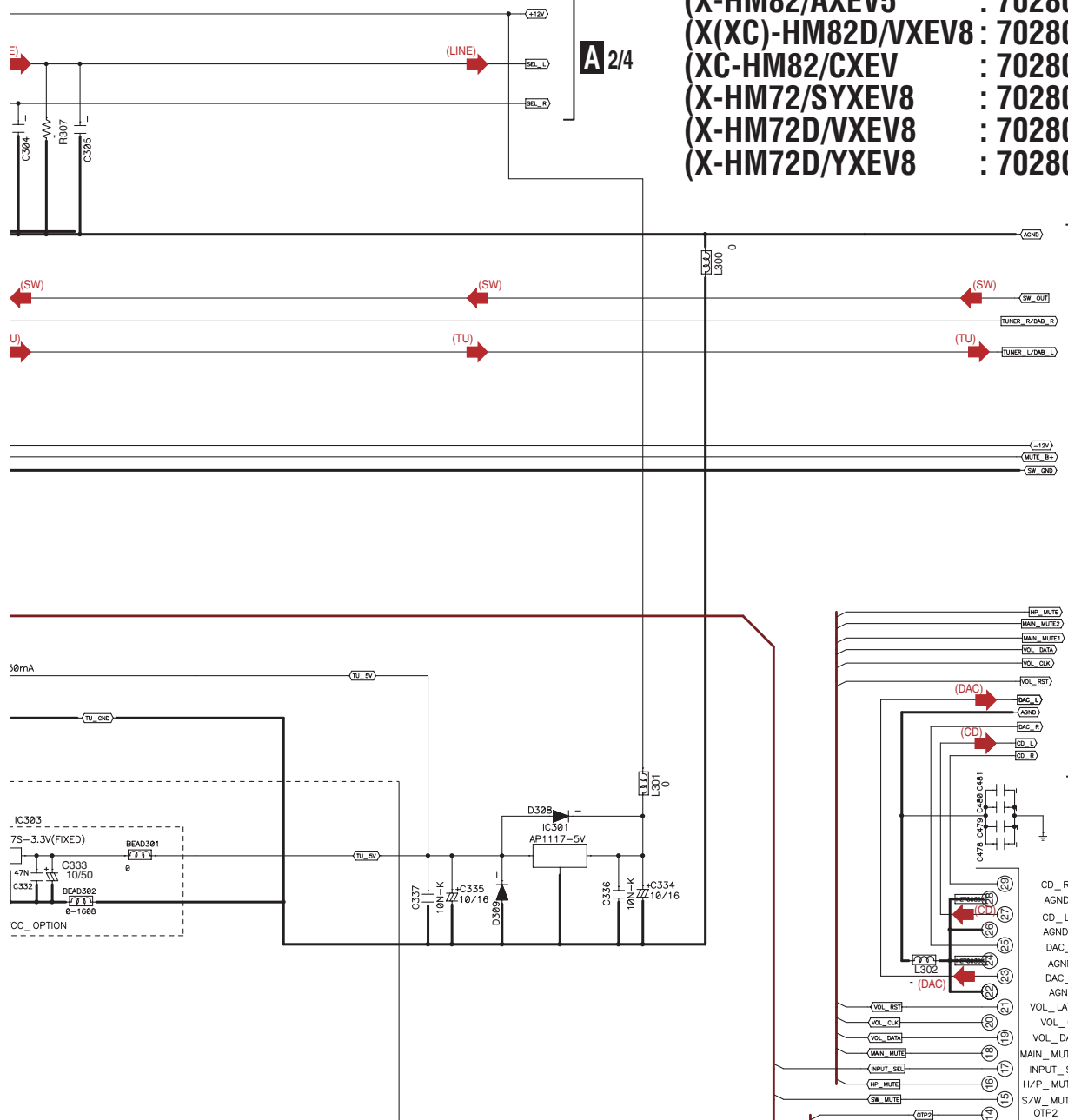


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

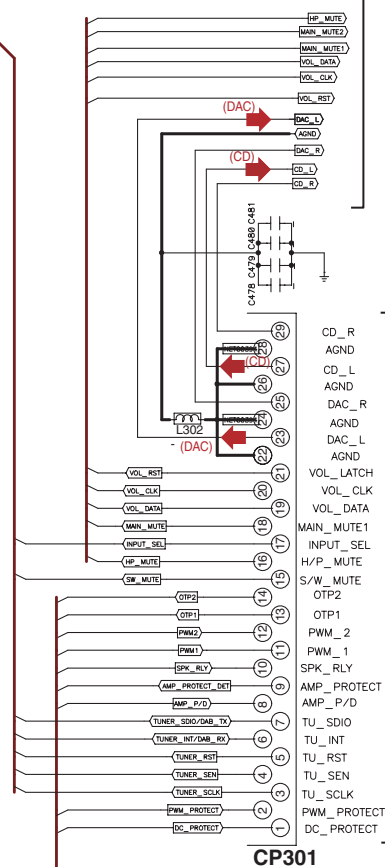
A 1/4 MAIN ASSY (1/4)

(X(XC)-HM82/SYXEV8 : 7028076851010)
(X-HM82/AXEV5 : 7028076851060)
(X(XC)-HM82D/VXEV8 : 7028076851030)
(XC-HM82/CXEV : 7028076851020)
(X-HM72/SYXEV8 : 7028076851040)
(X-HM72D/VXEV8 : 7028076851050)
(X-HM72D/YXEV8 : 7028076851050)

A 2/4



A 2/4



I CP313

CP301

- (LINE) : Audio Signal Route (LINE IN Lch)
- (TU) : Audio Signal Route (TUNER Lch)
- (SW) : Audio Signal Route (SubWoofer ch)
- (DAC) : Audio Signal Route (DAC Lch)
- (CD) : Audio Signal Route (CD Lch)

A 3/4

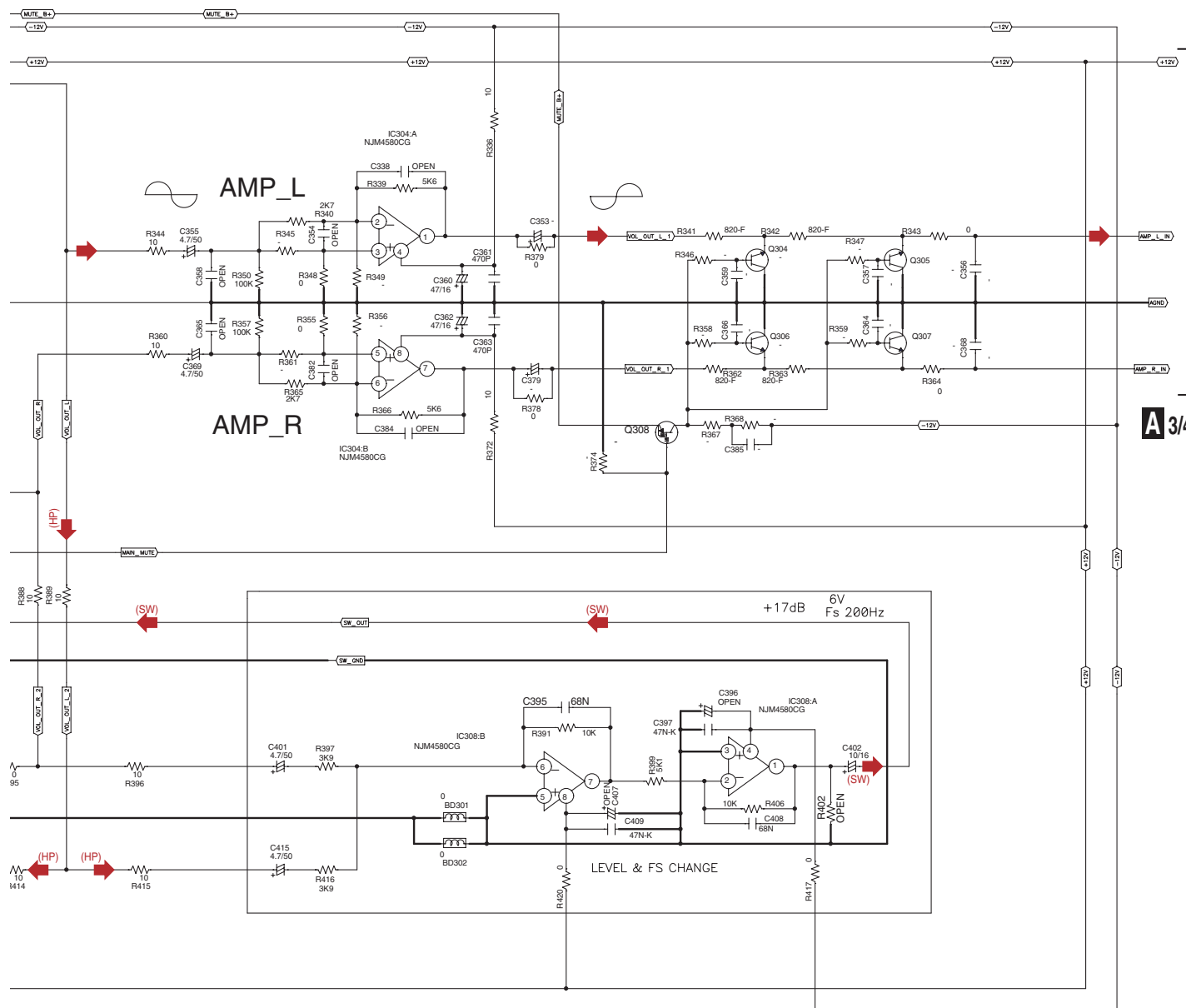
A 1/4

X-HM82-K

4

F

A2/4 MAIN ASSY (2/4)
 (X(XC)-HM82/SYXEV8 : 7028076851010)
 (X-HM82/AXEV5 : 7028076851060)
 (X(XC)-HM82D/VXEV8 : 7028076851030)
 (XC-HM82/CXEV : 7028076851020)
 (X-HM72/SYXEV8 : 7028076851040)
 (X-HM72D/VXEV8 : 7028076851050)
 (X-HM72D/YXEV8 : 7028076851050)



- ➔ : Audio Signal Route
- (LINE) ➔ : Audio Signal Route (LINE IN Lch)
- (FL) ➔ : Audio Signal Route (FRONT IN Lch)
- (HP) ➔ : Audio Signal Route (HEADPHONE Lch)
- (TU) ➔ : Audio Signal Route (TUNER Lch)
- (SW) ➔ : Audio Signal Route (SubWoofer ch)
- (DAC) ➔ : Audio Signal Route (DAC Lch)
- (CD) ➔ : Audio Signal Route (CD Lch)

10.3 MAIN ASSY (3/4)

A

B

C

D

E

F

A 4/4

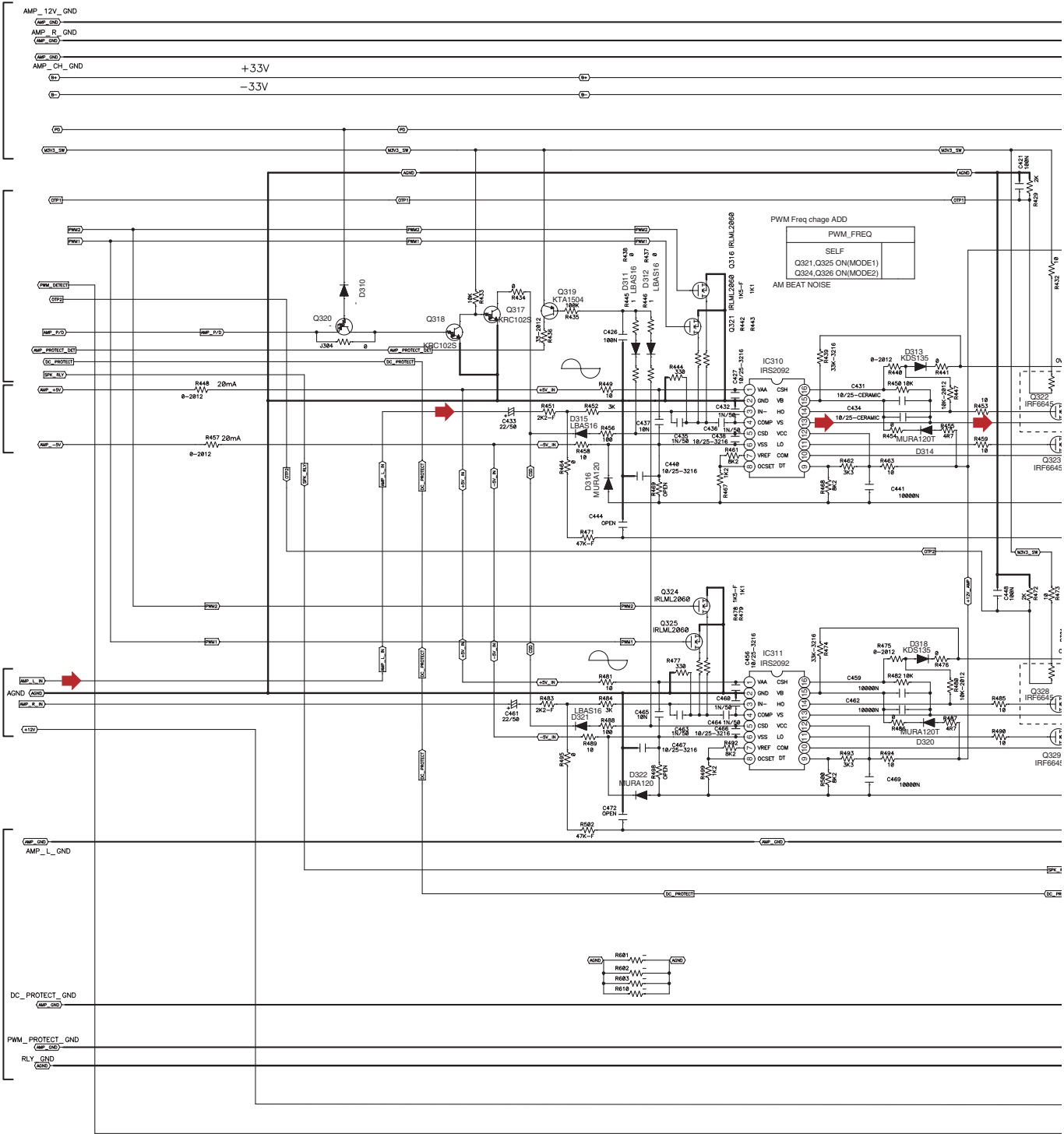
A 1/4

A 4/4

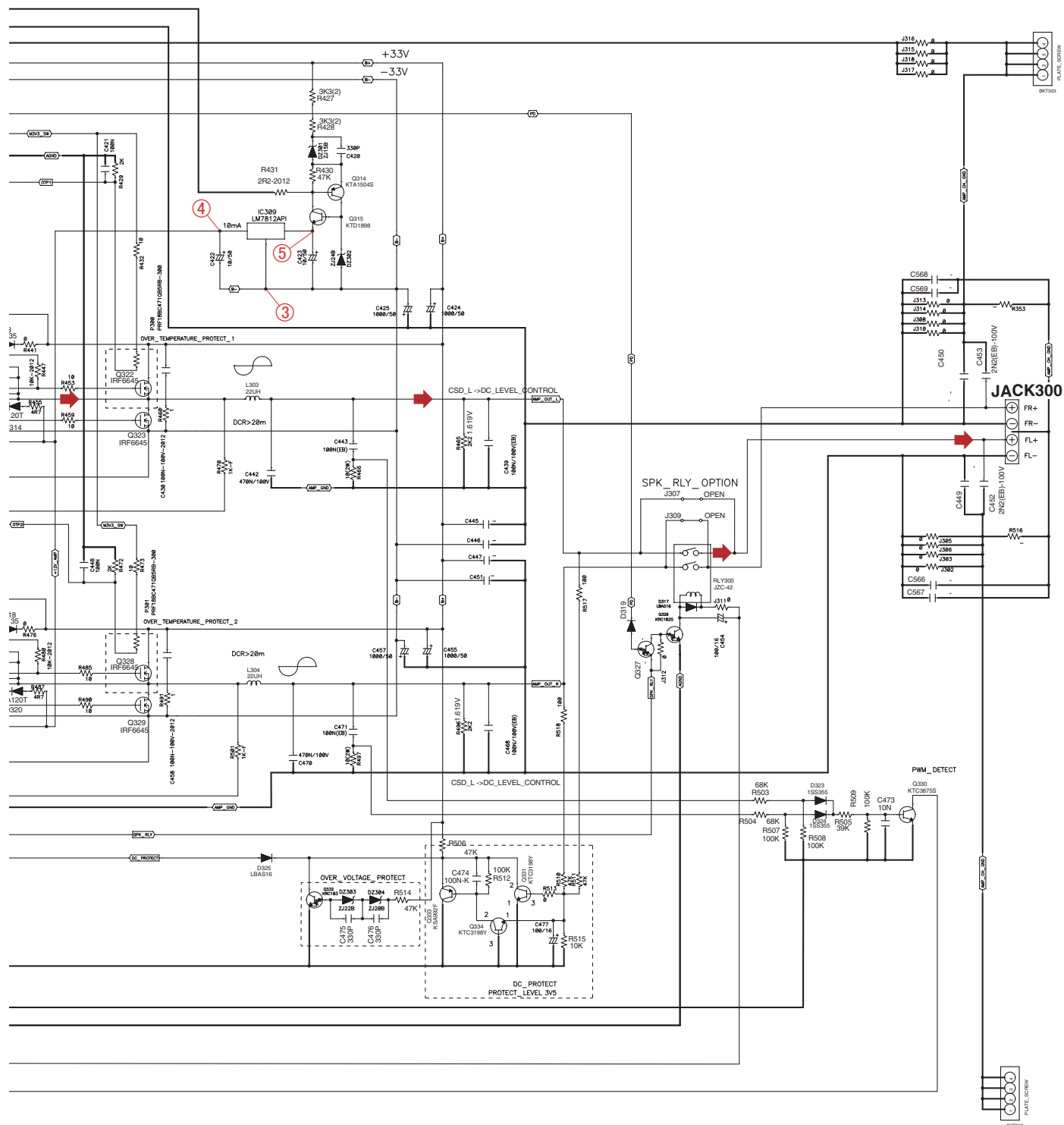
A 2/4

A 4/4

A 3/4



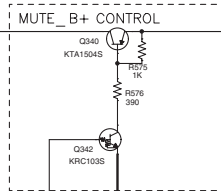
MAIN ASSY (3/4)
(X(XC)-HM82/SYXEV8 : 7028076851010)
(X-HM82/AXEV5 : 7028076851060)
(X(XC)-HM82D/VXEV8 : 7028076851030)
(XC-HM82/CXEV : 7028076851020)
(X-HM72/SYXEV8 : 7028076851040)
(X-HM72D/VXEV8 : 7028076851050)
(X-HM72D/YXEV8 : 7028076851050)



A^{3/4}

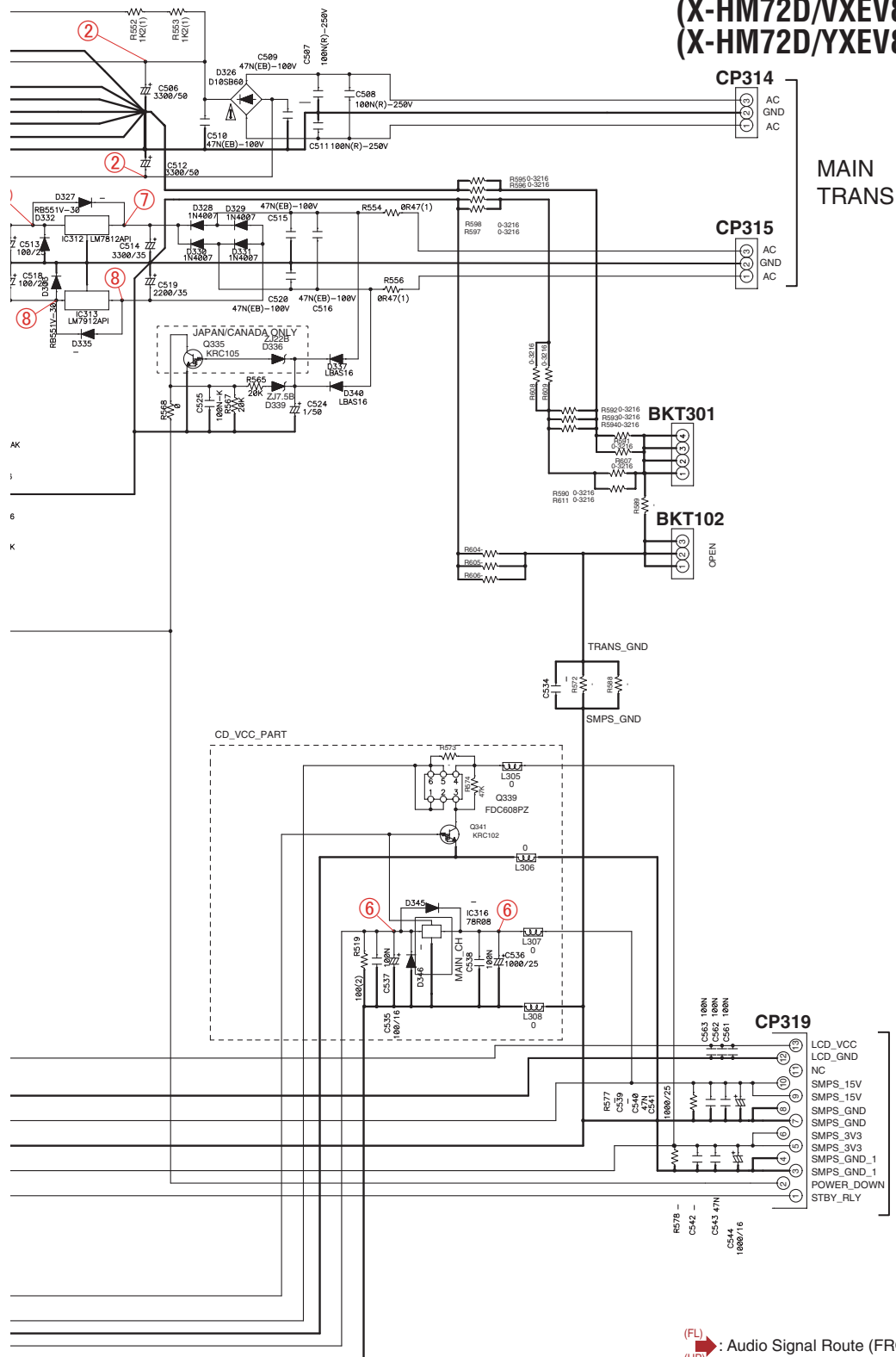
△

F



X-HM82-K

(X(XC)-HM82/SYXEV8 : 7028076851010)
(X-HM82/AXEV5 : 7028076851060)
(X(XC)-HM82D/VXEV8 : 7028076851030)
(XC-HM82/CXEV : 7028076851020)
(X-HM72/SYXEV8 : 7028076851040)
(X-HM72D/VXEV8 : 7028076851050)
(X-HM72D/YXEV8 : 7028076851050)



(FL) : Audio Signal Route (FRONT IN Lch)
(HP) : Audio Signal Route (HEADPHONE Lch)

F

B $\frac{1}{3}$



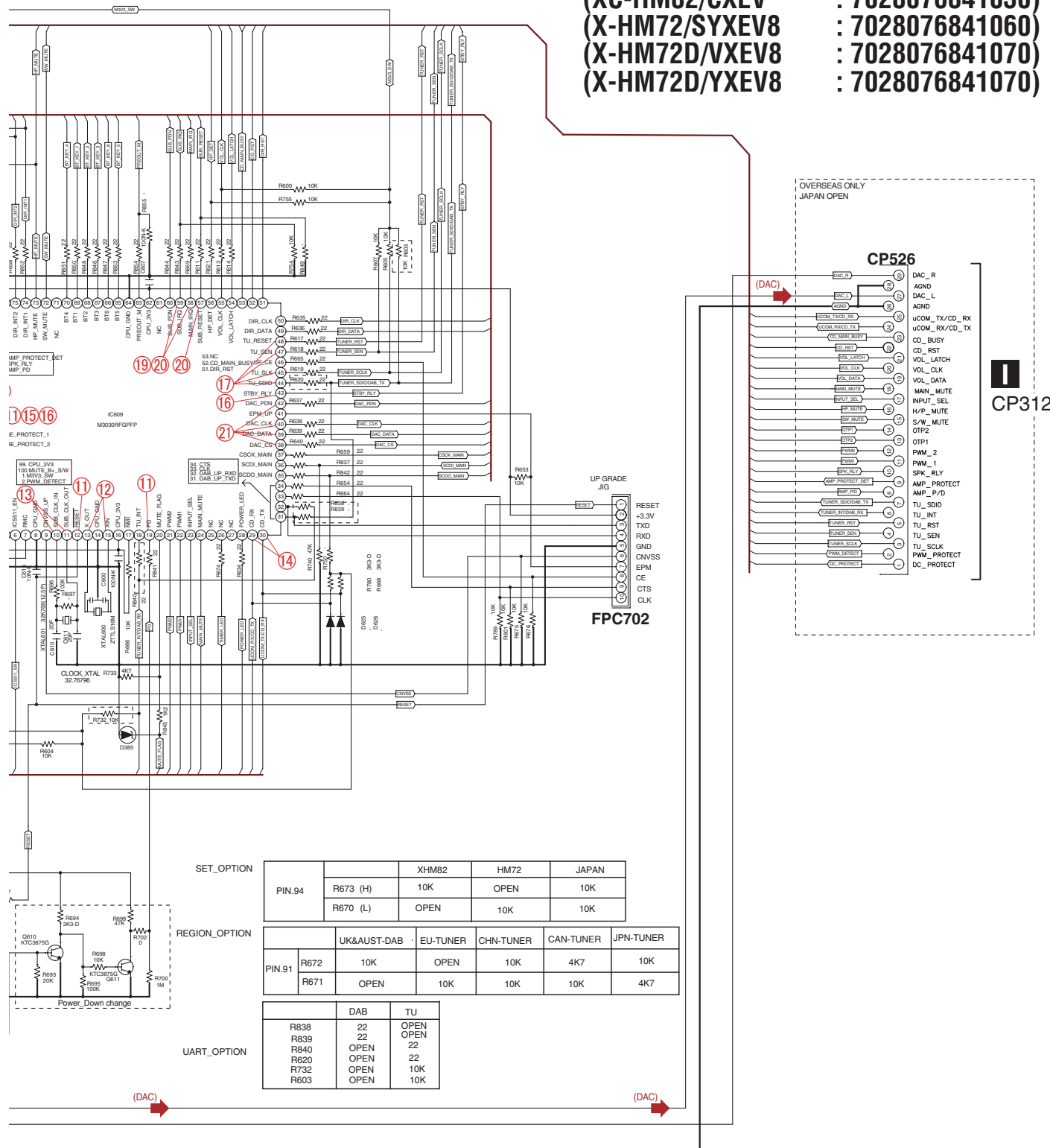
**B**^{1/3}

4



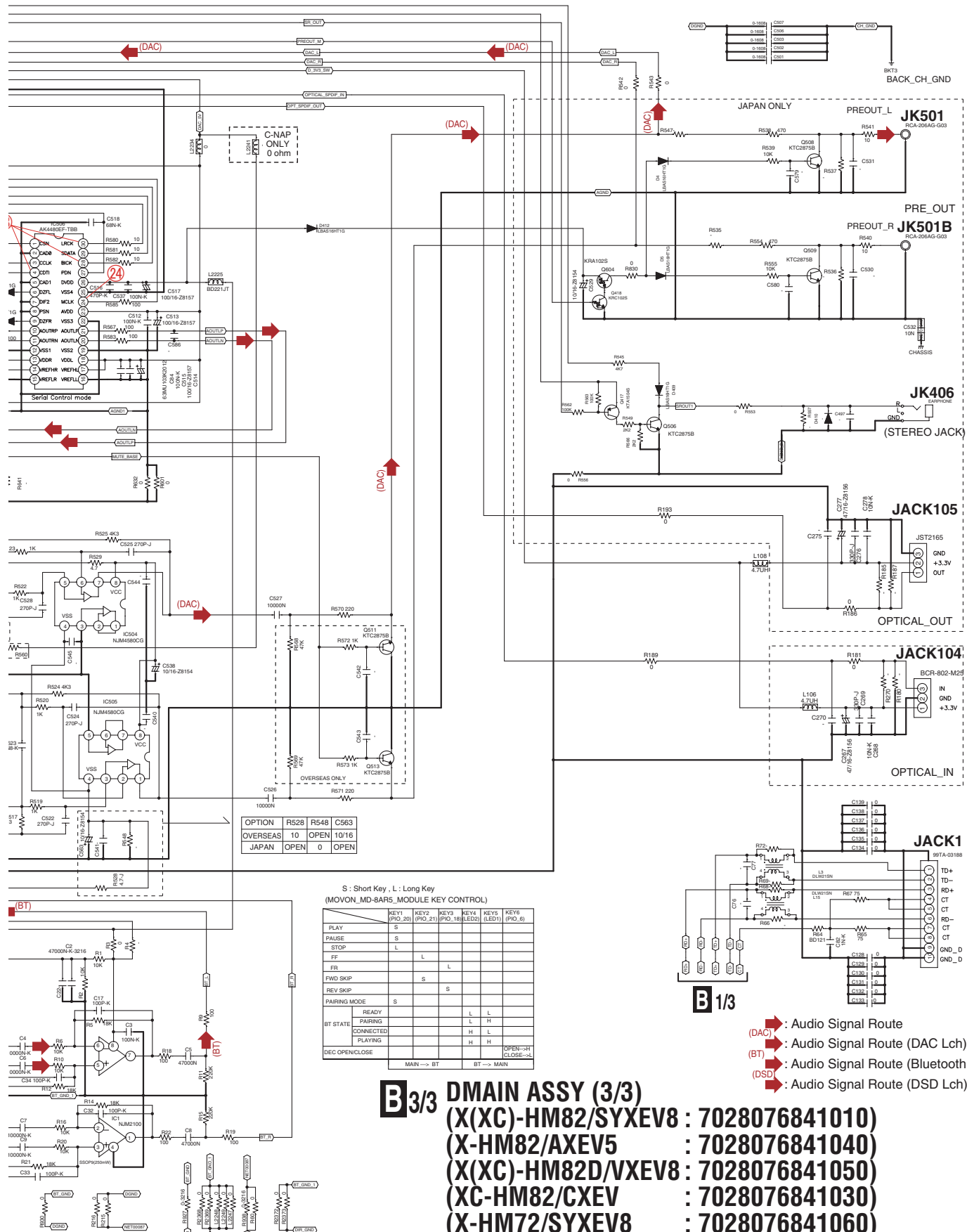
B2/3 DMAIN ASSY (2/3)

(X(XC)-HM82/SYXEV8 : 7028076841010)
 (X-HM82/AXEV5 : 7028076841040)
 (X(XC)-HM82D/VXEV8 : 7028076841050)
 (XC-HM82/CXEV : 7028076841030)
 (X-HM72/SYXEV8 : 7028076841060)
 (X-HM72D/VXEV8 : 7028076841070)
 (X-HM72D/YXEV8 : 7028076841070)



△



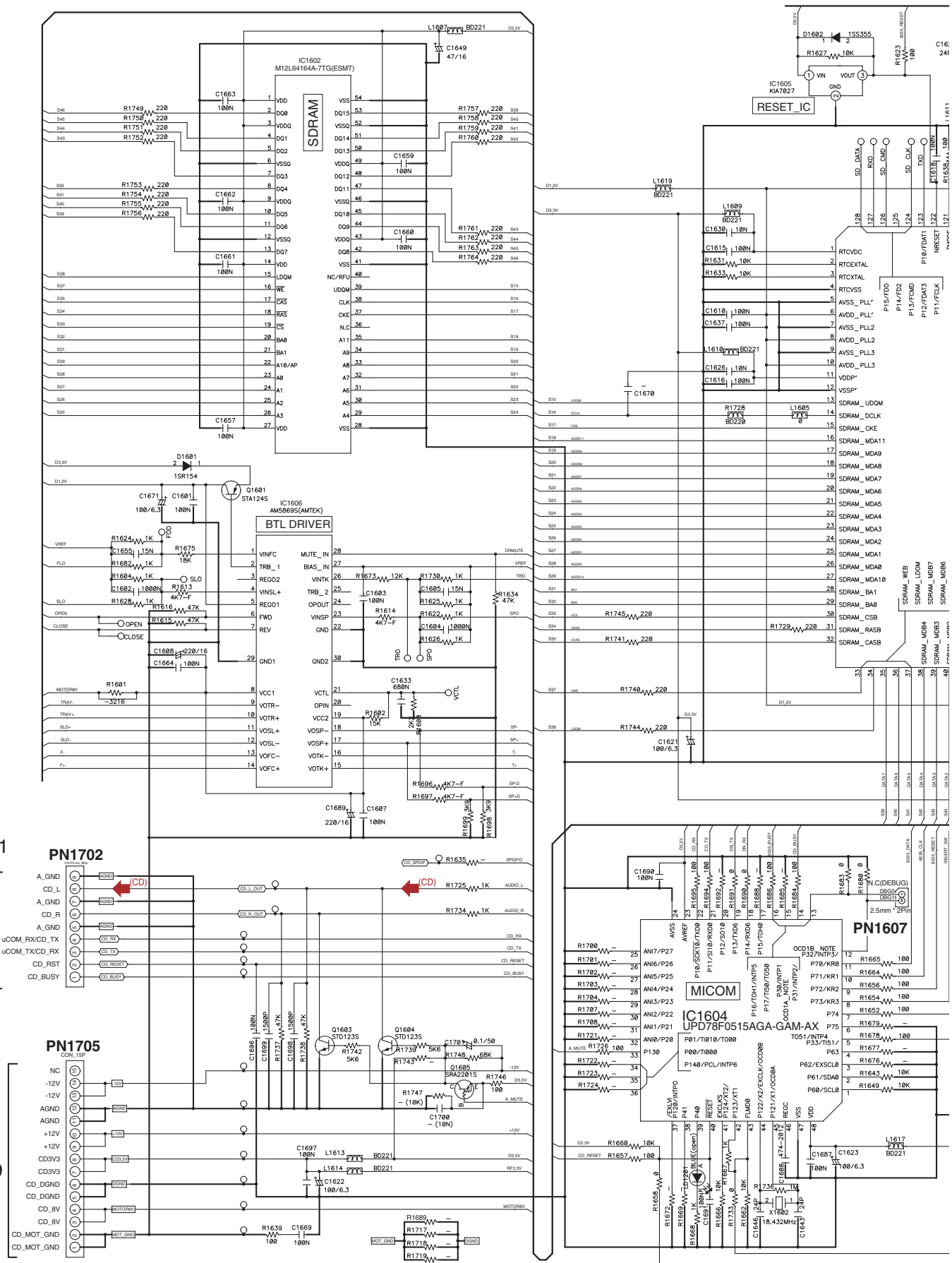
**B_{3/3}****DMAIN ASSY (3/3)**

(X(XC)-HM82/SYXEV8 : 7028076841010)
 (X-HM82/AXEV5 : 7028076841040)
 (X(XC)-HM82D/VXEV8 : 7028076841050)
 (XC-HM82/CXEV : 7028076841030)
 (X-HM72/SYXEV8 : 7028076841060)
 (X-HM72D/VXEV8 : 7028076841070)
 (X-HM72D/YXEV8 : 7028076841070)

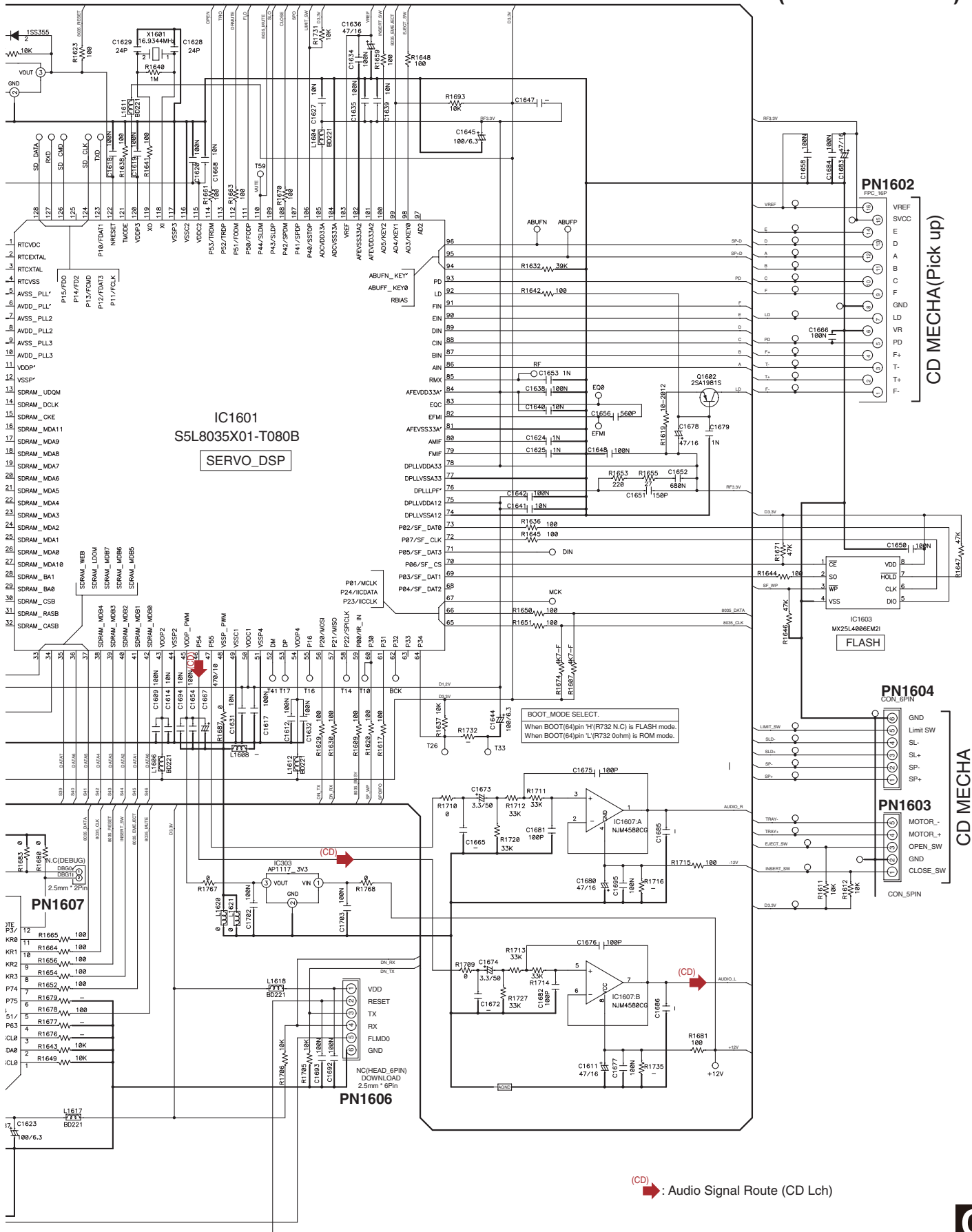
X-HM82-K

B_{3/3}

4



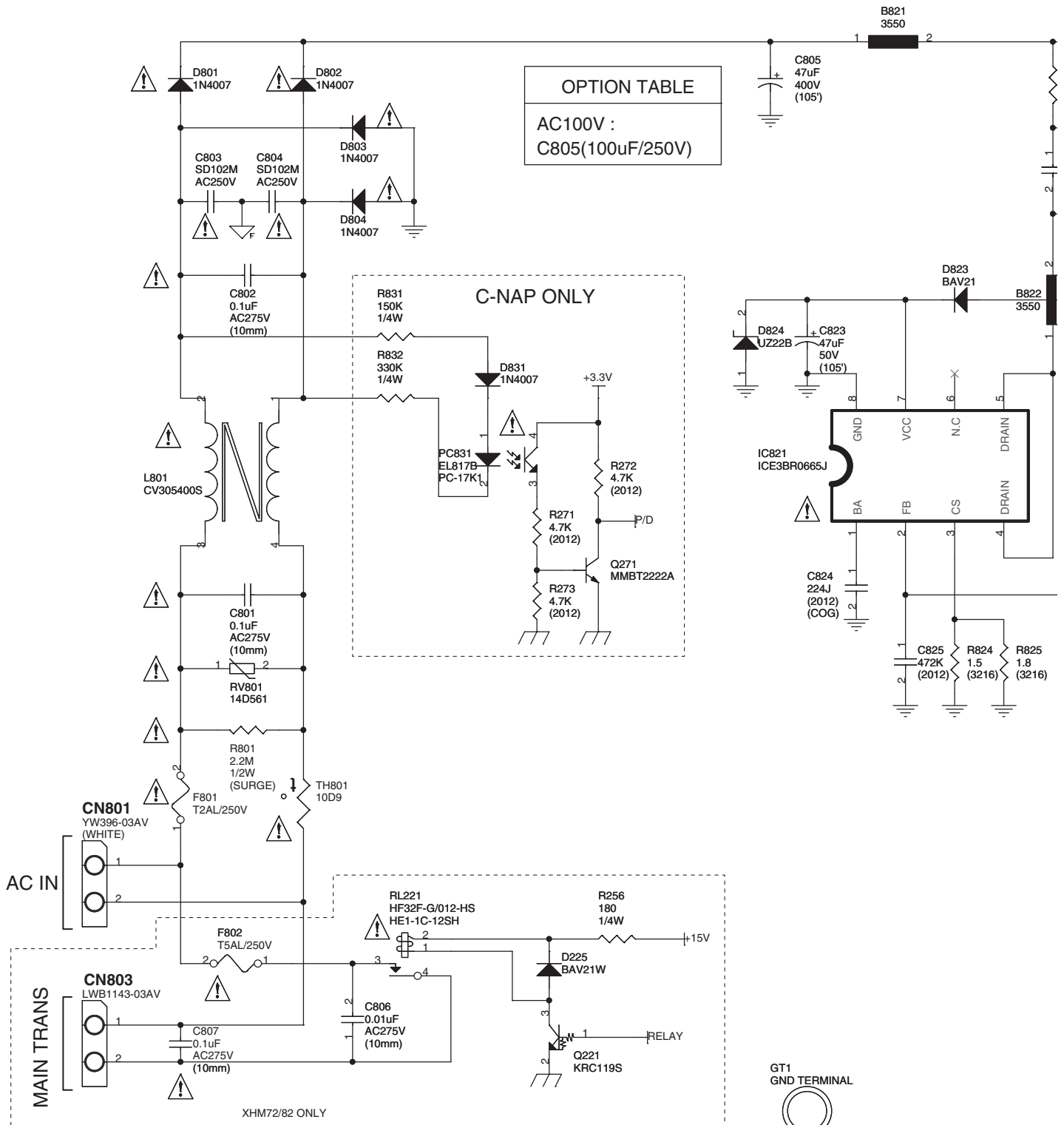
X-HM82-K



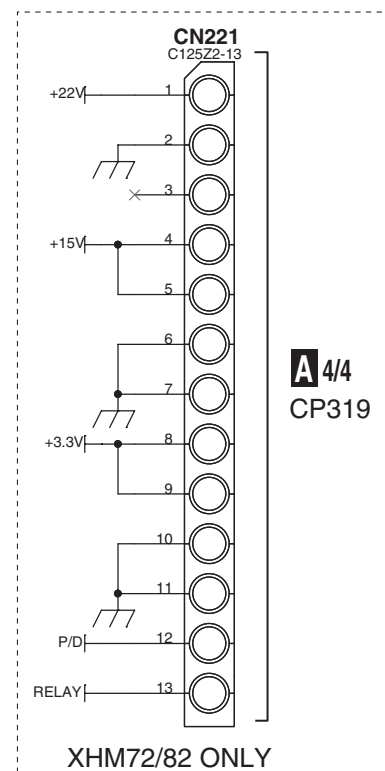
△



10.10 SMPS ASSY



⚠ INDICATES SAFETY CRITICAL COMPONENTS.
TO REDUCE THE RISK OF ELECTRIC SHOCK. LEAKAGE
CURRENT OR RESISTANCE MEASUREMENTS SHALL BE
CARRIED OUT (EXPOSED PARTS ARE ACCEPTABLY
INSULATED FROM THE SUPPLY CIRCUIT) BEFORE
THE APPLIANCE RETURNED TO THE CUSTOMER.

**G SMPS ASSY**

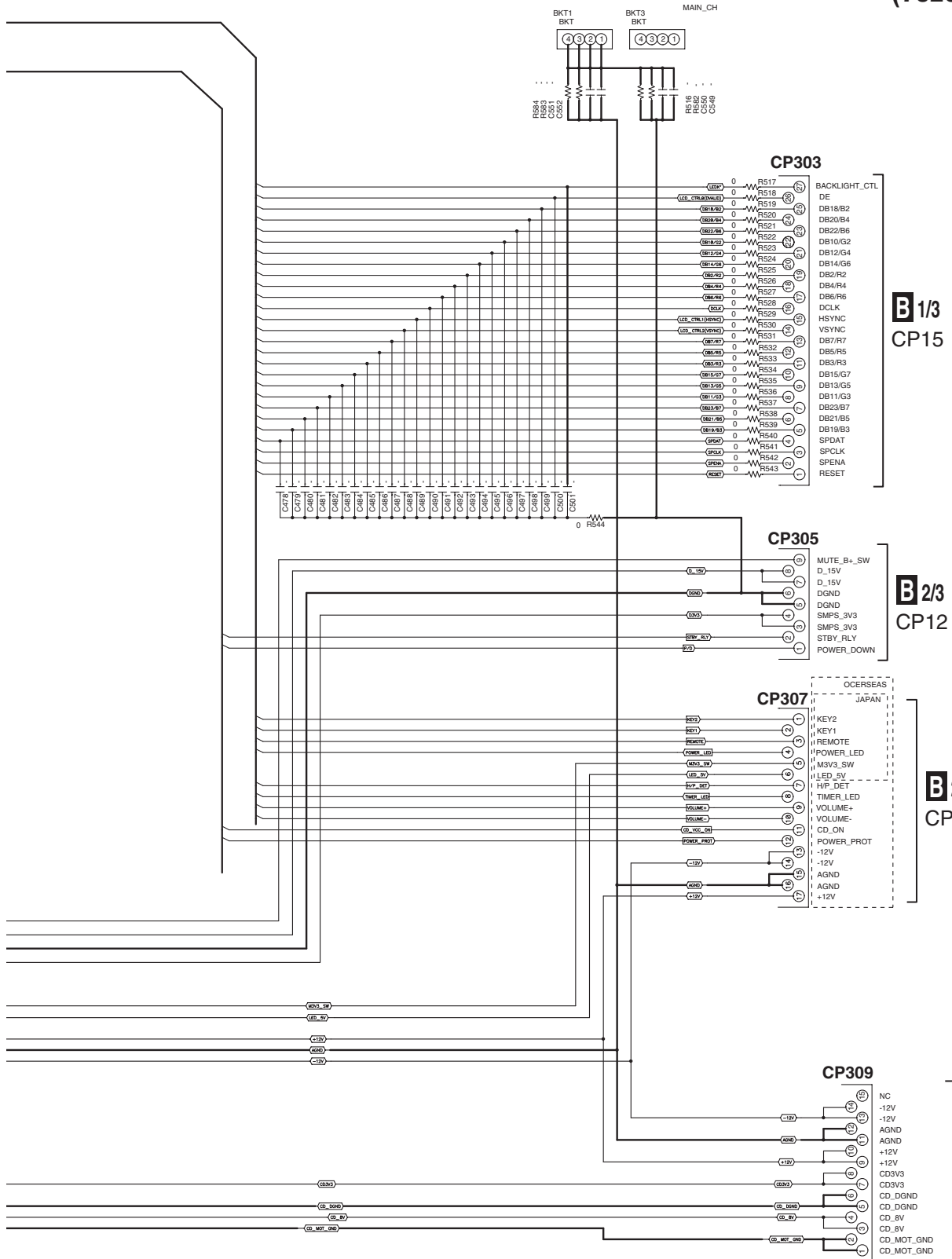
(X(XC)-HM82/SYXEV8 : 8208001120010S)
(X-HM82/AXEV5 : 8208001120010S)
(X(XC)-HM82D/VXEV8 : 8208001120010S)
(XC-HM82/CXEV : 8208001120030S)
(X-HM72/SYXEV8 : 8208001120010S)
(X-HM72D/VXEV8 : 8208001120010S)
(X-HM72D/YXEV8 : 8208001120010S)

△

F



CNT1 ASSY **(7028076871010)**



(FL) ➔ Audio Signal Route (FRONT IN Lch)
 (HP) ➔ Audio Signal Route (HEADPHONE Lch)

X-HM82-K



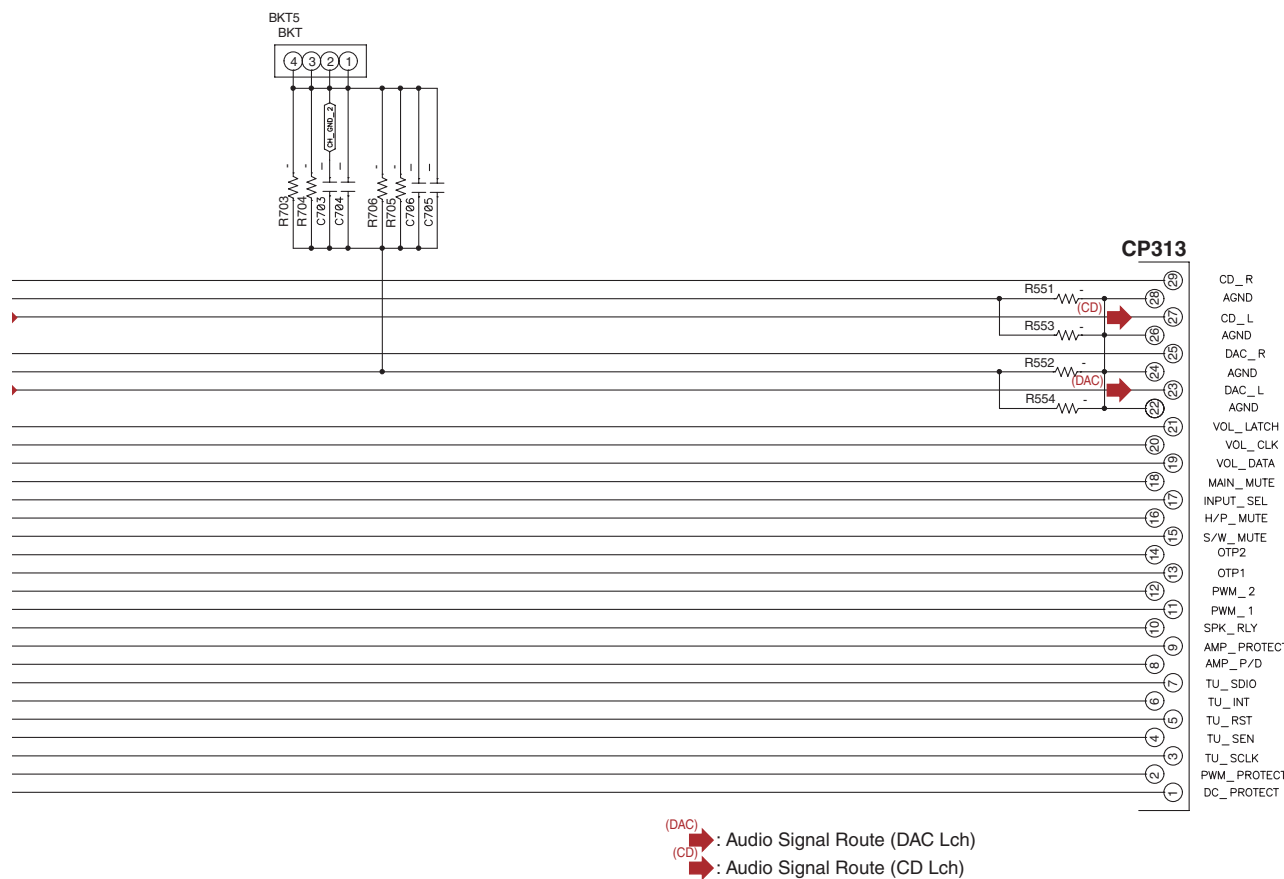
J USB GUIDE ASSY
(7028076856010)



K GUIDE1 ASSY
(7028076854010)



L GUIDE2 ASSY
(7028076855010)

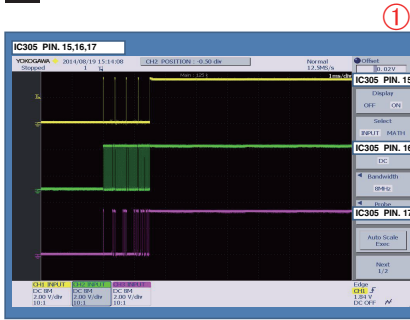


10.13 WAVEFORMS

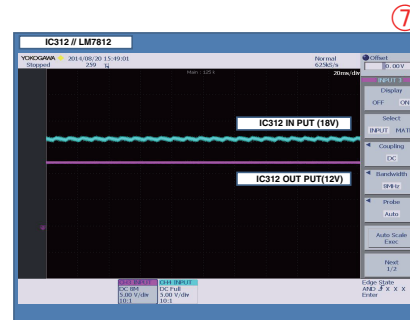
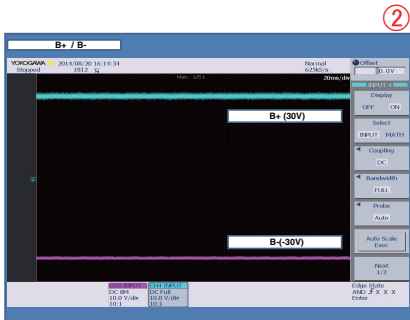
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

A

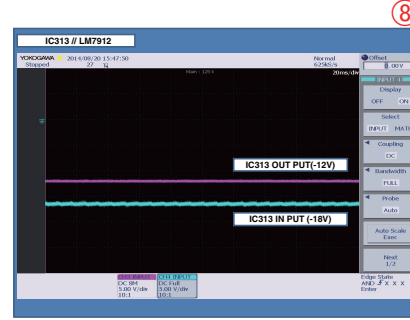
A MAIN ASSY



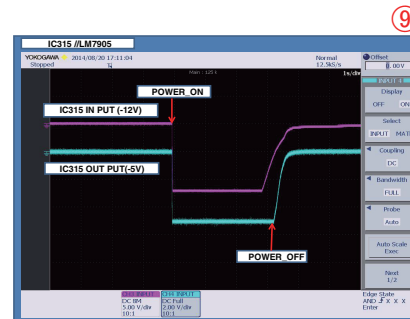
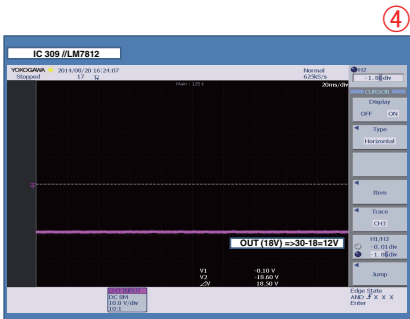
B



C



D



E



F

A

B

16



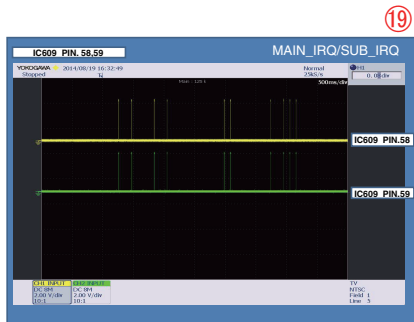
17



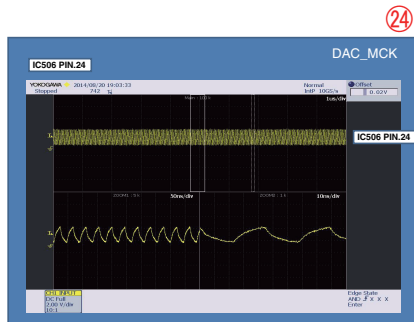
18



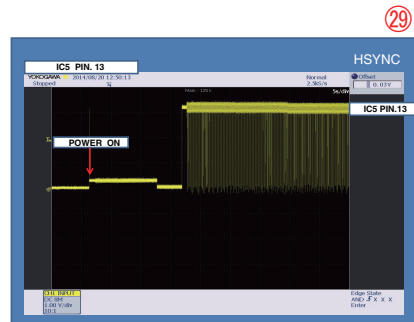
A



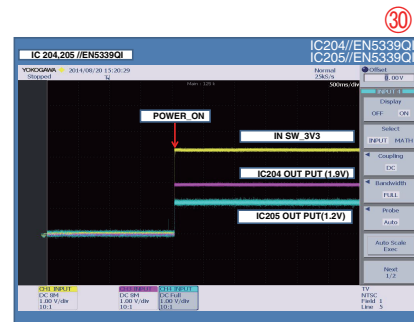
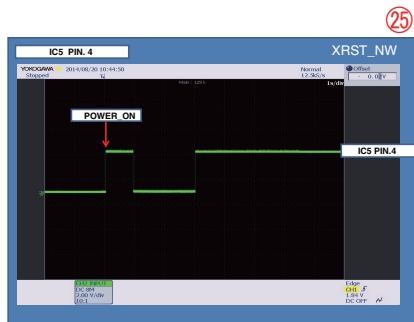
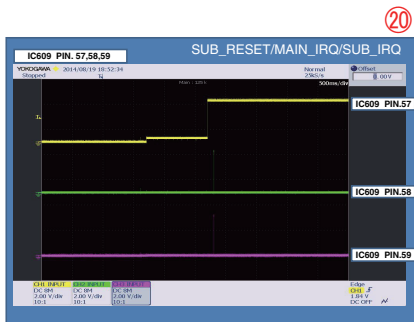
2



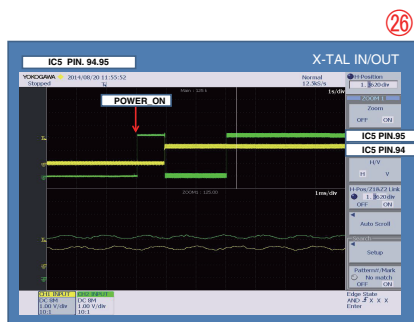
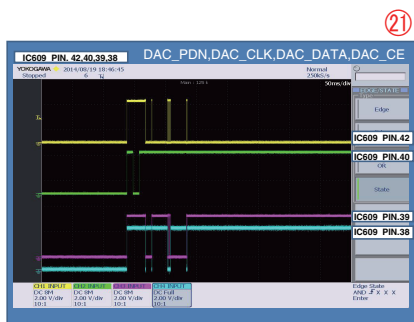
3



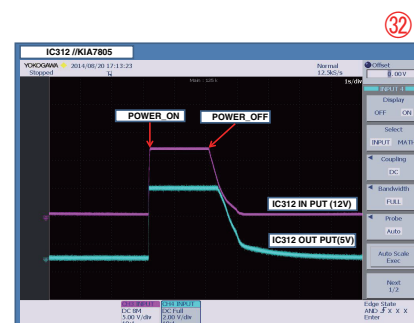
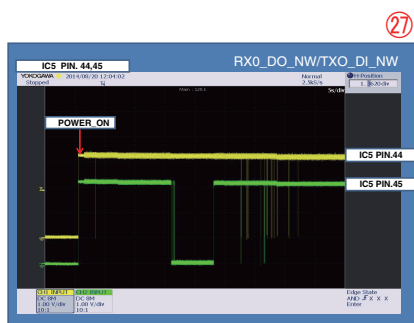
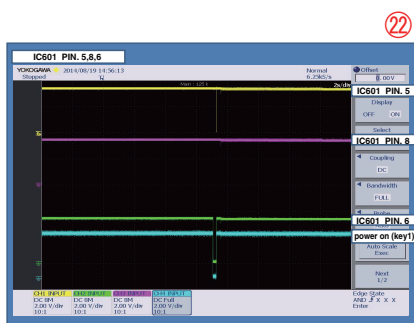
B



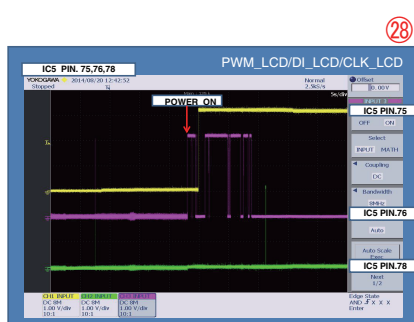
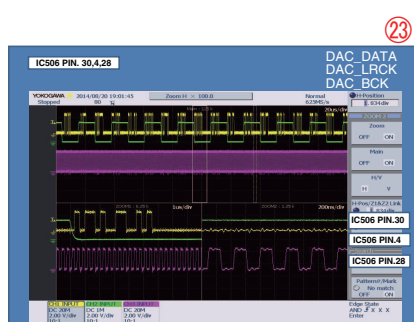
C



D



E



F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

■

7

■

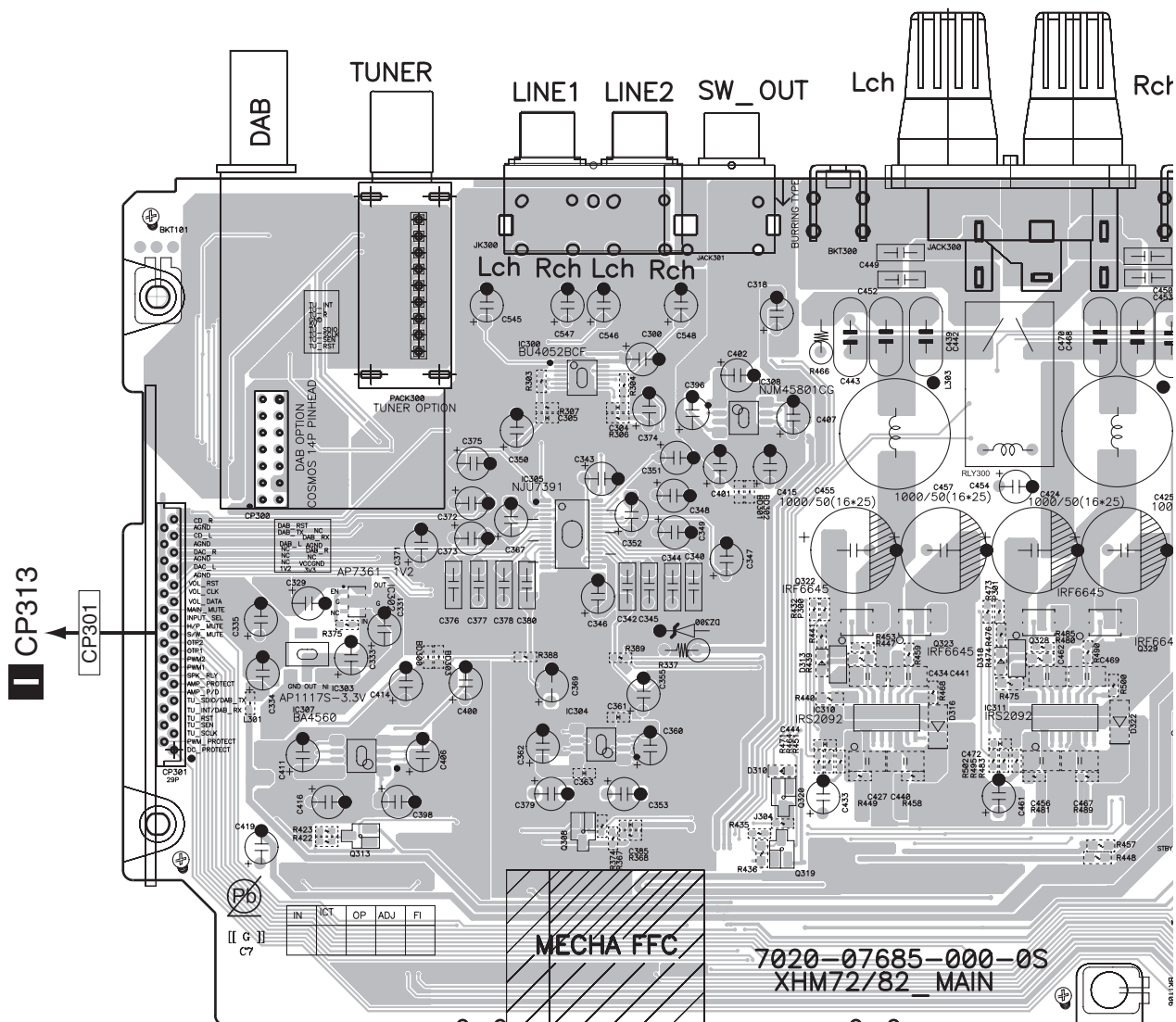
8

■

X-HM82-K

11.1 MAIN ASSY

A MAIN ASSY



Q	Q313		Q308		Q320 Q319	Q322	Q323	Q328	Q329
IC	IC303	IC302 IC307	IC300 IC305 IC304	IC308		IC310		IC311	

A



C

D

E

F

2. View point of PCB diagrams.



1

2

3

4

SIDE B

A

B

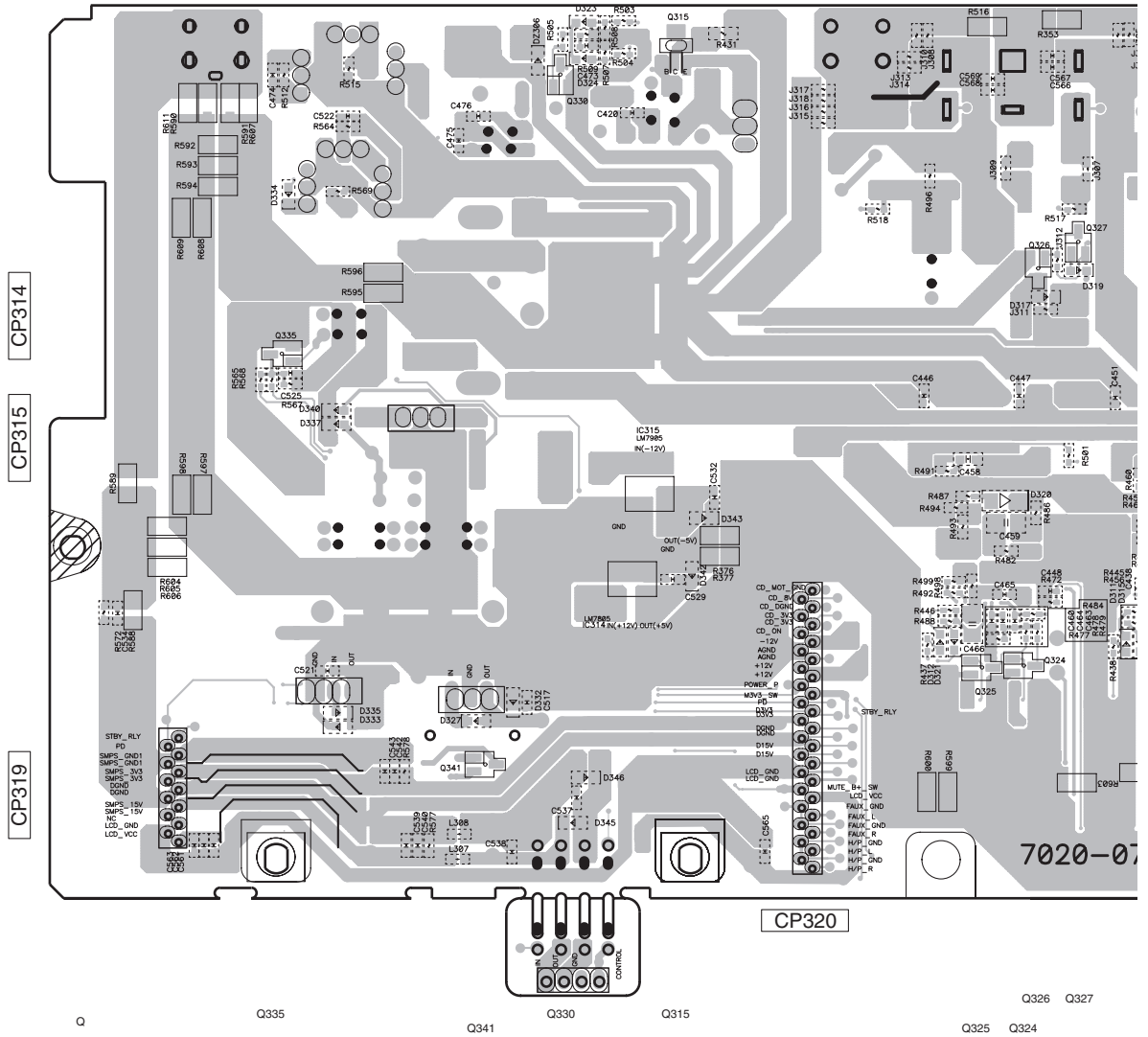
C

D

E

F

A MAIN ASSY



1

2

3

4

SIDE B

A

B

C

D

F

F

A

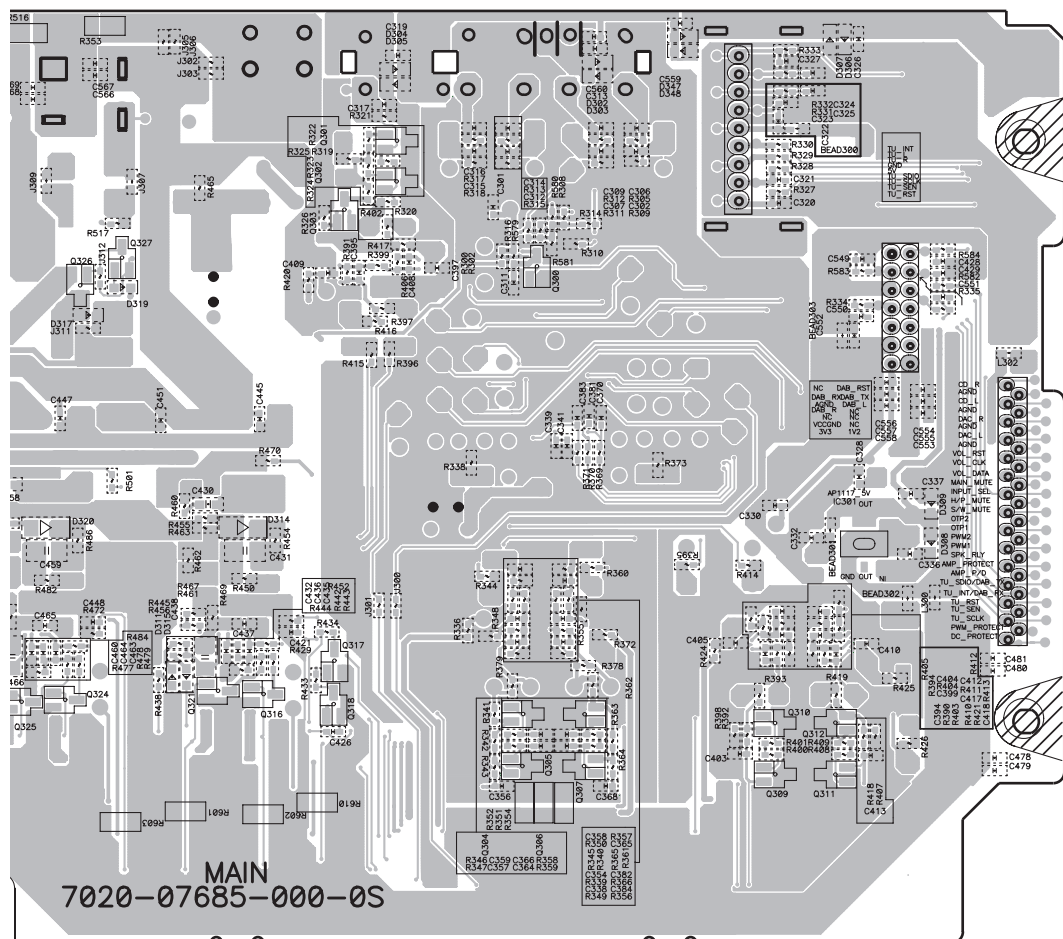
95

5

6

7

3



CP301

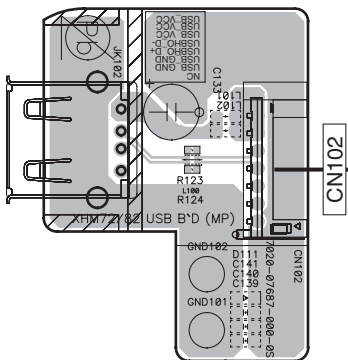
IC301

X-HM82-K

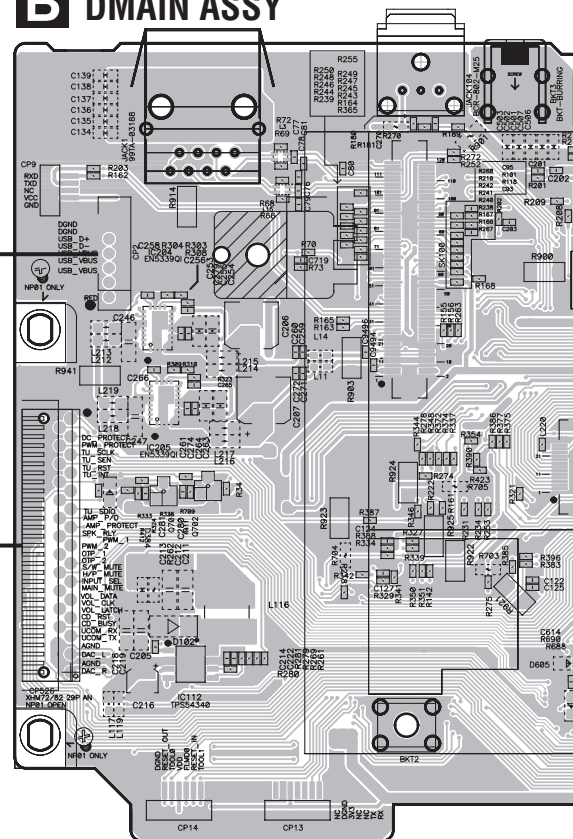
11.2 DMAIN ASSY and USB ASSY

SIDE A

F USB ASSY

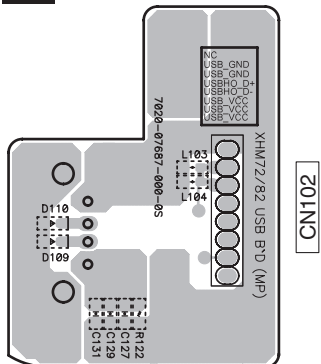


B DMAIN ASSY

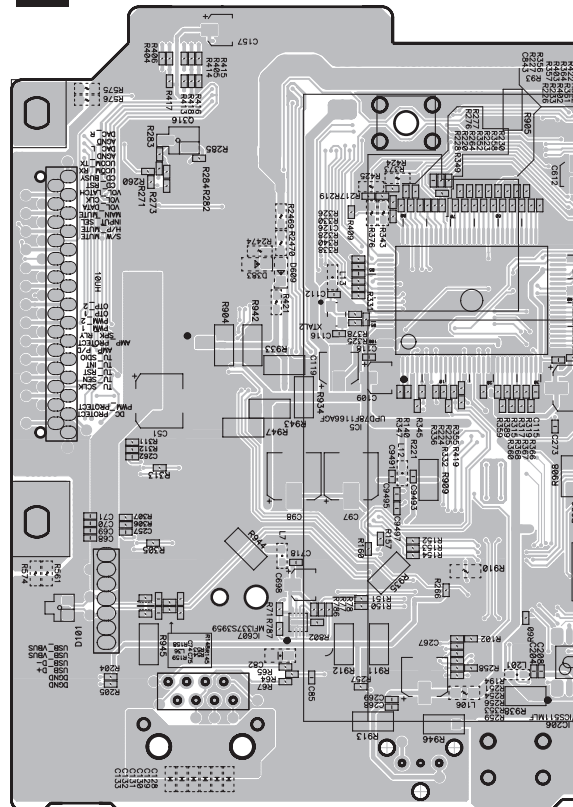


SIDE B

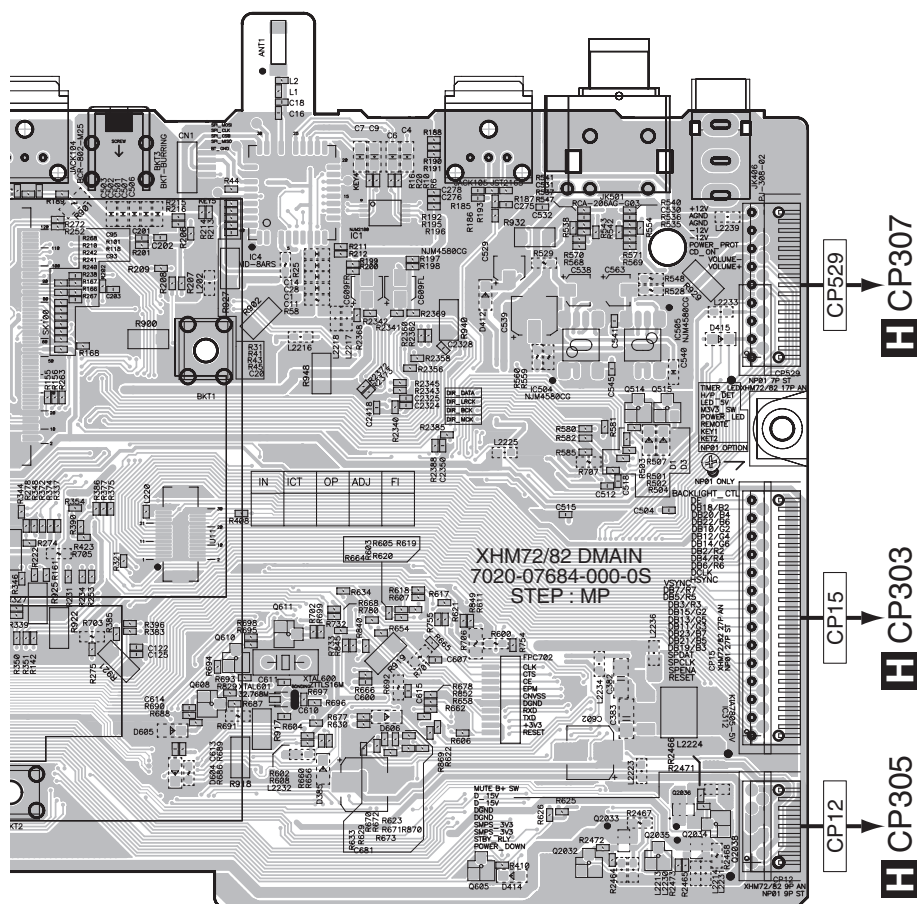
F USB ASSY



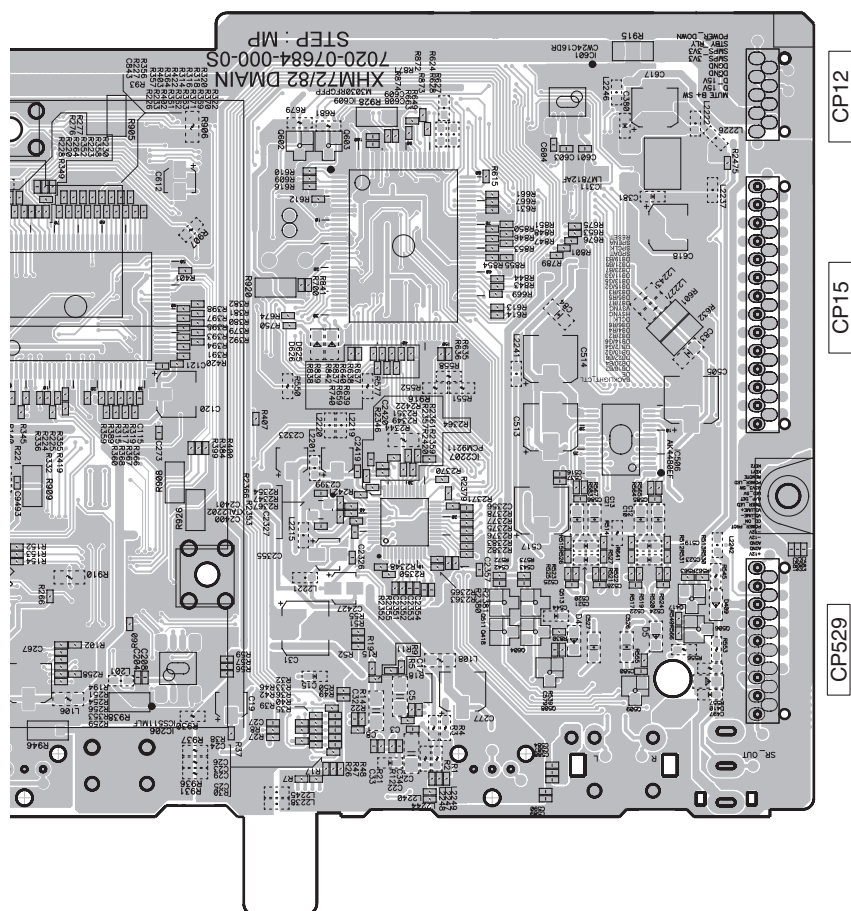
B DMAIN ASSY



B F

SIDE A

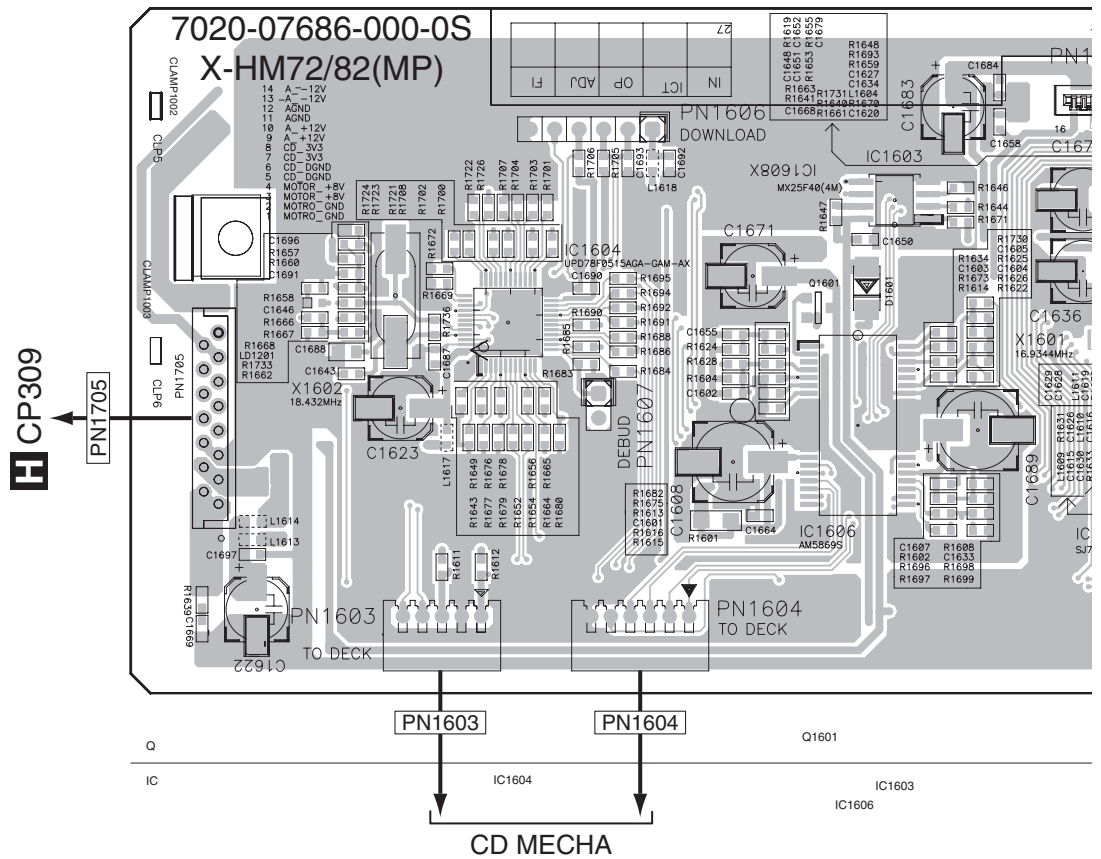
Q	IC
	IC200
Q514 Q515	IC200
Q701 Q702	
Q611	
Q610	
Q608	IC112
Q2036	
Q2033 Q2038	
Q2034	
Q2035	
Q605 Q2032	

SIDE B

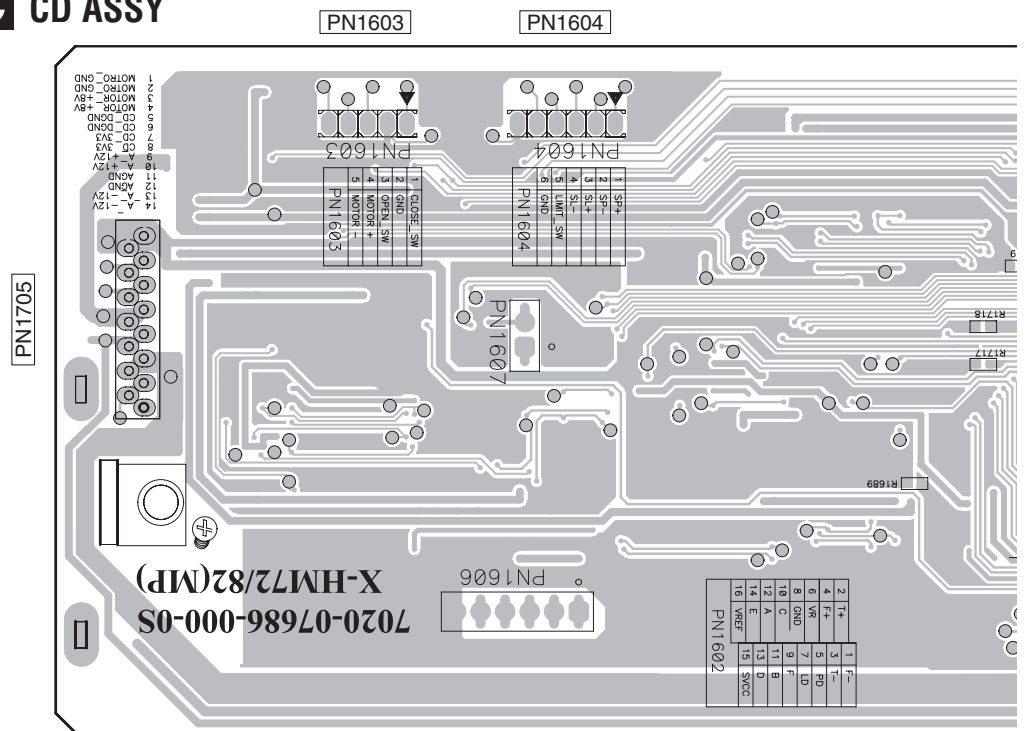
Q				IC
Q316	Q602	Q603		IC601
				IC311
				IC609
				IC5
				IC506
				IC2207
Q511	Q513	Q417		
Q418	Q604	Q506		IC607
	Q508	Q509		IC206

SIDE A

C **CD ASSY**



SIDE B

C CD ASSY

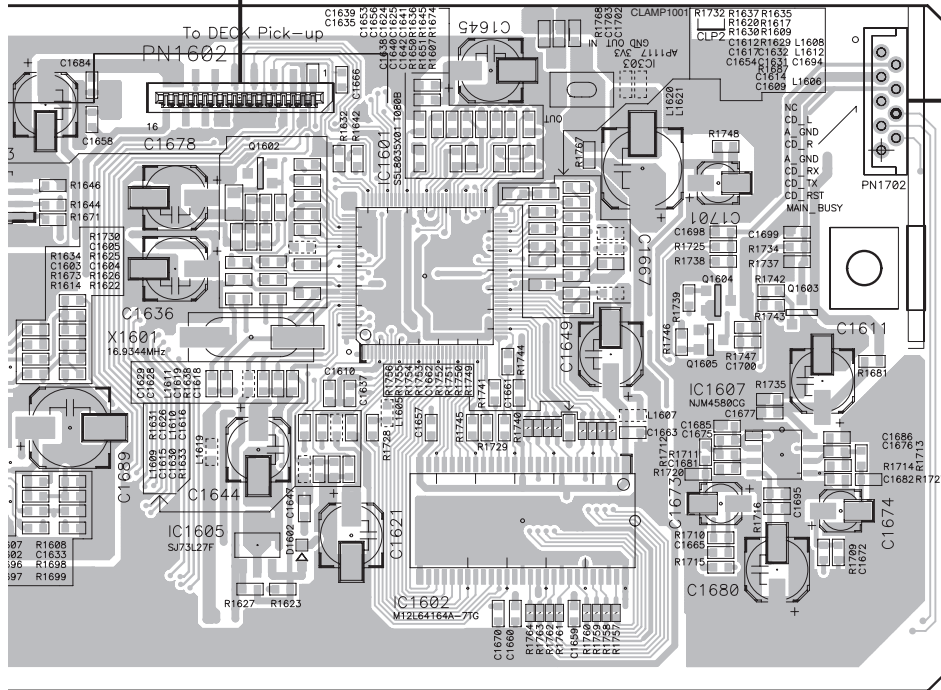
X-HM82-K

SIDE A

A

CD MECHA (Pick up)

PN1602



PN1702

CP311

Q1602

Q1604

Q1603

Q1605

IC1605

IC1601

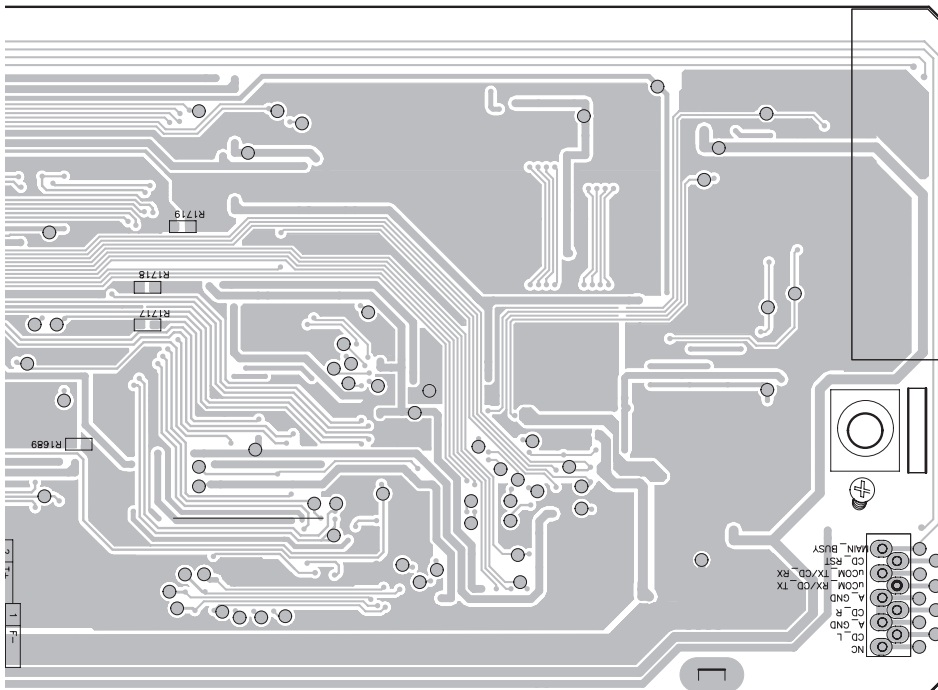
IC303

IC1602

IC1607

SIDE B

D



PN1602

PN1702

X-HM82-K

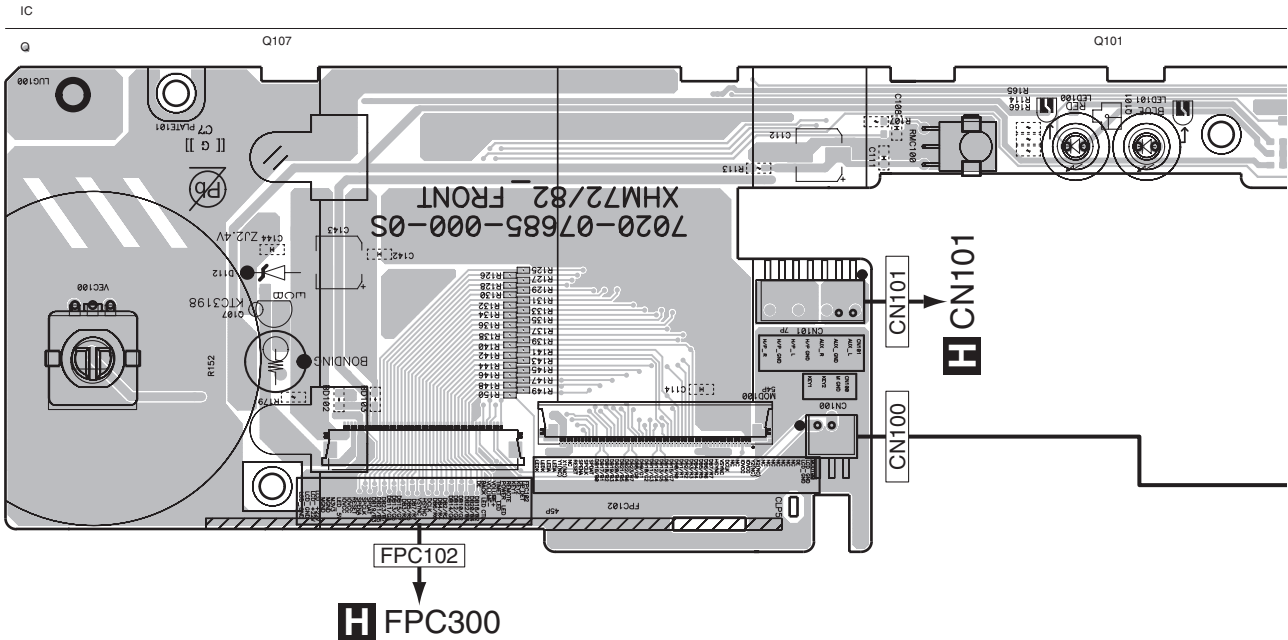
C

99

11.4 FRONT ASSY and KEY ASSY

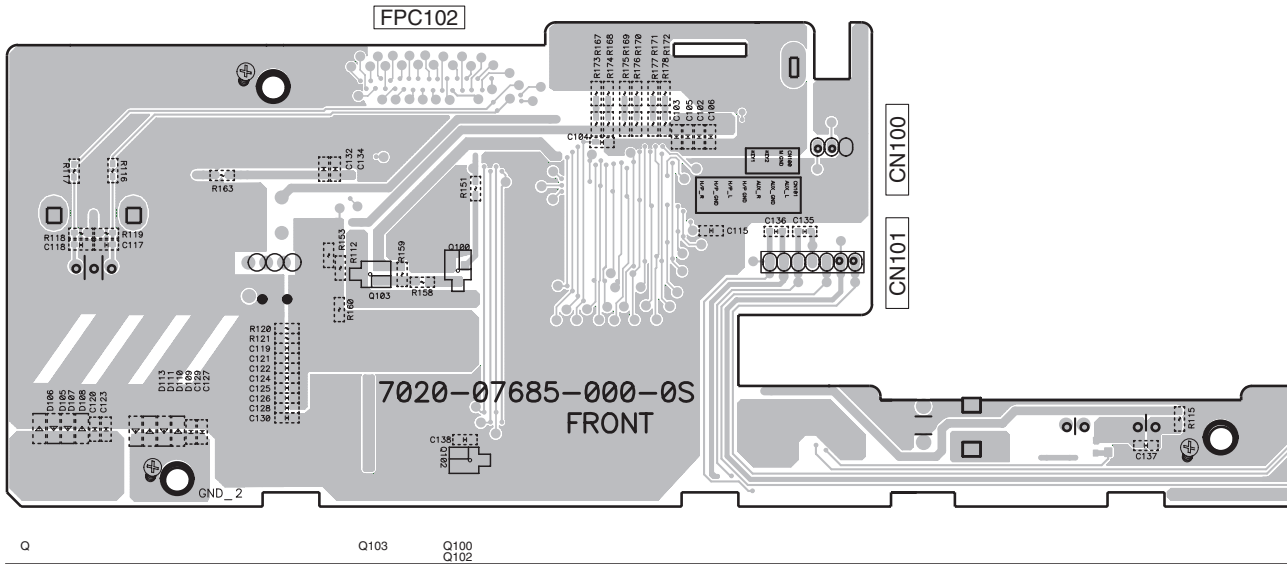
SIDE A

D FRONT ASSY



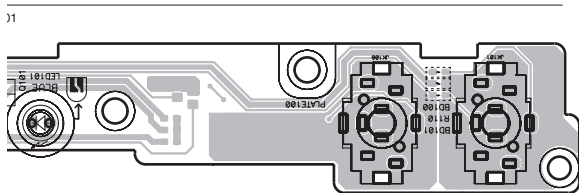
SIDE B

D FRONT ASSY



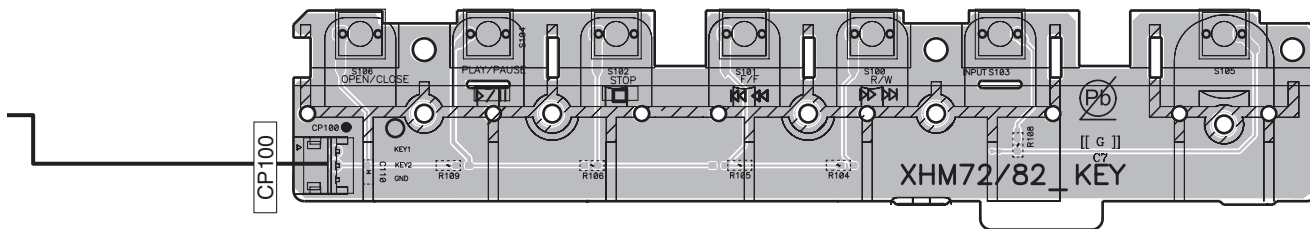
SIDE A

A



E KEY ASSY

B



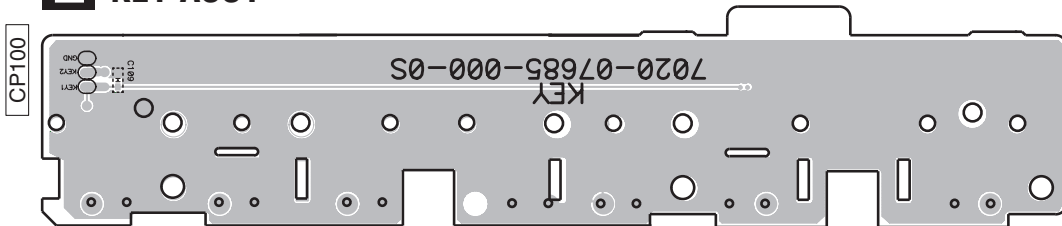
C

SIDE B

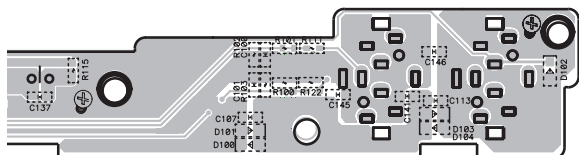
D

E KEY ASSY

E



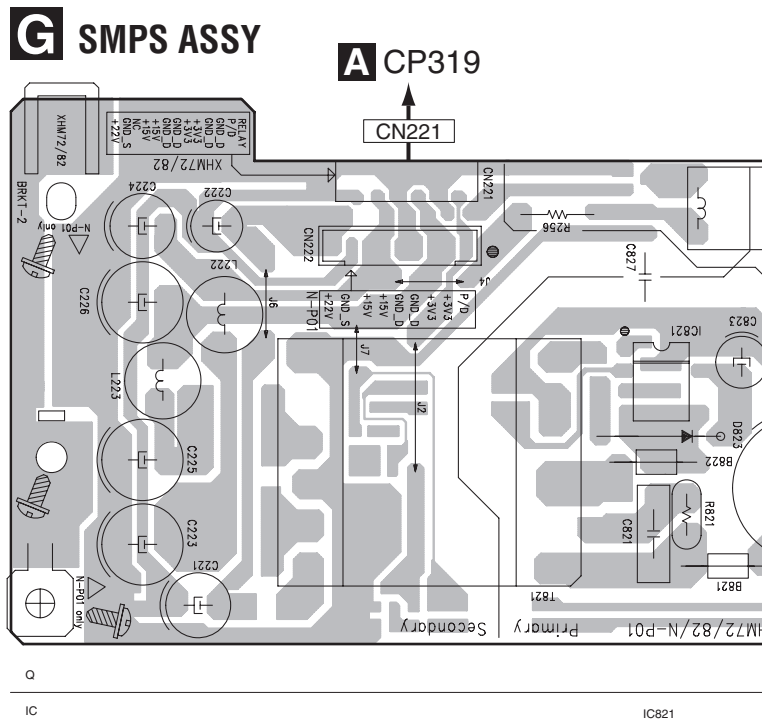
F



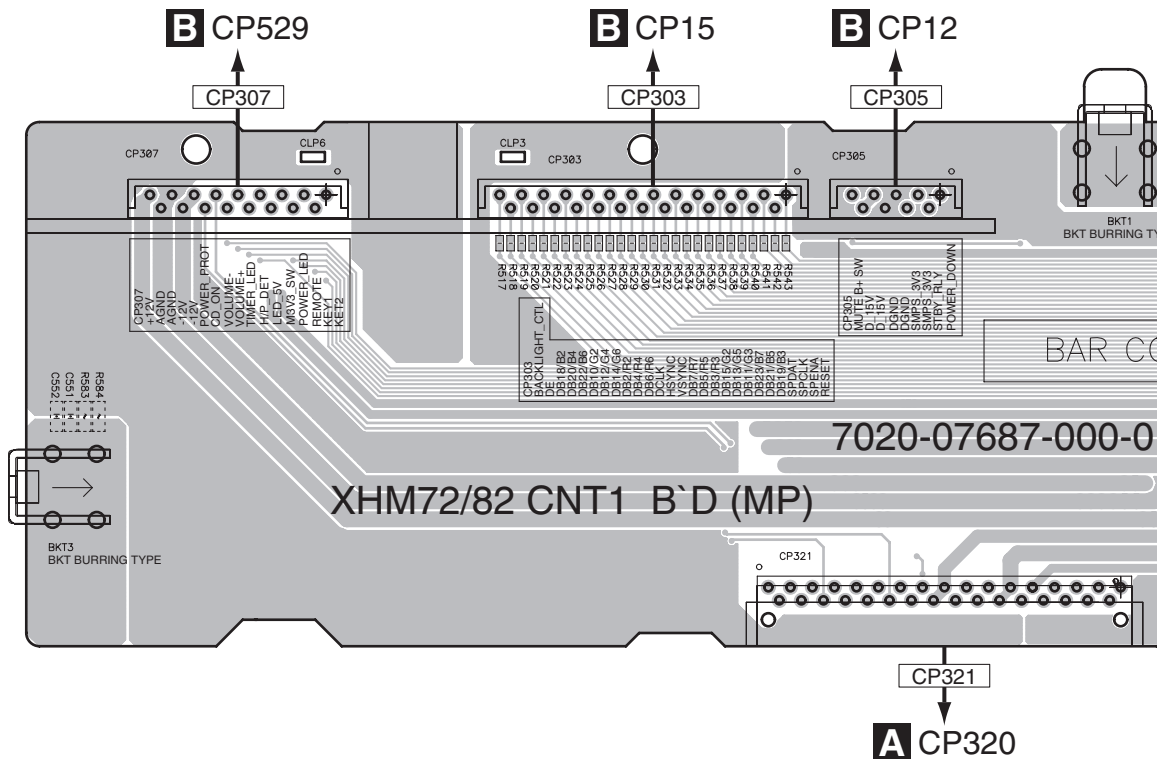
D E

11.5 SMPS ASSY and CNT1 ASSY

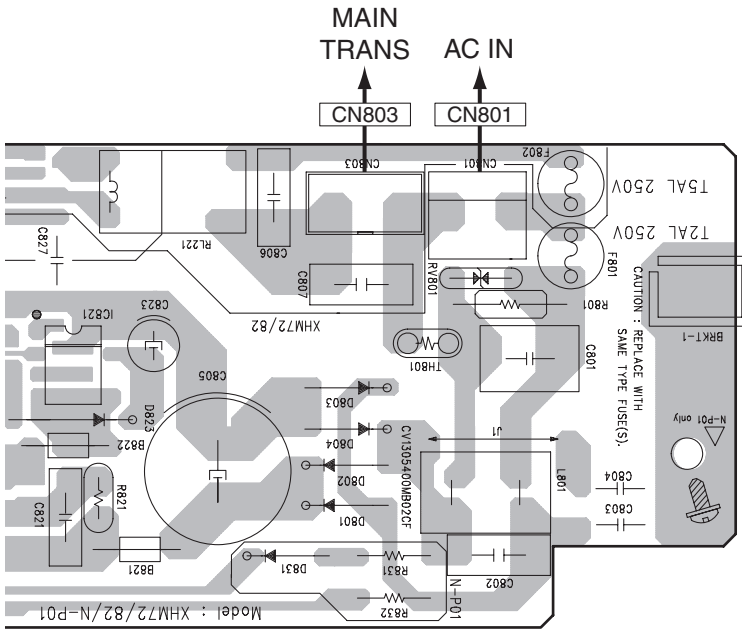
SIDE A



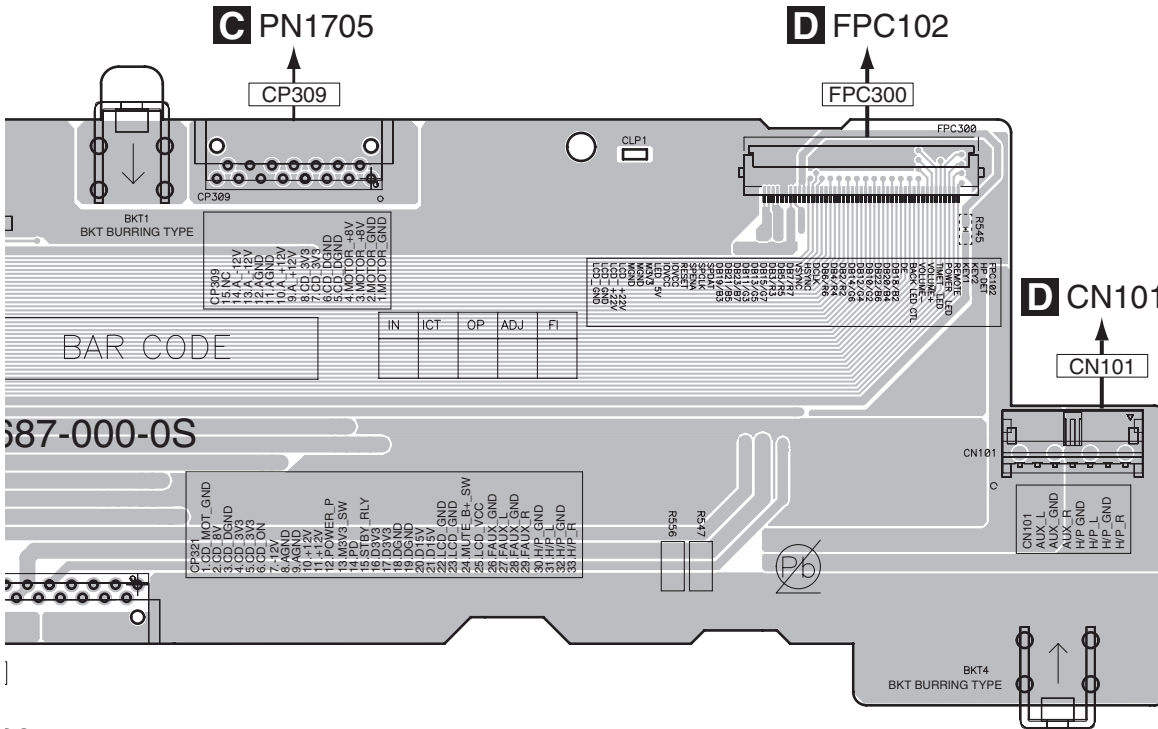
H CNT1 ASSY



G **H**



IC821



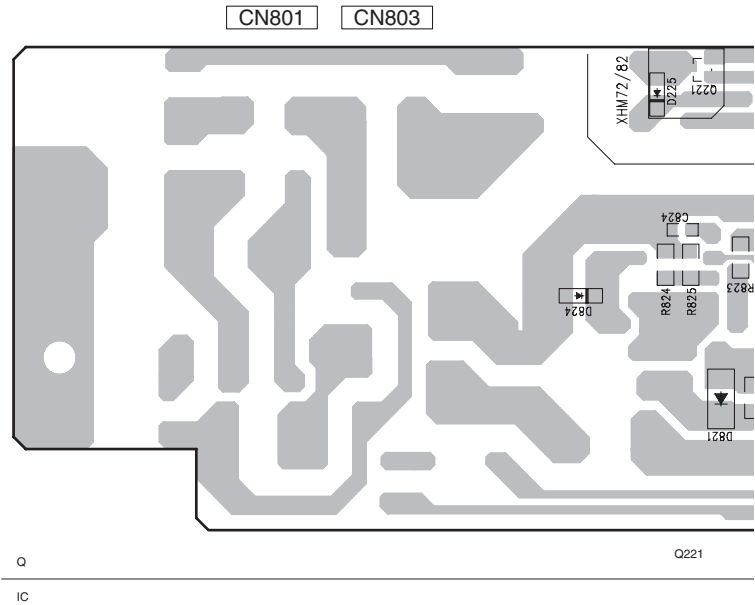
SIDE B

A

B

C

SMPS ASSY

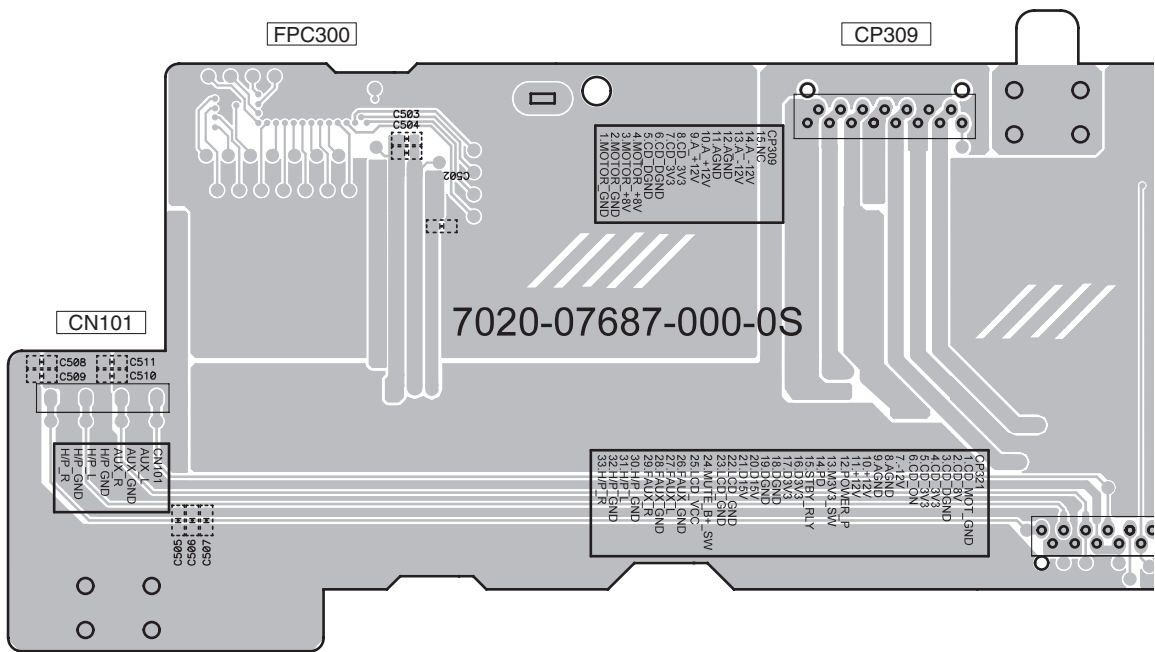


CNT1 ASSY

D

E

F



SIDE B

A

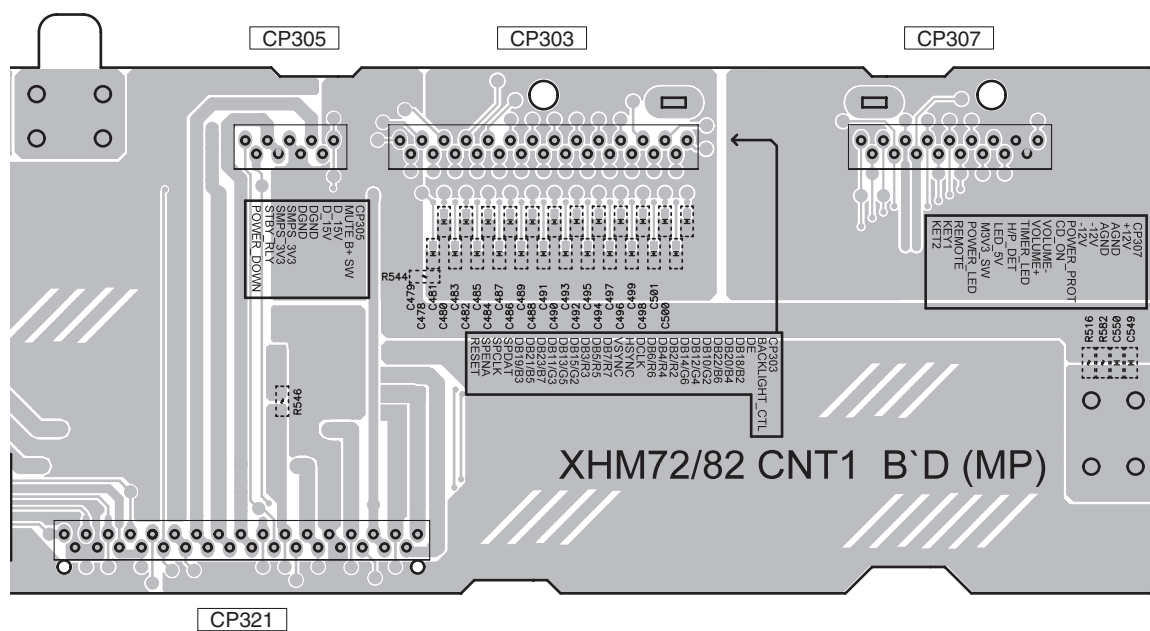
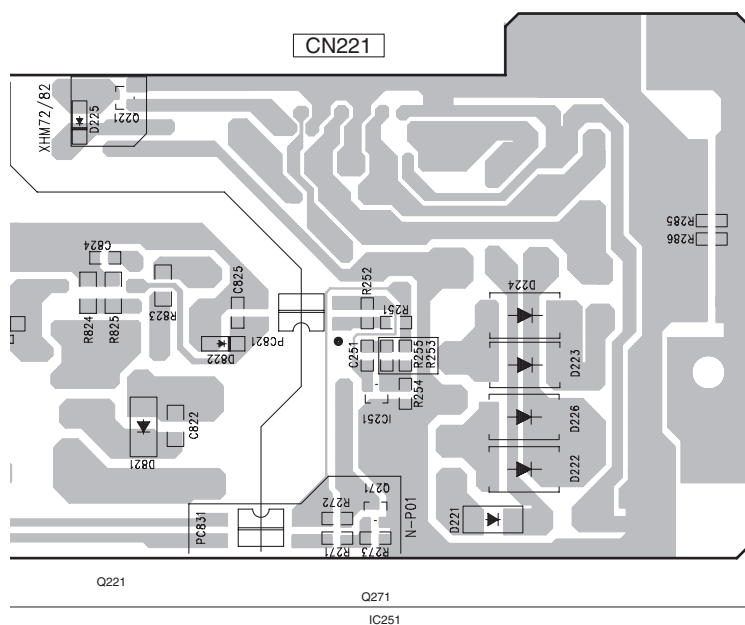
B

C

D

E

F



1

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3

4

SIDE A

A



C

SIDE B

D



F

2

3

4

SIDE A

SIDE A

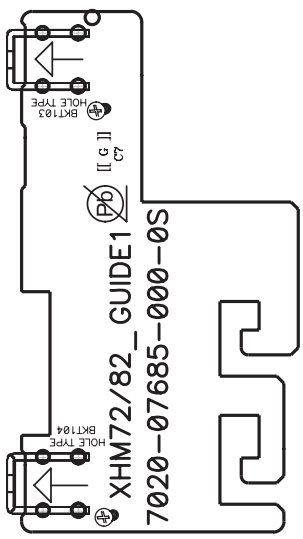
J

USB GUIDE ASSY



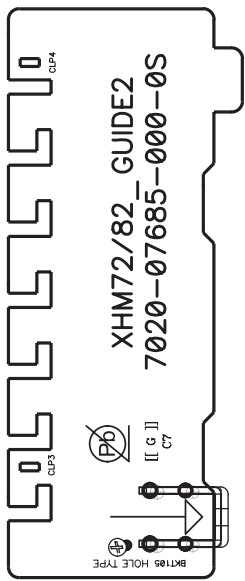
K

GUIDE1 ASSY



L

GUIDE2 ASSY

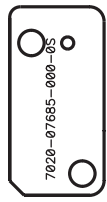


SIDE B

SIDE B

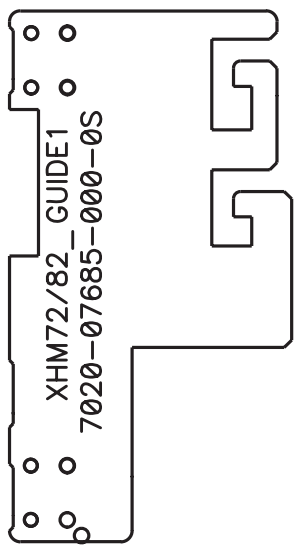
J

USB GUIDE ASSY



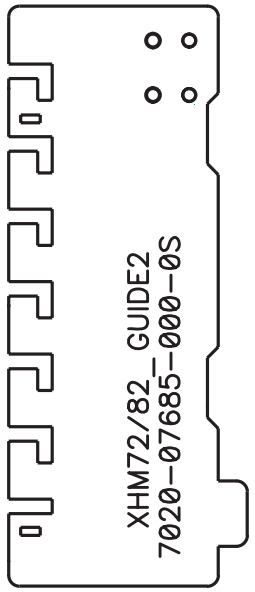
K

GUIDE1 ASSY



L

GUIDE2 ASSY



12. PCB PARTS LIST

NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.

● The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

● When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω $\rightarrow$ 56 $\times 10^1$ $\rightarrow$ 561 RD1/4PU $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$ J

47 k Ω $\rightarrow$ 47 $\times 10^3$ $\rightarrow$ 473 RD1/4PU $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$ J

0.5 Ω $\rightarrow$ R50 RN2H $\begin{bmatrix} R & 5 & 0 \end{bmatrix}$ K

1 Ω $\rightarrow$ 1R0 RSIP $\begin{bmatrix} 1 & R & 0 \end{bmatrix}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 k Ω $\rightarrow$ 562 $\times 10^1$ $\rightarrow$ 5621 RN1/4PC $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$ F

LIST OF ASSEMBLIES

Mark	Symbol & Discription	X-HM82-K/ SYXEV8	X-HM82-S/ SYXEV8	XC-HM82-K/ SYXEV8	XC-HM82-S/ SYXEV8	XC-HM82-K/ CXEV	X-HM82-S/ AXEV5
NSP	1..P.C.B. TOTAL ASSY MAIN	7025MU1401010	7025MU1401020	7025MU1401030	7025MU1401040	7025MU1401070	7025MU1401080
	2..MAIN ASSY	7028076851010	7028076851010	7028076851010	7028076851010	7028076851020	7028076851060
	2..FRONT ASSY	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010
	2..KEY ASSY	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010
	2..GUIDE1 ASSY	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010
	2..GUIDE2 ASSY	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010
	2..USB GUIDE ASSY	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010
NSP	1..P.C.B. TOTAL ASSY DMAIN	7025MU1401011	7025MU1401021	7025MU1401031	7025MU1401041	7025MU1401071	7025MU1401081
	2..DMAIN ASSY	7028076841010	7028076841010	7028076841010	7028076841010	7028076841030	7028076841040
NSP	1..P.C.B. TOTAL ASSY CD	7025MU1401012	7025MU1401022	7025MU1401032	7025MU1401042	7025MU1401072	7025MU1401082
	2..CD ASSY	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010
NSP	1..P.C.B. TOTAL ASSY CNT	7025MU1401013	7025MU1401023	7025MU1401033	7025MU1401043	7025MU1401073	7025MU1401083
	2..CNT1 ASSY	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010
	2..CNT2 ASSY	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010
	2..USB ASSY	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010
$\triangle$	1..SMPS ASSY	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120030S	8208001120010S

Mark	Symbol & Discription	X-HM82D-K/ VXEV8	XC-HM82D-K/ VXEV8	X-HM72-K/ SYXEV8	X-HM72-S/ SYXEV8	X-HM72D-K/ VXEV8	X-HM72D-S/ YXEV8
NSP	1..P.C.B. TOTAL ASSY MAIN	7025MU1401090	7025MU1401100	7025MU1401110	7025MU1401120	7025MU1401130	7025MU1401140
	2..MAIN ASSY	7028076851030	7028076851030	7028076851040	7028076851040	7028076851050	7028076851050
	2..FRONT ASSY	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010	7028076852010
	2..KEY ASSY	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010	7028076853010
	2..GUIDE1 ASSY	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010	7028076854010
	2..GUIDE2 ASSY	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010	7028076855010
	2..USB GUIDE ASSY	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010	7028076856010
NSP	1..P.C.B. TOTAL ASSY DMAIN	7025MU1401091	7025MU1401101	7025MU1401111	7025MU1401121	7025MU1401131	7025MU1401141
	2..DMAIN ASSY	7028076841050	7028076841050	7028076841060	7028076841060	7028076841070	7028076841070
NSP	1..P.C.B. TOTAL ASSY CD	7025MU1401092	7025MU1401102	7025MU1401112	7025MU1401122	7025MU1401132	7025MU1401142
	2..CD ASSY	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010	7028076861010
NSP	1..P.C.B. TOTAL ASSY CNT	7025MU1401093	7025MU1401103	7025MU1401113	7025MU1401123	7025MU1401133	7025MU1401143
	2..CNT1 ASSY	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010	7028076871010
	2..CNT2 ASSY	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010	7028076872010
	2..USB ASSY	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010	7028076873010
$\triangle$	1..SMPS ASSY	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S	8208001120010S

A MAIN ASSY

7028076851010, 7028076851020, 7028076851060, 7028076851030, 7028076851040 and 7028076851050 are constructed the same except for the following:

Mark	Symbol & Discription	7028076851010	7028076851020	7028076851060	7028076851030	7028076851040	7028076851050
	IC302 LINEAR-REGULATOR	Not used	Not used	Not used	J126736112010S	Not used	J126736112010S
	IC303 LINEAR-REGULATOR	Not used	Not used	Not used	J126111733230-IL	Not used	J126111733230-IL
	JACK300 TER,BOARD SCREW 4P	G612405EWG02Y-IL	G612405EWG02Y-IL	G612405EWG02Y-IL	G612405EWG02Y-IL	G612405E0200Y-IL	G612405E0200Y-IL
	JACK301 TER,RCA 1PIN	G600107AGF00Y-IL	G600107AGF00Y-IL	G600107AGF00Y-IL	G600107AGF00Y-IL	G600107A0000YS	G600107A0000YS
	PACK300 TUNER,FM/AM	E903104100781S	E903004100781S	E903004100781S	Not used	E903104100781S	Not used

Mark No. Description

Part No.

A MAIN ASSY

SEMICONDUCTORS

IC 300 LOGIC	J040405200070S
IC 301 LINEAR-REGULATOR	J126111750230S
IC 304,308 LINEAR OP	J121458000050-IL
IC 305 LOGIC	J040739100010-IL
IC 307 LINEAR OP	J121456000041-IL

IC 309,312 LINEAR-REGULATOR	J126781200510S
IC 310,311 ANALOG	J080209201010-IL
IC 313 LINEAR-REGULATOR	J126791200510S
IC 314 LINEAR-REGULATOR	J126780500520S
IC 315 LINEAR-REGULATOR	J126790500520S

IC 316 LINEAR-REGULATOR	J12678R080010-IL
D326 RECTIFIER BRIDGE	K047100600220-IL
D328,329,330,331 SWITCHING	K000400700220-IL

MISCELLANEOUS

JACK300 TER,BOARD SCREW 4P	G612405EWG02Y-IL
JACK301 TER,RCA 1PIN	G600107AGF00Y-IL
P 300,301 POSISTOR	F320184710050-IL
PACK300 TUNER,FM/AM	E903104100781S
RLY300 RELAY	G680120502050-IL

RESISTORS

R 466,497	C060010066050-IL
R 554,556	C060R47065050-IL

CAPACITORS

C 424,425,455,457	D040102087010-IL
C 506,512	D040332087000-IL
C 514	D040332085050S
C 519	D040222085020-IL
C 527,531,544	D040102083030-IL

C 536,541	D040102084060-IL
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B DMAIN ASSY

SEMICONDUCTORS

IC 1 LINEAR OP	J121210080010S
IC 5 CPU MICRO PROCESS	8952HM7200010
IC 112 LOGIC-D/D CONVER	J048543400010S
IC 206 LINEAR	J120511000020S
IC 312 LINEAR-REGULATOR	J126780500450-IL

IC 504,505 LINEAR OP	J121458000050-IL
IC 506 LOGIC-D/A CONVER	J042448000010S
IC 601 MEMORY-EEPROM	J000241600170-IL
IC 607 LOGIC-DECODER	J044337395930-IL
IC 609 CPU MICRO PROCESS	8952HM7200030

IC 2207 LOGIC-INTERFACE	J046921100010-IL
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Mark No. Description

Part No.

MISCELLANEOUS

JACK104 MODULE	E100802000250S
XTAL600 RESONATOR,CERAMIC	E83016R000060-IL
XTAL601 CRYSTAL	E80032R768210S

C CD ASSY

SEMICONDUCTORS

IC 303 LINEAR-REGULATOR	J126111733230-IL
IC 1601 LOGIC	J040580350020-IL
IC 1602 MEMORY-RAM	J001126410010-IL
IC 1603 MEMORY FLASH	8952HM7200070
IC 1604 CPU MICRO PROCESS	8952HM7200060

IC 1605 LINEAR-RESET	J125702700030S
IC 1606 LINEAR-DRIVER	J127586900010-IL
IC 1607 LINEAR OP	J121458000050-IL

D FRONT ASSY

SEMICONDUCTORS

Q107	J5023198Y0000-IL
LED100 ROUND	K500032001170S
LED101 ROUND	K500036001230-IL

MISCELLANEOUS

JK100,101 JACK,D3.5	G401035180010-IL
VEC100 SW,ENCODER	G121125072010-IL

E KEY ASSY

MISCELLANEOUS

S100-106 SW,TACT	G180000270010-IL
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F USB ASSY

MISCELLANEOUS

JK102 CN,PLUG CONTACT	G480040040020-IL
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G SMPS ASSY

SMPS ASSY has no service parts.

Mark

No.

Description

Part No.

H

CNT1 ASSY

CNT1 ASSY has no service parts.

A

I

CNT2 ASSY

CNT2 ASSY has no service parts.

J

USB GUIDE ASSY

USB GUIDE ASSY has no service parts.

K

GUIDE1 ASSY

GUIDE1 ASSY has no service parts.

B

L

GUIDE2 ASSY

GUIDE2 ASSY has no service parts.

C

D

E

F