

# AC-60 (M) AC-60-RW (M)

## SERVICE NOTES *Issued by RJA*

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**AC-60(M)**

**AC-60-RW(M)**

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## Cautionary Notes

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

## No User Data

This product cannot save user data. Backing up user data during servicing is not required.

## 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 AC-60: Acoustic Chorus

### Rated Power Output

30W + 30W

### Nominal Input Level (1 kHz)

GUITAR Channel: -10 dBu

MIC/LINE Channel: -50/-10 dBu

AUX IN: -10 dBu

### Nominal Output Level (1 kHz)

DI/TUNER OUT: +4 dBu

LINE OUT: +4 dBu

SUB WOOFER OUT: +4 dBu

\*  $0\text{ dBu} = 0.775\text{ Vrms}$

### Speakers

16 cm (6.5 inches) x 2

### Controls

(GUITAR Channel)

PICKUP Switch (PIEZO/MAGNETIC)

SHAPE Switch

VOLUME Knob

Equalizer Knobs (BASS, MIDDLE, TREBLE)

CHORUS Switch

(MIC/LINE Channel)

PHANTOM Switch

SELECT Switch (MIC/LINE)

VOLUME Knob

Equalizer Knobs (BASS, MIDDLE, TREBLE)

CHORUS Switch

CHORUS Knob

REVERB/DELAY Knob

(ANTI-FEEDBACK)

FREQUENCY Knob

START Button

MUTE Switch

MASTER Knob

POWER Switch

### Indicator

CHORUS (GUITAR Channel, MIC/LINE Channel)

ANTI-FEEDBACK

MUTE

POWER

### Connectors

GUITAR Channel Input Jack (1/4-inch phone type)

MIC/LINE Input Jacks (XLR type, 1/4-inch phone type)

AUX IN Jacks (RCA phono type, 1/4-inch phone type)

DI/TUNER OUT Jack (1/4-inch TRS phone type)

LINE OUT Jacks (XLR type, 1/4-inch phone type)

SUB WOOFER OUT Jack (1/4-inch phone type)

PHONES Jack (Stereo 1/4-inch phone type)

FOOT SWITCH Jacks (1/4-inch TRS phone type)

### Power Supply

AC 117 V, AC 230 V, AC 240 V

### Power Consumption

68 W

### Dimensions

380 (W) x 270 (D) x 268 (H) mm

15 (W) x 10-11/16 (D) x 10-9/16 (H) inches

### Weight

9.8 kg

21 lbs 10 oz

### Accessory

Carrying Case (#5100024254)

Owner's Manual

ENGLISH (#5100023923)

CHINESE (#5100023924)

### Options

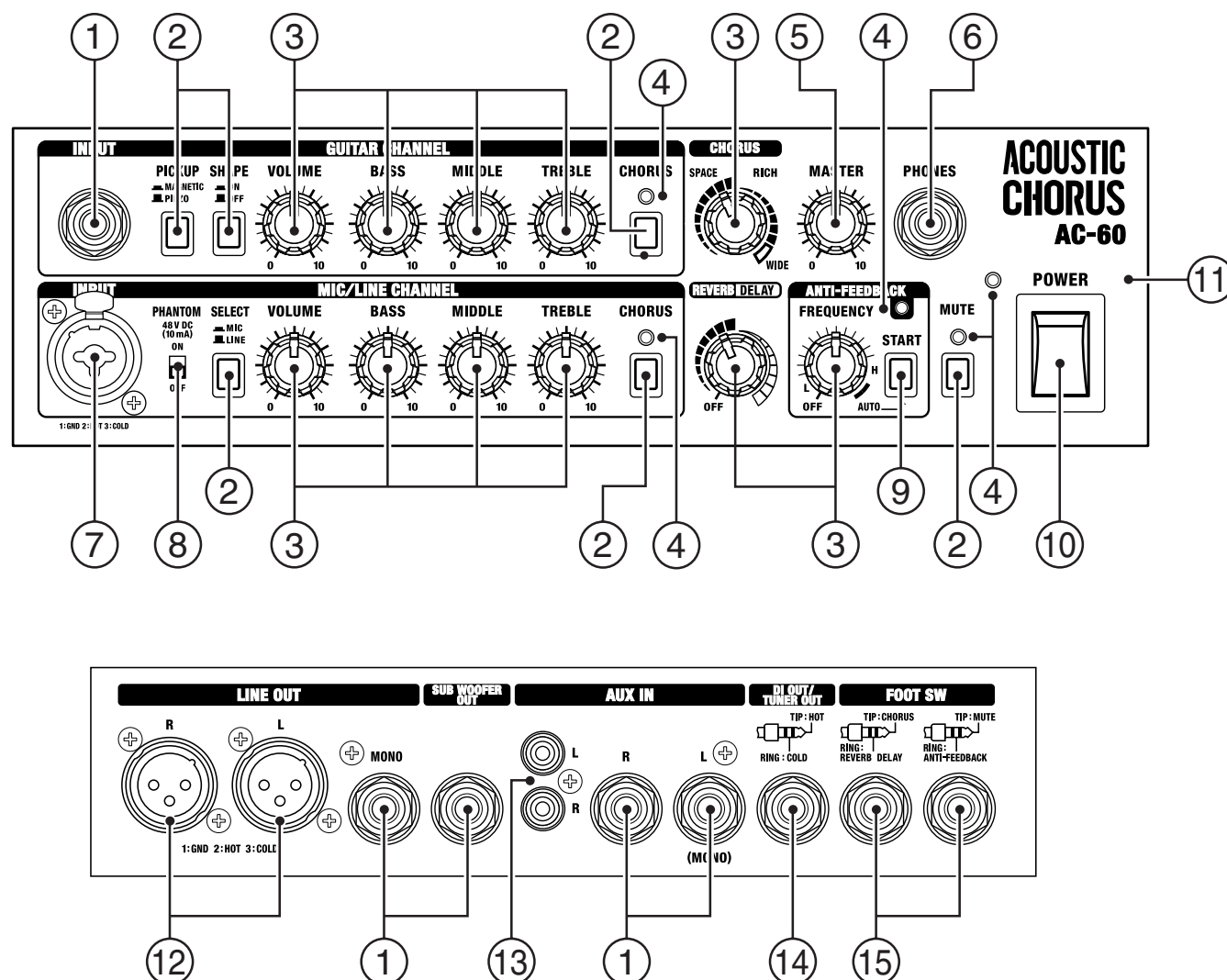
Foot Switch: BOSS FS-5L (Mute On/Off), BOSS FS-5U

Connection Cable: PCS-31

\* 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   | 13449146   | 6.5MM JACK           | YKB21-5012 (W/SW)              | 5    |
| 2   | 05011001   | PUSH SW              | 202-SF06D11B07                 | 6    |
| 3   | 5100024284 | ROTARY POTENTIOMETER | RK09L1140A66(SD000091)         | 11   |
| 4   | 03349978   | LED(RED)             | L-34HDSL-FPB                   | 5    |
| 5   | 5100024285 | ROTARY POTENTIOMETER | RK0971410Z0N(SD000090)         | 1    |
| 6   | 13449169   | 6.5MM JACK           | YKB21-5078                     | 1    |
| 7   | 01901001   | XLR JACK             | NCJ9FI-H                       | 1    |
| 8   | 04345623   | SLIDE SWITCH         | SSSF021500(SD000105)           | 1    |
| 9   | 05011012   | PUSH SWITCH          | (202-SF06D11B07)               | 1    |
| 10  | 01786012   | SEESAW SWITCH        | JW-M11RKK                      | 1    |
|     | 01786045   | SW HOLDER            | AT-217K                        | 1    |
| 11  | 5100024232 | CHASSIS              | SD000080                       | 1    |
| 12  | 00122123   | XLR SOCKET           | YKF52-5003                     | 2    |
| 13  | 05014890   | PIN JACK 2L2P WR NI  | HSP-242V1P-01(610-07015-08-00) | 1    |
| 14  | 13449145   | 6.5MM JACK           | YKB21-5010                     | 1    |
| 15  | 13449252   | 6.5MM JACK           | YKB21-5006 (STEREO W/SW)       | 2    |

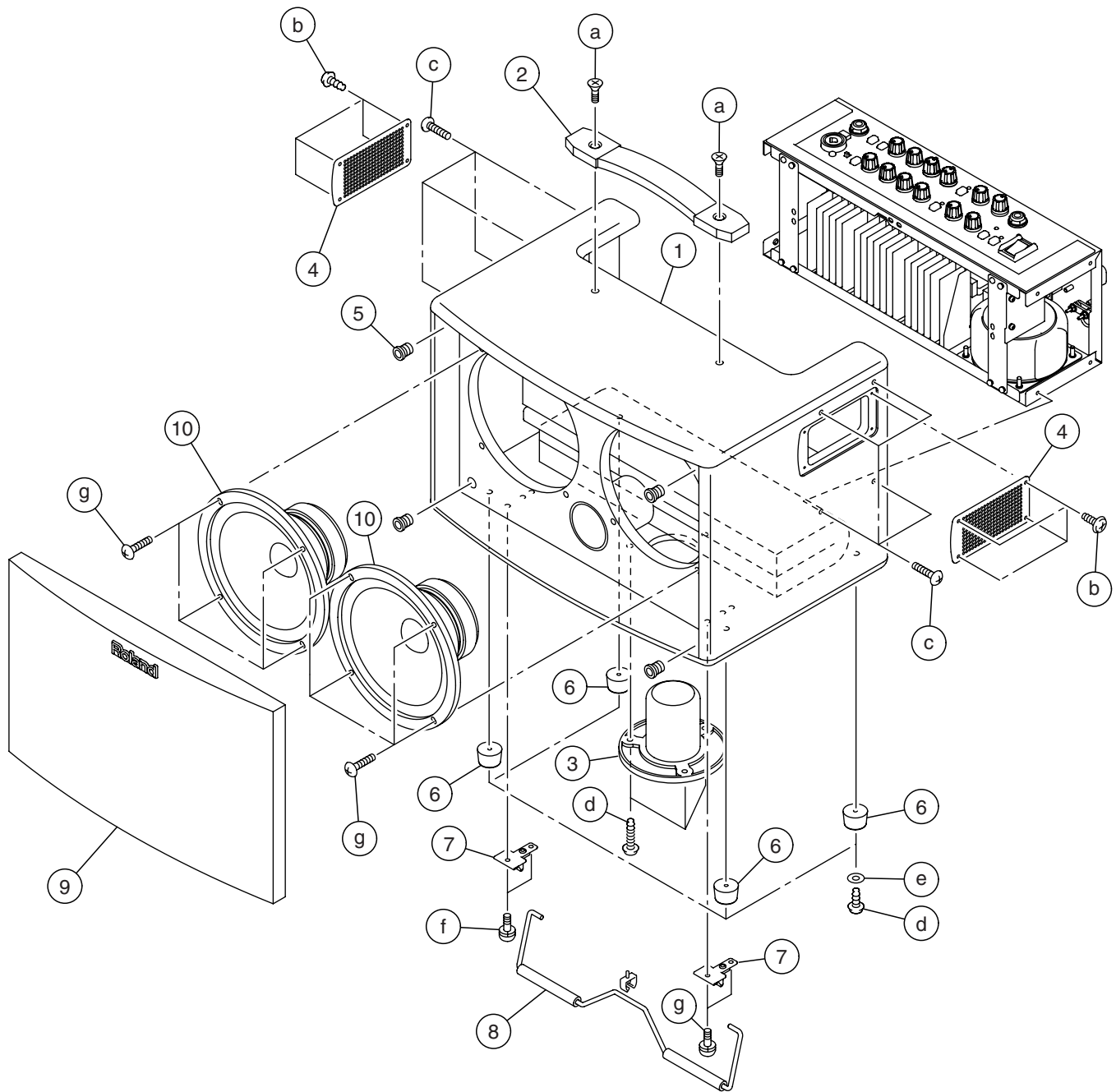
all JACK NUT: 22150756

all KNOB: 5100011024 (for AC-60(M)), 5100023642 (for AC-60-RW(M))

all BUTTON: 5100004355



# Exploded View (Cabinet)

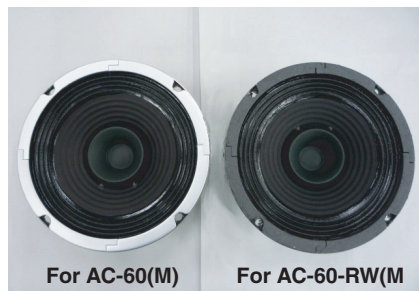


## Exploded View Parts List (Cabinet)

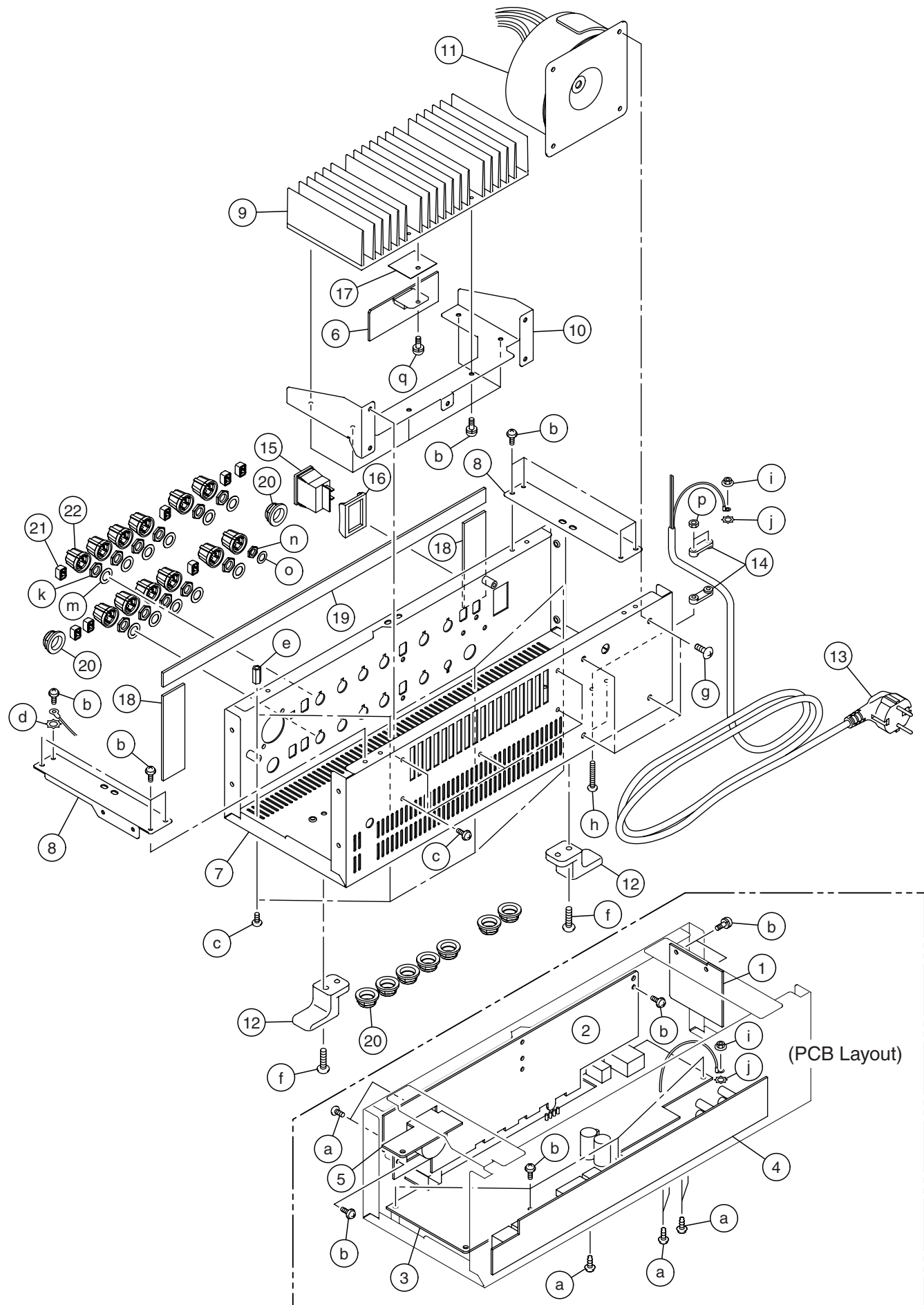
| No. | Part Code                                        | Part Name                 | Description                   |                 | Q'ty |
|-----|--------------------------------------------------|---------------------------|-------------------------------|-----------------|------|
| 1   | 5100024215                                       | CABINET ASSY              | 505-BG-404LF                  | for AC-60(M)    | 1    |
|     | 5100024109                                       | CABINET ASSY              | 505-AP028-A                   | for AC-60-RW(M) | 1    |
|     | <i>* This unit includes the following parts.</i> |                           |                               |                 |      |
| 2   | 5100011381                                       | HANDLE                    | 716-11038-01-00               |                 | 1    |
|     | 5100011382                                       | HANDLE PLATE              | 750-11038-03-00               |                 | 1    |
|     | 5100011383                                       | HANDLE HOLDER             |                               |                 | 2    |
| 3   | 5100009845                                       | STAND ADAPTOR (TOP HAT)   | 49A-10179 (#17055020)         |                 | 1    |
| 4   | 5100024229                                       | RADIATION PLATE           | SD000074                      |                 | 2    |
| 5   | 5100011025                                       | CATCH                     | SD000079                      |                 | 4    |
| 6   | 5100006069                                       | RUBBER FOOT(430-BG-435)   | D25XT18 40484-512(SD001005)   |                 | 4    |
| 7   | 5100009863                                       | STAND HOLDER(40E-1BG-435) | 40484-518 (#SD001007)         |                 | 2    |
| 8   | 5100009860                                       | STAND                     | 08203-016 (#SD001169)         |                 | 1    |
| 9   | 5100024773                                       | NET BOARD ASSY            | W/ROLAND BADGE (903-BG-404)   | for AC-60(M)    | 1    |
|     | 5100024774                                       | NET BOARD ASSY            | W/ROLAND BADGE (903-AP028)    | for AC-60-RW(M) | 1    |
| 10  | 5100024245                                       | SPEAKER                   | 377164(SD000084)              |                 | 2    |
| a   | 5100024249                                       | SCREW M5X20               | OVAL MACHINE BZC              |                 | 2    |
| b   | 5100024248                                       | SCREW 3.5X12              | TRUSS TAPPING A BZC(SD000100) |                 | 8    |
| c   | 40010134                                         | SCREW M4X20               | TRUSS MACHINE BZC             |                 | 8    |
| d   | 40010678                                         | SCREW 4X20                | TRUSS TAPPING A FE BZC        |                 | 7    |
| e   | 5100005100                                       | WASHER                    | FLAT 4.2X10X0.5 BZC           |                 | 4    |
| f   | 5100024387                                       | SCREW M4X12               | BINDING MACHINE W/SW BZC      |                 | 4    |
| g   | 40010367                                         | SCREW M4X25               | BINDING MACHINE BZC           |                 | 8    |

## Caution for Replacing the Speaker

The color of the front cushion of the speaker for AC-60-RW(M) is black like a photograph below. However, only the speaker for AC-60(M)—the color of the cushion is silver—can be supplied for service. When a speaker of AC-60-RW(M) is necessary to be replaced, order a speaker for AC-60(M) and paint the cushion black by a felt pen.



# Exploded View (Chassis)



## Procedure of disassembly

Removal of PCB ASSY is performed in following order.

1. AC CORD
2. (PCB ASSY) PS1
3. STAY
4. TRANSFORMER
5. HEATSINK HOLDER
6. (PCB ASSY) XLR BOARD
7. (PCB ASSY) MAIN BOARD
8. (PCB ASSY) JACK BOARD
9. (PCB ASSY) PANEL BOARD

## Exploded View Parts List (Chassis)

| No. | Part Code                                 | Part Name                 | Description               | Q'ty |
|-----|-------------------------------------------|---------------------------|---------------------------|------|
|     | 5100024214                                | MAIN SHEET ASSY           |                           | 1    |
|     | * This unit includes the following parts. |                           |                           |      |
| 1   | *****                                     | PS1 BOARD                 |                           | 1    |
| 2   | *****                                     | PANEL BOARD               |                           | 1    |
| 3   | *****                                     | MAIN BOARD                |                           | 1    |
| 4   | *****                                     | JACK BOARD                |                           | 1    |
| 5   | *****                                     | XLR BOARD                 |                           | 1    |
| 6   | *****                                     | AMP BOARD                 |                           | 1    |
| 7   | 5100024232                                | CHASSIS                   | SD000080                  | 1    |
| 8   | 5100024233                                | STAY                      | SD000081                  | 2    |
| 9   | 5100024234                                | HEATSINK                  | SD000085                  | 1    |
| 10  | 5100024231                                | HEATSINK HOLDER           | SD000086                  | 1    |
| 11  | 5100024246                                | TRANSFORMER               | 100/117V(SD000094)        | 1    |
|     | 5100024247                                | TRANSFORMER               | 230/240V(SD000093)        | 1    |
| 12  | 5100004359                                | CORD HOOK                 |                           | 2    |
| 13  | 5100004809                                | AC CORD                   | 181-BG413-JLF 100V 2.5M   | 1    |
|     | 04893356                                  | AC CORD                   | 181-BG413-UCLF            | 1    |
|     | 5100004806                                | AC CORD                   | 181-BG413-TLF 115VTW 2.5M | 1    |
|     | 5100012742                                | AC CORD                   | 181-BG413-BL 117VBL 2.5M  | 1    |
|     | 5100004807                                | AC CORD                   | 181-BG413-GLF 230V 2.5M   | 1    |
|     | 5100004808                                | AC CORD                   | 181-BG413-BLF 230VE 2.5M  | 1    |
|     | 5100004805                                | AC CORD                   | 181-BG413-ALF 240VA 2.5M  | 1    |
|     | 5100004804                                | AC CORD                   | 181-BG413-CNLF CCC 2.5M   | 1    |
| 14  | 12369410                                  | CORD BAND                 | 1702B                     | 2    |
| 15  | 01786012                                  | SEESAW SWITCH             | JW-M11RKK                 | 1    |
| 16  | 01786045                                  | SW HOLDER                 | AT-217K                   | 1    |
| 17  | 5100015947                                | INSULATING SHEET          | SD000087                  | 1    |
| 18  | 5100024238                                | PU SPONGE                 | 78X23X4T W/ADH            | 2    |
| 19  | 5100024239                                | PU SPONGE                 | 345X13X4T W/ADH           | 1    |
| 20  | 22150756                                  | JACK NUT 2                | PLASTIC/BLK               | 9    |
| 21  | 5100004355                                | BUTTON                    | 08203-501(SD000082)       | 7    |
| 22  | 5100011024                                | R-KNOB(SD000083)          | 08203-500(40A-KAC-60-B)   | 12   |
|     | 5100023642                                | R-KNOB                    |                           | 12   |
| a   | 5100024250                                | SCREW 3X8                 | PAN TAPTITE P BZC         | 7    |
| b   | 40013067                                  | SCREW M3X6                | PAN SEMS FECM             | 22   |
| c   | 40237101                                  | SCREW M3X6                | PAN MACHINE W/SW BZC      | 9    |
| d   | 40011878                                  | M3 EXTERNAL TOOTH WASHER  | FECM                      | 1    |
| e   | 5100011020                                | STANDOFF                  | M3-L6-H15 (311-BG108LF)   | 4    |
| f   | 40565489                                  | SCREW M4X25               | PAN MACHINE W/SW BZC      | 2    |
| g   | 5100029816                                | SCREW M4X12               | BINDING HEAD FE BZC       | 4    |
| h   | 40010301                                  | SCREW M3X20               | BINDING MACHINE BZC       | 2    |
| i   | 40011767                                  | FLANGE HEX NUT M4         | FE ZC                     | 1    |
| j   | 40011889                                  | EXTERNAL TOOTH WASHER M4  | FECM                      | 1    |
| k   | 17048630                                  | VR ACCESSORY NUT M9       |                           | 11   |
| m   | 40452178                                  | VR WASHER M9              |                           | 11   |
| n   | 40128923                                  | HEX NUT M7                |                           | 1    |
| o   | 17048651                                  | VR ACCESSORY WASHER M7    | M7X12X0.5 NO.476          | 1    |
| p   | 40011756                                  | FLANGE HEX NUT M3         | ZC                        | 2    |
| q   | 40013078                                  | SCREW M3X10 PAN HEAD SEMS | FE BZC                    | 1    |

# Parts List

Safety Precautions:  
The parts marked  $\Delta$  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.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

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

|                           |                                           |                           |                                |                 |    |
|---------------------------|-------------------------------------------|---------------------------|--------------------------------|-----------------|----|
| <b>CASING</b>             |                                           |                           |                                |                 |    |
|                           | 5100024215                                | CABINET ASSY              | 505-BG-404LF                   | for AC-60(M)    | 1  |
|                           | 5100024109                                | CABINET ASSY              | 505-AP028-A                    | for AC-60-RW(M) | 1  |
|                           | 5100024773                                | NET BOARD ASSY            | W/ROLAND BADGE (903-BG-404)    | for AC-60(M)    | 1  |
|                           | 5100024774                                | NET BOARD ASSY            | W/ROLAND BADGE (903-AP028)     | for AC-60-RW(M) | 1  |
|                           | 5100009860                                | STAND                     | 08203-016 (#SD001169)          |                 | 1  |
| <b>CHASSIS</b>            |                                           |                           |                                |                 |    |
|                           | 5100024232                                | CHASSIS                   | SD000080                       |                 | 1  |
|                           | 5100009863                                | STAND HOLDER(40E-1BG-435) | 40484-518 (#SD001007)          |                 | 2  |
|                           | 5100024233                                | STAY                      | SD000081                       |                 | 2  |
|                           | 01786045                                  | SW HOLDER                 | AT-217K                        |                 | 1  |
| <b>KNOB, BUTTON</b>       |                                           |                           |                                |                 |    |
|                           | 5100011024                                | R-KNOB(SD000083)          | 08203-500(40A-KAC-60-B)        | for AC-60(M)    | 12 |
|                           | 5100023642                                | R-KNOB                    |                                | for AC-60-RW(M) | 12 |
|                           | 5100004355                                | BUTTON                    | 08203-501(SD000082)            |                 | 7  |
| <b>SWITCH</b>             |                                           |                           |                                |                 |    |
|                           | 04345623                                  | SLIDE SWITCH              | SSSF021500(SD000105)           |                 | 1  |
| $\Delta$                  | 01786012                                  | SEESAW SWITCH             | JW-M11RKK                      |                 | 1  |
|                           | 05011001                                  | PUSH SW                   | 202-SF06D11B07                 |                 | 6  |
|                           | 05011012                                  | PUSH SWITCH               | (202-SF06D11B07)               |                 | 1  |
| <b>JACK, EXT TERMINAL</b> |                                           |                           |                                |                 |    |
|                           | 13449252                                  | 6.5MM JACK                | YKB21-5006 (STEREO W/SW)       |                 | 2  |
|                           | 13449145                                  | 6.5MM JACK                | YKB21-5010                     |                 | 1  |
|                           | 13449146                                  | 6.5MM JACK                | YKB21-5012 (W/SW)              |                 | 5  |
|                           | 13449169                                  | 6.5MM JACK                | YKB21-5078                     |                 | 1  |
|                           | 05014890                                  | PIN JACK 2L2P WR NI       | HSP-242V1P-01(610-07015-08-00) |                 | 1  |
|                           | 00122123                                  | XLR CONNECTOR             | YKF52-5003N                    |                 | 2  |
|                           | 01901001                                  | XLR CONNECTOR             | NCJ9FI-H                       |                 | 1  |
| <b>SPEAKER, BUZZER</b>    |                                           |                           |                                |                 |    |
|                           | 5100024245                                | SPEAKER                   | 377164(SD000084)               |                 | 2  |
| <b>PWB ASSY</b>           |                                           |                           |                                |                 |    |
|                           | 5100024214                                | MAIN SHEET ASSY           |                                |                 | 1  |
|                           | * This unit includes the following parts. |                           |                                |                 |    |
|                           | *****                                     | MAIN BOARD                |                                |                 | 1  |
|                           | *****                                     | JACK BOARD                |                                |                 | 1  |
|                           | *****                                     | PANEL BOARD               |                                |                 | 1  |
|                           | *****                                     | AMP BOARD                 |                                |                 | 1  |
|                           | *****                                     | XLR BOARD                 |                                |                 | 1  |
|                           | *****                                     | PS1 BOARD                 |                                |                 | 1  |
| <b>DIODE</b>              |                                           |                           |                                |                 |    |
|                           | 03349978                                  | LED(RED)                  | L-34HDSL-FPB                   |                 | 5  |
| <b>POTENTIOMETER</b>      |                                           |                           |                                |                 |    |
|                           | 5100024284                                | ROTARY POTENTIOMETER      | RK09L1140A66(SD000091)         |                 | 11 |
|                           | 5100024285                                | ROTARY POTENTIOMETER      | RK0971410Z0N(SD000090)         |                 | 1  |
| <b>FUSE, FUSE HOLDER</b>  |                                           |                           |                                |                 |    |
| $\Delta$                  | 03564690                                  | FUSE                      | 5ST 2.5 2.5A/250V(SD000092)    |                 | 1  |
| $\Delta$                  | 5100000592                                | FUSE HOLDER               | FC-201(613-11617-01-00)        |                 | 2  |
| $\Delta$                  | 5100005119                                | FUSE(472-11042-03-00)     | MRT125(SD000140)               |                 | 1  |
| $\Delta$                  | 03903845                                  | FUSE                      | MRT250(472-11040-01-00)        |                 | 2  |
| $\Delta$                  | 5100005125                                | FUSE                      | MRT3.15                        |                 | 2  |

| TRANSFORMER              |            |                          |                               |                     |    |
|--------------------------|------------|--------------------------|-------------------------------|---------------------|----|
| △                        | 5100024246 | TRANSFORMER              | 100/117V(SD000094)            | for low voltage     | 1  |
| △                        | 5100024247 | TRANSFORMER              | 230/240V(SD000093)            | for high voltage    | 1  |
| AC CORD ASSY (Installed) |            |                          |                               |                     |    |
| △                        | 5100004809 | AC CORD                  | 181-BG413-JLF 100V 2.5M       | for 100V            | 1  |
| △                        | 5100004806 | AC CORD                  | 181-BG413-TLF 115VTW 2.5M     | for 115VTW          | 1  |
| △                        | 5100012742 | AC CORD                  | 181-BG413-BL 117VBL 2.5M      | for 117VBL          | 1  |
| △                        | 04893356   | AC CORD                  | 181-BG413-UCLF                | for 117VU, 117VU/CS | 1  |
| △                        | 5100004804 | AC CORD                  | 181-BG413-CNLF CCC 2.5M       | for 220VCN          | 1  |
| △                        | 5100004808 | AC CORD                  | 181-BG413-BLF 230VE 2.5M      | for 230VE           | 1  |
| △                        | 5100004807 | AC CORD                  | 181-BG413-GLF 230V 2.5M       | for 230VEU          | 1  |
| △                        | 5100004805 | AC CORD                  | 181-BG413-ALF 240VA 2.5M      | for 240VA           | 1  |
| SCREWS                   |            |                          |                               |                     |    |
|                          | 40013067   | SCREW M3X8               | PAN MACHINE W/SW+SMALL PW ZC  |                     | 22 |
|                          | 40237101   | SCREW M3X8               | PAN MACHINE W/SW+SMALL PW BZC |                     | 9  |
|                          | 40013078   | SCREW M3X10              | PAN MACHINE W/SW FE ZC        |                     | 1  |
|                          | 40010301   | SCREW M3X20              | BINDING MACHINE BZC           |                     | 2  |
|                          | 5100024387 | SCREW M4X12              | BINDING MACHINE W/SW BZC      |                     | 4  |
|                          | 5100029816 | SCREW M4X15              | PAN MACHINE W/SW+PW BZC       |                     | 4  |
|                          | 40010134   | SCREW M4X20              | TRUSS MACHINE BZC             |                     | 8  |
|                          | 40565489   | SCREW M4X25              | PAN MACHINE W/SW BZC          |                     | 2  |
|                          | 40010367   | SCREW M4X25              | BINDING MACHINE BZC           |                     | 8  |
|                          | 5100024249 | SCREW M5X20              | OVAL MACHINE BZC              |                     | 2  |
|                          | 5100024248 | SCREW 3.5X12             | TRUSS TAPPING A BZC(SD000100) |                     | 8  |
|                          | 5100024250 | SCREW 3X8                | PAN TAPTITE B BZC             |                     | 7  |
|                          | 40010678   | SCREW 4X20               | TRUSS TAPPING A FE BZC        |                     | 7  |
|                          | 40011756   | FLANGE HEX NUT M3        | ZC                            |                     | 2  |
|                          | 40011767   | FLANGE HEX NUT M4        | FE ZC                         |                     | 1  |
|                          | 22150756   | JACK NUT 2               | PLASTIC/BLK                   |                     | 9  |
|                          | 5100011020 | STANDOFF                 | M3-L6-H15 (311-BG108LF)       |                     | 4  |
|                          | 17048630   | VR ACCESSORY NUT M9      |                               |                     | 11 |
|                          | 40128923   | HEX NUT M7               |                               |                     | 1  |
|                          | 5100005100 | WASHER                   | FLAT 4.2X10X0.5 BZC           |                     | 4  |
|                          | 40452178   | VR WASHER M9             |                               |                     | 11 |
|                          | 17048651   | VR ACCESSORY WASHER M7   | M7X12X0.5 NO.476              |                     | 1  |
|                          | 40011878   | M3 EXTERNAL TOOTH WASHER | FECM                          |                     | 1  |
|                          | 40011889   | EXTERNAL TOOTH WASHER M4 | FECM                          |                     | 2  |
| MISCELLANEOUS            |            |                          |                               |                     |    |
|                          | 5100011025 | CATCH                    | SD000079                      |                     | 4  |
| △                        | 12369410   | CORD BAND                | 1702B                         |                     | 2  |
| △                        | 5100010992 | CORD COVER               | 40285-021                     | only for 220VCN     | 1  |
|                          | 5100004359 | CORD HOOK                |                               |                     | 2  |
|                          | 5100011381 | HANDLE                   | 716-11038-01-00               |                     | 1  |
|                          | 5100011382 | HANDLE PLATE             | 750-11038-03-00               |                     | 1  |
|                          | 5100011383 | HANDLE HOLDER            |                               |                     | 2  |
|                          | 5100024234 | HEATSINK                 | SD000085                      |                     | 1  |
|                          | 5100024231 | HEATSINK HOLDER          | SD000086                      |                     | 1  |
|                          | 5100015947 | INSULATING SHEET         | SD000087                      |                     | 1  |
|                          | 5100024229 | RADIATION PLATE          | SD000074                      |                     | 2  |
|                          | 5100006069 | RUBBER FOOT(430-BG-435)  | D25XT18 40484-512(SD001005)   |                     | 4  |
|                          | 5100009845 | STAND ADAPTOR (TOP HAT)  | 49A-10179 (#17055020)         |                     | 1  |
|                          | 5100024238 | PU SPONGE                | 78X23X4T W/ADH                |                     | 2  |
|                          | 5100024239 | PU SPONGE                | 345X13X4T W/ADH               |                     | 1  |
| ACCESSORIES (Standard)   |            |                          |                               |                     |    |
|                          | 5100024254 | CARRYING BAG             |                               |                     | 1  |
|                          | 5100023922 | OWNER'S MANUAL           | JAPANESE(SD000070)            |                     | 1  |
|                          | 5100023923 | OWNER'S MANUAL           | ENGLISH(SD000071)             |                     | 1  |
| #                        | 5100023924 | OWNER'S MANUAL           | CHINESE                       |                     | 1  |

# Checking the Version Number

Note TIP: MUTE, RING: ANTI-FEEDBACK for [Foot SW 1].  
Note TIP: CHORUS, RING: REVERB/DELAY for [Foot SW 2].

1. Connecting the Foot Switches
- Connect two FS-5U foot switches to [Foot SW 1] using a PCS-31 foot switch cable. Make the FS-5U foot switch connections and settings as shown below.
- FS-5U foot switch polarity setting
- Set the [POLARITY] switch to the opposite of the JACK setting.

Foot switch connector cable connection settings
- The PCS-31 foot switch connector cable takes stereo input and splits it into two standard mono signals.
- The “white” standard plug carries the [TIP] signal, and the “red” plug carries the signal from the [RING].
- Each plug is connected to a separate FS-5U foot switch.
- The red and white plugs may be connected to either FS-5U.
2. Panel Settings
- [PICK UP] SW: “PIEZO”

[SELECT] SW: “LINE”

All other switches: “OFF”

All VRs: “MIN”
3. Version Number Display
- After carrying out Steps 1 and 2, hold down the foot switch to which [TIP] (the white plug) is connected and turn on the power.
- Within four seconds after turning on the power, press the switch twice to enter Test mode.
- Immediately upon entering Test mode, the GUITAR [CHORUS] LED, MIC/LINE [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flashes several times, and then the flashing of the LEDs changes to indicate the version number.

| Version             | 1.00 | 1.01 | 1.02 | 1.03 | 1.04 | 1.05 | 1.06 |
|---------------------|------|------|------|------|------|------|------|
| Gt. [CHORUS] LED    | ○    | ●    | ●    | ○    | ○    | ●    | ○    |
| MIC. [CHORUS] LED   | ●    | ○    | ●    | ○    | ●    | ○    | ○    |
| [ANTI-FEEDBACK] LED | ●    | ●    | ○    | ●    | ○    | ○    | ○    |

○ : Flashing  
● : Off

4. Turning Off the Power.

# Test Mode

## Tools Required

- Headphones:1 (pair)

FS-5U foot switches (sold separately): 2

PCS-31 foot switch connector cable (sold separately): 1

Tester (for measuring voltage)

## Instructions for Entering Test Mode

Note TIP: MUTE, RING: ANTI-FEEDBACK for [Foot SW 1].  
Note TIP: CHORUS, RING: REVERB/DELAY for [Foot SW 2].

1. Connecting the Foot Switches
- Connect two FS-5U foot switches to [Foot SW 1] using a PCS-31 foot switch cable. Make the FS-5U foot switch connections and settings as shown below.
- FS-5U foot switch polarity setting

Set the [POLARITY] switch to the opposite from the JACK setting.

Foot switch connector cable connection settings
- The PCS-31 foot switch connector cable takes stereo input and splits it into two standard mono signals.
- The “white” standard plug carries the [TIP] signal, and the “red” plug carries the signal from the [RING].
- Each plug is connected to a separate FS-5U foot switch.
- The red and white plugs may be connected to either FS-5U.
2. Panel Settings
- [PICK UP] SW: “PIEZO”

[SELECT] SW: “LINE”

All other switches: “OFF”

All VRs: “MIN”
- \* You cannot enter Test mode unless the settings in Step 2 are made correctly.
3. Entering Test Mode
- After carrying out Steps 1 and 2, hold down the foot switch to which [TIP] (the white plug) is connected and turn on the power.
- Within four seconds after turning on the power, press the switch twice to enter Test mode.

Immediately upon entering Test mode, the GUITAR [CHORUS] LED, MIC/LINE [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flashes several times, and then the flashing of the LEDs changes (refer to table of version number indicators).

After this, the LEDs are used to indicate the status of each test; at this time, confirm that the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED are capable of flashing.

## Exiting Test Mode

To cancel Test mode, turn off the power.

## Skipping Tests

You cannot skip tests in Test mode.

1. Display of the Version Number

| Version             | 1.00 | 1.01 | 1.02 | 1.03 | 1.04 | 1.05 | 1.06 |
|---------------------|------|------|------|------|------|------|------|
| Gt. [CHORUS] LED    | ○    | ●    | ●    | ○    | ○    | ●    | ○    |
| MIC. [CHORUS] LED   | ●    | ○    | ●    | ○    | ●    | ○    | ○    |
| [ANTI-FEEDBACK] LED | ●    | ●    | ○    | ●    | ○    | ○    | ○    |

○ : Flashing  
● : Off

Press the foot switch to which [TIP] (the white plug) is connected to stop displaying the version number and advance to the next test.

2. DSP Check

Upon entering this test, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED first go off, and then the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED light up in sequence as the test proceeds.

Test Passed: Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flash  
Test Failed: [MUTE] LED flashes

The procedure does not advance if this test fails.  
Press the foot switch to which [TIP] (the white plug) is connected to advance to the next test.

3. Switch Check

Upon entering this test, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED go off.

Perform the following operations and confirm the status of the corresponding LEDs.

- |                      |                               |                              |
|----------------------|-------------------------------|------------------------------|
| 1.) [PICKUP] SW      | Switch from PIEZO to MAGNETIC | Gt.[CHORUS] LED lights       |
| 2.) [SHAPE] SW       | Switch OFF to ON              | MIC.[CHORUS] LED lights      |
| 3.) [PHANTOM] SW     | Switch OFF to ON              | [ANTI-FEEDBACK] LED lights   |
| 4.) [SELECT] SW      | Switch from LINE to MIC       | [MUTE] LED lights            |
| 5.) Gt. [CHORUS] SW  | Switch OFF to ON              | Gt. [CHORUS] LED goes off    |
| 6.) MIC. [CHORUS] SW | Switch OFF to ON              | MIC.[CHORUS] LED goes off    |
| 7.) [START] SW       | Press                         | [ANTI-FEEDBACK] LED goes off |
| 8.) [MUTE] SW        | Switch OFF to ON              | [MUTE] LED goes off          |

If this test fails, the [MUTE] LED flashes, and the procedure does not advance to the next test.

If all tests up to this point are passed, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flash.

9.) [Foot SW 1] JACK SW

Disconnect the [FOOT SW 1] plug from the AC-60  
Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED go off

Connect the [FOOT SW 1] plug to the AC-60  
Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED light

10.) [Foot SW 1] [TIP] SW

Press the [TIP] (white) foot switch Gt. [CHORUS] LED goes off

11.) [Foot SW 1] [RING] SW

Press the [RING] (red) foot switch MIC. [CHORUS] LED goes off

12.) [Foot SW 2] JACK SW

Disconnect the [FOOT SW 1] plug from the AC-60  
[ANTI-FEEDBACK] LED and [MUTE] LED go off

Connect the plug to [FOOT SW 2] of AC-60  
Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED light

13.) [Foot SW 2] [TIP] SW

Press the [TIP] (white) foot switch [ANTI-FEEDBACK] LED goes off

14.) [Foot SW 2] [RING] SW

Press the [RING] (red) foot switch [MUTE] LED goes off

15.) [PHONES] JACK SW

Disconnect the [Foot SW 2] plug from the AC-60  
Gt. [CHORUS] LED, MIC. [CHORUS] LED go off  
Connect headphone plug to the [PHONES] jack  
Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED light  
Disconnect headphone plug from the [PHONES] jack  
Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED go off

\* If the tests are performed in the wrong sequence, or if a test fails, you cannot advance to confirm the items in subsequent tests.

When testing of all switches is completed, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flash.  
Connect the PCS-31's plug to the AC-60's [Foot SW 1] jack, then press the foot switch to which [TIP] (the white plug) is connected to advance to the next test.

## 4. Volume Check

Upon entering this test, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED go off.

\* *With some DSPs, oscillation may start on its own when volume controls are adjusted, so sound may be output from the speakers if the speakers are left connected during these tests. The volume level up to the point an individual volume check is completed will vary according to the knob position.*

In the sequence given below, turn the volume knob from the MIN to CENTER position, and then to MAX, and confirm that the volume changes accordingly. After checking each knob, be sure to leave it at MAX when proceeding to test the subsequent knob.

[MASTER] → [CHORUS] → Gt. [TREBLE] → Gt. [MIDDLE] → Gt. [BASS] → Gt. [VOLUME] → MIC. [VOLUME] → MIC. [BASS] → MIC. [MIDDLE] → MIC. [TREBLE] → [REVERB / DELAY] → [FREQUENCY]

MIN Detected: [ANTI-FEEDBACK] LED and [MUTE] LED go off

CENTER Detected: [ANTI-FEEDBACK] LED lights

MAX Detected: [ANTI-FEEDBACK] LED and [MUTE] LED light

If all tests are passed, the Gt. [CHORUS] LED, MIC. [CHORUS] LED, [ANTI-FEEDBACK] LED, and [MUTE] LED flash.

\* *If there is a failure in this test, you cannot advance to confirm the items in the subsequent test.*

Turn the power off.

## 5. Phantom Power Check

Turn on the power. Set the [MASTER] VR to MIN. There are no particularly specified positions for other knobs and switches.

Use the tester to check the DC voltage between each MIC / LINE CHANNEL [INPUT] XLR terminal.

Set the measurement range on the tester to 50 V or higher.

Put the tester's [COM] (black) probe to the [1:GND] terminal.

### 1. [PHANTOM] ON Voltage

Press the [PHANTOM] switch to the ON position.

Put the tester's [+] (red) probe to the [2:HOT] terminal.

44 V to 49 V

Put the tester's [+] (red) probe to the [3:COLD] terminal.

44 V to 49 V

### 2. [PHANTOM] OFF Voltage

Press the [PHANTOM] switch so that it is in the OFF position.

Put the tester's [+] (red) probe to the [2:HOT] terminal.

0 V

Put the tester's [+] (red) probe to the [3:COLD] terminal.

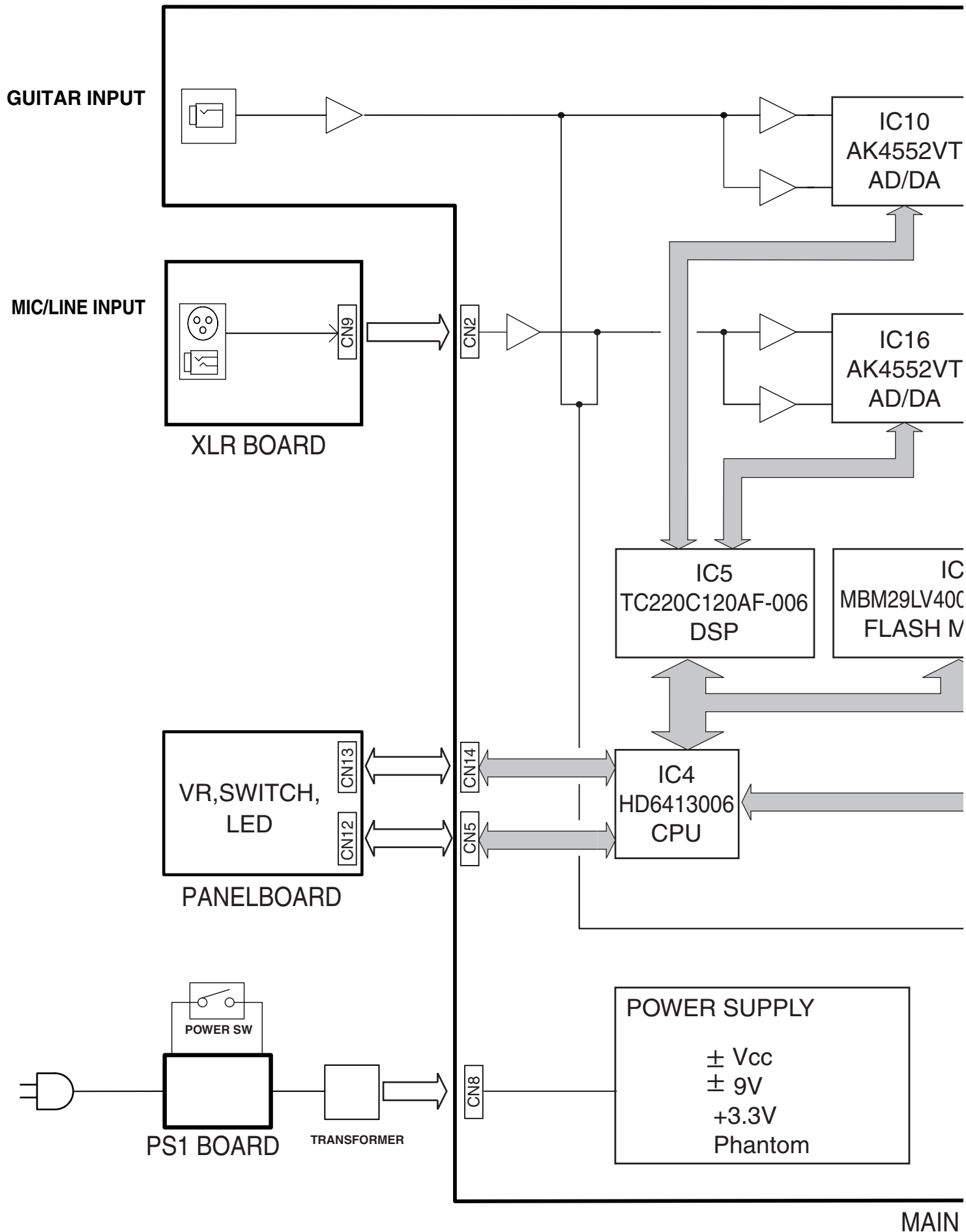
0 V

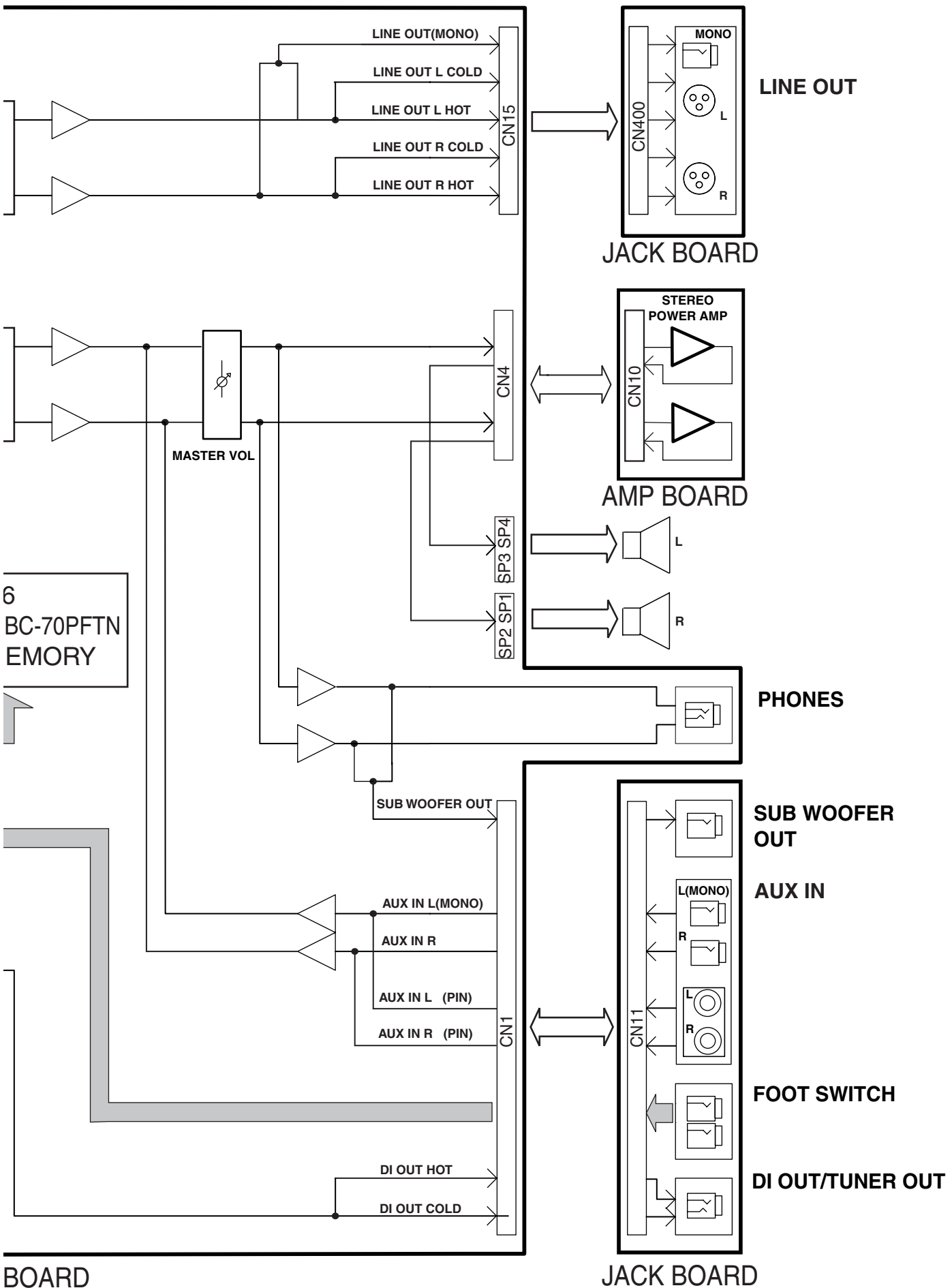
Turn off the power.

This concludes the tests.



# Block Diagram

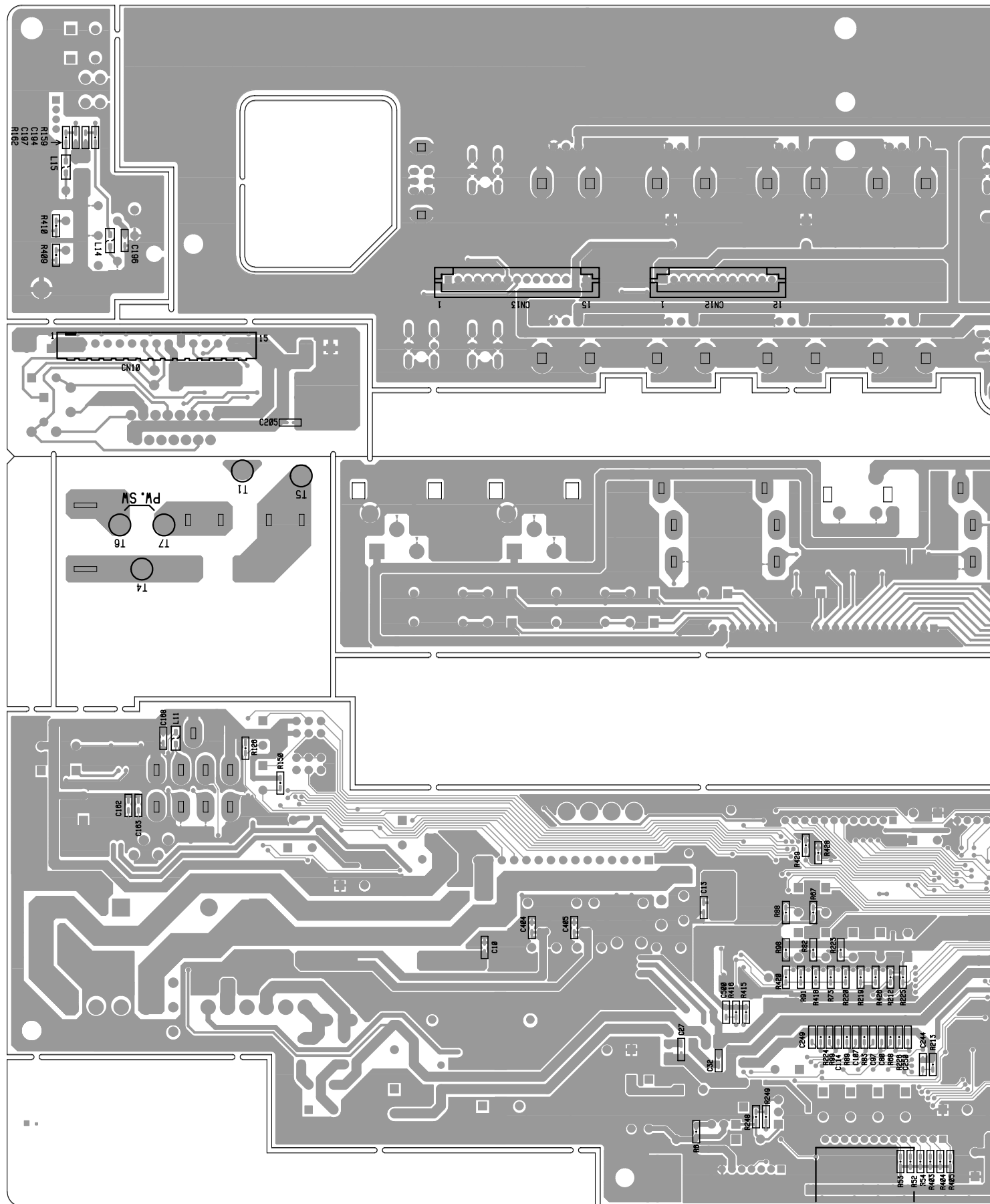


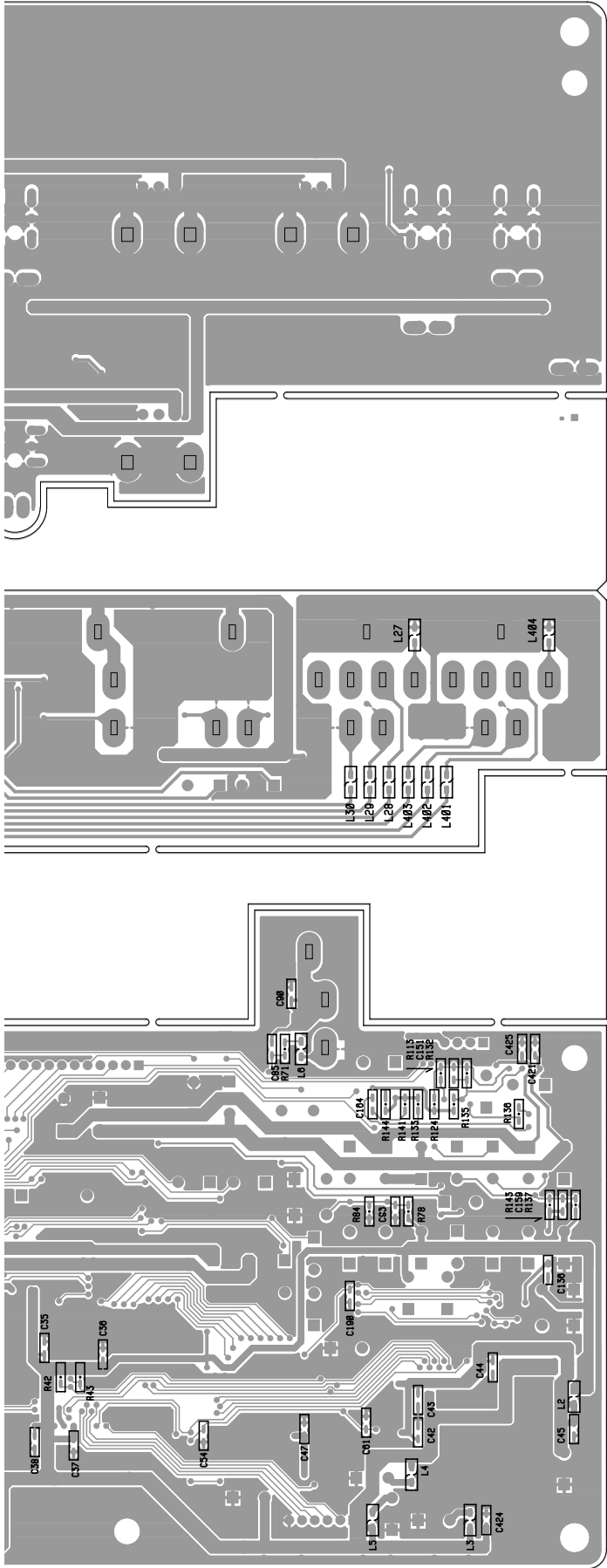




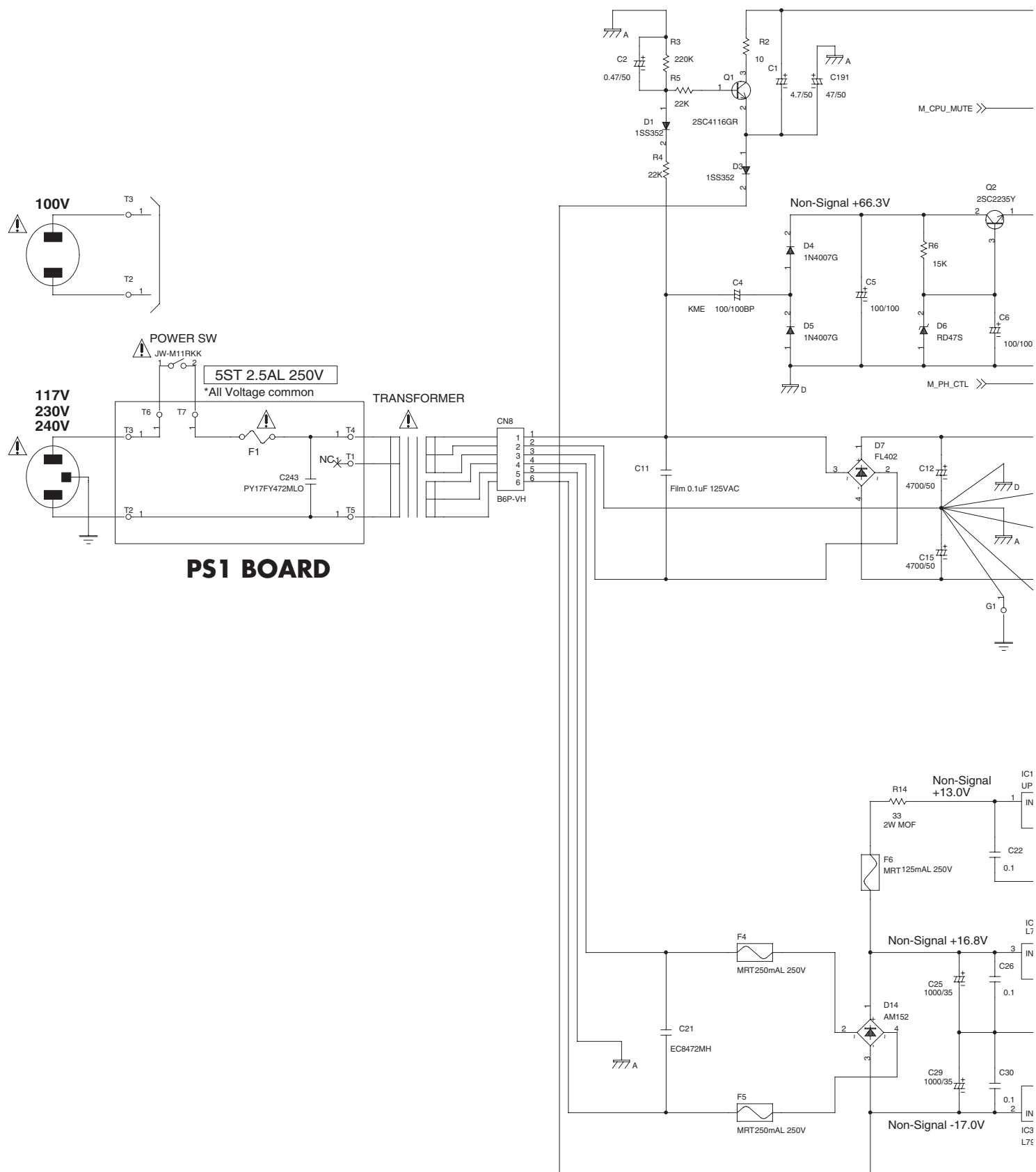


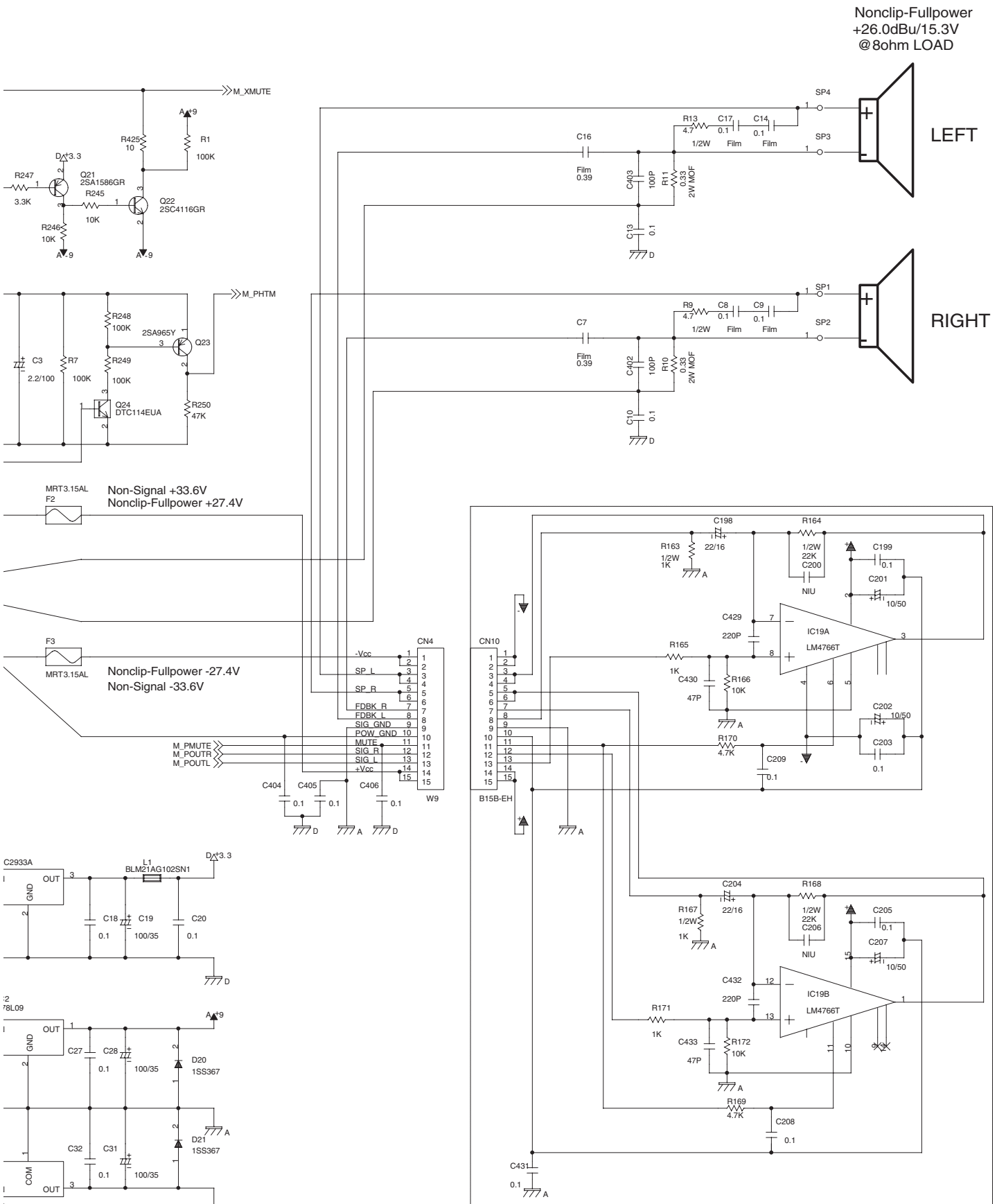
# Circuit Board





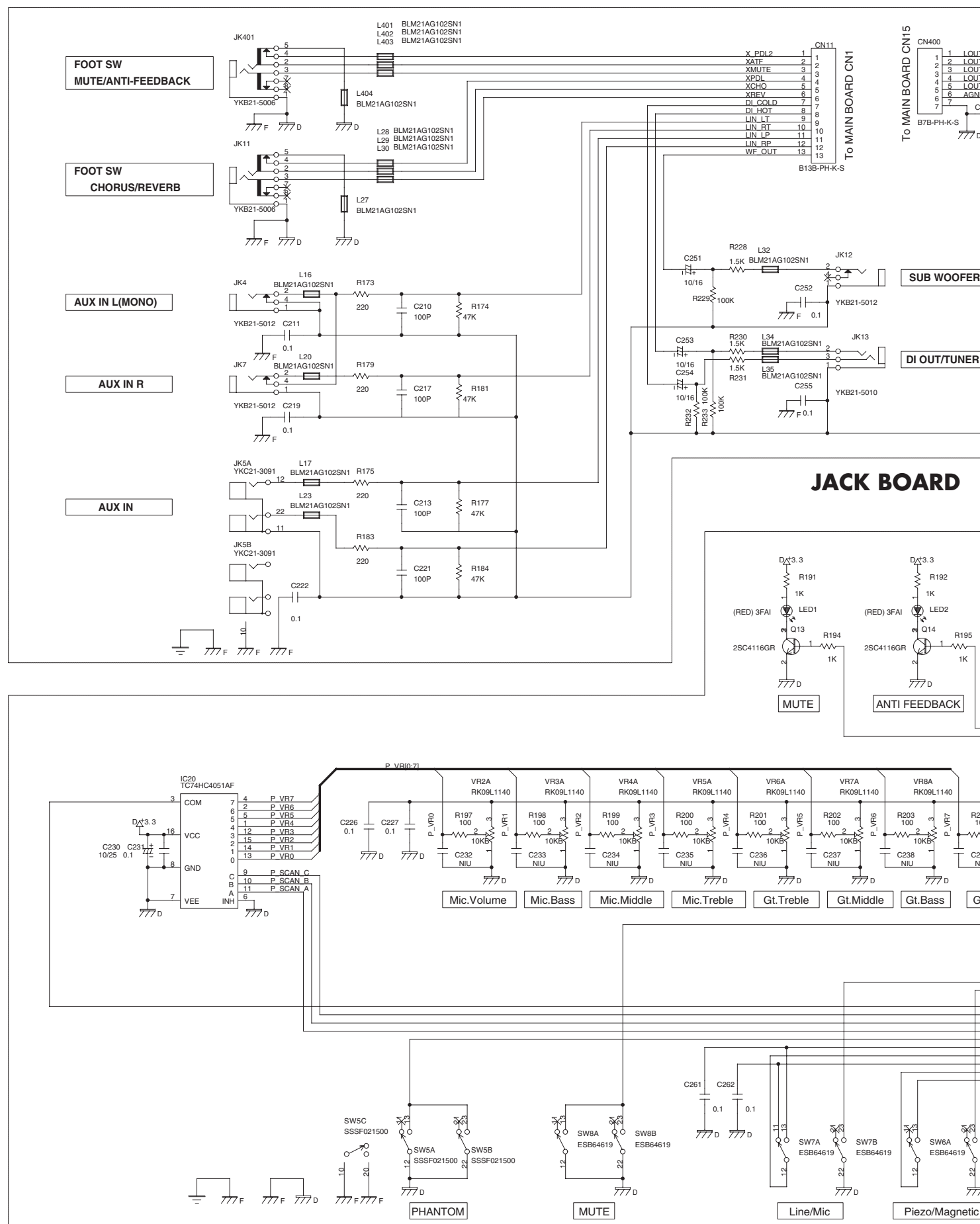
# Circuit Diagram (MAIN-PS/PS1/AMP)



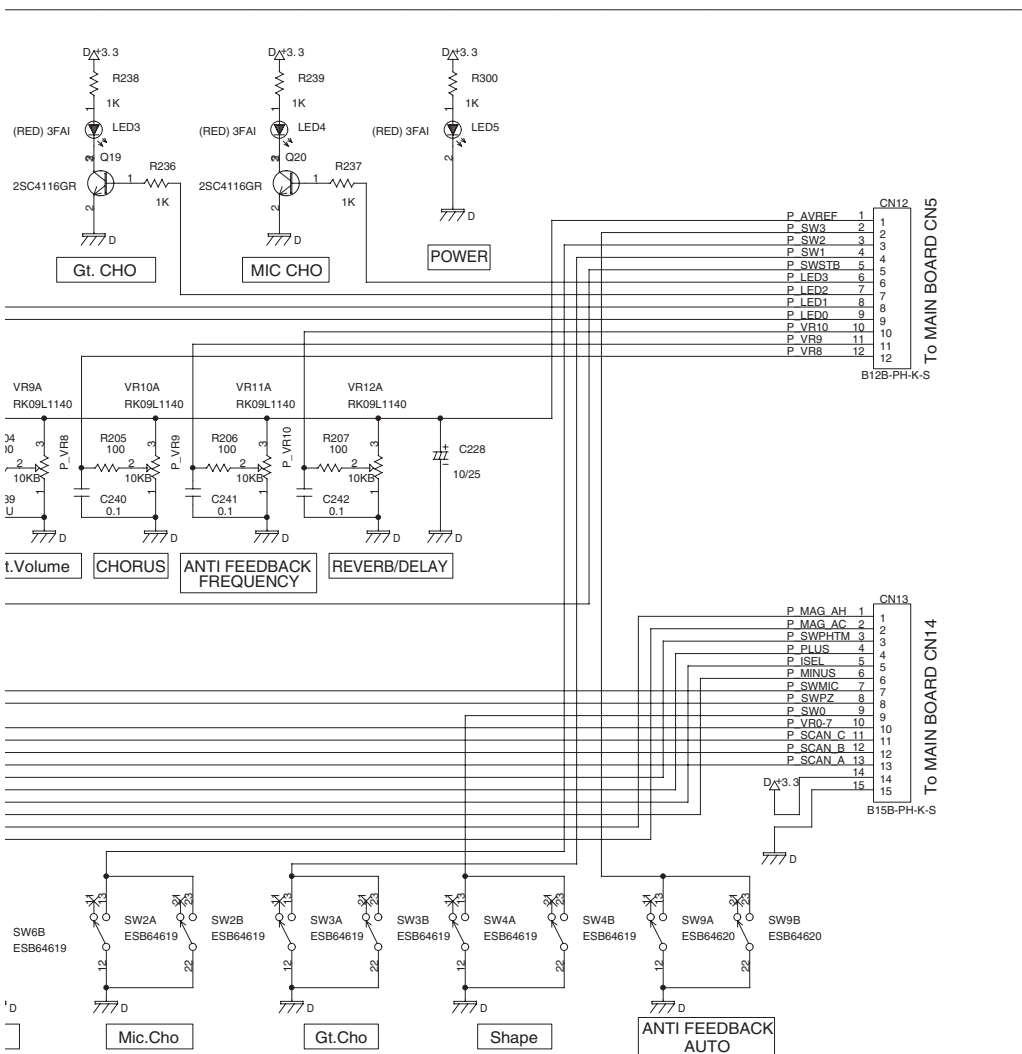
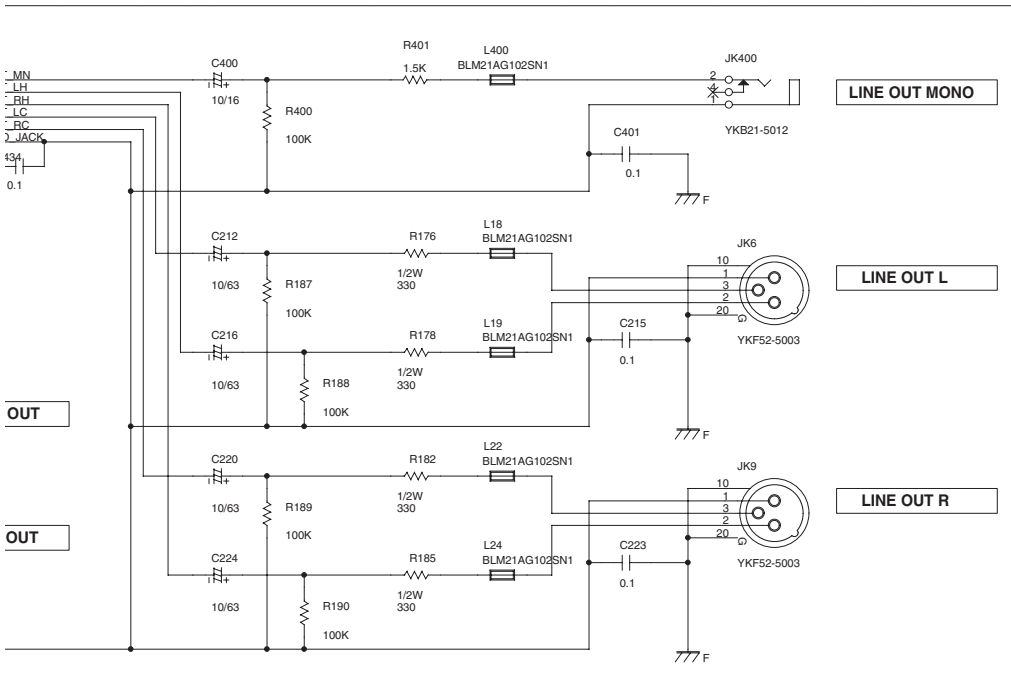


## AMP BOARD

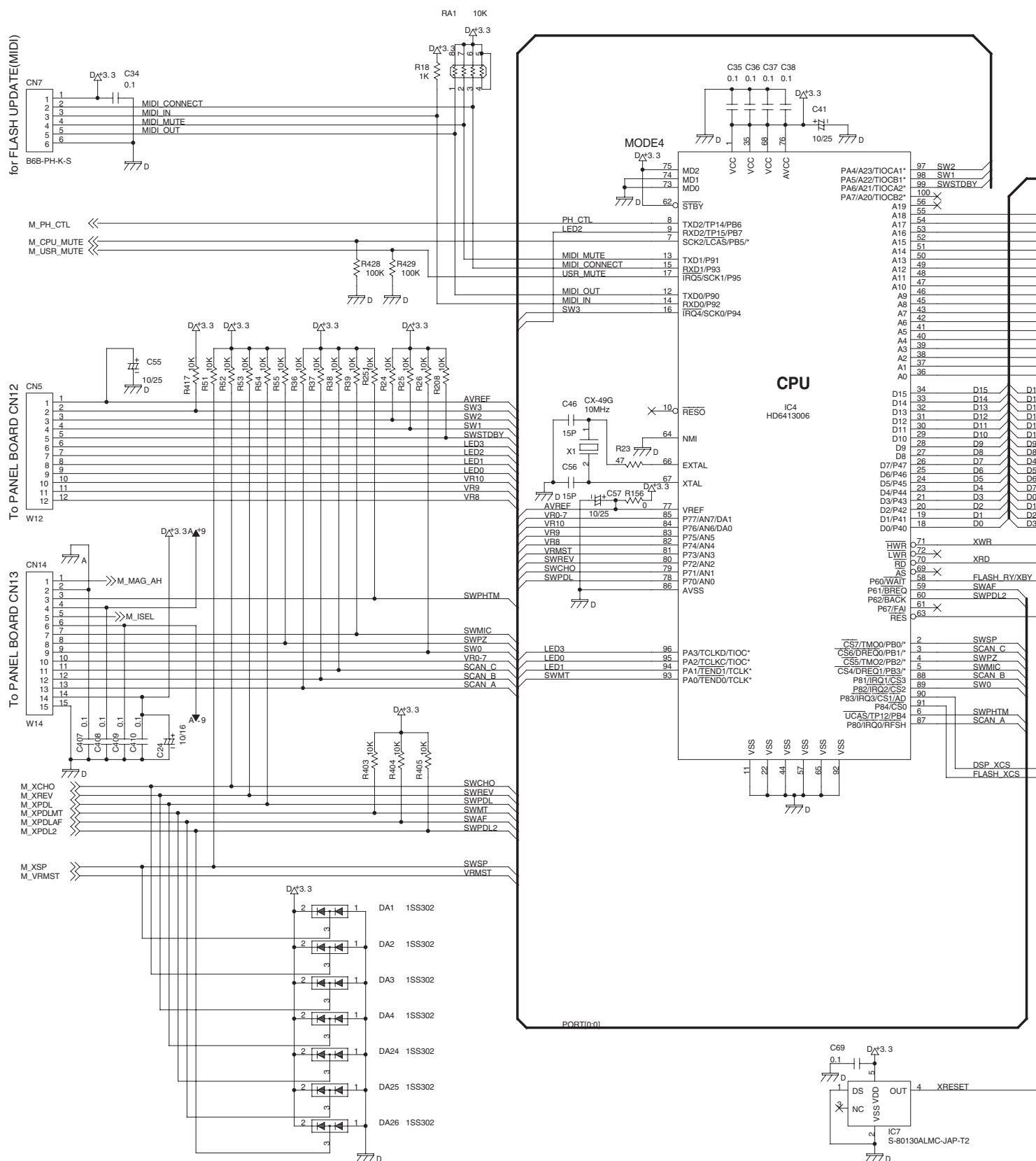
# Circuit Diagram (PANEL/JACK)



## PANEL BOARD



## 26





## 28

