

# SP-808

# SP-808 Pro

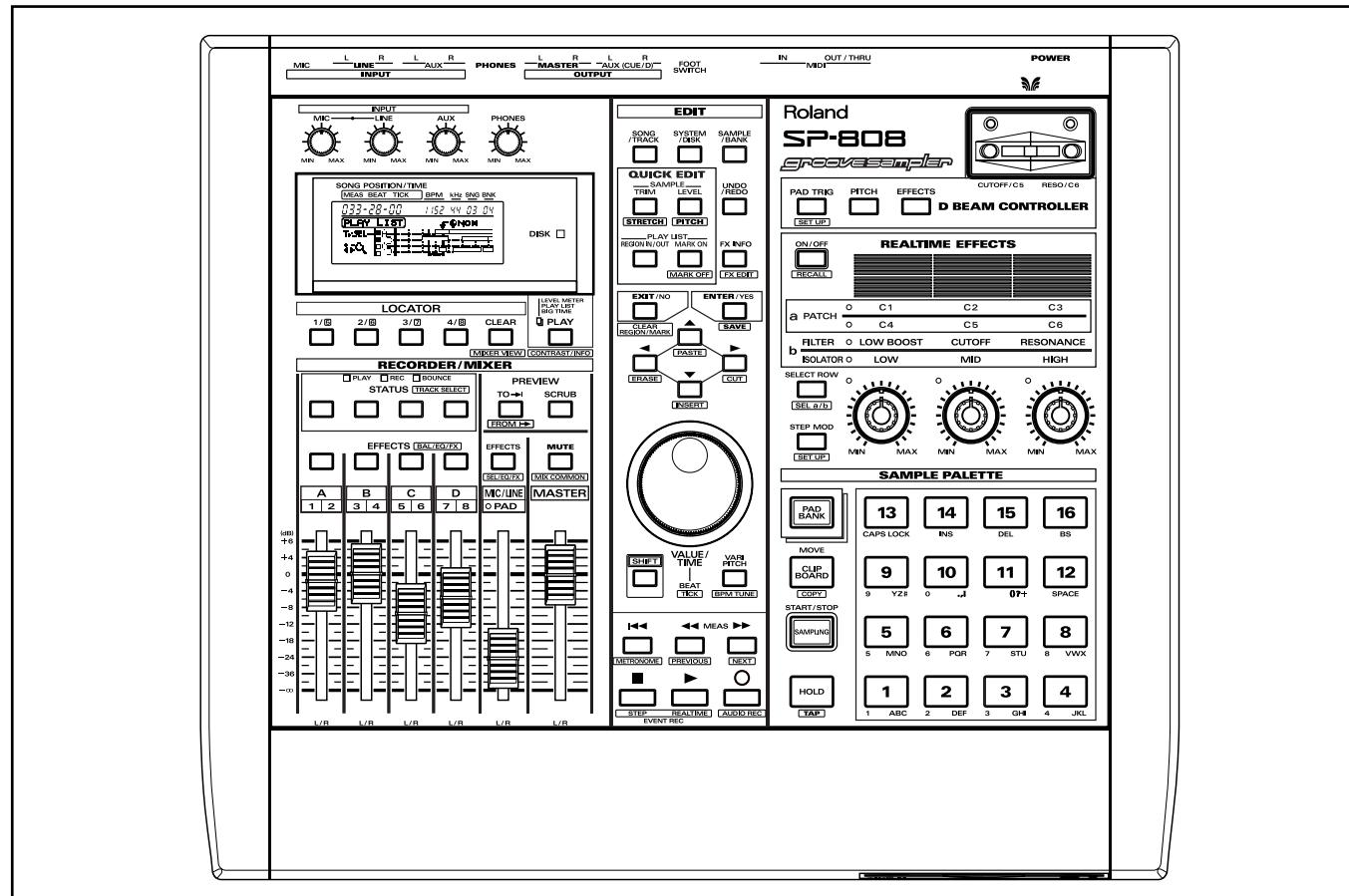
## GrooveSampler

# SERVICE NOTES

*First Edition  
Issued by RJA*

## TABLE OF CONTENTS

	Page
<b>SP-808/808Pro</b>	
SPECIFICATIONS	1
LOCATION OF CONTROLS	2
EXPLODED VIEW	3
BLOCK DIAGRAM	4
PARTS LIST	5
TEST MODE	6~8
IDENTIFYING VERSION NUMBER	6~8
CIRCUIT DIAGRAM & BOARD	9~16
IC DATA	17
<b>SP808-OP1</b>	
SPECIFICATIONS	18
INSTALLING THE	18
PARTS LIST	19
CIRCUIT DIAGRAM & BOARD	20~21



## SPECIFICATIONS

- SP-808:Groove Sampler**
- **Audio Data Format**  
SP-808 Original Format (R-DAC)
  - **Maximum Polyphony**  
Stereo x 4 (Total)
  - **Number of Tracks**  
Stereo Track x 4
  - **Simultaneous Recordable Tracks**  
One stereo pair of tracks
  - **Sample rate**  
Zip disk 100 M Bytes
  - **Sampling (Recording) Time**  
46 min. approx. (Sampling rate: 44.1 kHz, Monaural)  
64 min. approx. (Sampling rate: 32.0 kHz, Monaural)  
\*Varies by Vari-Pitch status and other conditions
  - **Signal Processing**  
A/D Conversion: 20 bits, 64 times oversampling  
D/A Conversion: 20 bits, 128 times oversampling  
Internal Processing: 24 bits (Digital Mixer section)
  - **Internal Memory**  
System Setup: 1
  - **Zip disk**  
Song: 64  
Sample Bank: 64  
Sample: 1024  
Effects Patch: 99 Presets, 99 Users
  - **Track Recording Method**  
Event Recording (Real time, Step)  
Audio Recording
  - **Phrase Event Memory**  
Approx. 2000 Phrase Events per song
  - **Channel Equalizer**  
3-band Parametric x 5 (Tracks A-D, Input)
  - **MIDI Sync Method**  
Master: MIDI Clock, MTC & MMC  
Slave: MTC & MMC
  - **Frequency Response**  
44.1 kHz: 10 Hz~21 kHz (+0/-3 dB)  
32.0 kHz: 10 Hz~15 kHz (+0/-3 dB)
  - **Nominal Input Level**  
Mic: -50~+20 dBu  
Line In, AUX In: -10~+4 dBu
  - **Input Impedance**  
Mic: 100 k ohms  
Line, AUX In: 47 k ohms
  - **Nominal Output Level**  
AUX Send, Master Out: -10 dBu
  - **Output Impedance**  
AUX Send, Master Out: 2 k ohms  
Headphones: 10 ohms
  - **Recommended Load Impedance**  
AUX Send, Master Out: 10 k ohms or greater  
Headphones: 4~600 ohms
  - **S/N Ratio**  
AUX Send, Master Out: 92 dB (Line, A/D-D/A, IHF-A, typ.)
  - **Display**  
69.0 x 25.0 mm (backlit LCD)
  - **Connectors**  
Mic Input Jack (1/4 inch phone type)  
Line Input Jacks, L, R (RCA phono type)  
AUX Input Jacks, L, R (RCA phono type)  
Master Output Jacks, L, R (RCA phono type)  
AUX Output Jacks, L, R (RCA phono type)  
Headphones Jack (Stereo 1/4 inch phone type)  
Footswitch Jack (1/4 inch phone type)  
MIDI Connectors (In, Out/Thru)

\*..Available with SP808-OP1 Multi I/O Expansion is installed.

- SCSI Connector (25-pin D-SUB type)
- Coaxial Digital In Connector
- Coaxial Digital Out Connector
- Optical Digital In Connector
- Optical Digital Out Connector
- Track Direct Out x 3, L, R (RCA phono type)
- **Power Supply**  
AC117V, 230V, 240V
- **Power Consumption**  
21W
- **Dimension**  
394 (W) x 343 (D) x 99 (H) mm / 15-9/16 (W) x 13-9/16 (D) x 3-15/16 (H) inches
- **Weight**  
4.3 kg/ 9 lbs 8 oz (excluding SP808-OP1)
- **Accessories**  
OWNER'S MANUAL SET ENGLISH (#71018090)  
AC CORD 120V (#00894378)  
AC CORD 230V (#00894389)  
AC CORD 230VE (#00907001)  
AC CORD 240VA (#23495124)  
DEMO ZIP DISK (#71125467)
- **Options**  
Multi I/O Expansion SP808-OP1

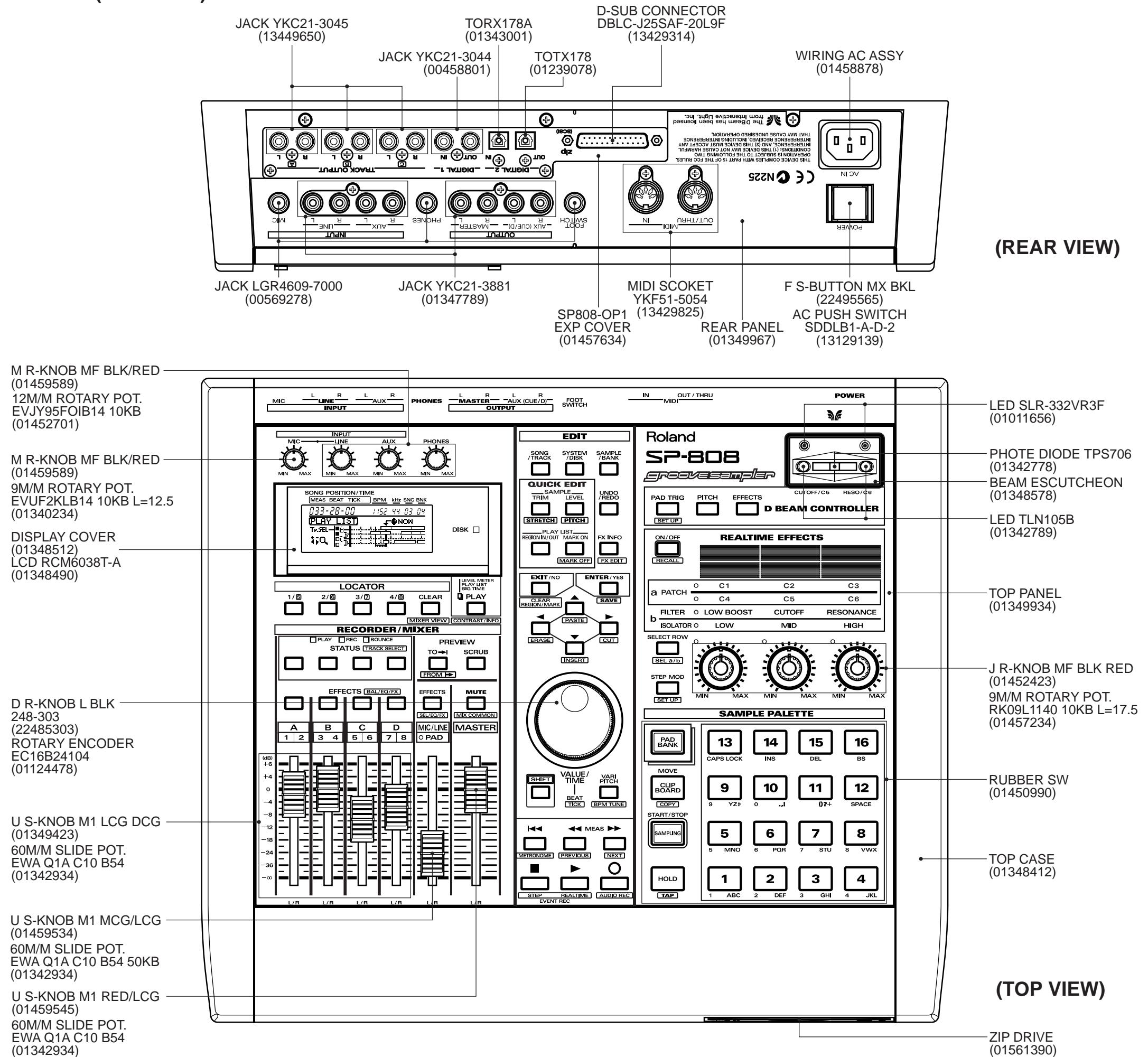
(0 dB = 0.775 V rms)

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

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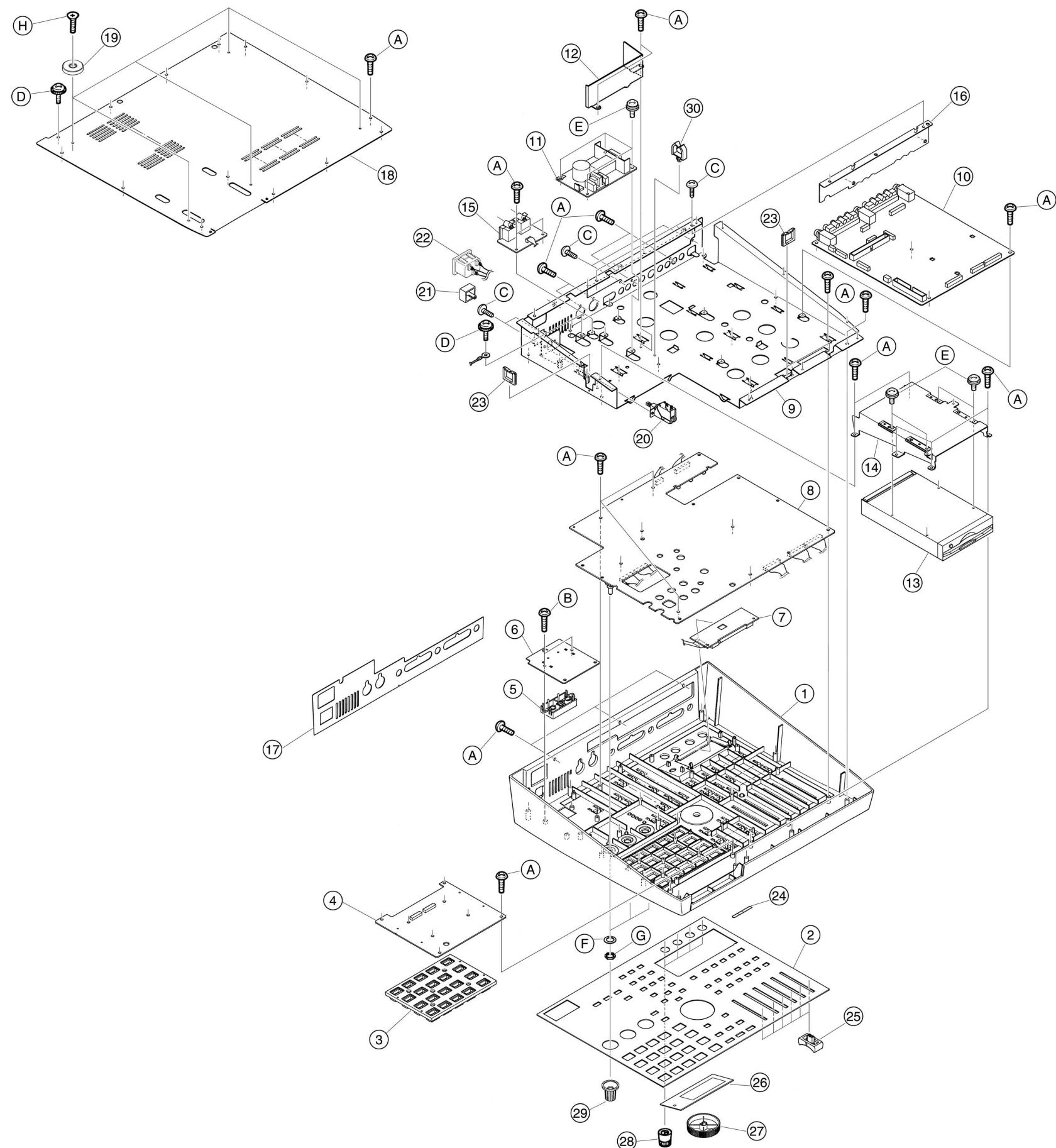
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## LOCATION OF CONTROLS (SP-808Pro)



**EXPLODED VIEW (SP-808)****[PARTS]**

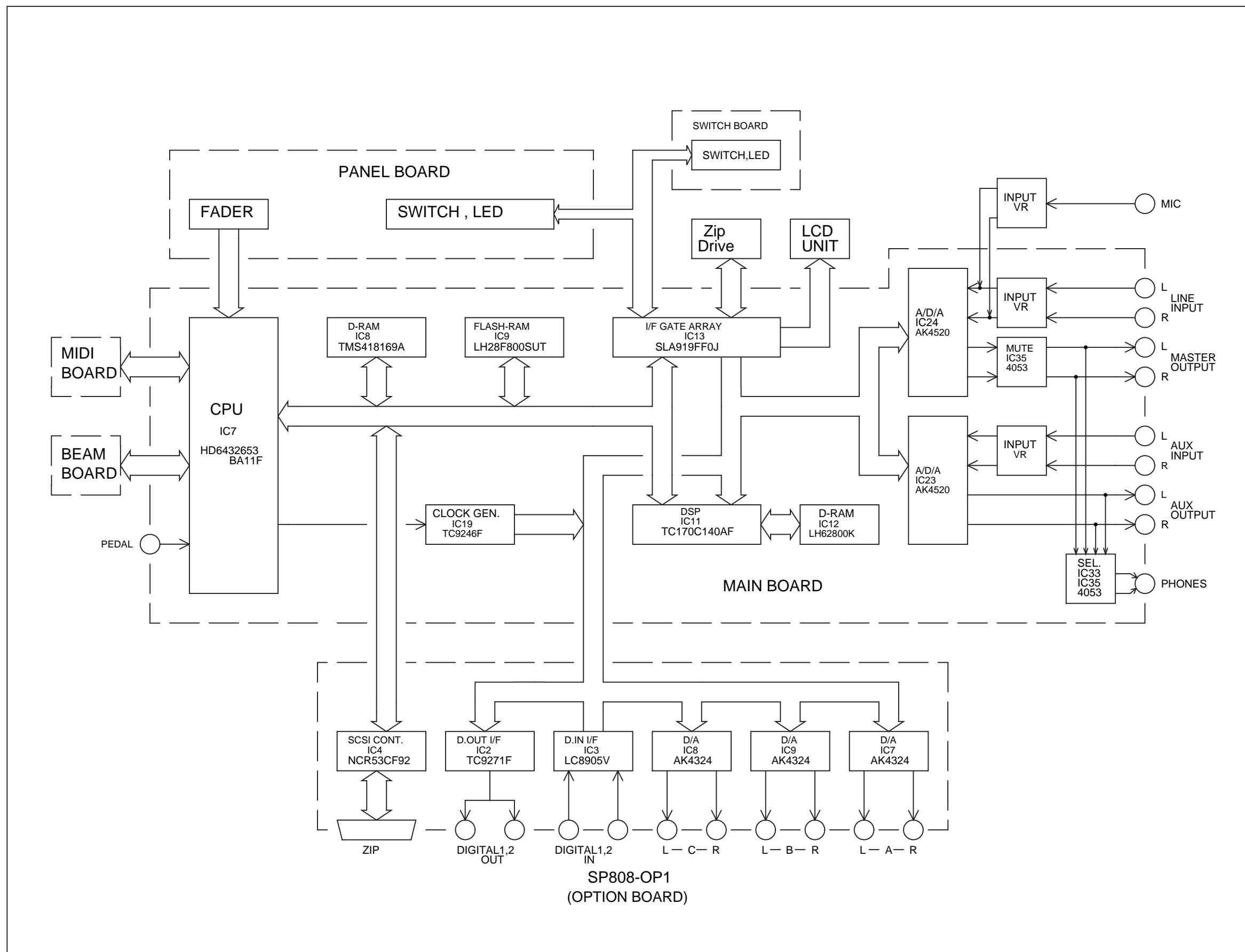
No.	PART No.	PART NAME
①	01348412	TOP CASE
②	01349934	TOP PANEL
③	01450990	RUBBER SW
④	71016045	SWITCH BOARD
⑤	01348578	BEAM ESCUTCHEON
⑥	70909489	BEAM BOARD
⑦	01348490	LCD UNIT RCM6038T-A
⑧	70909012	PANEL BOARD
⑨	01348501	SUB CHASSIS
⑩	70909001	MAIN BOARD
⑪	01127590	SWITCHING REGULATOR A1KW1AA240
⑫	01458678	SHIELD PANEL
⑬	01561390	ZIP DRIVE JU-811T03
⑭	01457178	HD HOLDER
⑮	71016034	MIDI BOARD
⑯	01348545	EXP COVER (SP-808 only)
⑰	01349967	REAR PANEL
⑱	01348590	BOTTOM COVER
⑲	22355160	FOOT D25
⑳	13129139	AC PUSH SWITCH SDDL81-A-D-2 TV-5 5A/250V
㉑	22495565	BUTTON F S-BUTTON MX BLK (POWER)
㉒	01458878	WIRING AC ASSY
㉓	00902790	CORD BUSHING EDS-1208U for AC CORD
㉔	17048436	STATUS SEAL 04484-202
㉕	01349423	KNOB U S-KNOB M1 LCG/DCG (TRACK)
	01459534	KNOB U S-KNOB M1 MCG/LCG (PAD)
	01459545	KNOB U S-KNOB M1 RED/LCG (MASTER)
㉖	01348512	DISPLAY COVER
㉗	22485303	KNOB D R-KNOB L BLK (VALUE)
㉘	01459589	KNOB M R-KNOB MF BLK/RED (INPUT)
㉙	01452423	KNOB J R-KNOB MF BLK/RED (EFFECTS)
㉚	01561323	HOOK CLAMP UAMS-09-0

**[SCREW]**

Ⓐ	40011101	M3x8mm Binding Taptight B BZC
Ⓑ	40012256	M3x10mm Binding Taptight B ZC
Ⓒ	40012534	M3x6mm Binding Taptight S BZC
Ⓓ	*****	M4x8mm LO2 BZC
Ⓔ	40012945	M3x6mm Pan Machine Screw W/SW+PW BZC
Ⓕ	*****	M9 SPACER INNER GEAR TYPE
Ⓖ	*****	M9 NUT THIN TYPE
Ⓗ	40011156	M3x8mm Flat Taptight B BZC

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

## A BLOCK DIAGRAM



## PARTS LIST

SAFETY PRECAUTIONS:				
<p>The parts marked ▲ have safety-related characteristics.</p>				
<p>Use only listed parts for replacement.</p>				
CONSIDERATIONS ON PARTS ORDERING				
<p>When ordering any parts listed in the parts list, please specify the following items in the order sheet.</p>				
QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER	
Ex. 10	22575241	Sharp Key	C-20/50	
15	2247017300	Knob (orange)	DAC-15D	
<p>Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.</p>				

*NOTE: The parts marked # are new (initial part).*

**Warning!** : There is the possibility that you will burn your hands when you touch Power Supply parts soon after the power supply is turned off.

**Note:** Consider about the natural environment carefully before through the old lithium battery away when you exchange to the new one.

MB → MAIN BOARD, SB → SW BOARD, SW → SWITCHING REGULATOR

CASING		
#	01348412	TOP CASE  NOTE: The TOP CASE does not include the following seal. Please order them separately, if necessary.
# 17048436 STATUS SEAL 04484-202		
#	01348590	BOTTOM COVER  NOTE: The BOTTOM COVER does not include the following label. Please order them separately, if necessary.
# 40238545 CAUTION LABEL SHOCK HAZARD & ICES		
#	01349934	TOP PANEL
#	01348312	DISPLAY COVER
#	01349967	REAR PANEL
#	01457178	HD HOLDER
#	01458678	SHIELD PANEL
#	01348545	EXP COVER *SP-808 only
#	01348501	SUB CHASSIS
NOTE: The SUB CHASSIS does not include the following label. Please order them separately, if necessary.		
# 40126812 CAUTION LABEL BARRIER (100V/117V only)		
#	01348578	BEAM ESCUTCHEON
KNOB, BUTTOM		
#	22495565	F S-BUTTON MX BLK
#	01452423	J R-KNOB MF BLK/RED
#	01459589	M R-KNOB MF BLK/RED
#	22485303	D R-KNOB L BLK 248-303
#	01349423	U S-KNOB M1 LCG/DCG
#	01459534	U S-KNOB M1 MCG/LCG
#	01459545	U S-KNOB M1 RED/LCG
SWITCH		
#	01450990	RUBBER SW
#	00894656	SKQNAD
△	13129139	TACT SWITCH SDDLBI-A-D-2 TV-5 5A/250V AC PUSH SWITCH
JACK, SOKET		
#	01347789	YKC21-3881
#	00569278	LGR4609-7000
#	13429825	YKF51-5054
		RCA(PIN) 6.5MM JACK MIDI SOCKET
		JK2,JK4 on MB JK1,JK3,JK5 on MB JK1 on MIDI Board
DISPLAY UNIT		
#	01348490	RCM6038T-A
		LCD UNIT
NOTE: Replacement DISPLAY UNIT should be made on a unit basis. No replacements available for individual parts. Replacement only by a unit.		
ZIP DRIVE		
# [E]	01561390	JU-811T03
NOTE: Replacement ZIP DRIVE should be made on a unit basis. No replacements available for individual parts. Replacement only by a unit.		

PCB ASSY		
# [E]	70909001	MAIN BOARD
#	70909012	PANEL BOARD
NOTE: Replacement PANEL BOARD includes the following parts.		
00340690	FOOT ZULEN XCK040	

#	71016045	SWITCH BOARD
#	71016034	MIDI BOARD
#	70909489	BEAM BOARD
<b>POWER SUPPLY</b>		
△	01127590	A1KW1AA240      SWITCHING REGULATOR
NOTE: Replacement POWER SUPPLY (SWITCHING REGULATOR) should be made on a unit basis. No replacements available for individual parts. Replacement only by a unit.		

IC				
#	01340201	HD6432653BA11F	CPU	IC7 on MB
	00892556	TC170C140AF-003 (ESP2)	CUSTOM DSP	IC11 on MB
	01231334	SLA19FF0J	CUSTOM GATE ARRAY	IC13 on MB
#	01347756	LH62800K-50	4M DRAM	IC12 on MB
#	01347745	TMS418169A-60	16M DRAM	IC8 on MB
	00899812	LH28F800SUT-70	FLASH MEMORY	IC9 on MB
	01238101	AK4520AVF-E2	AD/DA	IC23,IC24 on MB
	15169556T0	TC74HC574AP	CMS	IC3 on MB
	15259865T0	TC74HC4053AF(EL)	CMOS	IC3,IC4,IC33,IC35 on MB
	00893967	TC74VHC153F(EL)	CMOS	IC21 on MB
	15249112	TC7W32F(TE12L)	CMOS	IC38 on MB

	1525973870 00564545 00236845 00893978 00231878 00231890 # 01340212 15289105	TC74HC138F(EL) TC74HC04F(EL) TC74HC245F(EL) TC74HC393F(EL) TC74HC00F(EL) TC74HC08F(EL) TC74HC86F(EL) UPC4570G2-T2	CMSOS CMOS CMOS CMOS CMOS CMOS CMOS BIPOAR OP AMP	IC10 on MB IC2 on MB IC14.IC15 on MB IC20 on MB IC37 on MB IC17 on MB IC18 on MB IC25-IC32,IC34,IC36 on MB IC1,IC2 on Beam Board
	15199286 00564690 15289123 15169550T0 00019112 15149150	AN78L05M-(E1) TC9246F(ELP) M51953A-FP-600C TC74HC138AP TD62381P TD62787AP	REGULATOR IC PLL RESET IC CMOS TRANSISTOR ARRAY TRANSISTOR ARRAY	IC22 on MB IC19 on MB IC6 on MB IC1,IC5 on PB IC4 on PB IC2 on PB
	<b>OPTICAL DEVICE</b>			
#	15289125 00560756	PC-410T TPS706 SEL5221S TP15	PHOTO COUPLER PHOTO DIODE LED (RED)	IC1 on MB D1 on Beam Board D1,D3,D37,D45,D66,D67,D70. D72,D73,D74,D76,D77,D650 on PB
	00676423 01239856	SEL5421E TP15 SEL5921A TP15	LED (GREEN) LED (ORANGE)	D2,D61,D62 on PB D24,D34-D36,D40-D44,D46,D47,D50-D52. D55-D57,D60,D63-D65,D71,D75 on PB
#	01239867 01342789 01011656 # 01450401	SML72423C TP15 TLN105B SLR-332VR3F TLSU1002(LM/TPX1)	LED (RED/GREEN) LED LED (RED) LED	D230-D233 on PB LED3,LED4 on Beam Board LED1,LED2 on Beam Board D1-D19 on SB
	<b>TRANSISTOR</b>			
	15309101 15329507 15329516 15329505 00562012 01121289	2SA1037KR T146 DTA114EK146 DTC114EK146 DTC314TK146 2SC3265-Y(TE65R) 2SC4081 T106 QRS.	PNP PNP NPN NPN NPN NUN	Q4 on MB Q12,Q100 on MB Q1-Q3,0.8,Q11 on MB Q5,Q6,Q7,Q9,Q10 on MB Q4,Q6 on Beam Board Q3,Q5 on Beam Board
	<b>DIODE</b>			
	15019126 15339105 15339103 15339105 15339109	1SS133 T-77 DAN202K T146 MA153-(TX) DAN202K T146 DAP202K T146	SWITCHING DIODE DIODE ARRAY DIODE ARRAY DIODE ARRAY DIODE ARRAY	D120-D123,D130-D137,D140-D147. D150-D157,D160-D167,D170-D177 on PB D1,D3,D10-D14,D100-D102 on MB D2,D4,D5,D6 on Beam Board D2,D4-D9 on MB D28,D29 on SW D20-D27 on SW
	<b>RESISTOR</b>			
	00126101 00120823	EXBV8V221JV/ MNR35 J5 J 103	R-ARRAY R-ARRAY	RA2,RA3,RA4,RA13-RA24 on MB RA10.RA11.RA12 on MB
	<b>POTENTIOMETER</b>			
#	01340234 # 01457234 # 01452701 # 01342934	EVU F2K1B14 10KB L=12.5 RK09L1140 10KB L=17.5 EVJ Y95F01B14 10KB EWA Q1AC10B54 50KB	9M/M ROTARY POT. 9M/M ROTARY POT. 12M/M ROTARY POT. 60MM SLIDE POT.	VR12 on PB VR1,VR2,VR3 on PB VR10,VR11,VR13 on PB VR4-VR9 on PB
	<b>CAPACITOR</b>			
#	01458234 # 01564778	ECEA1EPZ222 RV2016V100MZ7-R	CHEMICAL CHEMICAL	C102,C104 on MB C40-C43,C45-C50,C52-C54,C56,C57. C62-C65,C68,C69,C138,C140-C145. C152,C220 on MB
#	15369151S0 # 01369213S0 # 0147778	16CV100BS 50CV3R3BS 6.3CV220BS	CHEMICAL CHEMICAL CHEMICAL	C219 on MB C15,C16,C39,C218 on MB C3,C23,C106,C129-C137 on MB
	13639698 15369143S0	ECEAOJKS101B 16CV22BS	CHEMICAL CHEMICAL	C6-C9 on Beam Board C1,C4,C5 on PB C4,C5 on Beam Board
	<b>INDUCTOR, COIL, FILTER</b>			
#	12449401 # 01458667	BLM41A151SPT BLM41P750S	FERRITE BEAD FERRITE BEAD	L1,L2 on MB L3 on MB
	<b>CRYSTAL, RESONATOR</b>			
	00894023	MA-406 20.000MHZ TE24	X'TAL	X1 on MB
	<b>ROTARY ENCODER</b>			
	01124478	EC16B24104 L=15	ROTARY ENCODER	ENC.1 on PB
	<b>CONNECTOR</b>			
#	01450412 # 01450423 13369515 13369582 13369541 13369565 13369563 13369562 13369569 13369567 13369566 13369503 13429192 13369851 13369793	S11B-ZR-SM3A-TF S12B-ZR-SM3A-TF B5B-PH-K-S JST B13B-PH-K-S JST B10B-PH-K-S JST B11B-PH-K-S JST B14B-PH-K-S JST B15B-PH-K-S JST B3B-XH-A JST B4B-PH-K-S JST B8B-PH-K-S JST B7B-PH-K-S JST PS-40PE-D4T1-B1-K PS-50PE-D4T1-B1-K S2030-1610	CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR FFC/FPC	CN2 on SB CN1 on SB CN14 on MB CN13 on MB CN3 on MB CN2 on MB CN10 on MB CN9 on MB CN11 on MB CN11 on MB CN15 on MB CN5 on MB CN12 on MB CN6 on MB CN8 on MB
	<b>WIRING CABLE</b>			
#	01450712 # 01450723 # 01450634 # 01450645 # 01450656 # 01450667 # 01450678 # 01450689 # 01450690 # 01450567 # 01450556 # △ 01450601 # △ 01450878	WIRING ZIP-A WIRING ZIP-B WIRING PANEL BOARD-A WIRING PANEL BOARD-B WIRING PANEL BOARD-C WIRING PANEL BOARD-D WIRING PANEL BOARD-E WIRING PANEL BOARD-F WIRING PANEL BOARD-G WIRING BEAM BOARD WIRING MIDI BOARD WIRING POWER UNIT WIRING AC ASSY		CN12 on MB CN11 on MB Between MB(CN13) to PB(CN6) Between MB(CN15) to PB(CN7) Between MB(CN9) to PB(CN1) Between MB(CN10) to PB(CN2) Between MB(CN11) to PB(CN5) Between SB(CN2) to PB(CN4) Between SB(CN1) to PB(CN3) Between MB(CN3) to Beam Board(CN1) Between MB(CN1) to MIDI Board(CN8) CN4 on PS
	<b>SCREW</b>			
	40012945 40012534 40011101 40011156 40012256 ***** ***** ***** ***** ***** *****	M3x6mm Pan Machine Screw W/SW+PW BZC M3x6mm Binding Taptight S BZC M3x9mm Binding Taptight B BZC M3x8mm Flat Taptight B BZC M3x10mm Binding Taptight B ZC M4x8mm LO2 BZC M9 NUT THIN TYPE M9 SPACER INNER GEAR TYPE		
	<b>PACKING</b>			
#	01348601 # 01561523 # 01562434	PACKING CASE PACKING PAD ACCESSORIES PAD	for PACKING for PACKING	
	<b>MISCELLANEOUS</b>			
#	01561323 # 01454234 22355160 00902790 40126812 40238545	UAMS-09-0 LH-3-6 D25 EDS-1208U CAUTION LABEL BARRIER (100V/117V only) CAUTION LABEL SHOCK HAZARD & ICES	HOOK CLAMP LED SPACER FOOT CORD BUSHING	
	<b>ACCESSORIES(Standard)</b>			
#	70908956 # 71018090 # △ 00894367 # △ 00894378 # △ 00894389 # △ 00907001 # △ 23495124 # 71125467	OWNER'S MANUAL SET OWNER'S MANUAL SET AC CORD SET 100V AC CORD SET 120V AC CORD SET 230V AC CORD SET 240VE AC CORD SET 240VA DEMO ZIP DISK	JAPANESE ENGLISH SP18A+SI14 VCTF2X0.75 SP301+SI14 SJT18/3 SP22+SI14 H05VV-F3G1.0 KP-610,GTBS-3,KS-31A SC-114-J01 ES303-10HMA	

## TEST MODE

### Tools required

SP-808

Audio devices: CD player, DAT, audio signal generator, amplifier, speaker, headphones

Foot pedal: DP-2 or equivalent

Oscilloscope

Zip drive

\*Additional devices to test SP808-OP1

CD player or the like having "COAXIAL" and "OPTICAL" output capability

DAT or the like having "COAXIAL" and "OPTICAL" input capability

Zip drive (SCSI TYPE)

Cables (SCSI/COAXIAL/OPTICAL)

### ●Verifying version

While in the test mode, the top of the screen displays the CPU software version and the system software version in the format shown below:

1.00 1.000

Left: CPU version; right: system version

### ●Entering the test mode

1. While holding STATUS (track D) and EFFECT (track D) buttons under RECORDER/MIXER, turn on POWER switch. See Note: in step 4 below.
  2. When "CHECK SP808-OP1 .." appears at the center of the screen, release the buttons.
  3. Test options will be displayed. Among the test options shown below, options 1. LCD to 4. Switch are displayed on the initial screen.
  4. If the option board, SP808-OP1 is installed, "OP-1" appears on the upper right-side of the screen.
- Note: When the Zip drive is to be used during test, connect it before turning on the SP-808. Set Termination to "ON" and SCSI ID to "6".
5. As mentioned before, the top of the LCD screen display shows the CPU software version (at the left) and the system software version (at the right).

LCD display	Test option
1. LCD	LCD contrast 1
2. LCD Contrast	LCD contrast 2
3. LED	LED check
4. Switch	Switch check
5. Encoder	VALUE dial check
6. Fader	Fader potentiometer check
7. Pot	Rotary potentiometer check
8. Beam	Beam check
9. Foot SW	Foot switch check
10. MIDI	MIDI check
11. Zip	Zip drive check
12. SCSI	SCSI check (only when option board, SP808-OP1 is installed)
13. Analog I/O	Analog inputs/outputs check
14. Digital I/O	Digital inputs/outputs check (only when option board, SP808-OP1 is installed)
15. Initialize	System data initialization

To select a test option, use the cursor buttons [ $\blacktriangle$ ] and [ $\blacktriangledown$ ] to move the cursor [ $>$ ] on the leftmost of the screen to the test option. Then, press the [ENTER/YES] button. After the test, the screen exits to the menu screen.

### ●Test description

1. LCD check
  - 1.1 When this option is selected, the LCD displays "Push [>] KEY" at the center of the screen.
  - 1.2 Press the [>] button blinking in green. The all dots on the LCD will be turned on. Press the [>] button again. The all dots will be turned off.

- 1.3 If necessary, press the button to repeat turning on/off of the dots.

To exit the test, press the RECORD button (●) blinking in red.

#### 2. LCD contrast check

- 2.1 When this option is selected, the LCD displays "CONTRAST = 5" on the bottom of the screen.
- 2.2 Turn the VALUE/TIME dial and verify changes in contrast. When the dial has successfully changed the value "CONTRAST = \*\*" from 0 to 15, the center area of the screen displays "LCD OK !!".

To exit the test, press the RECORD button (●)

#### 3. LED check

- 3.1 When this option is selected, the LCD displays "Push [<> [>] KEY" and all LEDs are turned on.
- 3.2 Press MEAS [>>] button. All LEDs are turned off except for "DISK".
- 3.3 Press MEAS [>>] button repeatedly. The remaining LEDs are turned on one by one, from the upper left one. Note: The STATUS LED first lights in red and then in green at the second press of the MEAS button.
- 3.4 When all the LEDs are turned on and kept on, the center area of the screen displays "LED OK !!".

To exit the test, press the RECORD button (●).

#### 4. Switch check

- 4.1 When this option is selected, the right-hand area of the screen displays "067" and "\*\*\*\*" just below the figures.
- 4.2 Press and hold a button. The "\*\*\*\*" is replaced with the button name or the button symbol. The graphic image on the screen shows the approx. location of the button being held down. If all LEDs are blinking, you are pressing two buttons.

- 4.3 Turn on the remaining buttons one by one. When all the buttons have been pressed, the upper-right area of the screen displays "SW OK !!".

To exit the test, press the RECORD button (●)

#### 5. Encoder check

- 5.1 When this option is selected, the LCD displays graphic which moves left and right as the VALUE dial is turned counter-clockwise and clockwise, and associated "Value: \*\*" reading just below it.
- 5.2 Verify that reading "Value: \*\*" changes from 0 to 100 as the VALUE dial is turned. When the reading covers this range, the upper-left area of the screen displays "OK !!".

To exit the test, press the RECORD button (●).

#### 6. Fader check

- 6.1 When this option is selected, the left-hand area of the screen displays graphics representing 6 faders.
- 6.2 These graphic faders move from bottom to the top as the corresponding fader is slid up and down.
- 6.3 When the fader successfully moves its full travel range, "OK" is displayed above and below the corresponding graphic fader on the screen.
- 6.4 Repeat the steps 6.2 and 6.3 for the remaining faders. When all the faders pass the test, "OK !!" is displayed at the center of the screen.

To exit the test, press the RECORD button (●).

#### 7. Rotary potentiometer check

- 7.1 When this option is selected, the LCD displays graphics representing 3 REALTIME EFFECT potentiometers.
- 7.2 Turn a potentiometer from MIN to MAX and verify that the corresponding graphic potentiometer also turns.

- 7.3 When the potentiometer successfully moves its travel range, "OK" is displayed to the left and right of the corresponding graphic potentiometer.  
 7.4 Repeat the steps 7.2 and 7.3 for the remaining pots. When all the pots pass the test, "OK !!" is displayed on the top of the screen.

To exit the test, press the RECORD button (●).

8. Beam check  
 Test conditions:  
 Clear space around the SP-808 at least 30 cm in all directions.

The distance between the SP-808 and large flat surfaces such as ceiling and wall must be at least 50 cm.

Do not place the SP-808 under the direct sunlight.

Remember that the SP-808 beam controller has wider directivity and yet high sensitivity.

- 8.1 When this option is selected, the left-hand area of the screen displays graphics representing a rotary potentiometer and a value "L: 0" above it.  
 8.2 Position your hand about 50 cm above the beam controller and then slowly lower the hand. The reading "L:" increases from 0 and the potentiometer on the screen turns clockwise.  
 8.3 As your hand reaches at a distance approx. 10 cm above the beam, the reading "L:" reaches the maximum value 127.  
 The screen displays "L: OK !!". Now, check the right beam.  
 8.4 The right-hand side of the screen displays "R: \*", and status of the right beam.  
 8.5 Repeat the action described in step 8.2 and verify that "R: \*" changes from 0 to 127.  
 The "R: OK !!" is displayed when the test is successful.

To exit the test, press the RECORD button (●).

9. Foot switch check  
 9.1 Connect a foot pedal (e.g. DP-2) to the SP-808.  
 9.2 When this test option is selected, the screen displays "[OFF] 0".  
 9.3 Depress the foot pedal, the "[OFF] 0" will change to "[ON] 127". The center area of the screen will display "OK !!".

To exit the test, press the RECORD button (●).

10. MIDI check  
 10.1 Hook up MIDI IN and OUT sockets of the SP-808 through a MIDI cable.  
 10.2 When this test option is selected, the screen displays "MIDI THRU", "IN->OUT".  
 10.3 Press [UNDO/REDO] button. The screen displays "OUT->IN" and will show "OK" in the [ ] located at the bottom of the screen when the MIDI circuit passes the test. Otherwise, it will display [NG !!].

To exit the test, press the RECORD button (●).

11. Zip drive check  
 11.1 When this test option is selected, the screen displays the prompt "Insert Zip Disk".  
 11.2 Insert the Zip disk into the Zip drive. The disk is automatically checked, and when OK, the message "IDE CHECK OK !!" will appear on the screen in several minutes. And the disk will be ejected.  
 Note : that this test will not modify the contents of the disk so that the user data is kept unchanged.

To exit the test, press the RECORD button (●).

12. SCSI check  
 12.1 Connect an external Zip drive to the SP-808. Set Termination to "ON" and SCSI ID to "6".

- 12.2 Turn on the Zip drive and insert a Zip disk.  
 12.3 Select the SISI check option. The LCD displays the message "NOW Checking ..." for a moment. When the SCSI is working, the screen will display "SCSI CHECK OK !!".

Error message:

- 1) "CHECK SP808-OP1 !!": communication error between the option board meaning that the option board is not correctly installed or IC4 (NCR53CF92) or associated circuitry is defective.  
 2) "SCSI NG !! (NO DRIVE)": communication error between Zip drive; or the Zip drive is defective.

To exit the test, press the RECORD button (●).

13. Analog I/O check  
 13.1 When this test option is selected, the screen displays "FS = 32.0 kHz".  
 Proceed to the following steps:

- a. AUX INPUT -> MASTER OUT check  
 1) Turn INPUT, AUX control to MAX, connect the audio frequency oscillator outputs to INPUT AUX.  
 2) Connect the oscilloscope to OUTPUT MASTER.  
 Set the oscillator to sine wave, 1 kHz, 620 mVpp.  
 (Keep this setting through tests in this section.)  
 The oscilloscope should display approx. 8 Vpp waveform.  
 b. MUTE  
 1) Press the LOCATOR [4/(8)] button.  
 2) The "Mute: OFF" indication on the upper-right side of the screen changes to "Mute: ON".  
 3) When the waveform on the oscilloscope disappears upon "Mute: ON", the muting circuit is working.  
 c. LINE INPUT -> AUX OUTPUT check  
 1) Turn INPUT, LINE control to MAX, connect the outputs (sine) from the oscillator to INPUT, LINE.  
 2) Connect the oscilloscope to OUTPUT AUX.  
 The oscilloscope should read approx. 8 Vpp sine waveform.  
 d. Sampling frequency changeover  
 1) While in step 3) in para. c above, press LOCATOR [3/(7)] button.  
 2) The frequency reading on the upper-left area of the screen changes from "Fs = 32.0 kHz" to "Fs = 44.1 kHz". The waveform on the scope should not change.  
 e. SP808-OP1 (option board) TRACK OUTPUT check  
 This is to check analog output from the option board, if installed.  
 1) The screen displays "PARA-A". The LOCATOR [1/(5)] button cycles "PARA-A" -> "PARA-B" -> "PARA-C".  
 2) The destination of the input coming through INPUT LINE is determined as indicated on the screen upon pressing of LOCATOR [1/(5)] button.  
 3) Connect the scope to the output terminal specified in step 1) above. The scope will show approx. 8 Vpp waveform.

- f. Headphones check  
 1) Connect the audio frequency oscillator to INPUT AUX and headphones to HEADPHONES.  
 The screen displays "PHONE" and "MASTER" under it. The LOCATOR [2/(6)] button cycles "MASTER" -> "AUX" -> "M+A" -> "OFF". The output to the headphones also changes as indicated.  
 2) The sounds are output to the headphones in "MASTER" or "M+A" mode.  
 3) Connect the audio frequency oscillator to INPUT LINE. This time, sounds are output to the headphones in "AUX" or "M+A" mode.

To exit the test, press the RECORD button (●).

## 14. Digital I/O check

The left-hand side of the screen displays "IN: -----".  
 The LOCATOR [1/(5)] button toggles between "IN: ---- "  
 and "IN:COAX" or "IN: OPT".

## Checking procedure

## a. Digital input

- 1) Connect the COAXIAL output from the CD player to SP-808 DIGITAL 1 and OPTICAL output to DIGITAL 2.
- 2) Connect the headphones to SP-808.
- 3) Leave the CD player turned off. The LCD displays "Unlock".
- 4) Turn on the CD player. "Unlock" changes to "Locked".
- 5) Play the CD player and verify the sounds through the headphones.
- 6) Press the LOCATOR [1/(5)] button repeatedly and verify the "Locked" is kept displayed.

## b. DIGITAL output check

- 1) Connect DIGITAL 1 output from SP-808 to COAXIAL input of the DAT, and DIGITAL 2 output to OPTICAL input of the DAT. Provide means to monitor DAT digital input signals.
- 2) Connect the headphones to the DAT.
- 3) Verify that the DAT is reproducing CD sounds. Also check DAT DIGITAL inputs by toggling between COAXIAL and OPTICAL.

To exit the test, press the RECORD button (●).

## 15. Initialize

If the system parameters in the flash memory are destroyed or the parameters are to be returned to the factory settings, follow the procedure described below.

When the initialize screen is selected, press [UNDO/REDO] button. The system parameters such as system common, system MIDI and system beam controller are initialized.

To exit the test, press the RECORD button (●).

## ●Exiting the test mode

Simply turn off the SP-808.

**FLASH MEMORY FAILURE**

If the flash memory (IC9 of the main board) becomes failure either in terms of software or hardware, the following message appears on the screen.

```
<< EMERGENCY >>
SYSTEM is BROKEN !
Please consult qualified Roland Service.
```

When this message appears, proceed to the following version upgrading procedure.

If the contents of the flash memory are not restored, replace the memory with new one; the same message will appear. Retry the version upgrading procedure.

**SP-808 SYSTEM SOFTWARE UPDATE USING THE SMF**

The latest system software of the SP-808 is stored to the floppy disk named "SP-808 UPDATE DISK VER.1.01 SMF" as the standard MIDI file format (SMF format).

Check the following SMF's included to the floppy disk.

```
SP-808 UPDATE DISK
Sp808#1.MID
Sp808#2.MID
Sp808#3.MID
Sp808#4.MID
Sp808#5.MID
Sp808#6.MID
Sp808#7.MID
Sp808#8.MID
```

Here's what to do to update the system software of your SP-808.

1. Connect a MIDI cable between two connectors; MIDI OUT connector of the MIDI Sequencer that can play back SMF data, and MDI IN connector of SP-808.  
 It is convenient to use the MIDI Sequencer such as a SB-55 sound brush that can play back some SMF's continuously.
2. While holding down [STATUS (TRACK SELECT)] and [EFFECTS (BAL/EQ/FX)], turn on the SP-808 power. MIDI update screen is displayed.
3. Check the message "waiting MIDI..." is appeared on the display.  
 Play back the SMF data in order the number 1 to 8.  
 While the data is being received "Receiving.. (x/8)" is displayed and the pad indicator (PAD) blinks. ("x" is the SMF data number being received.)
4. When all of SMF data is received "Update System? (Y/N)" is appeared on the display. Press [ENTER/YES].

Note : Never turn the power off while the message "KEEP POWER ON" is being displayed.

5. When "Update Complete" and "You may TURN OFF" are appeared on the display, turn the power off and turn it on again.

Now complete the update SP-808 system software.

**SP-808 SYSTEM SOFTWARE UODATE USING THE ZIP DISK**

By using the Zip disk of No. 17048912, the SP-808 can be upgraded.

## ●Procedure

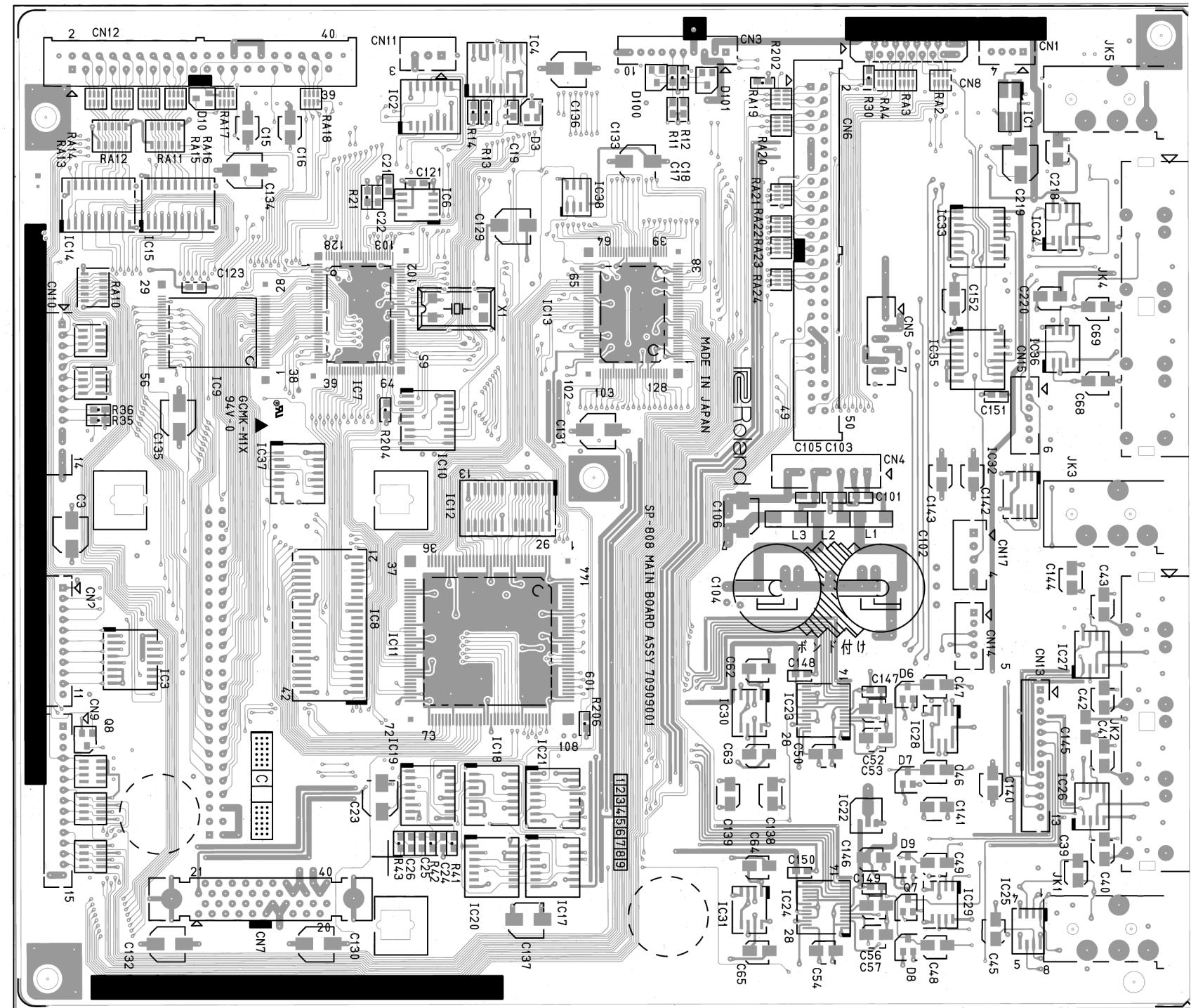
1. Insert the VER.UP Zip disk into the Zip drive of the SP-808.
2. Turn on the SP-808.
3. The screen displays the prompt "Update System? (Y/N)". Press [ENTER?/YES] button.
4. When the upgrading procedure completes, the disk will be ejected.
5. Turn off the SP-808.

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## A CIRCUIT BOARD

### B MAIN BOARD ASSY (70909001)

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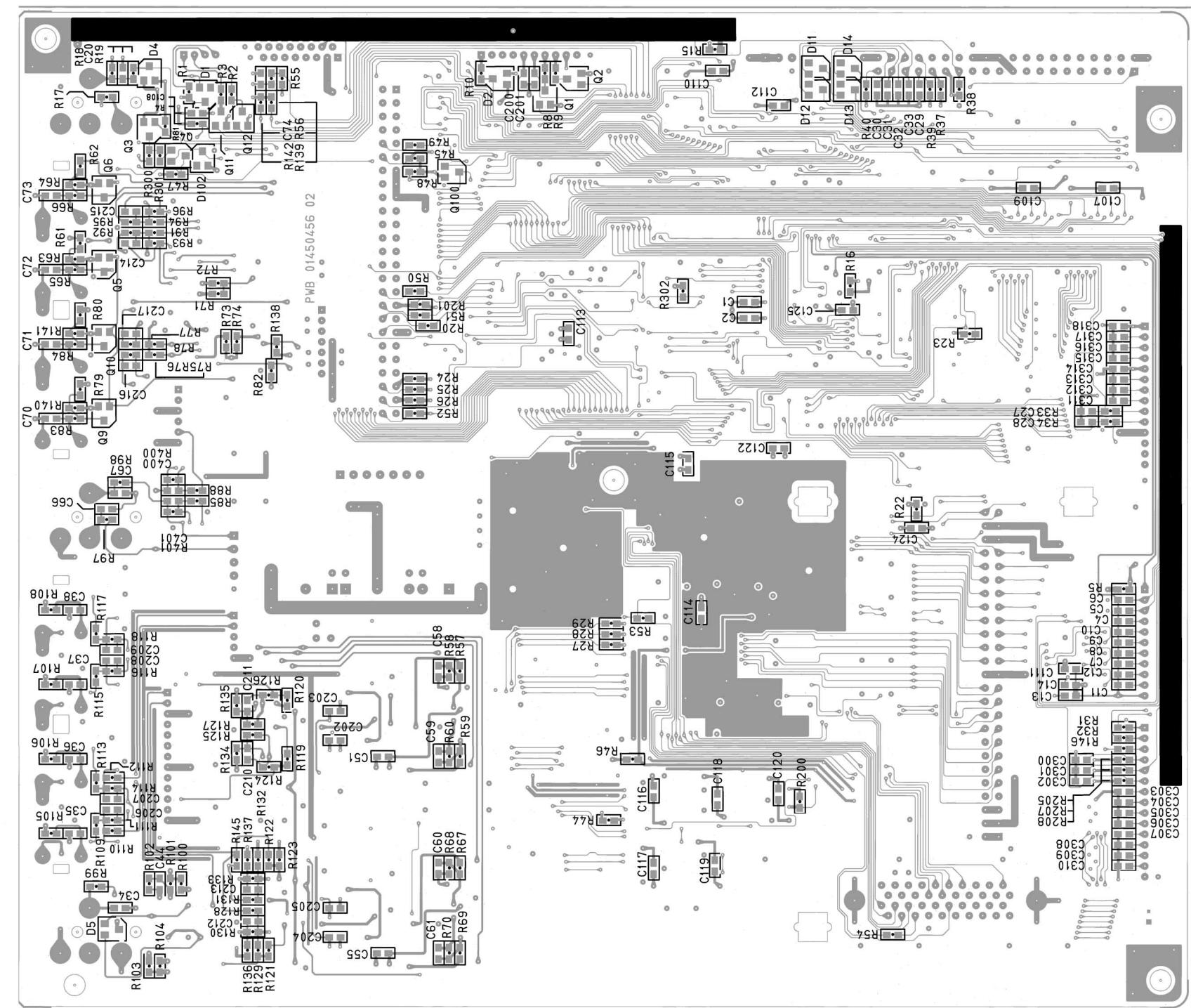


View from component side.

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**A MAIN BOARD ASSY (70909001)**

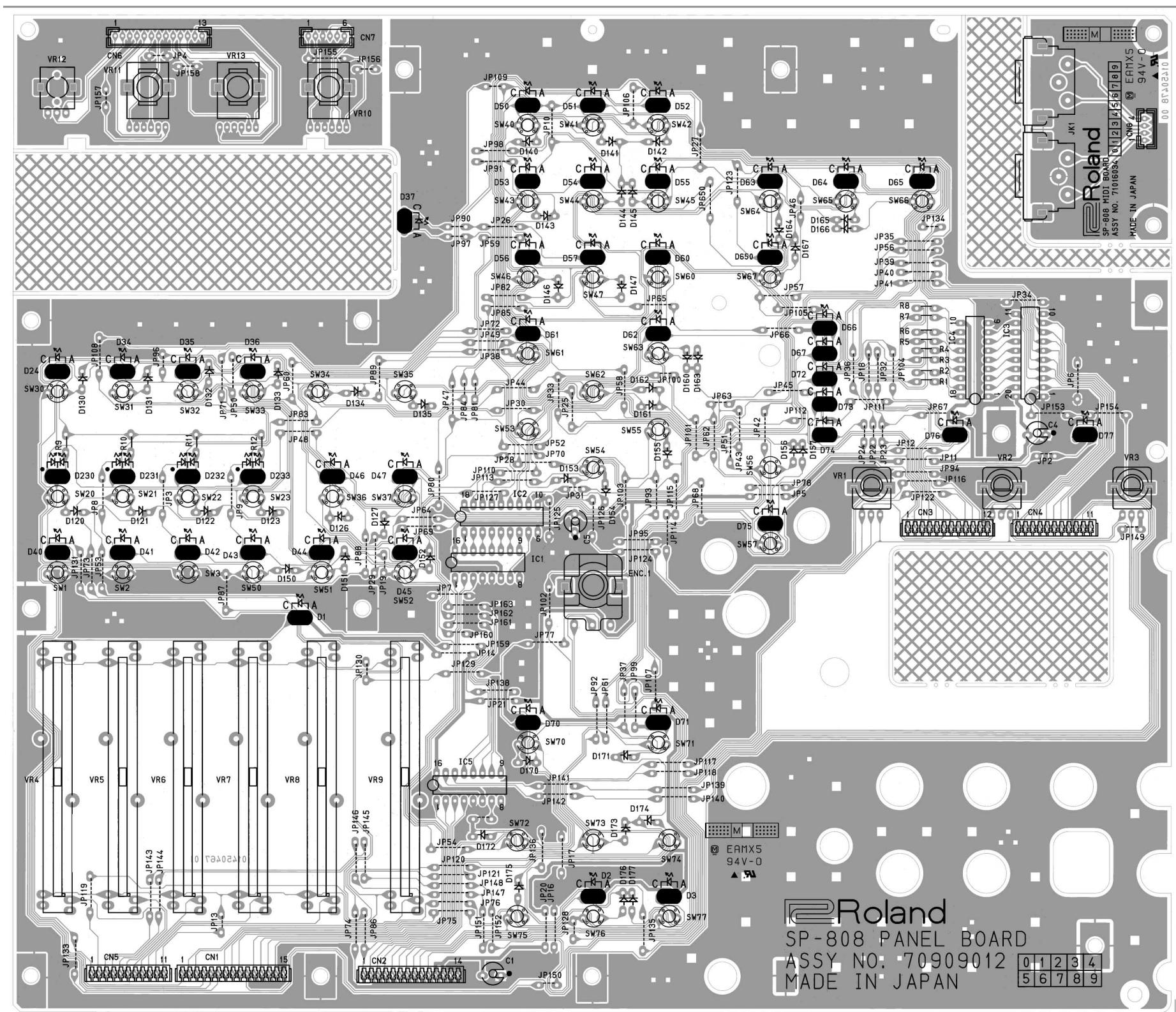
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**A PANEL BOARD ASSY (70909012) / MIDI BOARD ASSY (71016034)**

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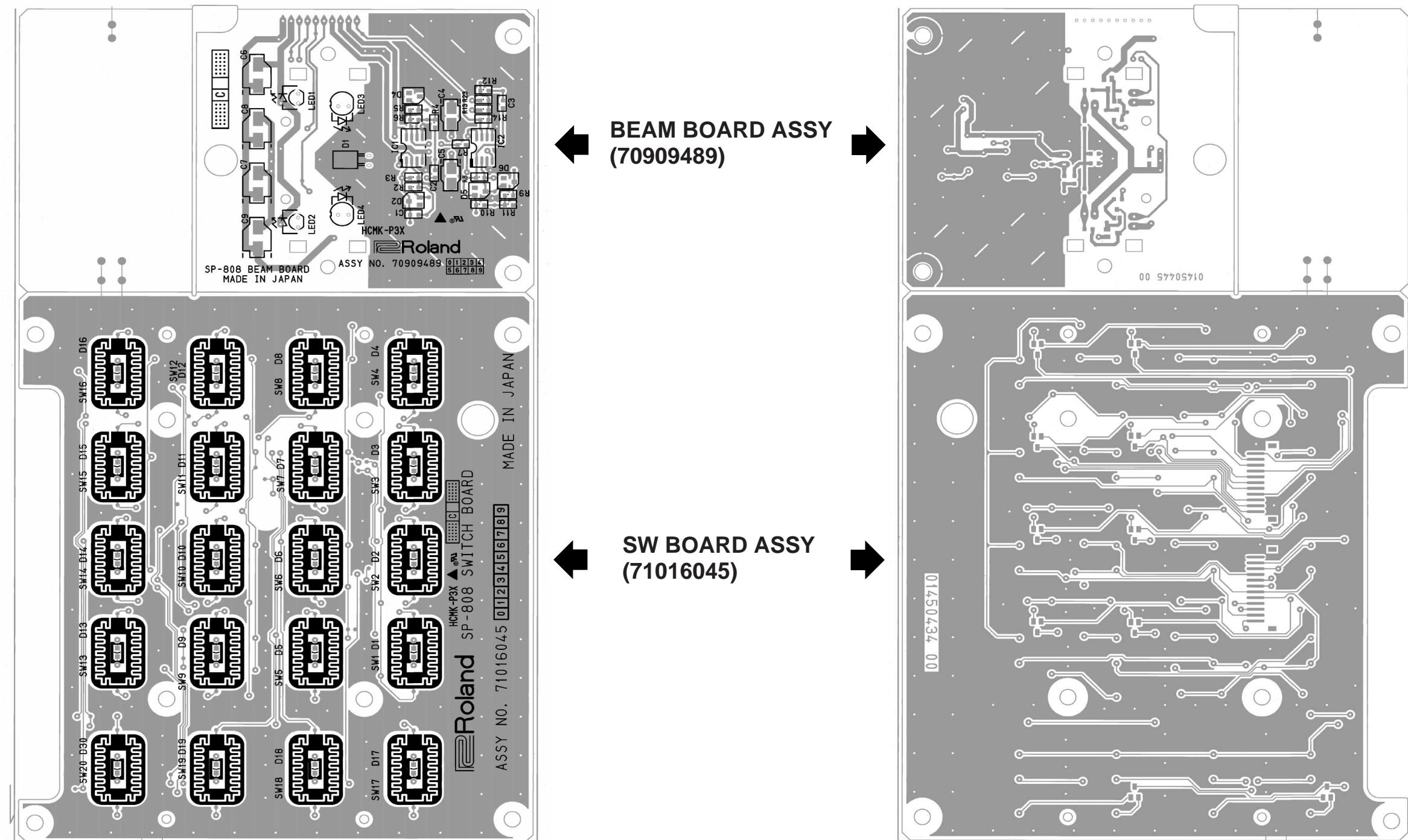
**PANEL BOARD ASSY (70909012)**

**MIDI BOARD ASSY  
(71016034)**

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A SW BOARD ASSY (71016045) / BEAM BOARD ASSY (70909489)

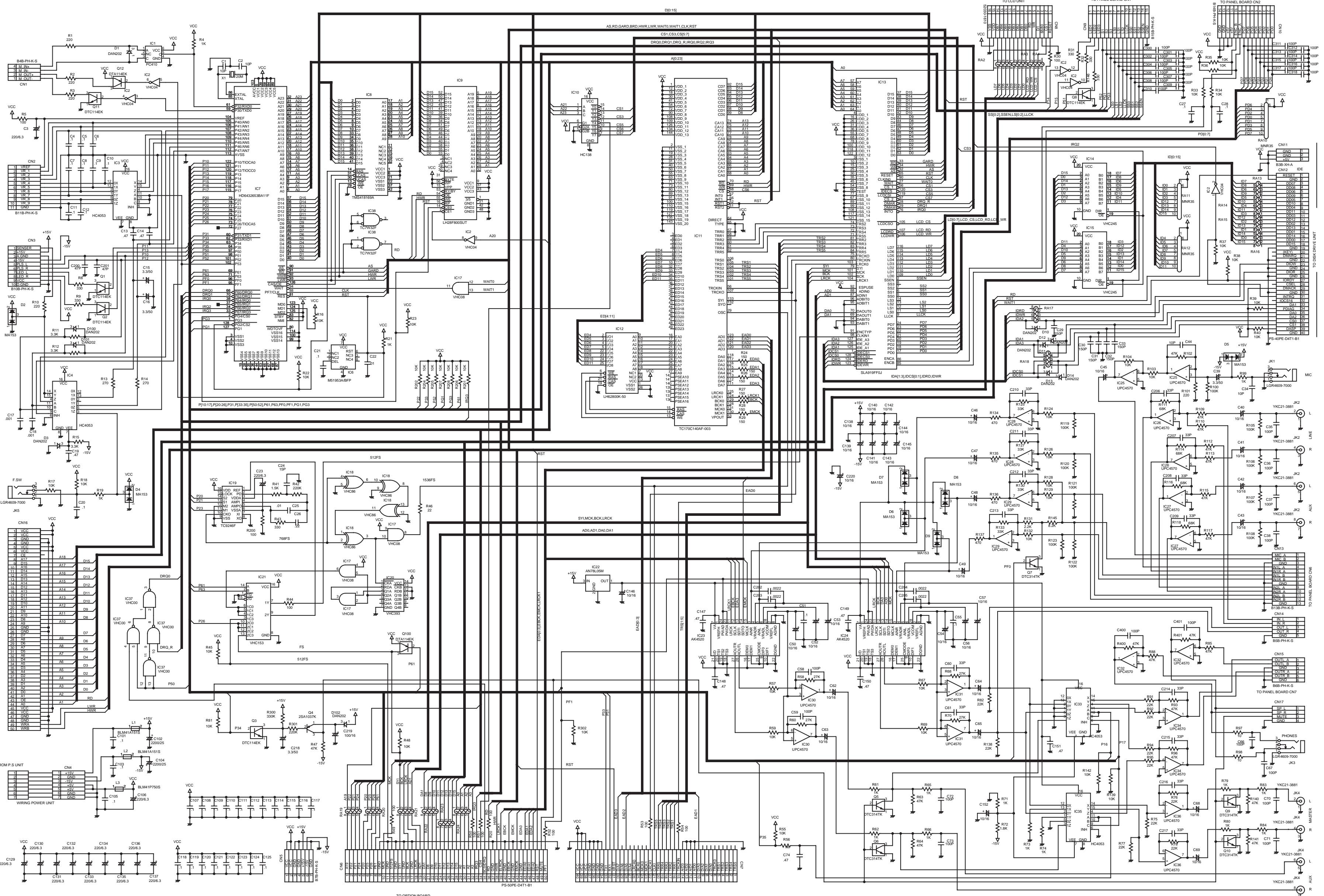
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## A CIRCUIT DIAGRAM

### MAIN BOARD ASSY (70909001)



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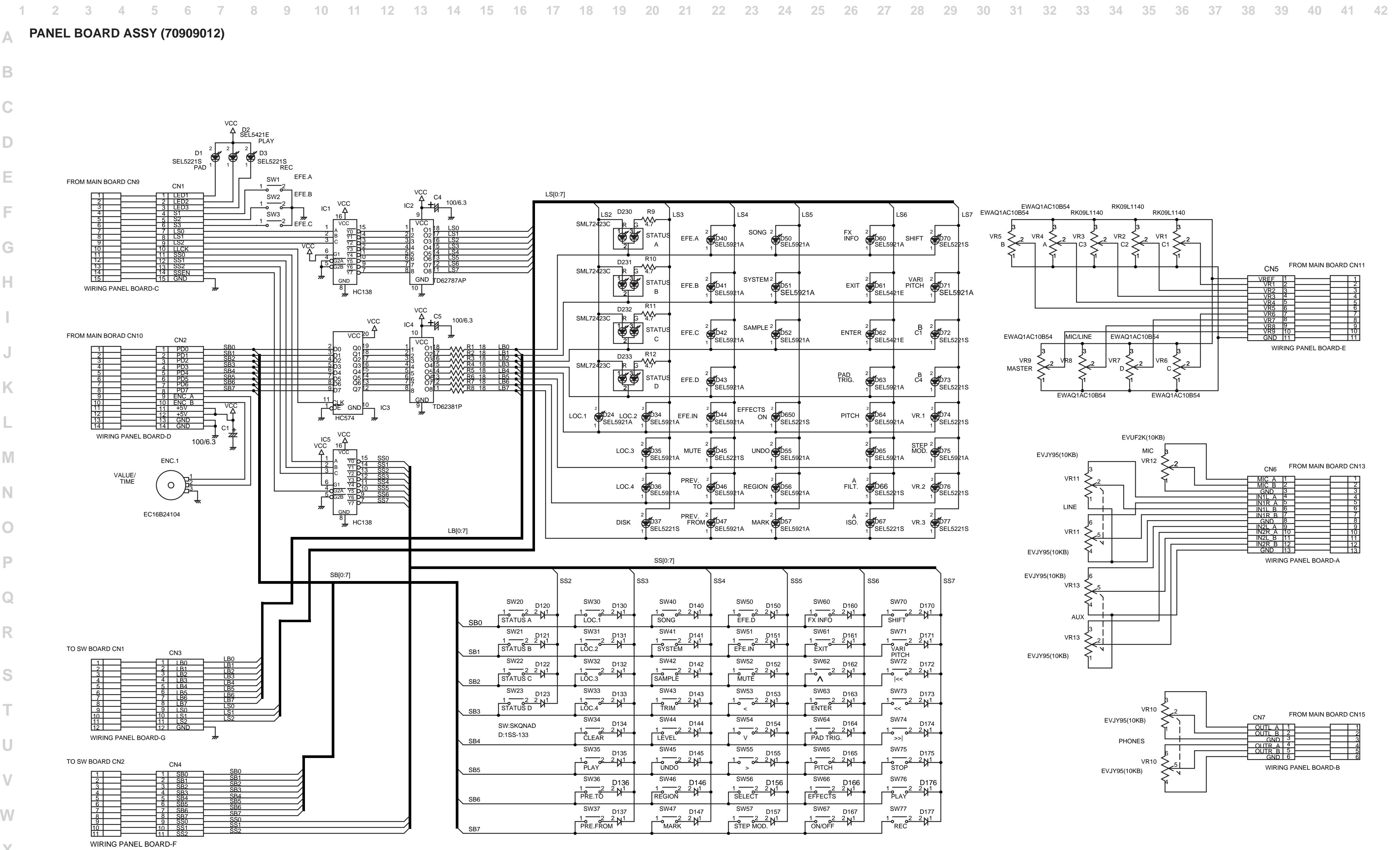
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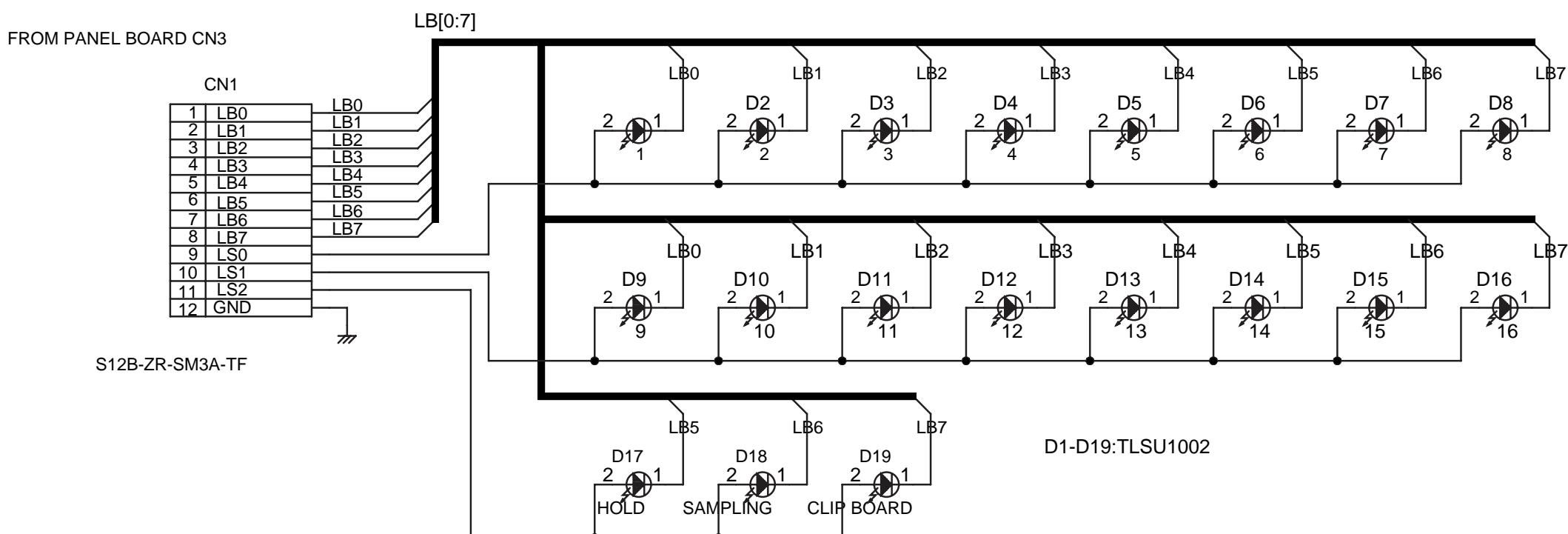
Z



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## A SWITCH BOARD ASSY (71016045)

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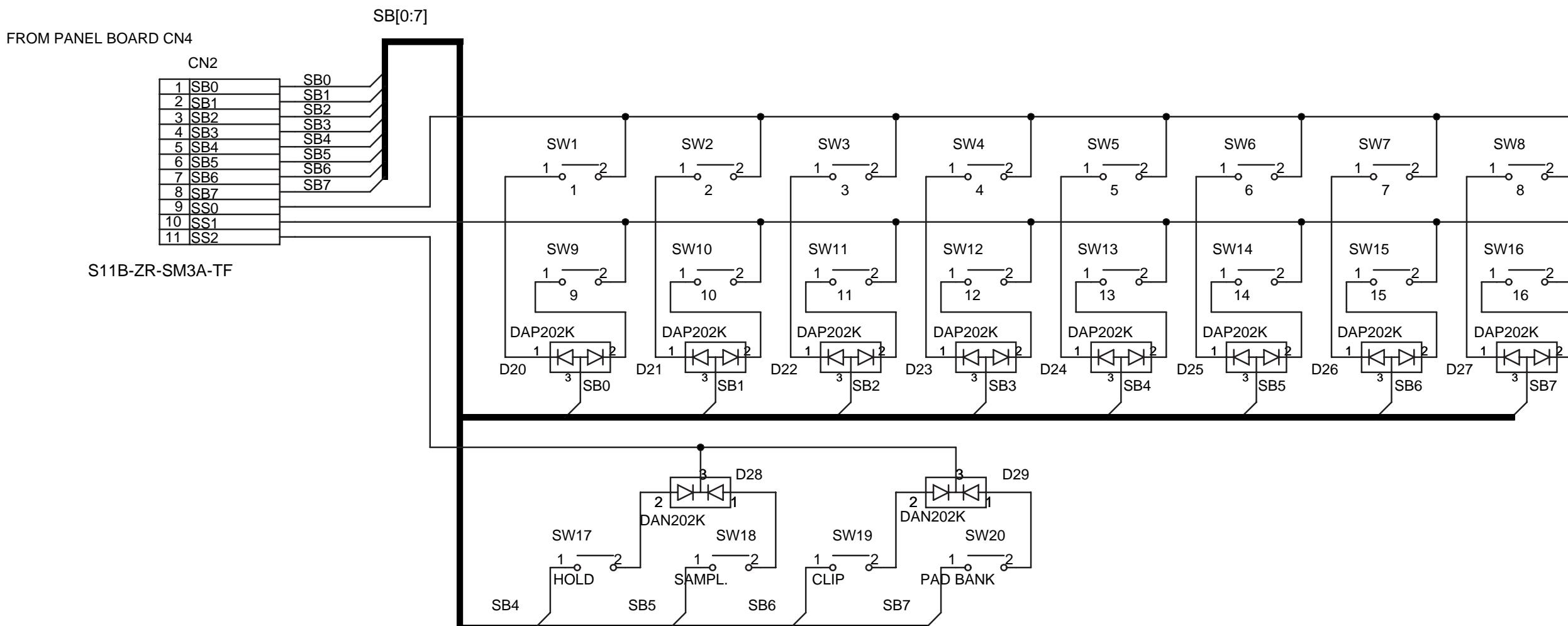
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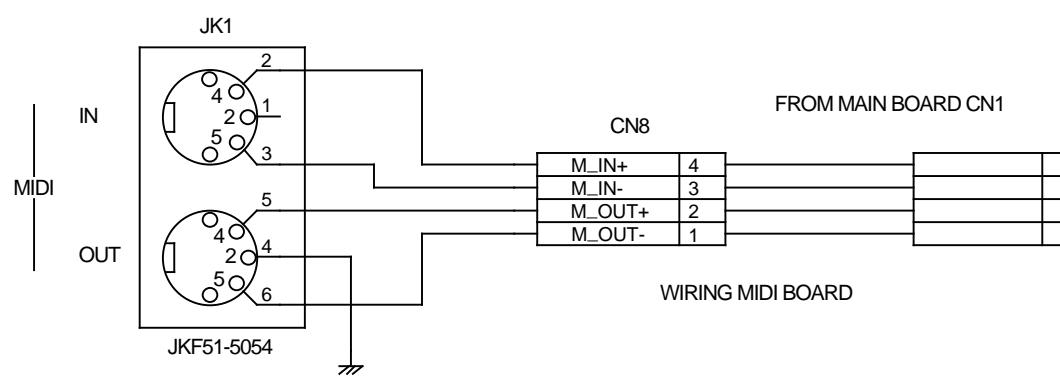
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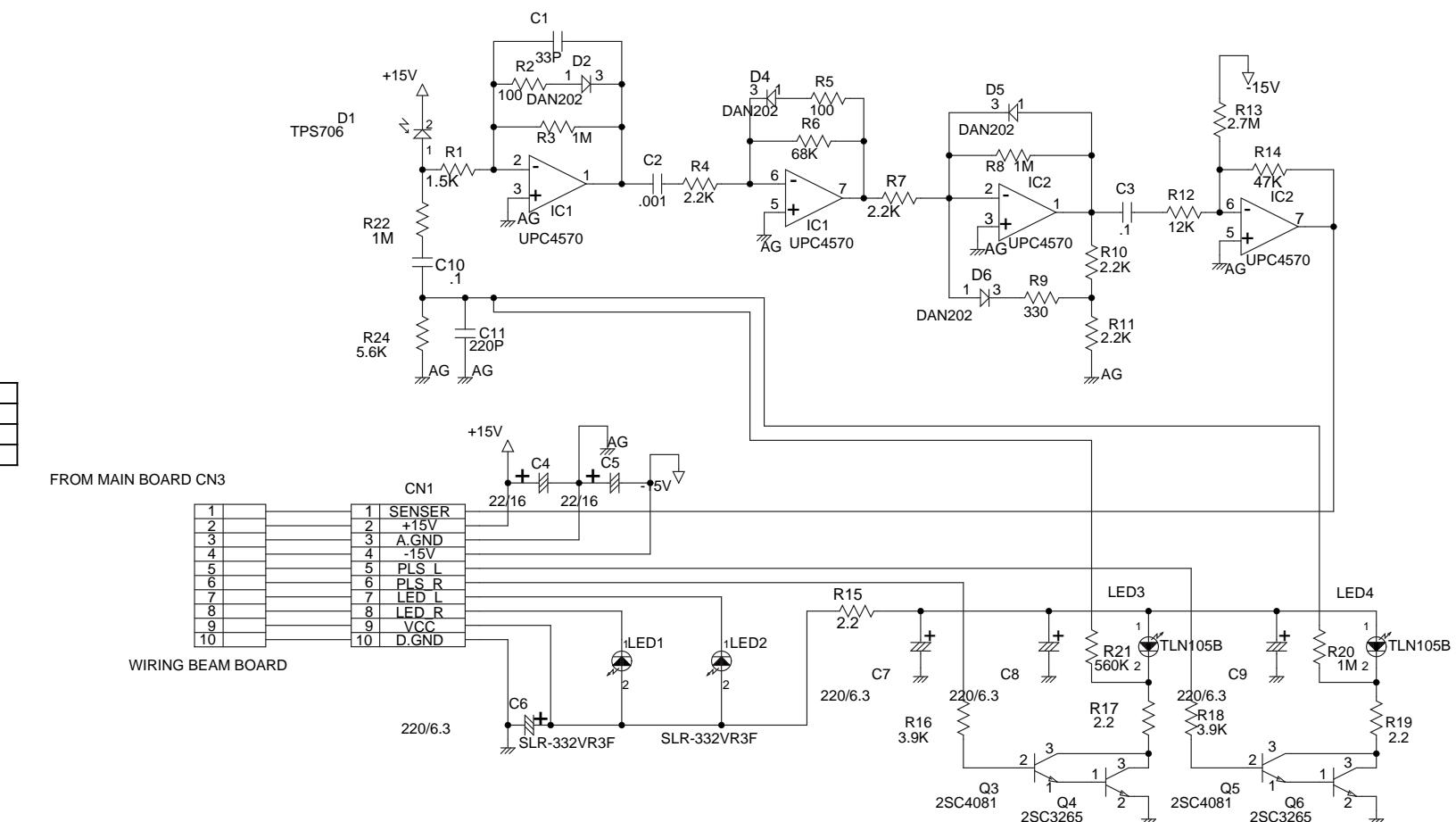


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### A MIDI BOARD ASSY (71016034)



### BEAM BOARD ASSY (70909489)

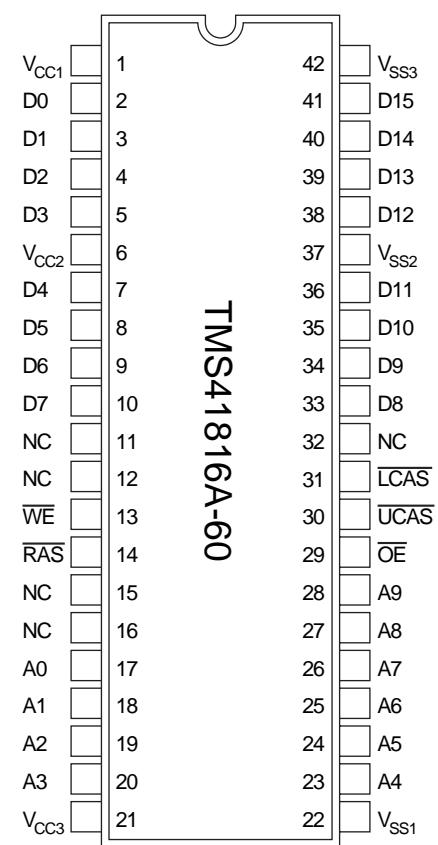


**IC DATA**

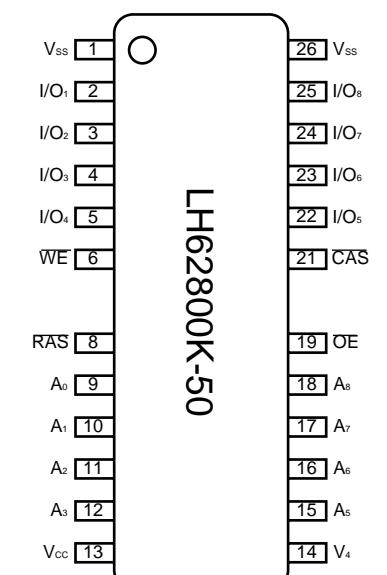
**CPU**  
**HD6432653BA11F (01340201)**  
**IC7 on MB**

**HD6432653BA11F**

**16M DRAM**  
**TMS41816A-60 (01347745)**  
**IC8 on MB**

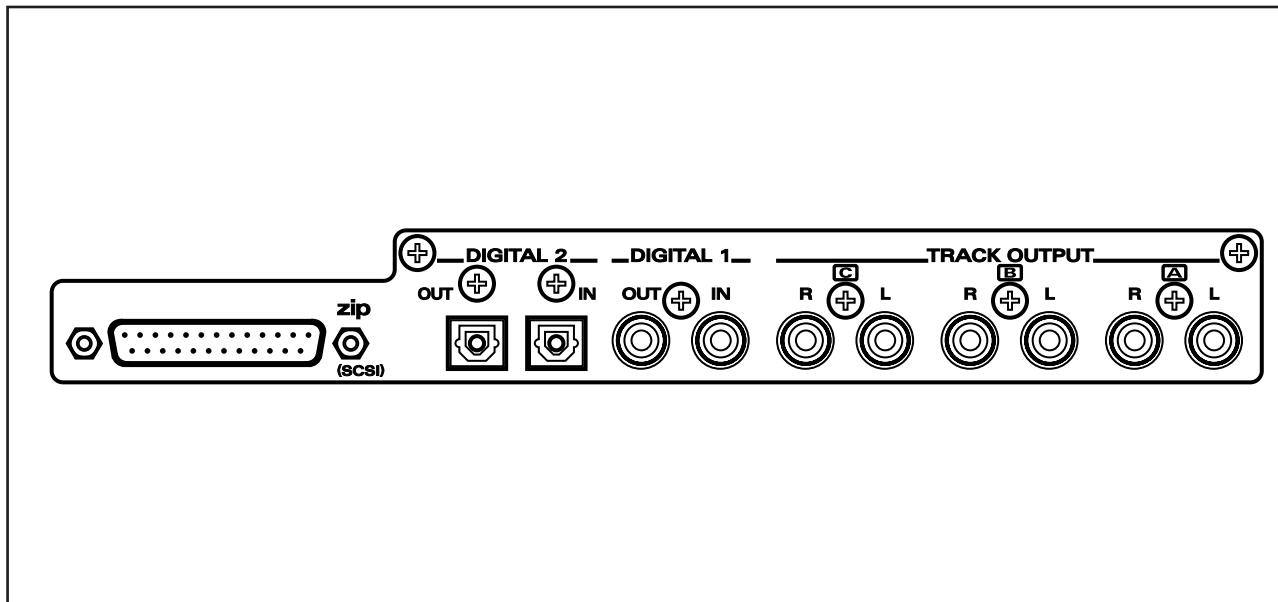
**TMS41816A-60**

**4M DRAM**  
**LH62800K-50 (01347756)**  
**IC12 on MB**

**LH62800K-50**

# SP808-OP1

## MULTI I/O EXPANSION BOARD FOR SP-808



### INSTALLING THE SP808-OP1

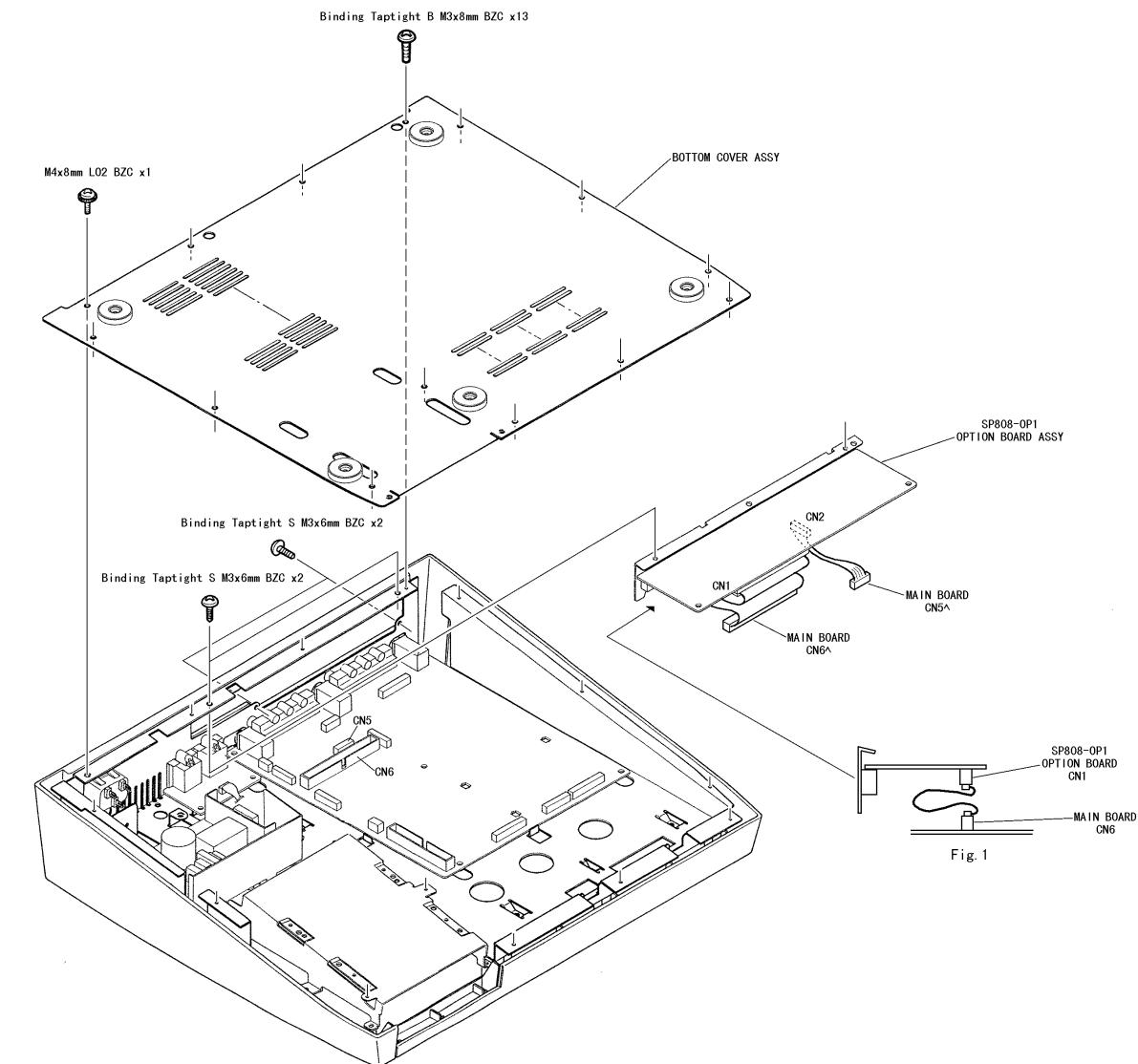
1. Turn off the SP-808. Remove all connecting cables from the SP-808.
2. Place the SP-808 upside down. Remove the bottom cover.
3. Remove the EXP cover from the SP-808.
4. Plug in SP808-OP1 connector, with a length of the flat cable bent, into the SP-808 main board connector. See Fig. 1.
5. Screw-lock the SP808-OP1.
6. Attach and secure the SP-808 bottom cover.
7. Enter the test mode: holding down STATUS (track D) and EFFECTS (track D) buttons of RECORDER/MIXER, turn on the SP-808. Verify that upper-right area of the screen displays "OP-1".
8. Turn off the SP-808.

### SPECIFICATIONS

#### SP808-OP1

##### SP808-OP1 Multi I/O Expansion Board

- \*SCSI Connector (25-pin D-SUB type)
- \*Coaxial Digital In Connector
- \*Coaxial Digital Out Connector
- \*Optical Digital In Connector
- \*Optical Digital Out Connector
- \*Track Direct Out x 3, L, R (RCA phono type)



**PARTS LIST**

<b>SAFETY PRECAUTIONS:</b> The parts marked △ have safety-related characteristics. Use only listed parts for replacement.	<b>CONSIDERATIONS ON PARTS ORDERING</b> When ordering any parts listed in the parts list, please specify the following items in the order sheet. QTY PART NUMBER DESCRIPTION MODEL NUMBER Ex. 10 22575241 Sharp Key C-20/50 15 2247017300 Knob (orange) DAC-15D  Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.
<i>NOTE: The parts marked # are new (initial parts)</i>	

<b>Warning!</b> : There is the possibility that you will burn your hands when you touch Power Supply parts soon after the power supply is turned off.
---

MB → MAIN BOARD

<b>PCB ASSY</b>			
# E 70909501 SP808-OP1 OPTION BOARD ASSY			
<b>JACK SOCKET</b>			
# 13449650 YKC21-3045 (DUAL) PIN JACK JK1.JK2.JK3 00458801 YKC21-3044 PIN O/O PIN JACK JK4 13429314 DBLC-J25SAF-20L9F D-SUB JK7			
<b>IC</b>			
00893356 NCR53CF92 SIO IC4			
01451578 AK4324-VF-E2 DAC IC7.IC8.IC9			
15249111 TC7WU04F(TE12L) CMOS IC14			
15249112 TC7W32F(TE12L) CMOS IC13			
15259706T0 TC74HCU04AF(EL) CMOS IC1			
15289105 UPC4570G2-T2 BIPOLAR OP AMP IC10.IC11.IC12			
15199137 AN7805F REGULATOR IC6			
00893990 BH9595FP TP SCSI ACTIVE TERMINATOR IC5			
00121078 TC9271F(ELP) DIGITAL IF TRANSMITTER IC2			
01124378 LC8905V-TLM DIGITAL IF RECEIVER IC3			
<b>OPTICAL DEVICE</b>			
01343001 TORX178A DIGITAL IN(OPTICAL) JK5			
01239078 TOTX178 DIGITAL OUT (OPTICAL) JK6			
<b>TRANSISTOR</b>			
15329505 DTC314TKT146 NPN Q1-Q6			
<b>DIODE</b>			
00673789 SB20-03P-TD SCHOTTKY DIODE D1			
<b>RESISTOR</b>			
# 01564645 ERG3SJ390H MTL.OXIDE RESISTOR R107			
<b>CAPACITOR</b>			
15369142S0 16CV10BS CHEMICAL C12.C13.C19.C20.C26.C27.C30-C35. C101-C106.C116.C117.C200-C205			
15369105S0 6.3CV100BS CHEMICAL C4.C5.C6			
01347778 6.3CV220BS CHEMICAL C110.C119.C120			
13639551 ECA1CM221B CHEMICAL C206			

<b>FILTER</b>			
01458667 BLM41P750S	FERRITE BEAD	L1	
<b>CONNECTOR</b>			
13369851 PS-50PE-D4T1-B1-K	CONNECTOR	CN1	
<b>WIRING CABLE</b>			
# 01452590 WIRING OPTION-A	Between CN1 to MB(CN6)		
# 01452601 WIRING OPTION-B	Between CN2 to MB(CN5)		
<b>TRANSFORMER</b>			
12449615 PT-10244-615	PULSE TRANS	T1	
<b>CHASSIS</b>			
# 01457634 EXP COVER			
<b>MISCELLANEOUS</b>			
# 01561623 UC-300287 L=10	EMI GASKET		
<b>PACKING</b>			
# 01456334 PACKING CASE			

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## A CIRCUIT BOARD

### B SP808-OP1 OPTION BOARD ASSY (70909501)

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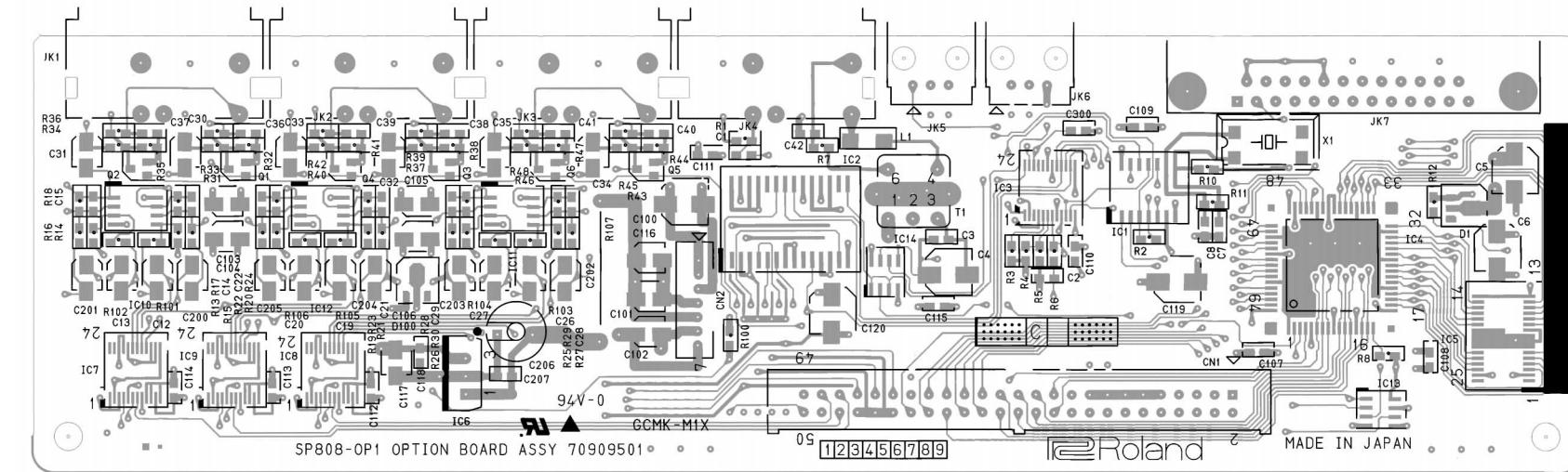
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## A CIRCUIT DIAGRAM

### SP808-OP1 OPTION BOARD ASSY (70909501)

