

EMX 62M

POWERED MIXER

SERVICE MANUAL



EMX62M

- OPTION
RK-88 RACK MOUNT KIT

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This document is printed on chlorine free (ECF) paper with soy ink.

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: This presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical / electronic and / or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and / or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL / ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder / flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: The wires in this main lead are coloured in accordance with the following code:
 GREEN-AND-YELLOW: EARTH
 BLUE: NEUTRAL
 BROWN: LIVE

As the colours of the wires in the main lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The GREEN-and-YELLOW wire must be connected to the terminal in the plug that is marked with the letter E or the safety earth symbol (or coloured GREEN or GREEN-and-YELLOW).

The BLUE wire must be connected to the terminal that is marked with the letter N (or coloured BLACK).

The BROWN wire must be connected to the terminal that is marked with the letter L (or coloured RED).

This applies only to products distributed by Yamaha Kemble Music (U. K.) Ltd.

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

SPECIFICATIONS

● General specifications

Maximum output power	135 W/8Ω @0.5% THD at 1 kHz (SPEAKERS OUT) 200 W/4Ω @0.5% THD at 1 kHz (SPEAKERS OUT) 175 mW/40Ω @0.5% THD at 1 kHz (PHONES OUT)	
Frequency response	20 Hz–20 kHz +1 dB, –3 dB @1 W output into 8Ω (SPEAKERS OUT) 20 Hz–20 kHz +1 dB, –3 dB @+4 dB output into 10 kΩ (MAIN OUT, MONITOR OUT, EFFECT OUT)	
Total harmonic distortion	Less than 0.5% @20 Hz–20 kHz, 100 W output into 4Ω (SPEAKERS OUT) Less than 0.3% @20 Hz–20 kHz, +14 dB output into 10 kΩ (MAIN OUT, MONITOR OUT, EFFECT OUT)	
Hum & noise (Average, Rs=150Ω) (with 20 Hz–20 kHz BPF)	–124 dB equivalent input noise, –68 dB residual output noise (SPEAKERS OUT)	
	–88 dB residual output noise (MAIN OUT, MONITOR OUT)	
	–79dB (83 dB S/N) (MAIN OUT, MONITOR OUT)	Master level control: nominal level Channel level controls: minimum
	–69 dB (73 dB S/N) (MAIN OUT, MONITOR OUT)	Master level control: nominal level 1 channel level control: nominal level
	–75 dB (79 dB S/N) (EFFECT OUT)	All channel level controls: minimum
	–69 dB (73 dB S/N) (EFFECT OUT)	1 channel level control: nominal level
Maximum voltage gain	86 dB CH IN (Lo-Z) to SPEAKERS OUT (CH1–4) 66 dB CH IN (Lo-Z) to MAIN OUT, MONITOR OUT (CH1–4) 66 dB CH IN (Lo-Z) to EFFECT OUT (CH1–4) 48 dB CH IN (Lo-Z) to REC OUT (CH1–4) 56 dB CH IN (Hi-Z) to MAIN OUT, MONITOR OUT (CH1–4) 26 dB LINE IN to MAIN OUT (CH5) 26 dB AUX IN to MAIN OUT 22 dB 2TR IN to MAIN OUT 46 dB Super Hi-z IN to MAIN OUT (CH6)	
Crosstalk at 1 kHz	65 dB adjacent input, 65 dB input to output	
Input channel equalization	±15 dB Maximum HIGH 10 kHz shelving * LOW 100 Hz shelving * * Turn over/roll-off frequency of shelving: 3 dB below maximum variable level.	
Meters	5 points LED Meter (–10, –5, 0, +3, +6 dB) MAIN OUT	
Graphic equalizer	7 bands (125, 250, 500, 1k, 2k, 4k, 8k Hz) MAIN OUT ±12 dB Maximum	
Internal digital effect	3 programs (VOCAL REVERB, LARGE HALL, SMALL HALL)	
Phantom power	+15 V (balanced input)	
Limiter	Comp. : THD≥0.5% (SPEAKERS OUT)	
LIMIT indicator	Turn on. : THD≥0.5% (SPEAKERS OUT)	
Protection circuit (Power amp)	POWER switch on/off mute DC detection Temp (Heatsink Temp≥90°C)	
Foot switch (FC5)	DIGITAL EFFECT MUTE : on/off	
Optional accessories	RK-88, FC5	
Power requirement	USA and Canada: 120 V AC 60 Hz Europe: 230 V AC 50 Hz Other: 240 V AC 50 Hz	
Power consumption	110 W	
Dimensions (WxHxD)	482 x 305 x 328 mm	
Weight	12 kg	
Supplied accessories	AC power cord, Owner's Manual	

● Input specifications

Input connectors	PAD	Actual load impedance	Nominal impedance	Input level			Connector type
				Sensitivity ^{*1}	Nominal level	Max. before clipping	
CH INPUT (Lo-Z) (CH1–4)	OFF	3 k Ω	50–600 Ω Mics	–62 dB (0.616 mV)	–50 dB (2.45 mV)	–20 dB (77.5 mV)	XLR-3-31 type ^{*2}
	ON		600 Ω Lines	–32 dB (19.5 mV)	–20 dB (77.5 mV)	+10 dB (2.45 V)	
CH INPUT (Hi-Z) (CH1–4)	OFF	10 k Ω	50–600 Ω Mics	–52 dB (1.95 mV)	–40 dB (7.75 mV)	–10 dB (245 mV)	Phone jack (TRS) ^{*2}
	ON		600 Ω Lines	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	
LINE IN (CH5) (1–2)		10 k Ω	600 Ω Line	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	Phone jack ^{*3}
Super Hi-Z IN (CH6) (1–2)		470 k Ω	1k Ω	–42 dB (6.16 mV)	–30 dB (24.5 mV)	0 dB (0.775 V)	Phone jack ^{*3}
AUX IN		10 k Ω	600 Ω Line	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	Phone jack ^{*3}
2TR IN (1–2)		10 k Ω	600 Ω Line	–22 dBV (79.4 mV)	–10 dBV (316 mV)	+17.8 dBV (7.76 V)	Phono jack

*1. Sensitivity is the lowest level that can produce an output of +4 dB (1.23 V) or the nominal output level when the unit is set at maximum gain.
(All level controls are at maximum position.)

*2. Balanced.

*3. Unbalanced.

- 0 dB= 0.775 Vrms, 0 dBV= 1 Vrms.

● Output specifications

Output connectors	Actual source impedance	Nominal impedance	Output level		Connector type
			Nominal	Max. before clipping	
SPEAKERS OUT (1, 2)	0.1 Ω	4/8 Ω Speaker	40 W/4 Ω	200 W/4 Ω	Phone jack
MAIN OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
MONITOR OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
EFFECT OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
PHONES OUT	35 Ω	40 Ω Phones	33 mW	175 mW	Phone jack
REC OUT (1, 2)	600 Ω	10 k Ω Lines	–10 dBV (316 mV)	+10 dBV (3.16 V)	Phono jack

- PHONE JACKS are unbalanced.

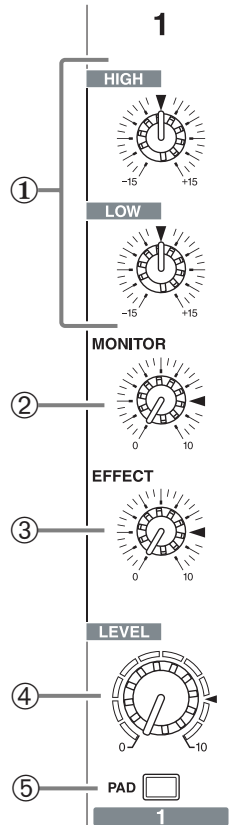
- 0 dB= 0.775 Vrms, 0 dBV= 1 Vrms.

PANEL LAYOUT

● CONTROL PANEL

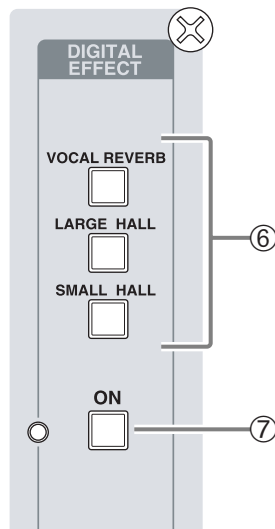
1. CONTROL SECTION

• Channel Control



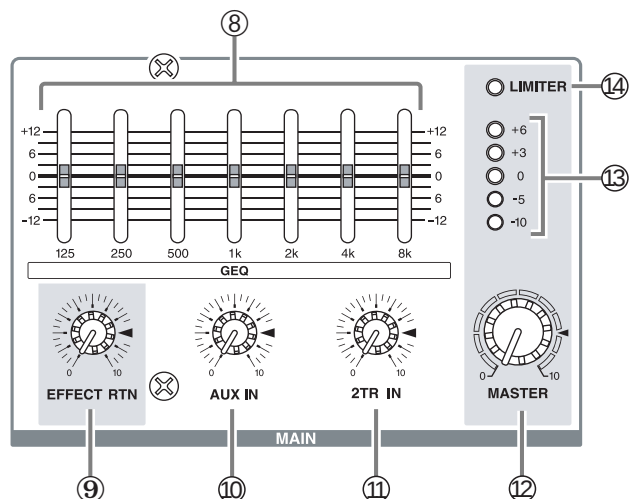
- ① Equalizer (HIGH, LOW)
- ② MONITOR control
- ③ EFFECT control
- ✓ LEVEL control
- ⑤ PAD switch (CH1-4)

• Digital Effect



- ≈ EFFECT select switch
- △ ON switch, indicator

• MAIN



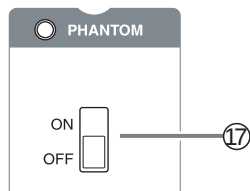
- ⑧ Graphic Equalizer
- ⑨ EFFECT RTN control
- ⑩ AUX IN control
- ⑪ 2TR IN control
- ⑫ MASTER control
- ⑬ Peak Level Indicator
- ⑭ LIMITER indicator

• MONITOR



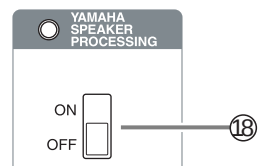
- ⑮ EFFECT RTN control
- ⑯ MASTER control

• PHANTOM switch, indicator



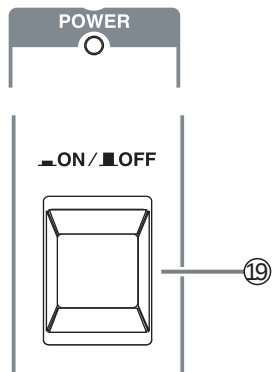
- ⑰ PHANTOM ON/OFF switch

• YAMAHA SPEAKER PROCESSING



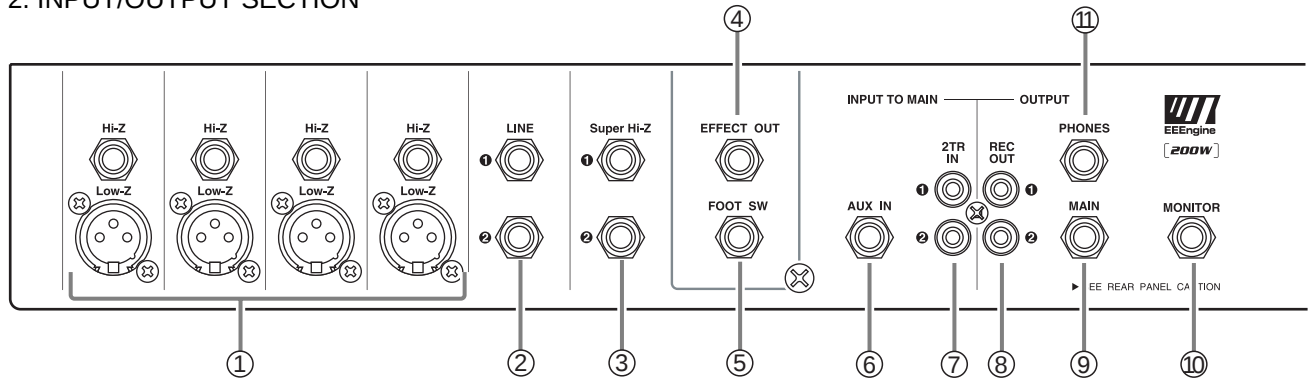
- ⑱ ON/OFF switch

• POWER switch, indicator



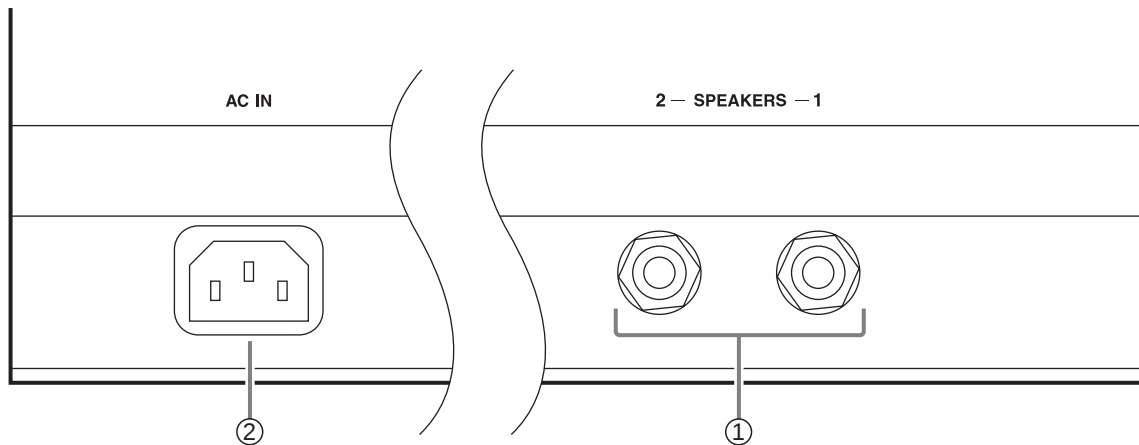
- ⑲ POWER ON/OFF switch, indicator

2. INPUT/OUTPUT SECTION



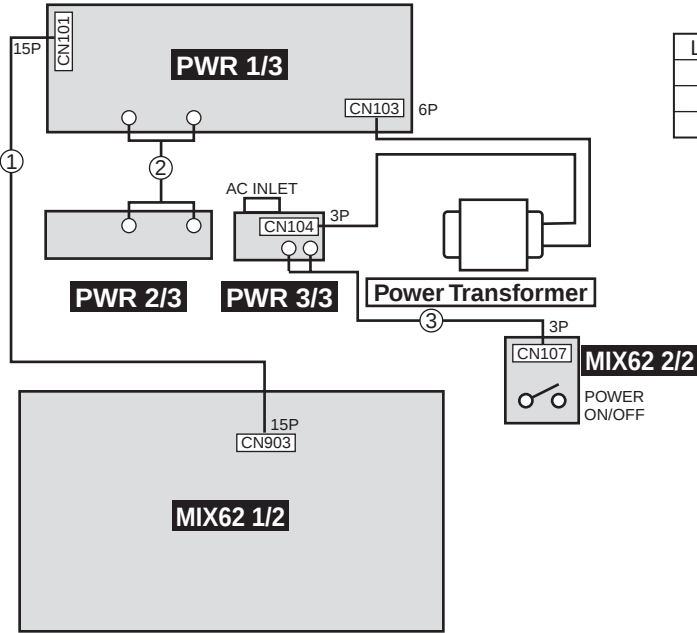
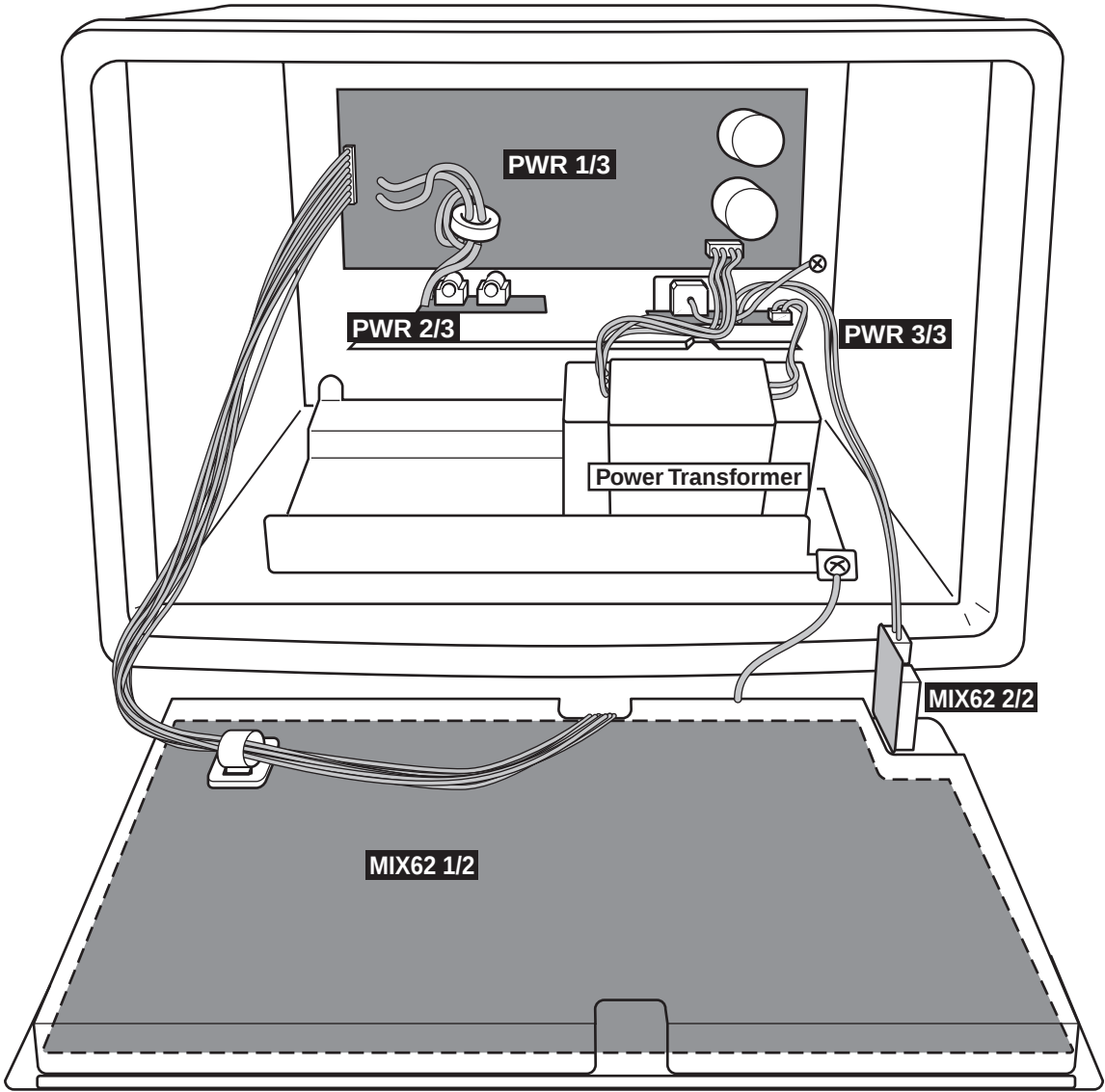
- ① INPUT terminal (Hi-Z, Low-Z)
(CH1-4)
- ② INPUT terminal (LINE 1, 2)
(CH5)
- ③ INPUT terminal (Super Hi-Z)
(CH6)
- ④ EFFECT OUT terminal
- ⑤ FOOT SW terminal
- ⑥ INPUT TO MAIN terminal (AUX IN)
- ⑦ INPUT TO MAIN terminal (2TR IN)
- ⑧ OUTPUT terminal (REC OUT)
- ⑨ OUTPUT terminal (MAIN)
- ⑩ OUTPUT terminal (MONITOR)
- ⑪ OUTPUT terminal (PHONES)

● REAR PANEL



- ① SPEAKERS 1, 2 terminal
- ② AC IN socket

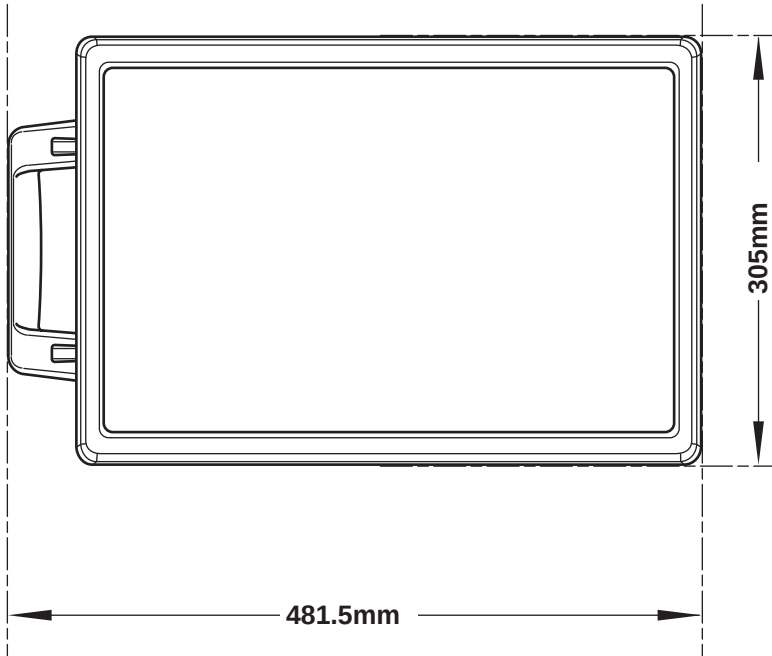
CIRCUIT BOARD LAYOUT & WIRING



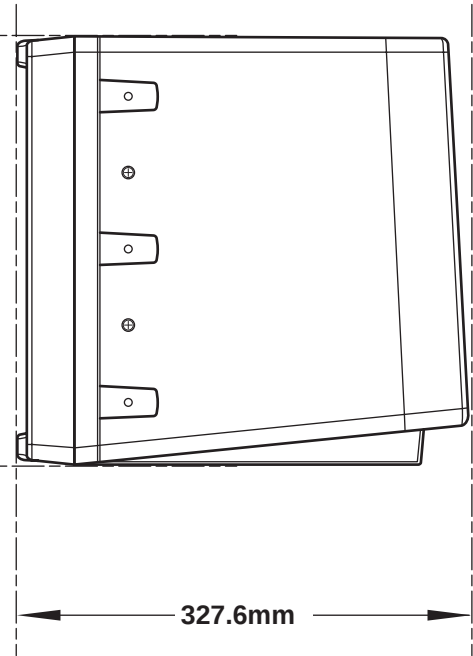
Location	Connector Assembly	Remarks	Parts No.
1	MIX621/2-PWR1/3	2426&2426 14P L=700	(V842610)
2	PWR1/3-PWR2/3	B&B2P	(V828330)
3	PWR3/3-MIX622/2	PSW	V8272900

■ DIMENSIONS

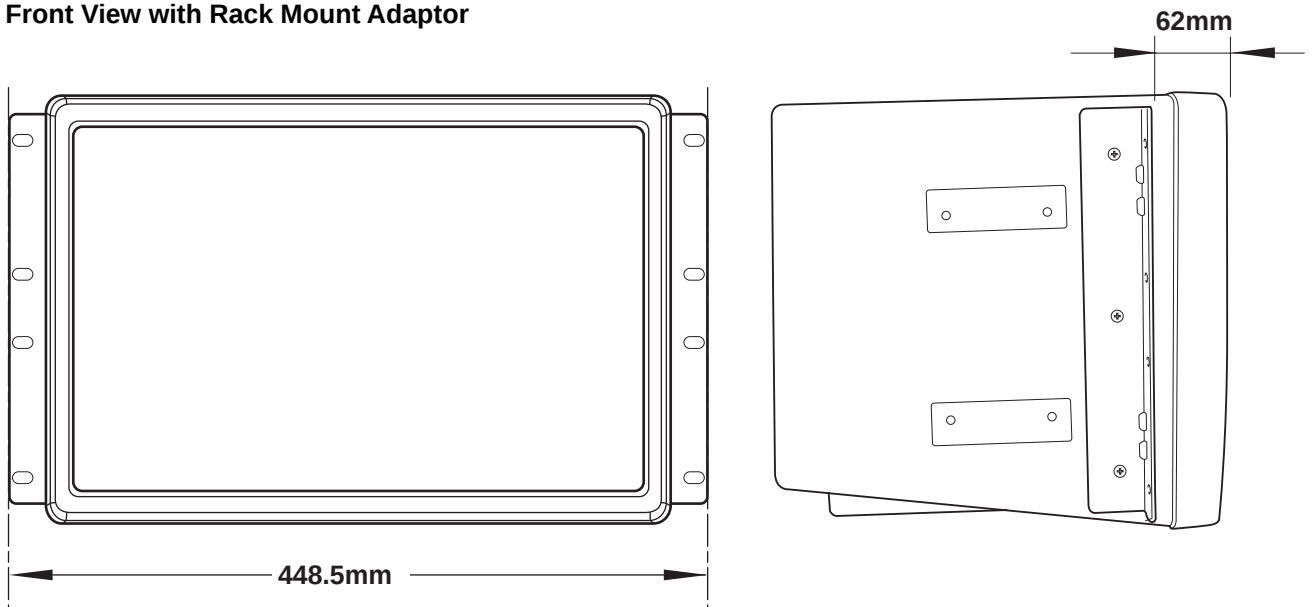
● Front View



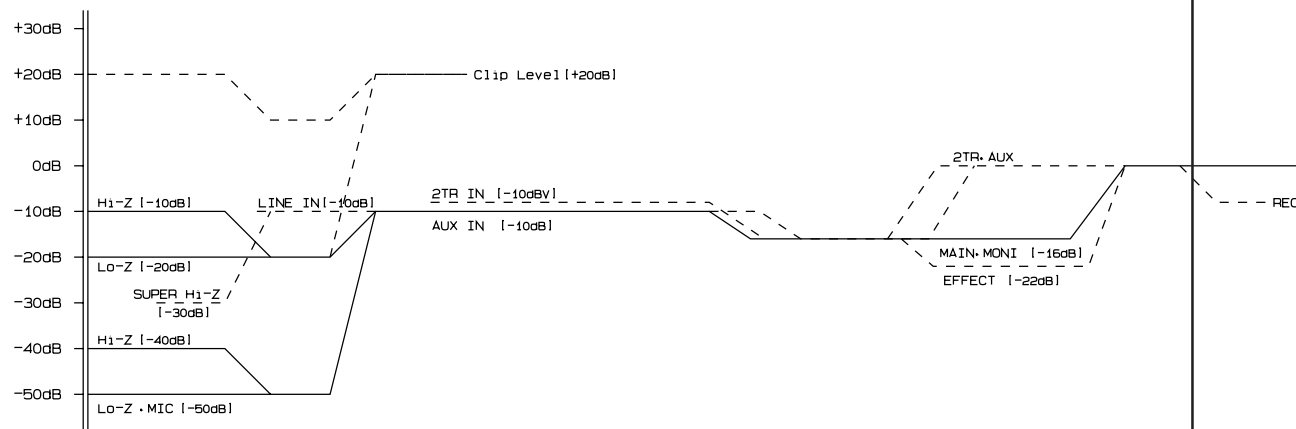
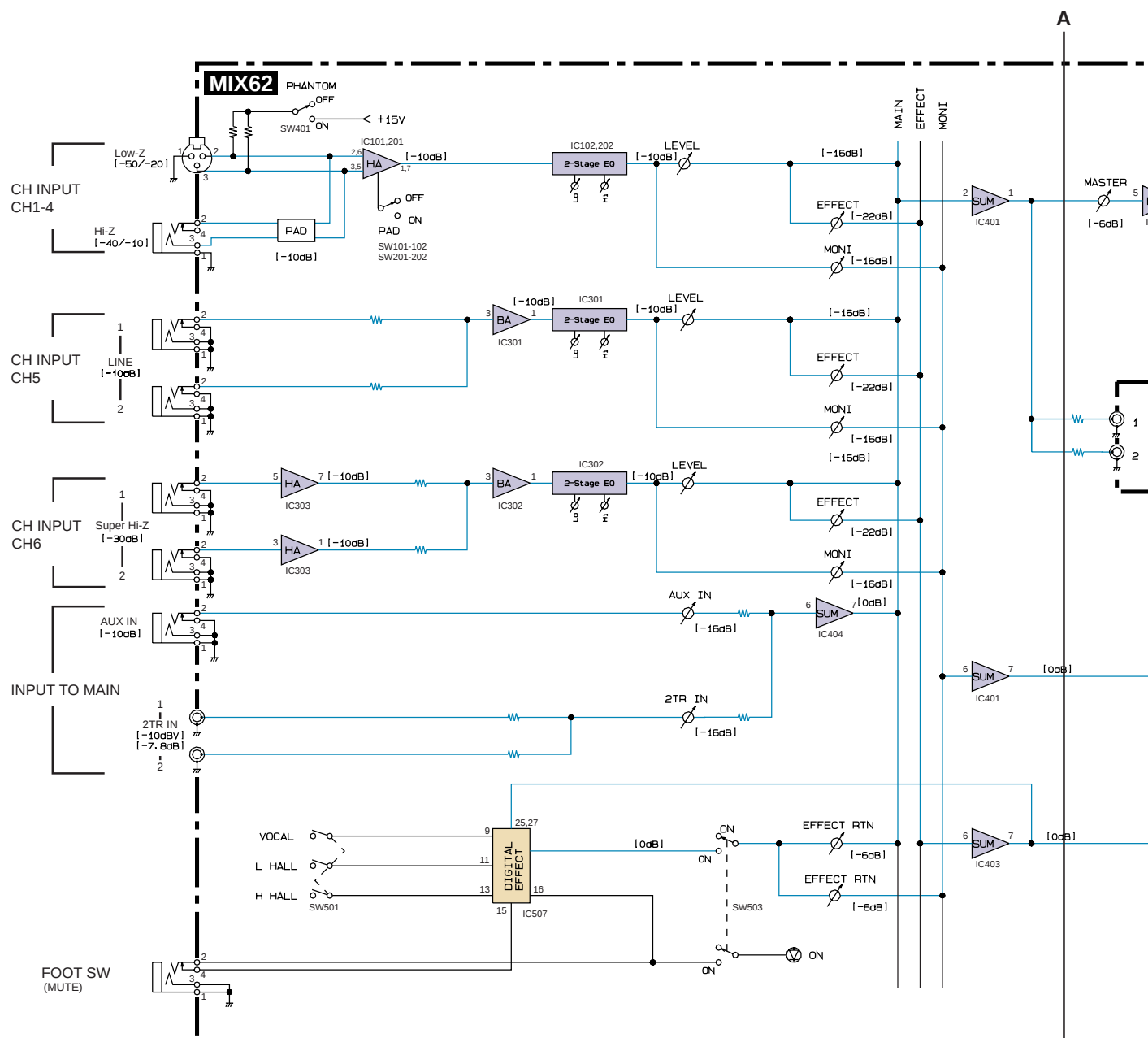
● Side View

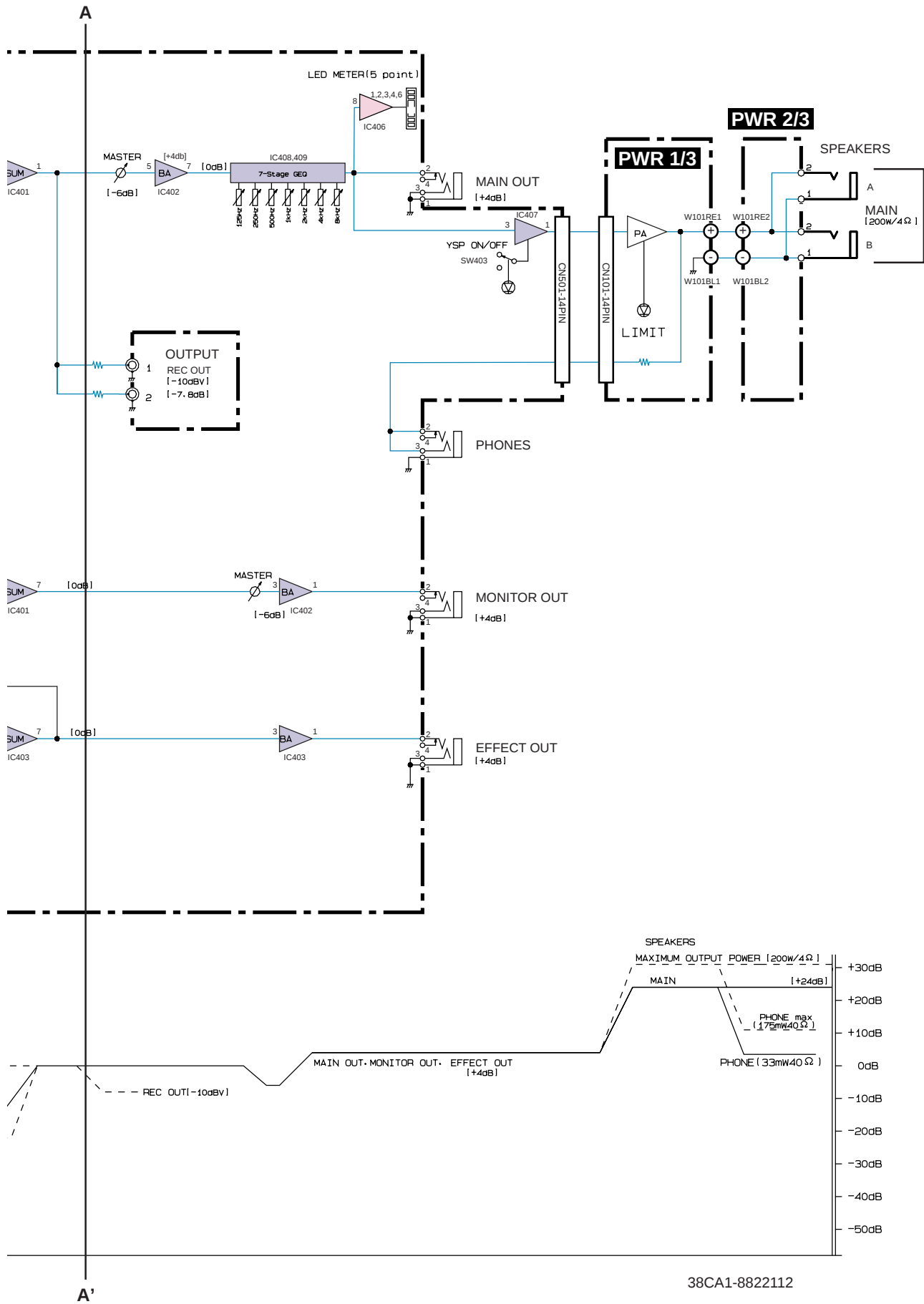


● Front View with Rack Mount Adaptor



BLOCK & LEVEL DIAGRAM





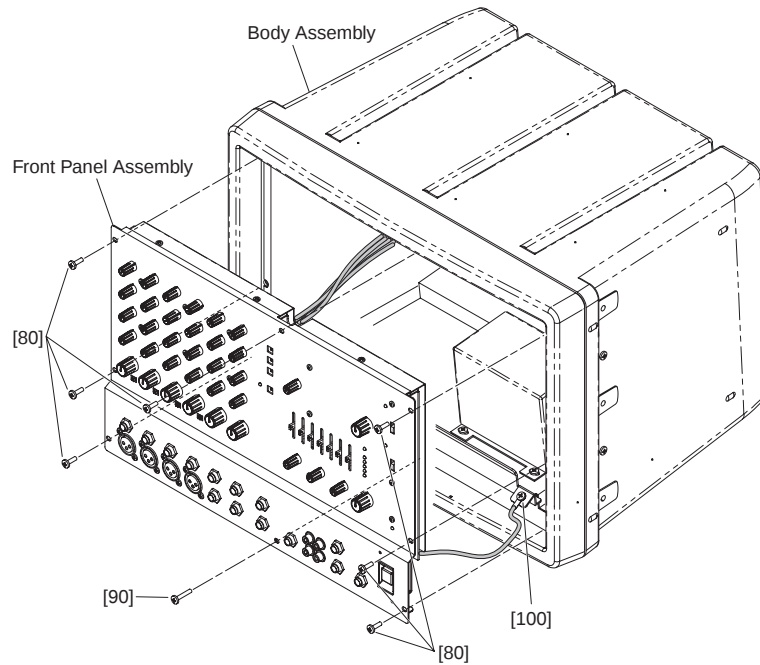
38CA1-8822112

■ DISASSEMBLY PROCEDURE

1. Front Panel Assembly

(Time required: about 3 min)

- 1-1. Remove the seven (7) screws marked [80] and the screw marked [90]. (Fig.1)
- 1-2. Hold volume knobs and pull the panel to the front. (Fig.1)
- 1-3. Remove the screw marked [100]. The front panel assembly can then be removed. (Fig.1)



(Fig. 1)

[80]: Bind Head Screw 4.0X12 MFZN2BL (VB132700)

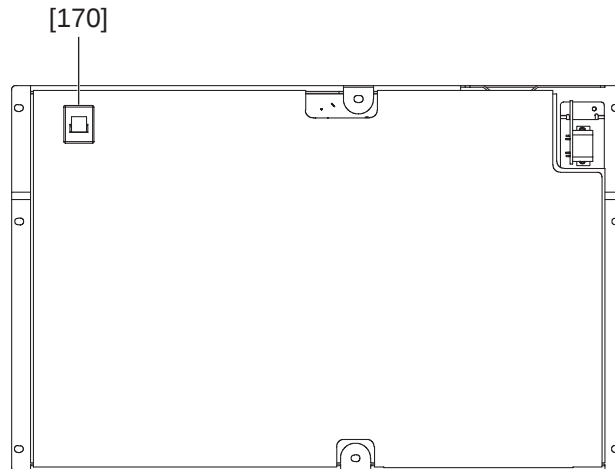
[90]: Bind Head Screw 4.0X20 MFZN2BL (VB403600)

[100]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)

2. MIX62 Circuit Board 1/2

(Time required: about 16 min)

- 2-1. Remove the front panel assembly. (See Procedure 1)
- 2-2. Remove the cable from the cord binder marked [170]. (Fig.2)

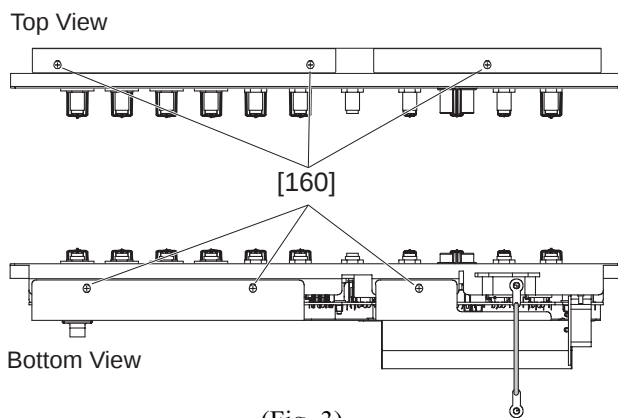


(Fig. 2)

[170]: Cord Binder TS-0708 KSS (VZ765100)

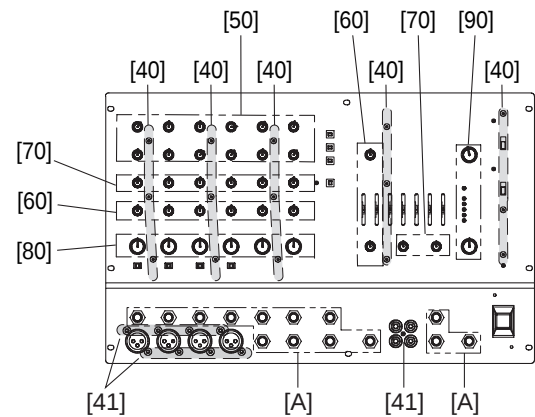
- 2-3. Remove the six (6) screws marked [160] to remove the shield plate. (Fig.3)
- 2-4. Remove the fifteen (15) screws marked [40], the nine (9) screws marked [41], and the fourteen (14) hexagonal nuts marked [A]. (Fig.4)
- 2-5. Remove the twelve (12) knobs marked [50], eight (8) knobs marked [60], the eight (8) knobs marked [70], and the eight (8) knobs marked [80].
The mix62 circuit board 1/2 can then be removed. (Fig.4)

Note: When placing the front panel assembly on the table, take care not to weight the MIX62 circuit board 2/2. (Fig.5)



(Fig. 3)

[160] Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)



(Fig. 4)

[40]: Screw 3X25 MFZNBL (V3289800)

[41]: Bonding Tapping Screw-B 3.0X8 MFZN2BL (VN413300)

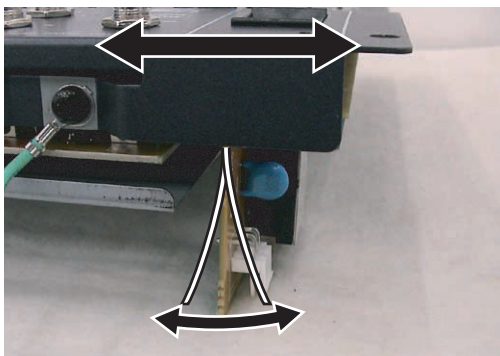
[50]: Knob GREEN/M-GRAY (V6225300)

[60]: Knob L-GRAY/M-GRAY (V6225600)

[70]: Knob BLUE/M-GRAY (V6225400)

[80]: Knob L-GRAY/D-GRAY (V6225700)

[90]: Bind Head Screw 3.0X8 MFZN2BL (VB659000)

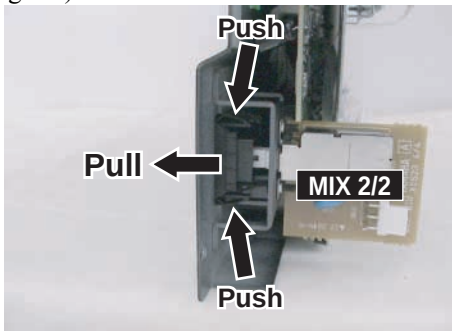


(Fig. 5)

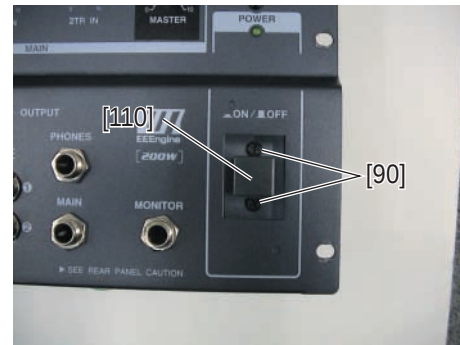
3. MIX62 Circuit Board 2/2

(Time required: about 4 min)

- 3-1. Remove the front panel assembly. (See Procedure 1)
- 3-2. Pinch slightly the stopper of the power switch escutcheon with a plyer, and pull it to the front to remove. (Fig.6-1)
- 3-3. Remove the two (2) screws marked [90]. (Fig.6-2)
- 3-4. Remove the power switch knob marked [110]. The MIX62 circuit board 2/2 can then be removed. (Fig.6-2)



(Fig. 6-1)



(Fig. 6-2)

[90]: Bind Head Screw 3.0X8 MFZN2BL (VB659000)

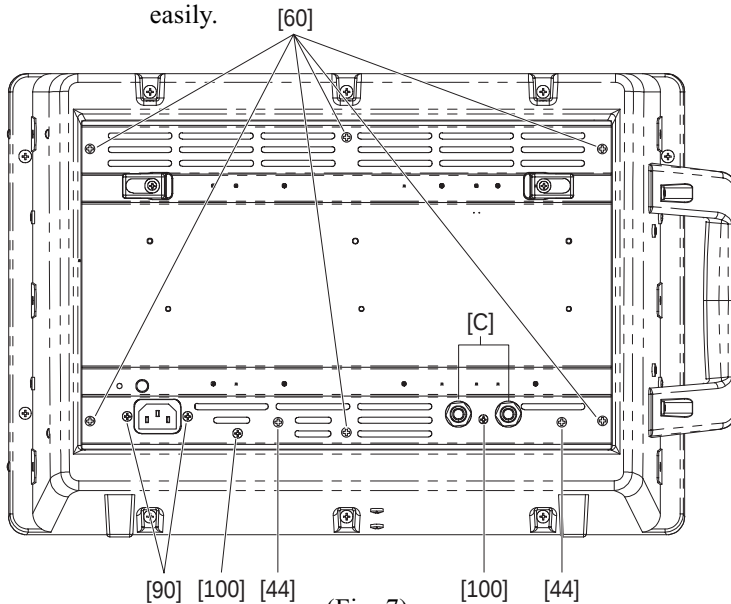
[110]: Power Switch Knob MX12/4 (VU859000)

4. Rear Panel Assembly

(Time required: about 5 min)

- 4-1. Remove the front panel assembly. (See Procedure 1)
- 4-2. Remove the six (6) screws marked [60] and the two (2) screws marked [44]. (Fig.7)
- 4-3. Hold the cord holder and pull the rear panel to the front to remove. (Fig.8)

Note: When reinstalling, install the rear panel assembly and the front panel assembly in that order to connect the power supply connector easily.



(Fig. 7)



(Fig. 8)

[44]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

[60]: Bind Head Screw 4.0X12 MFZN2BL (VB132700)

[90]: Bind Head Tapping Screw-B 3.0X12 MFZN2BL (VQ074600)

[100]: Bonding Head Tapping Screw-B 3.0X8 MFZN2BL (VN413300)

5. PWR Circuit Board 2/3

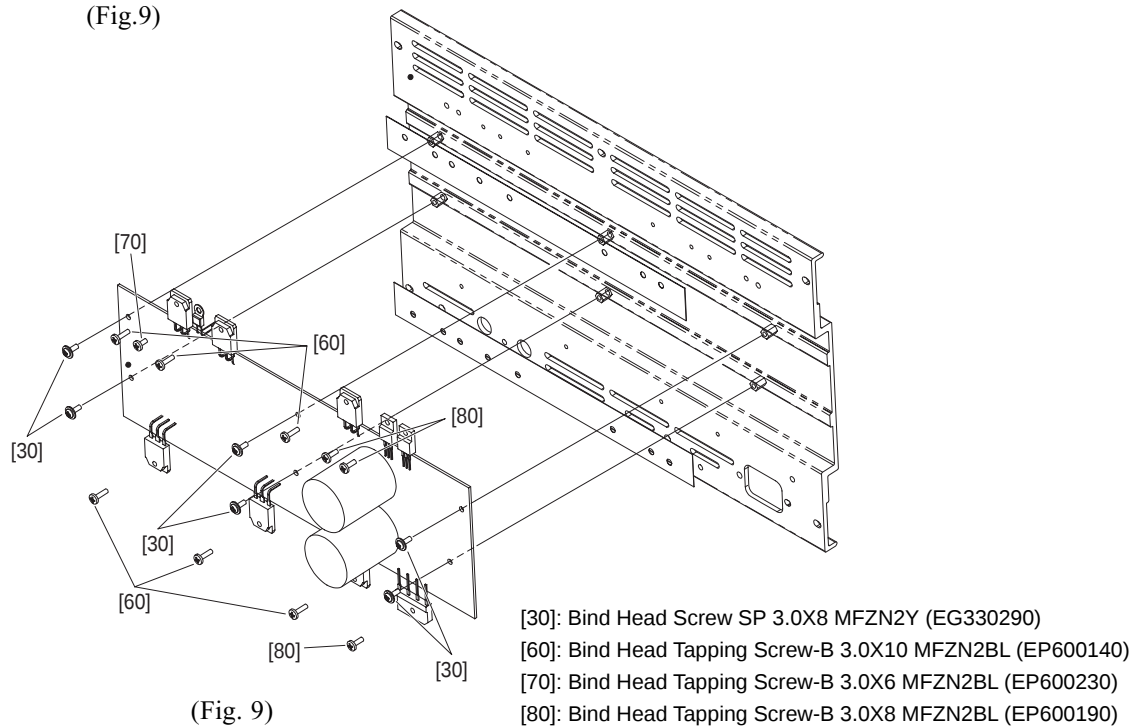
(Time required: about 7 min)

- 5-1. Remove the rear panel assembly. (See Procedure 4)
- 5-2. Remove the screw marked [100] and the two (2) hexagonal nuts marked [C]. The PWR circuit board 2/3 can then be removed. (Fig.7)

6. PWR Circuit Board 1/3

(Time required: about 9 min)

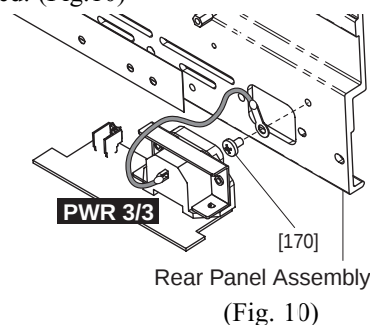
- 6-1. Remove the rear panel assembly. (See Procedure 4)
- 6-2. Remove the PWR circuit board 2/3. (See Procedure 5)
- 6-3. Remove the six (6) screws marked [30], the six (6) screws marked [60], the screw marked [70] and the three (3) screws marked [80].
The PWR circuit board 1/3 can then be removed. (Fig.9)



7. PWR Circuit Board 3/3

(Time required: about 6 min)

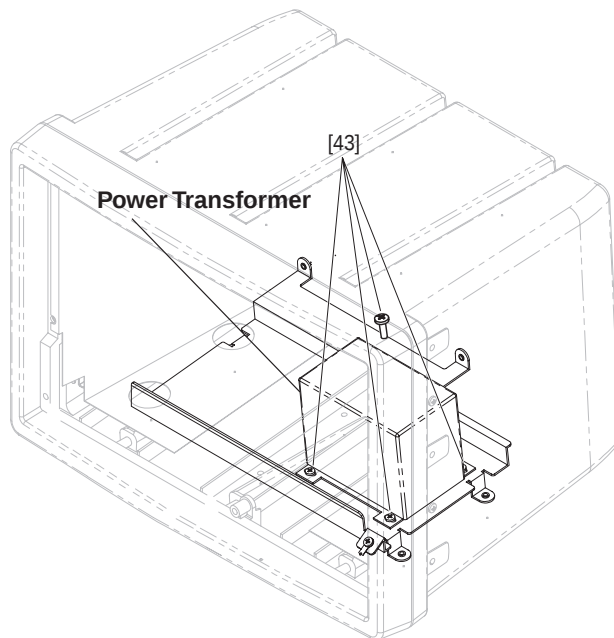
- 7-1. Remove the rear panel assembly. (See Procedure 4)
- 7-2. Remove the two (2) screws marked [90] and the screw marked [100]. (Fig.7)
- 7-3. Remove the screw marked [170]. The PWR circuit board 3/3 can then be removed. (Fig.10)



[170]: Bind Head Screw A4.0X6 MFZN2BL (EG340290)

8. Power Transformer (Time required: about 6 min)

- 8-1. Remove the rear panel assembly. (See Procedure 4)
- 8-2. Remove the four (4) screws marked [43]. The power transformer can then be removed. (Fig.11)



(Fig. 11)

[43]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

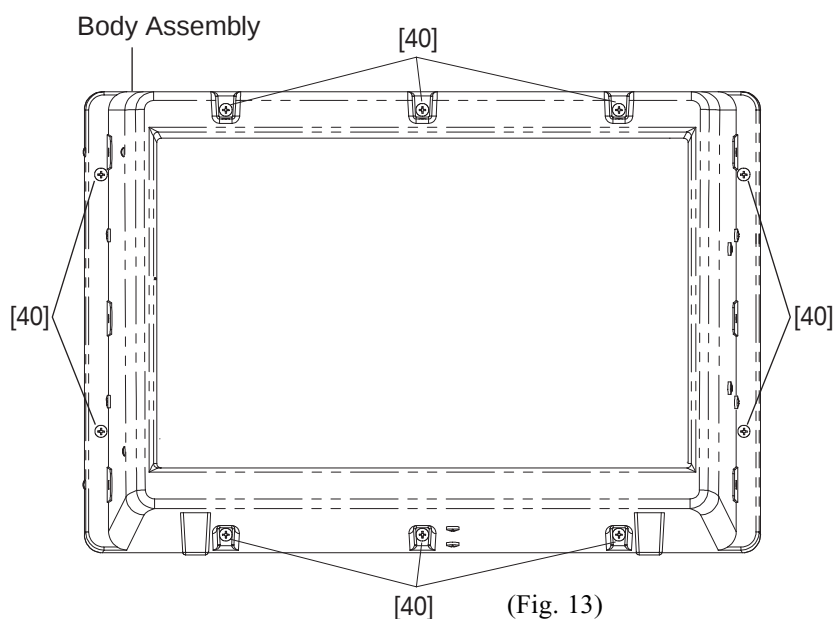
9. Front Frame (Time required: about 6 min)

- 9-1. Remove the front panel assembly. (See Procedure 1)
- 9-2. Remove the four (4) screws marked [50] to remove the handle assembly. (Fig.12)
- 9-3. Remove the ten (10) screws marked [40]. The front frame can then be removed. (Fig.13)



(Fig. 12)

[50]: Bind Head Screw 4.0X16 MFZN2BL (EG340110)



(Fig. 13)

[40]: Bind Head Tapping Screw-P 4.0X30 MFZN2BL (V8322700)

LSI PIN DESCRIPTION

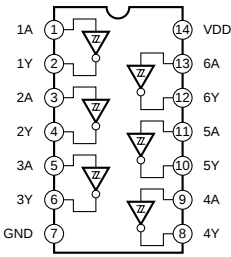
● YSS234 (XN299A00) Digital Sound Processor

MIX62: IC507

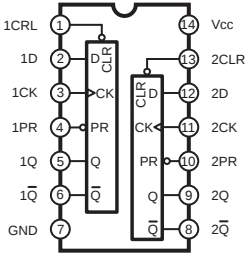
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	MD4	I/O	External RAM interface data	33	AVDD	-	DC A+5Vs bus
2	MD3	I/O		34	VDD	-	DC D+5V
3	MD0	I/O		35	TST0	-	DC D+5V
4	MD1	I/O		36	TST1	-	DC D+5V
5	MD2	I/O		37	DOEN	-	DC D+5V
6	MCKO	O	Master clock output	38	SDO1	O	N.C.
7	XO	O	Crystal oscillator connection	39	SDO0	O	N.C.
8	XI	I	Crystal oscillator connection	40	WC	O	N.C.
9	ER0	I	Early refraction preset select	41	BCO	O	N.C.
10	ER1	I		42	MA0	O	External RAM interface address
11	ER2	I		43	MA1	O	
12	REV0	I	Effect select	44	MA2	O	
13	REV1	I		45	MA3	O	
14	REV2	I		46	MA4	O	
15	MUTEN	I	DC D+5V	47	MA5	O	External RAM interface address
16	ICN	I	Initial clear	48	MA6	O	
17	PRG	I	DC D+5V	49	MA7	O	
18	MODE	I	Preset mode (H=DC +5V)	50	MA12	O	
19	VSS	-	Ground	51	MA14	O	
20	AVSS	-	Ground	52	VSS	-	Ground
21	CVA	-	N.C.	53	MA10	O	External RAM interface address
22	AORL	O	N.C.	54	MA011	O	
23	AORR	O	N.C.	55	MA09	O	
24	CHL	I	Sample hold capacitor connection	56	MA8	O	
25	AIL	I	Lch ADC input	57	MA13	O	
26	VDD	-	DC D+5V	58	VDD	-	DC D+5V
27	AIR	I	Rch ADC input	59	WEN	I	Write enable
28	CHR	I	Sample hold capacitor connection	60	OEN	I	Output enable
29	AOFL	O	Lch DAC output	61	CEN	I	Chip select
30	AOFR	O	Rch DAC output	62	MD7	I/O	External RAM interface data
31	AVDD	-	DC A+5V	63	MD6	I/O	
32	CVB	I	Rch midpoint voltage	64	MD5	I/O	

IC BLOCK DIAGRAM

● **74HC14DT** (X2166A00)
Hex Inverter
MIX62: IC504

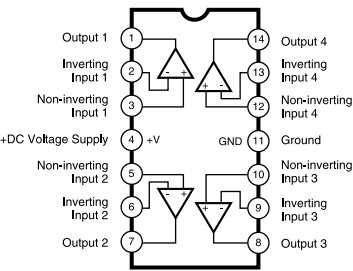


● **74HC74DT** (X2167A00)
Dual D-Type Flip-Flop
MIX62: IC505

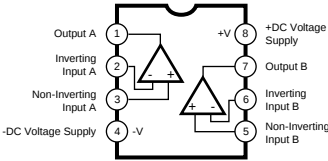


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q̄
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	X	Q _o	Q̄ _o

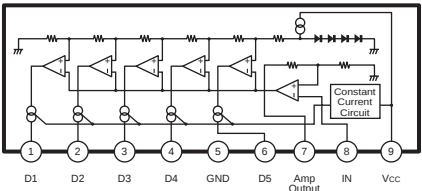
● **NJM2060M (TE2) OP** (XM560A00)
Quad Operational Amplifier
MIX62: IC408, IC409



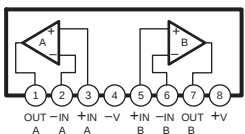
● **NJM2068MD-T1** (XJ553A00)
● **NJM4558MT-1** (IG103520)
● **TL072CPSR** (XV423A00)
Dual Operational Amplifier
MIX62: IC101, IC102, IC201, IC202
IC301, IC302, IC303, IC401
IC402, IC403, IC404, IC407
IC501, IC502, IC503



● **LB1423N** (XZ348A00)
LED Driver
MIX62: IC406



● **NJM4558L-D** (XQ212A00)
OP AMP
PWR 1/3: IC101



■ **CIRCUIT BOARDS**

■ **CONTENTS**

MIX62 1/2 CIRCUIT BOARD (COMPONENT SIDE) 22

MIX62 1/2 CIRCUIT BOARD (PATTERN SIDE) 24

PWR 1/3 CIRCUIT BOARD (COMPONENT SIDE) 26

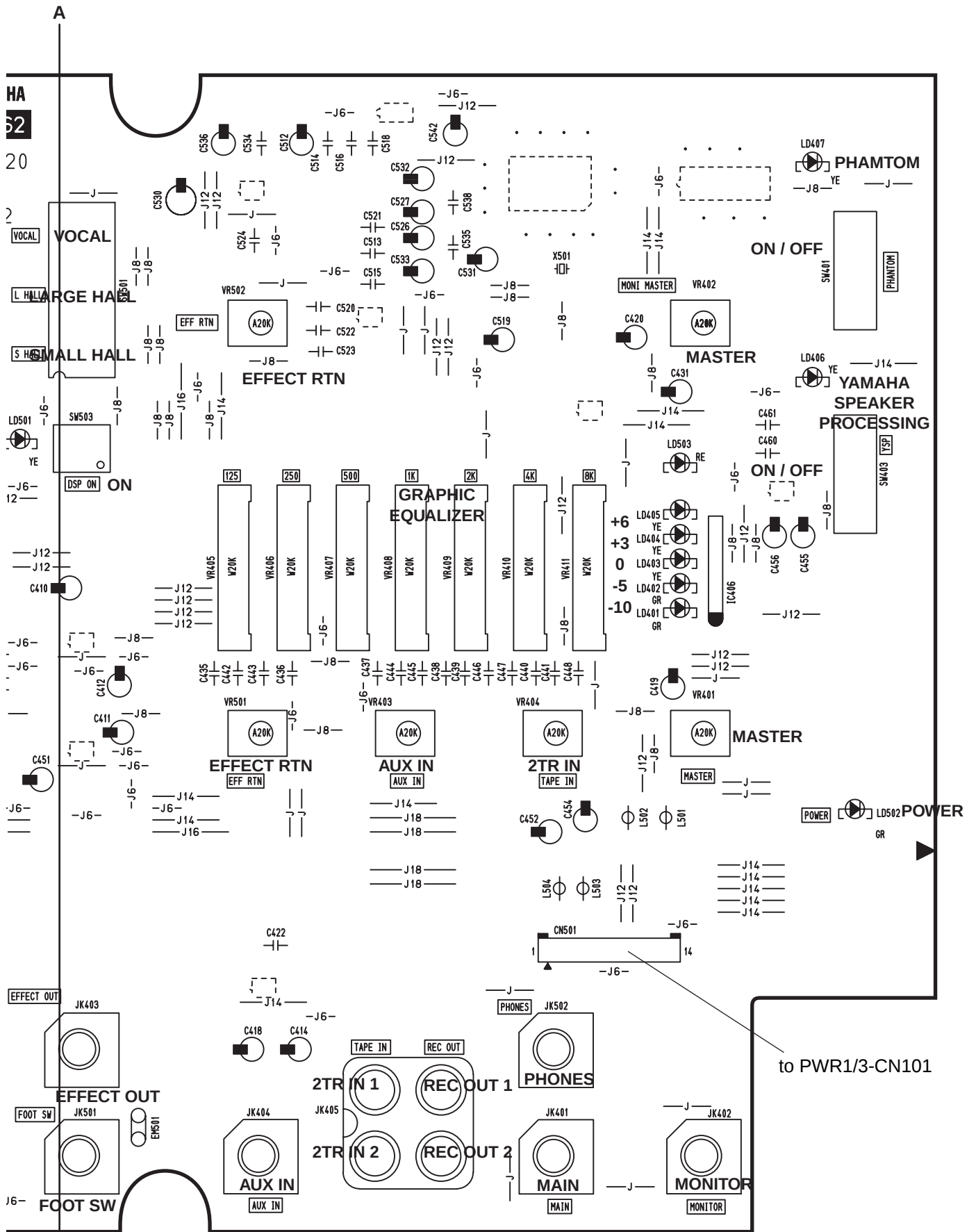
PWR 2/3 CIRCUIT BOARD (COMPONENT SIDE) 28

PWR 3/3 CIRCUIT BOARD (COMPONENT SIDE) 28

MIX62 2/2 CIRCUIT BOARD (COMPONENT SIDE) 28

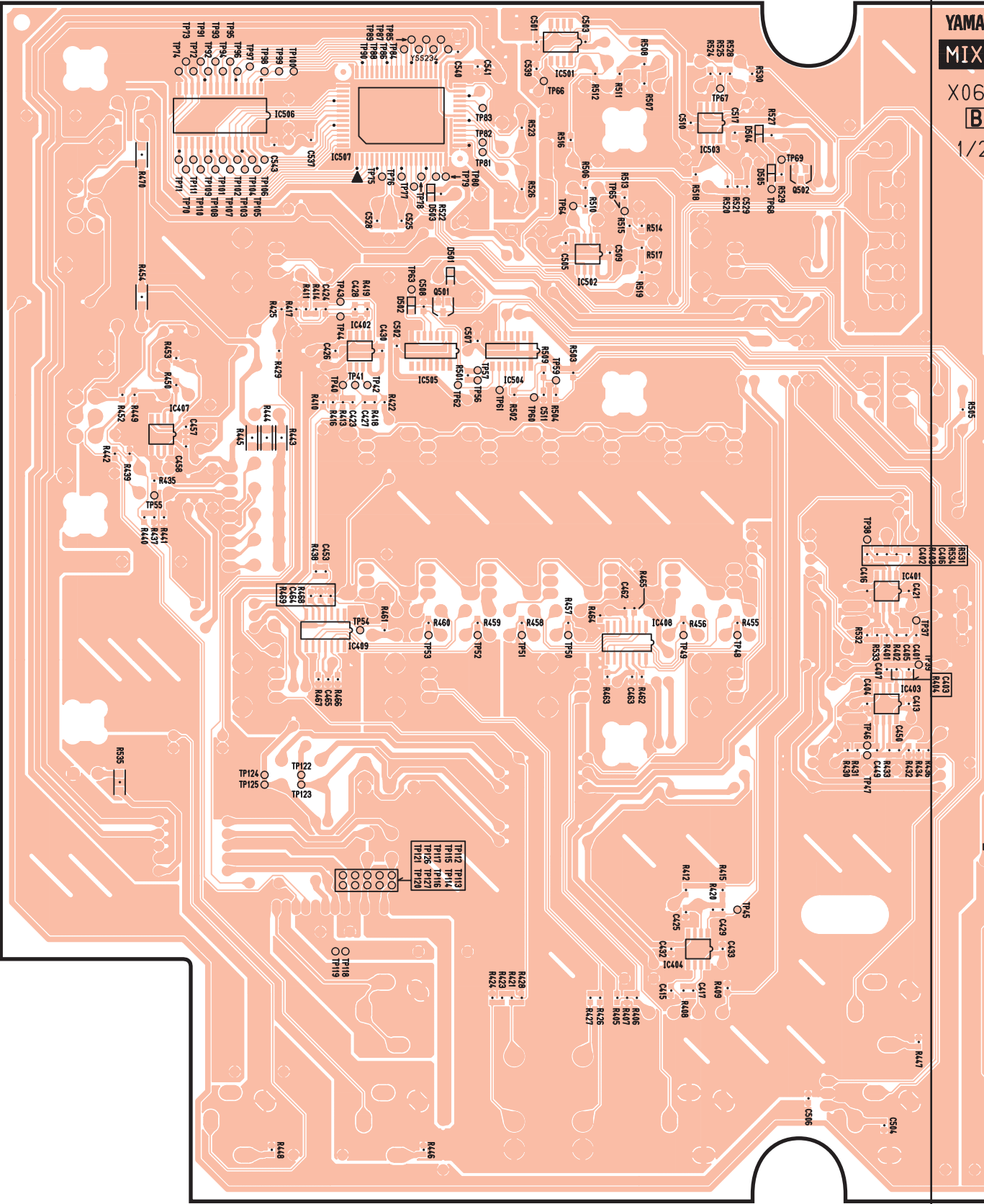
MIX62 2/2 CIRCUIT BOARD (PATTERN SIDE) 28





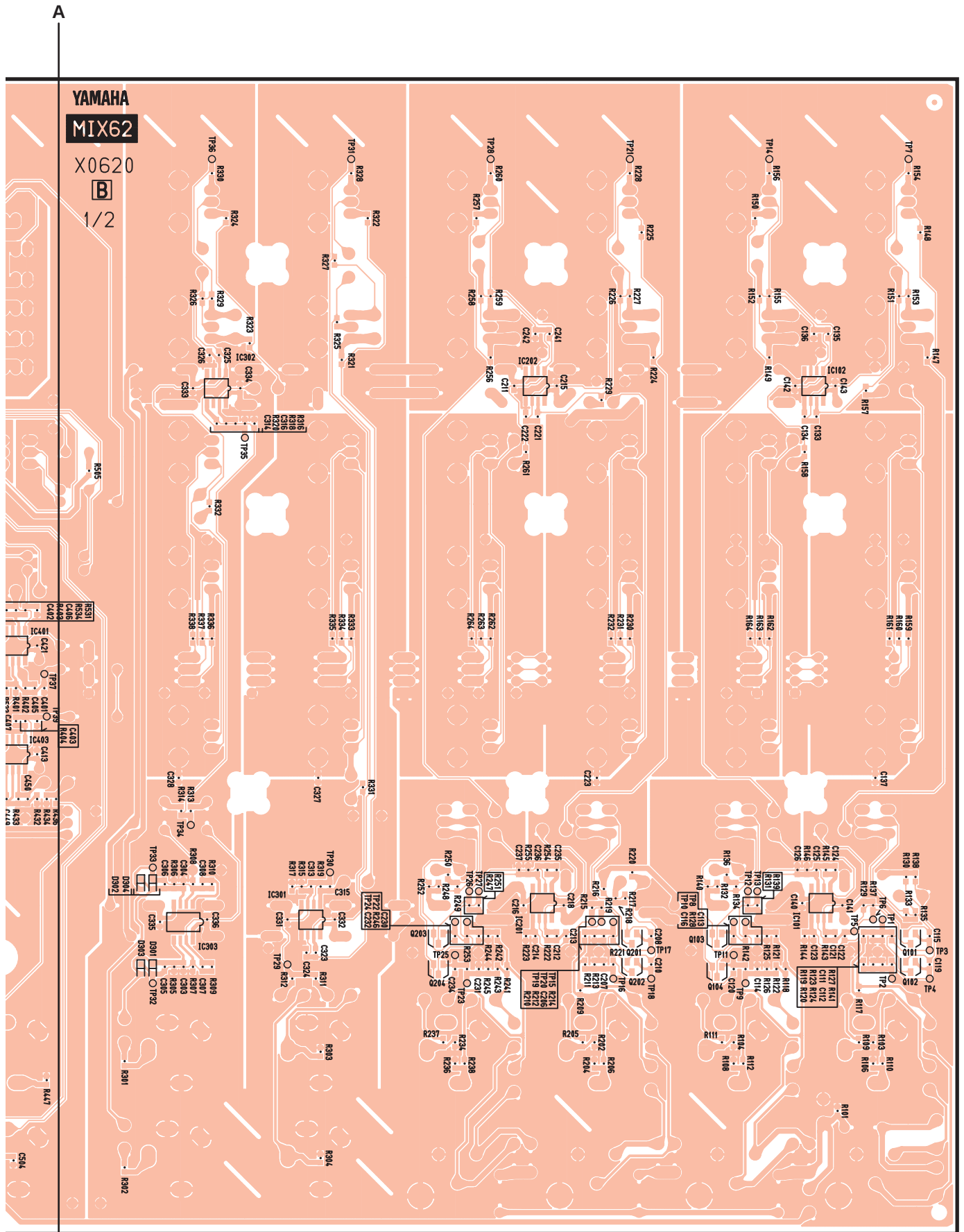
Component side

• MIX62 1/2 Circuit Board

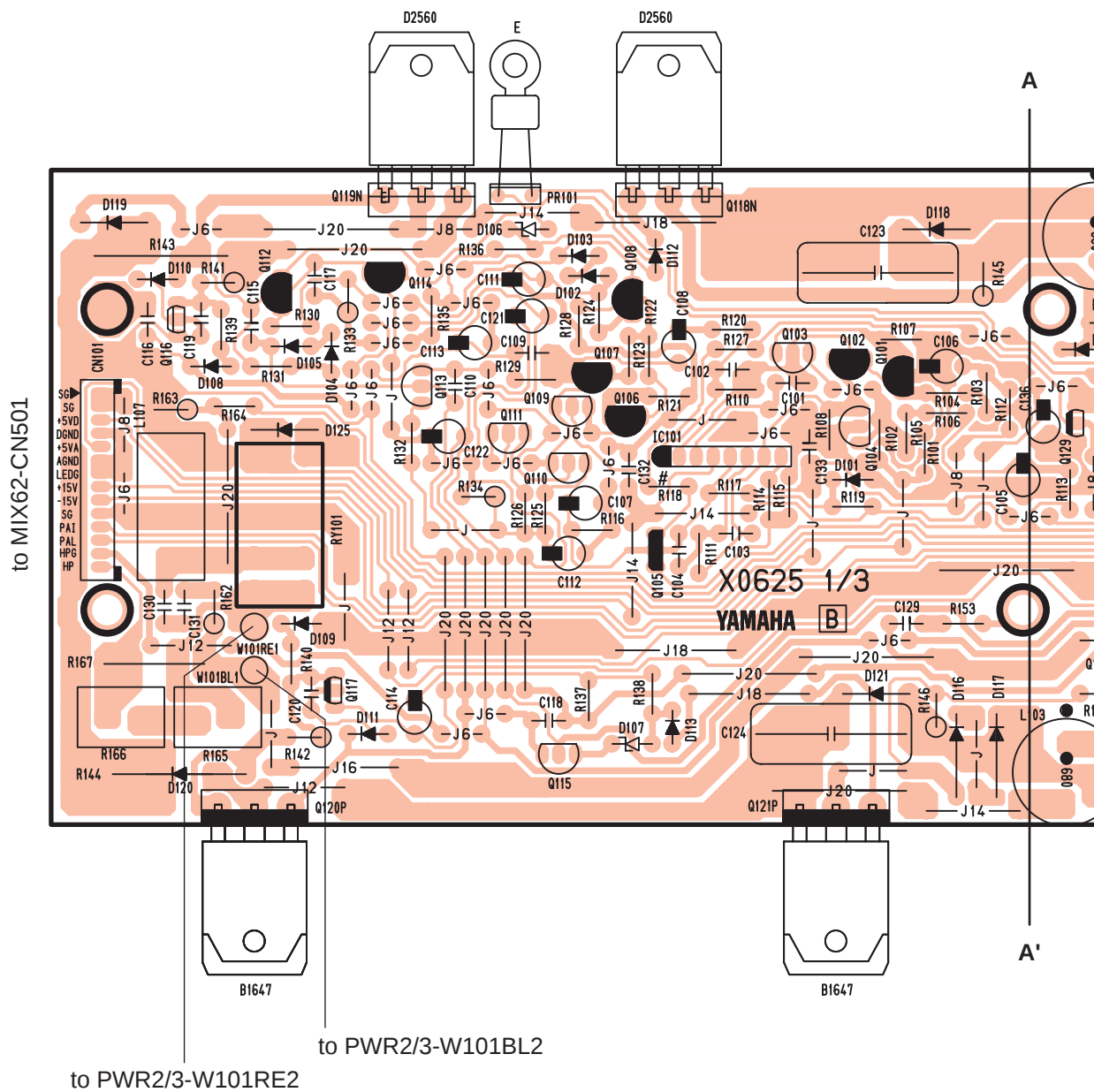


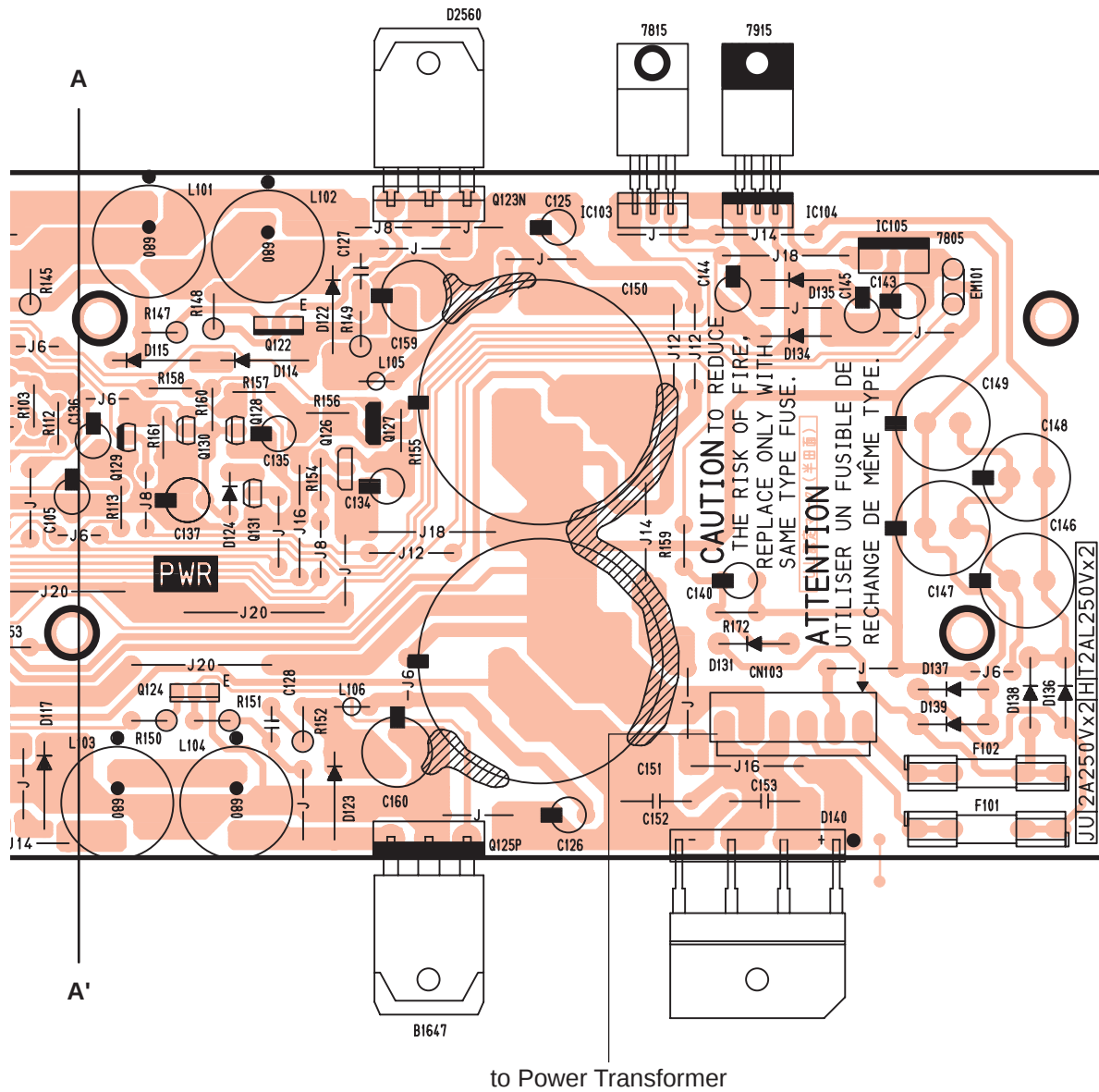
A

A'

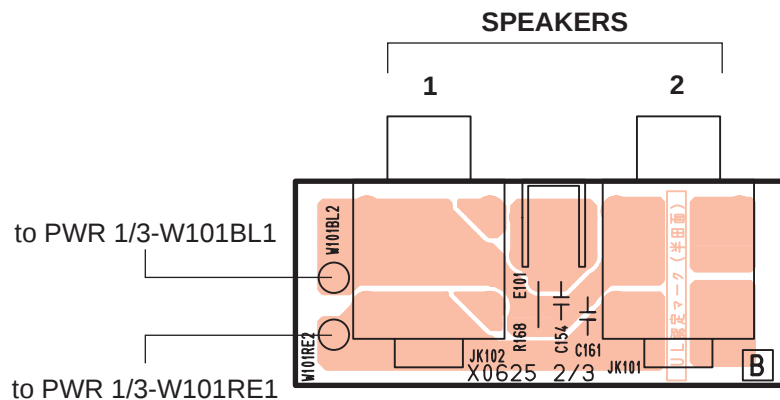


• PWR 1/3 Circuit Board

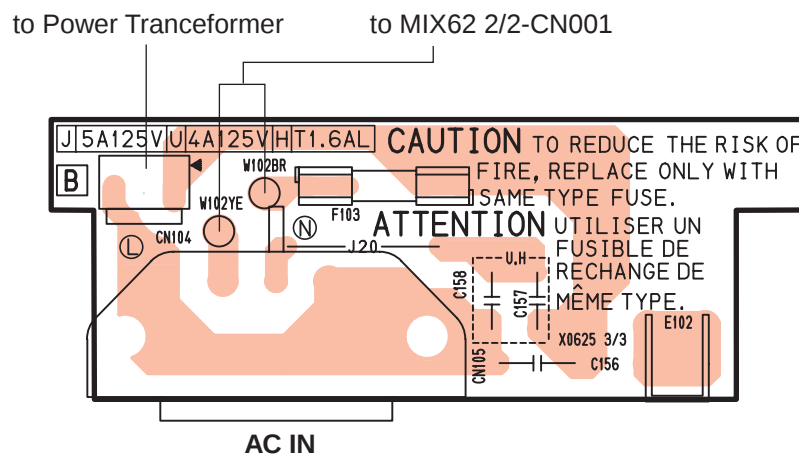




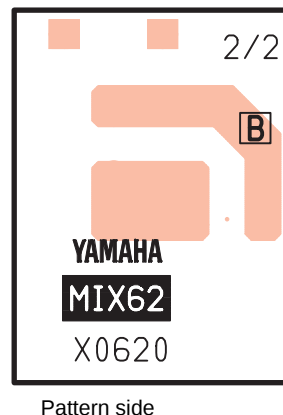
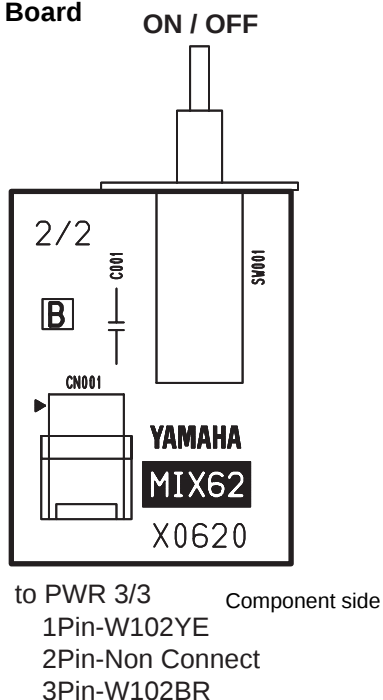
• PWR 2/3 Circuit Board



• PWR 3/3 Circuit Board



• MIX62 2/2 Circuit Board



PWR 2/3: 3NA-V826840

PWR 3/3: 3NA-V826840

PMIX62 2/2: 3NA-V826700

INSPECTIONS

0. PREPARATION

(1) Measuring instruments

- Oscillator (Ballance output type, Output impedance 150Ω)
- Oscilloscope (Input impedance 100kΩ)
- Level meter (Input impedance 100kΩ)
- Distortion Meter

(2) Notes for measuring

- Noise level must be measured by using DIN AUDIO FILTER.
- 0dB is equal to 0.775V.

1. Power Indicator Check

Confirm that the power indicator LED lights up while the power is ON.

2. Mixer Check

2.1 Preparation

- Except otherwise indicated, input signal should be 1kHz sine curve and output impedance of signal source should be 150Ω.
- Connect the load of 10kΩ to MAIN OUT, MONITOR OUT, EFFECT OUT and REC OUT terminal and connect the load of 40Ω to PHONES OUT.
- Set each control as follows.

CH INPUT 1-4

EQ (HIGH, LOW) level control:	CENTER
MONITOR level control:	MAX
EFFECT level control:	MAX
LEVEL control:	MAX
PAD switch:	OFF

CH INPUT 5-6

EQ (HIGH, LOW) level control:	CENTER
MONITOR level control:	MAX
EFFECT level control:	MAX
LEVEL control:	MAX

EFFECT

DIGITAL EFFECT ON switch:	OFF
---------------------------	-----

MAIN

GRAPHIC EQUALIZER (7 band) fader:	CENTER
EFFECT RTN level control:	MAX
AUX IN level control:	MAX
2TR IN level control:	MAX
MASTER (MAIN) level control:	MAX

MONITOR

EFFECT RTN level control:	MAX
MASTER (MAIN) level control:	MAX

PHANTOM switch:	OFF
-----------------	-----

YAMAHA SPEAKER PROCESSING switch:	OFF
-----------------------------------	-----

2.2 Gain Check

On condition of 2.1, confirm that the output level of each terminal meets the table 2.2-1.

Table 2.2-1

[unit: dBs]

INPUT	INPUT LEVEL	MAIN OUT	MONITOR OUT	EFFECT OUT	REC OUT	PHONES OUT
Low-Z	-62	+4±2	+4±2	+4±2	-13.8±2	+3.4±2
	-32 (PAD ON)					
Hi-Z	-52	+4±2	-	-	-	-
LINE	-22	+4±2	-	-	-	-
Super Hi-Z	-42	+4±2	-	-	-	-
AUX	-22	+4±2	-	-	-	-
2TR	-22	+4±2	-	-	-	-

2.3 Frequency Characteristic Check

At each terminal of the Table 2.2-1, confirm that the output level for 20Hz, 20kHz signal are within +1, -3dB from the level for 1kHz signal.

2.4 EQ Response Characteristic Check

On condition of 2.1, set the LOW, HIGH controls according to the table 2.4-1, and measure the output level of MAIN OUT and MONITOR OUT.

Then confirm that output level variations from center click position meet the table 2.4-1.

When output level does not meet the table, change the input frequency until the output level meets the table.

If the frequency variation is within ±20% of the rated value, the result can be regarded as OK.

Table 2.4-1

[unit: dB]

EQ	VR Setting	INPUT FREQUENCY	RANGE OF VARIATION
HIGH	MAX	10kHz	+12±2
	MIN		-12±2
LOW	MAX	100Hz	+12±2
	MIN		-12±2

2.5 GEQ Response Characteristic Check

On condition of 2.1, set the GEQ faders to MIN or MAX, and measure the output levels of MAIN OUT and MONITOR OUT.

Then confirm that output level variations from center click position meet the table 2.5-1.

When the output level does not meet the table, change the input frequency until the output level meets the table.

If the frequency variation is within ±20% from the rated value, the result can be regarded as OK.

Table 2.5-1

[unit: dB]

		125	250	500	1k	2k	4k	8k
INPUT FREQUENCY		125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
Variations	(for fader MAX)	+12±2						
	(for fader MIN)	-12±2						

2.6 LED Meter Check

When the output level of MAIN OUT and MONITOR OUT meets the Table 2.6-1, confirm that the corresponding LED meter starts to light up.

Table 2.6-1

[unit: dBs]

LED	+6	+3	0	-5	-10
OUTPUT LEVEL	+10±2	+7±2	+4±2	-1±2	-6±2.5

2.7 Distortion Rate Check

On condition of 2.1, set the INPUT and MASTER volume for each terminal to nominal position.

Then, confirm that the distortion rate is within 0.3% when the output level is +14dBs. (except REC OUT and PHONES OUT)

2.8 Maximum Output Level Check

At MAIN OUT, MONITOR OUT, EFFECT OUT terminals on condition of 2.7, confirm that the output level of +20dBs can be gained with the distortion rate less than 1%.

2.9 EIN Check

Note: This measurement should be performed by using DIN AUDIO FILTER.

On condition of 2.1, set the LEVEL control for measuring channel to maximum and set the LEVEL control for other channels to minimum.

Connect the 150Ω load between the Low-Z and the MIC of input channel, and confirm that the noise level of MAIN OUT is less than -58dB.

However, less than -56dB as for CH6.

If noise level is more than the rated value, find the noise level converted from the input level for each channel.

Then confirm that the noise level is less than -124dB as for CH1-5, and less than -122dB as for CH6.

2.10 Remaining Noise Check

On condition of 2.1, set the LEVEL control of all input channels to minimum.

Set the MASTER control of MAIN and MONITOR to maximum or minimum, and measure the noise level of MAIN OUT, MONITOR OUT, and EFFECT OUT.

Then, confirm that the noise levels are less than the values shown in the table 2.10-1.

Table 2.10-1

[unit: dBs]

MASTER VR	MAIN OUTPUT(L,R)	MONITOR OUTPUT	EFFECT OUT
MAX	-71	-71	-73
MIN	-88	-88	-

2.11 PHANTOM Check

Connect the 2.7kΩ load between the pin1 and pin2 of Low-Z or MIC, and short-circuit the pin2 and pin3 of them.

Then, confirm that the load voltage is 10±1.5V when the PHANTOM switch is ON.

2.12 DIGITAL EFFECT Check

- Confirm that the ON LED lights up when DIGITAL EFFECT switch is ON, and that the LED goes out when the switch is OFF.
- Apply the music source (vocal etc), and confirm the effect aurally.
- Turn on the DIGITAL EFFECT ON switch, and confirm that sound effect can be switched on or off by using a foot switch.

2.13 Stability Check

Note: This measurement should be performed with a load resistance connected to power amplifier output. (See 3.1)

- At each input terminal, connect 10pF~0.1μF capacitor in parallel to the load resistance, and confirm that the system works normally without oscillation etc.
- Set all VR and EQ faders to maximum, and confirm that the system works normally. (Especially, does not oscillate when the EQ HIGH is set to maximum)

3. Power Amplifier Check

3.1 Preparation

- INPUT terminal: CH 5 LINE 1
- OUTPUT terminal: SPEAKERS 1
- Load Resistance: 4Ω (more than 200W)
Except otherwise indicated, the load resistance should be connected only for the power amplifier check.
- Set the LEVEL control of CH1-4, 6 to minimum.
- Except the above, same as the setting of 2.1.

3.2 Power ON Mute Check

Turn on the power and confirm that the mute system is released and the relay is switched on after 2.5 ± 1 seconds.

3.3 Output Terminal D.C. Voltage Check

Ground input terminal and confirm that the D.C. voltage of output terminal is $0 \pm 100\text{mV}$.

3.4 Gain Check

- Apply -26dBs signal into the input terminal and confirm that the output level of $20.0 \pm 2.0\text{dBs}$ can be gained.
- Confirm that the same output level can be gained at SPEAKERS 2 output.

3.5 Frequency Response Check

- YAMAHA SPEAKERS PROCESSING Switch OFF
Apply -26dBs signal into input terminal, and confirm that the output level for 20Hz, 20kHz signal are within +1, -3dB from the level for 1kHz signal.
- YAMAHA SPEAKERS PROCESSING Switch ON
Apply 70Hz / -26dB signal into input terminal, and confirm that the output level is within $6.5 \pm 2\text{dB}$ from the level for 1kHz input with YAMAHA SPEAKERS PROCESSING switch OFF.
Besides, confirm that the LED lights up when YAMAHA SPEAKERS PROCESSING switch is ON and that LED goes out when the switch is OFF.

3.6 Harmonic Distortion Rate Check

Note: This measurement should be finished in 30 seconds.

- Apply 1kHz signal into input terminal, and confirm that output level of $200\text{W}/4\Omega$ (31.2dBs) can be gained with harmonic distortion rate less than 0.5%.
- Apply 20Hz, 1kHz and 20kHz signal into input terminal, and confirm that output level of $100\text{W}/4\Omega$ (28.2dBs) can be gained with harmonic distortion rate less than 0.5%.

3.7 Remaining Noise Check

Set the MASTER (MAIN) to minimum, and confirm that the noise level of output terminal is less than -68dBs.

Note: Take care not to be affected by inductive noise.

This measurement should be performed by using DIN AUDIO FILTER.

3.8 Stability Check

- (1) Connect 10pF~0.47μF capacitor in parallel to the 4Ω load resistance and apply rectangle signal of 10kHz/-26dBs.

Then, confirm that overshoot and ringing are as follows.

Overshoot: $V_p/V_o \leq 1.8$

Ringing: within 5 waves

- (2) Connect 10μH~0.47H inductor in series to the 4Ω load resistance and apply rectangle signal of 10kHz/-26dBs.

Then, confirm that overshoot and ringing meet the same condition as (1).

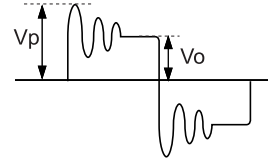
- (3) Remove the 4Ω load resistance and connect only 10pF~0.47μF capacitor as load, and apply rectangle signal of 10kHz/-26dBs.

Then confirm that the system does not oscillate.

Besides, confirm that overshoot and ringing are as follows.

Overshoot: $V_p/V_o \leq 2.5$

Ringing: within 7 waves



3.9 Protection Circuit Check

- Apply 10Hz signal until output level is saturated, and confirm that the protection circuit works and the relay does not open.
- Apply 1Hz, $V_{p-p} = 6V$ (8.7dBs) signal, and confirm that the protection circuit starts to work in 2 seconds to cut off the signal.
- Stop applying the input signal, and confirm that the system automatically resumes in 5 seconds.

3.10 PC LIMITER Circuit and LIMITER Circuit Check

Connect 1Ω(±5%, 100W) load and apply -20dBs signal into input terminal.

Mesure the output level and confirm that $V_{p-p} \leq 20V$ and the waveform is not a rectangle.

3.11 LIMITER Indicator Check

Apply 1kHz/-10.8dBs signal, and confirm that LIMITER indicator lights up.

3.12 Efficiency Check

Adjust the input level so that the output level of SPEAKER becomes 10V (22.2dBs).

Then confirm that the primary power is $100 \pm 20W$.

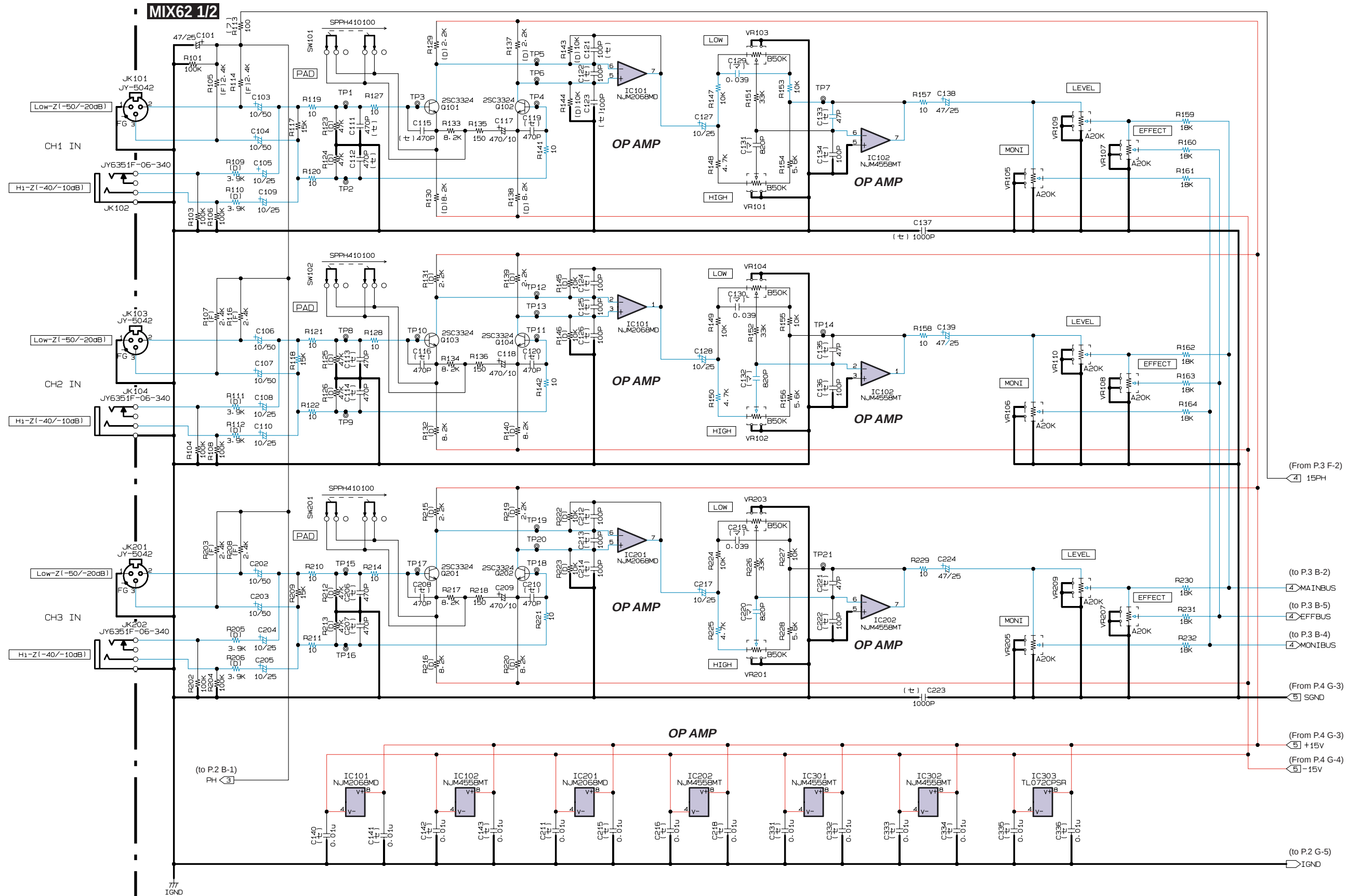
4. Miscellaneous

4.1 Power Supply Voltage Variation

Change the voltage of power supply in the range of $\pm 10\%$, and confirm that the system works normally.

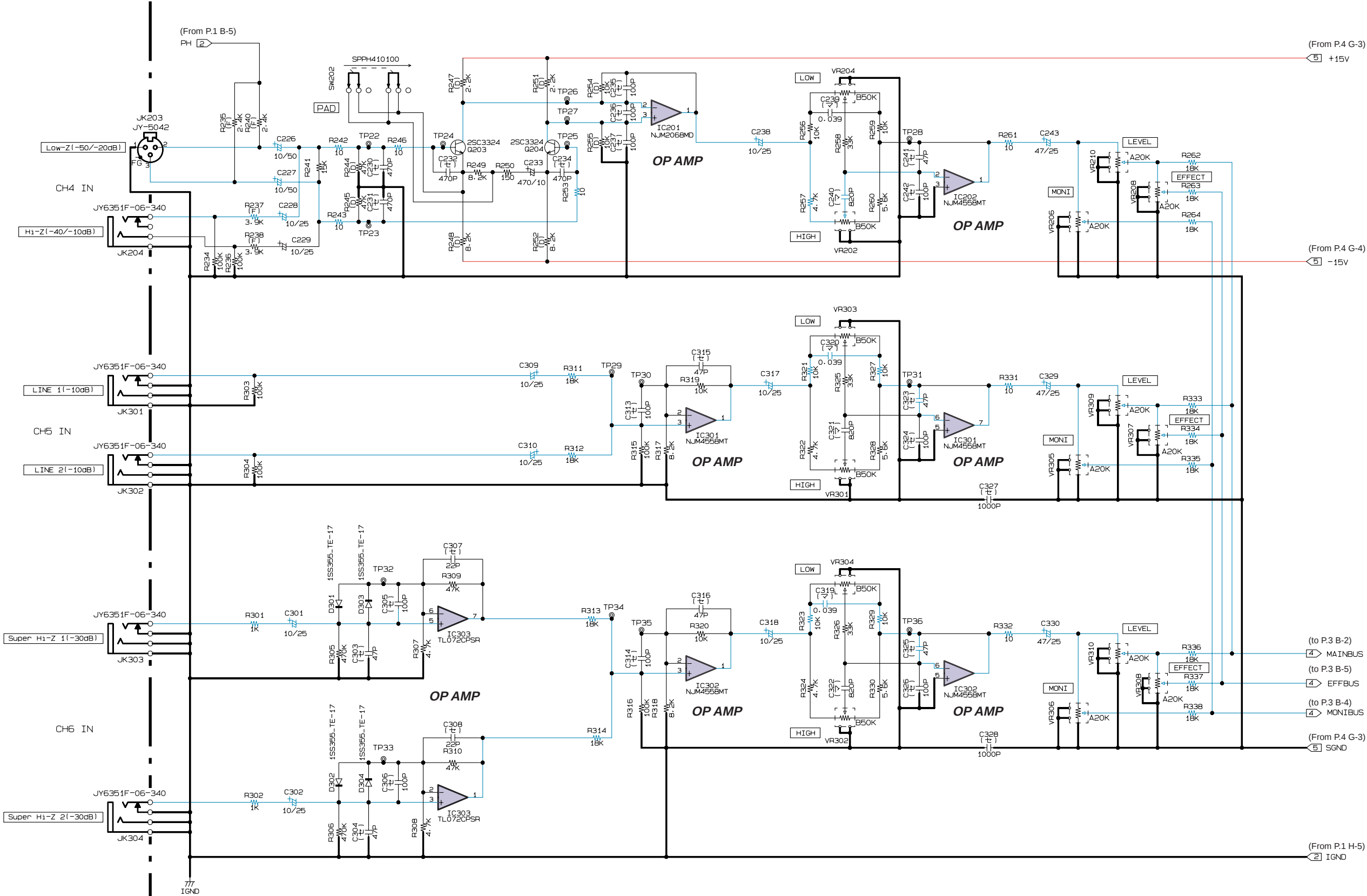
EMX62M

■ EMX62M OVERALL CIRCUIT DIAGRAM 1/5 (MIX62 1/2 (1/4))



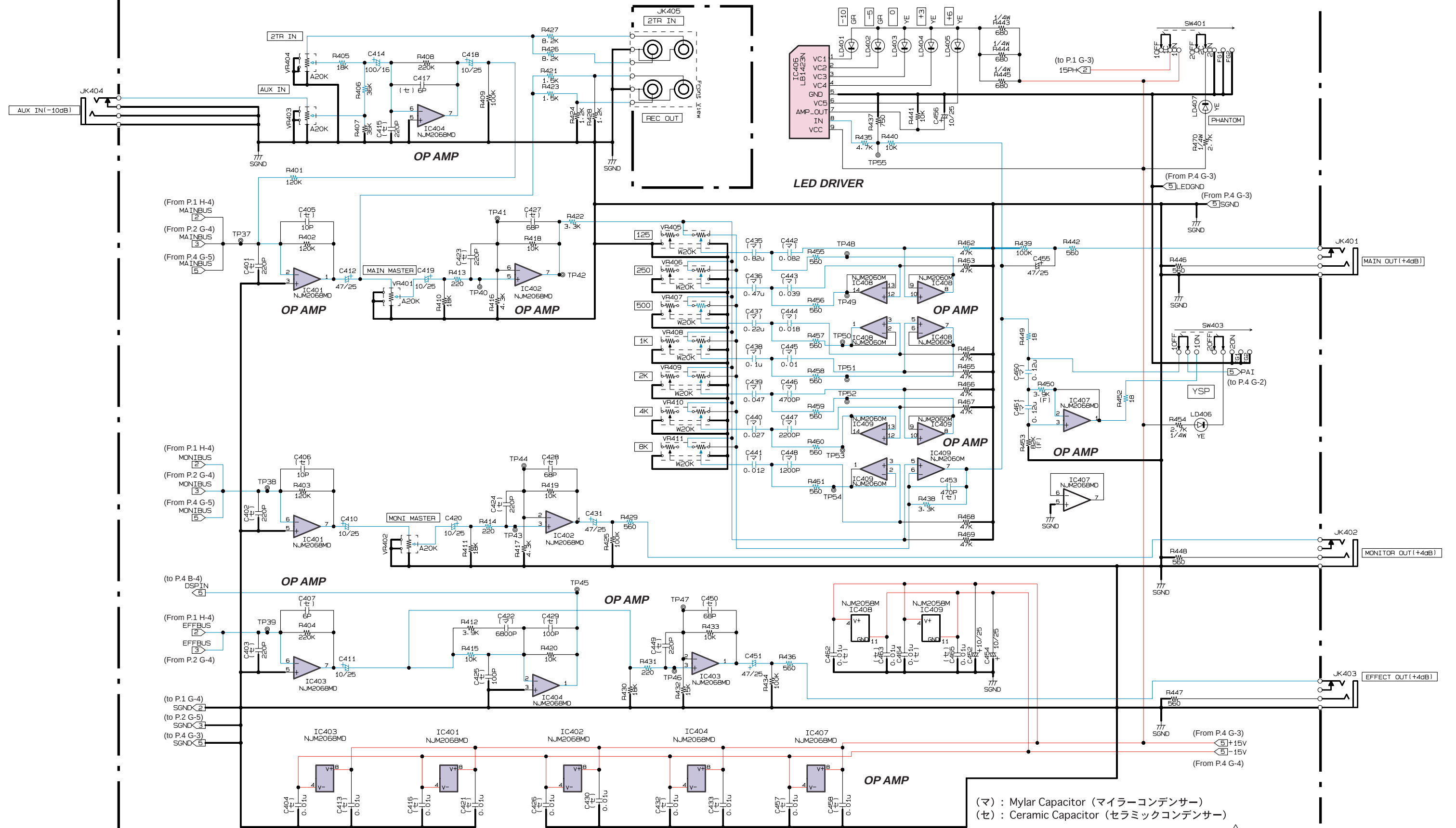
(フ) : Flame Proof Carbon Resistor (不燃化カーボン抵抗)
(マ) : Mylar Capacitor (マイラーコンデンサー)
(セ) : Ceramic Capacitor (セラミックコンデンサー)

EMX62M CIRCUIT DIAGRAM 2/5 (MIX62 1/2 (2/4))



(マ) : Mylar Capacitor (マイラーコンデンサー)
(セ) : Ceramic Capacitor (セラミックコンデンサー)

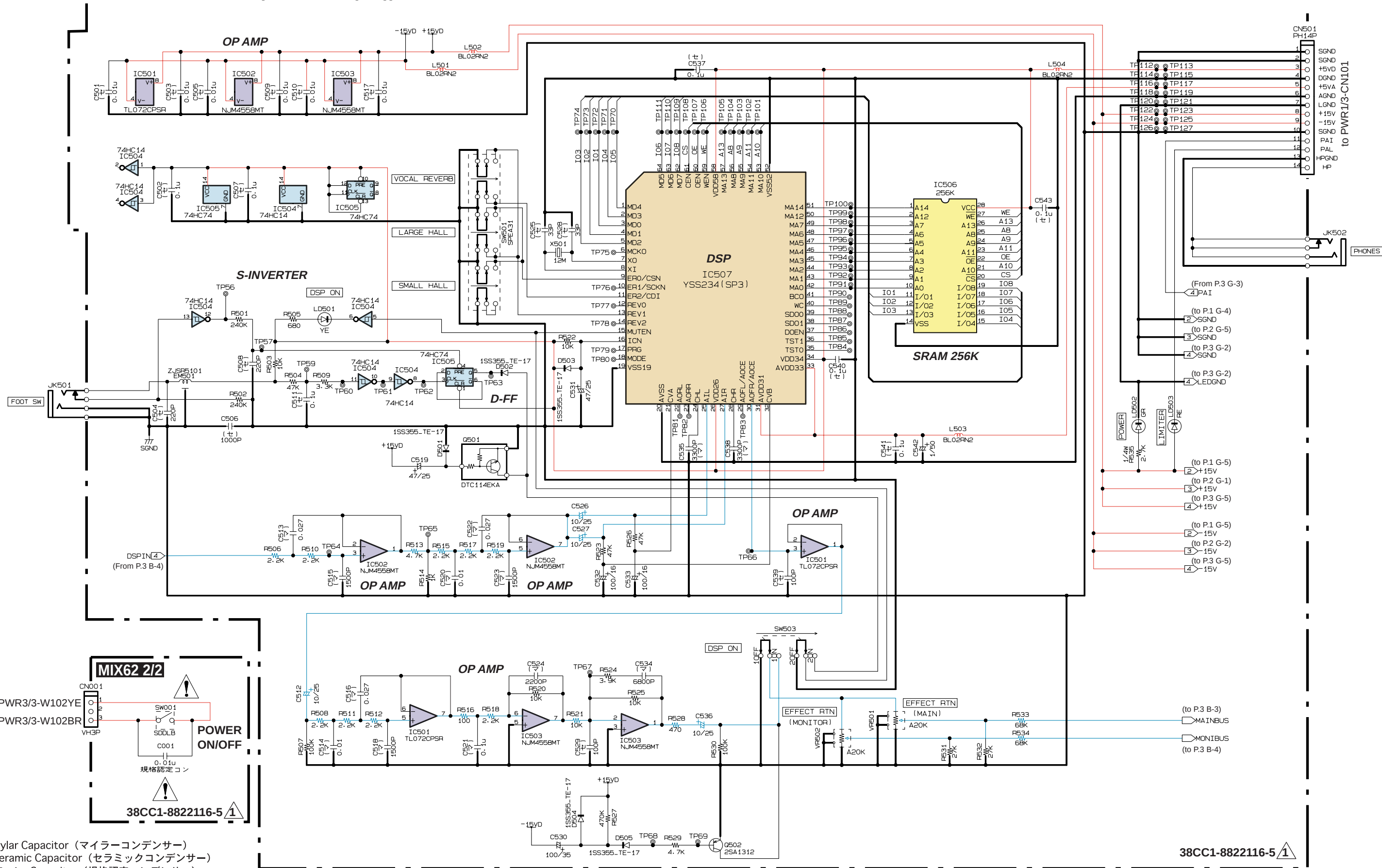
EMX62M
■ EMX62M CIRCUIT DIAGRAM 3/5 (MIX62 1/2 (3/4))



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(セ) : Ceramic Capacitor (セラミックコンデンサー)

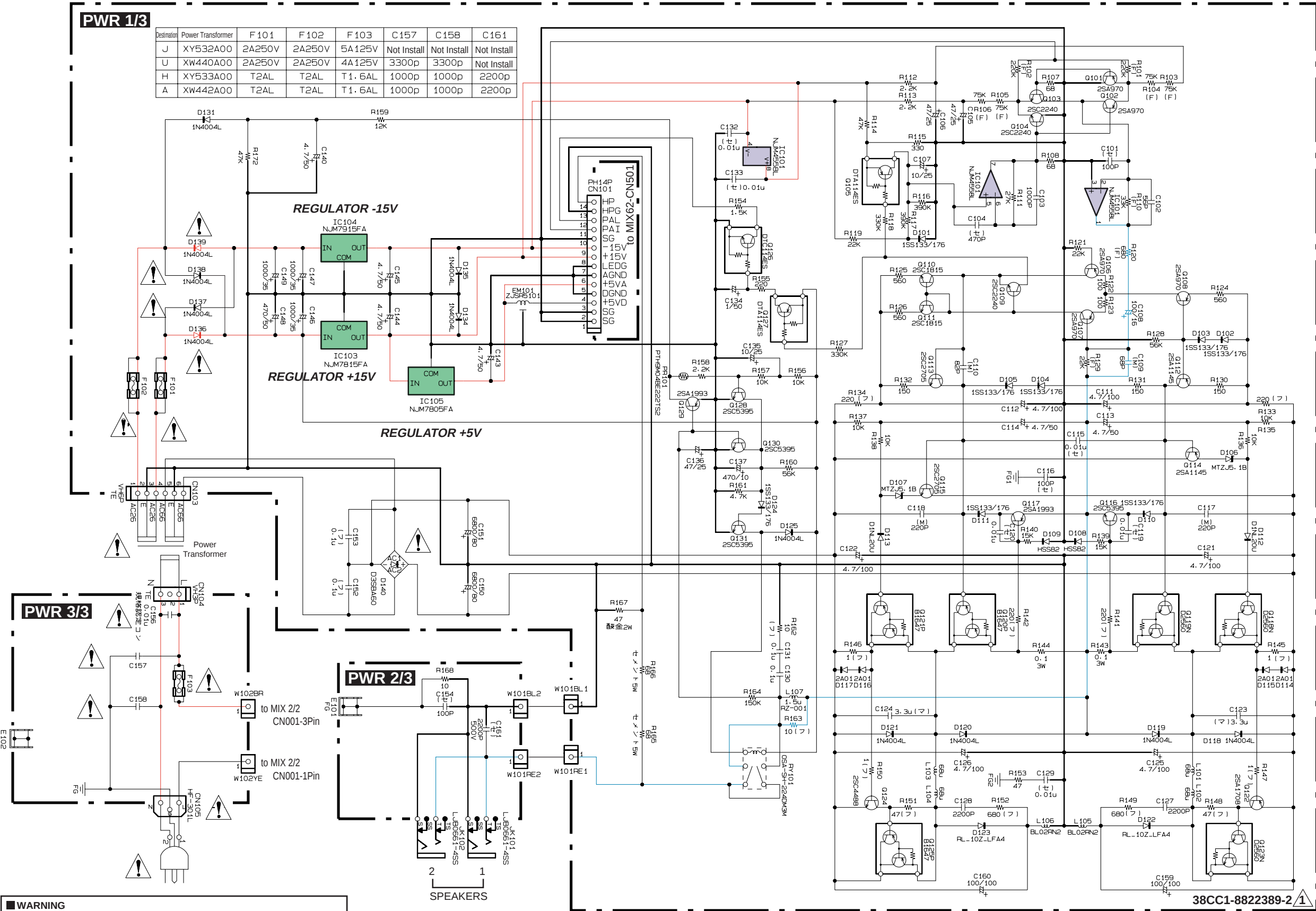
38CC1-8822116-4 1

EMX62M CIRCUIT DIAGRAM 4/5 (MIX62 1/2 (4/4))



(マ) : Mylar Capacitor (マイラーコンデンサー)
 (セ) : Ceramic Capacitor (セラミックコンデンサー)
 規格認定コン: Capacitor (規格認定コンデンサー)

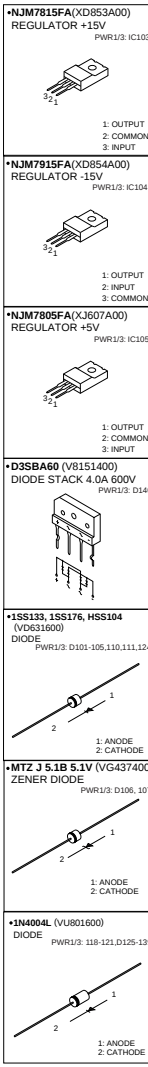
EMX62M
EMX62M CIRCUIT DIAGRAM 5/5 (PWR1/3, PWR2/3, PWR3/3)



・ Resistor (抵抗)
(フ) : Flame Proof Carbon Resistor (不燃化カーボン抵抗)
(セメント) : Wire Wound Resistor (セメント抵抗)
酸金: Metal Oxide Film Resistor (酸化金属被膜抵抗)

・ Capacitor (コンデンサー)
(マ) : Mylar Capacitor (マイラーコンデンサー)
(セ) : Ceramic Capacitor (セラミックコンデンサー)
規格認定コン: Capacitor (規格認定コンデンサー)
(フ) : Polyester Film Capacitor (フィルムコンデンサー)

Note: See parts list for details of circuit board component parts.



PWR3/3: 38CC1-8822389-2 $\triangle$
PWR2/3: 38CC1-8822389-2 $\triangle$

EMX 62M

POWERED MIXER

PARTS LIST

RACK MOUNT KIT

RK-88

■ CONTENTS

OVERALL ASSEMBLY	2
FRONT PANEL ASSEMBLY	4
REAR PANEL ASSEMBLY	6
ELECTRICAL PARTS	8
RK-88 RACK MOUNT KIT	20

Note) DESTINATION ABBREVIATIONS

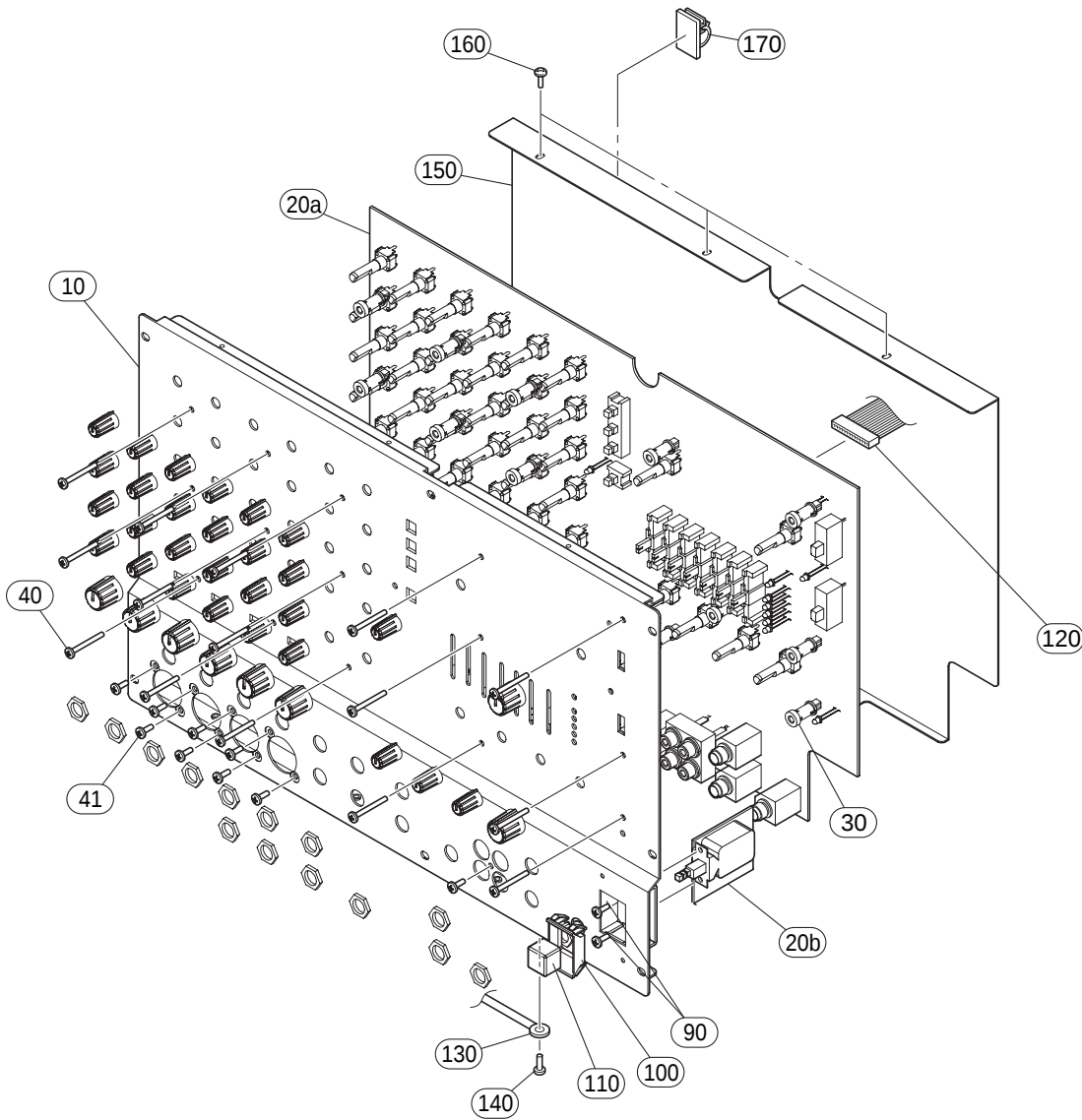
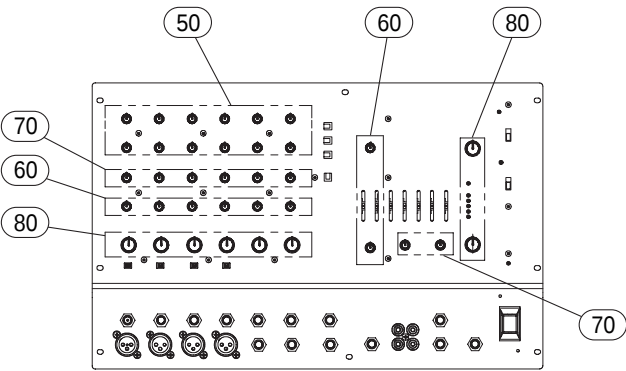
A: Australian model	M: South African model
B: British model	O: Chinese model
C: Canadian model	Q: South-east Asia model
D: German model	T: Taiwan model
E: European model	U: U.S.A. model
F: French model	V: General export model (110V)
H: North European model	W: General export model (220V)
I: Indonesian model	N,X: General export model
J: Japanese model	Y: Export model

■ WARNING

Components having special characteristics are marked $\triangle$ and must be replaced with parts having specifications equal to those originally installed.

- The numbers in " QTY " show quantities for each unit.
- The parts with " - - " in " PART NO. " are not available as spare parts.
- The mark " } " in the remarks column indicates that these parts are interchangeable.
- The second letter of the shaded () part number is O, not zero.
- The second letter of the shaded () part number is I, not one.

FRONT PANEL ASSEMBLY

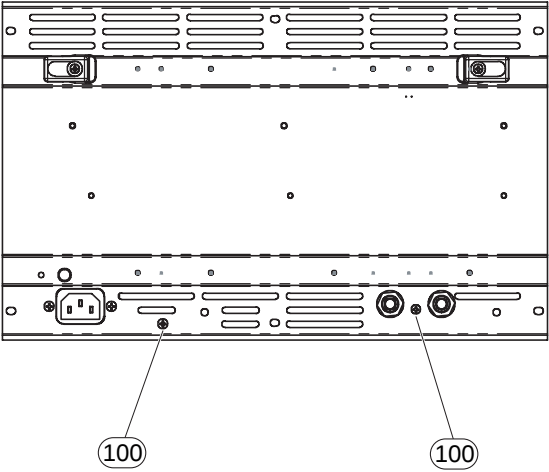
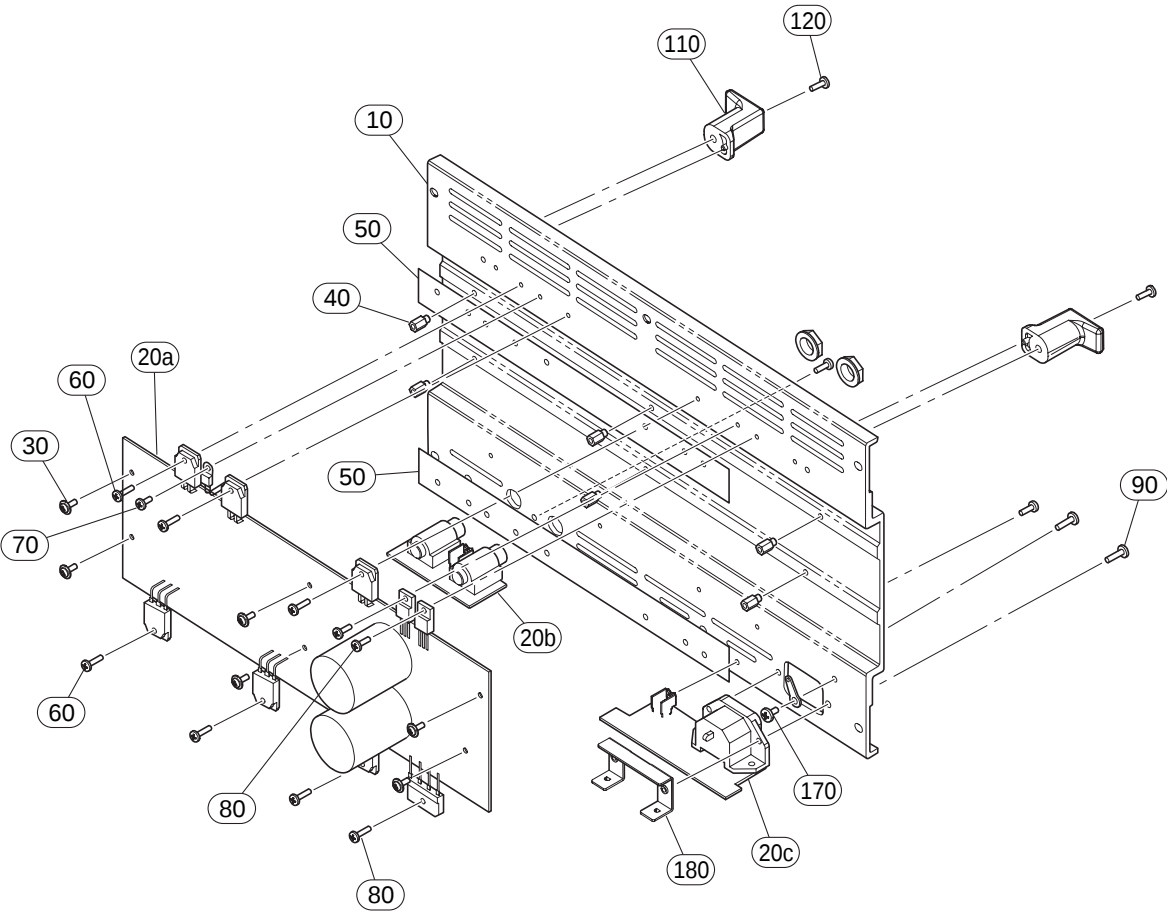


[illegible]

*: New Parts

RANK: Japan only

REAR PANEL ASSEMBLY



[illegible]

*: New Parts

RANK: Japan only

ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		ELECTRICAL PARTS				
*	AAX33320	Circuit Board	MIX62 1/2	(V826700)(X0620B0)		
*	AAX33330	Circuit Board	MIX62 2/2	(V826700)(X0620B0)		
*	AAX32940	Circuit Board	PWR B62 1/3	J, U (V826840)(X0625B0)		
*	AAX32950	Circuit Board	PWR B62 1/3	H, A (V826860)(X0625B0)		
*	AAX32960	Circuit Board	PWR B62 2/3	J, U (V826840)(X0625B0)		
*	AAX32970	Circuit Board	PWR B62 2/3	H, A (V826860)(X0625B0)		
*	AAX32990	Circuit Board	PWR B62 3/3	J (V826840)(X0625B0)		
*	AAX33000	Circuit Board	PWR B62 3/3	U (V826850)(X0625B0)		
*	AAX33010	Circuit Board	PWR B62 3/3	H, A (V826860)(X0625B0)		
*	AAX33320	Circuit Board	MIX62 1/2	(V826700)(X0620B0)		
*	AAX33330	Circuit Board	MIX62 2/2	(V826700)(X0620B0)		
*	VU860700	Button	CD-GRAY/WHITE	VOCAL REVERB, LARGE HALL, SMALL HALL, EFFECT ON	4	01
	VV307300	LED Spacer			10	01
	V4467500	Button	CD-GRAY/WHITE	PAD (CH1-4)	4	01
	--	Jumper Wire	0.60	(VV29140)		
	--	Jumper Wire	0.60 TP	(V829020)		
C001	V6113500	Electrolytic Cap.	1000P 400V J.U.C.S			
C101	UR847470	Electrolytic Cap.	47.00 25.0V			01
C103	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C104	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C105	UR847100	Electrolytic Cap.	10.00 25.0V			01
C106	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C107	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C108	UR847100	Electrolytic Cap.	10.00 25.0V			01
-110	UR847100	Electrolytic Cap.	10.00 25.0V			01
C111	UX062470	Ceramic Capacitor (chip)	470P 50V J			
-116	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C117	UR828470	Electrolytic Cap.	470.00 10.0V			01
C118	UR828470	Electrolytic Cap.	470.00 10.0V			01
C119	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C120	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C121	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
-126	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C127	UR847100	Electrolytic Cap.	10.00 25.0V			01
C128	UR847100	Electrolytic Cap.	10.00 25.0V			01
C129	UA954390	Mylar Capacitor	0.0390 50V J			01
C130	UA954390	Mylar Capacitor	0.0390 50V J			01
C131	VV190000	Mylar Capacitor	820P 50V J			01
C132	VV190000	Mylar Capacitor	820P 50V J			01
C133	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C134	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C135	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C136	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C137	UX063100	Ceramic Capacitor (chip)	1000P 50V K			01
C138	UR847470	Electrolytic Cap.	47.00 25.0V			01
C139	UR847470	Electrolytic Cap.	47.00 25.0V			01
C140	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
-143	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C202	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C203	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C204	UR847100	Electrolytic Cap.	10.00 25.0V			01
C205	UR847100	Electrolytic Cap.	10.00 25.0V			01
C206	UX062470	Ceramic Capacitor (chip)	470P 50V J			
-208	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C209	UR828470	Electrolytic Cap.	470.00 10.0V			01
C210	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C211	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C212	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
-214	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C215	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C216	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C217	UR847100	Electrolytic Cap.	10.00 25.0V			01
C218	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C219	UA954390	Mylar Capacitor	0.0390 50V J			01
C220	VV190000	Mylar Capacitor	820P 50V J			01
C221	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C222	UX062100	Ceramic Capacitor (chip)	100P 50V J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C223	UX063100	Ceramic Capacitor (chip)	1000P 50V K			01
C224	UR847470	Electrolytic Cap.	47.00 25.0V			01
C226	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C227	VV488800	Electrolytic Cap. LLM	10.00 50.0V			01
C228	UR847100	Electrolytic Cap.	10.00 25.0V			01
C229	UR847100	Electrolytic Cap.	10.00 25.0V			01
C230	UX062470	Ceramic Capacitor (chip)	470P 50V J			
-232	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C233	UR828470	Electrolytic Cap.	470.00 10.0V			01
C234	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C235	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
-237	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C238	UR847100	Electrolytic Cap.	10.00 25.0V			01
C239	UA954390	Mylar Capacitor	0.0390 50V J			01
C240	VV190000	Mylar Capacitor	820P 50V J			01
C241	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C242	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C243	UR847470	Electrolytic Cap.	47.00 25.0V			01
C301	UR847100	Electrolytic Cap.	10.00 25.0V			01
C302	UR847100	Electrolytic Cap.	10.00 25.0V			01
C303	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C304	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C305	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C306	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C307	UX061220	Ceramic Capacitor (chip)	22P 50V J			01
C308	UX061220	Ceramic Capacitor (chip)	22P 50V J			01
C309	UR847100	Electrolytic Cap.	10.00 25.0V			01
C310	UR847100	Electrolytic Cap.	10.00 25.0V			01
C313	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C314	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C315	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C316	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C317	UR847100	Electrolytic Cap.	10.00 25.0V			01
C318	UR847100	Electrolytic Cap.	10.00 25.0V			01
C319	UA954390	Mylar Capacitor	0.0390 50V J			01
C320	UA954390	Mylar Capacitor	0.0390 50V J			01
C321	VV190000	Mylar Capacitor	820P 50V J			01
C322	VV190000	Mylar Capacitor	820P 50V J			01
C323	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C324	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C325	UX061470	Ceramic Capacitor (chip)	47P 50V J			
C326	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C327	UX063100	Ceramic Capacitor (chip)	1000P 50V K			01
C328	UX063100	Ceramic Capacitor (chip)	1000P 50V K			01
C329	UR847470	Electrolytic Cap.	47.00 25.0V			01
C330	UR847470	Electrolytic Cap.	47.00 25.0V			01
C331	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
-336	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C401	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
-403	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C404	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C405	UX061100	Ceramic Capacitor (chip)	10P 50V D			01
C406	UX061100	Ceramic Capacitor (chip)	10P 50V D			01
C407	UX060600	Ceramic Capacitor (chip)	6P 50V C			
C410	UR847100	Electrolytic Cap.	10.00 25.0V			01
C411	UR847100	Electrolytic Cap.	10.00 25.0V			01
C412	UR847470	Electrolytic Cap.	47.00 25.0V			01
C413	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C414	UR838100	Electrolytic Cap.	100.00 16.0V			01
C415	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C416	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C417	UX060600	Ceramic Capacitor (chip)	6P 50V C			
C418	UR847100	Electrolytic Cap.	10.00 25.0V			01
-420	UR847100	Electrolytic Cap.	10.00 25.0V			01
C421	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C422	UA953680	Mylar Capacitor	6800P 50V J			01
C423	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C424	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C425	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C426	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C427	UX061680	Ceramic Capacitor (chip)	68P 50V J			01
C428	UX061680	Ceramic Capacitor (chip)	68P 50V J			01
C429	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C430	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C431	UR847470	Electrolytic Cap.	47.00 25.0V			01
C432	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C433	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C435	UA655820	Mylar Capacitor	0.8200 50V J			01
C436	UA655470	Mylar Capacitor	0.4700 50V J			01
C437	UA655220	Mylar Capacitor	0.2200 50V J			01
C438	V5868900	Mylar Capacitor	0.1 50V J			
C439	UA954470	Mylar Capacitor	0.0470 50V J			01
C440	UA954270	Mylar Capacitor	0.0270 50V J			01
C441	UA954120	Mylar Capacitor	0.0120 50V J			
C442	UA954820	Mylar Capacitor	0.0820 50V J			01
C443	UA954390	Mylar Capacitor	0.0390 50V J			01
C444	UA954180	Mylar Capacitor	0.0180 50V J			01
C445	UA954100	Mylar Capacitor	0.0100 50V J			01
C446	UA953470	Mylar Capacitor	4700P 50V J			01
C447	UA953220	Mylar Capacitor	2200P 50V J			01
C448	UA953120	Mylar Capacitor	1200P 50V J			01
C449	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C450	UX061680	Ceramic Capacitor (chip)	68P 50V J			01
C451	UR847470	Electrolytic Cap.	47.00 25.0V			01
C452	UR847100	Electrolytic Cap.	10.00 25.0V			01
C453	UX062470	Ceramic Capacitor (chip)	470P 50V J			
C454	UR847100	Electrolytic Cap.	10.00 25.0V			01
C455	UR847470	Electrolytic Cap.	47.00 25.0V			01
C456	UR847100	Electrolytic Cap.	10.00 25.0V			01
C457	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C458	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C460	UA655120	Mylar Capacitor	0.1200 50V J			01
C461	UA655120	Mylar Capacitor	0.1200 50V J			01
C462	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
-465	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C501	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C502	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C503	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C504	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C505	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C506	UX063100	Ceramic Capacitor (chip)	1000P 50V K			01
C507	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C508	UX062220	Ceramic Capacitor (chip)	220P 50V J			01
C509	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C510	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C511	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C512	UR847100	Electrolytic Cap.	10.00 25.0V			01
C513	UA954270	Mylar Capacitor	0.0270 50V J			01
C514	UA954100	Mylar Capacitor	0.0100 50V J			01
C515	UA953150	Mylar Capacitor	1500P 50V J			01
C516	UA954270	Mylar Capacitor	0.0270 50V J			01
C517	UX064100	Ceramic Capacitor (chip)	0.0100 50V K			01
C518	UA953150	Mylar Capacitor	1500P 50V J			01
C519	UR847470	Electrolytic Cap.	47.00 25.0V			01
C520	UA954100	Mylar Capacitor	0.0100 50V J			01
C521	V5868900	Mylar Capacitor	0.1 50V J			
C522	UA954270	Mylar Capacitor	0.0270 50V J			01
C523	UA953150	Mylar Capacitor	1500P 50V J			01
C524	UA953220	Mylar Capacitor	2200P 50V J			01
C525	UX061330	Ceramic Capacitor (chip)	33P 50V J			
C526	UR847100	Electrolytic Cap.	10.00 25.0V			01
C527	UR847100	Electrolytic Cap.	10.00 25.0V			01
C528	UX061330	Ceramic Capacitor (chip)	33P 50V J			
C529	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C530	UR858100	Electrolytic Cap.	100.00 35.0V			01
C531	UR847470	Electrolytic Cap.	47.00 25.0V			01
C532	UR838100	Electrolytic Cap.	100.00 16.0V			01
C533	UR838100	Electrolytic Cap.	100.00 16.0V			01
C534	UA953680	Mylar Capacitor	6800P 50V J			01
C535	UA953330	Mylar Capacitor	3300P 50V J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C536	UR847100	Electrolytic Cap.	10.00 25.0V			01
C537	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C538	UA953330	Mylar Capacitor	3300P 50V J			01
C539	UX062100	Ceramic Capacitor (chip)	100P 50V J			01
C540	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C541	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
C542	UR866100	Electrolytic Cap.	1.00 50.0V			01
C543	UX145100	Ceramic Capacitor (chip)	0.1000 25V Z			01
CN001	LB933030	Base Post Connector	VH- 3P SE			01
CN501	VV067400	Connector Base Post	M2426XX 14P TE			01
D301	VT332900	Diode	1SS355 TE-17			01
-304	VT332900	Diode	1SS355 TE-17			01
D501	VT332900	Diode	1SS355 TE-17			01
-505	VT332900	Diode	1SS355 TE-17			01
EM501	VV056900	Noise Filter	ZJSR5101-223TA			01
IC101	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC102	IG103520	IC	NJM4558M(T1)	OP AMP		03
IC201	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC202	IG103520	IC	NJM4558M(T1)	OP AMP		03
IC301	IG103520	IC	NJM4558M(T1)	OP AMP		03
IC302	IG103520	IC	NJM4558M(T1)	OP AMP		03
* IC303	XV423A00	IC	TL072CPSR	OP AMP		02
IC401	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
-404	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
IC406	XZ348A00	IC	LB1423N	LED DRIVER		02
IC407	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC408	XM560A00	IC	NJM2060M(T2)OP	OP AMP		02
* IC409	XM560A00	IC	NJM2060M(T2)OP	OP AMP		02
* IC501	XV423A00	IC	TL072CPSR	OP AMP		02
IC502	IG103520	IC	NJM4558M(T1)	OP AMP		03
IC503	XJ553A00	IC	NJM2068MD-T1	OP AMP		02
* IC504	X2166A00	IC	74HC14DT	S-INVERTER		02
* IC505	X2167A00	IC	74HC74DT	DFF		02
IC506	XR115A00	IC	UPD43256BGU-70L	SRAM 256K		08
IC507	XN299A00	IC	YSS234(SP3)	DSP		11
JK101	V6127200	XLM Connector	JY-5042	Low-Z (CH1)		03
JK102	V2886000	Phone Jack	JY-6351J-06-340	Hi-Z (CH1)		02
JK103	V6127200	XLM Connector	JY-5042	Low-Z (CH2)		03
JK104	V2886000	Phone Jack	JY-6351J-06-340	Hi-Z (CH2)		02
JK201	V6127200	XLM Connector	JY-5042	Low-Z (CH3)		03
JK202	V2886000	Phone Jack	JY-6351J-06-340	Hi-Z (CH3)		02
JK203	V6127200	XLM Connector	JY-5042	Low-Z (CH4)		03
JK204	V2886000	Phone Jack	JY-6351J-06-340	Hi-Z (CH4)		02
JK301	V2886000	Phone Jack	JY-6351J-06-340	LINE 1 (CH5)		02
JK302	V2886000	Phone Jack	JY-6351J-06-340	LINE 2 (CH5)		02
JK303	V2886000	Phone Jack	JY-6351J-06-340	Super Hi-Z 1 (CH6)		02
JK304	V2886000	Phone Jack	JY-6351J-06-340	Super Hi-Z 2 (CH6)		02
JK401	V2886000	Phone Jack	JY-6351J-06-340	OUTPUT MAIN		02
JK402	V2886000	Phone Jack	JY-6351J-06-340	OUTPUT MONITOR		02
JK403	V2886000	Phone Jack	JY-6351J-06-340	EFFECT OUT		02
JK404	V2886000	Phone Jack	JY-6351J-06-340	AUX IN		02
JK405	V4807600	Pin Jack	RJ-1130A-01-0320A	2TR IN 1, 2TR IN 2, REC OUT 1, REC OUT 2		03
JK501	V2886000	Phone Jack	JY-6351J-06-340	FOOT SW		02
JK502	V2886000	Phone Jack	JY-6351J-06-340	PHONES		02
L501	GE300670	Ferrite Bead	BL02RN2-R62T4			02
-504	GE300670	Ferrite Bead	BL02RN2-R62T4			02
* LD401	V8840200	LED	L34GD-TNB5/13.6	-10		02
* LD402	V8840200	LED	L34GD-TNB5/13.6	-5		02
* LD403	V8840400	LED	L34YD-TNB5/13.6	0		02
* LD404	V8840400	LED	L34YD-TNB5/13.6	+3		02
* LD405	V8840400	LED	L34YD-TNB5/13.6	+6		02
* LD406	V8840400	LED	L34YD-TNB5/13.6	YSP		02
* LD407	V8840400	LED	L34YD-TNB5/13.6	PHANTOM		02
* LD501	V8840400	LED	L34YD-TNB5/13.6	DSP ON		02
* LD502	V8840200	LED	L34GD-TNB5/13.6	POWER		02
* LD503	V8840100	LED	L34HD-TNB5/13.6	LIMITER		02
* Q101	V7421700	Transistor (chip)	2SC2SC3324 GR,BL			02
* -104	V7421700	Transistor (chip)	2SC2SC3324 GR,BL			02
* Q201	V7421700	Transistor (chip)	2SC2SC3324 GR,BL			02

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* -204	V7421700	Transistor (chip)	2SC2SC3324 GR,BL			
Q501	VV655400	Digital Transistor	DTC114EKA TP			01
* Q502	V7421800	Transistor	2SA2SA1312 GR,BL			
R101	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R103	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R104	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R105	V2440200	Metal Film Resistor	2.4K 1/4 F			01
R106	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R107	V2440200	Metal Film Resistor	2.4K 1/4 F			01
R108	RG008100	Carbon Resistor (chip)	100K 0.1 J			
* R109	RF356390	Carbon Resistor (chip)	3.9K D 1608			
* -112	RF356390	Carbon Resistor (chip)	3.9K D 1608			
R113	VV276800	Flame Proof C. Resistor	100 1/4 J			01
R114	V2440200	Metal Film Resistor	2.4K 1/4 F			01
R116	V2440200	Metal Film Resistor	2.4K 1/4 F			01
* R117	RG007150	Carbon Resistor (chip)	15K 0.1 J			
* R118	RG007150	Carbon Resistor (chip)	15K 0.1 J			
R119	RG004100	Carbon Resistor (chip)	10 0.1 J			
-122	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R123	RF357470	Carbon Resistor (chip)	47.0K D 1608			
* -126	RF357470	Carbon Resistor (chip)	47.0K D 1608			
R127	RG004100	Carbon Resistor (chip)	10 0.1 J			
R128	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R129	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R130	RF356820	Carbon Resistor (chip)	8.2K D 1608			
* R131	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R132	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R133	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
R134	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
* R135	RG005150	Carbon Resistor (chip)	150 0.1 J			
* R136	RG005150	Carbon Resistor (chip)	150 0.1 J			
* R137	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R138	RF356820	Carbon Resistor (chip)	8.2K D 1608			
* R139	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R140	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R141	RG004100	Carbon Resistor (chip)	10 0.1 J			
R142	RG004100	Carbon Resistor (chip)	10 0.1 J			
R143	RF357100	Carbon Resistor (chip)	10.0K D 1608			01
-146	RF357100	Carbon Resistor (chip)	10.0K D 1608			01
R147	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R148	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R149	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R150	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R151	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R152	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R153	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R154	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R155	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R156	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R157	RG004100	Carbon Resistor (chip)	10 0.1 J			
R158	RG004100	Carbon Resistor (chip)	10 0.1 J			
R159	RG007180	Carbon Resistor (chip)	18K 0.1 J			
-164	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R202	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R203	V2440200	Metal Film Resistor	2.4K 1/4 F			01
R204	RG008100	Carbon Resistor (chip)	100K 0.1 J			
* R205	RF356390	Carbon Resistor (chip)	3.9K D 1608			
* R206	RF356390	Carbon Resistor (chip)	3.9K D 1608			
R208	V2440200	Metal Film Resistor	2.4K 1/4 F			01
* R209	RG007150	Carbon Resistor (chip)	15K 0.1 J			
R210	RG004100	Carbon Resistor (chip)	10 0.1 J			
R211	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R212	RF357470	Carbon Resistor (chip)	47.0K D 1608			
* R213	RF357470	Carbon Resistor (chip)	47.0K D 1608			
R214	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R215	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R216	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R217	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
* R218	RG005150	Carbon Resistor (chip)	150 0.1 J			
* R219	RF356220	Carbon Resistor (chip)	2.2K D 1608			

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* R220	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R221	RG004100	Carbon Resistor (chip)	10 0.1 J			
R222	RF357100	Carbon Resistor (chip)	10.0K D 1608			01
R223	RF357100	Carbon Resistor (chip)	10.0K D 1608			01
R224	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R225	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R226	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R227	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R228	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R229	RG004100	Carbon Resistor (chip)	10 0.1 J			
R230	RG007180	Carbon Resistor (chip)	18K 0.1 J			
-232	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R234	RG008100	Carbon Resistor (chip)	100K 0.1 J			01
R235	V2440200	Metal Film Resistor	2.4K 1/4 F			
R236	RG008100	Carbon Resistor (chip)	100K 0.1 J			
* R237	RF356390	Carbon Resistor (chip)	3.9K D 1608			
* R238	RF356390	Carbon Resistor (chip)	3.9K D 1608			01
R240	V2440200	Metal Film Resistor	2.4K 1/4 F			
* R241	RG007150	Carbon Resistor (chip)	15K 0.1 J			
R242	RG004100	Carbon Resistor (chip)	10 0.1 J			
R243	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R244	RF357470	Carbon Resistor (chip)	47.0K D 1608			
* R245	RF357470	Carbon Resistor (chip)	47.0K D 1608			
R246	RG004100	Carbon Resistor (chip)	10 0.1 J			
* R247	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R248	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R249	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
* R250	RG005150	Carbon Resistor (chip)	150 0.1 J			
* R251	RF356220	Carbon Resistor (chip)	2.2K D 1608			
* R252	RF356820	Carbon Resistor (chip)	8.2K D 1608			
R253	RG004100	Carbon Resistor (chip)	10 0.1 J			01
R254	RF357100	Carbon Resistor (chip)	10.0K D 1608			01
R255	RF357100	Carbon Resistor (chip)	10.0K D 1608			
R256	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R257	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R258	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R259	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R260	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R261	RG004100	Carbon Resistor (chip)	10 0.1 J			
R262	RG007180	Carbon Resistor (chip)	18K 0.1 J			
-264	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R301	RG006100	Carbon Resistor (chip)	1.0K 0.1 J			
R302	RG006100	Carbon Resistor (chip)	1.0K 0.1 J			
R303	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R304	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R305	RG008470	Carbon Resistor (chip)	470K 0.1 J			
R306	RG008470	Carbon Resistor (chip)	470K 0.1 J			
R307	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R308	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R309	RG007470	Carbon Resistor (chip)	47K 0.1 J			
R310	RG007470	Carbon Resistor (chip)	47K 0.1 J			
R311	RG007180	Carbon Resistor (chip)	18K 0.1 J			
-314	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R315	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R316	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R317	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
R318	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
R319	RG007100	Carbon Resistor (chip)	10K 0.1 J			
-321	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R322	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R323	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R324	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R325	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R326	RG007330	Carbon Resistor (chip)	33K 0.1 J			
R327	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R328	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R329	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R330	RG006560	Carbon Resistor (chip)	5.6K 0.1 J			
R331	RG004100	Carbon Resistor (chip)	10 0.1 J			
R332	RG004100	Carbon Resistor (chip)	10 0.1 J			

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R333	RG007180	Carbon Resistor (chip)	18K 0.1 J			
-338	RG007180	Carbon Resistor (chip)	18K 0.1 J			
* R401	RG008120	Carbon Resistor (chip)	120K 0.1 J			
* -403	RG008120	Carbon Resistor (chip)	120K 0.1 J			
R404	RG008220	Carbon Resistor (chip)	220K 0.1 J			
R405	RG007180	Carbon Resistor (chip)	18K 0.1 J			
* R406	RG007360	Carbon Resistor (chip)	36K 0.1 J			
* R407	RG007360	Carbon Resistor (chip)	36K 0.1 J			
R408	RG008220	Carbon Resistor (chip)	220K 0.1 J			
R409	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R410	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R411	RG007180	Carbon Resistor (chip)	18K 0.1 J			
* R412	RG006390	Carbon Resistor (chip)	3.9K 0.1 J			
R413	RG005220	Carbon Resistor (chip)	220 0.1 J			
R414	RG005220	Carbon Resistor (chip)	220 0.1 J			
R415	RG007100	Carbon Resistor (chip)	10K 0.1 J			
* R416	RG006430	Carbon Resistor (chip)	4.3K 0.1 J			
* R417	RG006430	Carbon Resistor (chip)	4.3K 0.1 J			
R418	RG007100	Carbon Resistor (chip)	10K 0.1 J			
-420	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R421	RG006150	Carbon Resistor (chip)	1.5K 0.1 J			
R422	RG006330	Carbon Resistor (chip)	3.3K 0.1 J			
R423	RG006150	Carbon Resistor (chip)	1.5K 0.1 J			
* R424	RG006120	Carbon Resistor (chip)	1.2K 0.1 J			
R425	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R426	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
R427	RG006820	Carbon Resistor (chip)	8.2K 0.1 J			
* R428	RG006120	Carbon Resistor (chip)	1.2K 0.1 J			
R429	RG005560	Carbon Resistor (chip)	560 0.1 J			
R430	RG007180	Carbon Resistor (chip)	18K 0.1 J			
R431	RG005220	Carbon Resistor (chip)	220 0.1 J			
* R432	RG007150	Carbon Resistor (chip)	15K 0.1 J			
R433	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R434	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R435	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R436	RG005560	Carbon Resistor (chip)	560 0.1 J			
* R437	RG005750	Carbon Resistor (chip)	750 0.1 J			
R438	RG006330	Carbon Resistor (chip)	3.3K 0.1 J			
R439	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R440	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R441	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R442	RG005560	Carbon Resistor (chip)	560 0.1 J			
* R443	RG205680	Carbon Resistor (chip)	680 1/4 J			
* -445	RG205680	Carbon Resistor (chip)	680 1/4 J			
R446	RG005560	Carbon Resistor (chip)	560 0.1 J			
-448	RG005560	Carbon Resistor (chip)	560 0.1 J			
* R449	RG004180	Carbon Resistor (chip)	18 0.1 J			
* R450	RF356390	Carbon Resistor (chip)	3.9K D 1608			
* R452	RG004180	Carbon Resistor (chip)	18 0.1 J			
* R453	RF357820	Carbon Resistor (chip)	82.0K D 1608			
* R454	RG206270	Carbon Resistor (chip)	2.7K 1/4 J			
R455	RG005560	Carbon Resistor (chip)	560 0.1 J			
-461	RG005560	Carbon Resistor (chip)	560 0.1 J			
R462	RG007470	Carbon Resistor (chip)	47K 0.1 J			
-469	RG007470	Carbon Resistor (chip)	47K 0.1 J			
* R470	RG206270	Carbon Resistor (chip)	2.7K 1/4 J			
* R501	RG008240	Carbon Resistor (chip)	240K 0.1 J			
* R502	RG008240	Carbon Resistor (chip)	240K 0.1 J			
R503	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R504	RG007470	Carbon Resistor (chip)	47K 0.1 J			
R505	RG005680	Carbon Resistor (chip)	680 0.1 J			
R506	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
R507	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R508	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
R509	RG006330	Carbon Resistor (chip)	3.3K 0.1 J			
R510	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
-512	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
R513	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R514	RG006100	Carbon Resistor (chip)	1.0K 0.1 J			
R515	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R516	RG005100	Carbon Resistor (chip)	100 0.1 J			
R517	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
-519	RG006220	Carbon Resistor (chip)	2.2K 0.1 J			
R520	RG007100	Carbon Resistor (chip)	10K 0.1 J			
-522	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R523	RG007470	Carbon Resistor (chip)	47K 0.1 J			
* R524	RG006390	Carbon Resistor (chip)	3.9K 0.1 J			
R525	RG007100	Carbon Resistor (chip)	10K 0.1 J			
R526	RG007470	Carbon Resistor (chip)	47K 0.1 J			
R527	RG008470	Carbon Resistor (chip)	470K 0.1 J			
R528	RG005470	Carbon Resistor (chip)	470 0.1 J			
R529	RG006470	Carbon Resistor (chip)	4.7K 0.1 J			
R530	RG008100	Carbon Resistor (chip)	100K 0.1 J			
R531	RG007270	Carbon Resistor (chip)	27K 0.1 J			
R532	RG007270	Carbon Resistor (chip)	27K 0.1 J			
R533	RG007680	Carbon Resistor (chip)	68K 0.1 J			
R534	RG007680	Carbon Resistor (chip)	68K 0.1 J			
* R535	RG206270	Carbon Resistor (chip)	2.7K 1/4 J			
△ * SW001	V8996200	Push Switch	SFDLB11P7U-YL	POWER ON/OFF		
SW101	V6962600	Push Switch		PAD (CH1)		02
SW102	V6962600	Push Switch		PAD (CH2)		02
SW201	V6962600	Push Switch		PAD (CH3)		02
SW202	V6962600	Push Switch		PAD (CH4)		02
SW401	V3483200	Slide Switch	SS001P022BQcPA6	PHANTOM ON/OFF		03
SW403	V3483200	Slide Switch	SS001P022BQcPA6	YSP ON/OFF		03
SW501	VU804900	Push Switch	SPEA31MC16-YL	VOCAL REVERB, LARGE HALL, SMALL HALL		05
SW503	VU805000	Push Switch	SPEA12MC15-YL	DSP ON		03
* VR101	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH1)		
* VR102	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH2)		
* VR103	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH1)		
* VR104	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH2)		
* VR105	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH1)		
* VR106	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH2)		
* VR107	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH1)		
* VR108	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH2)		
* VR109	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH1)		
* VR110	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH2)		
* VR201	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH3)		
* VR202	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH4)		
* VR203	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH3)		
* VR204	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH4)		
* VR205	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH3)		
* VR206	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH4)		
* VR207	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH3)		
* VR208	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH4)		
* VR209	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH3)		
* VR210	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH4)		
* VR301	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH5)		
* VR302	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	HIGH (CH6)		
* VR303	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH5)		
* VR304	V8264700	Rotary Variable Resistor	B 50.0K XV09213P	LOW (CH6)		
* VR305	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH5)		
* VR306	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MONITOR (CH6)		
* VR307	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH5)		
* VR308	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT (CH6)		
* VR309	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH5)		
* VR310	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	LEVEL (CH6)		
* VR401	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MASTER (MAIN)		
* VR402	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	MASTER (MONITOR)		
* VR403	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	AUX IN		
* VR404	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	2TR IN		
VR405	VV044600	Slide Variable Resistor	RS20H11KD017-YL	125		03
VR406	VV044600	Slide Variable Resistor	RS20H11KD017-YL	250		03
VR407	VV044600	Slide Variable Resistor	RS20H11KD017-YL	500		03
VR408	VV044600	Slide Variable Resistor	RS20H11KD017-YL	1k		03
VR409	VV044600	Slide Variable Resistor	RS20H11KD017-YL	2k		03
VR410	VV044600	Slide Variable Resistor	RS20H11KD017-YL	4k		03
VR411	VV044600	Slide Variable Resistor	RS20H11KD017-YL	8k		03
* VR501	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT RTN (MAIN)		

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* VR502	V8264600	Rotary Variable Resistor	A 20.0K XV09213P	EFFECT RTN (MONITOR)		
X501	QU007700	Ceramic Resonator	12M CSA12.0MTZ			03
*	AAX32940	Circuit Board	PWR B62 1/3	J, U (V826840)(X0625B0)		
*	AAX32950	Circuit Board	PWR B62 1/3	H, A (V826860)(X0625B0)		
*	AAX32960	Circuit Board	PWR B62 2/3	J, U (V826840)(X0625B0)		
*	AAX32970	Circuit Board	PWR B62 2/3	H, A (V826860)(X0625B0)		
*	AAX32990	Circuit Board	PWR B62 3/3	J (V826840)(X0625B0)		
*	AAX33000	Circuit Board	PWR B62 3/3	U (V826850)(X0625B0)		
*	AAX33010	Circuit Board	PWR B62 3/3	H, A (V826860)(X0625B0)		
	--	Wiring Assembly	SGND	(V676790)		
	--	Jumper Wire	0.60 TP	(V829020)		
	--	Jumper Wire	0.60	(VV29140)		
	VV319600	Fuse Holder	CQ-05CT			01
C101	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C102	VZ353300	Ceramic Capacitor-SL	56P 50V J			01
C103	VZ353900	Ceramic Cap.-B	1000P 50V K			01
C104	VZ353800	Ceramic Cap.-B	470P 50V K			01
C105	UR847470	Electrolytic Cap.	47.00 25.0V			01
C106	UR847470	Electrolytic Cap.	47.00 25.0V			01
C107	UR847100	Electrolytic Cap.	10.00 25.0V			01
C108	UR838100	Electrolytic Cap.	100.00 16.0V			01
C109	FU451680	Mica Capacitor	68P 500V J			01
C110	FU451820	Mica Capacitor	82P 500V J			01
C111	UR896470	Electrolytic Cap.	4.7 100.0V			
C112	UR896470	Electrolytic Cap.	4.7 100.0V			
C113	UR866470	Electrolytic Cap.	4.70 50.0V			01
C114	UR866470	Electrolytic Cap.	4.70 50.0V			01
C115	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C116	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C117	FU452220	Mica Capacitor	220P 500V J			02
C118	FU452220	Mica Capacitor	220P 500V J			02
C119	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C120	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C121	UR896470	Electrolytic Cap.	4.7 100.0V			
C122	UR896470	Electrolytic Cap.	4.7 100.0V			
C123	VV082200	Polyester Film Cap.	3.3000 100V M			03
C124	VV082200	Polyester Film Cap.	3.3000 100V M			03
C125	UR896470	Electrolytic Cap.	4.7 100.0V			
C126	UR896470	Electrolytic Cap.	4.7 100.0V			
C127	VZ354300	Ceramic Capacitor-E	0.0022 500 M			01
C128	VZ354300	Ceramic Capacitor-E	0.0022 500 M			01
C129	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C130	VZ354600	Monolithic Ceramic Cap.	0.10 50V Z			01
C131	VZ354600	Monolithic Ceramic Cap.	0.10 50V Z			01
C132	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C133	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C134	UR866100	Electrolytic Cap.	1.00 50.0V			01
C135	UR847100	Electrolytic Cap.	10.00 25.0V			01
C136	UR847470	Electrolytic Cap.	47.00 25.0V			01
C137	UR828470	Electrolytic Cap.	470.00 10.0V			01
C140	UR866470	Electrolytic Cap.	4.70 50.0V			01
C143	UR866470	Electrolytic Cap.	4.70 50.0V			01
-145	UR866470	Electrolytic Cap.	4.70 50.0V			01
C146	V5482000	Electrolytic Cap.	1000 35.0V			
C147	V5482000	Electrolytic Cap.	1000 35.0V			
C148	VV714300	Electrolytic Cap.	470 50.0V			01
C149	V5482000	Electrolytic Cap.	1000 35.0V			
C150	V8349500	Electrolytic Cap.	6800 80V			08
C151	V8349500	Electrolytic Cap.	6800 80V			08
C152	VV082300	Polyester Film Cap.	0.1000 250V M			01
C153	VV082300	Polyester Film Cap.	0.1000 250V M			01
C154	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C156	V8099100	Capacitor	0.01 400V J.U.C.S			
C157	V6113500	Capacitor	1000P 400V J.U.C.S	H, A		01
C157	V6185400	Capacitor	3300P 400V J.U.C.S	U		01
C158	V6113500	Capacitor	1000P 400V J.U.C.S	H, A		01
C158	V6185400	Capacitor	3300P 400V J.U.C.S	U		01
C159	V5307900	Electrolytic Cap.	100 100.0V			
C160	V5307900	Electrolytic Cap.	100 100.0V			

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C161	VZ354300	Ceramic Capacitor-E	0.0022 500 M	H		01
CN101	VV067400	Connector Base Post	M2426XX 14P TE			
CN103	LB932060	Base Post Connector	VH- 6P TE			01
CN104	LB932030	Base Post Connector	VH- 3P TE			01
CN105	V5817000	AC Inlet	HF-301L			
D101	VD631600	Diode	1SS133,176,HSS104			01
-105	VD631600	Diode	1SS133,176,HSS104			01
D106	VG437400	Zener Diode	MTZ J 5.1B 5.1V			01
D107	VG437400	Zener Diode	MTZ J 5.1B 5.1V			01
D108	VQ469600	Diode	HSS82			01
D109	VQ469600	Diode	HSS82			01
D110	VD631600	Diode	1SS133,176,HSS104			01
D111	VD631600	Diode	1SS133,176,HSS104			01
D112	VN478200	Diode	D1NL20U			01
D113	VN478200	Diode	D1NL20U			01
D114	VV082000	Diode	2A01			01
-117	VV082000	Diode	2A01			01
D118	VU801600	Diode	1N4004L 26			01
-121	VU801600	Diode	1N4004L 26			01
D122	V4096300	Diode	RL 10Z LFA4			01
D123	V4096300	Diode	RL 10Z LFA4			01
D124	VD631600	Diode	1SS133,176,HSS104			01
D125	VU801600	Diode	1N4004L 26			01
D131	VU801600	Diode	1N4004L 26			01
D134	VU801600	Diode	1N4004L 26			01
-139	VU801600	Diode	1N4004L 26			01
D140	V8151400	Diode Stack	D3SBA60 4.0A 600V			
E101	VV075700	Terminal Plate				01
E102	VV075700	Terminal Plate				01
EM101	VV056900	Noise Filter	ZJSR5101-223TA			01
F101	VV070600	Fuse	TDS 2A 250V J/U/C	J, U		01
F101	VV071500	Fuse	TSD 2A 250V SEMKO	H, A		01
F102	VV070600	Fuse	TDS 2A 250V J/U/C	J, U		01
F102	VV071500	Fuse	TSD 2A 250V SEMKO	H, A		01
F103	VV071000	Fuse	TDS 4A 125V J/U/C	U		01
F103	VV071400	Fuse	TSD 1.6A 250V SEMK	H, A		01
F103	VZ897900	Fuse	TDS 5A 125V J/U/C	J		01
IC101	XQ212A00	IC	NJM4558L-D	OP AMP		03
IC103	XD853A00	IC	NJM7815FA	REGULATOR +15V		03
IC104	XD854A00	IC	NJM7915FA	REGULATOR -15V		03
IC105	XJ607A00	IC	NJM7805FA	REGULATOR +5V		02
JK101	V8102300	Phone Jack	STJACK LJB0661	SPEAKERS 1		
JK102	V8102300	Phone Jack	STJACK LJB0661	SPEAKERS 2		
L101	V0030700	Coil	LHL16NB680K			04
-104	V0030700	Coil	LHL16NB680K			04
L105	GE300670	Ferrite Bead	BL02RN2-R62T4			02
L106	GE300670	Ferrite Bead	BL02RN2-R62T4			02
L107	VR150900	Coil	RZ-001 21MM			02
PR101	VL965100	Positive Thermistor	PTH9M04BE222TS2			04
Q101	IA097030	Transistor	2SA970 GR,BL			01
Q102	IA097030	Transistor	2SA970 GR,BL			01
Q103	IC224030	Transistor	2SC2240 GR,BL			01
Q104	IC224030	Transistor	2SC2240 GR,BL			01
Q105	VD678500	Digital Transistor	DTA114ES			01
Q106	IA097030	Transistor	2SA970 GR,BL			01
-108	IA097030	Transistor	2SA970 GR,BL			01
Q109	IC224030	Transistor	2SC2240 GR,BL			01
Q110	IC1815M0	Transistor	2SC1815 Y,GR			01
Q111	IC1815M0	Transistor	2SC1815 Y,GR			01
Q112	VE198700	Transistor	2SA1145 O,Y			01
Q113	VE198800	Transistor	2SC2705 O,Y			01
Q114	VE198700	Transistor	2SA1145 O,Y			01
Q115	VE198800	Transistor	2SC2705 O,Y			01
Q116	V2797700	Transistor	2SC5395 E,F			01
Q117	V2797600	Transistor	2SA1993 E,F			01
Q118N	VV081700	Pair Transistor	B1647/D2560			08
Q119N	VV081700	Pair Transistor	B1647/D2560			08
Q120P	VV081700	Pair Transistor	B1647/D2560			08
Q121P	VV081700	Pair Transistor	B1647/D2560			08
Q122	VP872600	Transistor	2SA1708 S,T			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
Q123N	VV081700	Pair Transistor	B1647/D2560			08
Q124	VP872700	Transistor	2SC4488 S,T			01
Q125P	VV081700	Pair Transistor	B1647/D2560			08
Q126	VD678700	Digital Transistor	DTC114ES			01
Q127	VD678500	Digital Transistor	DTA114ES			01
Q128	V2797700	Transistor	2SC5395 E,F			01
Q129	V2797600	Transistor	2SA1993 E,F			01
Q130	V2797700	Transistor	2SC5395 E,F			01
Q131	V2797700	Transistor	2SC5395 E,F			01
R101	VV313500	Metal Film Resistor	220K 1/4 F			01
R102	VV313500	Metal Film Resistor	220K 1/4 F			01
R103	HB027750	Metal Film Resistor	75.0K 1/4 F			
-106	HB027750	Metal Film Resistor	75.0K 1/4 F			
R107	HF454680	Carbon Resistor	68.0 1/4 J			01
R108	HF454680	Carbon Resistor	68.0 1/4 J			01
R110	VV066000	Metal Film Resistor	33K 1/4 F			01
R111	HF457270	Carbon Resistor	27.0K 1/4 J			01
R112	HF456220	Carbon Resistor	2.2K 1/4 J			01
R113	HF456220	Carbon Resistor	2.2K 1/4 J			01
R114	HF457470	Carbon Resistor	47.0K 1/4 J			01
R115	HF455330	Carbon Resistor	330.0 1/4 J			01
R116	HF458390	Carbon Resistor	390.0K 1/4 J			01
R117	HF458390	Carbon Resistor	390.0K 1/4 J			01
R118	HF458330	Carbon Resistor	330.0K 1/4 J			01
R119	HF457220	Carbon Resistor	22.0K 1/4 J			01
R120	VV312800	Metal Film Resistor	680.0 1/4 F			01
R121	HF457220	Carbon Resistor	22.0K 1/4 J			01
R122	HF455100	Carbon Resistor	100.0 1/4 J			01
R123	HF455100	Carbon Resistor	100.0 1/4 J			01
R124	HF455560	Carbon Resistor	560.0 1/4 J			01
-126	HF455560	Carbon Resistor	560.0 1/4 J			01
R127	HF458330	Carbon Resistor	330.0K 1/4 J			01
R128	HF457560	Carbon Resistor	56.0K 1/4 J			01
R129	VV312900	Metal Film Resistor	22K 1/4 F			01
R130	HF455150	Carbon Resistor	150.0 1/4 J			01
-132	HF455150	Carbon Resistor	150.0 1/4 J			01
R133	VV313800	Flame Proof C. Resistor	220.0 1/4 J			01
R134	VV313800	Flame Proof C. Resistor	220.0 1/4 J			01
R135	HF457100	Carbon Resistor	10.0K 1/4 J			01
-138	HF457100	Carbon Resistor	10.0K 1/4 J			01
R139	HF457150	Carbon Resistor	15.0K 1/4 J			01
R140	HF457150	Carbon Resistor	15.0K 1/4 J			01
R141	VV313800	Flame Proof C. Resistor	220.0 1/4 J			01
R142	VV313800	Flame Proof C. Resistor	220.0 1/4 J			01
R143	VR412900	Metal Film Resistor	0.10 3W J			01
R144	VR412900	Metal Film Resistor	0.10 3W J			01
R145	VV557800	Flame Proof C. Resistor	1.0 1/4 J			01
-147	VV557800	Flame Proof C. Resistor	1.0 1/4 J			01
R148	VV313700	Flame Proof C. Resistor	47.0 1/4 J			01
R149	VV313900	Flame Proof C. Resistor	680.0 1/4 J			01
R150	VV557800	Flame Proof C. Resistor	1.0 1/4 J			01
R151	VV313700	Flame Proof C. Resistor	47.0 1/4 J			01
R152	VV313900	Flame Proof C. Resistor	680.0 1/4 J			01
R153	HF454470	Carbon Resistor	47.0 1/4 J			01
R154	HF456150	Carbon Resistor	1.5K 1/4 J			01
R155	HF455220	Carbon Resistor	220.0 1/4 J			01
R156	HF457100	Carbon Resistor	10.0K 1/4 J			01
R157	HF457100	Carbon Resistor	10.0K 1/4 J			01
R158	HF456220	Carbon Resistor	2.2K 1/4 J			01
R159	HF457120	Carbon Resistor	12.0K 1/4 J			01
R160	HF457560	Carbon Resistor	56.0K 1/4 J			01
R161	HF456470	Carbon Resistor	4.7K 1/4 J			01
R162	VV058500	Flame Proof C. Resistor	10.0 1/4 J			01
R163	VV058500	Flame Proof C. Resistor	10.0 1/4 J			01
R164	HF458150	Carbon Resistor	150.0K 1/4 J			01
R165	V4996300	Wire Wound Resistor	68.0 5W K			
R166	V4996300	Wire Wound Resistor	68.0 5W K			
R167	V4566800	Metal Oxide Film Resistor	47 2W J			
R168	HF454100	Carbon Resistor	10.0 1/4 J			01
R172	HF457470	Carbon Resistor	47.0K 1/4 J			01

*: New Parts

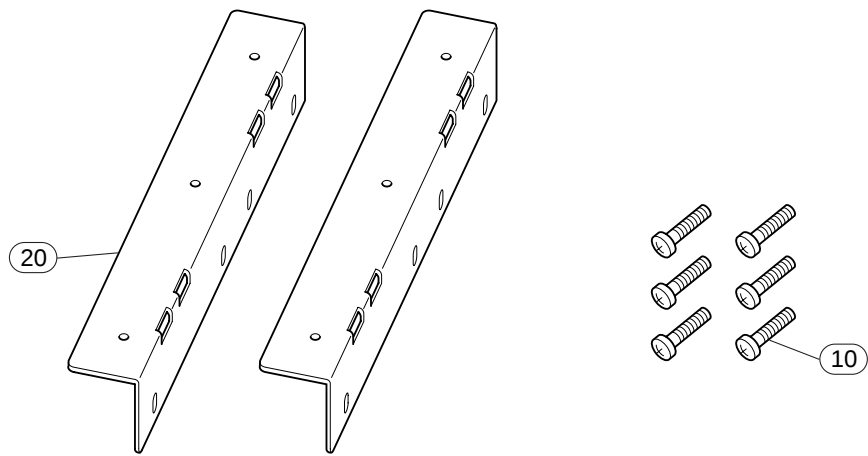
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■ RK-88 RACK MOUNT KIT



REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
10	VB132700	RACK MOUNT KIT			RK-88 (V840830)	6	01
20		Bind Head Screw Rack Angle	4.0X12 MFZN2BL			2	

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