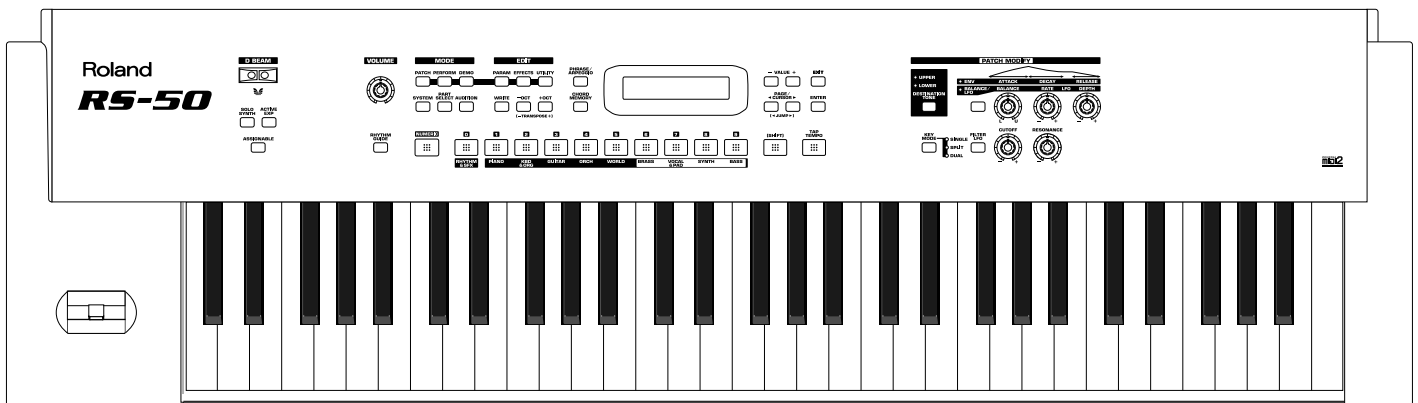


RS-50

SERVICE NOTES Issued by RJA

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SPECIFICATIONS

RS-50: Synthesizer Keyboard (conforms to General MIDI 2 System)

Keyboard

61 keys (with velocity)

[Sound Generator]

Maximum Polyphony

64 voices

Parts

16

* Each part (Patch) can be assigned two tones; can be split or layered.

Wave Memory

32 M bytes (16-bit linear equivalent)

Preset Memory

Original Tones: 640

Patches: 640 (RS-50 original: 384, General MIDI 2: 256)

Rhythm Sets: 20 (RS-50 original: 11, General MIDI 2: 9)

Performances: 32

User Memory

Patches: 128

* Each Patch can be assigned two Tones.

Rhythm Sets: 2

Performances: 8

Effects

Multi-Effects: 47 types

Reverb: 8 types

Chorus: 8 types

[Others]

Rhythm Guide

Preset Patterns: 32

Tempo: 5--300 BPM (with tap tempo function)

Multi-Chord Memory

Preset Chord Sets: 16

* 12 chord forms are assigned to each set.

User Chord Sets: 8

* 12 chord forms can be assigned to each set.

Phrase/Arpeggio

Templates: 342

User Templates: 8

Styles (Variations): 473

Controllers

D Beam Controller: 1

Pitch Bend/Modulation Lever: 1

Control Knobs: 5

Display

20 characters, 2 lines (Backlit LCD)

Connectors

Output Jacks (L/MONO, R)

Headphones Jack

MIDI Connectors (IN, OUT)

Hold Pedal Jack

Control Pedal Jack

Power Supply

DC 9 V (AC Adaptor)

Current draw

1,000 mA

Dimensions

1,033 (W) x 294 (D) x 103 (H) mm

40-11/16 (W) x 11-5/8 (D) x 4-1/16 (H) inches

Weight

5.5 kg/12 lbs 13 oz

Accessories

Owner's Manual English(#72237790)

Japanese(#72237623)

AC Adaptor (ACI Series or PSB-1U)

ACI-120C(#00905756)

ACI-230C(#01018312)

PSB-1U(R)(#03017356)

230V AC CORD SET(#01903356)

240V AC CORD SET(#01903367)

CD-ROM (Editor program for PC/Mac):(#03341467)

Options

Pedal Switch: DP-2, DP-8

Foot Switch: BOSS FS-5U

Expression Pedal: EV-5

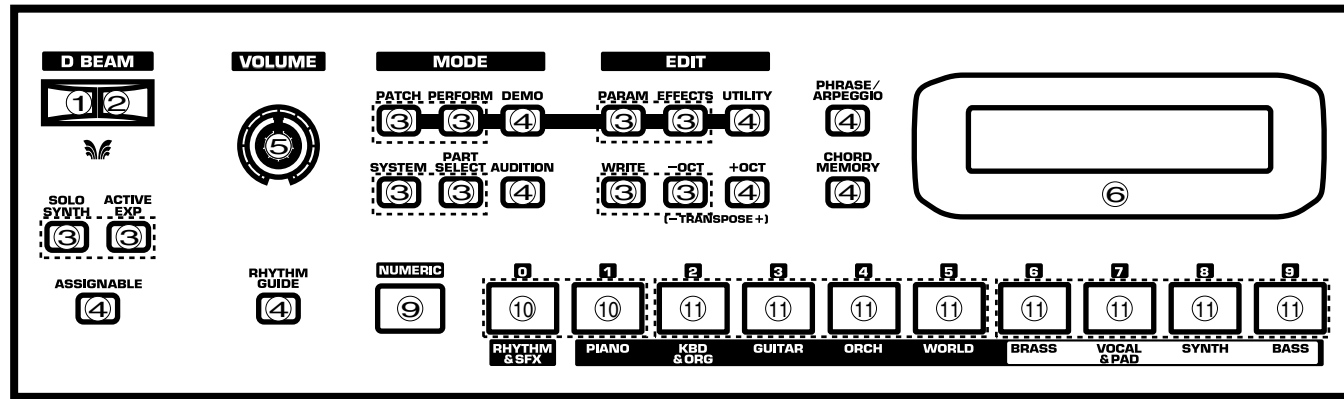
MIDI IMPLEMENTATION English(#17041321)

Japanese(#17041320)

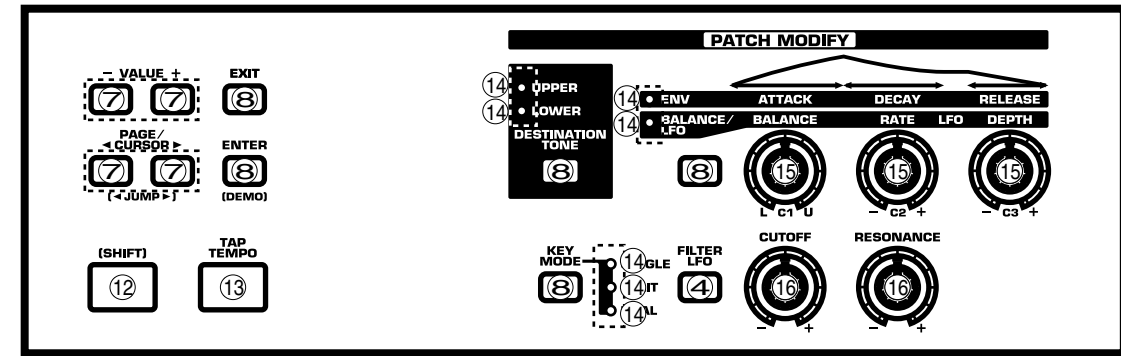
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

LOCATION OF CONTROLS

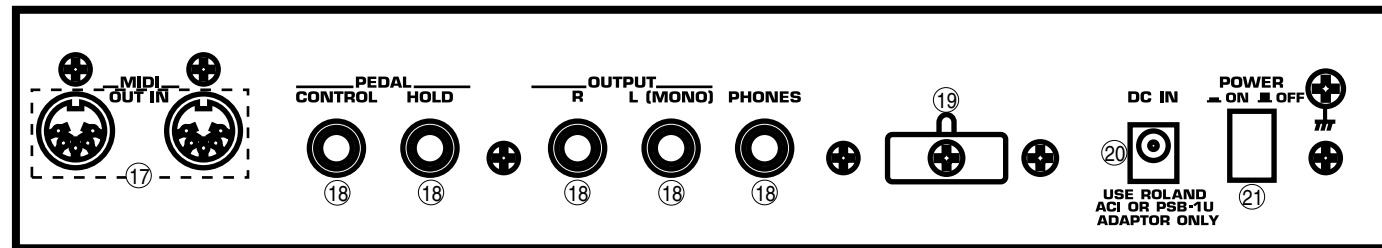
TOP(SIDE L)



TOP(Side R)



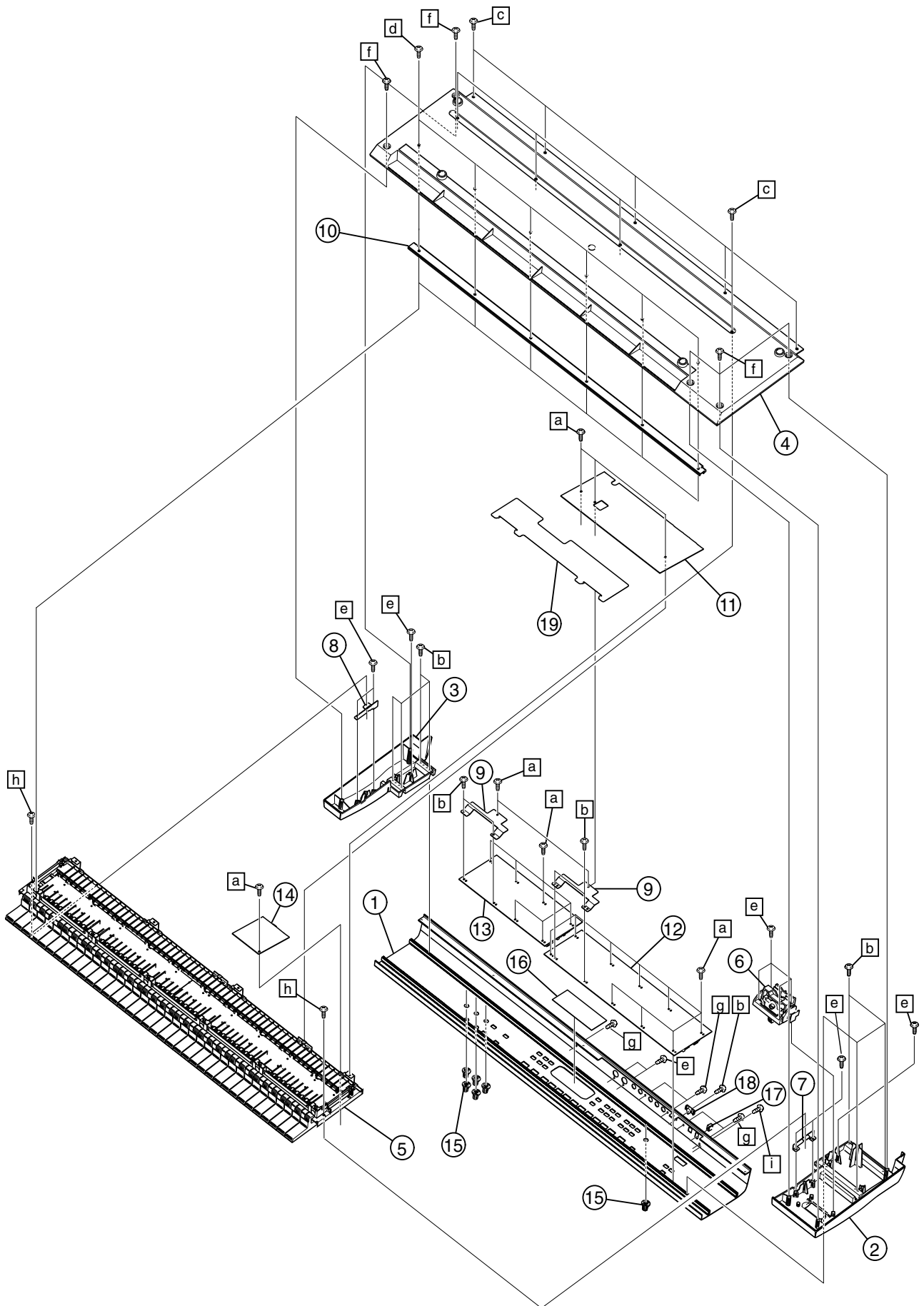
REAR



LOCATION OF CONTROLS PARTS LIST

No	PART CODE	Part name	Description	QTY
1-2	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK	1
1	03126134	LED	TLN233	1
1	02230578	LED SPACER	LDS-50R	1
2	01900612	DIODE	TPS611	1
2	12169368	LED SPACER	LDS-40B	1
3-4,9-11	01239856	LED (ORANGE)	SEL5921A TP15	29 +1
3-4,7-13	02891789	TACT SWITCH	SKRGADD010 H=5.0	29 +12
3,7	03120889	D S-KEYTOP	SX2H-B GRS	5 +2
4,8	03120890	D S-KEYTOP	SX1H-B GRS	8 +6
5,15-16	02452912	J R-KNOB	SF-A BLK/LCG	6
5	02455234	12M/M ROTARY POTENTIOMETER	EVJY15F02B14	1
6	03231856	DISPLAY COVER		1
6	02453345	LCD HOLDER		1
6	02453156	LED (ORANGE)	LNJ801TP6JA	5
6	02453145	LCD	RCM2072M-A	1
6	02908834	LEAF REFLECTOR		1
9,13	01783923	N S-KEYTOP	MD1H	1 +1
10	01783934	N S-KEYTOP	MD2H	1
11	01783956	N S-KEYTOP	MD4H	2
12	01783967	N S-KEYTOP	MX1H	1
13	01239867	LED (RED/GREEN)CLR	SML72423C TP15	1
14	01343090	LED SPACER		3
14	01907901	LED	LNJ482YKXXE	7
15	02891889	9M/M ROTARY POTENTIOMETER	EVUFEKFK3B14 10KB CC	3
16	01787545	9M/M ROTARY POTENTIOMETER	EVUF2KFK3B14 10KB	2
17	13429676	MIDI CONNECTOR	YKF51-5048 (TWIN)	1
18	00569278	6.5MM JACK	LGR4609-7100	5
19	22365714	CORD HOOK	236-714	1
20	13449711	AC ADAPTOR JACK	HEC-0470-01-630	1
21	12499175	G S-BUTTON	S1H BLK 249-175	1
21	01676512	PUSH SWITCH	SDKLA1-B	1

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

[Parts]

NO	PARTCODE	Part name	Description	Q'TY
1	03233212	TOP PANEL		1
2	02453290	SIDE PANEL L		1
3	02453301	SIDE PANEL R		1
4	03235656	BOTTOM CASE		1
5	72341001	KEYBOARD ASSY	SK-9A61-A	1
6	03234723	BENDER	PB-H0204	1
7	02453323	SIDE HOLDER L		1
8	02453334	SIDE HOLDER R		1
9	02455956	PANEL HOLDER		2
10	03236689	CHANNEL		1
11	72237678	MAIN BOARD ASSY		1
12	72237701	PWB PANEL L ASSY		1
13	72237712	PWB PANEL R ASSY		1
14	72237723	PWB PS ASSY		1
15	02452912	J R-KNOB	SF-A BLK/LCG	6
16	03231856	DISPLAY COVER		1
17	12499175	G S-BUTTON	S1H BLK 249-175	1
18	22365714	CORD HOOK	236-714	1
19	03236667	INSULATING SHEET		1

[Screw]

NO	PARTCODE	Part name	Description	Q'TY
a	40011056	SCREW 3X6	BINDING TAPTITE B ZC	21
b	40011101	SCREW 3X8	BINDING TAPTITE B BZC	13
c	40011123	SCREW 4X8	BINDING TAPTITE B BZC	9
d	40012356	SCREW 4X20	BINDING TAPTITE B BZC	6
e	40011312	SCREW 3X8	BINDING TAPTITE P BZC	12
f	40012501	SCREW M4X12	BINDING TAPTITE P FE BZC	5
g	40011490	SCREW M3X6	PAN MACHINE W/SW BZC	5
h	40239734	SCREW 3X6	VWH B-TIGHT ZC	2
i	40454856	SCREW M4X10	BINDING NI	1

PARTS LIST

SAFETY PRECAUTIONS:

The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.

CONSIDERATION ON PARTS ORDRING

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.

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

PWB MAIN ASSY=MB, PWB PANEL L ASSY=PAL, PWB PANEL R ASSY=PAR, PWB PS ASSY=PS

CASING

	03235656	BOTTOM CASE		1
	03231856	DISPLAY COVER		1
	02453290	SIDE PANEL L		1
	02453301	SIDE PANEL R		1
#	03233212	TOP PANEL		1

CHASSIS

	02455956	PANEL HOLDER		2
	02453323	SIDE HOLDER L		1
	02453334	SIDE HOLDER R		1
	03236689	CHANNEL		1

KNOB, BUTTON

	12499175	G S-BUTTON	S1H BLK 249-175	1
	02452912	J R-KNOB	SF-A BLK/LCG	6

SWITCH

	02891789	SKRGADD010 H=5.0	TACT SWITCH	SW29,SW28,SW27,SW25,SW38,SW24,SW23,SW22,SW30,SW26,SW42,SW50,SW49,SW48,SW47,SW46,SW35,SW44,SW31,SW41,SW40,SW37,SW21,SW34,SW33,SW32,SW45,SW20,SW39 on PAL, SW10,SW7,SW19,SW16,SW15,SW14,SW13,SW9,SW8,SW2,SW3,SW4 on PAR	29 +1 2
	01676512	SDKLA1-B	PUSH SWITCH	SW1 on PS	1

JACK, EXT TERMINAL

	13429676	YKF51-5048 (TWIN)	MIDI CONNECTOR	JK1 on MB	1
	00569278	LGR4609-7100	6.5MM JACK	JK2,JK3,JK4,JK5,JK6 on MB	5
	13449711	HEC-0470-01-630	AC ADAPTOR JACK	JK1 on PS	1

DISPLAY UNIT

	02453145	RCM2072M-A	LCD	IC9 on PAL	1
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NOTE: Replacement RCM2072M-A should be made on a unit base.

KEYBOARD ASSY

	72341001	KEYBOARD ASSY	SK-9A61-A		1
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NOTE: See 'KEYBOARD PARTS LIST' for details.

PCB ASSY

#	72237678	MAIN BOARD ASSY			1
	03236101	WIRING	8X170-P2.5-XHP-SCN-R	CN8 on MB	1
	12199584	GROUNDING TERMINAL	M1698	TER3,TER2,TER1 on MB, TER1,TER2 on PS	3
#	72237701	PWB PANEL L ASSY			1
	NOTE: 'PWB PANEL L ASSY' includes the following parts.				
	02560123	RIBBON CABLE	JWFV 10X175-P2.0		1
	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCUT BLK		1
	02453345	LCD HOLDER			1
	03120889	D S-KEYTOP	SX2H-B GRS		5
	03120890	D S-KEYTOP	SX1H-B GRS		8
	01783923	N S-KEYTOP	MD1H		1
	01783934	N S-KEYTOP	MD2H		1
	01783956	N S-KEYTOP	MD4H		2

PCB ASSY				
	02908834	LEAF REFLECTOR		1
	02230578	LED SPACER	LDS-50R	1
	12169368	LED SPACER	LDS-40B	1
#	72237712	PWB PANEL R ASSY		1
	NOTE: 'PWB PANEL R ASSY' includes the following parts.			
	01783923	N S-KEYTOP	MD1H	1
	01783967	N S-KEYTOP	MX1H	1
	03120889	D S-KEYTOP	SX2H-B GRS	2
	03120890	D S-KEYTOP	SX1H-B GRS	6
	01343090	LED SPACER		3
#	72237723	PWB PS ASSY		1
	NOTE: 'PWB PS ASSY' includes the following parts.			
	22465224	HEATSINK	246-224	HS1 on PS
	12199584	GROUNDING TERMINAL	M1698	TER3,TER2,TER1 on MB, TER1,TER2 on PS
	40011501	SCREW M3X8	PAN MACHINE W/SW+PW BZC	1
IC				
	03231645	HD6437016E30F	IC (32BIT CPU)	IC7 on MB
	02677490	RA0C-003XP7TC203C180AF003	IC (CUSTOM)	IC24 on MB
	00129278	SSC1080F0B	IC	IC33 on MB
	01342978	TC160G22AF-1253	IC (CUSTOM)	IC18 on MB
	02784856	M11L416256SA-35T	IC (DRAM)	IC13,IC30 on MB
	01900678	BR93LC46FV-WE2	IC (EEPROM)	IC16 on MB
	03231656	MX23L12810TC-12 M1P0102WAV	IC (MASK ROM)	IC21 on MB
	*****	LH28F160BJE-BTL80	IC (FLASH MEMORY)	1
	01451578	AK4324-VF-E2	IC (DAC)	IC28 on MB
	01458401	TC74LVX4245FS(EL)	IC (TTL)	IC12,IC14 on MB
	03127589	TC7S08FU	IC (CMOS)	IC36 on MB
	01348912	TC7SH08FU(TE85L)	IC (CMOS)	IC32,IC11 on MB
	01348945	TC7SH32FU(TE85L)	IC (CMOS)	IC9 on MB
	01455301	TC7WH04FU(TE12L)	IC (CMOS)	IC4 on MB
	02234245	TC7WHU04FU(TE12L)	IC (CMOS)	IC25 on MB
	02675689	HD74LV245ATELL	IC (CMOS)	IC1,IC5,IC8,IC15 on MB
	03016167	TC74VHCT08AFT(EL)	IC (CMOS)	IC3 on MB
	15189261	M5218AFP-600E	IC (BIPOLAR OP AMP)	IC29,IC19,IC27 on MB
	15289109	M5216FP-600D	IC (BIPOLAR OP AMP)	IC31 on MB
	01458445	UPC29M33T-T1	IC (REGULATOR)	IC34 on MB
	02010156	AN77L05M	IC (REGULATOR)	IC26 on MB
	02234778	NJM2360AM-TE3	IC (REGULATOR)	IC35 on MB
	03236112	FS781BZBT	IC	IC401 on MB
	15199937	M51953BFP-600C	IC (RESET)	IC37 on MB
	02900545	PC410LKNIP	IC (PHOTO COUPLER)	IC6 on MB
	01677756	HD74HC138P	IC (CMOS)	IC4,IC5 on PAL
	01677823	HD74HC574P	IC CMOS	IC6 on PAL
	15189186	UPC4570C	IC (BIPOLAR OP AMP)	IC7,IC8 on PAL
	01677812	HD74HC4053P	IC (CMOS)	IC2 on PAR
	15189249	BA10324A	IC (OP AMP)	IC1 on PAR
	15199190	NJM7805FA	IC(V.RGL)	IC3 on PS
TRANSISTOR				
	15309101	2SA1037AKT146R	TRANSISTOR	Q7,Q13,Q6 on MB
	02671012	2SA1530A-T12-1R	TRANSISTOR	Q401 on MB
	03233989	2SC4210-Y(TE85R)	TRANSISTOR	Q17 on MB
	02671023	2SC3052-T12-1E	TRANSISTOR	Q5 on MB
	15319101	2SC2412KR T146	TRANSISTOR	Q15,Q14 on MB
	15319115	2SC4213-A(TE85L)	TRANSISTOR	Q11,Q9,Q12,Q10 on MB
	15329507	DTA114EKT146	DIGITAL TRANSISTOR	Q1 on MB
	15329511	DTC114TKT146	DIGITAL TRANSISTOR	Q2,Q3 on MB
	15329516	DTC114EKT146	TRANSISTOR	Q16 on MB
	03126145	2SA933ASTPR	TRANSISTOR	Q18 on PAL
	03234545	2SD1858 TV2 Q	TRANSISTOR	Q19 on PAL
	15119163	RN2227(TPE4)	TRANSISTOR	Q5,Q8,Q7,Q6 on PAL, Q1,Q2,Q3,Q4 on PAR
	15129164	DTC114ESTP	DIGITAL TRANSISTOR	Q10,Q9,Q12,Q13,Q14,Q11,Q16,Q15 on PAL
				+4
				8
DIODE				
	00673789	SB20-03P-TD	SCHOTTKY DIODE	D5 on MB
	02780401	MA720-(TX)	SCHOTTKY DIODE	D2 on MB
	15339130	MA142WK-(TX)	ARRAY DIODE	DA4,DA5,DA401,DA402,D3,DA3,D1 on MB
	01897189	MA147-(TX)	ARRAY DIODE	DA1,DA8,DA7,DA6 on MB
	01565678	RD5.1M-T2B	ZENER DIODE	D4 on MB
	01900612	TPS611	DIODE	Q17 on PAL

DIODE

15019126	ISS133 T-77	SWITCHING DIODE	D29,D21,D26,D28,D30,D27,D25,D24,D22,D 53,D31,D23,D54,D58,D57,D50,D55,D32,D51 ,D49,D48,D47,D46,D33,D56,D45,D34,D35,D 36,D38,D39,D40,D41,D42,D43 on PAL, D20,D15,D16,D3,D14,D11,D10,D9,D8,D5,D 4,D17 on PAR	35 +1 2
03126134	TLN233	LED	LED44 on PAL	1
02453156	LNJ801TP6JA	LED	LED49,LED53,LED47,LED51,LED45 on PAL	5
01239856	SEL5921A TP15	LED (ORANGE)	LED25,LED41,LED39,LED37,LED36,LED34 ,LED33,LED32,LED31,LED30,LED29,LED4 2,LED26,LED40,LED24,LED23,LED22,LED 21,LED20,LED19,LED18,LED17,LED16,LE D15,LED14,LED13,LED12,LED27,LED38 on PAL,LED401 on PAR	29 +1
01907901	LNJ482YKXXE	LED	LED8,LED2,LED3,LED7,LED9,LED10,LED 4 on PAR	7
01239867	SML72423C TP15	LED (RED/GREEN)CLR	LED11 on PAR	1
15039136	DSA26C	DIODE	D1 on PS	1

RESISTOR

00567289	RPC05T 103 J	MTL.FILM RESISTOR	R401,R134,R116,R405,R408,R113,R111,R109 ,R404,R96,R85,R100,R5,R69,R16,R74,R22,R9 9,R72,R32,R95,R86 on MB	22
00567290	RPC05T 123 J	MTL.FILM RESISTOR	R97,R81,R110 on MB	3
00567378	RPC05T 473 J	MTL.FILM RESISTOR	R156,R141,R139,R133,R45 on MB	5
01011856	RPC05T 0R0 J	MTL.FILM RESISTOR	R29,L12,R31,L55,L11,R19,L1,R3,L60,R17,L1 0,R65,L7,L18,L57,L401,R64,L13,L9,L15,L8,R 80,R57 on MB	23
03236123	RPC05T 2R2 J	MTL.FILM RESISTOR	R153,R152,R150,R148,R149 on MB	5
00567267	RPC05T 682 J	MTL.FILM RESISTOR	R121,R127 on MB	2
00567301	RPC05T 153 J	MTL.FILM RESISTOR	R120,R126,R117,R107,R104,R93 on MB	6
00567278	RPC05T 822 J	MTL.FILM RESISTOR	R154,R108,R112,R98,R94 on MB	5
00567245	RPC05T 472 J	MTL.FILM RESISTOR	R87,R66,R135,R28,R13,R413,R30,R70 on MB	8
00566967	RPC05T 470 J	MTL.FILM RESISTOR	R75,R41 on MB	2
00567212	RPC05T 332 J	MTL.FILM RESISTOR	R106,R37,R415,R402,R58,R119 on MB	6
00567034	RPC05T 121 J	MTL.FILM RESISTOR	R7 on MB	1
00567067	RPC05T 221 J	MTL.FILM RESISTOR	R2,R4,R36 on MB	3
00567112	RPC05T 471 J	MTL.FILM RESISTOR	R49,R78,R90,R77,R79,R50 on MB	6
00567134	RPC05T 681 J	MTL.FILM RESISTOR	R114,R102 on MB	2
00567156	RPC05T 102 J	MTL.FILM RESISTOR	R71,R151,R125,R157,R140,R132,R73,R147,R 53,R137,R68,R67,R46,R11 on MB	14
00567023	RPC05T 101 J	MTL.FILM RESISTOR	R54,R56,R51,R27,R59,R76,R26,R101,R20,R8, R6,R146,R40,R410,R414,R416 on MB	16
00566912	RPC05T 220 J	MTL.FILM RESISTOR	R411,R412 on MB	2
00566867	RPC05T 100 J	MTL.FILM RESISTOR	R34,R14,R35,R92,R145,R25,R407,R24,R88,R 409,R144 on MB	11
00567412	RPC05T 104 J	MTL.FILM RESISTOR	R105,R131,R118,R124,R48 on MB	5
15399711	MCR25 JZH J 221 1/4W	MTL.FILM RESISTOR	R47 on MB	1
15399952	MCR50JZH470 1/2W	CHIP RESISTOR	R128,R129,R123,R122 on MB	4
00567089	RPC05T 331 J	MTL.FILM RESISTOR	R115,R103 on MB	2
15409113	EXBV8V103JV	RESISTOR ARRAY	RA25,RA401,RA19,RA22,RA27,RA24,RA26 ,RA28 on MB	8
01457145	EXBE10C103J	RESISTOR ARRAY	RA8,RA14,RA17,RA33,RA13,RA21,RA12,R A35,RA10,RA30 on MB	10
01013923	EXBV8V100JV	RESISTOR ARRAY	RA3,RA15,RA31,RA16,RA29,RA23 on MB	6
02456878	EXB2HV220JV	RESISTOR-ARRAY	RA34,RA7,RA9,RA5,RA6,RA20,RA2,RA11, RA4,RA18,RA32,RA1,RA36 on MB	13
13749861T0	SR25TRE 474 J	CARBON RESISTOR	R43 on PAL,R8, R6,R2 on PAR	1 +3
13749190	SR50TR 100 J	CARBON RESISTOR	R33,R32 on PAL	2
13749787T0	SR25TRE 391J 1/6W	RESISTOR	R65,R61,R57,R55,R63 on PAL	5
13749837T0	SR25TRE 473 J	CARBON RESISTOR	R37,R40 on PAL	2
13749797T0	SR25TRE 102 J	CARBON RESISTOR	R38,R42,R47 on PAL, R60 on PAR	3 +1
13749813T0	SR25TRE 472 J	CARBON RESISTOR	R35 on PAL	1
13749817T0	SR25TRE 682 J	CARBON RESISTOR	R51,R34 on PAL	2
13749821T0	SR25TRE 103 J	CARBON RESISTOR	R48 on PAL	1
13749831T0	SR25TR 273 J	CARBON RESISTOR	R39 on PAL	1
13749859T0	SR25TRE 394 J	CARBON RESISTOR	R36 on PAL	1
13749757T0	SR25TRE 220 J	CARBON RESISTOR	R20,R19,R18,R17,R15,R14,R16 on PAL	7
13749767T0	SR25TRE 560J	CARBON RESISTOR	R22,R21,R27,R26,R25,R23,R28,R24 on PAL, R13,R12,R11,R10,R9 on PAR	8 +5
13749773T0	SR25TRE 101 J	CARBON RESISTOR	R41,R45 on PAL, R7,R5,R1 on PAR	2 +3
13749779T0	SR25TRE 181 J	CARBON RESISTOR	R49 on PAL	1
13749799T0	SR25TR 122J	CARBON RESISTOR	R44 on PAL	1
13749823T0	SR25TRE 123 J	CARBON RESISTOR	R46 on PAL	1
13749845T0	SR25TRE 104 J 1/4W	CARBON RESISTOR	R50 on PAL	1
13749857T0	SR25TRE 334 J	CARBON RESISTOR	R53 on PAL	1
13749795T0	SR25TRE 821 J	CARBON RESISTOR	R59 on PAR	1

POTENTIOMETER				
02455234	EVJY15F02B14	12M/M ROTARY POTENTIOMETER	VR6 on PAL	1
01787545	EVUF2KFK3B14 10KB	9M/M ROTARY POTENTIOMETER	VR5,VR1 on PAR	2
02891889	EVUFEKFK3B14 10KB CC	9M/M ROTARY POTENTIOMETER	VR3,VR2,VR4 on PAR	3
CAPACITOR				
00567945	GRM39B103K50PT	CERAMIC CAPACITOR	C15,C98,C106,C203,C110,C77,C109 on MB	7
00567978	GRM39F104Z25PT	CERAMIC CAPACITOR	C418,C38,C50,C39,C42,C44,C45,C46,C47,C4 17,C37,C48,C415,C49,C414,C5,C12,C183,C1 73,C1,C4,C8,C7,C9,C11,C28,C13,C14,C16,C 17,C18,C19 ,C25,C26,C27,C51,C120,C115,C124,C123,C4 13,C122,C125,C121,C186,C201,C119,C207,C 118,C117,C236,C116,C249,C200,C142,C164, C163,C175,C162,C177,C161,C188,C179,C19 0,C181,C141,C140,C138,C137,C185,C135,C1 27, C153,C96,C53,C55,C411,C406,C57,C108,C4 01,C56,C61,C252,C85,C253,C254,C65,C74,C 58,C251,C111,C113,C52,C250,C412 on MB	96
01674334	ECUV1H101JCV	CERAMIC CAPACITOR	C160,C425,C416,C428,C427,C426,C402,C3, C105,C36,C151,C152 on MB	12
01674356	ECUV1H151JCV	CERAMIC CAPACITOR	C235 on MB	1
01674489	ECJ1VB1H152K	CERAMIC CAPACITOR	C409 on MB	1
01674712	ECJ1VF1A105Z	CERAMIC CAPACITOR	C237,C6,C21,C60,C166,C167,C168,C22,C20 on MB	9
01675189	GRM39CH180J50PT	CERAMIC CAPACITOR	C408,C407 on MB	2
02129534	ECJ1VB1H102K	CERAMIC CAPACITOR	C80,C79,C76,C67,C69,C71,C75,C70,C68,C72 ,C78,C174,C86,C87,C88,C89,C83,C170,C223 ,C82,C403,C404,C423,C81,C101 on MB	25
01674423	ECUV1H471JCV	CERAMIC CAPACITOR	C29 on MB	1
01674189	ECUV1H120JCV	CERAMIC CAPACITOR	C143 on MB	1
01674167	ECUV1H100DCV	CERAMIC CAPACITOR	C146,C171,C165,C154,C144 on MB	5
01674190	ECUV1H150JCV	CERAMIC CAPACITOR	C214,C213,C191,C212,C196,C211,C210,C20 9,C198,C192,C194,C197,C195,C90,C224,C23 1,C230,C229,C228,C226,C225,C215,C222,C2 21,C220,C219,C218,C217,C216,C227,C99,C1 93,C103,C104,C93,C94,C102,C100,C91,C92, C95 on MB	41
01343245	AMZV0050J271 0200	POLYEST. CAPACITOR	C159,C150 on MB	2
02236712	AMZV0050J221 0200	POLYEST. CAPACITOR	C145,C155 on MB	2
00239401	AMZV0050J821 0200	POLYEST. CAPACITOR	C147,C156 on MB	2
00560212	ECA1CM4471B	CHEMICAL CAPACITOR	C232,C205 on MB	2
02345101	RV2-16V100M-R	CHEMICAL CAPACITOR	C10,C184,C182,C199,C114,C97,C43,C202,C 24,C405,C23,C2 on MB	12
00560245	16SC10M+T (OS)	CAPACITOR(CHEMICAL)	C233 on MB	1
01454889	RA2-16V470MT2 470UF/16V	CHEMICAL CAPACITOR	C158,C149 on MB	2
01900834	RA2-16V101M-T2	CHEMICAL CAPACITOR	C176,C148,C169,C157,C178,C172,C208,C13 6,C134,C73,C180,C204,C206,C234,C139 on MB	15
01902590	RA2-6V101MC-T2	CHEMICAL CAPACITOR	C64,C54,C84,C107 on MB	4
02784812	RE3-16V102M-T2	CHEMICAL CAPACITOR	C187 on MB	1
02891667	RE3-6V102M-T2	CHEMICAL CAPACITOR	C189 on MB, C15 on PS	+1
03125023	RPER11H103K2M1A01A	CERAMIC CAPACITOR	C41 on PAL,C18, C22,C3 on PAR	1 +3
13529132	RPE132-901F104Z50	MLT.LAY.CERAMIC CAPACITOR	C34,C40,C32,C29,C45,C27,C25,C24,C43,C44 ,C42 on PAL, C4,C5,C2,C7,C8,C9,C17,C23,C6 on PAR, C10,C11,C13,C14 on PS	11 +9 +4
03018523	RPE2C1H100J2M1D01A	MLT.LAY.CERA CAPACITOR	C37,C38,C39 on PAL	3
01894601	RC2-16V101MB-T2	CERAMIC CAPACITOR	C31,C33,C36 on PAL, C19 on PAR	3 +1
02781423	RC3-6V101M-T2	CHEMICAL CAPACITOR	C28 on PAL, C21,C16,C1 on PAR	1 +3
02891756	RC2-6V331M-T2	CHEMICAL CAPACITOR	C26 on PAL	1
02891767	RC2-16V100M-T2	CHEMICAL CAPACITOR	C30 on PAL	1
13649270	ECA1CM222B 2200UF/16V	CAPACITOR	C12 on PS	1
INDUCTOR, COIL, FILTER				
01676023	SBCP-87331H	CHOKO COIL	L64 on MB	1
00903167	N2012Z601T02 (CHIP)	FERRITE-BEAD	L39,L54,L34,L56,L17,L42,L36,L58,L52,L5,L3 ,L2,L59,L16,L14,L6,L4 on MB	17
01565578	N1608Z601T01	FERRITE-BEAD	L19,L53 on MB	2
01787056	N1608Z102T01	FERRITE-BEAD	L38,L25,L37,L43,L29,L21,L41,L26,L44,L20,L 27,L45,L35,L28,L33,L32,L31,L30,L40,L51,L2 4,L22,L49,L23,L50,L48,L46,L47 on MB	28
01340834	EXCML20A390	FERRITE-BEAD	L62 on MB	1
00237212	SH-202	CHOKO COIL	FL2 on PS	1

CRYSTAL, RESONATOR

01126267	MA-406 7.056MHZ	CRYSTAL	X1 on MB	1
02561323	MA-406 33.8688MHZ TE24	CRYSTAL	X2 on MB	1

CONNECTOR

01908656	18FE-BT-VK-N	CONNECTOR	CN3 on MB	1
01908667	22FE-BT-VK-N	CONNECTOR	CN2 on MB	1
02014445	20FE-BT-VK-N	CONNECTOR	CN5 on MB	1
02010867	16FE-ST-VK-N	CONNECTOR	CN9,CN7 on MB	2
13369605	52147-1010(10P)	WIRE TRAP	CN6 on MB	1
13369664	S4B-PH-K-S(4P)	CONNECTOR	CN4 on MB	1
02016956	22FE-ST-VK-N	CONNECTOR	CN5 on PAL	1
02018712	20FE-ST-VK-N FOR WIRING	CONNECTOR	CN7 on PAL	1
02122456	14FE-ST-VK-N	CONNECTOR	CN4 on PAL,CN3 on PAR	2
13429299	51048-1000(10P)	CABLE HOLDER	CN6 on PAL	1
02010878	18FE-ST-VK-N FOR WIRING	CONNECTOR	CN1 on PAR	1
13369556	B8B-XH-A JST	CONNECTOR	CN2 on PS	1

WIRING, CABLE

02342034	WIRING	4X300-P2.0-PHR-PHR-F		1
03236712	BAN CARD	BNCD-S-P=1.25-K-16-130(NO GS)		2
02231789	BAN CARD	BNCD-P=1.25-K-14-120		1
03236056	BAN CARD	BNCD-S-P=1.25-K-18-280(NO GS)		1
03236078	BAN CARD	BNCD-P=1.25-K-20-140		1
03236089	BAN CARD	BNCD-P=1.25-K-22-380		1

SCREW

40454856	SCREW M4X10	BINDING NI		1
40011123	SCREW 4X8	BINDING TAPTITE B BZC		9
40011101	SCREW 3X8	BINDING TAPTITE B BZC		13
40011056	SCREW 3X6	BINDING TAPTITE B ZC		31
40239734	SCREW 3X6	VWH B-TIGHT ZC		2
40012501	SCREW M4X12	BINDING TAPTITE P FE BZC		11
40011312	SCREW 3X8	BINDING TAPTITE P BZC		12
40011490	SCREW M3X6	PAN MACHINE W/SW BZC		6
40012356	SCREW 4X20	BINDING TAPTITE B BZC		6

PACKING

	02561534	PAD UPPER CENTER		1
	02561523	PAD LOWER CENTER		1
	02561512	PAD SIDE R		1
	02561501	PAD SIDE L		1
#	03237567	PACKING CASE		1

MISCELLANEOUS

	40122812	ACETATE TAPE	NITTO NO.5 BLK W15MM 30M	10
	40122901	DOUBLE-FACED TAPE	#501F W10MM 20M 20P (CM)	84
	22365714	CORD HOOK	236-714	1
	03234723	BENDER	PB-H0204	1
	03236667	INSULATING SHEET		1

ACCESSORIES (STANDARD)

△	00905756	AC ADAPTOR	ACI-100C	1
△	00905767	AC ADAPTOR	ACI-120C	1
△	01018312	AC ADAPTOR	ACI-230C	1
△	03017356	AC ADAPTOR WITHOUT AC CORD	PSB-1U(R) UNIVERSAL	1
△	01903356	AC CORD SET	230V 1.0M FOR PSB	1
△	01903367	AC CORD SET	240V 1.0M FOR PSB	1
△	00905234	EURO CONVERTER PLUG	ECP01-5A (PLUG FOR BRC-230T)	1
	72237623	OWNER'S MANUAL	JAPANESE	1
	72237790	OWNER'S MANUAL	ENGLISH	1
#	03341467	CD-ROM	EDITOR & DRIVER V1.50	1
	40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY	1

CHECKING THE VERSION NUMBER

While holding down the [SYSTEM] button, turn on the power. The following screen will appear. (Continue holding down the [SYSTEM] button until the following screen appears.) The CPU and ROM version numbers will be displayed. Please turn off the power, if the version of CPU and ROM is checked.

```
RS-50 VERSION [US]
CPU:1.00 ROM:1.00
```

SAVING AND LOADING DATA

Required items

- A sequencer that can record and play back SMF (e.g., MC-80)
- MIDI cable

Saving data

Here's how to back up (save) all settings of the RS-50 on an external MIDI sequencer.

Procedure

1. Use a MIDI cable to connect the RS-50's MIDI OUT to the MIDI IN of your sequencer.
2. Press the [PATCH] button to make it light, entering Patch mode.
3. Press the [UTILITY] button to make it light.
4. Use the [PAGE/CURSOR <] / [PAGE/CURSOR >] buttons to select "4:XFER to MIDI."

```
UTIL MENU:      [ENT]
4:XFER to MIDI
```

5. Press the [ENTER] button.
6. Use the [VALUE -] / [VALUE +] buttons to select "DUMP ALL."

```
XFER to MIDI   [ENT]
What:          DUMP ALL
```

7. Start recording on your sequencer.
8. Press the [ENTER] button.

```
XFER to MIDI
Sending[       ]
```

9. When "COMPLETED" appears, the process is complete. Stop recording on your sequencer.

Loading data

Here's how to return the backed-up data from your sequencer into the RS-50.

Procedure

1. Use a MIDI cable to connect the RS-50's MIDI IN to your sequencer's MIDI OUT.
2. Press the [PATCH] button to make it light, selecting Patch mode.
3. On your sequencer, play back the file that you want to load. Do not operate the RS-50 while it is receiving the data.
4. When the file has finished playing back, loading has been completed.

TEST MODE

Required items

- Headphones
- Monitor speakers (e.g., MA-12) x 2
- Audio cables x 2
- MIDI cable x 1
- Expression pedal
- Hold pedal
- Noise meter

Test items

The RS-50 has the following tests. For details on each test, refer to the corresponding item.

```
0:Test Mode Top Page
1:SHOCK Test
2:MEMORY Test
3:MIDI Test
4:SOUND Test
5:LCD Test
6:A/D Test 1 (Bender,Modulation)
7:A/D Test 2 (Control Knob)
8:A/D Test 3 (Hold Pedal,Expression Pedal)
9:D BEAM ADJUSTMENT
10:D BEAM Test
11:SWITCH & LED Test
12:KEYBOARD Test
13:NOISE Test
14:DESTINATION Set
15:Factory Reset
```

Caution before you begin the test

- Even when you enter Test mode, the user data will not be erased until you execute "15.Factory Reset." You will need to store the user data to an external sequencer beforehand only if you only want to execute "15.Factory Reset." (See "Saving and loading data")
- Some of the test items will produce a test tone. Connect headphones and monitor speakers before you start.

Entering Test mode

While holding down the three buttons [DESTINATION TONE] + [ENV or BALANCE/LFO] + [TAP TEMPO], turn on the power of the RS-50. The top page of Test mode will appear. (Continue holding down the buttons until the top page of Test mode appears.)

Exiting Test mode

In the "0 Test Mode Top Page," press the [SHIFT] button + [EXIT] button.

Moving between test items

Use the [SHIFT] button + [PAGE/CURSOR <] button to move to the preceding test, or the [SHIFT] button + [PAGE/CURSOR >] button to move to the next test.

```
MEMORY Test 3 :
WAVE :OK      DSP :OK
```

- This test checks WAVE ROM and DSP.
- If no problems are found, the display will indicate OK, and you will automatically proceed to the next test.
- If the result is NG, check the following locations.
WAVE NG :MAIN BOARD IC21
DSP NG :MAIN BOARD IC24,X2,IC30
Press the [SHIFT] button + [ENTER] button to proceed to the next test.

Test mode details

0. Test Mode Top page

```
RS-50 PD Test [US]
CPU:1.00 ROM:1.00
```

- Here you can check the CPU and Program ROM versions. If the version is inappropriate, please perform the update. (Refer to "Updating the system")
- Verify that the LCD backlight is lit evenly. If it is not lit correctly, check the following locations.
MAIN BOARD L52,CN5
RS-50 PWB PANEL L ASSY
R55,R57,R61,R63,R65,LED45,LED47,LED49,LED51,LED53,CN7
BNCD-P=1.25-K-20-140
- Press the [ENTER] button to begin Test mode.

1. SHOCK Test

```
SHOCK Test :
Mute :--
```

- The demo song will play. Verify that the VOLUME control produces no static etc.
- Verify that the audio output is muted while you hold down the [TAP TEMPO] button.
- Press the [ENTER] button to proceed to the next test.

2. MEMORY Test

(MEMORY Test 1)

```
MEMORY Test 1 :
CPU:OK ROM:OK
```

- This test checks the CPU and FLASH ROM (program memory).
- If no problems are found, the display will indicate OK, and you will automatically proceed to MEMORY Test 2.
- If the result is NG, check the following locations.
CPU NG :MAIN BOARD IC7,IC401,X1,
ROM NG :MAIN BOARD IC2
Press the [SHIFT] button + [ENTER] button to proceed to the next test.
(MEMORY Test 2)

```
MEMORY Test 2 :
DRAM:OK EEPROM:OK
```

- This test checks DRAM and EEPROM.
- If no problems are found, the display will indicate OK, and you will automatically proceed to MEMORY Test 3.
- If the result is NG, check the following locations.
DRAM NG :MAIN BOARD IC10
EEPROM NG :MAIN BOARD IC16,R24,R25
Press the [SHIFT] button + [ENTER] button to proceed to Memory Test 3.
(MEMORY Test 3)

3. MIDI Test

```
MIDI Test :
Connect :--
```

- Use a MIDI cable to connect MIDI IN and MIDI OUT. If the connection is correct, you will automatically proceed to the next test.

4. SOUND Test

(L-ch Test)

```
SOUND Test :
Left >>>>
```

- Verify that a sine wave is output from Output-L and from the left side of the headphones.
- Press the [ENTER] button to proceed to the R-ch test.
(R-ch Test)

```
SOUND Test :
<<<< Right
```

- Verify that a triangle wave is output from Output-R and from the right side of the headphones.
- Press the [ENTER] button to proceed to the L/R-ch test.
(L/R-ch Test)

```
SOUND Test :
Left >>>><<<< Right
```

- Verify that a sine wave is output from Output-L and from the left side of the headphones, and that a triangle wave is output from Output-R and from the right side of the headphones.
- Press the [ENTER] button to proceed to the next test.

5. LCD Test

- Verify that all pixels of the LCD are lit.
- Press the [ENTER] button to proceed to the All LCD Pixels Unlit test.
- Verify that all pixels of the LCD are unlit.
- Press the [ENTER] button to proceed to the LCD Contrast Test.
(LCD Contrast Test)

```
LCD Test :
LCD Contrast : 5
```

- Verify that you can adjust the contrast by pressing (holding) the VALUE [-] / [+] buttons.
- The contrast value (from 1 to 10) will be displayed in the LCD.
- Press the [ENTER] button to proceed to the next test.

6. A/D Test 1 (Bender, Modulation)

- Verify that bender and modulation operate correctly.
- Make sure that the bender is not being touched when you enter this test. (The A/D value at the moment you enter the test is read as the center voltage.)

```
A/D Test 1:
BEND:  0  MOD:  0
```

- Move the bender all the way to the left; if a value of -128 is reached, a click will sound.
- Move the bender all the way to the right; if a value of 127 is reached, a click will sound.
- When left and right movements are completed, the display will indicate OK.
- Move the modulation lever fully away from yourself; if a value of 127 is reached, a click will sound.
- Return the modulation lever toward yourself; if a value of 0 is reached, a click will sound, the display will indicate OK, and you will proceed to the next test.

(The OK indication will not appear unless you perform the tests in the order of Bender Left, Bender Right, and Modulation.)

7. A/D Test 2 (Control Knob)

```
A/D   A--- D--- R---
Tst2: C--- R---
```

A: ATTACK or BALANCE

D: DECAY or RATE

R: RELEASE or DEPTH

C: CUTOFF

R: RESONANCE

- Perform this test in the order of A, D, R (RELEASE), C, R (RESONANCE).
- Turn the knob all the way toward the left; if 0 is reached, a click will sound.
- Turn the knob all the way toward the right; if 127 is reached, a click will sound.
- Turn the knob to the center; if 63/64 is reached, a click will sound and the display will indicate OK.
- If all knobs are OK, you will automatically proceed to the next test.

8. A/D Test 3 (Hold Pedal, Expression Pedal)

```
A/D Test 3:
HOLD:  0  CTL:  0
```

- Connect a hold pedal to the rear panel HOLD jack, and an expression pedal to the rear panel CONTROL jack.
- Press the hold pedal; a click will sound when the display indicates 127.
- Release the hold pedal; a click will sound when the display indicates 0, and OK will appear.
- Advance the expression pedal; a click will sound when the display indicates 127.
- Return the expression pedal; a click will sound when the display indicates 0, and OK will appear.
- If both HOLD and CTL are OK, you will automatically proceed to the next test.

9. D BEAM ADJUSTMENT

```
D BEAM ADJUSTMENT:
LOW:  0  HIGH:  ---
```

- Here you will make D BEAM settings.
- Before you begin this test, verify that there are no objects within 50 cm of the RS-50. (If any such objects are within this range, the settings cannot be made correctly.)
- Do not perform this test in direct sunlight.
- Place your hand 5 cm above the D BEAM and press the [ENTER] button. If the setting was made correctly, the display will indicate OK.
- Place your hand 45 cm above the D BEAM and press the [ENTER] button. If the setting was made correctly, the display will indicate OK and you will automatically proceed to the next test.

10. D BEAM Test

```
D-BEAM Test :
0
```

- This checks the operation of the D BEAM.
- Move your hand in a range from 5 to 40 cm above the D BEAM, and verify that the value increases and decreases.
- Place your hand 5 cm above the D BEAM and verify that a value of 127 is displayed.
- Place your hand 45 cm above the D BEAM and verify that a value of 0 is displayed.
- Place your hand 30 cm above the D BEAM and verify that a value greater than 1 is displayed.
- Press [ENTER] to proceed to the next test.

11. SWITCH & LED Test

```
SWITCH & LED Test : 46
```

- This checks switches and LEDs.
- When you enter this test, all LEDs will light.
- When you press a switch that has an LED, the LED will go dark.
- The number of switches you have not yet pressed is shown in the upper right of the screen.
- The lower line of the LCD shows the name of the switch you pressed.
- If more than one LED corresponds to one switch (button), press that switch the corresponding number of times.
<UPPER>, <LOWER>LED = [DESTINATION TONE] switch (button)
<ENV>, <BALANCE/LFO>LED = [ENV or BALANCE/LFO] switch (button)
<SINGLE>, <SPLIT>, <DUAL>LED = [KEY MODE] switch (button)
- Verify that the TAP TEMPO LED changes from "red" -> "green" -> "unlit."
- When all switches have been pressed, you will automatically proceed to the next test.

* If you press more than one switch at once, the bottom line of the LCD will indicate "WARNING!!" If this occurs, use the [SHIFT] button + [PAGE/CURSOR <], [PAGE/CURSOR >] buttons to re-select the SWITCH & LED Test item, and perform the test again.

12. KEYBOARD Test

KEYBOARD Test :
PIANO

- Press each key and verify that sound is produced. Also verify that the volume changes depending on the strength with which you press the key.
- Press the [ENTER] button to change the sound from PIANO to ORGAN.

KEYBOARD Test :
ORGAN

- Press each key and verify that sound is produced.
- Press the [ENTER] button to proceed to the next test.

13. NOISE Test

NOISE Test :

- Use a noise meter to measure the residual noise.
- Set the input filter of your noise meter to "DIN- AUDIO."
- Verify that the measured value is "- 83.0 dBm" or less.
- Press the [ENTER] button to proceed to the next test.

14. DESTINATION Set

DESTINATION set :
[-] US [+] EUR

- Here you will set the export destination.
- For the US region, press the [VALUE -] button to proceed to the next step. (US region: 100V, 117V U, 117V U/CS)
- For the EUR region, press the [VALUE +] button to proceed to the next step. (EUR region: 230V EU, 230V E, 240V A)

15. Factory Reset

Factory Reset : US
[ENTER] / [EXIT]

- Verify that the correct export destination is shown in the upper right of the screen.
- Press the [ENTER] button to execute Factory Reset. (Do not turn off the power while the screen indicates "KEEP POWER ON !")
- Factory Reset will be completed within 30 seconds.
- If you press the [EXIT] button, you will return to 14.DESTINATION Set.
- If you press the [SHIFT] button +[EXIT] button, you will return to 0.Test Mode Top Page.

COMPLETED
Test Mode End

- When this screen appears, the procedure has been completed. Turn off the power.

RESTORING THE FACTORY SETTINGS

If there is important data you've created that's stored in the RS-50's internal memory, you must note that all such data will be discarded when a Factory Reset is performed. If you want to keep the existing data, save it on a disk (Saving the entire user memory).

Be sure not to turn off the power while Factory Reset is being performed.

If the power is turned off or interrupted while data is being written to memory, the internal data may become corrupted, and you may not be able to turn the power back on.

Procedure

1. Press [PATCH] button so it is lit and you are in Patch mode.
2. Press [UTILITY] button so it is lit.
3. Use PAGE/CURSOR [<|/>] button to select "5:FACTORY RESET."

UTIL MENU : [ENT]
5 : FACTORY RESET

4. Press [ENTER] button.

FACTORY RESET [ENT]
Are you sure?

5. Press [ENTER] button again to execute the Factory Reset. Factory Reset will be completed within 30 seconds.



Do not turn off the power while the screen indicates "KEEP POWER ON !" The operation will be completed in less than five minutes.

KEEP POWER ON !

6. When the display indicates "COMPLETED", the factory reset operation has been completed.

UPDATING THE SYSTEM

Overview

- The RS-50 uses 16 Mbit flash memory to store its program.
- The flash memory updater (control program) is stored in the updater block of the flash memory.
- The data for the update is normally provided as SMF data. Connect a sequencer that is able to play back SMF data (e.g., the MC-80) to the RS-50, and load the data into the RS-50 to update its program.



- After you update the system, you will need to perform the Factory Reset. Since this will also reset the user data, you must back up the user data beforehand. (Refer to "Saving and loading data")

Turnaround time of updating about 20 minutes

Required items

- Sequencer that is able to play back SMF data (e.g., MC-80; a sequencer that has Chain Play capability is ideal)
- MIDI cable
- Disks containing the SMF update data (2HD x 2): P/No.17041315
The disks are named as follows.
RS-50 SMF Update Disk #1 (1/2)
RS-50 SMF Update Disk #2 (2/2)
The two disks contain files named p000XX.mid, where XX is a consecutive number starting from "01". (The number of files will depend on the version.) Play back these files in their numerical order.

Procedure

1. Connect the MIDI from your external sequencer's MIDI OUT to the RS-50's MIDI IN. If you are using a sequencer with Chain Play capability, make settings so that you can chain-play the SMF files.
2. While holding down the [KEY MODE] button and [ENV or BALANCE/LFO] button, turn on the power. (Continue holding down the buttons until the following screen appears.)

```
Select Menu:
      1:MIDI  2:SUM
```

3. Press the [1](PIANO) button. The display will indicate "Preparing..." for several seconds, then "Waiting...", and will wait to receive MIDI data.

```
Waiting...
[          ]
```

4. When the RS-50 indicates that it is waiting to receive MIDI data, play back all of the ".mid" files from the RS-50 SMF Update Disks in numerical order. While the RS-50 is receiving MIDI data, the "Waiting" indication will change to "Receiving." When the data of one file has been received, the indication will change to "Waiting"; you can then play back the next file. The update process will be easier if you use a sequencer that has Chain Play capability, such as the MC-80.
5. When the update is completed, the following screen will appear and the [1](PIANO) and [2](KBD&ORG) LEDs will blink.

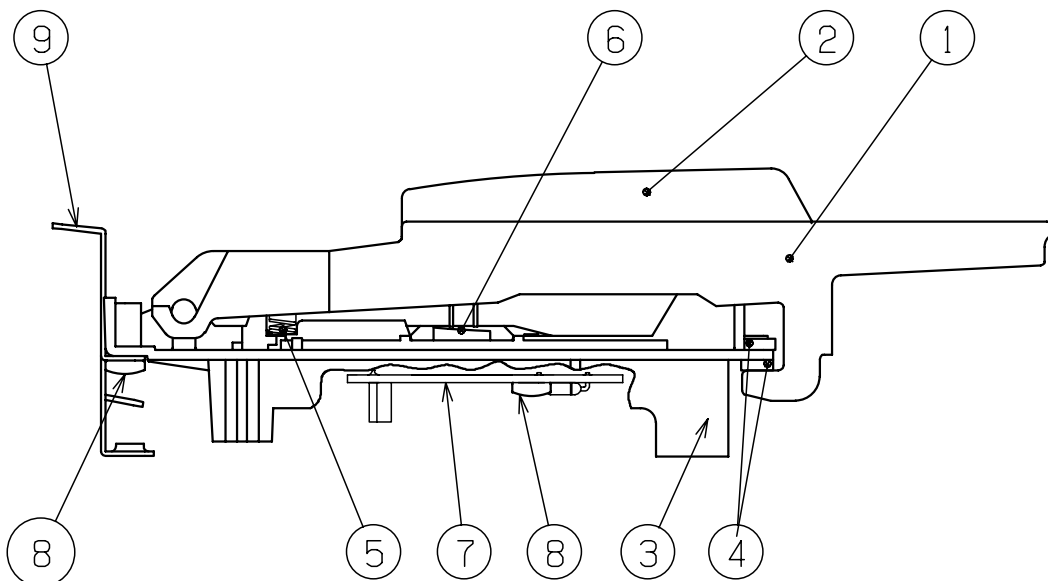
```
INT:160B (160B 160B)
EXT:**** (****) XXXX
```

6. Verify that "****" matches the checksum of the version to which you updated.
7. Turn off the power of the RS-50. Then turn the power on again and perform the Factory Reset operation. (Refer to "Factory reset")
8. If the update failed, perform it once again from step 1.

KEYBOARD PARTS LIST

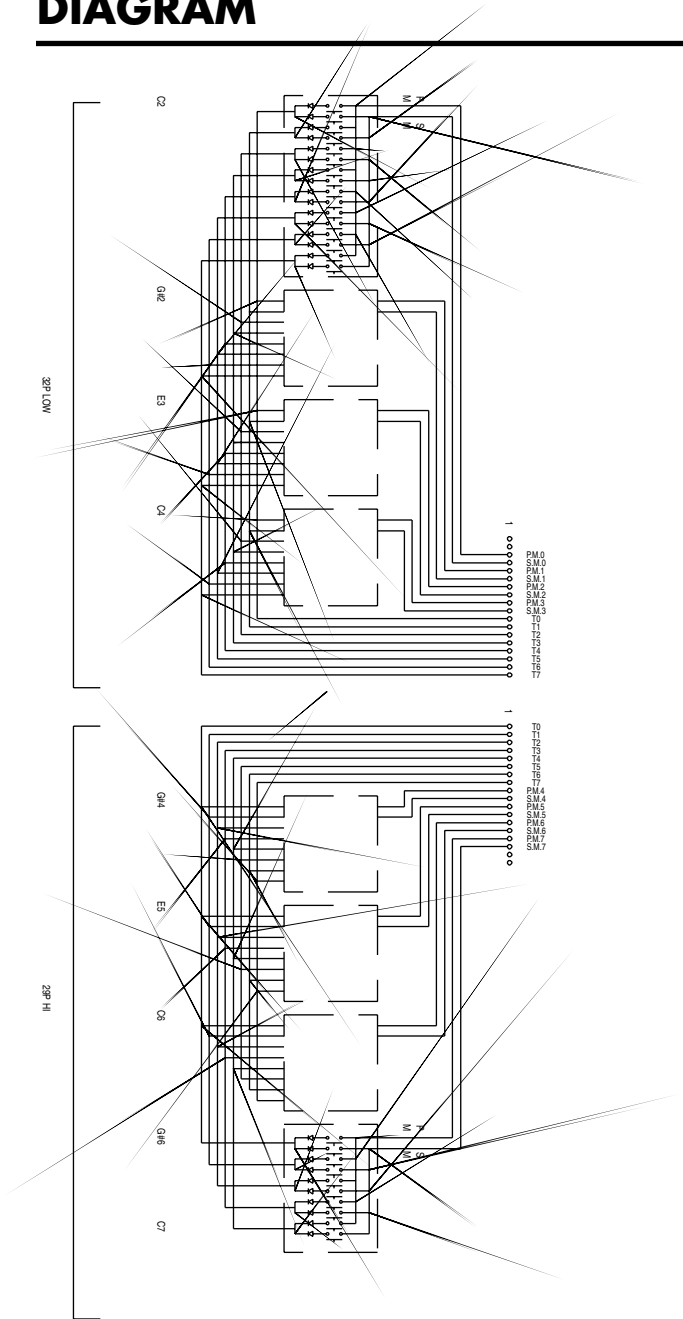
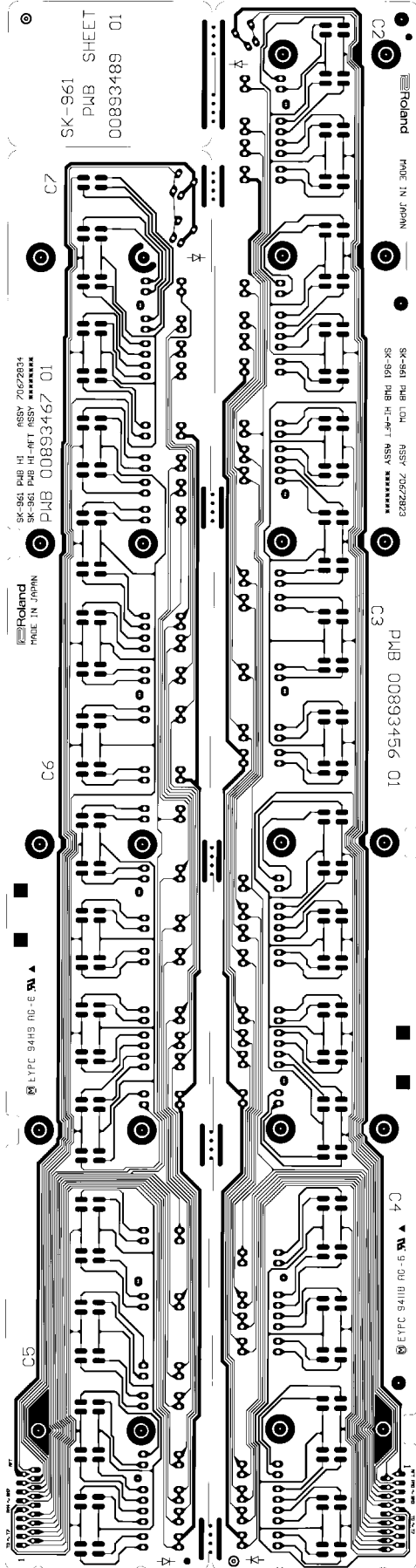
SK-9A61-A PARTS LIST

No.	PARTS No.	PARTS NAME	Qty.	
1	00893723	SK-9 NATURAL KEY CF	10	
	00893734	SK-9 NATURAL KEY EB	10	
	00893756	SK-9 NATURAL KEY D	5	
	00893767	SK-9 NATURAL KEY G	5	
	00893745	SK-9 NATURAL KEY A	5	
	00893778	SK-9 NATURAL KEY C' F'	1	
2	00893790	SK-9 SHARP KEY	25	
	72341012	SK-9A61-A SUB ASSY	1	
	3	03120667	SK-9A CHASSIS 61P	1
	4	00129812	SK-8 CUSHION 61P-C	2
5	03236967	SK-9A SPRING	61	
6	00893823	SK-9 RUBBER SWITCH 12P	4	
	00893834	SK-9 RUBBER SWITCH 13P	1	
7	70672823	SK-961 PWB LOW ASSY	1	
	70672834	SK-961 PWB HI ASSY	1	
8	40011312	SCREW 3X8 BINDING TAPTITE P BZC	25	
9	03236645	RS-70 KBD HOLDER	4	
	03236656	RS-70 PWB HOLDER	2	



KEYBOARD CIRCUIT BOARD

KEYBOARD CIRCUIT DIAGRAM



KEYBOARD DISASSEMBLY

<ATTACHING RUBBER SWITCH and CIRCUITBOARD>

Use screws which TAPTIGHT P 3X8MM ZC(#40011312) to fixed SIRCUIT BOARD in SK-9.

1) Turn over the keyboard as shown in Fig. 1 . Place the RUBBER SWITCH 12P on 4 chassis, from the left (lowest note) upward, with respect to slots in the chassis. Make sure that each switch is aligned with corresponding air groove in the chassis(Fig.2). Similarly, Place the RUBBER SWITCH 13P on the right section (high note) chassis.

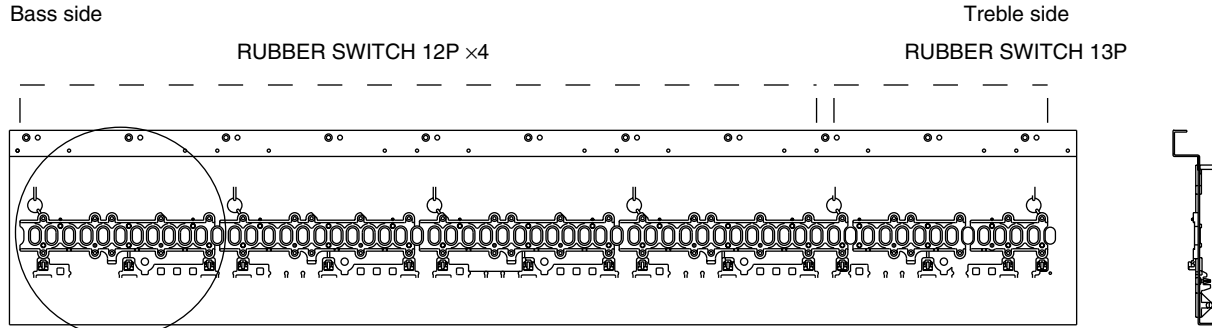


Fig.1

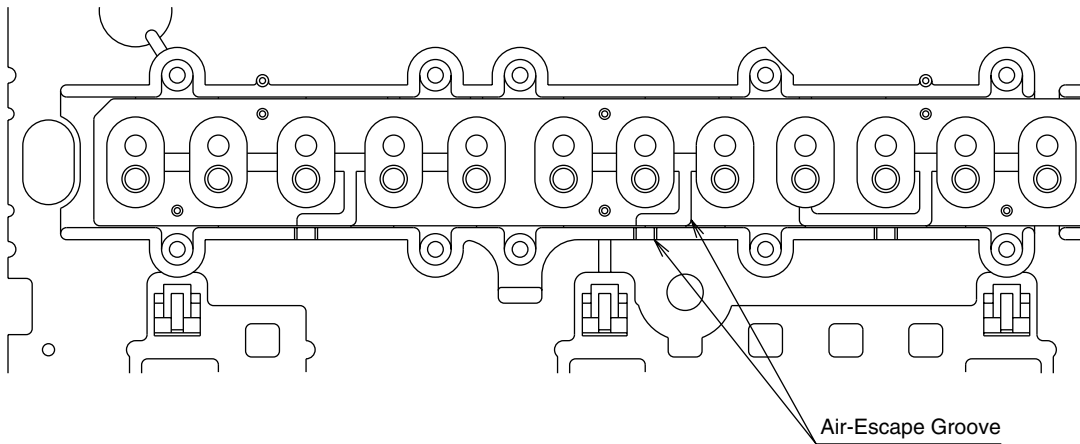


Fig.2

2) Align notch of the LOW PCB with projection from the chassis and then insert the PCB into the chassis hook until the chassis's positioning reference pin (located closest to the connector, (Fig.4) fits into the positioning reference hole of the PCB(Fig.3). Then, engage all pins with holes. Repeat above steps for the HI PCB.

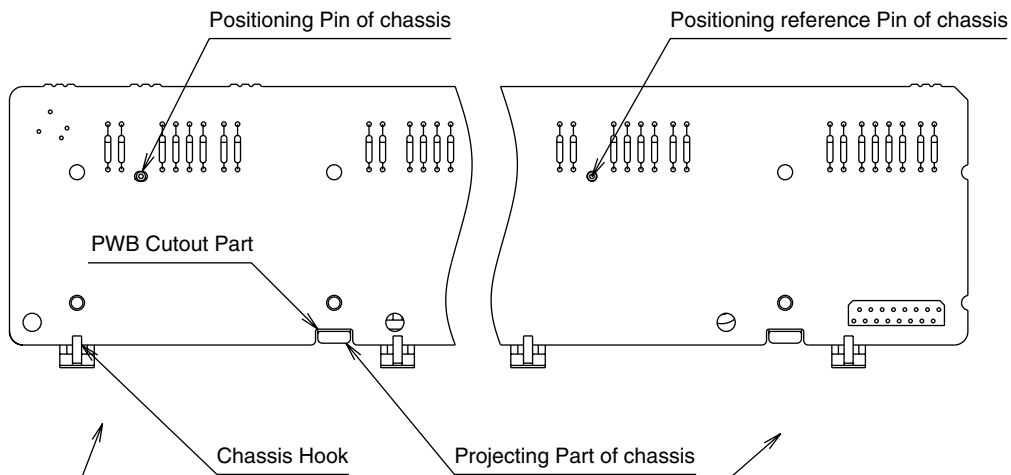


Fig.3

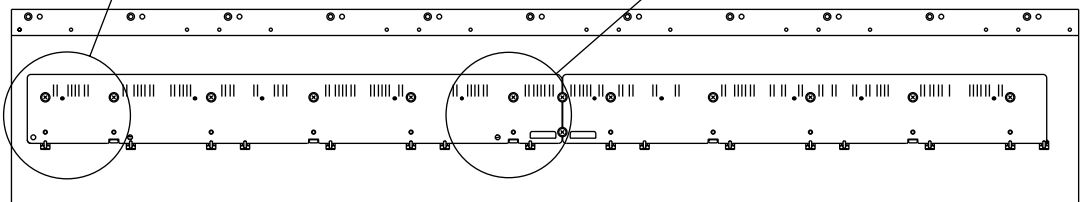
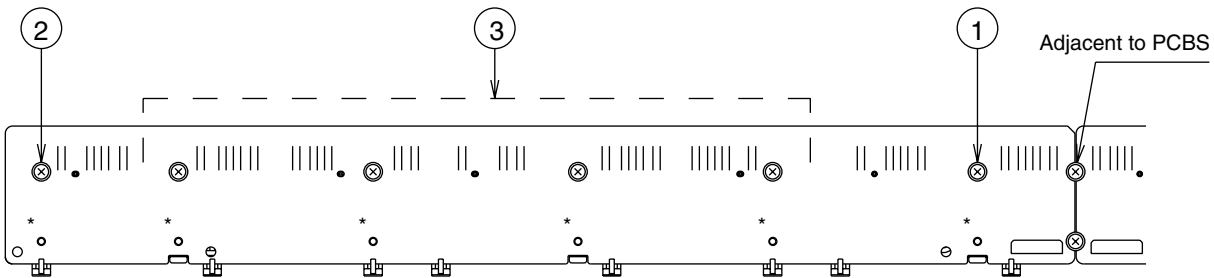


Fig.4

3) Secure the LOW and HI PCBs with screws, while holding the PCB at the center, and starting at the center screw (1) and then (2) and (3). See Fig.5. Screw at the locations illustrated.

NOTE

When using a power screwdriver, set the tightening torque to 8kgf.cm to firmly secure the PCB without damaging it. Overtightening will break foil conductors.



⊗:Secure with screw : No screw is required unless the chassis hook becomes useless.

Fig.5

<Removing the keyboard>

Holding the tip of the key, insert a pair of long nose pliers into the U groove (shaded in Fig.6) and then push the key in the direction of arrow.

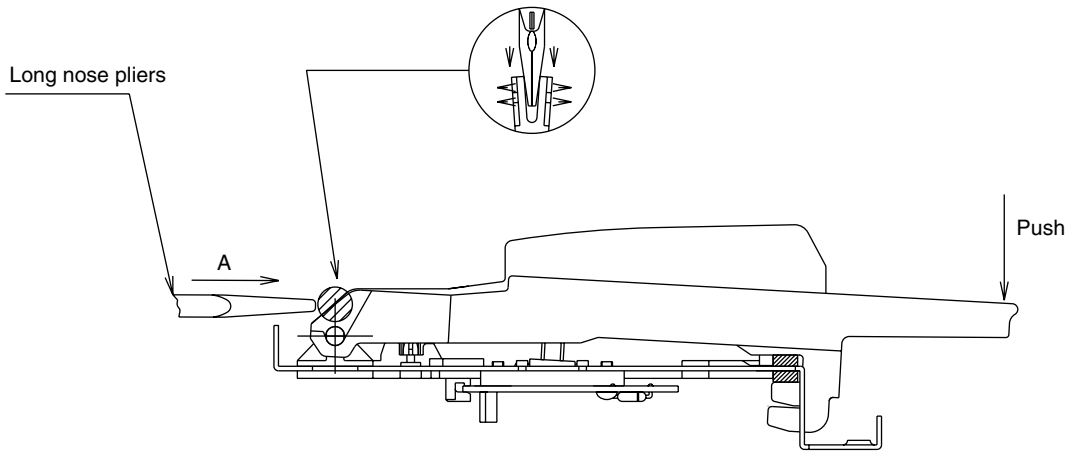


Fig.6

<Installing the keyboard>

Fit the spring on the chassis, place the key as illustrated in Fig.7 and then push the dotted circle line section in the direction of arrow.

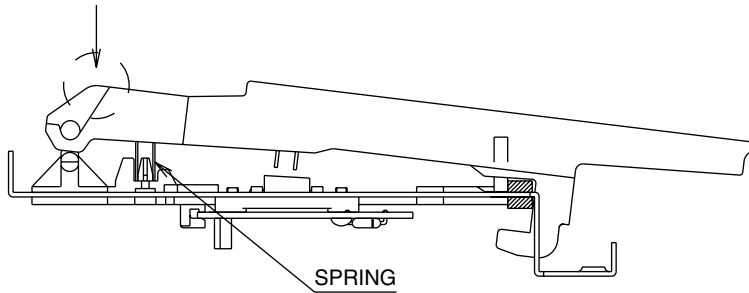
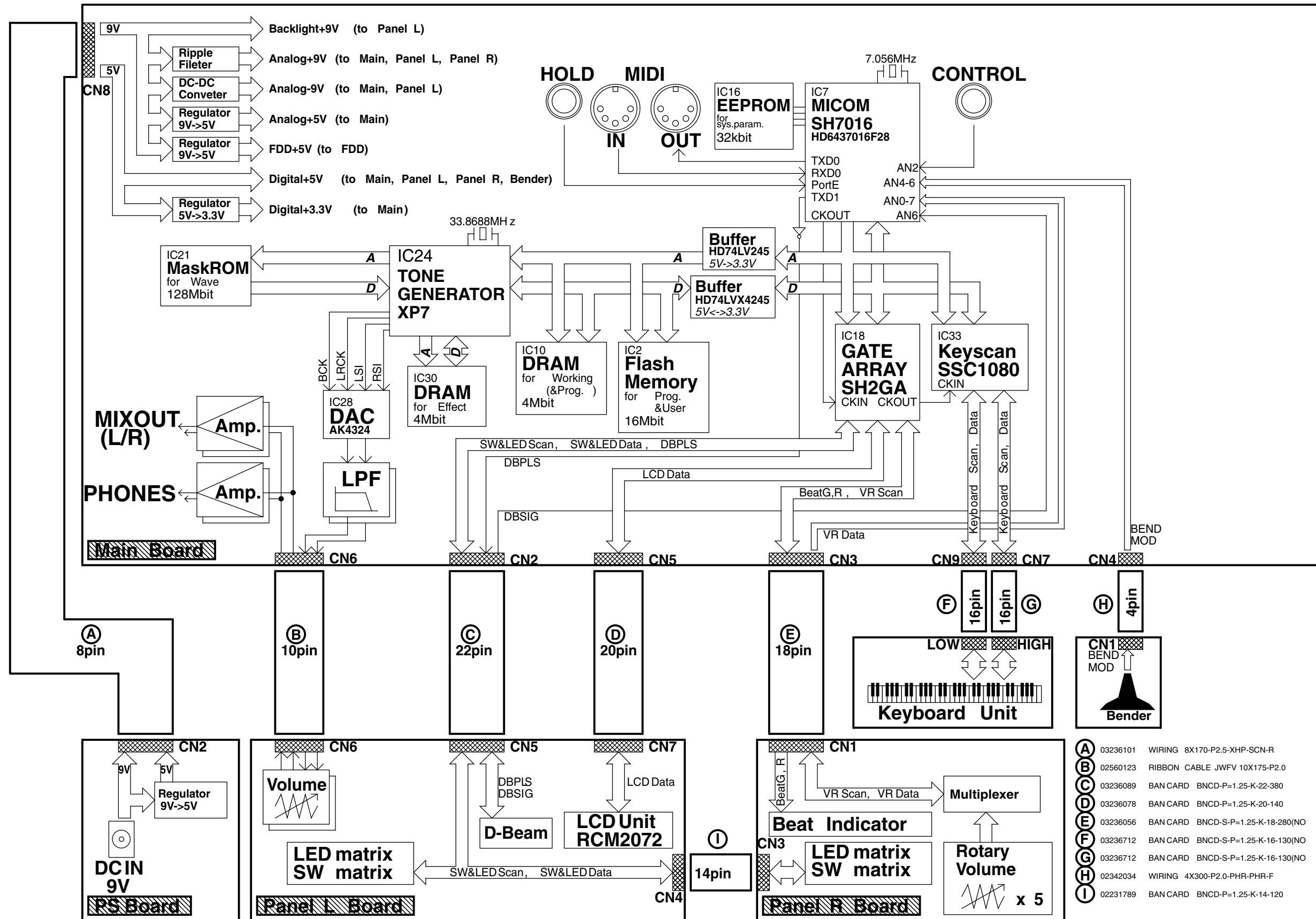


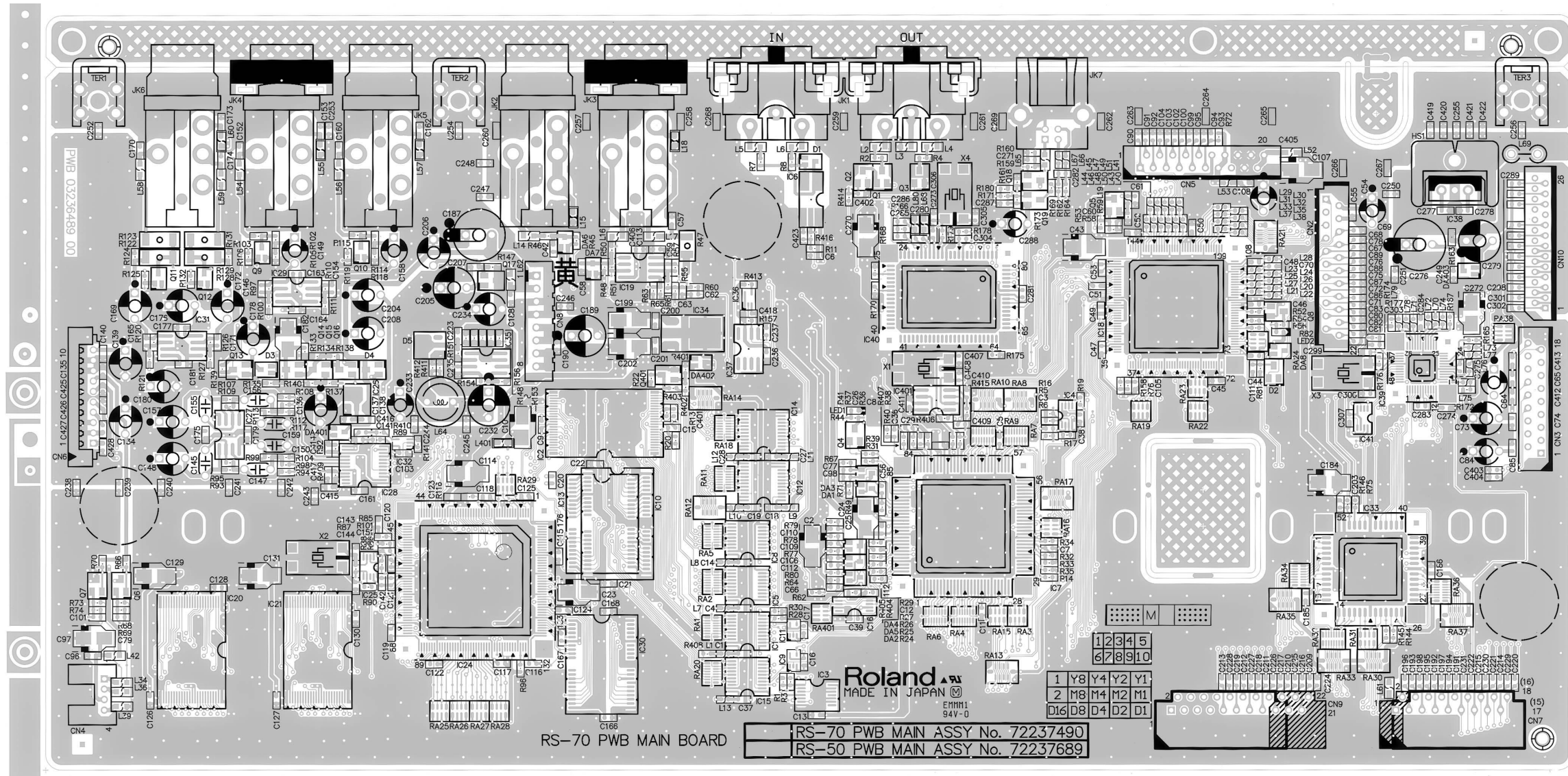
Fig.7

BLOCK DIAGRAM



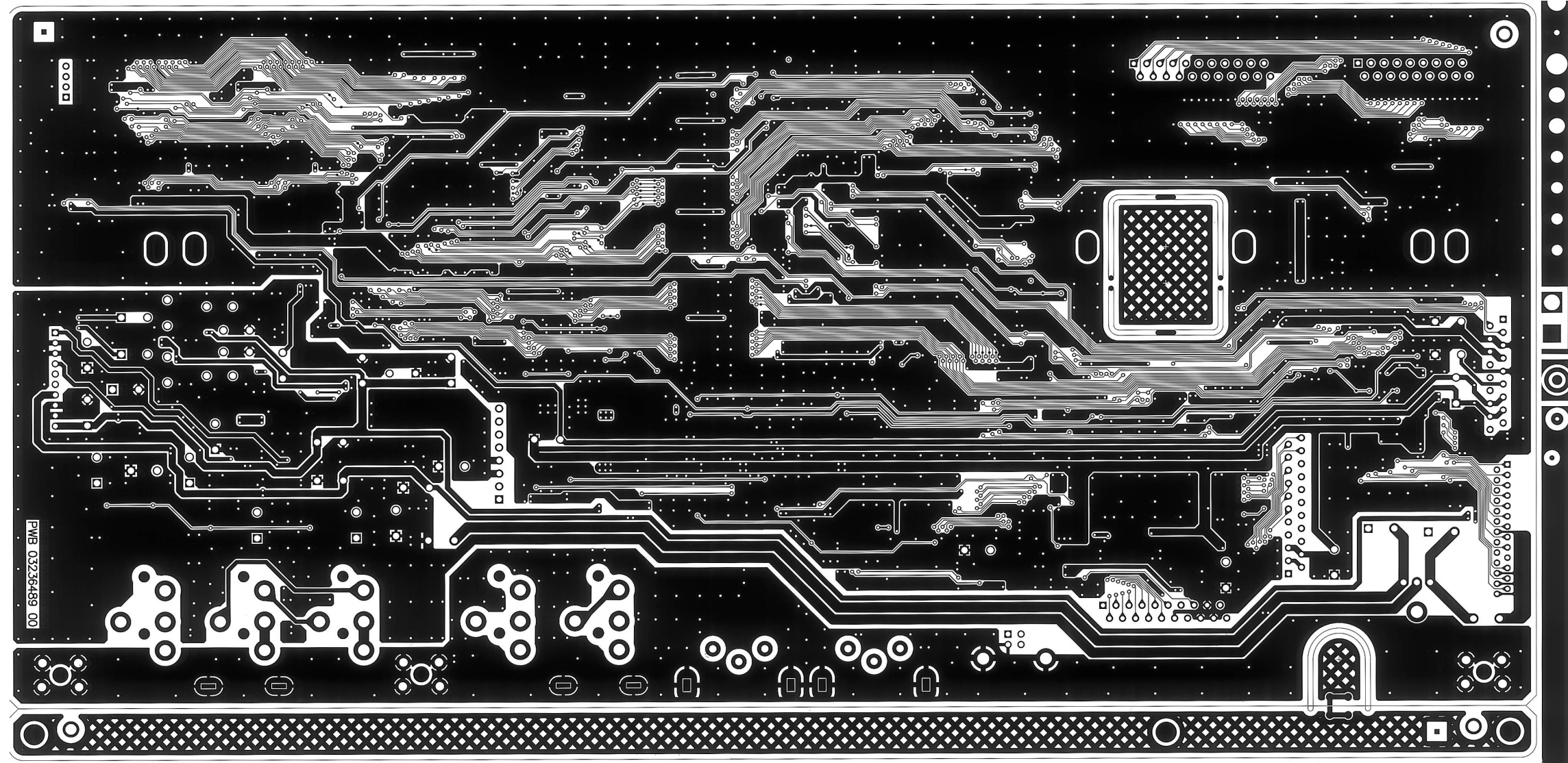
- (A) 03236101 WIRING 8X170-P2.5-XHP-SCN-R
- (B) 02560123 RIBBON CABLE JWV 10X175-P2.0
- (C) 03236089 BAN CARD BNCD-P=1.25-K-22-380
- (D) 03236078 BAN CARD BNCD-P=1.25-K-20-140
- (E) 03236056 BAN CARD BNCD-S-P=1.25-K-18-280(NO GS)
- (F) 03236712 BAN CARD BNCD-S-P=1.25-K-16-130(NO GS)
- (G) 03236712 BAN CARD BNCD-S-P=1.25-K-16-130(NO GS)
- (H) 02342034 WIRING 4X300-P2.0-PHR-PHR-F
- (I) 02231789 BAN CARD BNCD-P=1.25-K-14-120

CIRCUIT BOARD(Main Board)



View from components side

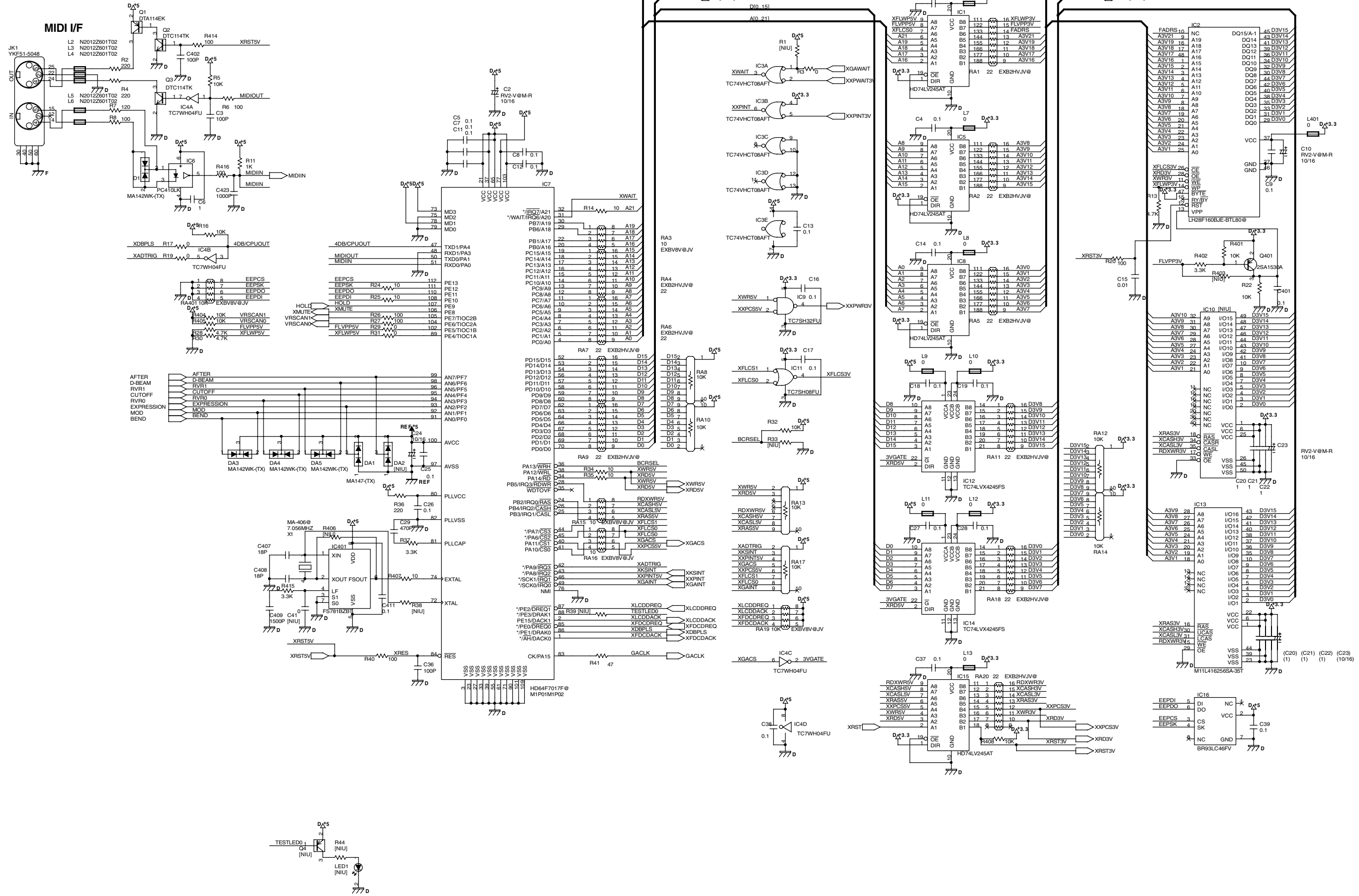
CIRCUIT BOARD(Main Board)



View from foil side

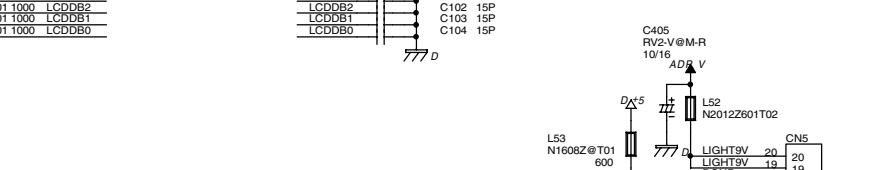
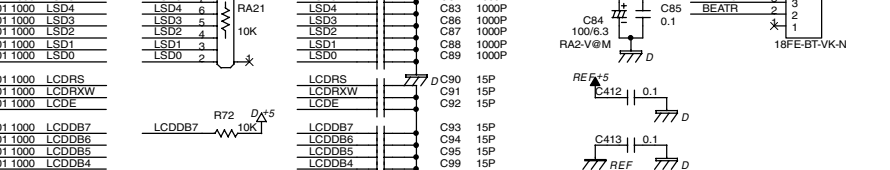
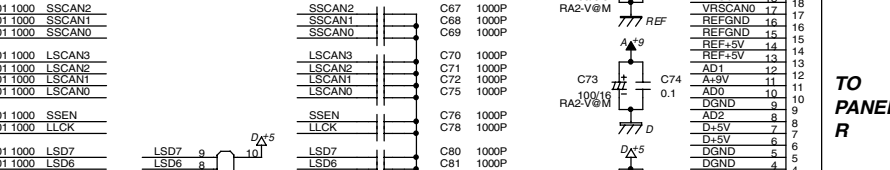
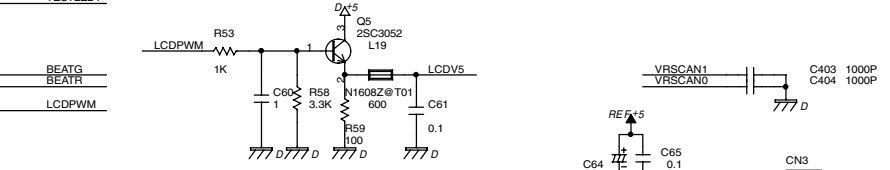
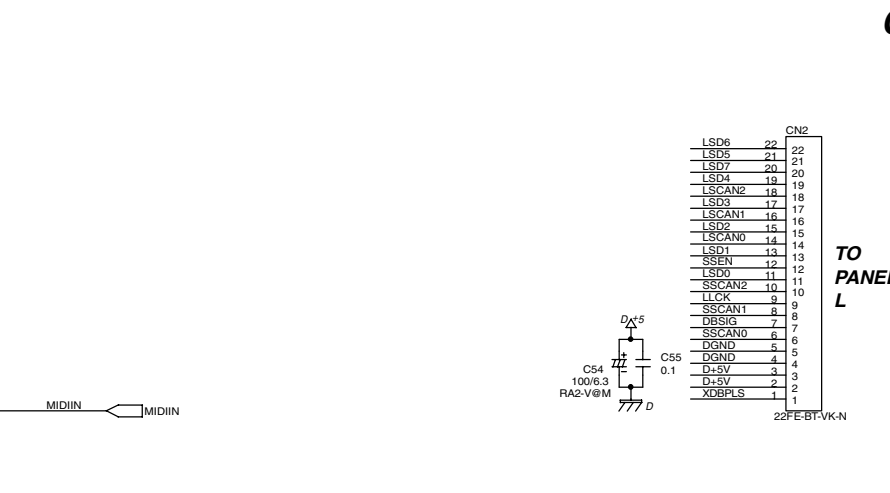
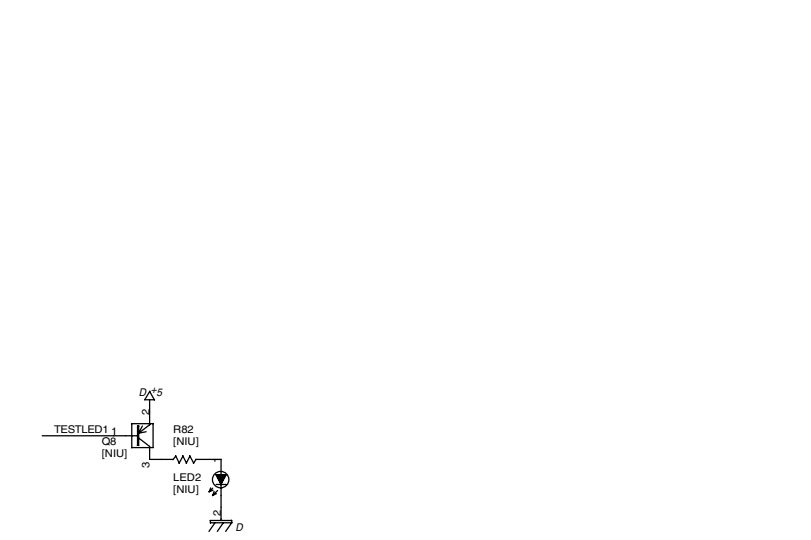
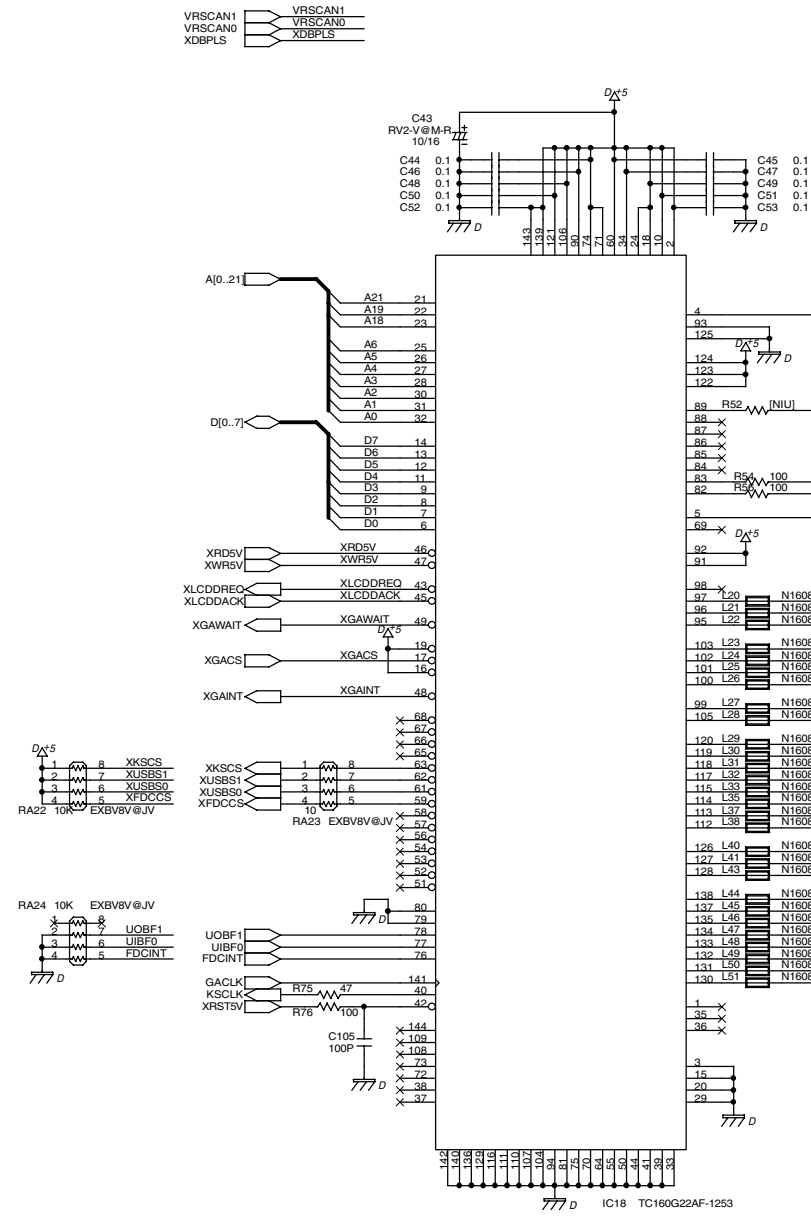
CIRCUIT DIAGRAM(Main 1)

MICOM, Memory

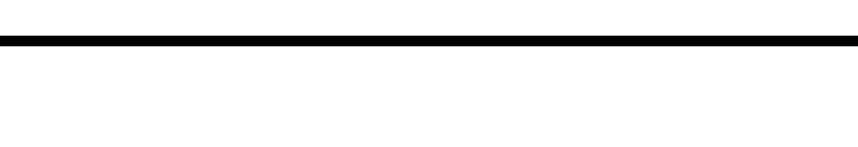
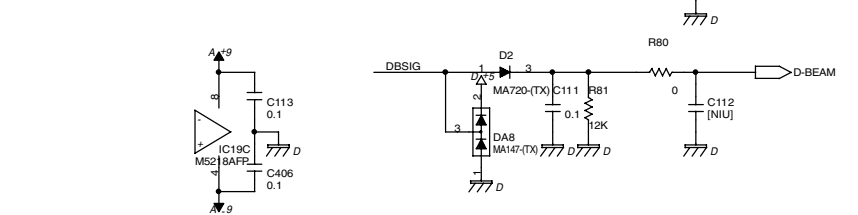
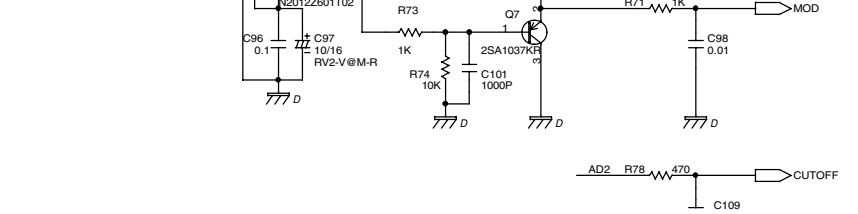
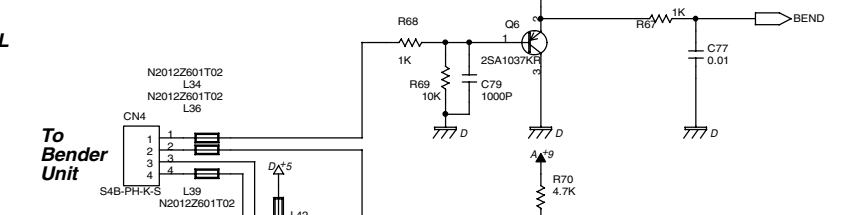
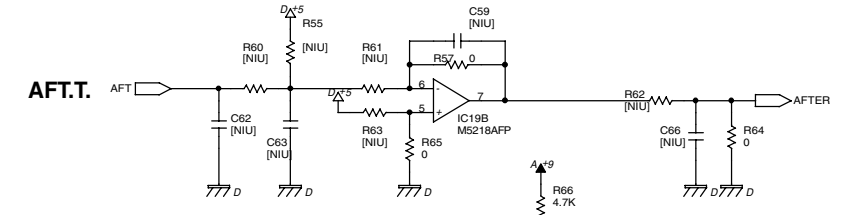
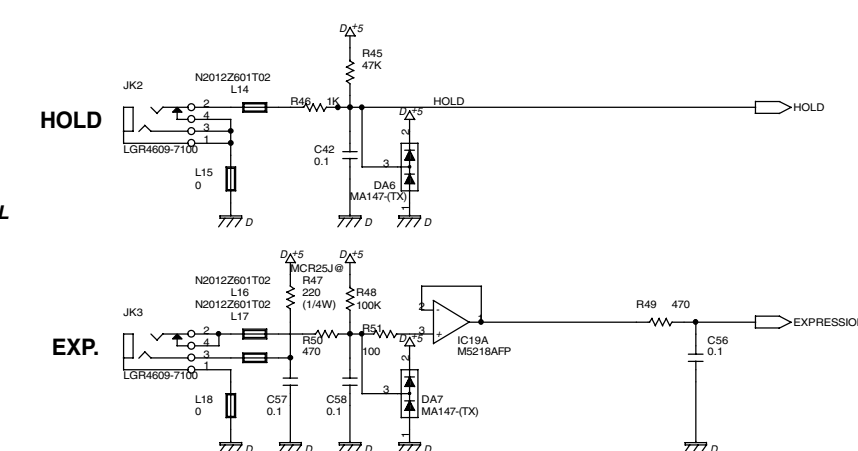


CIRCUIT DIAGRAM(Main2)

SH2GA, Panel I/F

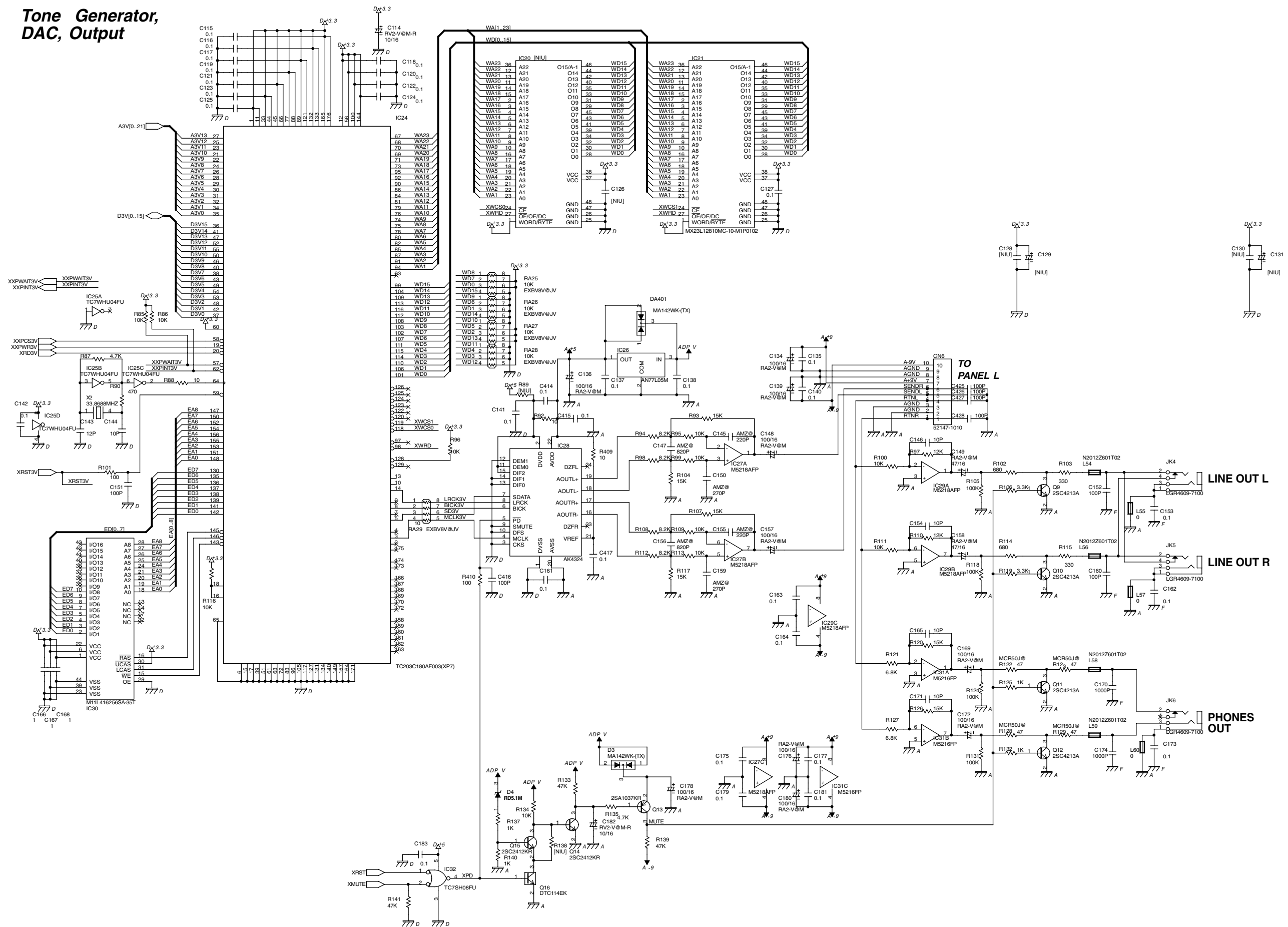


Controller I/F



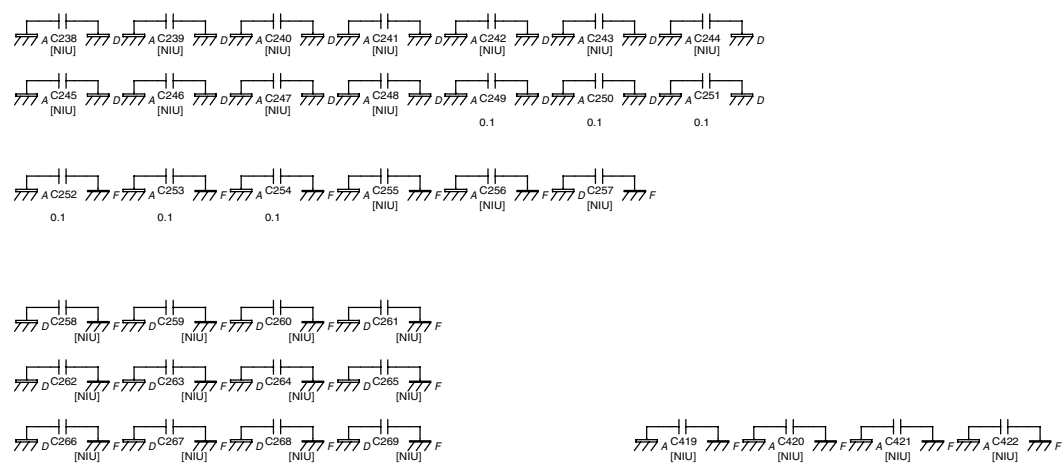
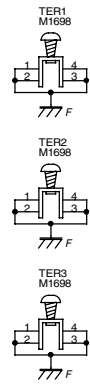
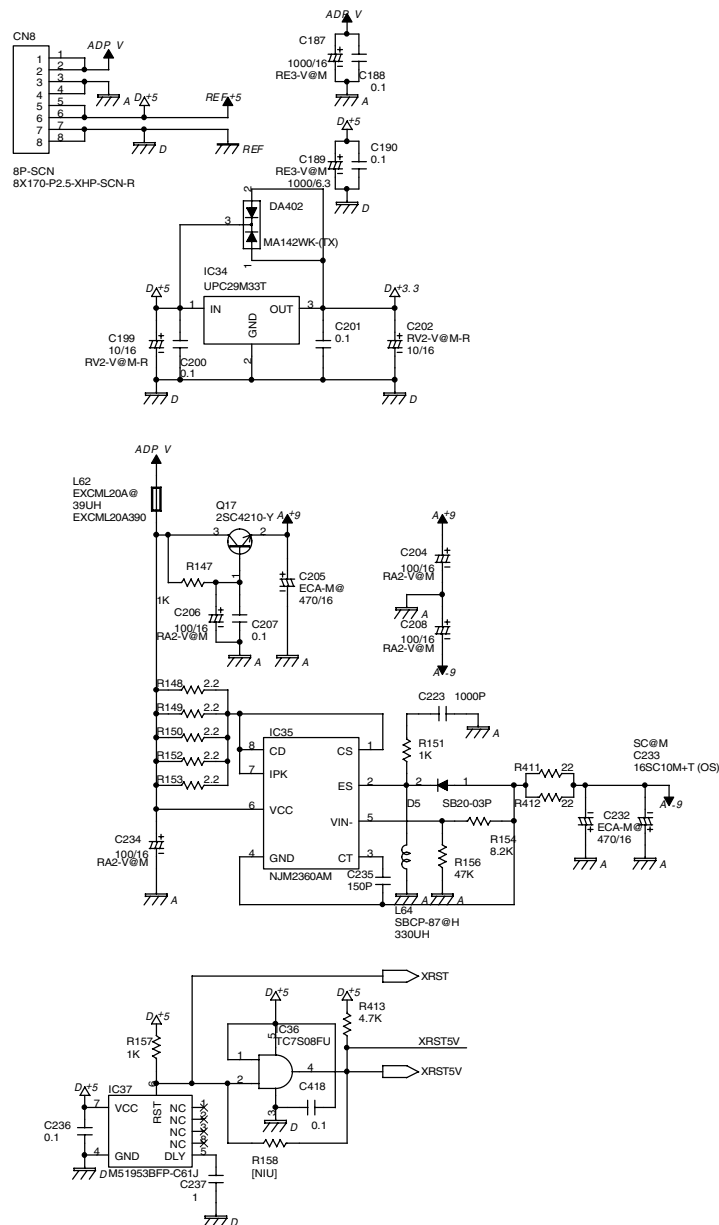
CIRCUIT DIAGRAM(Main3)

Tone Generator, DAC, Output

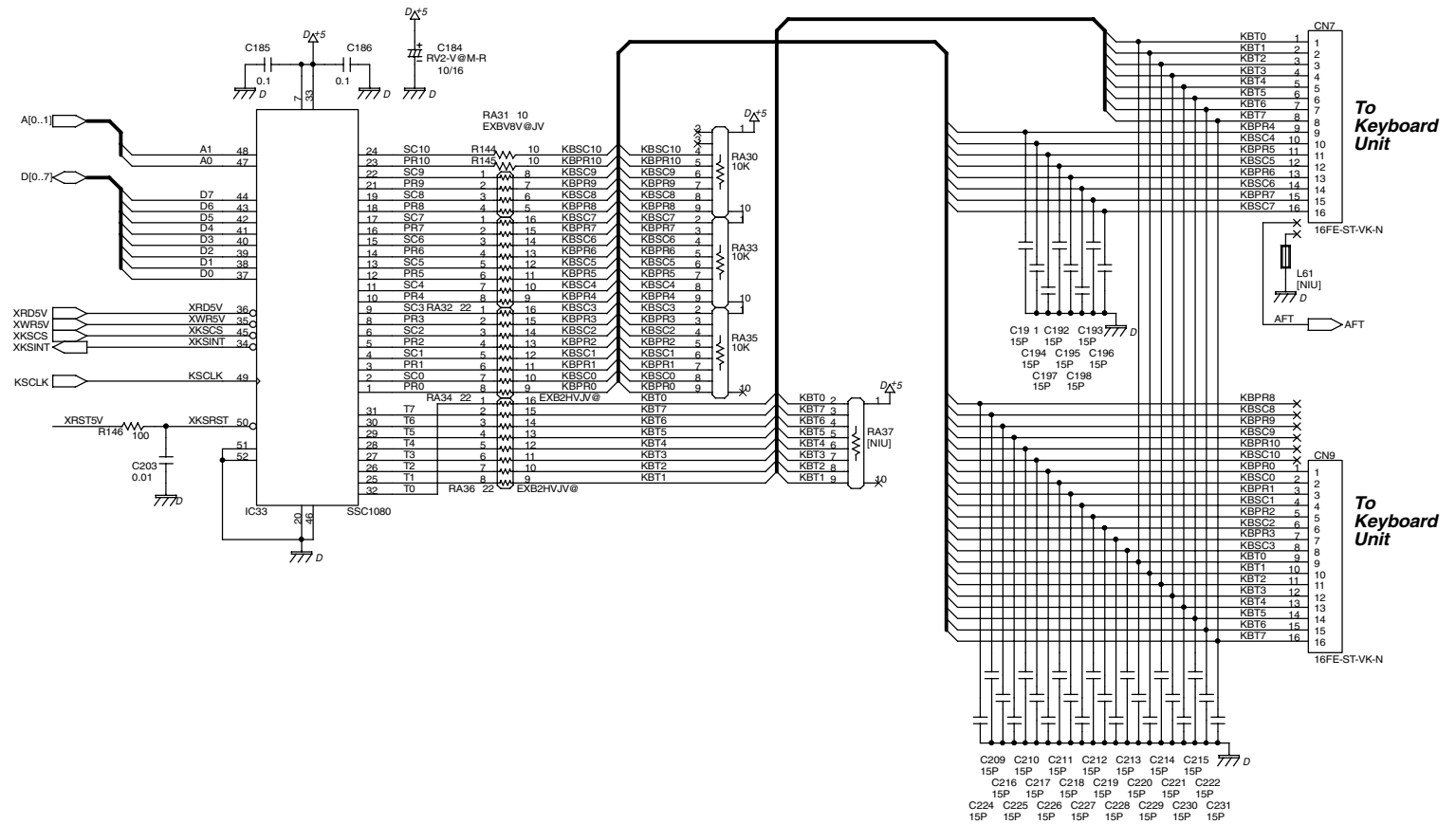


CIRCUIT DIAGRAM(Main4)

Power Supply

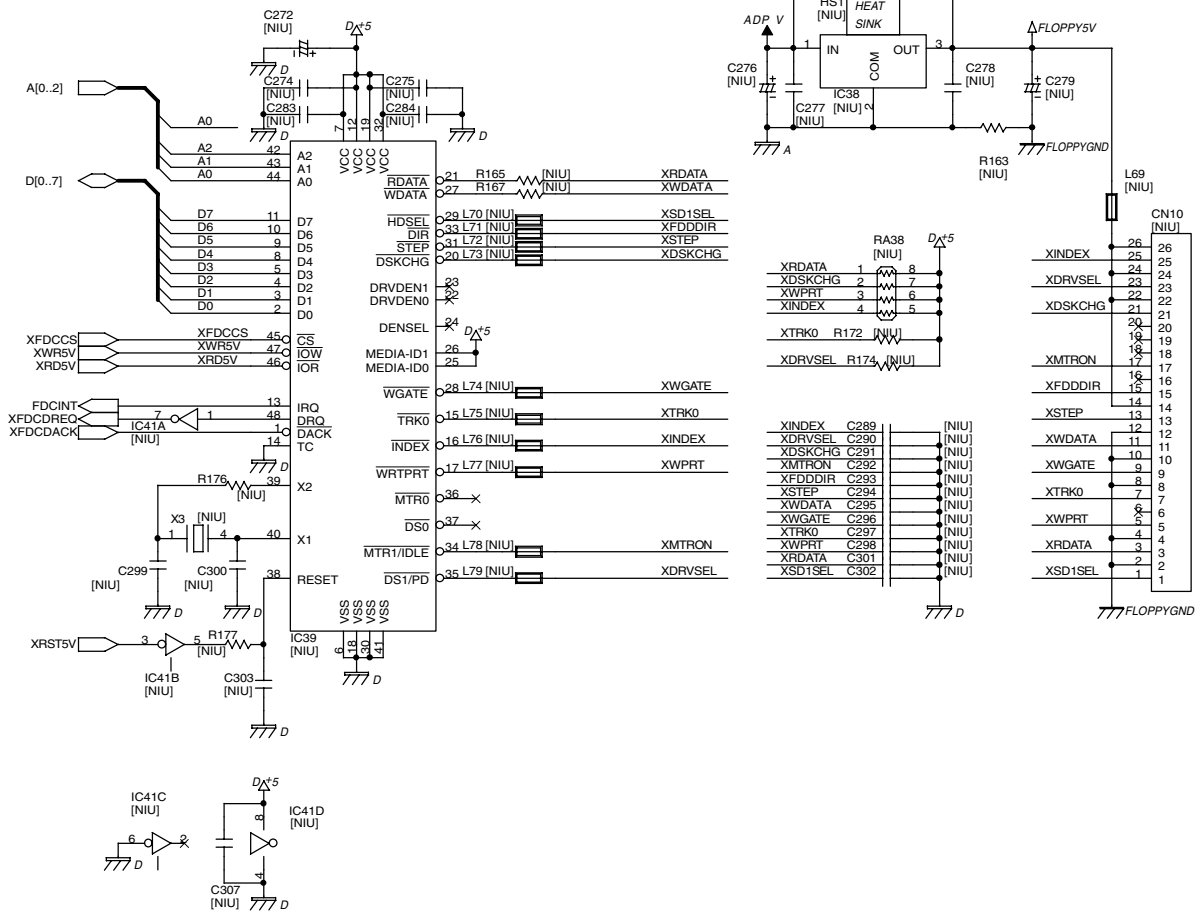


Keyboard I/F

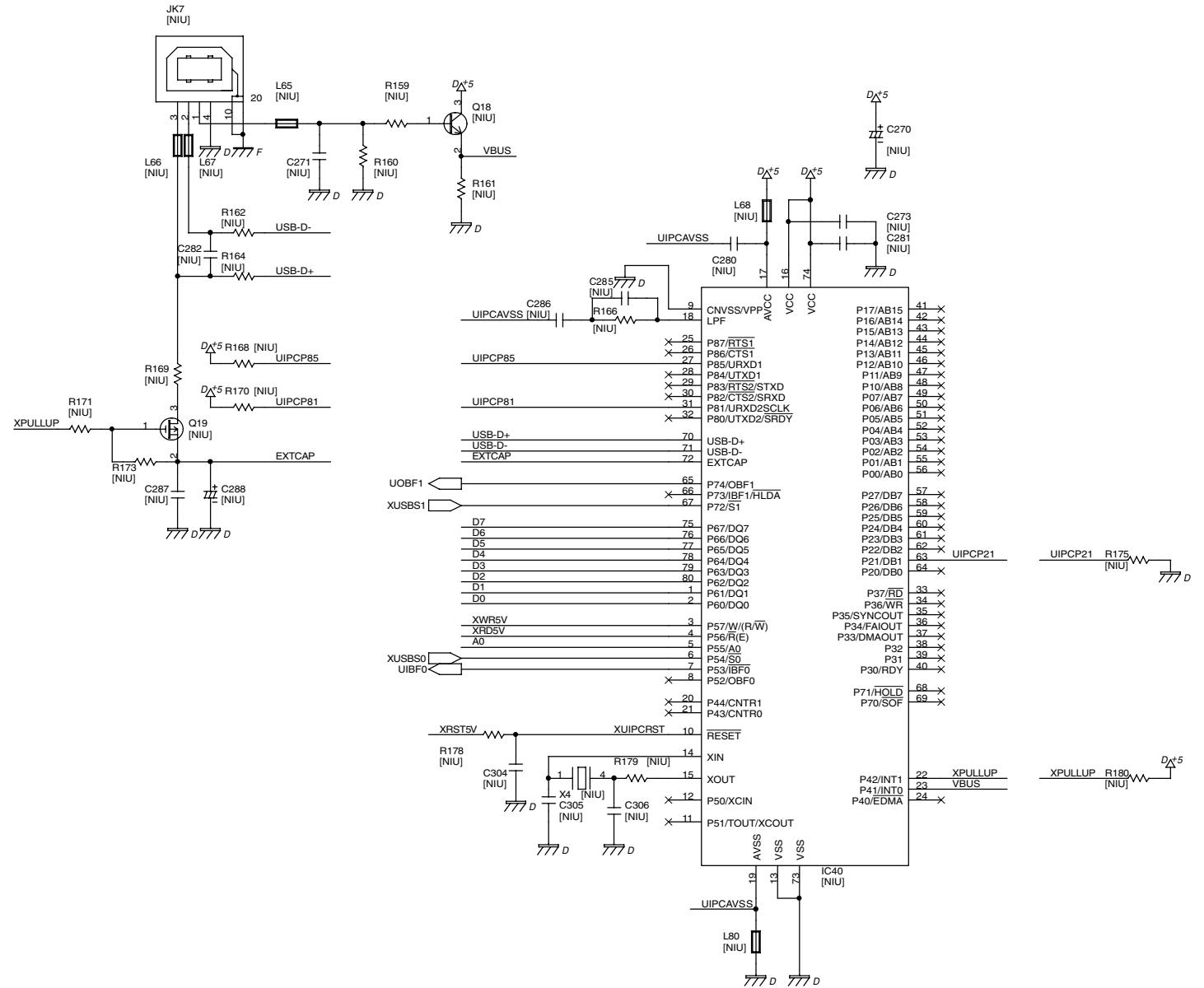


CIRCUIT DIAGRAM(Main5)

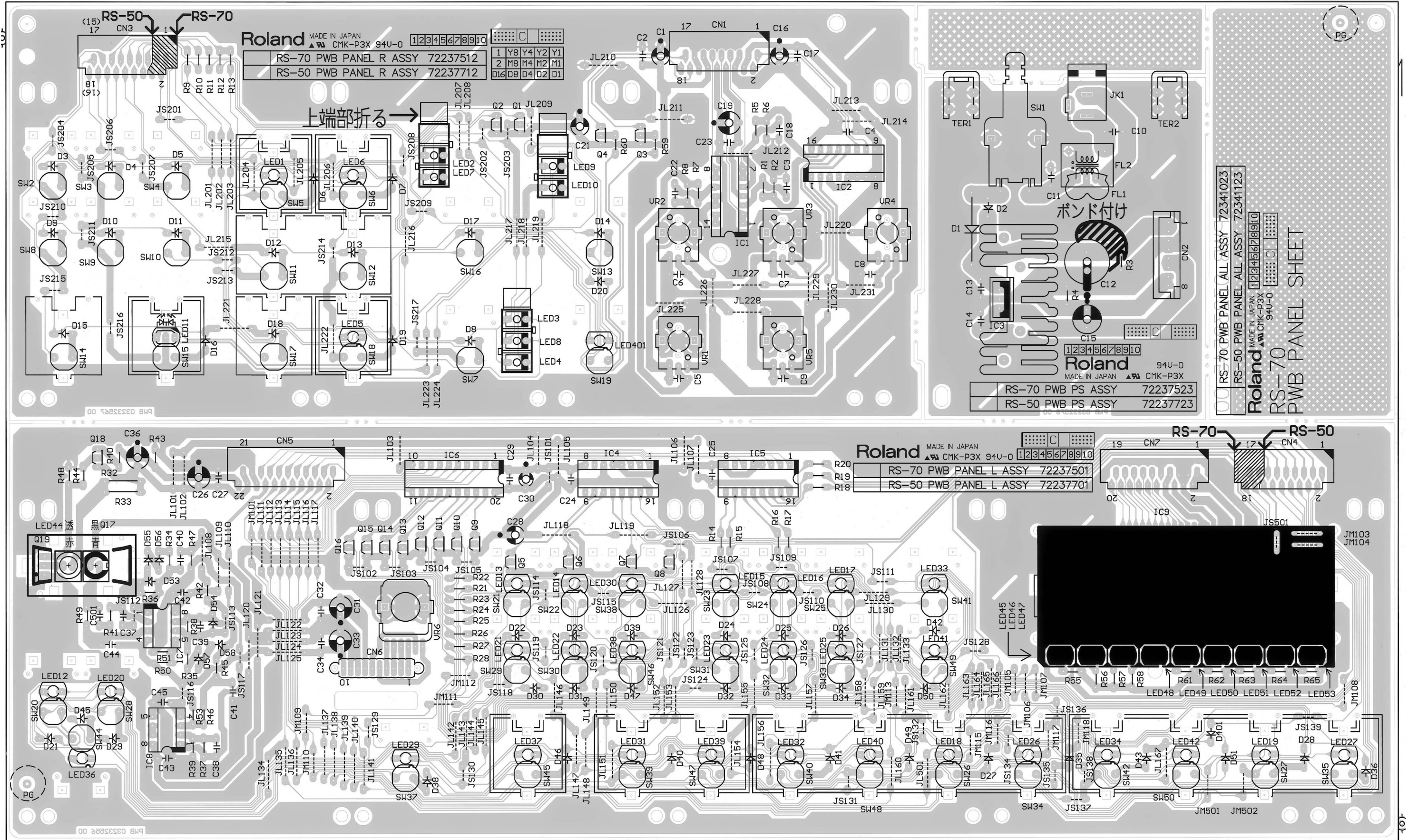
FDD I/F (NIU)



USB I/F (NIU)



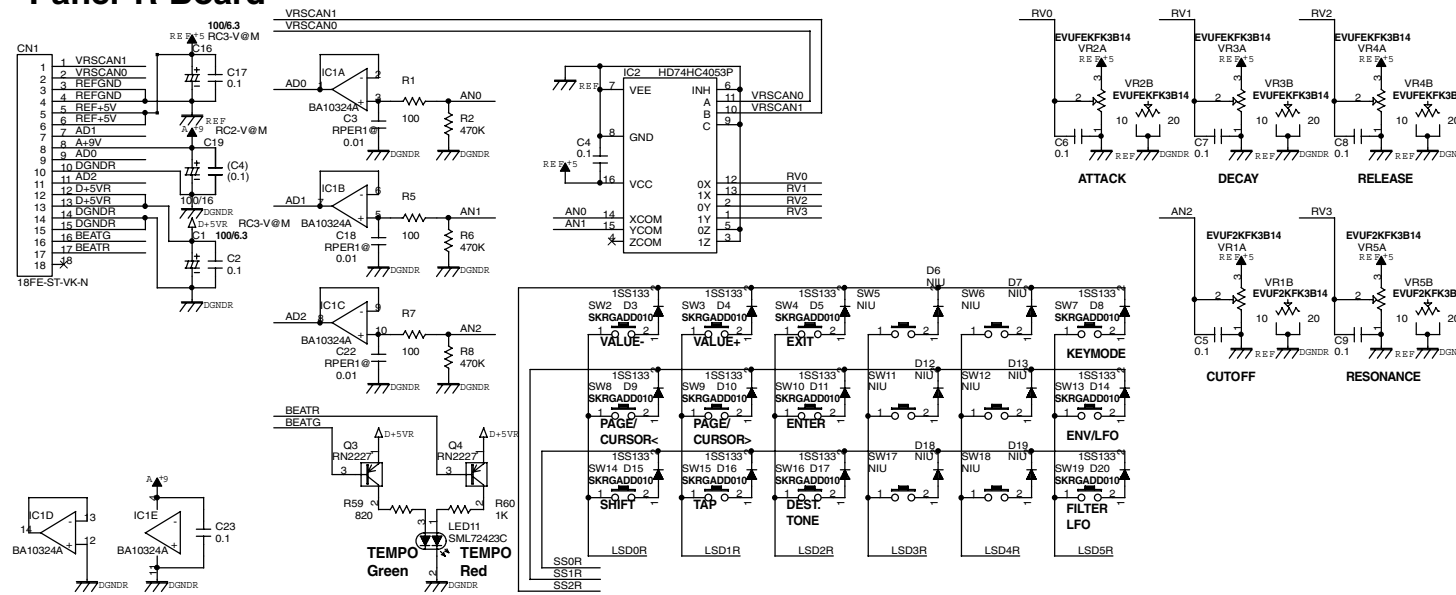
CIRCUIT BOARD(PWB PANEL R ASSY/PWB PANEL L ASSY/PWB PS ASSY)



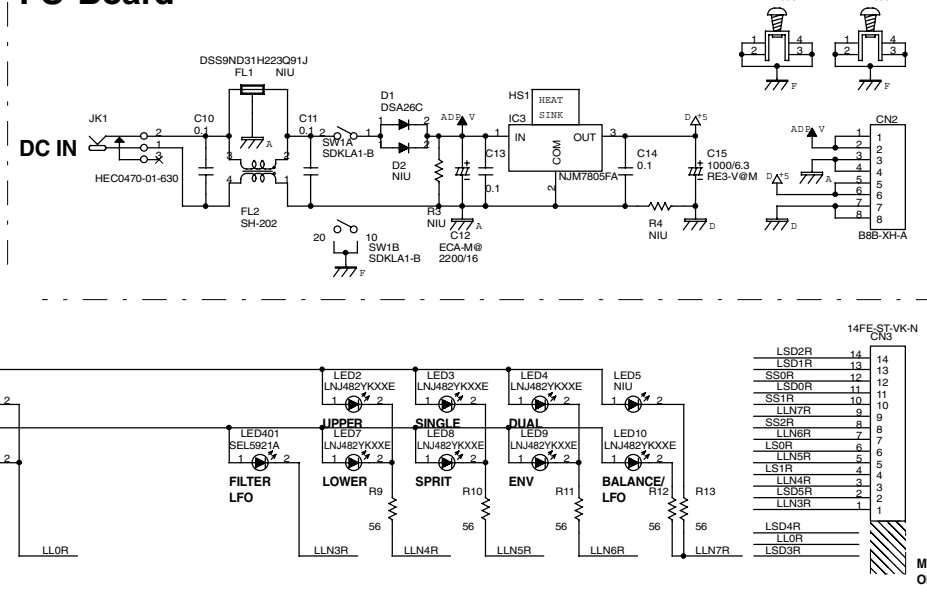
View from components side

CIRCUIT DIAGRAM(PWB PANEL R ASSY/PWB PANEL L ASSY/PWB PS ASSY)

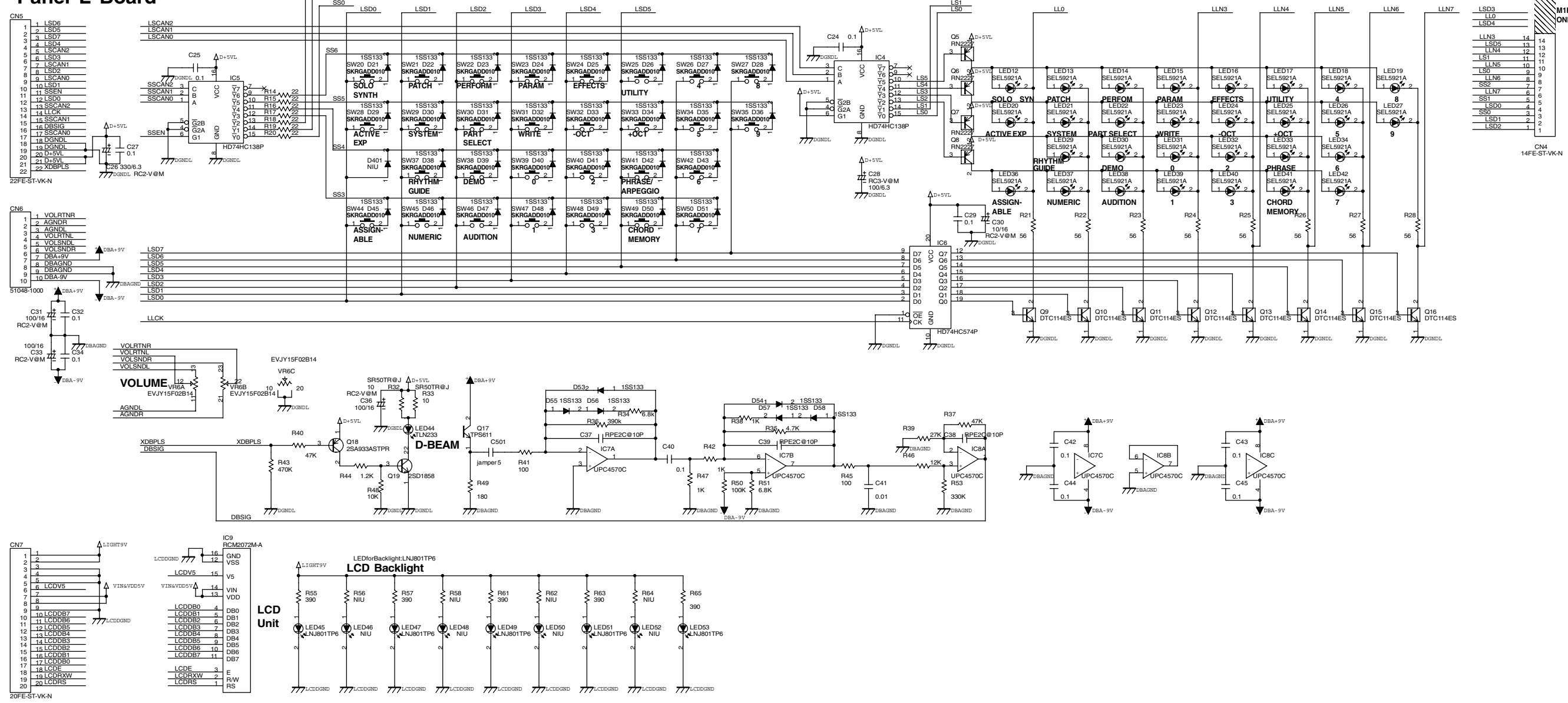
Panel R Board



PS Board



Panel L Board



ERROR MESSAGES

Checksum Error

Meaning: The checksum of a received System Exclusive message was incorrect.

Action: Set the correct checksum value.

MIDI Buffer Full

Meaning: Due to an inordinate volume of MIDI messages received, the RS-50 has failed to process them properly.

Action: Reduce the amount of MIDI messages to be transmitted.

MIDI Communication Error

Meaning: A problem has occurred with the MIDI cable connections.

Action: Check that MIDI cables are not broken or pulled out.

Receive Data Error

Meaning: A MIDI message was received incorrectly.

Action: If the same error message is displayed repeatedly, the problem lies with the MIDI messages that are being transmitted to the RS-50.

User Memory Damaged

Meaning: The data in user memory has been lost.

Action: Use the Factory Reset function to initialize the memory to the factory settings.

CANCELED

Meaning: Processing is canceled. (This is not an error message.)

Action: ---