VP-550
VOCAL & ENSEMBLE KEYBOARD

SERVICE NOTES
Issued by RJA

Table of Contents

Roland
17058412E0
Printed in Japan (0400) (SC-KWS)

Specifications

VP-550: Vocal & Ensemble Keyboard

Keyboard

49 keys (with velocity)

Tones

Vocal Designer (7 tones)

CLASSIC, MALE & FEMALE, GOSPEL, POP, VOCODER 1, VOCODER 2, EXT IN

Ensemble (6 tones)

STRINGS 1, STRINGS 2, JAZZ SCAT, MIXED CHORUS, BOYS CHOIR, HUMMING

Bass & Percussion (4 sets)

BASS 1, BASS 2, BASS 3, PERC

Ambience (3 types)

HALL 1, HALL 2, STUDIO

Maximum Polyphony

128 voices (Changes depending on the sound and the playing technique)

Controllers

D Beam Controller
Pitch Bend / Modulation Lever

Octave Shift

+/-1 Octave

Number of Registration memories

4

Master Tune

415.3 Hz to 466.2 Hz

Sound Check Function

Records OUTPUT signal for 10 seconds and plays it back.

Nominal Input Level

INPUT (MIC): -50 to -10 dBu
INPUT (EXT IN): -36 to +4 dBu

(0 dBu = 0.775 V rms)

Connectors

Headphones Jack (Stereo 1/4 inch phone type)
Output Jacks (L/MONO, R) (1/4 inch phone type)
MIC Jack (XLR type)
External Input Jack (1/4 inch phone type)
MIDI Connectors (IN, OUT)
Hold Pedal Jack
Expression Pedal Jack
AC Inlet

Power Supply

AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)

Power Consumption

14 W

Dimensions

865.4 (W) x 346.3 (D) x 98.6 (H) mm
34-1/8 (W) x 13-11/16 (D) x 3-15/16 (H) inches

Weight

8.5 kg / 18 lbs 12 oz

Accessories

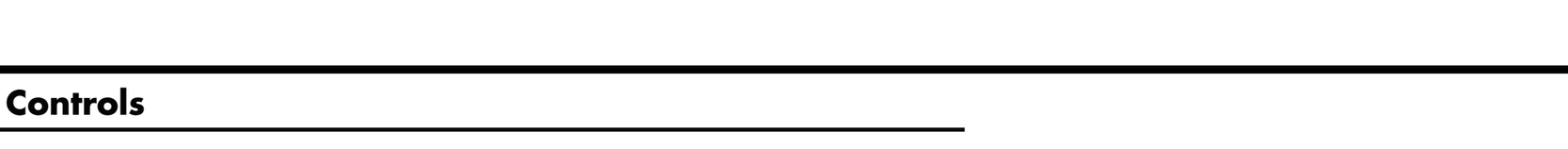
Owner's Manual English (#73231045)
Leaflet "USING THE UNIT SAFELY" (#********)
(This is included in the Owner's Manual.)
Leaflet "Mics recommended for the VP-550" (#********)
(This is included in the Owner's Manual.)
Power Cord 240VE (#00907001)
240VA (#23495124)
230V (#00894389)
120V (#00894378)

Options

Keyboard Stand: KS-12
Pedal Switch: DP Series
Foot Switch: BOSS FS-5U
Expression Pedal: EV-5

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

Location of Controls

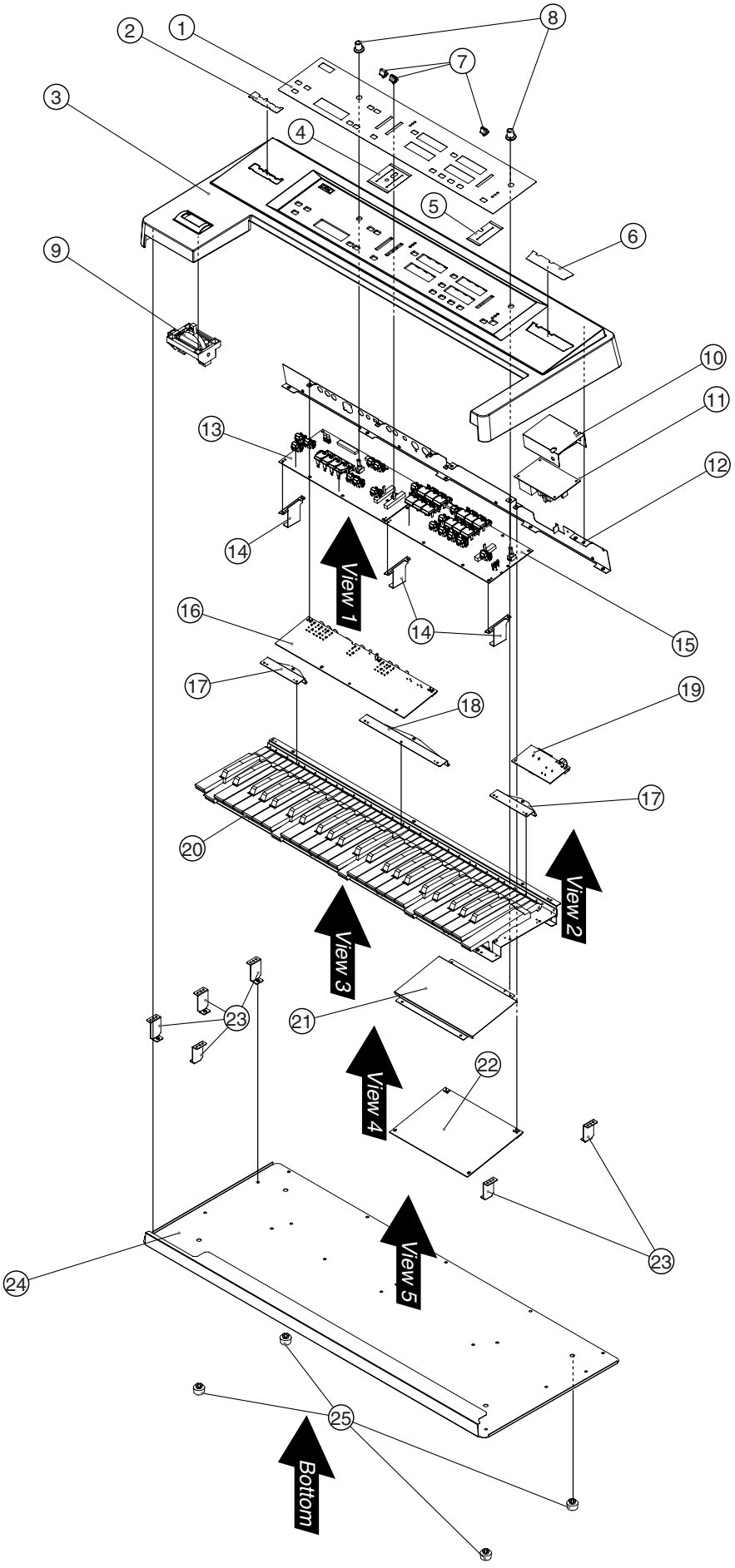


Location of Controls Parts List

No.	Parts Code	Parts Name	Description	Q'ty
1	04233923	BADGE ROLAND		1
2	03126134	LED(INFRARED)	TLN233(F)	1
2	02230578	LED SPACER	LDS-50R	1
3	01900612	DIODE	TPS611(F)	1
3	12169368	LED SPACER	LDS-40B	1
4	03120890	D S-KEYTOP	SX1H-B GRS	5
4	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	5
4	02781634	TACT SWITCH	SKRGAED010	5
5	04124267	J R-KNOB	SF-ELA BLK/SLV	1
5	02670445	12M/M ROTARY POTENTIOMETER	EVJY15FB6A14	1
6	01013356	T S KEYTOP	MD1H LCG	4
6	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	4
6	00125590	TACT SWITCH	EVQ QJJ 05Q	4
7	03120889	D S-KEYTOP	SX2H-B GRS	3
7	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	3
7	02781634	TACT SWITCH	SKRGAED010	3
8	03120889	D S-KEYTOP	SX2H-B GRS	1
8	04121578	LED	SLR-343MCT32	1
8	02781634	TACT SWITCH	SKRGAED010	1
9	01561578	J S-KNOB S BLK/LCG		2
9	03122123	30M/M SLIDE POTENTIOMETER	EWA NKE C15 B14	2
10	01561578	J S-KNOB S BLK/LCG		1
10	04232356	SLIDE POTENTIOMETER	EWANKEC15A15	1
11	00785856	LED(RED)	SLR-342VR3F	4
11	12169406	LED SPACER	LDS-100Y 10MM	4
12	03016901	LED	SLR-342DU3F	1
12	12169406	LED SPACER	LDS-100Y 10MM	1

No.	Parts Code	Parts Name	Description	Q'ty
13	02015623	LED	SLR-342MG3F	1
13	12169406	LED SPACER	LDS-100Y 10MM	1
14	04233367	Y S-KEYTOP	LD2H LCG	6
14	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	6
14	00125590	TACT SWITCH	EVQ QJJ 05Q	6
15	02784589	Y S-KEYTOP	LD1H LCG (WHYT BRWN GRY)	4
15	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	4
15	00125590	TACT SWITCH	EVQ QJJ 05Q	4
16	02016478	Y S-KEYTOP	LD1H MCG	2
16	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	2
16	00125590	TACT SWITCH	EVQ QJJ 05Q	2
17	04124267	J R-KNOB	SF-ELA BLK/SLV	1
18	03120890	D S-KEYTOP	SX1H-B GRS	1
18	02781634	TACT SWITCH	SKRGAED010	1
19	04233934	BADGE VP-550		1
20	03234723	BENDER	PB-H0204	1
21	32490595	P S-KEY	MX BLK	1
21	01676512	PUSH SWITCH	SDKLA10200	1
22	02675701	AC INLET ASSY	WIRING W3(AC INLET+GND)	1
23	13429825	MIDI CONNECTOR	YKF51-5054V	2
24	01671345	9M/M ROTARY POTENTIOMETER	RK09K1110077	1
25	13449275	6.5MM JACK	YKB21-5074	6
26	13159180	SWITCH	SSSF112500	1
27	04232345	ROTARY POTENTIOMETER	RK09K1110D4B	1
28	03459223	XLR CONNECTOR	JY-5033A	1

Exploded View (1)



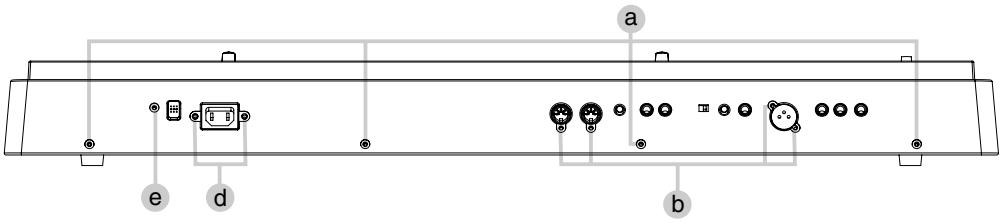
Exploded View (1) Parts List

Parts

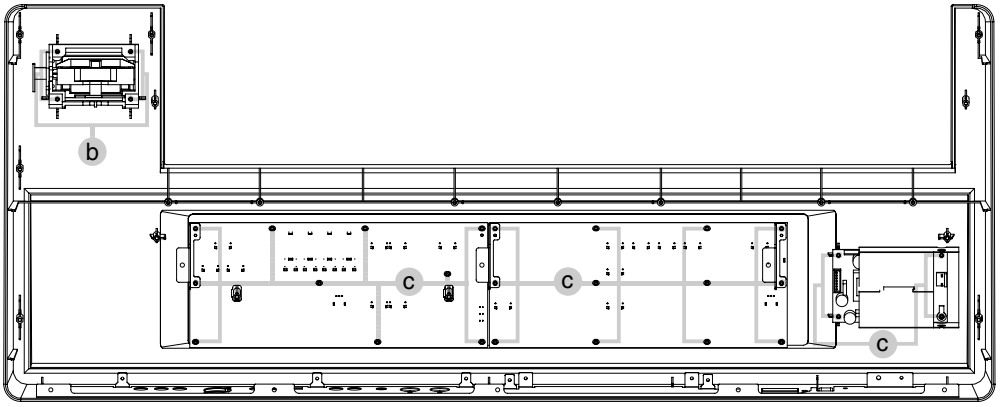
No.	Parts Code	Parts Name	Description	Q'ty
1	04234089	PANEL SHEET		1
2	04233923	BADGE ROLAND		1
3	04234101	TOP CASE		1
4	04237390	POT DUST COVER A		1
5	04237401	POT DUST COVER B		1
6	04233934	BADGE VP-550		1
7	01561578	J S-KNOB S BLK/LCG		3
8	04124267	J R-KNOB	SF-ELA BLK/SLV	2
9	03234723	BENDER	PB-H0204	1
10	02894367	INSULATING COVER	DA-2496 SW-PS	1
11	03782334	SWITCHING REGULATOR	A1DU2L3B184	1
12	04234090	REAR HOLDER		1
13	73129701	PANEL L KEYTOP ASSY		1
14	04233801	STAY		3
15	73129723	PANEL R KEYTOP ASSY		1
16	73129678	JACK BOARD ASSY		1
17	04233790	PANEL HOLDER SIDE		2
18	04234078	PANEL HOLDER		1
19	73129689	INLET BOARD ASSY		1
20	73230089	KEYBOARD ASSY	SK-949-E	1
21	04234145	SHIELD PLATE		1
22	73129601	MAIN BOARD ASSY		1
23	04129178	SIDE HOLDER		6
24	73129590	BOTTOM COVER ASSY		1
25	12359139	RUBBER FOOT	FF-018 BLK	4

Exploded View (2)

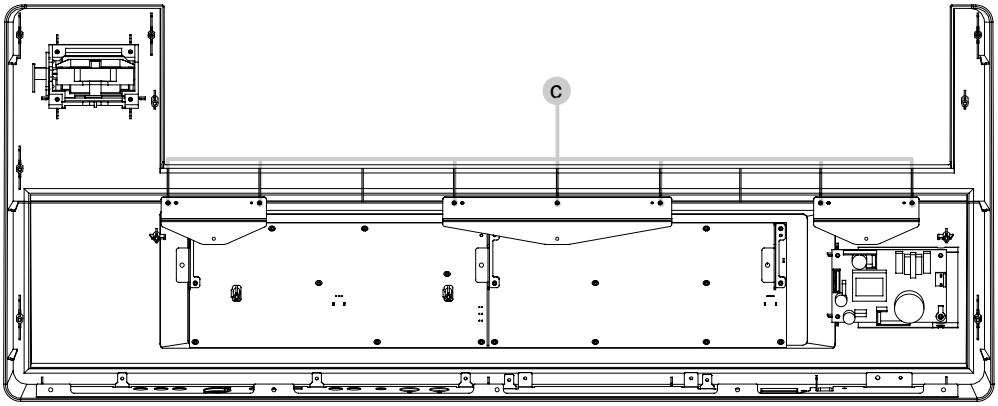
Rear



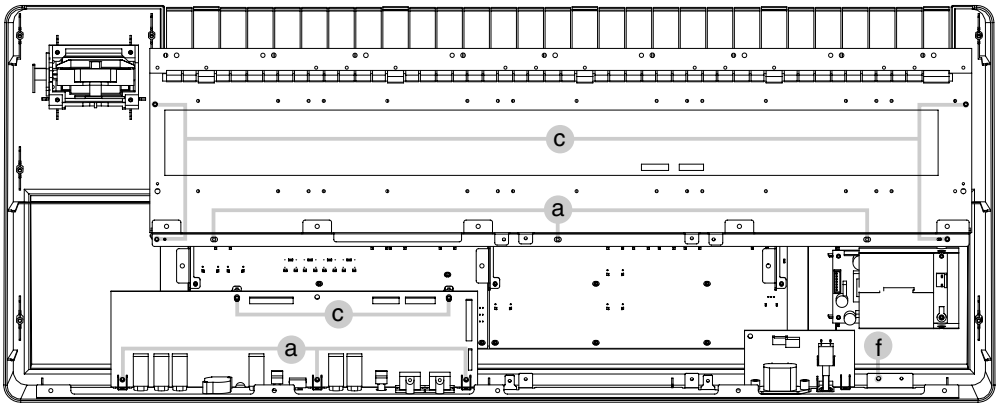
View 1



View 2



View 3



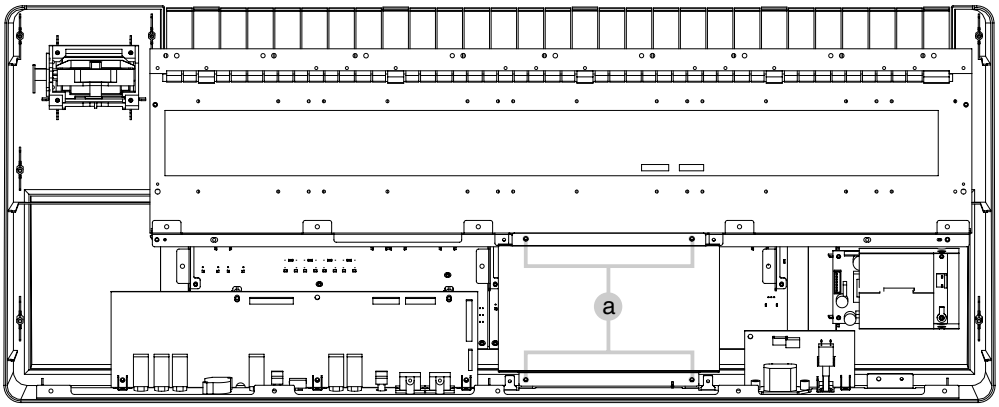
Exploded View (2) Parts List

Screw

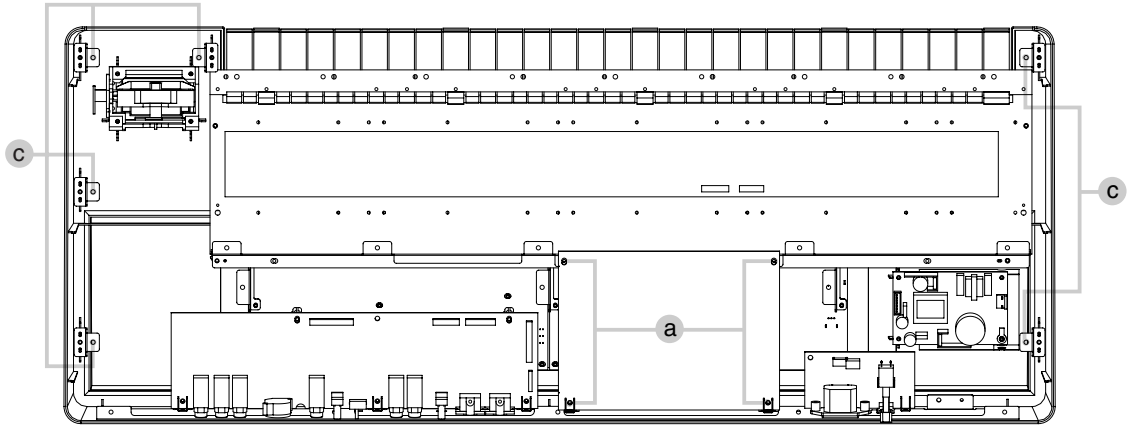
No.	Parts Code	Parts Name	Description	Q'ty
a	40011090	SCREW 3X6	BINDING TAPTITE B BZC	10
b	40011323	SCREW 3X10	BINDING TAPTITE P BZC	8
c	40011312	SCREW 3X8	BINDING TAPTITE P BZC	39
d	40011123	SCREW 4X8	BINDING TAPTITE B BZC	2
e	40237101	SCREW M3X8	PAN MACHINE W/SW+PW FE BZC	1
f	40011378	SCREW M4X8	BINDING TAPTITE S FE BZC	1

Exploded View (3)

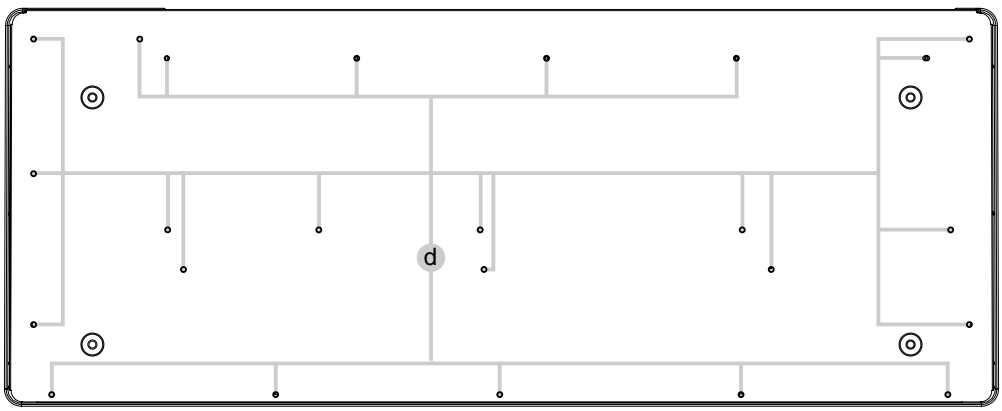
View 4



View 5



Bottom



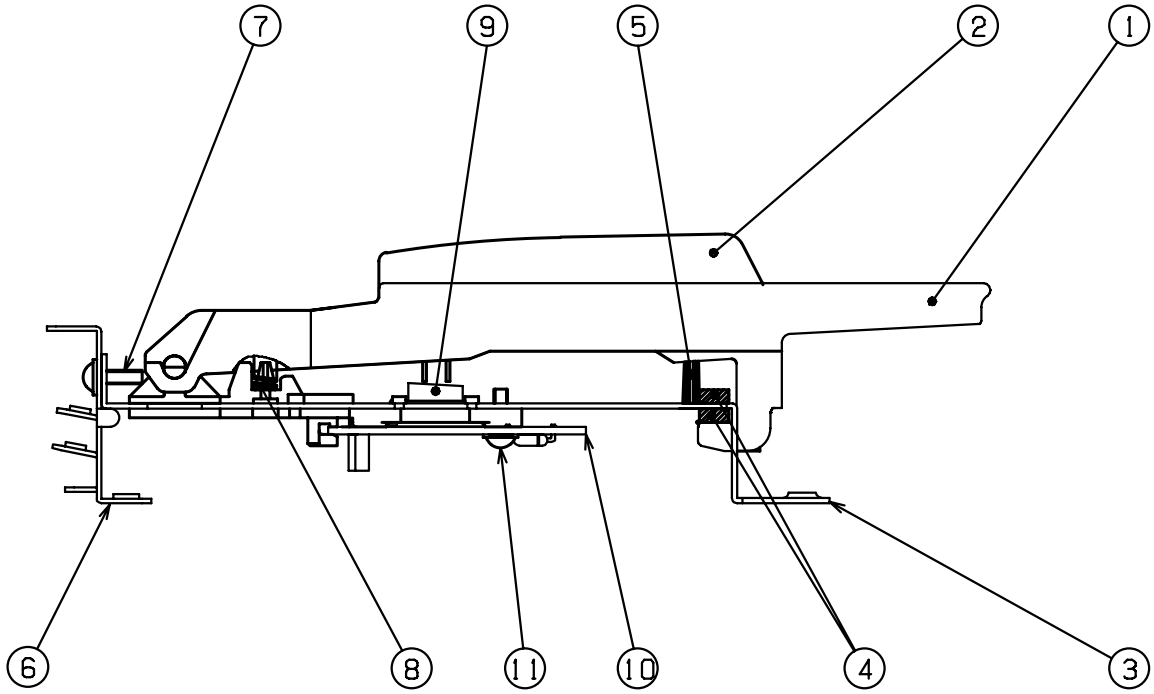
Exploded View (3) Parts List

Screw

No.	Parts Code	Parts Name	Description	Q'ty
a	40011090	SCREW 3X6	BINDING TAPTITE B BZC	8
c	40011312	SCREW 3X8	BINDING TAPTITE P BZC	6
d	40011123	SCREW 4X8	BINDING TAPTITE B BZC	24

Keyboard Parts List

SK-949-E (#73230089)



No.	Parts Code	Parts Name	Description	Q'ty
1	00893723W0	SK-9 NATURAL KEY CF	SK-9 (W/WEIGHT)	8
1	00893734W0	SK-9 NATURAL KEY EB	SK-9 (W/WEIGHT)	8
1	00893756W0	SK-9 NATURAL KEY D	SK-9 (W/WEIGHT)	4
1	00893767W0	SK-9 NATURAL KEY G	SK-9 (W/WEIGHT)	4
1	00893745W0	SK-9 NATURAL KEY A	SK-9 (W/WEIGHT)	4
1	00893778W0	SK-9 NATURAL KEY C'/F'	SK-9 (W/WEIGHT)	1
2	00893790W0	SK-9 SHARP KEY	SK-9 (W/WEIGHT)	20
	********	SK-9 CHASSIS 49P-C ASSY		1
3	********	SK-9 CHASSIS 49P-B		1
4	00894423	CUSHION	SK-9 49P	2
5	01122023	SK-9 GUIDE		49
6	********	VP-550 KBD HOLDER		1
7	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	6
8	01231534	SPRING-WT2	SK-9	19
9	00893823	RUBBER SWITCH	12P	3
9	00893834	RUBBER SWITCH	13P	1
10	70672856	SK-949 PWB LOW ASSY	SK-949-B	1
10	70672867	PWB HI ASSY	SK-949-B	1
11	40233545	SCREW 3X10	VWH TAPTITE B ZC	19

Parts List

SAFETY PRECAUTIONS:
The parts marked ⚠ 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.

CASING

#	73129590	BOTTOM COVER ASSY		1
#	04237390	POT DUST COVER A		1
#	04237401	POT DUST COVER B		1
#	04234145	SHIELD PLATE		1
#	04234101	TOP CASE		1

CHASSIS

#	04234078	PANEL HOLDER		1
#	04233790	PANEL HOLDER SIDE		2
#	04234090	REAR HOLDER		1
#	04129178	SIDE HOLDER		6
#	04233801	STAY		3

KNOB, BUTTON

	03120889	D S-KEYTOP	SX2H-B GRS	2
	03120890	D S-KEYTOP	SX1H-B GRS	4
	03120890	D S-KEYTOP	SX1H-B GRS	7
	04124267	J R-KNOB	SF-ELA BLK/SLV	2
	32490595	P S-KEY	MX BLK	1
	01013356	T S KEYTOP	MD1H LCG	4
#	04233367	Y S-KEYTOP	LD2H LCG	3
	02016478	Y S-KEYTOP	LD1H MCG	2
	02784589	Y S-KEYTOP	LD1H LCG (WHYT BRWN GRY)	4
	01561578	J S-KNOB S BLK/LCG		3

SWITCH

	13159180	SWITCH	SSSF112500	1
	02781634	TACT SWITCH	SKRGAED010	15
	01676512	PUSH SWITCH	SDKLA10200	1
	00125590	TACT SWITCH	EVQ QJJ 05Q	16

JACK, EXT TERMINAL

	13429825	MIDI CONNECTOR	YKF51-5054V	1
	13449275	6.5MM JACK	YKB21-5074	6
	03459223	XLR CONNECTOR	JY-5033A	1

POWER SUPPLY UNIT

	03782334	A1DU2L3B184	SWITCHING REGULATOR	1

BENDER UNIT

	03234723	PB-H0204	BENDER	1

KEYBOARD ASSY

	73230089	SK-949-E	KEYBOARD ASSY	1

PWB ASSY

#	!	73129689	INLET BOARD ASSY	1
#		73129678	JACK BOARD ASSY	1
#		73129601	MAIN BOARD ASSY	1
#		73129701	PANEL L KEYTOP ASSY	1
#		73129723	PANEL R KEYTOP ASSY	1

IC

	15189191	NJM2068D-D	IC (OP AMP)	1
	15189134	NJM2904D	IC (OP AMP)	2
	15189251	M5218AP-TF0Z	IC (BIPOLAR OP AMP)	2

TRANSISTOR

	03126145	2SA933ASTPR	TRANSISTOR	1
	03234545	2SD1858 TV2 Q	TRANSISTOR	1
	15129164	DTC114ESATP	DIGITAL TRANSISTOR	10
	15119170	RN2226(TPE4.F)	DIGITAL TRANSISTOR	8

DIODE

	15019126	1SS133 T-77	SWITCHING DIODE	37
	01904112	SLR-342VCT32 N.P.Q RANK	LED(RED)	29
	00785856	SLR-342VR3F	LED(RED)	4
	03126134	TLN233(F)	LED(INFRARED)	1
	03016901	SLR-342DU3F	LED	1
	02015623	SLR-342MG3F	LED	1
	04121578	SLR-343MCT32	LED	1
	01900612	TPS611(F)	DIODE	1

RESISTOR

	13749799T0	SR25TR 122J	CARBON RESISTOR	1
	13749773T0	SR25TRE 101 J	CARBON RESISTOR	4
	13749797T0	SR25TRE 102 J	CARBON RESISTOR	2
	13749821T0	SR25TRE 103 J	CARBON RESISTOR	2
	13749869T0	SR25TRE 105 J	CARBON RESISTOR	1
	13749779T0	SR25TRE 181 J	CARBON RESISTOR	1
	13749827T0	SR25TRE 183 J	CARBON RESISTOR	1
	13749781T0	SR25TRE 221 J	CARBON RESISTOR	2
	13749805T0	SR25TRE 222 J	CARBON RESISTOR	1
	13749811T0	SR25TRE 392 J	CARBON RESISTOR	2
	13749859T0	SR25TRE 394 J	CARBON RESISTOR	1
	13749837T0	SR25TRE 473 J	CARBON RESISTOR	3
	13749767T0	SR25TRE 560J	CARBON RESISTOR	12
	13749839T0	SR25TRE 563 J	CARBON RESISTOR	1
	13749190	SR50TR 100 J	CARBON RESISTOR	2

POTENTIOMETER

#	04232356	EWANKEC15A15	SLIDE POTENTIOMETER	1
#	04232345	RK09K1110D4B	ROTARY POTENTIOMETER	1
	01787545	EVUF2KFK3B14 10KB	9M/M ROTARY POTENTIOM-ETER	1
	01671345	RK09K1110077	9M/M ROTARY POTENTIOM-ETER	1
	03122123	EWA NKE C15 B14	30M/M SLIDE POTENTIOME-TER	2
	02670445	EVJY15FB6A14	12M/M ROTARY POTENTI-OMETER	1

CAPACITOR

	03018523	RPE2C1H100J2M1D01A	MLT.LAY.CERA CAPACITOR	1
	02018690	R2A-16V101MF1P2#-T2	CHEMICAL CAPACITOR	11
	02127812	RA2-25V470ME3#8-T2	CHEMICAL CAPACITOR	1
	02891767	RC2-16V100MD1#-T2	CHEMICAL CAPACITOR	1
	02891756	RC2-6V331MG1#-T2	CHEMICAL CAPACITOR	1
	03018534	RPE2C1H150J2M1Y01A	CERAMIC CAPACITOR	2
	03125001	RPE2C1H680J2M1Y01A	CERAMIC CAPACITOR	2
	01458323	RPEF11H103Z2M1A01A	CERAMIC CAPACITOR	1
	13529132	RPEF11H104Z2M1A01A	CERAMIC CAPACITOR	12

INDUCTOR, COIL, FILTER

	02892401	RFC-6	FERRITE-CORE	1

CONNECTOR

	01908634	14FE-BT-VK-N	CONNECTOR	1
	01908645	16FE-BT-VK-N	CONNECTOR	1
	02120834	30FE-BT-VK-N	CONNECTOR	1
	02458456	30FE-ST-VK-N	CONNECTOR	1
	02019001	32FE-BT-VK-N FOR WIRING	CONNECTOR	1
	02018689	32FE-ST-VK-N FOR PCB	CONNECTOR	1
	13369541	B10B-PH-K-S(LF)(SN)	CONNECTOR	2
	13369564	B12B-PH-K-S JST(LF)(SN)	CONNECTOR	1
	13369898	B2P3-VH(LF)(SN) 7A/250V	CONNECTOR	1
	13369567	B4B-PH-K-S JST(LF)(SN)(4P)	CONNECTOR	1
	13369556	B8B-XH-A(LF)(SN) JST	CONNECTOR	1
	13369672	S12B-PH-K-S(LF/SN)	CONNECTOR	1

WIRING, CABLE

	02675701	AC INLET ASSY	WIRING W3(AC INLET+GND)	1
#	04234645	BAN CARD	BNCD-P=1.25-K-32-150	1
#	04234656	BAN CARD	BNCD-P=1.25-K-30-160	1
	02016990	BAN CARD	BNCD-P=1.25-K-16-400	1
	03568789	BAN CARD	BNCD-P=1.25-K-14-400	1
	02678745	BAN CARD	BNCD-P=1.00-K-16-60	1
	02342023	WIRING	4X250-P2.0-PHR-PHR-F	1
	02344023	WIRING	12X200-P2.0-PHR-PHR-F	1
#	04234634	WIRING	10X280-P2.0-PHR-PHR-F	1
#	04234667	WIRING W1		1
#	04234678	WIRING W2		1
#	03565034	WIRING W3		1

SCREWS

	40011090	SCREW 3X6	BINDING TAPTITE B BZC	18
	40011323	SCREW 3X10	BINDING TAPTITE P BZC	8
	40011312	SCREW 3X8	BINDING TAPTITE P BZC	45
	40011123	SCREW 4X8	BINDING TAPTITE B BZC	26
	40237101	SCREW M3X8	PAN MACHINE W/SW+PW FE BZC	1
	40011378	SCREW M4X8	BINDING TAPTITE S FE BZC	1

PACKING

#	04233945	PACKING CASE		1
#	04233956	PACKING PAD L		1
#	04233967	PACKING PAD R		1
#	04233989	REAR PAD		1

MISCELLANEOUS

	12199584	GROUNDING TERMINAL	M1698	1
	02890945	CLAMP	LWSM-0605	1
	02230578	LED SPACER	LDS-50R	1
	12169368	LED SPACER	LDS-40B	1
	12169406	LED SPACER	LDS-100Y 10MM	3
	12169406	LED SPACER	LDS-100Y 10MM	3
	12359139	RUBBER FOOT	FF-018 BLK	4
	02894367	INSULATING COVER	DA-2496 SW-PS	1
	40016512	INSULOK TIE	80M/M T-18S	3
	40014589	WARNING SEAL	102-103	1
#	04233923	BADGE ROLAND		1
#	04233934	BADGE VP-550		1
	04125590	LEAF SPRING		1
#	04234089	PANEL SHEET		1

ACCESSORIES (Standard)

	40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY	1
#	73129567	OWNER'S MANUAL	JAPANESE	1
#	73231045	OWNER'S MANUAL	ENGLISH	1
	00907001	AC CORD SET	240VE SP-60+IS-14	1
	23495124	AC CORD SET	240VA SC-144-JO1 ES303-10HMA	1
	00894389	AC CORD SET	230V SP22+IS14 H05VV-F3G1.0	1
	00894378	AC CORD SET	120V SP301+IS14 SJT18/3	1
	03340956	AC CORD SET PSE	100V YA-101/YP-3NB/YC-13	1

Checking the Version

Enter the Test Mode and execute the first test item (1. VERSION) to confirm the system version.

Factory Reset

Outline

The procedure of factory reset for VP-550 isn't described in the Owner's Manual. Follow the procedure described below to execute it.
Initial settings of parameters when shipping are as follows.

- Contents of REGISTRATION 1--4
- Volume level of BASE and PURCUSSION (1--4)
- Settings of Vocal Designer and Voice Expression

Procedure

1. While holding down [PITCH] and [EXPRESSION], turn on the power.
   Until all LEDs light, hold down these two buttons.
2. While holding down [MIC ON/OFF], press [HUMMING].
   The [HUMMING] LED lights.
3. Press [REC].
   The Factory Reset is executed and [REC] LED is turned off.
4. Turn off the power.

How to Update the System Program

Outline

VP-550 uses a flash memory for system program. Data for the update are usually supplied as SMF (standard MIDI file). Connect the VP-550 and a MIDI sequencer which can play back the SMF, and load and write the MIDI data into the VP-550, then the system program of the VP-550 will be updated.

Required Time

About 9 minutes

Required Items

- Update CD-ROM (#17041823)
- A MIDI sequencer which can play back the SMF
  (Examples)
  Software Sequencer: UpdSMF.exe
  (Refer to Service Information #102333)
  Hardware Sequencer: MC-80

(If you use UpdSMF.exe)

- PC for Windows (with a USB connector)
- USB-MIDI interface (UM series)

Procedure

1. Prepare the sequencer (MC-80) or PC to play back the SMF for system update.
2. Connect the VP-550 and the sequencer (MC-80) with a MIDI cable. If you use UpdSMF.exe, connect them through a USB-MIDI interface.
3. While holding down the [PLAY] of the VP-550, turn on the power and hold the [PLAY] button until the [PLAY] LED blinks.
   When the [PLAY] LED blinks, VP-550 is on standby for receiving MIDI data and three LEDs of **AMBIENCE** turn on in order.
4. Play back the SMF data for system update.
   The [LEVEL] LEDs in the **MIC** section blink while receiving SMF data.
   Twelve LEDs of the tone in **VOCAL DESIGNER** and **ENSEMBLE** turn on in order to show the progress for data receiving. It will take about eight minutes to finish the data receiving.

   After the data receiving is completed, program writing will start automatically. And when the program writing is completed, the twelve LEDs of the tone will turn on in order.
5. Turn off the power of the VP-550.

* *If the system update is failed, execute again from the first step.*

Test Mode

Required Items

- Microphone
- Monitor Speaker
- Headphones
- Oscillator
- Oscilloscope
- Foot Switch (FS-5U or DP-2)
- Expression Pedal (EV-5)

Entering the Test Mode

1. Connect the MIDI IN and MIDI OUT of the VP-550 with a MIDI cable.
   * *This is necessary for the test item **2. DEVICE** (p. 17).*
2. Connect a microphone to the MIC connector.
   * *This is necessary for the test item **5. MIC** (p. 18).*
3. Connect an oscillator to the EXT IN jack.
   * *This is necessary for the test item **6. EXT IN** (p. 18). Output signal from the oscillator have to be converted to balance signal.*
4. While holding down the [PITCH] and [EXPRESSION], turn on the power.

Exiting the Test Mode

Turn off the power of the VP-550.

Skipping the Test Items

- Advance to the next test item:press OCTAVE [UP]
- Return back to the previous test item:press OCTAVE [DOWN]

* *When executing **9. SWITCH & LED** (p. 19) test or moving by force, press the buttons described above while holding down [MIC ON/OFF].*

Direct Selection of the Test Items

To select each test item directly and execute it, hold down [MIC ON/OFF] and press the following tone buttons in the VOCAL DESIGNER and ENSEMBLE sections.

Test Item	Tone Button
1. VERSION	[CLASSIC]
2. DEVICE	[MALE&FEMALE]
3. PHONES	[GOSPEL]
4. OUTPUT	[POP]
5. MIC	[VOCODER 1]
6. EXT IN	[VOCODER 2]
7. MUTE	[STRINGS 1]
8. D BEAM	[STRINGS 2]
9. SWITCH & LED	[JAZZ SCAT]
10. A/D	[MIXED CHORUS]
11. KEYBOARD	[BOYS CHOIR]
12. FACTORY RESET	[HUMMING]

Test Items

1. VERSION

Outline

This shows the system version.

Procedure

1. When entering the test mode and all LEDs light, press any switch except for tone buttons ([CLASSIC]--[HUMMING]).

* *Don't hold your hand above D BEAM at this time.*

The [CLASSIC] LED lights and the system version is shown as follows.

System version is shown as a lighting pattern made up by the following eight LEDs. In this example, eight LEDs are written in numerals of [1]--[8].

BASS1 [1]
BASS2 [2]
BASS3 [3]
PERC [4]
REGISTRATION 1[5]
REGISTRATION 2[6]
REGISTRATION 3[7]
REGISTRATION 4[8]

When a lighting LED is written in **1**, and a non-lighting LED is written in **0**, the system version is shown as follows.

[1]--[8]= **0110 0100** (binary) = 100 (decimal) -> Ver. 1.00
[1]--[8]= **0110 0101** (binary) = 101 (decimal) -> Ver. 1.01
[1]--[8]= **0110 1110** (binary) = 110 (decimal) -> Ver. 1.10
[1]--[8]= **1100 1000** (binary) = 200 (decimal) -> Ver. 2.00
[1]--[8]= **1111 1111** (binary) = 255 (decimal) -> Ver. 2.55

MEMO

If you use the function calculator of **Calculator** in **Accessories** of Windows, you can convert from binary to decimal mutually.

2. Press OCTAVE [UP] to advance to the next test item.

2. DEVICE

Outline

This tests some main electronic devices.

Procedure

* *Before entering the Test Mode, connect MIDI IN and MIDI OUT with a MIDI cable previously.*

The [MALE&FEMALE] LED lights and the test for each device starts automatically. If any device is wrong, the LED corresponds to that device blinks as follows.

LED	Device
[BASS1]	Flash ROM (BOOT)
[BASS2]	Flash ROM (PROG)
[BASS3]	SD RAM (MAIN)
[PERC]	SD-RAM (DSP)
REGISTRATION [1]	WAVE ROM
REGISTRATION [2]	WX
REGISTRATION [3]	MIDI
REGISTRATION [4]	SUB CPU

If all devices have no problems, the test program advances to the next test item automatically.

3. PHONES

Outline

This tests the PHONES jack.

Procedure

The [GOSPEL] LED lights.

1. Connect an oscilloscope to the PHONES jack.

2. Confirm sine waves are outputted correctly from the PHONES jack. (L ch: 110 Hz, R ch: 220 Hz)

3. Press OCTAVE [UP] to advance to the next test item.

4. OUTPUT

Outline

This tests the OUTPUT L, R jacks.

Procedure

The [POP] LED lights.

1. Connect monitor speakers to the OUTPUT L and R jacks.

2. Confirm sine waves sound with no distortions.

3. Connect an oscilloscope to the OUTPUT L and R jacks.

4. Confirm sine waves are outputted correctly from the OUTPUT L and R jacks. (L ch: 330 Hz, R ch: 440 Hz)

5. Press OCTAVE [UP] to advance to the next test item.

5. MIC

Outline

This tests the MIC connector.

Procedure

* *Before entering the Test Mode, connect a microphone to the MIC connector previously.*

The [VOCODER 1] LED lights.

1. Connect monitor speakers to the OUTPUT L and R jacks.
2. Adjust the MIC LEVEL knob on the top panel to minimum and input a voice to the microphone.
3. Confirm no sound is produced.
4. Adjust the MIC LEVEL knob on the top panel to maximum and input a voice to the microphone.
5. Confirm a sound without distortion is produced.
6. Press OCTAVE [UP] to advance to the next test item.

If there are some troubles on mic input...

Carry out the next procedure for detailed confirmation.

1. Turn off the power and connect an oscillator to the MIC connector.
   * *Convert the unbalance signal from the oscillator to the balance signal.*
2. Connect an oscilloscope to the OUTPUT L and R jacks.
3. Adjust the MIC LEVEL knob on the top panel to the maximum.
4. Input the balanced sine wave (1 kHz, -51.0 dBu).
5. Adjust the VOLUME knob on the top panel to the maximum.
6. Confirm the output signals from OUTPUT L and R are +12.4 dBu (+/- 10%).

6. EXT IN

Outline

This tests the EXT IN jack.

Procedure

* *Before entering the Test Mode, connect an oscillator to the EXT IN jack previously.*

* *Convert a signal from oscillator to the balance signal.*

The [VOCODER 2] LED lights.

1. Connect an oscillator to the OUTPUT L and R jacks.
2. Rotate the LINE/MIC knob on the rear panel all the way to the MIC side.
   * *It's no problem whether the MIX TO MIC switch is set to ON or OFF.*
3. Input the balanced sine wave (1 kHz, -50.2 dBu).
4. Confirm the output signals from OUTPUT L and R are +12.2 dBu (+/- 10%).
5. Rotate the LINE/MIC knob to the LINE side, and confirm the amplitude of output wave become small.
6. Press OCTAVE [UP] to advance to the next test item.

7. MUTE

Outline

This tests the working of the muting circuit.

Procedure

LEDs of [STRINGS 1] and [PLAY] light.

1. Connect monitor speakers to the OUTPUT L and R jacks.
2. Press and hold down [PLAY].
3. Confirm the [PLAY] LED turns off and a sound stops while holding down [PLAY].
4. Release [PLAY].
5. Confirm the [PLAY] LED lights and a sound is audible.
6. Press OCTAVE [UP] to advance to the next test item.

8. D BEAM

Outline

This tests the working of D BEAM, and adjusts its sensitivity.

Procedure

The [STRINGS 2] LED lights.

* *[PITCH] or [EXPRESSION] blinks and a sound is audible while D BEAM responds.*

1. Make sure not to hold your hand above the D BEAM.

2. Confirm [EXPRESSION] lights. ([EXPRESSION] lights when the OFF of D BEAM are detected correctly.)

Adjusting the D BEAM Sensitivity

When you don't hold your hand above D BEAM, if [PITCH] blinks and a sound is audible, D BEAM is too sensitive. Then adjust the D BEAM sensitivity. The sensitivity can be adjusted within six levels by pressing the following buttons.

Buttons	Sensitivity
CLASSIC	1
MALE&FEMALE	2
GOSPEL	3
STRINGS 1	4
STRINGS 2	5
JAZZ SCAT	6

3. Bring your hand slowly to the D BEAM from a distance.

4. Confirm [EXPRESSION] blinks and a sound is audible.

5. Bring your hand slowly away from the D BEAM.

6. Confirm [EXPRESSION] lights and a sound stops.
When the test is OK, the test program advances the next test item automatically.
(When going to the next test item, the D BEAM sensitivity is stored.)

9. SWITCH & LED

Outline

This tests LED lightings and switch workings.

Procedure

1. Press buttons which LED light one by one.
When pressing the button, its LED turns off.

* *When the MIC LEVEL LED lights, press the 8va button.*

The following switches correspond to more than one LED.

Switch	LED
MIC ON/OFF	PEAK, SIGNAL(H), SIGNAL(L)
AMBIENCE TYPE	HALL1, HALL2, STUDIO

When the test is completed, the test program advances the next test item automatically.

* *If you want to go to the next test in the middle of the current test, hold down [MIC ON/OFF] and press OCTAVE [UP].*

10. A/D

Outline

This tests knobs, sliders, slide switches and pedals.

Procedure

The [MIXED CHORUS] LED lights, and one of the following LEDs which corresponds to each test item blinks.

LED	Test Items
BASS1	Pitch Bender
BASS2	Modulation Lever
BASS3	MIX TO MIC Slide Switch
PERC	HOLD Pedal
REGISTRATION 1	EXP Pedal
REGISTRATION 2	TUNE Knob
REGISTRATION 3	MIC DIRECT Slider
REGISTRATION 4	ENSEMBLE LEVEL Slider
AMBIENCE	AMBIENCE Knob

1. Connect a Foot Switch (FS-5U) to the HOLD PEDAL jack.

2. Connect a Expression Pedal (EV-5) to the EXP PEDAL jack.

3. Rotate or slide knobs, sliders, slide switches or pedals which LEDs are blinking to the minimum, the maximum, and the minimum again.

4. Confirm the corresponding LED turns off.
When tests for all knobs, sliders, and slide switches are completed, the test program advances to the next test item automatically.

11. KEYBOARD

Outline

This tests Keyboard.
This tests each key is pressed more than one time.

Procedure

The [BOYS CHOIR] LED lights, and LEDs of [BASS1], [BASS2], [BASS3] and [PERC] blink.

1. Play the keyboard.
Velocity is indicated in six levels using next LEDs.
[POP], [VOCODER 1],
[VOCODER 2], [MIXED CHORUS],
[BOYS CHOIR], [HUMMING]
When each key is pressed more than one time, each LED of [BASS1], [BASS2], [BASS3] and [PERC] lights.

2. Press OCTAVE [UP] to advance to the next test item.

12. FACTORY RESET

Outline

This executes the Factory Reset.

* *Refer to **Factory Reset** (p. 16) about which parameters are reset to the value on shipping.*

Procedure

The [HUMMING] LED lights, and the [REC] LED blinks.

1. Press [REC].
Factory Reset is executed.
When the Factory Reset is completed, the test program advances to the next test item automatically.

13. COMPLETED

Outline

All tests have been finished.

Procedure

Confirm twelve tone LEDs in the VOCAL DESIGNER or ENSEMBLE sections blink, and turn off the power.

Keyboard Disassembly

Attaching the RUBBER SWITCHES and PWB

NOTE

To fasten the SK-9 PWB, be sure to use 3 x 10 mm BINDING VWH (Part No. 40233545).

1. Turn the chassis over as shown in Fig.5.
Next, place 3 pieces of RUBBER SWITCH 12P in turn, on the chassis from the left end (the bass side of keyboard), aligning them with the long holes provided on the chassis. At this point, be sure that the air-escape grooves of each RUBBER SWITCH are positioned at the respective air-escape grooves on the chassis. (See Fig.6.)
Place RUBBER SWITCH 13P on the right side (the high note area) in the same way.

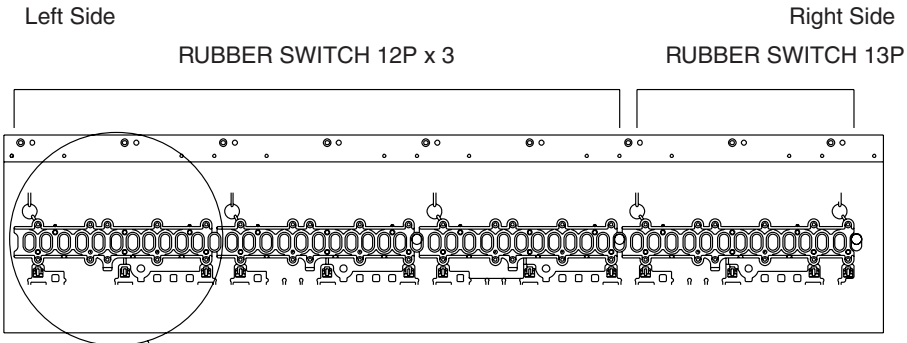


Fig.5

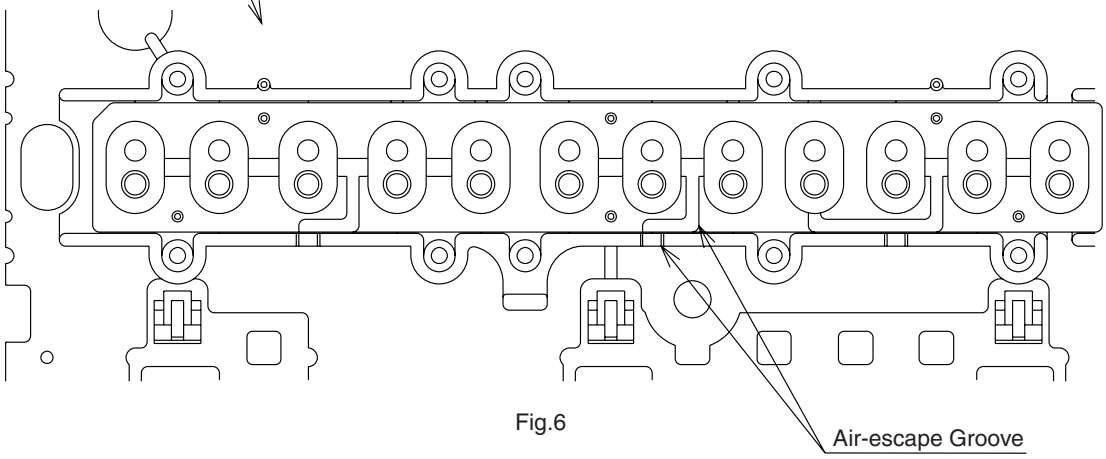


Fig.6

2. Aligning the cutouts in the PWB with the lugs on the chassis, put one side of the PCB into the chassis hooks. Place the PWB on the chassis so that the chassis positioning pins fit into the positioning holes. (See Fig.7.)

At this point, the chassis positioning reference pin should first be fitted into the hole.

There are two PWBs, LOW and HI, as shown in Fig.8. The chassis positioning reference pins are located near the connector each of the LOW and HI PWBs.

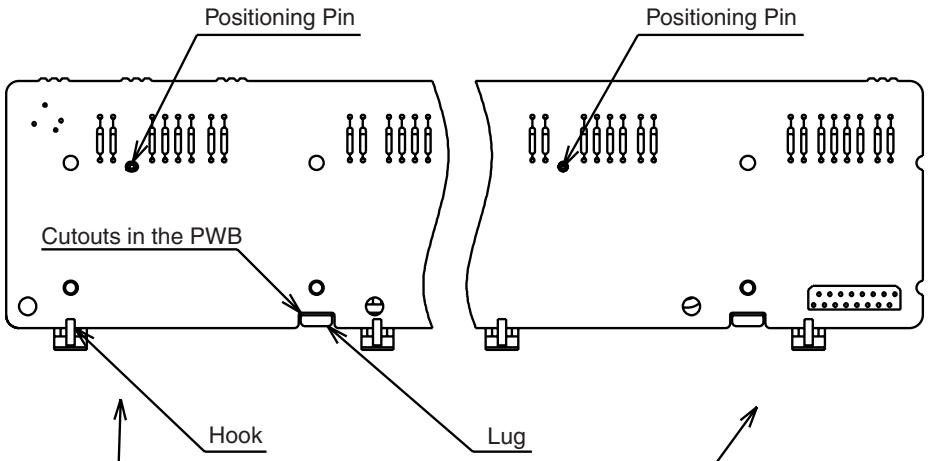


Fig.7

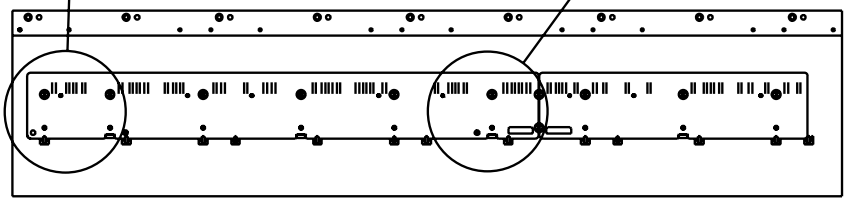
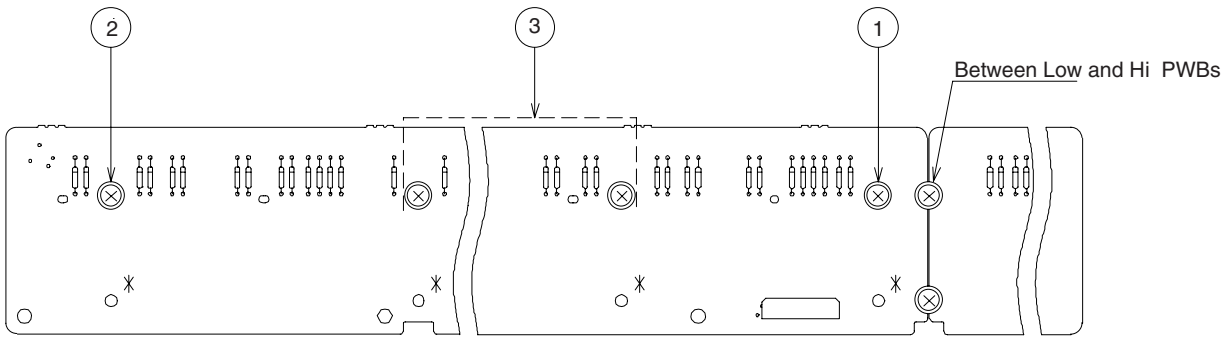


Fig.8

3. Then, using the screws, fasten the LOW and HI PWBs to the chassis from the center of the keyboard, that is, from the LOW PCB as shown in Fig.9. While you are screwing down the PWB, it may float from the chassis. To avoid this, after screwing in the PWB at the center of the keyboard, screw down opposite end, before screwing in other areas in the middle of the PWB. (See Fig.5.) In addition, the PWBs may be warped by soldering, etc. It is recommended that each PWB be fastened screws while holding down the middle of the PWB lightly. Finally, screw down the adjacent area between the LOW and HI PWBs.



⊗ : Screw Positions ✳ : Use of these screw holes is not necessary, but if the chassis hooks are broken use these holes for insertion.

Fig.9

* *When using an electric screwdriver, be careful of the torque. If excessive force is applied, the PWB may break or chip. (Suitable torque: 8 kgf-cm)*

Key Removal

Hold the tip of the key, put pliers into the bearing side, and spread out. (Refer to Fig.10)

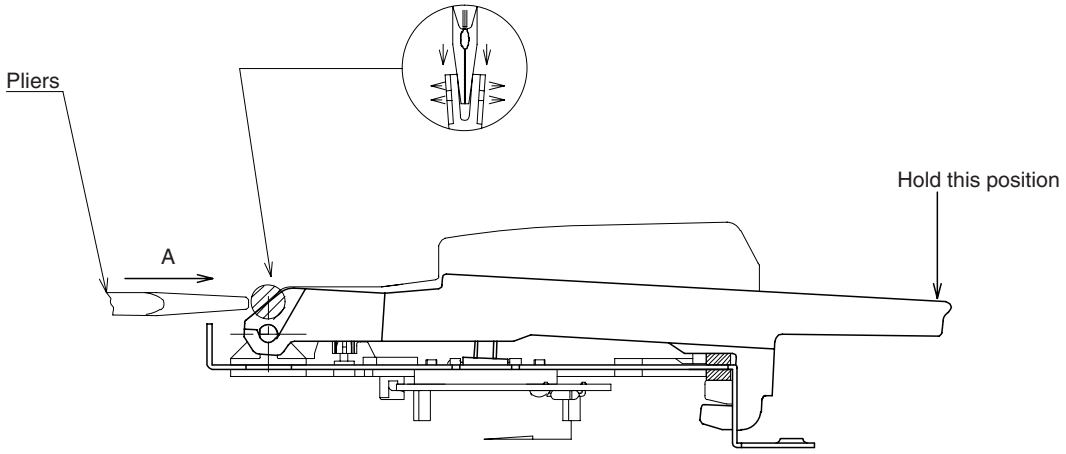


Fig.10

Key Installation

Place a spring on the chassis. Next, place a key (see Fig.11) and press the bearing side.

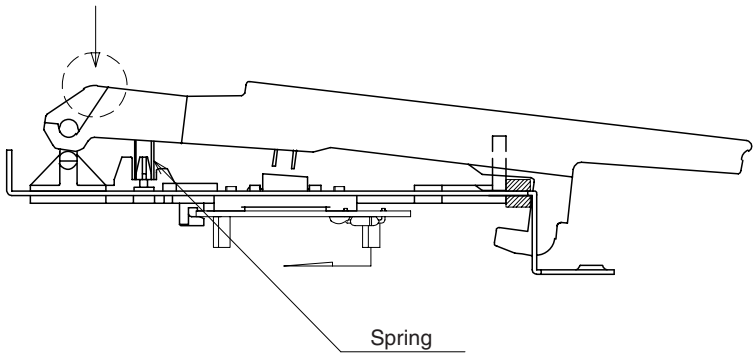
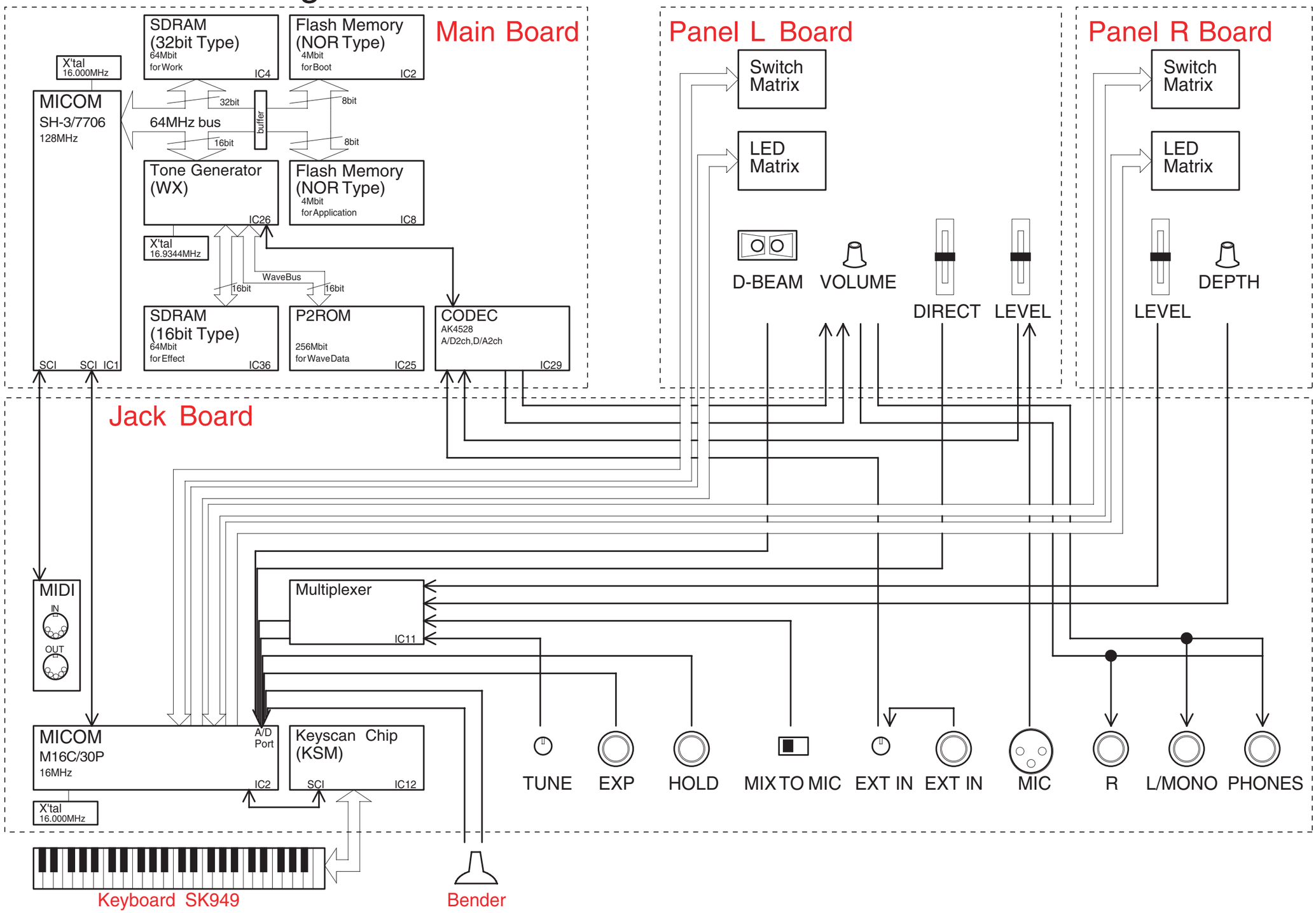


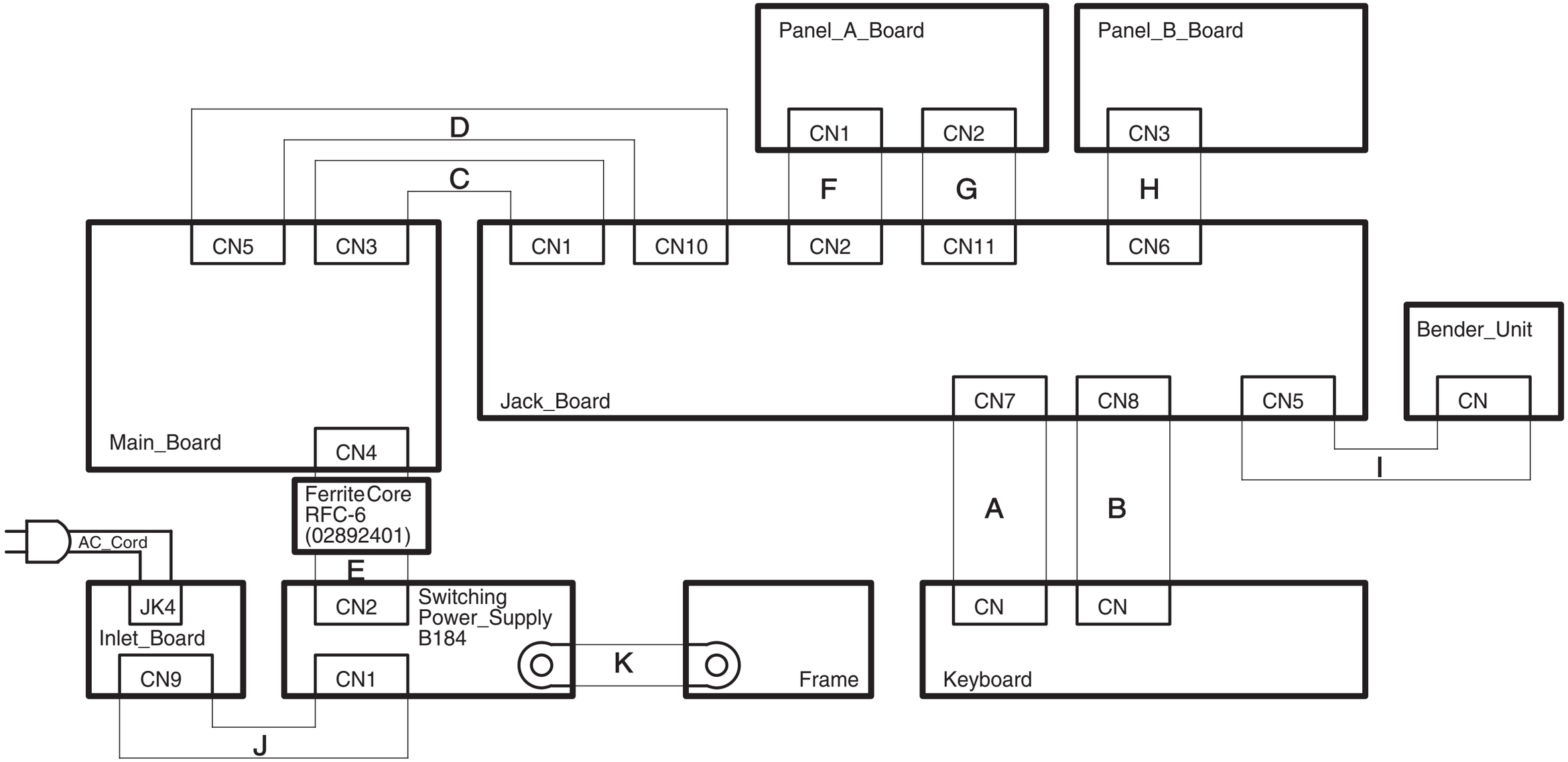
Fig.11

Block Diagram

VP-550 Block Diagram



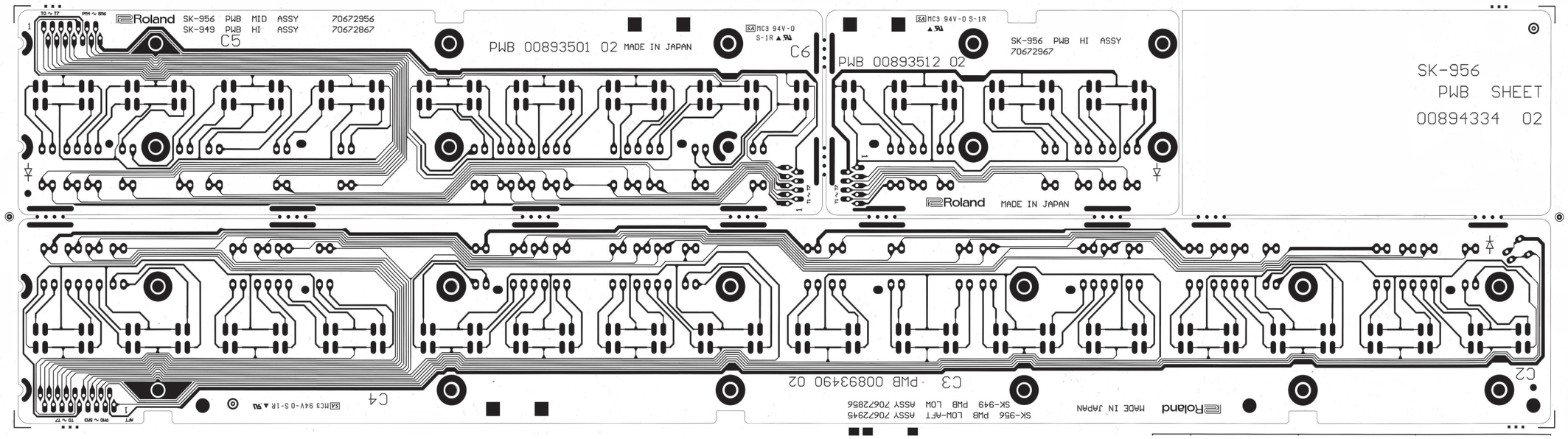
Wiring Diagram



Symbol	Parts Code	Parts Name	Description
A	02016990	BAN CARD	BNCD-P=1.25-K-16-400
B	03568789	BAN CARD	BNCD-P=1.25-K-14-400
C	02678745	BAN CARD	BNCD-P=1.00-K-16-60
D	04234634	WIRING	10X280-P2.0-PHR-PHR-F
E	03565034	WIRING W3	
F	04234645	BAN CARD	BNCD-P=1.25-K-32-150
G	02344023	WIRING	12X200-P2.0-PHR-PHR-F
H	04234656	BAN CARD	BNCD-P=1.25-K-30-160
I	02342023	WIRING	4X250-P2.0-PHR-PHR-F
J	04234667	VP-550 WIRING W1	
K	04234678	VP-550 WIRING W2	

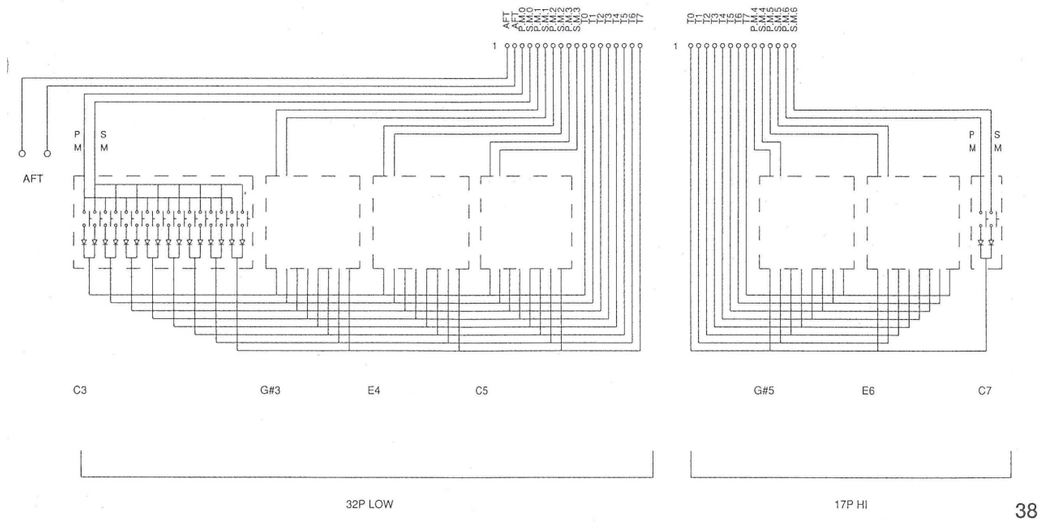
Keyboard Circuit Board

SK-949 PWB HI ASSY 70672867



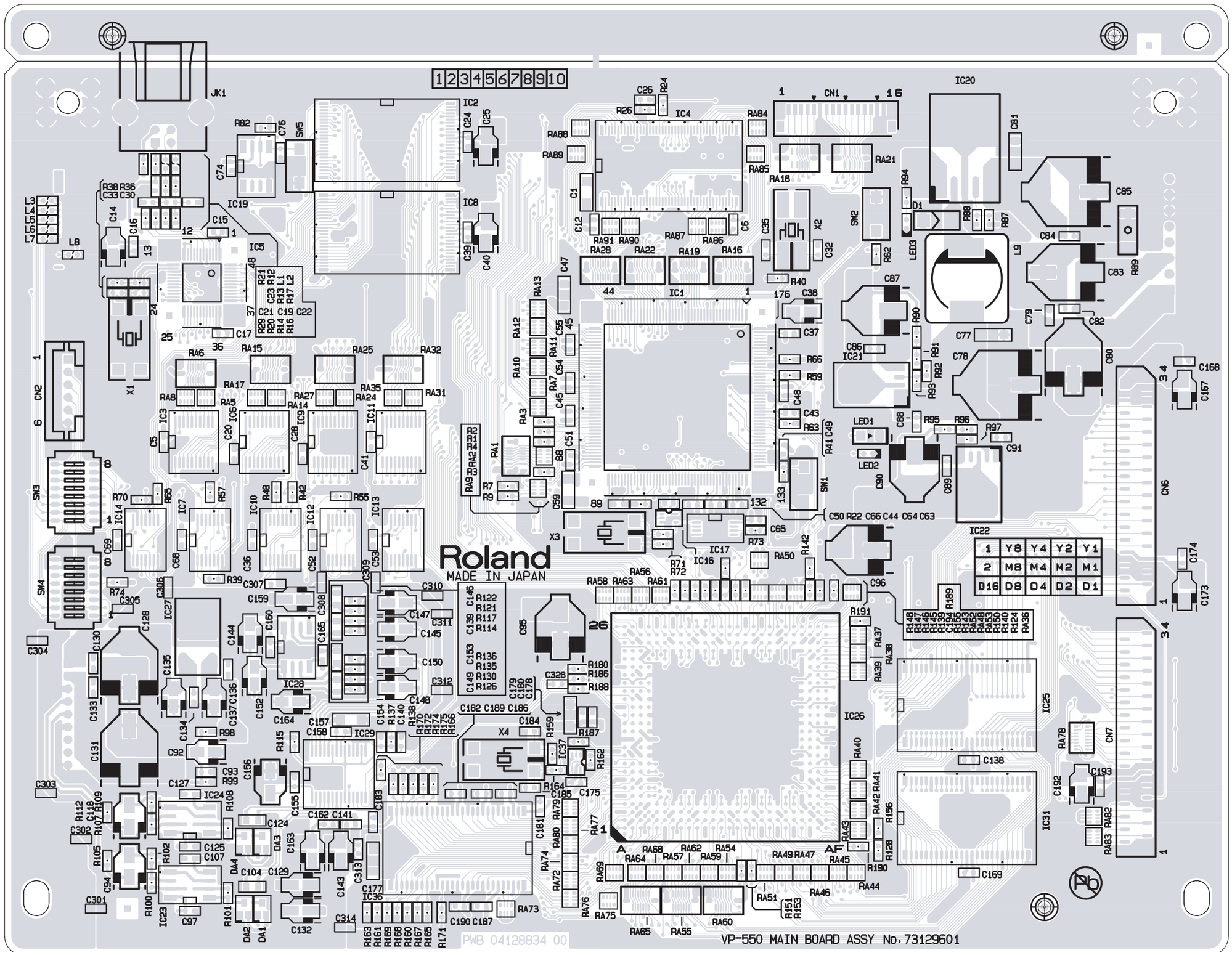
SK-949 PWB LOW ASSY 70672856

Keyboard Circuit Diagram

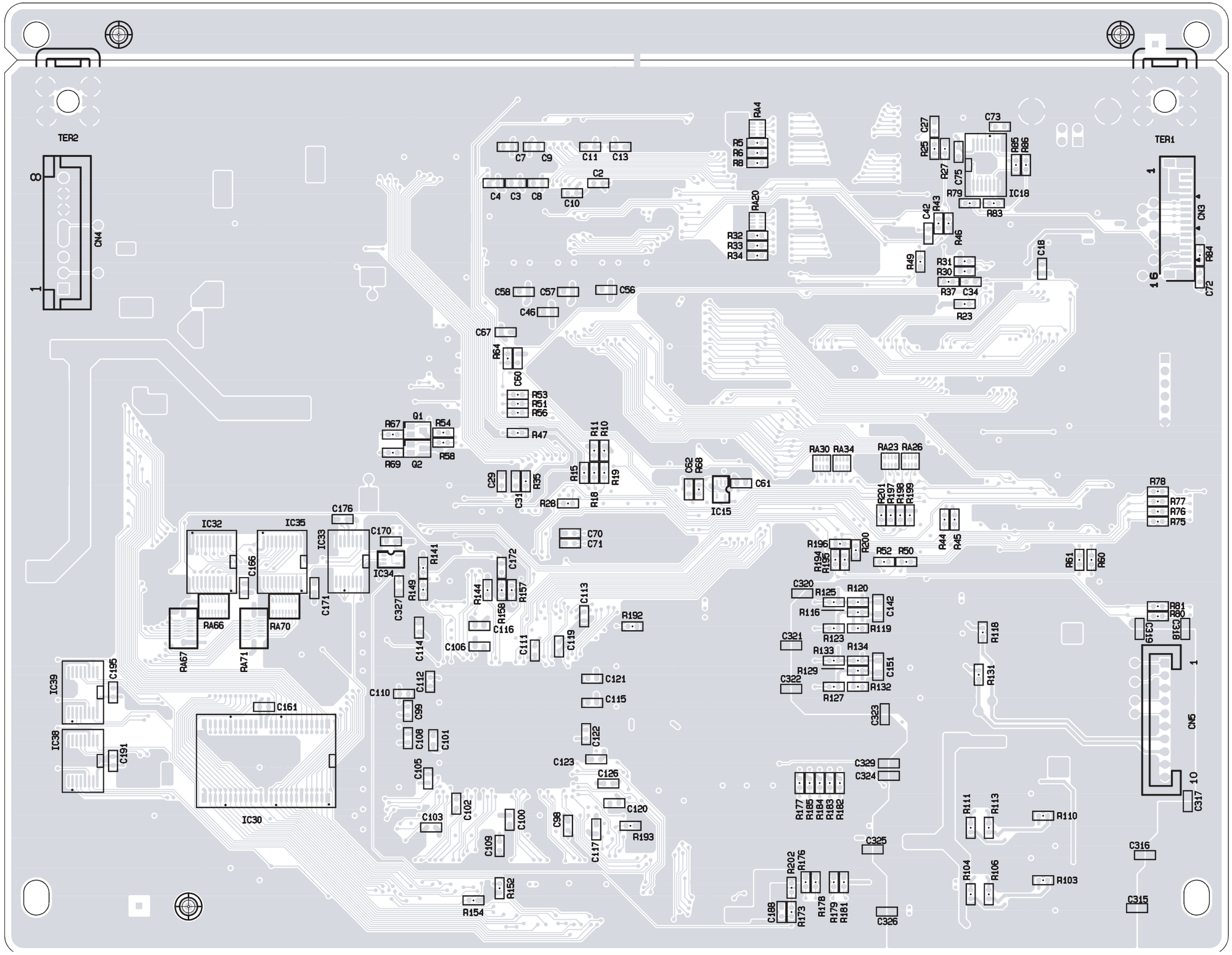


38

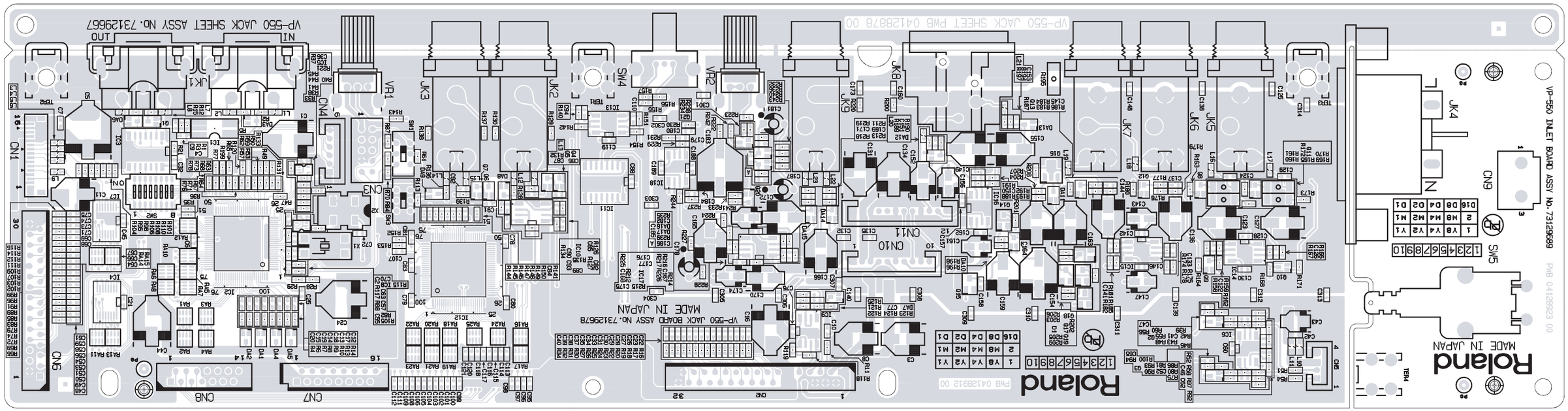
Circuit Board (MAIN BOARD: 1/2)



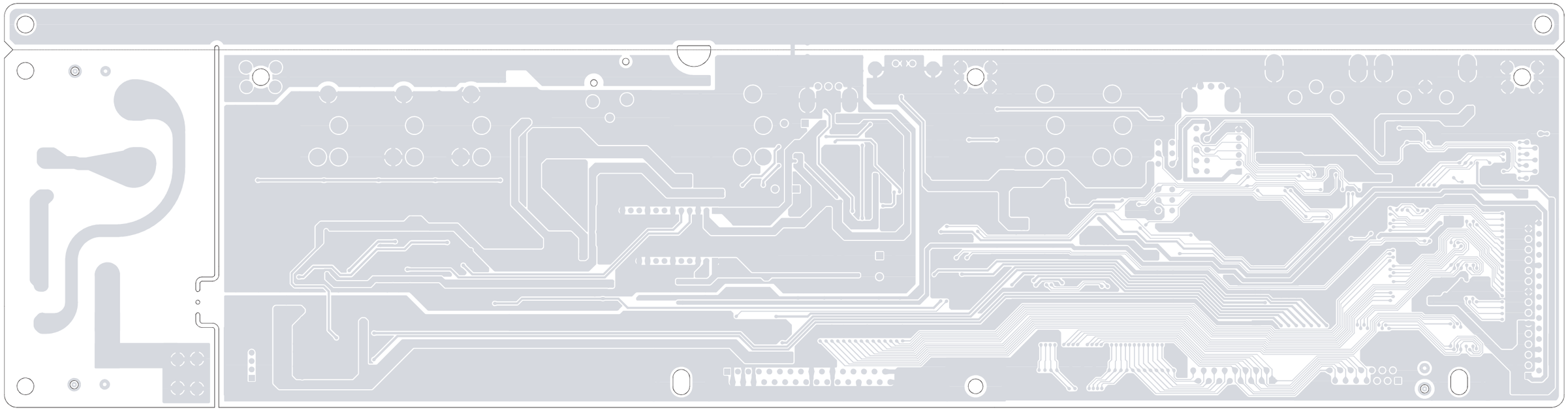
Circuit Board (MAIN BOARD: 2/2)



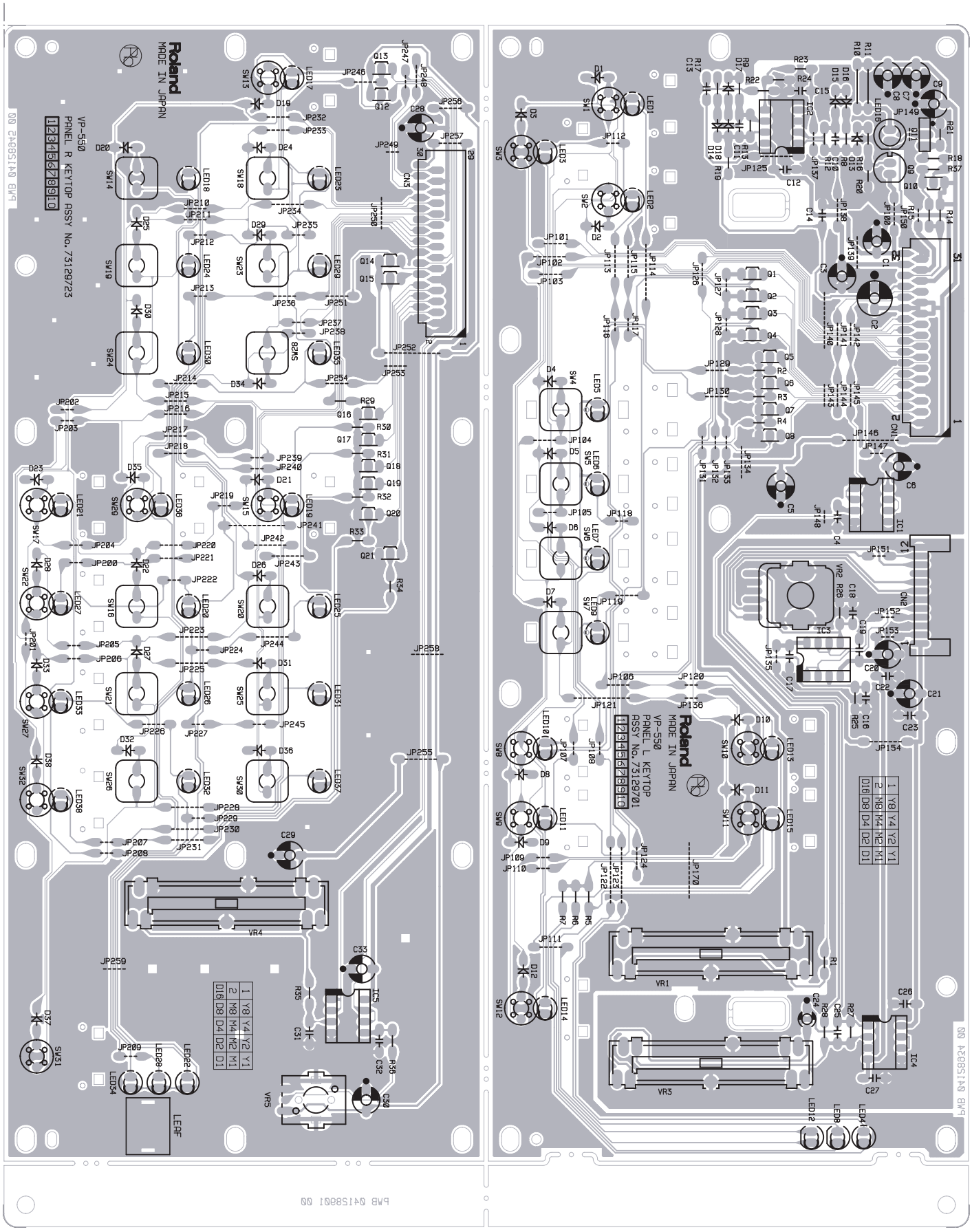
Circuit Board (JACK BOARD, INLET BOARD: 1/2)



Circuit Board (JACK BOARD, INLET BOARD: 2/2)

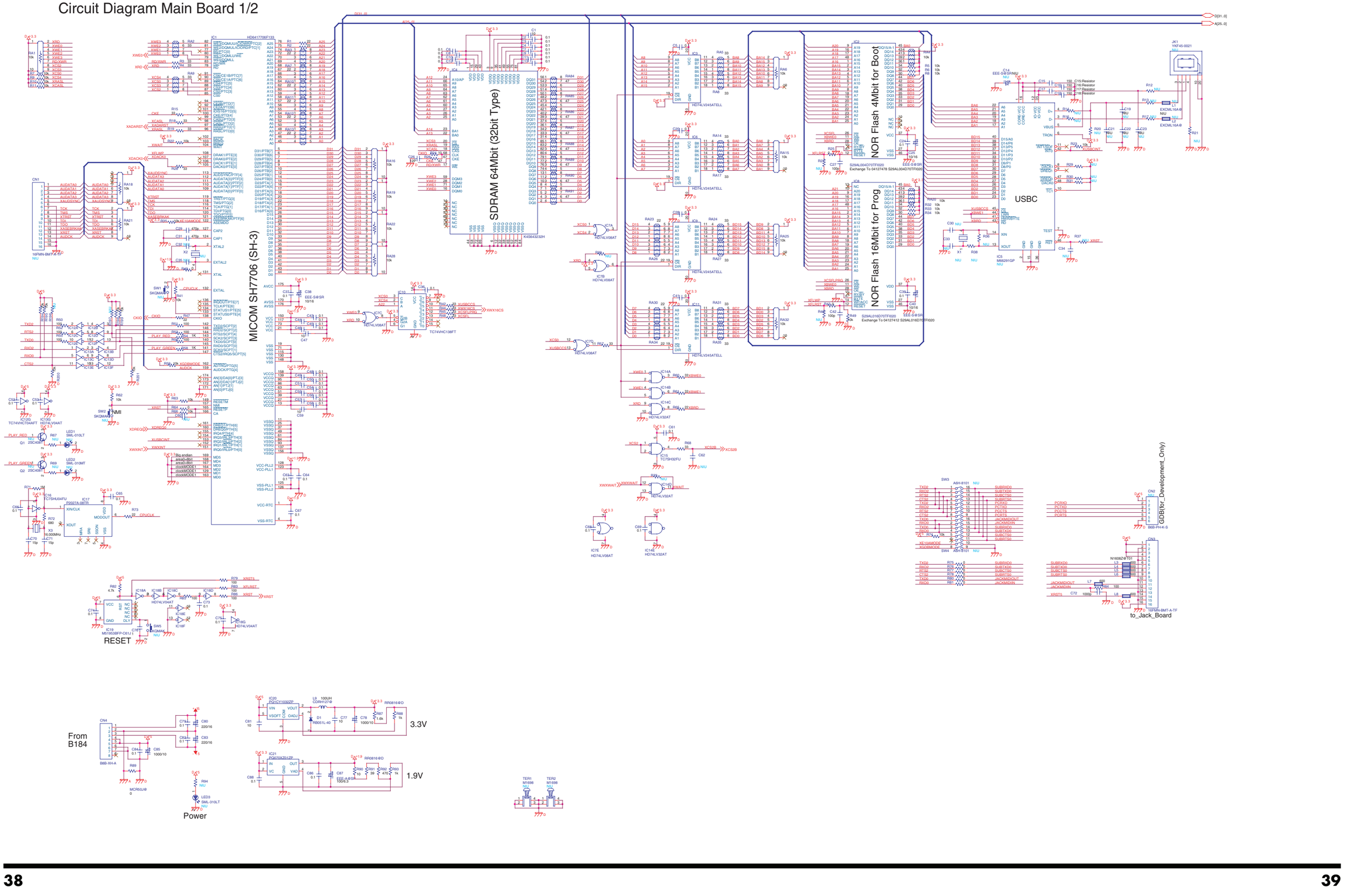


Circuit Board (PANEL L BOARD, PANEL R BOARD)



Circuit Diagram (MAIN BOARD: 1/2)

Circuit Diagram Main Board 1/2



Circuit Diagram (MAIN BOARD: 2/2)

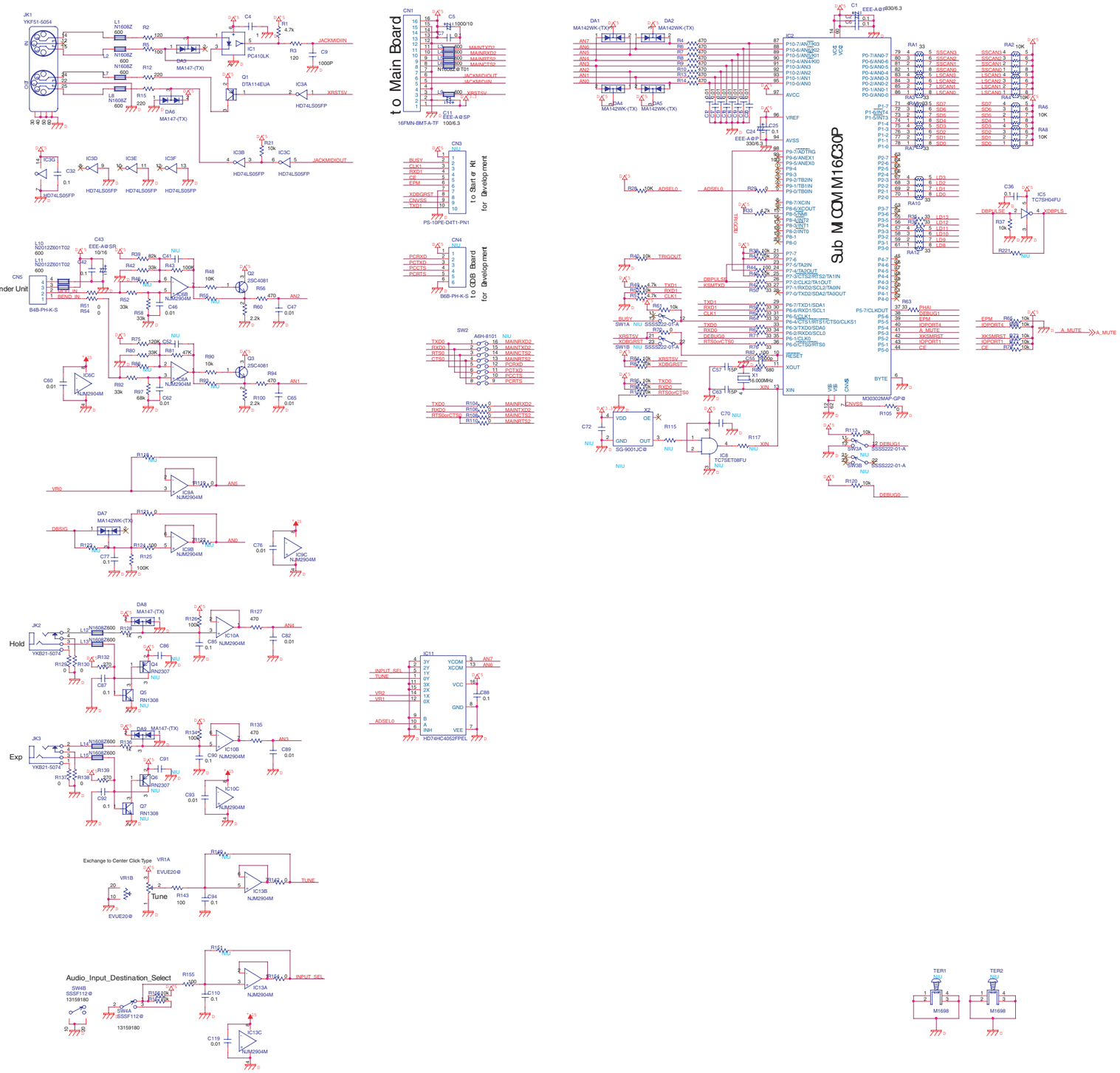
Circuit Diagram Main Board 2/2

WX Chip

1.5V

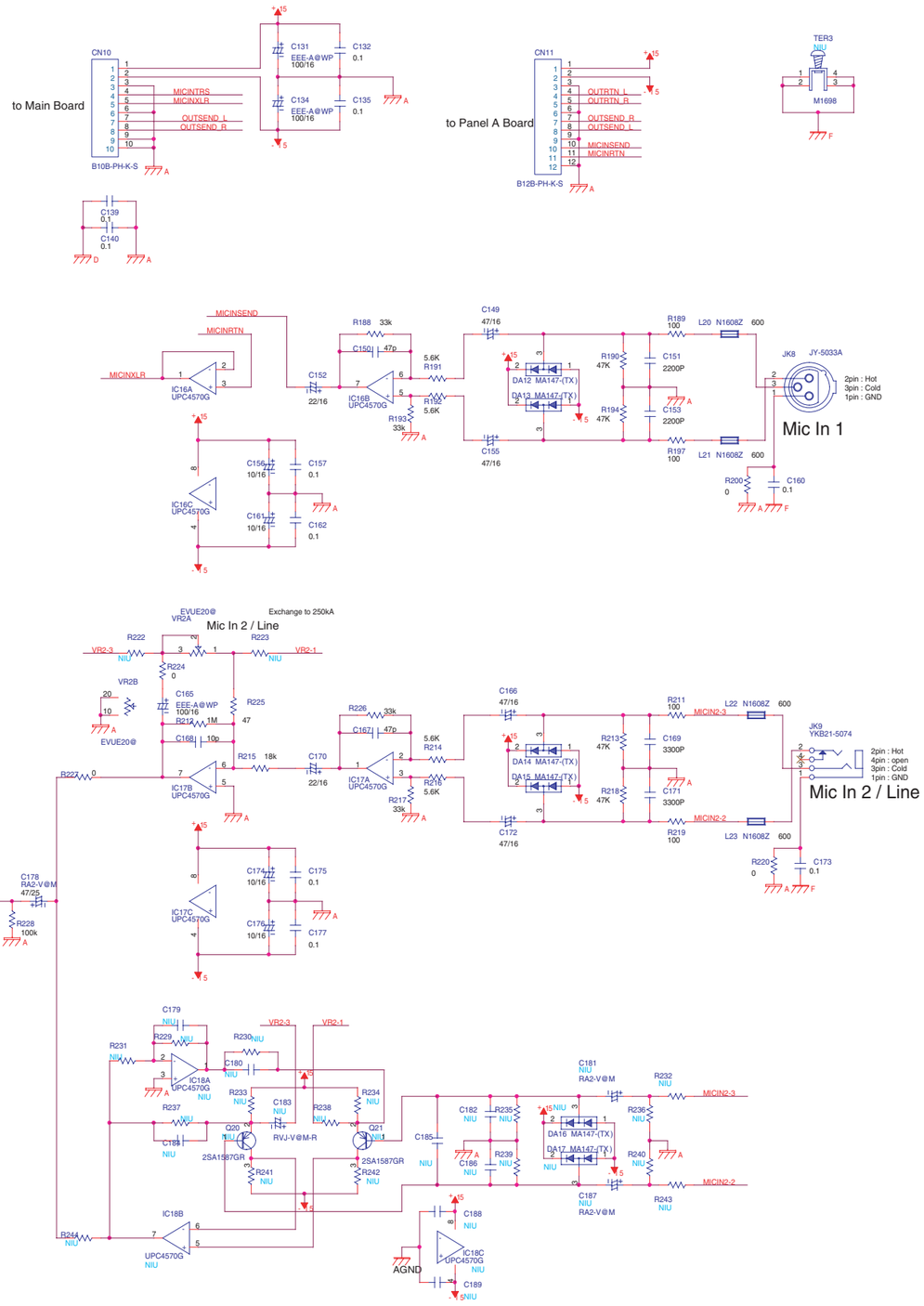
Circuit Diagram (JACK BOARD: 1/2)

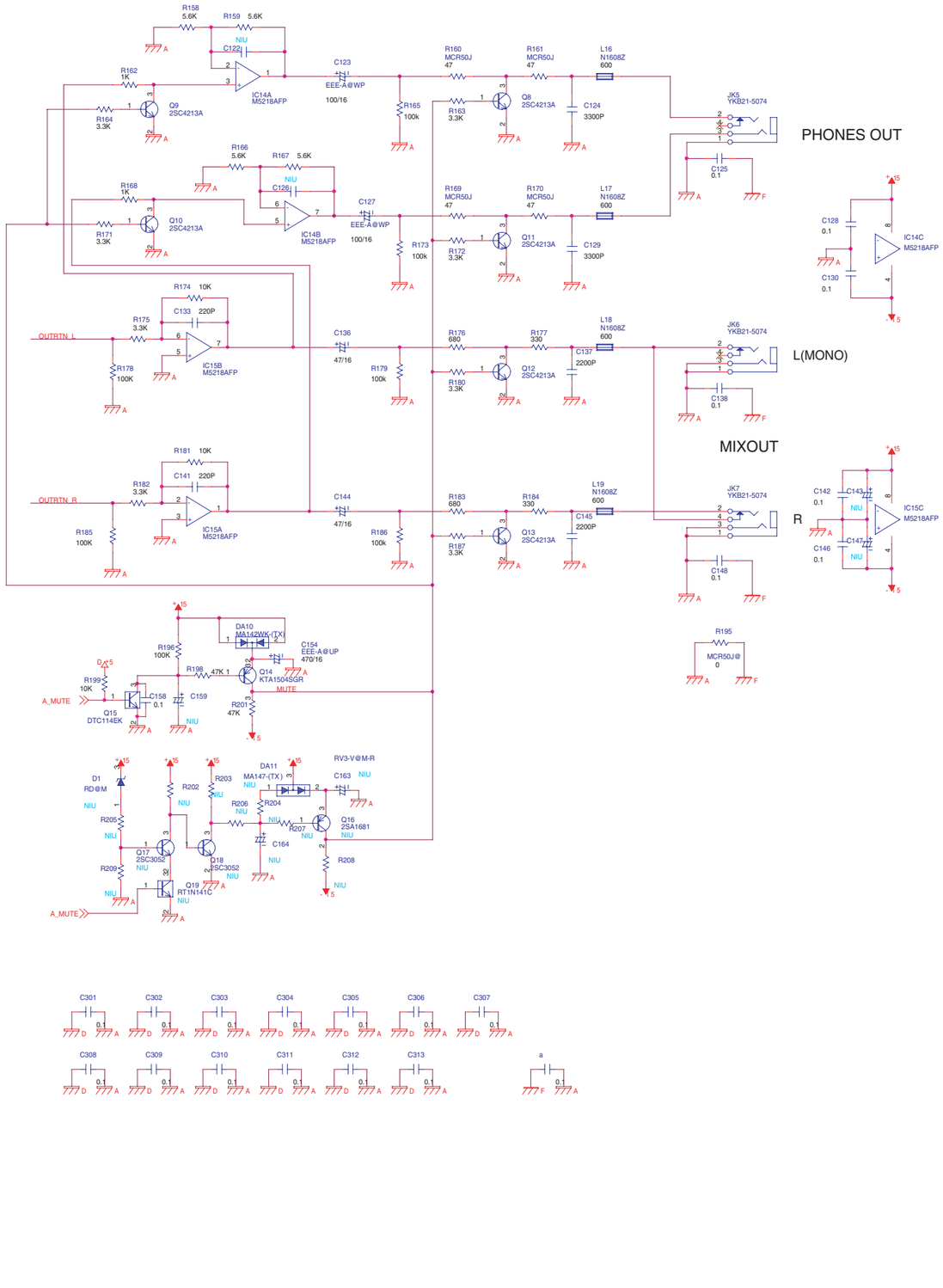
Circuit Diagram Jack Board 1/2



Circuit Diagram (JACK BOARD: 2/2)

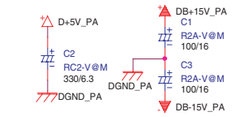
Circuit Diagram Jack Board 2/2



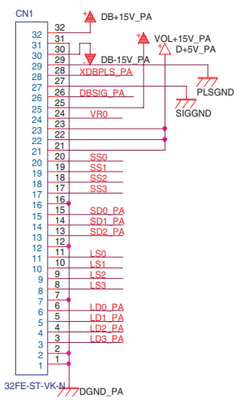


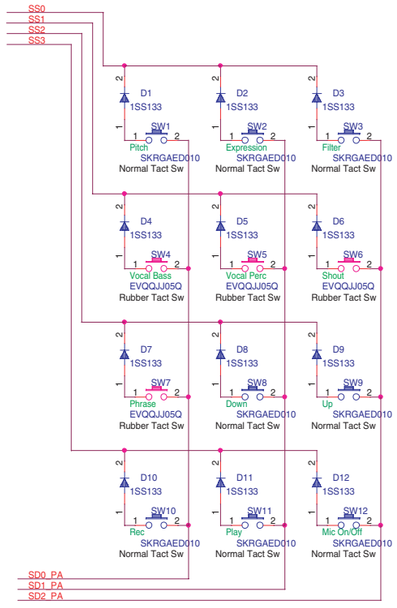
Circuit Diagram (PANEL L BOARD)

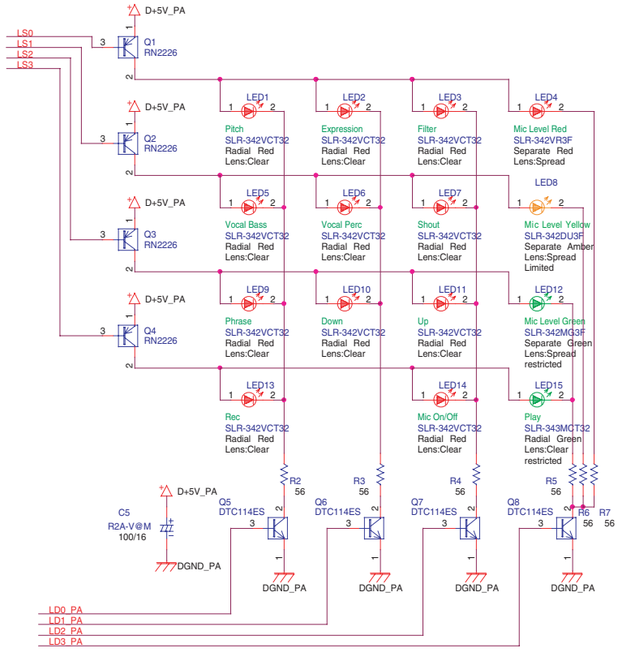
Circuit Diagram Panel L Board

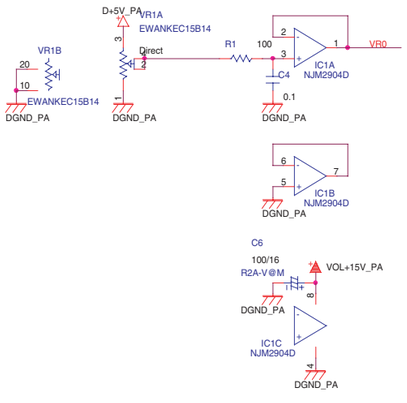


To_Jack_Board

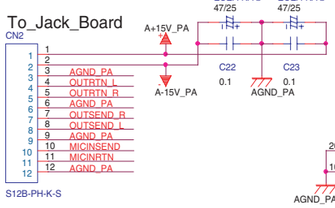




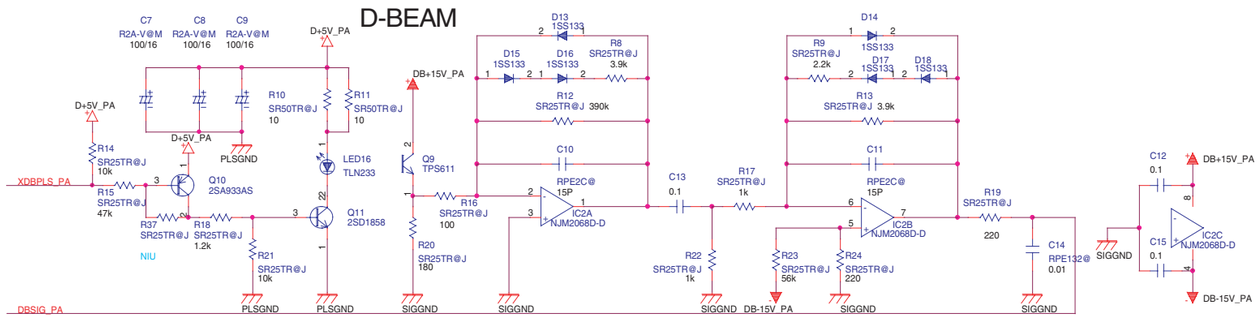




To_Jack_Board

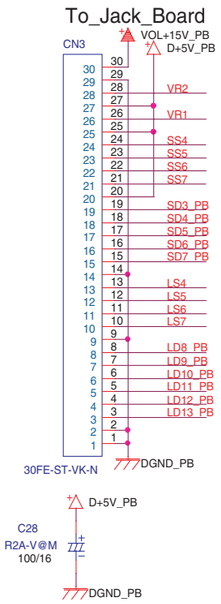


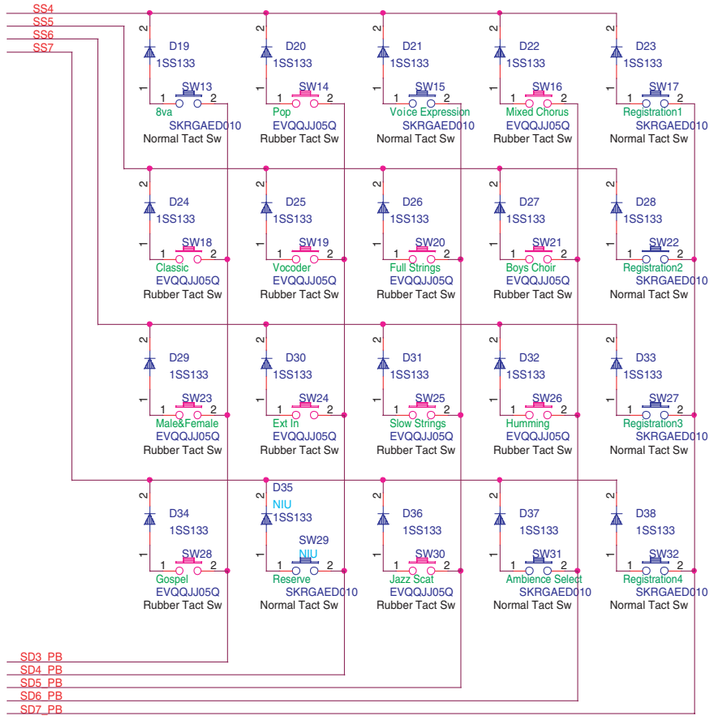
D-BEAM

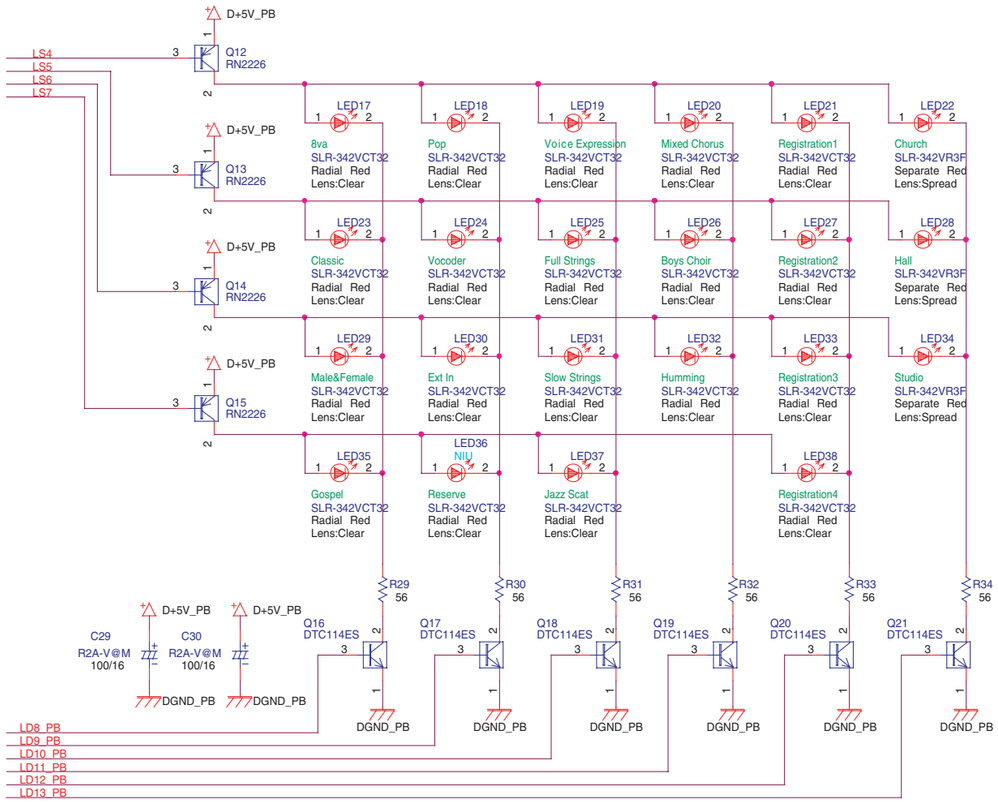


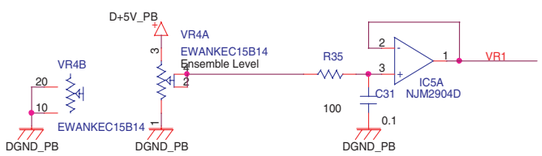
Circuit Diagram (PANEL R BOARD)

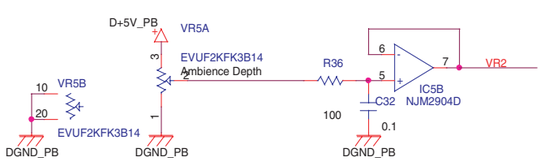
Circuit Diagram Panel R Board

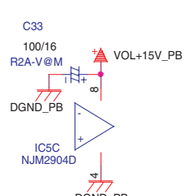






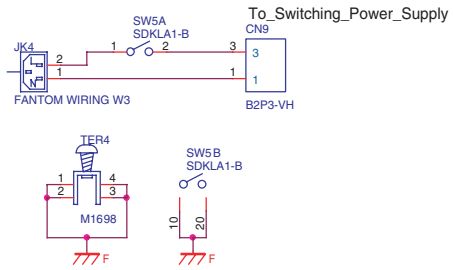






Circuit Diagram (INLET BOARD)

Circuit Diagram Inlet Board



Note for Panel L Board Assy

The wiring BNCD-P=1.25-K-32-150 (04234645) connected Panel L Board Assy (73129712) is fixed on the solder side of the Panel L Board Assy by double faced adhesive tape. When assembling after maintenance, make sure to return it back to the original condition.

MEMO