

# CUBE 10GX

## SERVICE NOTES *Issued by RJA*

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## Cautionary Notes

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

## For User Data

You can replace the amp types on the unit using a CUBE-10GX app of a smart phone, but the replaced amp types cannot be backed up. Also, executing a Factory Reset returns the amp types to their factory defaults.

## Part Replacement

When replacing components near the power-supply circuit or a heat-generating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

## Parts List

A component whose part code is \*\*\*\*\* will not be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).
- Because it is carried in electronic data on the Roland web site.
- Because it is a package or an accessory irrelevant to the function maintenance of the main body.
- Because it can be replaced with an article on the market. (battery or etc.)

## Circuit Diagram

In the circuit diagram, "NIU" is an abbreviation for "Not in Use," and "UnPop" is an abbreviation for "Unpopulated." They both mean non-mounted components. The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.

## Specifications

### Roland CUBE-10GX: Guitar Amplifier

#### Maximum Power Output

10 W

#### Nominal Input Level (1kHz)

INPUT: -10 dBu (1 M $\Omega$ )

AUX IN: -10 dBu

#### Speaker

20 cm (8 inches)

#### Controls

POWER switch

AMP TYPE switch (CLEAN, CRUNCH, LEAD)

GAIN knob

VOLUME knob

BASS knob

MIDDLE knob

TREBLE knob

EFFECT knob (CHORUS, DELAY, REVERB, SPRING)

#### Indicator

AMP TYPE

#### Connectors

INPUT jack: 1/4-inch phone type

AUX IN jack: Stereo miniature phone type

REC OUT / PHONES jack: Stereo miniature phone type

#### Power Supply

AC adaptor (DC 5.7 V)

#### Current Draw

700 mA

#### Dimensions

346 (W) x 179 (D) x 317 (H) mm

13-5/8 (W) x 7-1/16 (D) x 12-1/2 (H) inches

#### Weight (excluding AC adaptor)

4.7 kg

10 lbs 6 oz

#### Accessories

Owner's manual (#5100040980, #5100040981)

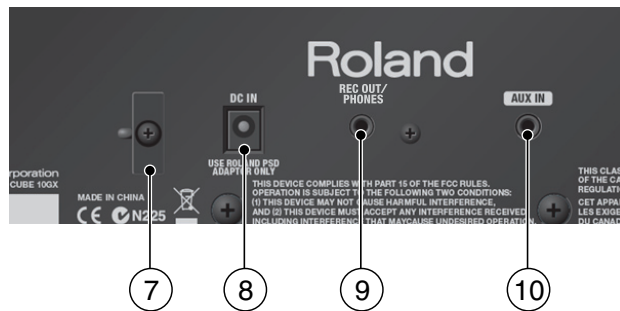
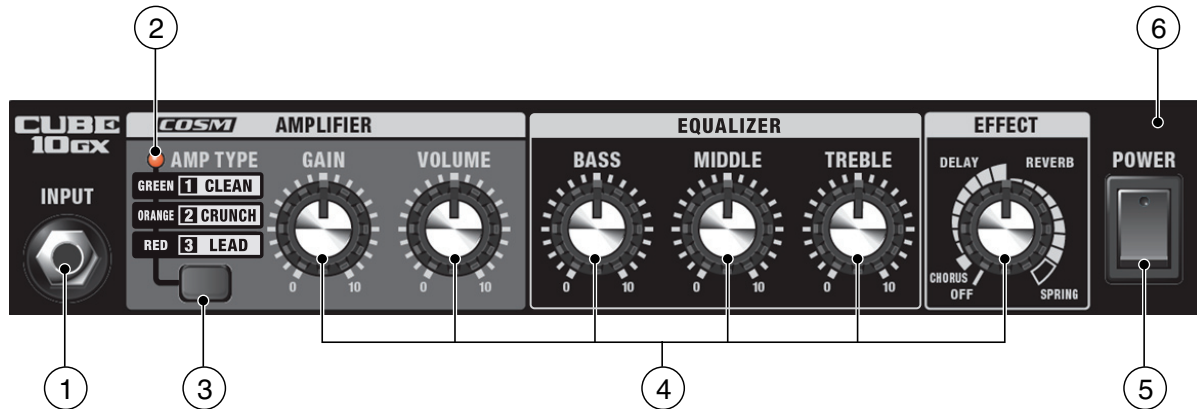
AC adaptor (#5100038306, #5100038307, #5100038308, #5100038309, #5100038310, #5100038311, #5100038312)

\* 0 dBu = 0.775 V<sub>rms</sub>

\* Printed matters will not be supplied after the end of the production. Then, download the electronic file from the Roland web site.

\* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

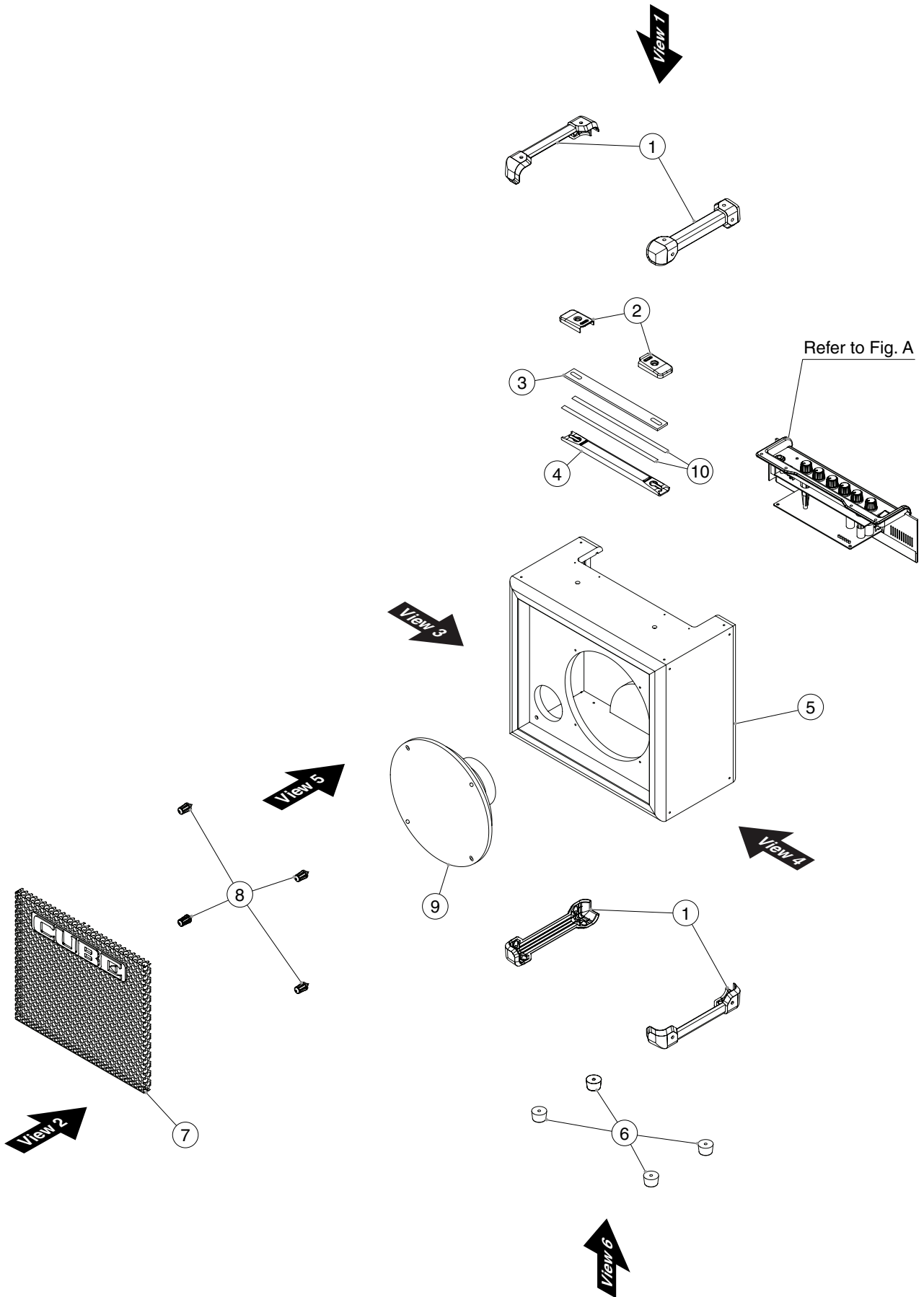
# Location of Controls



# Location of Controls Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100024419	6.5MM JACK	PJ-644C-04-EP(610-11020-01-00)	1
		* This unit includes the following parts.		
	*****	JACK NUT		1
	*****	JACK WASHER		1
2	05011067	LED	L-3WEGW (153-L-3WEGW)	1
3	5100036682	S-KEYTOP		1
	01780101	TACT SWITCH	SKQKABD010	1
4	5100033014	R-KNOB	SF BLK/SLV	6
	5100033433	ROTARY POTENTIOMETER	R0923NOCV1B103FE00A1	6
		* This unit includes the following parts.		
	17048630	VR ACCESSORY NUT M9		6
	40452178	VR WASHER M9		6
5	02897801	SEESAW SWITCH	SDDJE13200 94V-0	1
6	5100040834	PANEL SHEET		1
7	5100027106	CORD HOOK	40516-014	1
8	13449720	DC JACK	HEC2305-016250	1
9	04452956	3.5MM JACK	YKB21-5401N	1
10	04452945	3.5MM JACK	YKB21-5344N	1

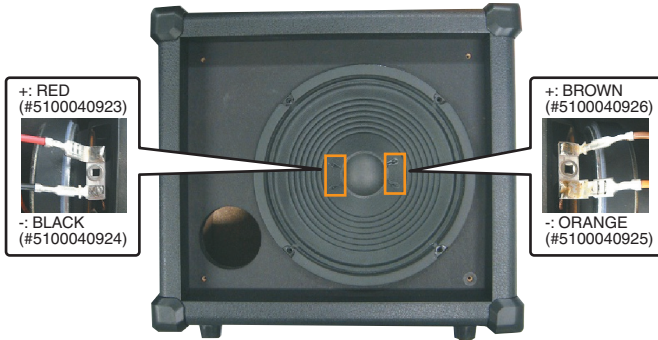
# Exploded View



# Exploded View Parts List

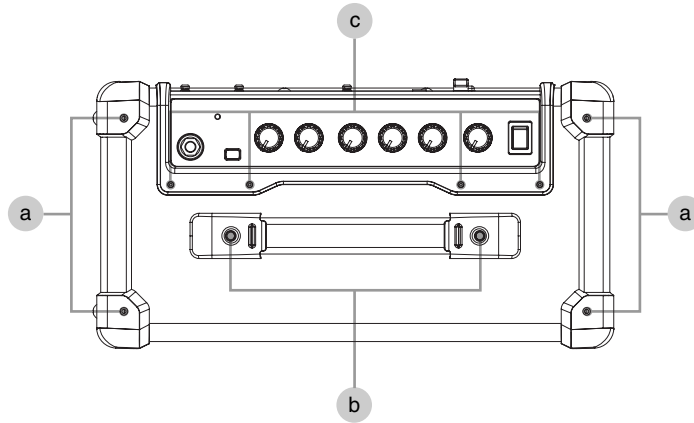
No.	Part Code	Part Name	Description	Q'ty
1	5100040843	CORNER PROTECTOR		4
2	5100011383	HANDLE HOLDER		2
3	5100011382	HANDLE PLATE	750-11038-03-00	1
4	5100011381	HANDLE	716-11038-01-00	1
5	5100040832	CABINET		1
6	5100004362	RUBBER FOOT(721-11040-01-00)	D23XT15 08203-014	4
7	5100040011	GRILLE ASSY		1
8	5100010870	GRILLE SPACER		4
9	5100040811	SPEAKER	W080404-050A	1
10	5100036989	ACETATE TAPE	NITTO #5 BLACK W12MM	-

\* When installing the speaker, orient it as shown in the figure.

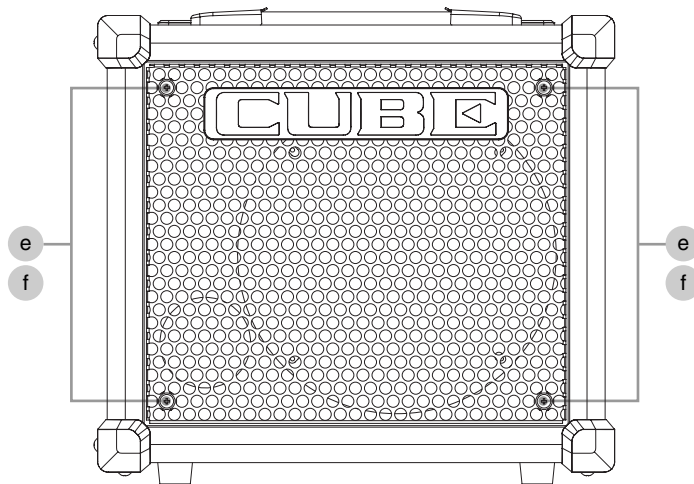


# Plane View (1)

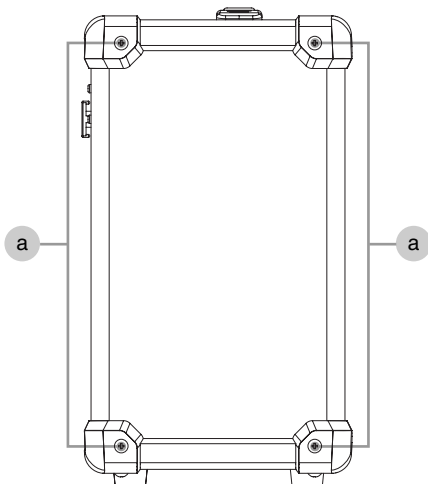
View 1



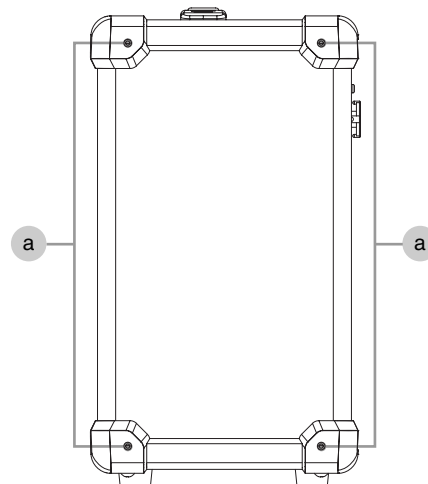
View 2



View 3



View 4



**View 1**

No.	Part Code	Part Name	Description	Q'ty
a	40677623	SCREW 4X16	TRUSS TAPPING A FE NI	4
b	40010478	SCREW M5X25	OVAL MACHINE FE BZC FOR HANDL	2
c	5100005098	SCREW 3X16	TRUSS TAPPING A BZ	4

**View 2**

No.	Part Code	Part Name	Description	Q'ty
e	5100042461	SCREW 4X30	TRUSS TAPPING NI	4
f	5100005101	WASHER	RESIN 4.1X11X1 BLACK	4

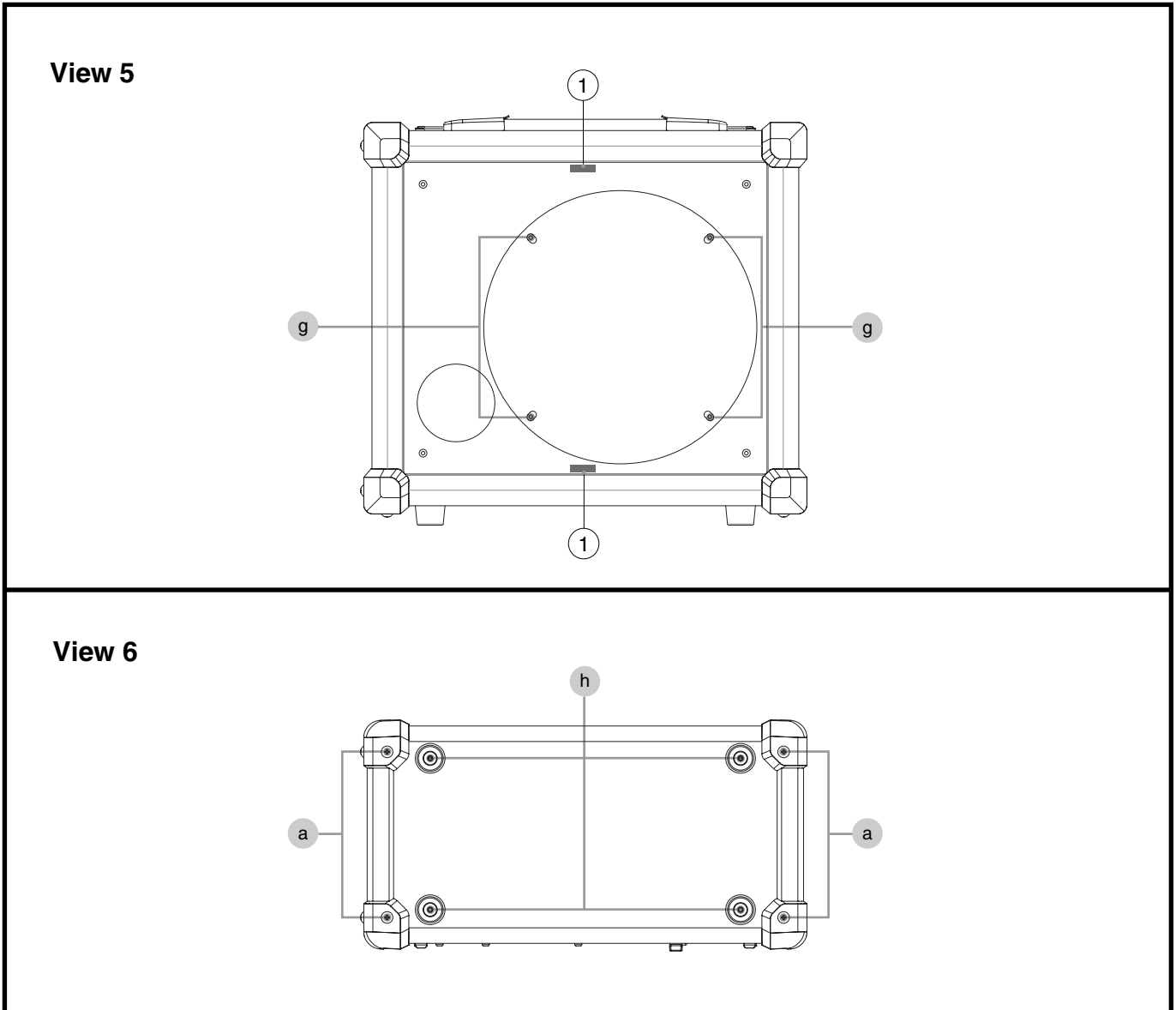
**View 3**

No.	Part Code	Part Name	Description	Q'ty
a	40677623	SCREW 4X16	TRUSS TAPPING A FE NI	4

**View 4**

No.	Part Code	Part Name	Description	Q'ty
a	40677623	SCREW 4X16	TRUSS TAPPING A FE NI	4

# Plane View (2)



## View 5

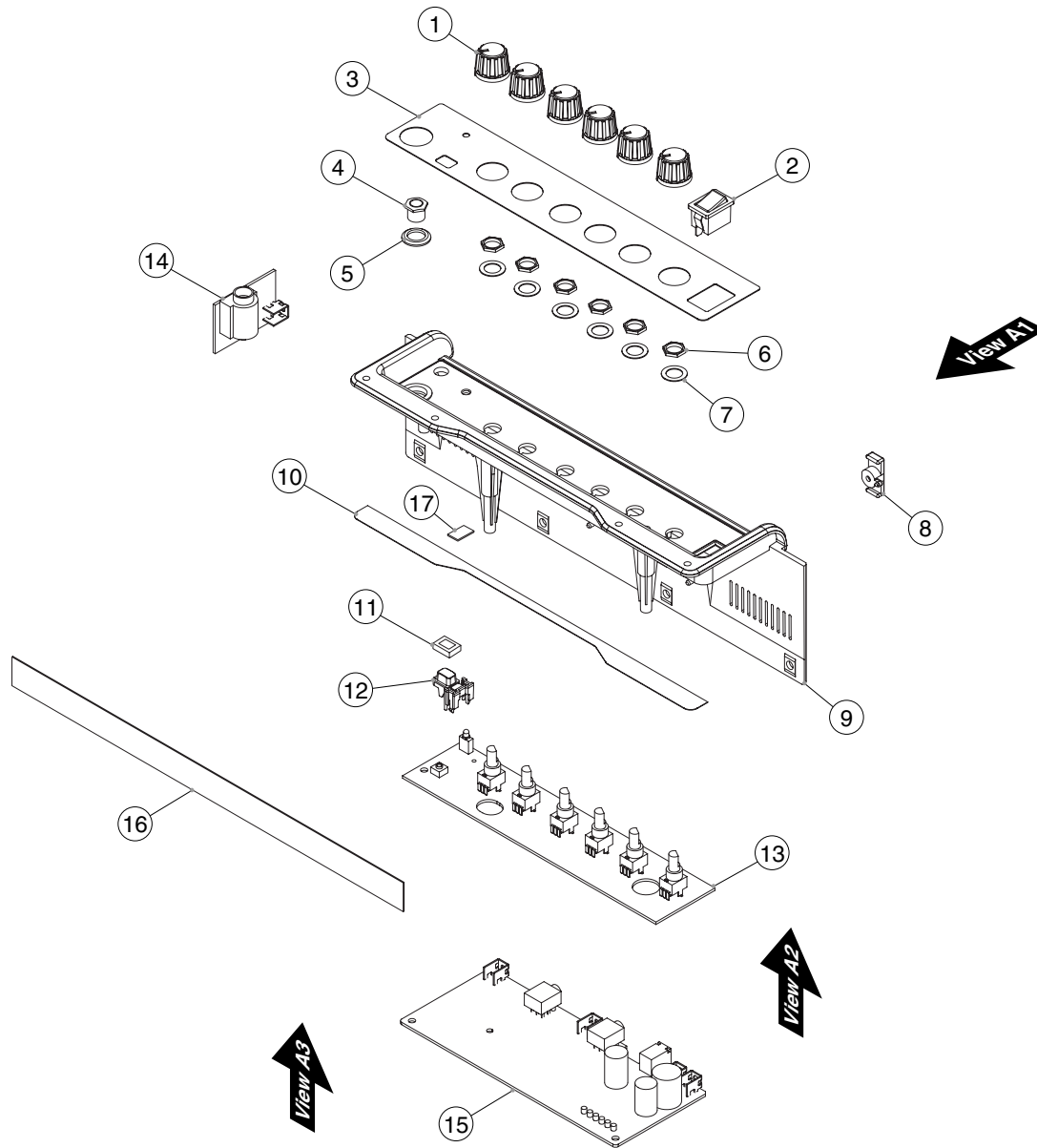
No.	Part Code	Part Name	Description	Q'ty
g	5100024107	SCREW 4X16	BINDING TAPPING A FE BZC	4
1	5100004358	EVA PACKING W/ADH	60X5X1T	2

## View 6

No.	Part Code	Part Name	Description	Q'ty
a	40677623	SCREW 4X16	TRUSS TAPPING A FE NI	4
h	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	4



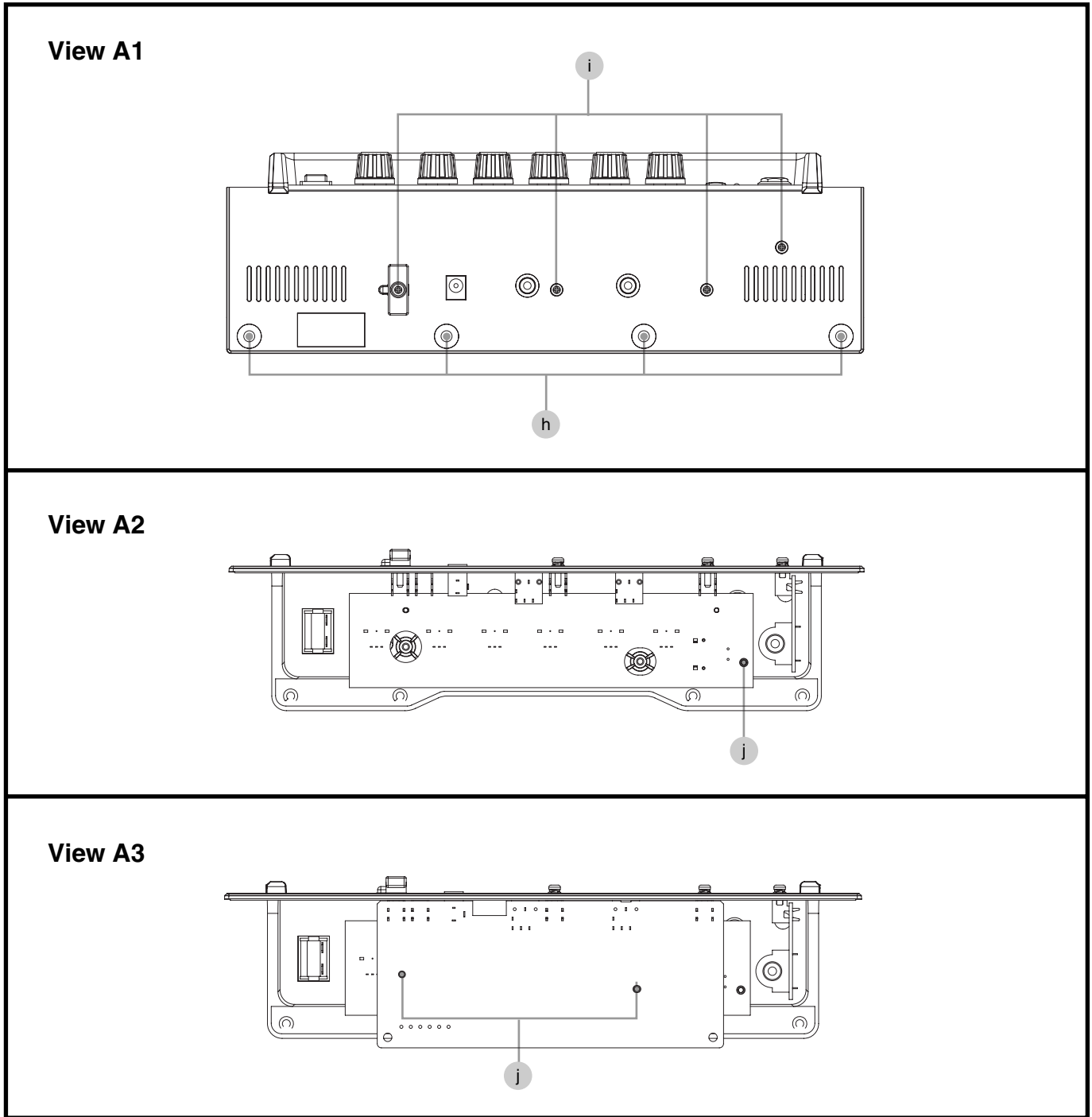
# Exploded View (Fig. A)



## Exploded View (Fig. A) Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100033014	R-KNOB	SF BLK/SLV	6
2	02897801	SEESAW SWITCH	SDDJE13200 94V-0	1
3	5100040834	PANEL SHEET		1
4	*****	JACK NUT	attached to jack	1
5	*****	JACK WASHER	attached to jack	1
6	17048630	VR ACCESSORY NUT M9	attached to volume	6
7	40452178	VR WASHER M9	attached to volume	6
8	5100027106	CORD HOOK	40516-014	1
9	5100040833	CHASSIS		1
10	5100042379	HIMELON	CHASSIS TOP	1
11	5100032493	KEYTOP CUSHION	761-12020-03-00	1
12	5100036682	S-KEYTOP		1
	5100040014	PANEL SHEET ASSY		1
		* This unit includes the following parts.		
13	*****	PANEL BOARD		1
14	*****	INPUT BOARD		1
15	5100040022	MAIN BOARD ASSY		1
16	5100040866	HIMELON	CHASSIS REAR	1
17	5100036269	EVA PACKING	S-KEYTOP	1

Plane View (Fig. A)



View A1

No.	Part Code	Part Name	Description	Q'ty
i	5100034002	SCREW M3X12	PAN MACHINE W/SMW+PW BZC	4
h	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	4

View A2

No.	Part Code	Part Name	Description	Q'ty
j	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	1

View A3

No.	Part Code	Part Name	Description	Q'ty
j	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	2



# Parts List

**Safety Precautions:**

The parts marked  $\triangle$  have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code \*\*\*\*\* cannot be supplied as service parts.

- Supply is prohibited due to copyright restrictions.
- It is carried in electronic data on the Roland web site.
- The part is made to order (at current market price).
- It can be replaced with an article on the market. (battery or etc.)
- It is a package or an accessory irrelevant to the function maintenance of the main body.
- A number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Reissuance is restricted.
- It is supplied as an assembled part (under a different part code).

Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

**CASING**

#	5100040832	CABINET		1
#	5100040843	CORNER PROTECTOR		4
#	5100040011	GRILLE ASSY		1
	5100011381	HANDLE	716-11038-01-00	1
	5100011383	HANDLE HOLDER		2
#	5100040834	PANEL SHEET		1

**CHASSIS**

#	5100040833	CHASSIS		1
	5100011382	HANDLE PLATE	750-11038-03-00	1

**KNOB, BUTTON**

	5100033014	R-KNOB	SF BLK/SLV	6
	5100036682	S-KEYTOP		1

**SWITCH**

	01780101	TACT SWITCH	SKQKABD010	1
	02897801	SEESAW SWITCH	SDDJE13200 94V-0	1

**JACK, EXT TERMINAL**

	04452956	3.5MM JACK	YKB21-5401N	1
	04452945	3.5MM JACK	YKB21-5344N	1
	5100024419	6.5MM JACK	PJ-644C-04-EP(610-11020-01-00	1
	13449720	DC JACK	HEC2305-016250	1

**SPEAKER, BUZZER**

#	5100040811	SPEAKER	W080404-050A	1
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**PWB ASSY**

#	5100040022	MAIN BOARD ASSY		1
#	5100040014	PANEL SHEET ASSY		1
		* This unit includes the following parts.		
	*****	PANEL BOARD		1
	*****	INPUT BOARD		1

**DIODE**

	05011067	LED	L-3WEGW (153-L-3WEGW)	1
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**POTENTIOMETER**

	5100033433	ROTARY POTENTIOMETER	R0923NOCV1B103FE00A1	6
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**WIRING, CABLE**

#	5100040922	WIRING	W1(1007#26-PHR-SAN-F 12X80)	1
#	5100040923	WIRING	W2(1015#22-RED 1X160)	1
#	5100040924	WIRING	W3(1015#22-BLK 1X160)	1
#	5100040925	WIRING	W4(1015#22-ORG 1X140)	1
#	5100040926	WIRING	W5(1015#22-BRN 1X140)	1
#	5100040927	WIRING	W6(1007#26)	1
#	5100040928	WIRING	W7(1007#26)	1

**SCREWS**

	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	3
	5100005098	SCREW 3X16	TRUSS TAPPING A BZ	4
	5100024107	SCREW 4X16	BINDING TAPPING A FE BZC	4
	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	8
	40677623	SCREW 4X16	TRUSS TAPPING A FE NI	16
#	5100042461	SCREW 4X30	TRUSS TAPPING NI	4
	5100034002	SCREW M3X12	PAN MACHINE W/SMW+PW BZC	4
	40010478	SCREW M5X25	OVAL MACHINE FE BZC FOR HANDL	2
	5100005101	WASHER	RESIN 4.1X11X1 BLACK	4
	17048630	VR ACCESSORY NUT M9		6
	40452178	VR WASHER M9		6

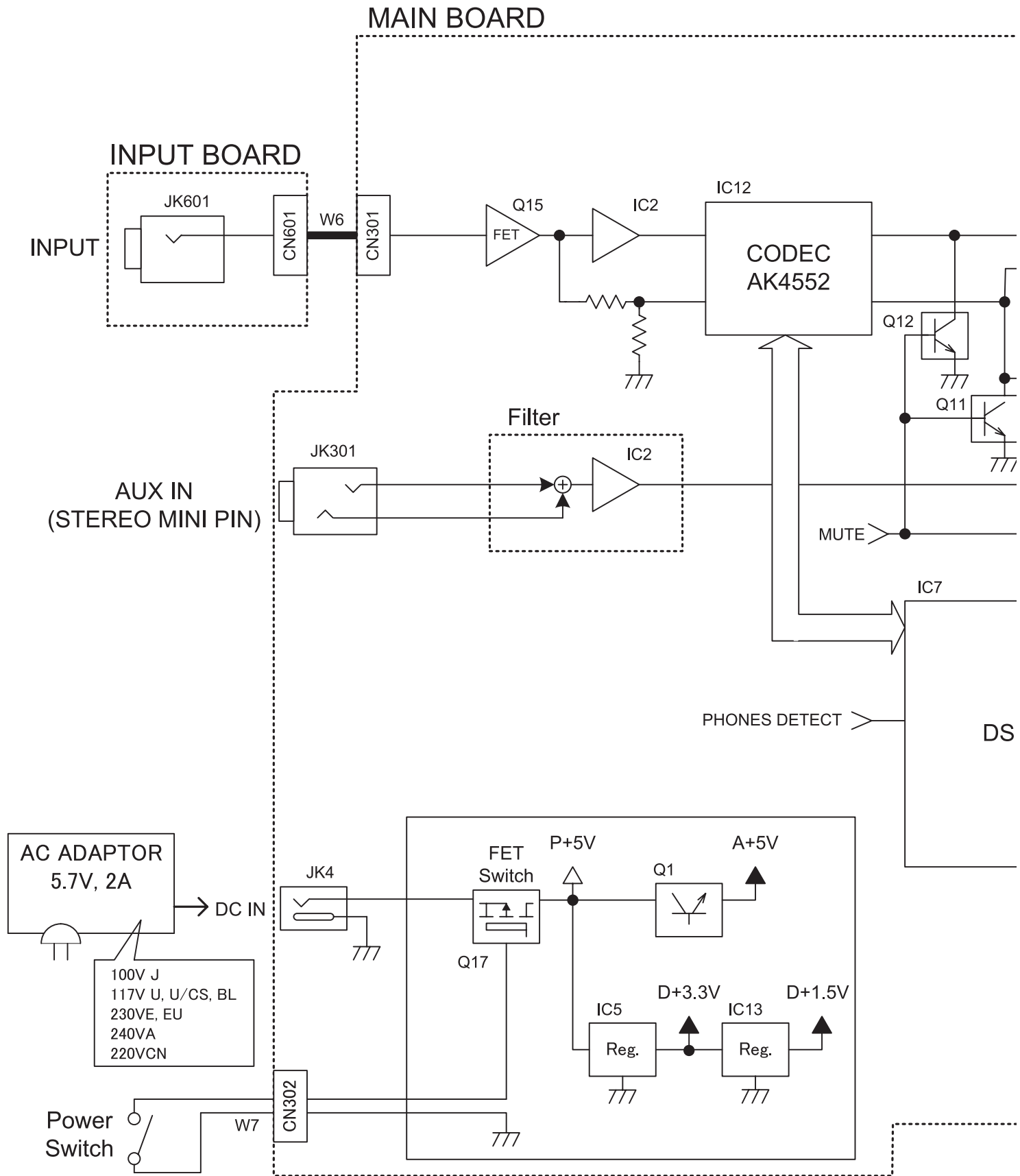
**MISCELLANEOUS**

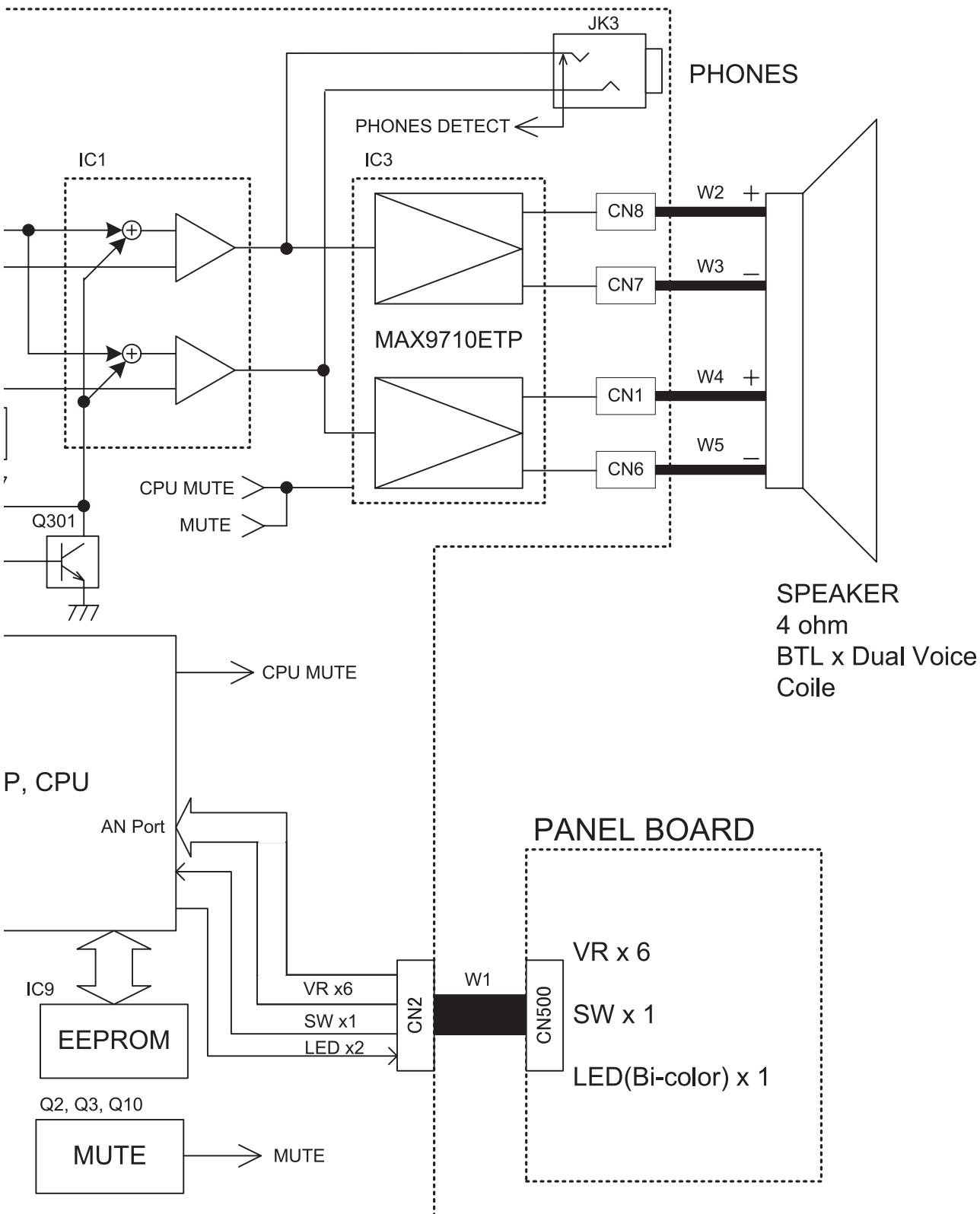
	5100027106	CORD HOOK	40516-014	1
	5100039403	CUSHION	WIRING B	2
	5100036269	EVA PACKING	S-KEYTOP	1
	5100004358	EVA PACKING W/ADH	60X5X1T	2
	5100010870	GRILLE SPACER		4
#	5100042379	HIMELON	CHASSIS TOP	1
#	5100040866	HIMELON	CHASSIS REAR	1
#	5100040809	LED SPACER	LED 3X8.5	1
	5100032493	KEYTOP CUSHION	761-12020-03-00	1
	5100003695	TERMINAL	PCB-12	4
	5100004362	RUBBER FOOT(721-11040-01-00)	D23XT15 08203-014	4
	5100036989	ACETATE TAPE	NITTO #5 BLACK W12MM	-

**ACCESSORIES (Standard)**

	△	5100038305	AC ADAPTOR	PSD-100	for 100V	1
	△	5100038306	AC ADAPTOR	PSD-120	for 117VU, 115VTW, 117VU/CS	1
	△	5100038307	AC ADAPTOR	PSD-120Z	for 117VBL	1
	△	5100038308	AC ADAPTOR	PSD-220	for 220VCN	1
	△	5100038309	AC ADAPTOR	PSD-220K	for 220VK	1
	△	5100038310	AC ADAPTOR	PSD-230	for 230VEU	1
	△	5100038311	AC ADAPTOR	PSD-230E	for 230VE	1
	△	5100038312	AC ADAPTOR	PSD-240	for 240VA	1
#		5100040980	OWNER'S MANUAL	MULTILANGUAGE		1
#		5100040981	OWNER'S MANUAL	CHINESE		1

# Wiring Diagram/Block Diagram





No.	Part Code	Part Name	Description	Q'ty
W1	5100040922	WIRING	W1(1007#26-PHR-SAN-F 12X80)	1
W2	5100040923	WIRING	W2(1015#22-RED 1X160)	1
W3	5100040924	WIRING	W3(1015#22-BLK 1X160)	1
W4	5100040925	WIRING	W4(1015#22-ORG 1X140)	1
W5	5100040926	WIRING	W5(1015#22-BRN 1X140)	1
W6	5100040927	WIRING	W6(1007#26)	1
W7	5100040928	WIRING	W7(1007#26)	1

# Verifying the Version

Perform verification in the **Test mode**.

## Performing a Factory Reset

You can replace the amp types on the unit using a CUBE-10GX app of a smart phone.

Holding down **AMP TYPE** switch and turning on the power resets all replaced amp types to their factory defaults.

## Test Mode

### Items Required

- Headphones (with miniature stereo phone plug)

### Entering the Test Mode

- Turn all controls all the way counterclockwise.
- Connect the headphones to the **REC OUT/PHONES** jack.
- Hold down the **AMP TYPE** switch and turn on the power. The LED lights up green, then goes dark, then flashes green once. Continue to hold down the **AMP TYPE** switch until the LED flashes green.
- After the LED flashes green, press the **AMP TYPE** switch twice within 2 seconds. The LED rapidly flashes orange and then flashes green, and the unit enters the Test mode.

### Quitting the Test Mode

Turn off the power.

### Skipping Test Items

Inspection items cannot be skipped.

### 1. Version Check

Press the **AMP TYPE** switch once.

The LED rapidly flashes red, then flashes in a pattern that indicates the version, as described below.

Version	LED color	Flashing of the LED
1.01	Orange	1 long flash and 1 short flash
1.02	Orange	1 long flash and 2 short flashes
1.03	Orange	1 long flash and 3 short flashes

### 2. POWER LED/DSP/EEPROM Test

Press the **AMP TYPE** switch once.

The **POWER LED/DSP/EEPROM** test is conducted automatically, and the way the LED lights up indicates the test results.

If the test is passed (OK) The LED lights up red → green, then flashes orange.

If the test is failed (not OK) The LEDs rapidly flash in the following colors to indicate a problem.

LED color	Error location
Green	EEPROM
Red	IRAM, PRAN, ERAM

\* Advancing to the next test item is not possible if the test is failed ("NG").

### 3. Volume Test

- Disconnect the headphones from the **REC OUT/PHONES** jack. The LED flashes red.
- Turn the **GAIN** control in this sequence: minimum → center → maximum. At this time, verify that the color of the illuminated LED changes in the sequence of red (minimum) → green (center) → orange (maximum), and that the volume simultaneously become progressively louder, and that from the center position and after, the pitch becomes higher.
- In the same way, carry out step **2** for other controls in this sequence: **VOLUME, BASS, MIDDLE, TREBLE, EFFECT**.

When testing of all potentiometers has been finished, the LED flashes orange. This concludes the testing.

## Input/Output Level Test (for Reference)

### Items Required

- Signal generator
- Noise Meter
- Dummy load resistor (4 Ω)
- 1/4-inch stereo phone plug with 100 Ω load resistor

### Procedure

- Make the following settings on the main unit.

Controls and switches	Controls and switches position
AMP TYPE	CLEAN
GAIN	Maximum
VOLUME	Maximum
BASS	Centered
MIDDLE	Centered
TREBLE	Centered
EFFECT	OFF (adjust the controls position to minimum.)

### Verifying Speaker Output

- Connect a 4 Ω load resistor to the speaker lines.
- Input the following signal to the **INPUT** jack.  
INPUT: 1-kHz sine wave at -31.5 dBm
- Verify that the following signals are output from the speaker lines.  
SP OUT (red - back): +11.5±1.5 dBm  
SP OUT (orange - blown): +11.5±1.5 dBm
- Input the following signal via the left channel of the **AUX IN** jack.  
AUX IN L: 1-kHz sine wave at +1.0 dBm
- Verify that the following signals are output from the speaker lines.  
SP OUT (red - back): +11.5±1.5 dBm  
SP OUT (orange - blown): +11.5±1.5 dBm
- Input the following signal via the right channel of the **AUX IN** jack.  
AUX IN R: 1-kHz sine wave at +1.0 dBm
- Verify that the following signals are output from the speaker lines.  
SP OUT (red - back): +11.5±1.5 dBm  
SP OUT (orange - blown): +11.5±1.5 dBm



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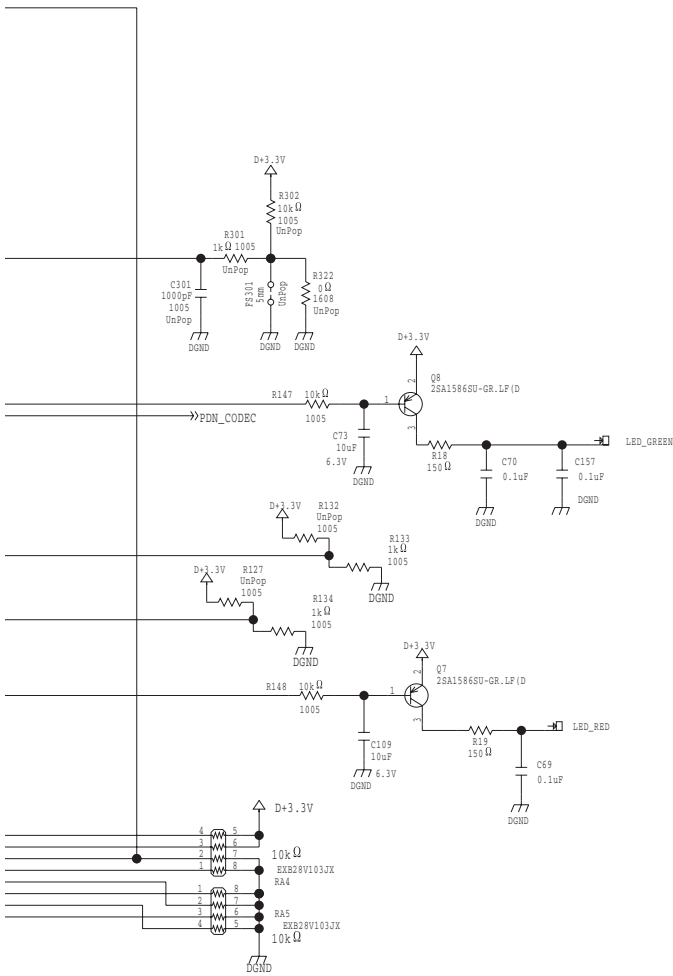
## Verifying PHONES Jack Output

1. Connect a 1/4-inch stereo phone plug with 100  $\Omega$  load resistor to the **REC OUT/PHONES** jack.
2. Input the following signal to the **INPUT** jack.  
INPUT: 1-kHz sine wave at -17.0 dBm
3. Verify that the following signals are output from the **REC OUT/PHONES** jack.  
PHONES L:  $-3.5 \pm 1.5$  dBm  
PHONES R:  $-3.5 \pm 1.5$  dBm
4. Input the following signal via the left channel of the **AUX IN** jack.  
AUX IN L: 1-kHz sine wave at +3.5 dBm
5. Verify that the following signals are output from the **REC OUT/PHONES** jack.  
PHONES L:  $-3.5 \pm 1.5$  dBm  
PHONES R:  $-3.5 \pm 1.5$  dBm
6. Input the following signal via the right channel of the **AUX IN** jack.  
AUX IN R: 1-kHz sine wave at +3.5 dBm
7. Verify that the the following signals are output from the **REC OUT/PHONES** jack.  
PHONES L:  $-3.5 \pm 1.5$  dBm  
PHONES R:  $-3.5 \pm 1.5$  dBm









MODE SETTING

EA7/H: CLOCK 15-20MHz, L: 12-15MHz  
 EA6/H: EEPROM program mode, L: Normal mode

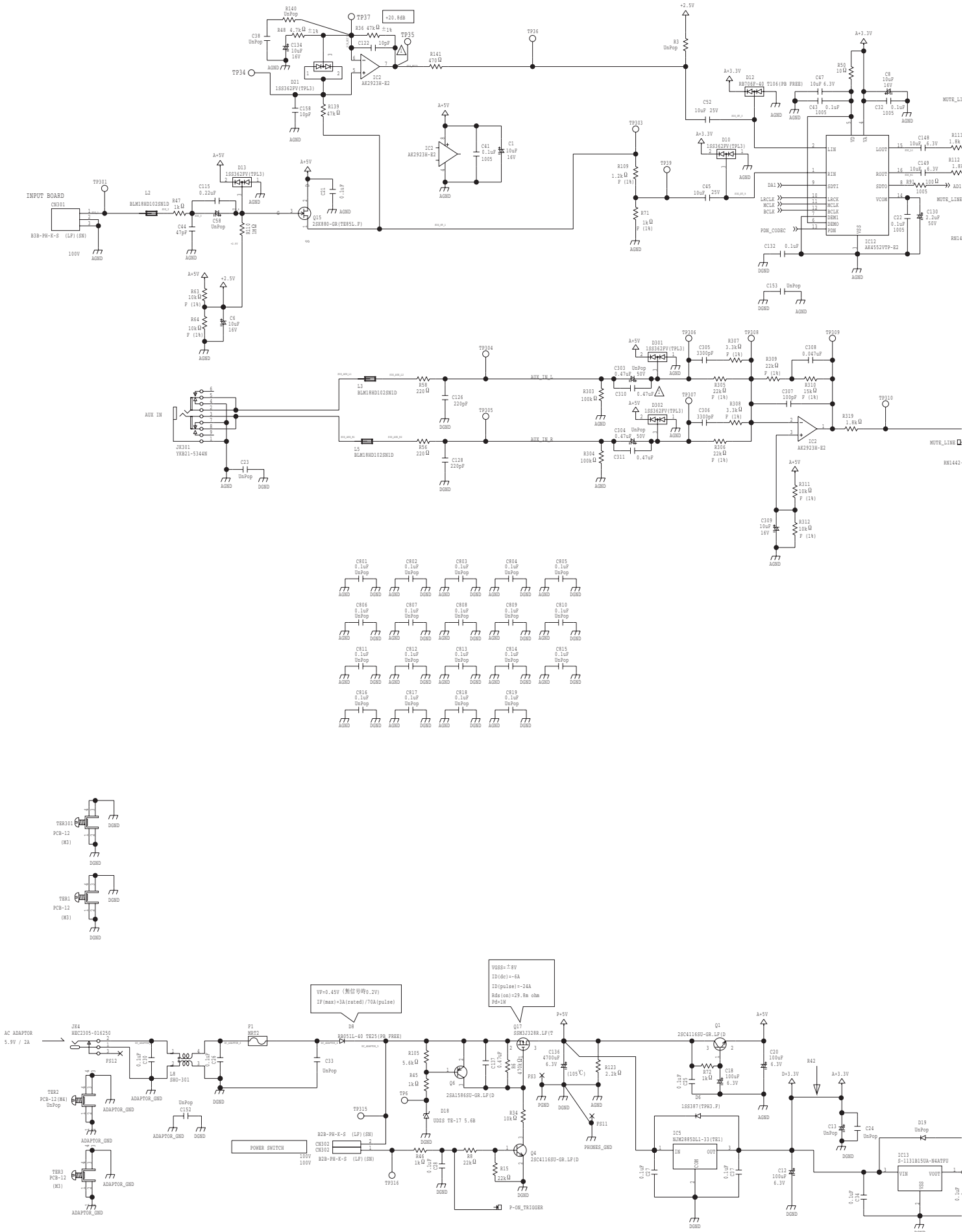
EA5-3 (PROG_SEL)	EA 5 4 3	destination
0 0 0		IIC EEPROM (2byte address)*
0 0 1		IIC EEPROM (1byte address)
0 1 0		SPI EEPROM
0 1 1		(same upper)
1 0 0		BOM CS1 (6x0040_0000)
1 0 1		BOM CS3 (6x0400_0000)
1 1 0		BOM CS6 (6x0800_0000)
1 1 1		BOM CS7 (6x0C00_0000)

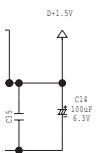
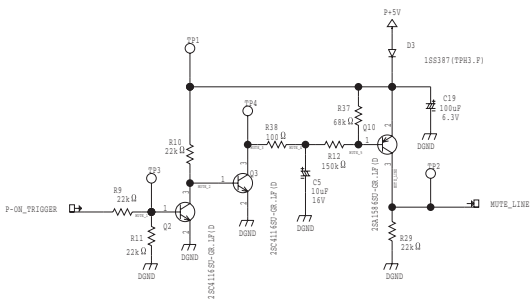
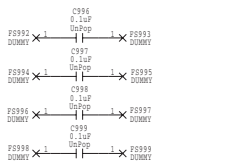
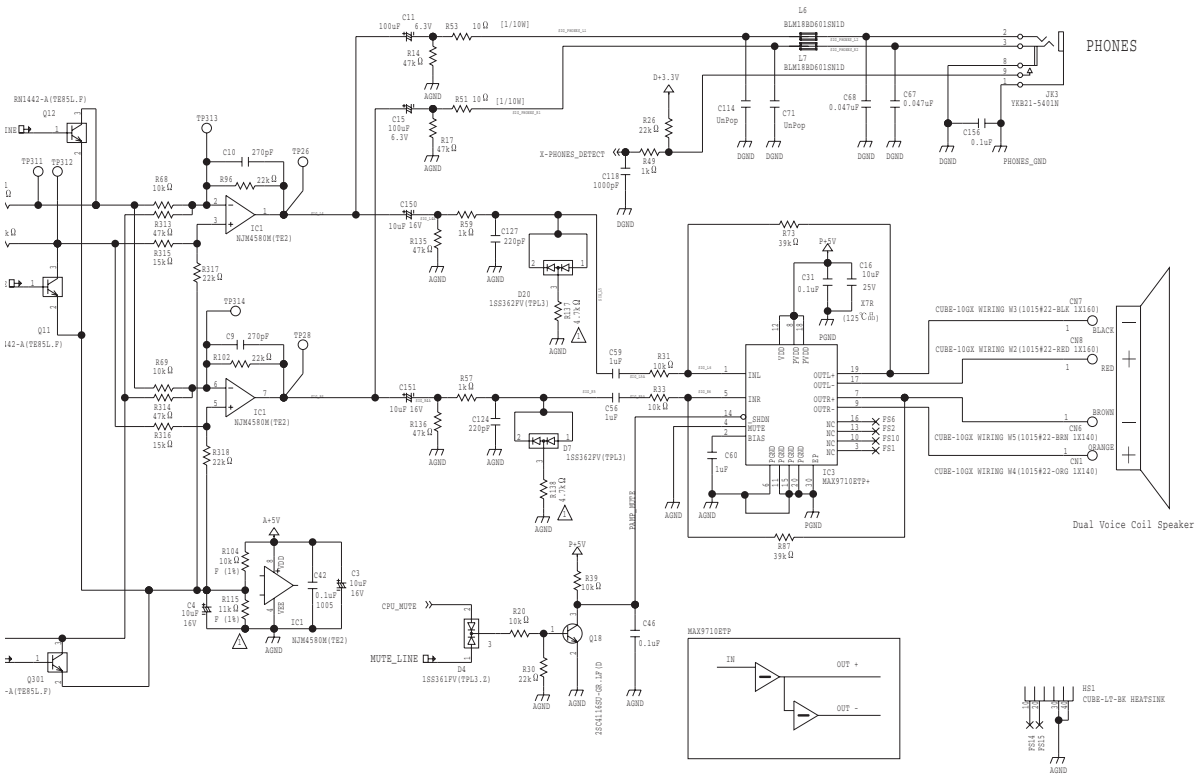
EA2-0 (PIN_MODE)	EA 2 1 0	mode
0 0 0		MODE 0
0 0 1		MODE 1
0 1 0		MODE 2 (not Exist CSI pin)
0 1 1		MODE 3
1 0 0		MODE 4
1 0 1		(N/A)
1 1 0		(N/A)
1 1 1		(N/A)

PORT PIN (MODE 1)

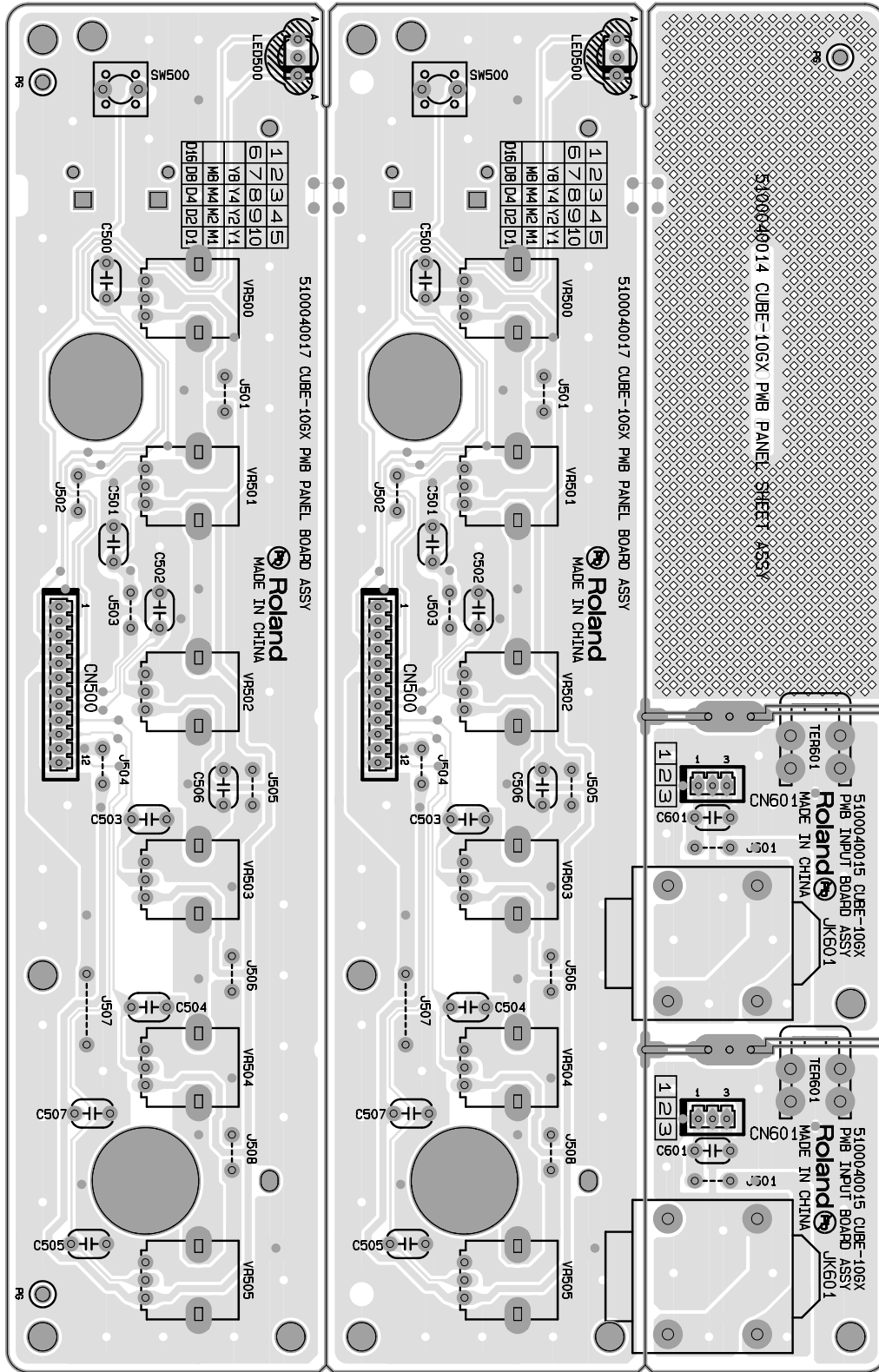
P40-P47
P50
P63-P67
P90-P96

# Circuit Diagram (Main Board: 2/2)



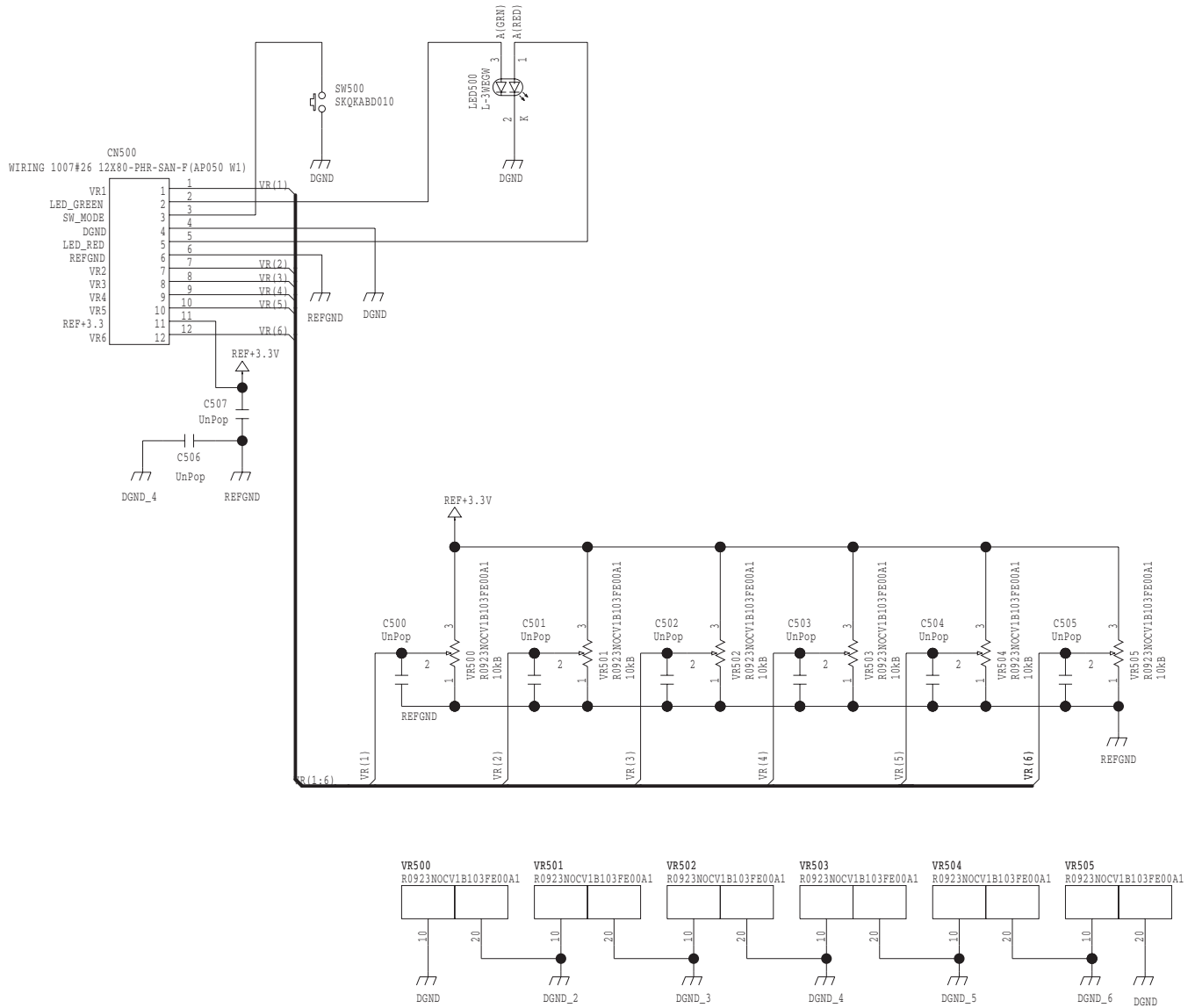


# Circuit Board (Panel, Input Board)





# Circuit Diagram (Panel Board)



# Circuit Diagram (Input Board)

