

DISCOVER 5

REALTIME ORCHESTRATOR

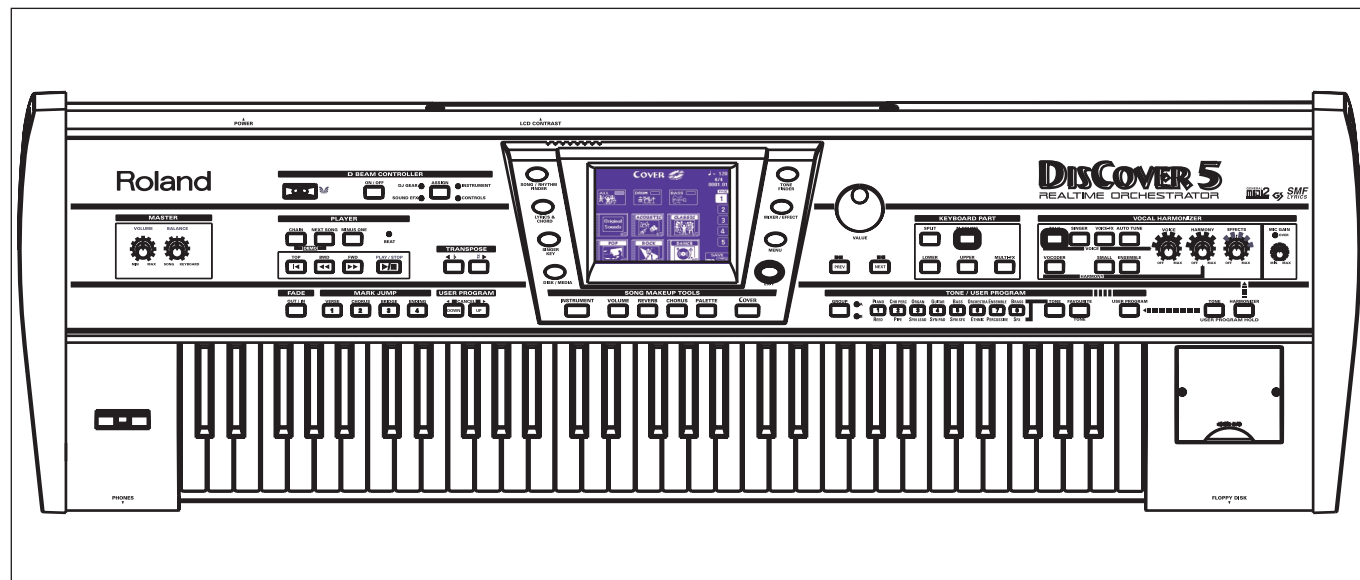
SERVICE NOTES

First edition

Issued by RES

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Specifications:

Keyboard:	61 Keys Touch Sensitive (TP-7BA)
Sound source:	PCM samples
Max polyphony	64 voices
Tones	1422 on 20 Mbytes PCM Samples
Drum Kits	44 incl. ORIENTAL Drum Set
Multitimbral parts	19
Compatibility	GM2/GS
Display type & controls:	¼ VGA Touch Screen LCD Backlight
Contrast potentiometer	Yes
Panel controls:	
Alpha Dial Data/Tempo Controller	Yes
D-Beam	Yes, with macro settings
Bender	Yes
Modulation	Yes
Master volume	Potentiometer
Keyboard/Song Balance	Potentiometer
Mic Gain	Potentiometer
Voice Level	Potentiometer
Harmony Level	Potentiometer
Effect Level	Potentiometer
Songs:	
Realtime Song player	Yes
Mark/Jump	4 programmable locations
SMT: Song Makeup Tools	2 operation modes: Manual and Cover 30
	Cover ALL: Original Sound, Acoustic, Pop1, Rock1, Dance, Classic, Vocal, Ethnic, Oriental1, Oriental2, Jungle, etc..18 Cover Drum, 24 Cover Bass
Text Import/Export	Yes
Text to lyrics synchronization	Yes
Lyrics on display	Yes
Chords on display	Yes
Minus One	Yes, Programmable
SCE: Song Chord Extractor	Yes
User Programs:	128
User Program Finder	Search all User Program Sets
User Program Hold	Tone - Harmonizer
Effects:	
Reverb	8 types
Chorus	8 types
Multi-FX (Rotary, Distortion..)	47 types
Data Storage:	
Smart Media	Yes
FDD 3.5" 2HD/2DD	Yes
Type of files managed	MIDI Song, User Programs, MIDI Sets, Song Chain, Files.txt

Vocal Harmonizer:

4 programmable macro	Talk, Voice-FX 12 macro, Auto Tune, Singer
2 programm. Harmony mode	30 macro Small, 30 macro Ensemble
Programmable Vocoder mode	24 macro
Voice Effects	Noise Gate, Compressor, 9 Reverb types, 9 Delay types, programmable
Harmony Effects	9 Reverb types, 9 Delay types, 9 Chorus types, programmable

Other functions:

Interactive DEMO	Yes: Cover, Tones, Harmonizer
Tone Finder	34 families (Categories)
Favourite Tone	16 programmable
Song Finder	Yes, up to 99999 songs
NSR: Next Song Reserve	Yes
Keyboard Part	Upper, Lower, MDrums
Fade OUT/IN	Yes, programmable
Octave	Yes, -4~ +4 separate for Upper-Lower- MDrums
Transpose with SKA:	
Singer Key Adapter	Yes, -6 ~ +5
Updating system:	Yes, on Flash

Connections:

MIDI	In, Out, Thru
Output	(L/mo-no-Right)
Hold Footswitch	Yes
Footswitch	Yes, Programmable
Foot Pedal	Yes
Phones	Yes
Harmonizer Microphone Input	Yes
Harmonizer Output	Separate Left-Right or Main Output mixed
Video Output	Composite, Independent Lyrics transmission

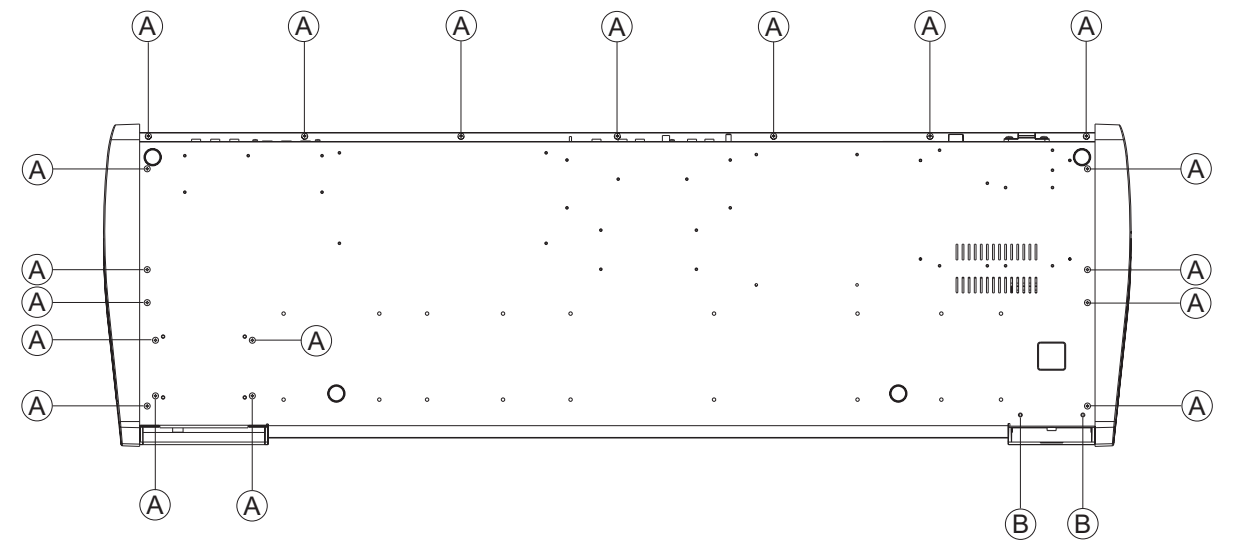
Other:

Power Supply	100V - 117V - 230V - 240V
Dimensions (mm):	1184 (W) x 371 (D) x 127 (H) mm
Weight:	12,5 Kg.

Supplied accessories:

Owner's Manual	Yes
Power chord	Yes
Smart Media 64 MB	100 SMFs + 32 SMFs Rhythm

DISASSEMBLY

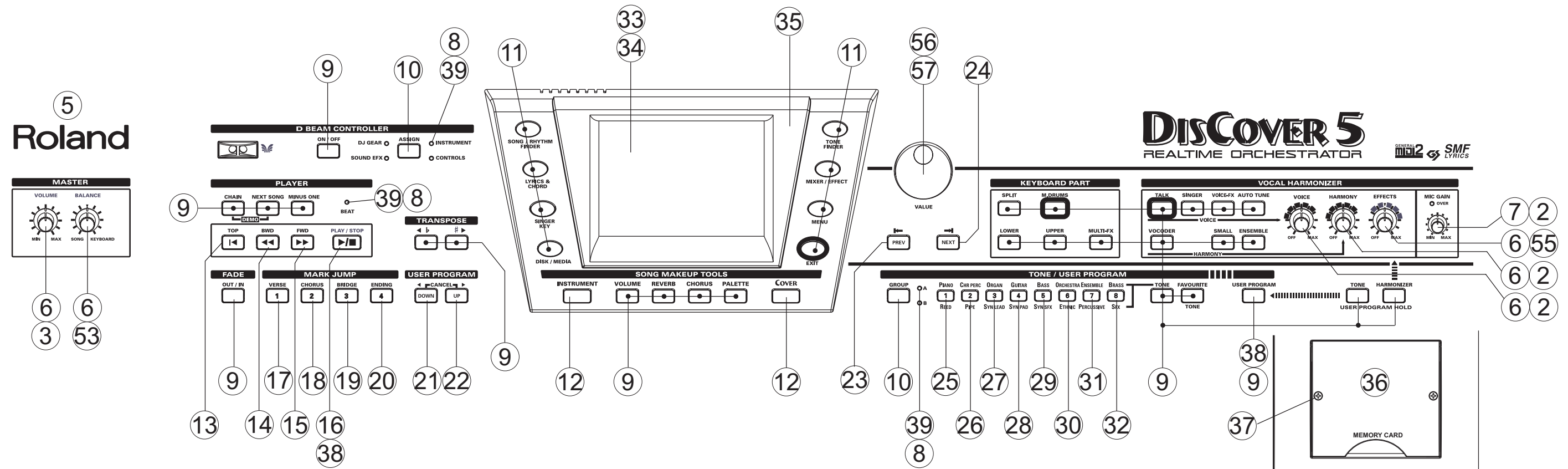


(A) SELF TAP.SCREW 3.5X13 TC TC code: J2289116

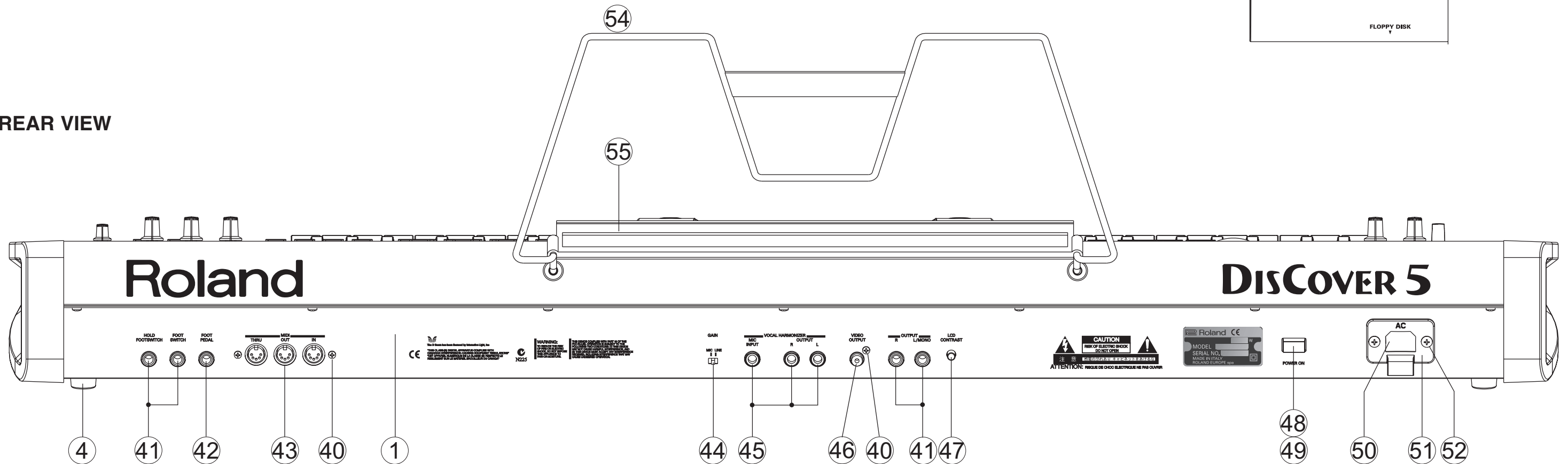
(B) SCREW 2.9X10 TC TC PR BRUN code: J2289254

LOCATION OF CONTROLS

All non indicated LEDs are: LED DIODE 5 L-53 SRD-D / RED code: J5029112
 All the switches are: SWITCH TP-1101A / EVQ-PAE 05 R code: J3169105



REAR VIEW



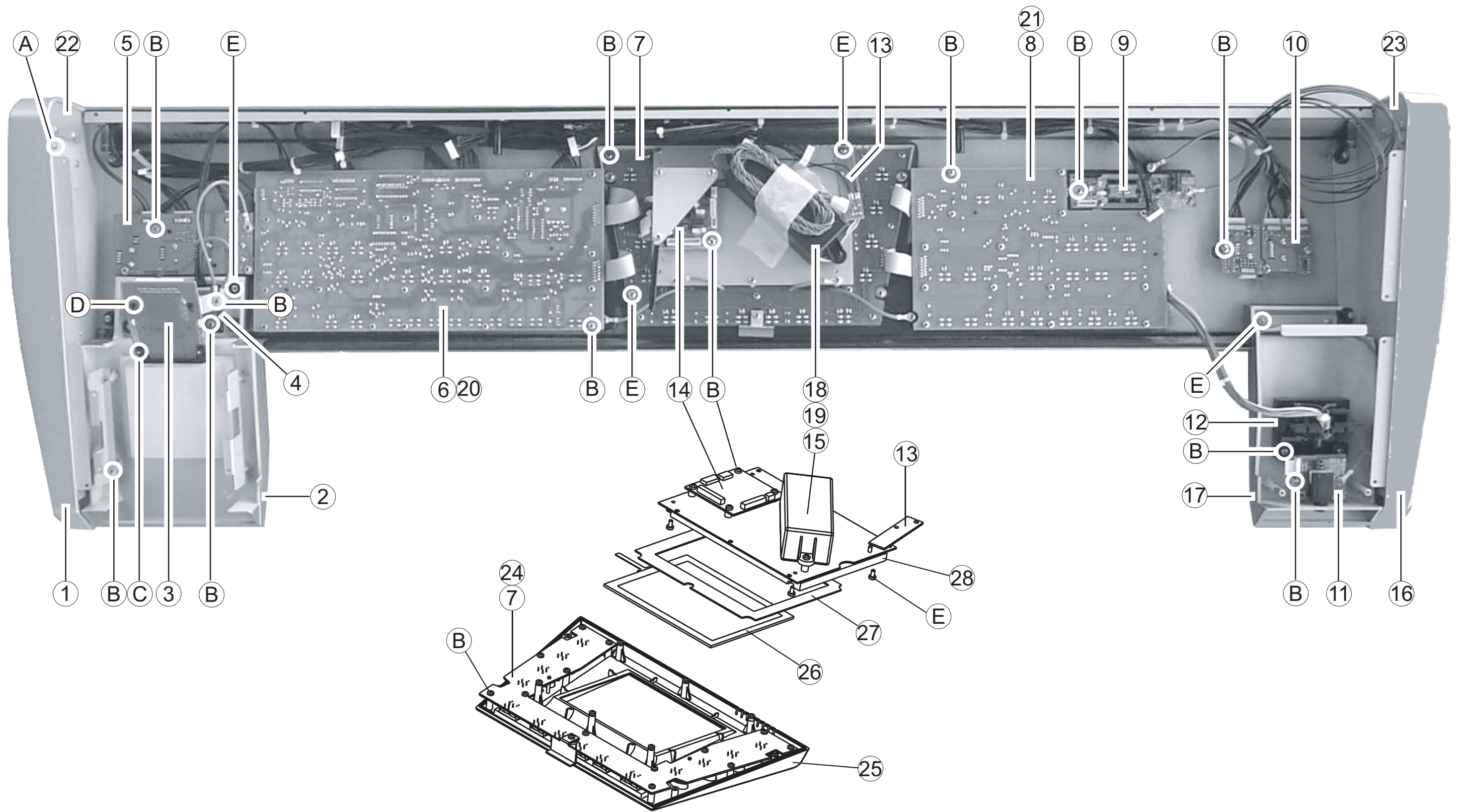
PARTS LIST OF LOCATION OF CONTROLS

No.	Part number	Description
1	7773532000	VARN.+SILK. BOTTOM CBNT DISCOVER 5
2	13289185	ROT. POT. 10KB 11K1130
3	13289186	ROT.POT. 10KB 11K1130
4	J2359105	PRESSURE RUBBER SFF-018
5	7773531000	VARN. TOP CABINET DISCOVER 5
6	K2478374	BLACK KNOB+WHITE INSERT DISCOVER 5
7	K2478353	SMALL BLACK KNOB WITH WHITE INSERT
8	K2238127	DIFFUSER FOR LED VA-7
9	K2478306	BUTTON 16X10 WHITE
10	K2478373	BUTTON 16X10 DARK GREY
11	K2478354	ELLIPTIC KNOB
12	K2478313	BUTTON 20X10 WHITE
13	K2478370	BUTTON 16X10 DARK GREY (TOP)
14	K2478371	BUTTON 16X10 DARK GREY (BWD)
15	K2478372	BUTTON 16X10 DARK GREY (FWD)
16	K2478355	BUTTON 20X10 WHITE (PLAY/STOP)
17	K2478356	BUTTON 16X10 WHITE (1)
18	K2478357	BUTTON 16X10 WHITE (2)
19	K2478358	BUTTON 16X10 WHITE (3)
20	K2478359	BUTTON 16X10 WHITE (4)
21	K2478311	BUTTON 16X10 DARK GREY (DOWN)
22	K2478312	BUTTON 16X10 DARK GREY (UP)
23	K2478360	BUTTON 16X10 DARK GREY (PREV)
24	K2478361	BUTTON 16X10 DARK GREY (NEXT)
25	K2478362	BUTTON 12X8 DARK GREY (1)
26	K2478363	BUTTON 12X8 DARK GREY (2)
27	K2478364	BUTTON 12X8 DARK GREY (3)
28	K2478365	BUTTON 12X8 DARK GREY (4)
29	K2478366	BUTTON 12X8 DARK GREY (5)
30	K2478367	BUTTON 12X8 DARK GREY (6)
31	K2478368	BUTTON 12X8 DARK GREY (7)
32	K2478369	BUTTON 12X8 DARK GREY (8)
33	02126390	TOUCH SCREEN SENSOR EMU601A2MA16
34	01124234	LCD SHARP LM320191
35	7773523000	VARN. LCD COVER DISCOVER 5
36	7773528000	SMART COVER DISCOVER 5
37	J2289255	SCREW TORX 2.9X16 PR BRON.
38	J5029113	LED DIODE 5 L-53 SED / ORANGE
39	J5029111	LED DIODE L-59SRSGW-CC
40	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR
41	13449125	JACK SOCKET HLJ0520-01-110
42	13449126	JACK SOCKET HLJ0520-01-010
43	13429273	DIN SOCKET 3PZ YKF51-5046
44	13159180	SSSF11209K SLIDE SWITCH
45	13449252	JACK SOCKET YKB 21-5006
46	00562023	SOCKET RCA YKC21-3017
47	J3219101	ROT.POT. 5KB 90° - MONO
48	K2478258	POWER SWITCH KNOB (BLACK)
49	01453245	AC PUSH SWITCH SDDL1B2D TV5
50	J3449103	UNIVERSAL AC INLET ON PCB
51	K2248160	AC SOCKET HOLDER
52	J2289213	SELF TAP.SCREW 3.9X16 TC TC
53	00459901	ROT. POT. 10KB 14K 1230
54	K2128126	BLACK MUSIC REST VA-7/VA-5/VA-76
55	22208320	MUSIC SCORE HOLDER
56	22485303	D-RK KNOB BLK
57	01013223	EVQ-VEM F01-24B ENCODER

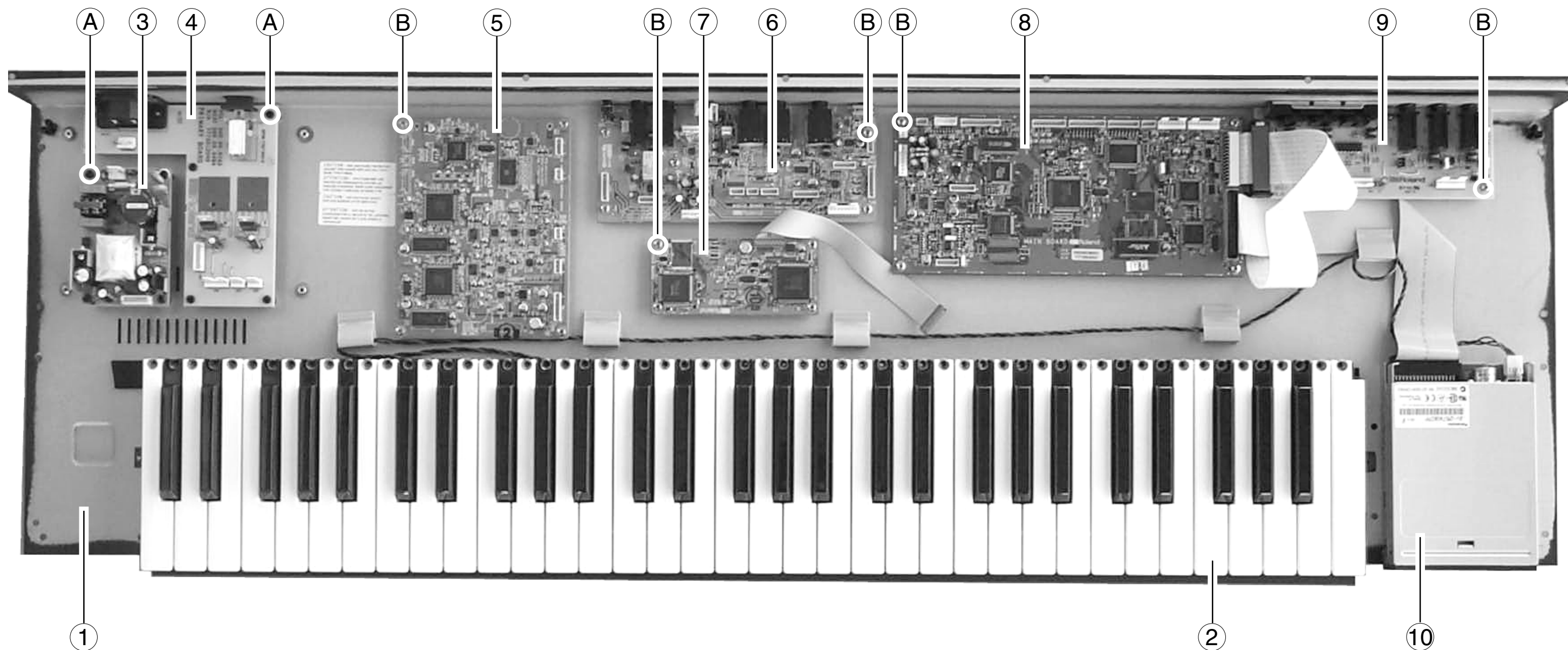
PARTS LIST OF EXPLODED VIEW (TOP)

No.	Part number	Description
1	7773524000	VARN. RIGHT SIDE PANEL DISCOVER 5
2	7773526000	RIGHT VARN. END-BLOCK DISCOVER 5
3	7773511000	SMART MEDIA CARD PCB ASSY DISCOVER 5
4	7773510000	CONTROL FREEZE PCB ASSY DISCOVER 5
5	7773508000	RIGHT POTENTIOMETERS PCB ASSY DISCOVER5
6	7773505000	RIGHT CONTROL PCB ASSY DISCOVER 5
7	7773506000	CENTRAL CONTROL PCB ASSY DISCOVER 5
8	7773504000	LEFT CONTROL PCB ASSY DISCOVER 5
9	7700609000	CONTROL PCB ASSY F/ D-BEAM
10	7773507000	LEFT POTENTIOMETERS PCB ASSY DISCOVER 5
11	7773509000	HEADPHONE PCB ASSY DISCOVER 5
12	K3278110	PITCH BENDER (SW) + CABLE (24) + 1C
13	7773514000	THERMISTOR PCB ASSY DISCOVER 5
14	7770101001	LCD CONTROL PCB ASSY
15	7711203000	INVERTER PCB ASSY
16	7773525000	LEFT VARN. SIDE PANEL DISCOVER 5
17	7773527000	LEFT VARN. END-BLOCK DISCOVER 5
18	K2248127	PROTECTING BOX COVER F/INVERTER
19	K2248128	PROTECTING BOX BASE F/INVERTER
20	K2268174	R. VIBRATION DUMPER HLC/30 (GREY)
21	K2268175	L. VIBRATION DUMPER HLC/30 (GREY)
22	7773529000	CAP FOR RIGHT VARN. SIDE PANEL DISCOVER5
23	7773530000	CAP F/ VARN. LEFT SIDE PANEL DISCOVER 5
24	K2268177	VIBRATION DUMPER COVER LCD HLC/30
25	7773523000	VARN. LCD COVER DISCOVER 5
26	02126390	TOUCH SCREEN SENSOR EMU601A2MA16
27	K2268176	BLACK ANTI DUSTING PL30N LCD
28	01124234	LCD SHARP LM320191
Screw		
A	J2289130	SCREW 2.9X13 TC TC PR TROP
B	J2289125	SCREW 2.9X10 TC TC PR TROP
C	J2289126	SELF TAP.SCREW 2.9X 8 TCTCPRBZ
D	J2289101	SELF TAP.SCREW 2.9X 6 TC TC
E	J2289193	SELF LOCK.SCREW M3X6 TC TC H.6

EXPLODED VIEW (TOP)



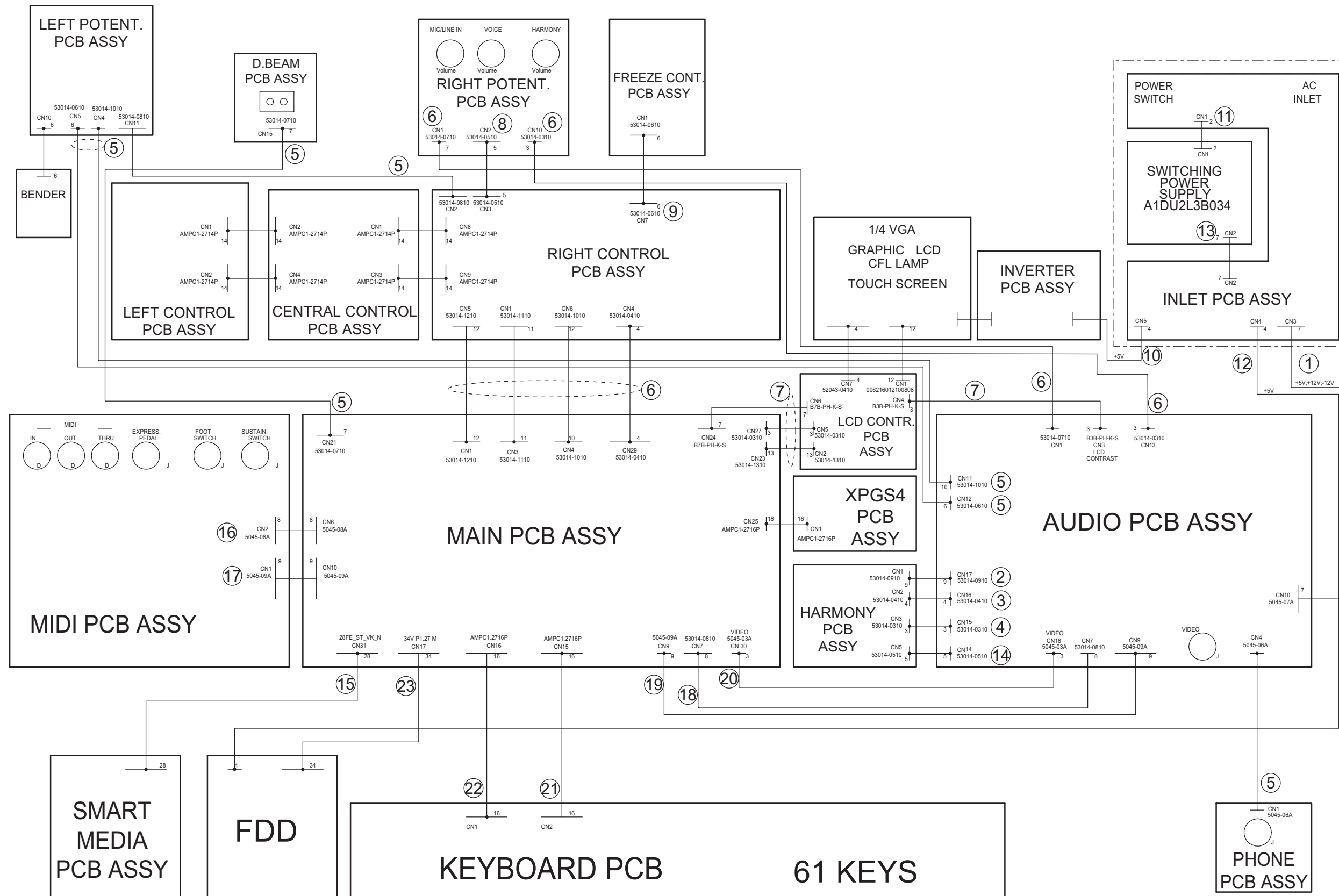
EXPLODED VIEW (BOTTOM)



No.	Part number	Description
1	7773532000	VARN.+SILK. BOTTOM CBNT DISCOVER 5
2	7626921001	61 KEY KEYBOARD TP/7BA 2ND
3	01785823	SWITCHING POWER SUPPLY A1DUL3B034
4	7773512000	PRIMARY PCB ASSY DISCOVER
5	7773501000	HARMONY PCB ASSY DISCOVER
6	7773503000	AUDIO PCB ASSY DISCOVER 5
7	7773513000	XPGS-4 MODULE PCB ASSY DISCOVER
8	7773502001	MAIN PCB ASSY (EMC) DISCOVER 5
9	7770105000	MIDI PCB ASSY VA-7/VA-5/VA-76
10	J2409107	FLOPPY DISK DRIVER JU-257A 907P

Screw		
A	J2289108	SELF LOCK.SCREW M3X10 TCTC H.6
B	J2289193	SELF LOCK.SCREW M3X6 TC TC H.6

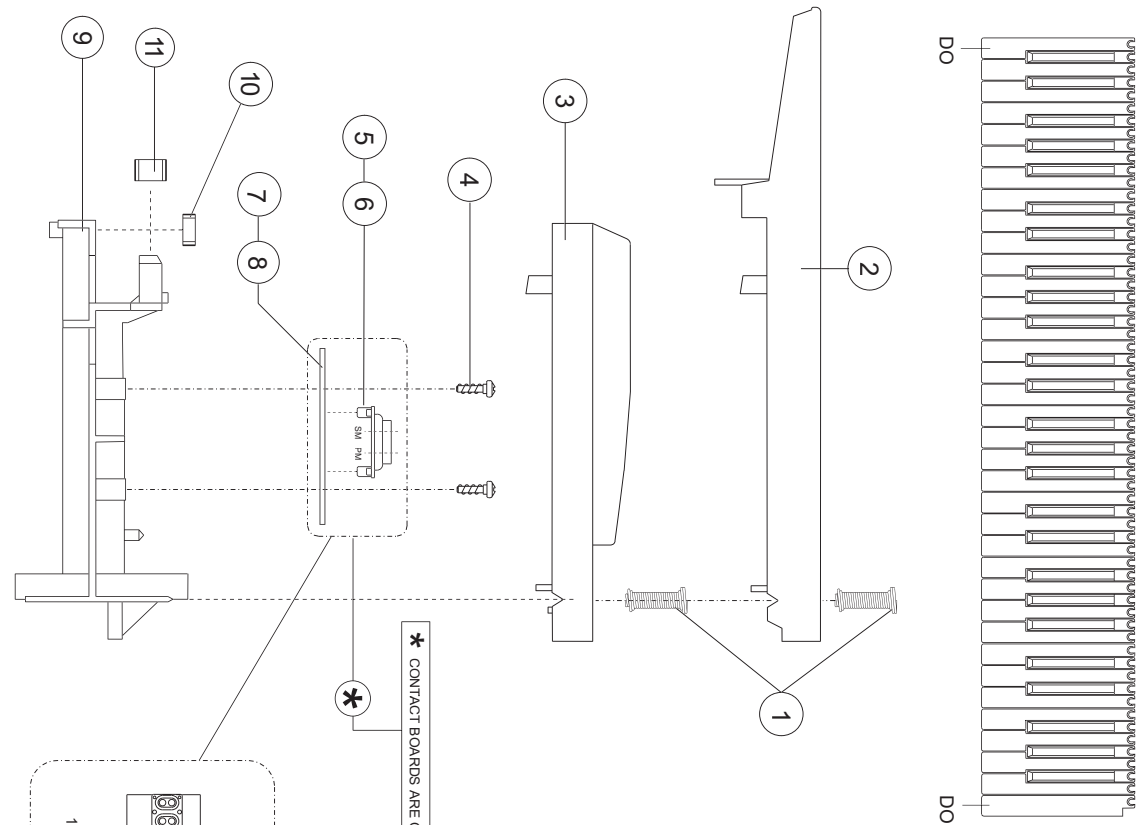
WIRING DIAGRAM



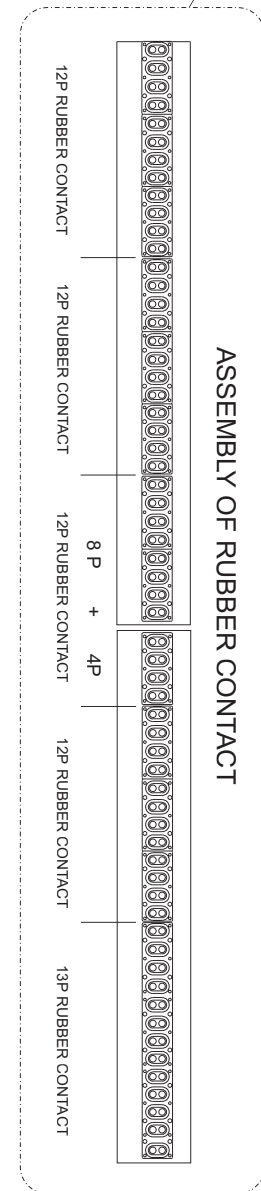
1	K3468269	7P CABLE (50) -2C P.2.5 D/R	9	7699517000	6P CABLE ASSY (24) -2C P.2	17	K3468171	9P CABLE (22) -2C D/R
2	7773522000	9P CABLE ASSY (14) -2C P.2 D/R	10	K3468156	4P CABLE (90) 2C D/D	18	7773521000	5+1P COAXIAL CABLE ASSY (20) 2C P.2 D/R
3	7773406000	4P CABLE ASSY (20) -2C P.2 D/R	11	7773518000	2P AWG18 CABLE ASSY 1N/1B (8) 2C	19	K3468270	9P CABLE (12) -2C P.2.5 D/R
4	7773519000	1P COAXIAL CABLE (20) 2C P.2 D/R	12	7771006000	3 CABLE ASSY 2N/1R (130) -2C 4P D/D	20	K3468268	3P CABLE (20) -2C P. 2.5 D/R
5	7773516000	WIRING ASSY (POT/AUD/MB/CNTR./HEAD/D.B)	13	7773520000	7P CABLE ASSY (14) -2C P.2,5 JST/AWG22	21	K3468186	16P FLAT CABLE (36) -2C
6	7773517000	WIRING ASSY (POT/AUDIO/MB/R.CONTROL)	14	7699407000	5P CBL ASSY (28) -2C P.2	22	K3468166	16P FLAT CABLE (44) -2C
7	7773515000	WIRING ASSY (LCD/MAIN/AUDIO)	15	K3468271	28P MYLAR CABLE (40) 1.25B SMCD28X350	23	K3468146	34P FLAT CABLE (26) -2C
8	7770306000	5P CABLE (8) -2C P.2 D/R VA-5	16	7697220001	8P CABLE (32) -2C			

KEYBOARD PARTS LIST

61 KEY TP/7BA 2° KEYBOARD ASSY code 7626921001



61-KEY KEYBOARD TP/7BA 2° code 7626921001



No.	PARTS NAME	CODE RJA	Num.
1	DOUBLE HEADED SPRING	22178226	61
2	NATURAL KEY C5	J2579123	5
	NATURAL KEY D6	J2579124	5
	NATURAL KEY E7	J2579125	5
	NATURAL KEY F1	J2579126	5
	NATURAL KEY G2	J2579127	5
	NATURAL KEY A3	J2579128	5
	NATURAL KEY B4	J2579129	5
	NATURAL KEY C8	J2579130	1
3	SHARP KEY	22578318	25
4	SCREW 2.9x10 TCTPR TROP	J2289125	34
5	12P RUBBER CONTACT	2218523802	4
6	13P RUBBER CONTACT	2218523902	1
7/8	RIGHT & LEFT CONTACT PCB ASSY+RUBBER	7624508000	1
9	KEYBOARD SUPPORT 61 KEYS	22818746	1
10	ADHESIVE RUBBER 8 x 2,5 x 848	22358151	1
11	RUBBER END STROKE	22158789	1

PARTS LIST Discover5 (117V/230V/230VE/240VA)

SAFETY PRECAUTIONS :

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

CONSIDERATION ON PARTS ORDERING

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).
- A The parts marked "A " are new (Initial Parts) for RES but already used by RJA
- Δ The parts marked Δ have Safety - Related characteristics. Use only listed parts for replacement.
- << EMI >> Component for EMC.

Note: Replacement should be made on a unit basis. No replacements available for individual parts. Replacement only be a unit.

AUD = Audio Board	MB = Main Board
CCB = Central Control Board	MI = Midi Board
DBM = D-Beam Board	RB = Right Contact Board
FR = Freeze Control Board	RCB = Right Control Board
HA = Harmony Board	RPB = Right Potentiometer Board
INV = Inverter Board	PHB = Phones Board
LB = Left Contact Board	PRB = Primary Board
LCB = Left Control Board	SM = Smart Card Board
LCD = LCD Control Board	XPGS4 = XPGS4 Board
LPB = Left Potentiometer Board	

CASING

		Q.ty	
	K2128126	BLACK MUSIC REST VA-7/VA-5/VA-76	1
	22208320	MUSIC SCORE HOLDER	1
#	7773523000	VARN. LCD COVER DISCOVER 5	1
#	7773524000	VARN. RIGHT SIDE PANEL DISCOVER 5	1
#	7773525000	LEFT VARN. SIDE PANEL DISCOVER 5	1
#	7773526000	RIGHT VARN. END-BLOCK DISCOVER 5	1
#	7773527000	LEFT VARN. END-BLOCK DISCOVER 5	1
#	7773528000	SMART COVER DISCOVER 5	1
#	7773529000	CAP FOR RIGHT VARN. SIDE PANEL DISCOVER 5	1
#	7773530000	CAP F/ VARN. LEFT SIDE PANEL DISCOVER 5	1
#	7773531000	VARN. TOP CABINET DISCOVER 5	1
#	7773532000	VARN.+SILK. BOTTOM CBNT DISCOVER 5	1

KNOB BUTTON

	22485303	D-RK KNOB BLK	1
#	K2478353	SMALL BLACK KNOB WITH WHITE INSERT	1
	K2478258	POWER SWITCH KNOB (BLACK)	1
	K2478306	BUTTON 16X10 WHITE	28
	K2478311	BUTTON 16X10 DARK GREY (DOWN)	1
	K2478312	BUTTON 16X10 DARK GREY (UP)	1
	K2478313	BUTTON 20X10 WHITE	2
#	K2478354	ELLIPTIC KNOB	8
#	K2478355	BUTTON 20X10 WHITE (PLAY/STOP)	1
#	K2478356	BUTTON 16X10 WHITE (1)	1
#	K2478357	BUTTON 16X10 WHITE (2)	1
#	K2478358	BUTTON 16X10 WHITE (3)	1
#	K2478359	BUTTON 16X10 WHITE (4)	1
#	K2478360	BUTTON 16X10 DARK GREY (PREV)	1
#	K2478361	BUTTON 16X10 DARK GREY (NEXT)	1
#	K2478362	BUTTON 12X8 DARK GREY (1)	1
#	K2478363	BUTTON 12X8 DARK GREY (2)	1
#	K2478364	BUTTON 12X8 DARK GREY (3)	1
#	K2478365	BUTTON 12X8 DARK GREY (4)	1
#	K2478366	BUTTON 12X8 DARK GREY (5)	1
#	K2478367	BUTTON 12X8 DARK GREY (6)	1
#	K2478368	BUTTON 12X8 DARK GREY (7)	1
#	K2478369	BUTTON 12X8 DARK GREY (8)	1
#	K2478370	BUTTON 16X10 DARK GREY (TOP)	1
#	K2478371	BUTTON 16X10 DARK GREY (BWD)	1
#	K2478372	BUTTON 16X10 DARK GREY (FWD)	1
#	K2478373	BUTTON 16X10 DARK GREY	2
	K2478374	BLACK KNOB+WHITE INSERT DISCOVER 5	5

SWITCH

Δ	01453245	AC PUSH SWITCH	SDDL1B2D TV5	SW1 on PRB	1
	J3169105	SWITCH	TP-1101A / EVQ-PAE 05 R	On LCB/ on FR/ on CCB/ on RCB	60
	13159180	SLIDE SWITCH	SSSF11209K	SW1 on AUD	1

JACK, SOCKET

	13449252	JACK SOCKET	YKB 21-5006	JK1,2,6 on AUD/JK1 on PHB	4
	13449125	JACK SOCKET	HLJ0520-01-110	JK3,4 on AUD/JK2,3 on MI	4
	13449126	JACK SOCKET	HLJ0520-01-010	JK4 on MI	1
	13429273	DIN SOCKET 3PZ	YKF51-5046	JK5 on MI	1
#	00562023	SOCKET RCA	YKC21-3017	JK9 on AUD	1

DISPLAY UNIT

Note:	01124234	LCD SHARP LM320191	1
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DISK DRIVE UNIT

Note:	J2409107	FLOPPY DISK DRIVER JU-257A 907P	1
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BENDER UNIT

Note:#	K3278110	PITCH BENDER (SW) + CABLE (24) + 1C	1
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KEYBOARD ASSY

	7626921001	61 KEY KEYBOARD TP/7BA 2ND	1
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NOTE: For details, refer to KEYBOARD PARTS LIST (Page 7)

POWER SUPPLY UNIT

Note:#	01785823	SWITCHING POWER SUPPLY A1DUL3B034	1
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PCB ASSY

#	7773514000	THERMISTOR PCB ASSY DISCOVER 5	1
	7700609000	CONTROL PCB ASSY F/ D-BEAM	1
	7711203000	INVERTER PCB ASSY	1
	7770105000	MIDI PCB ASSY VA-7/VA-5/VA-76	1
#	7773505000	RIGHT CONTROL PCB ASSY DISCOVER 5	1
#	7773504000	LEFT CONTROL PCB ASSY DISCOVER 5	1
#	7773511000	SMART MEDIA CARD PCB ASSY DISCOVER 5	1
#	7773501000	HARMONY PCB ASSY DISCOVER 5	1
#	7773506000	CENTRAL CONTROL PCB ASSY DISCOVER 5	1
#	7773508000	RIGHT POTENTIOMETERS PCB ASSY DISCOVERS	1
#	7773507000	LEFT POTENTIOMETERS PCB ASSY DISCOVER 5	1
#	7773509000	HEADPHONE PCB ASSY DISCOVER 5	1
#	7773510000	CONTROL FREEZE PCB ASSY DISCOVER 5	1
#	7773512000	PRIMARY PCB ASSY DISCOVER	1
#	7773503000	AUDIO PCB ASSY DISCOVER 5	1
#	7773513000	XPGS-4 MODULE PCB ASSY DISCOVER 5	1
	7624508000	CONTACT PCB 61 KEYS W/RUBBER	1
#	7770101001	LCD CONTROL PCB ASSY	1
#	7773502001	MAIN PCB ASSY (EMC) DISCOVER 5	1

IC

	00900901	INVERTER MODULE	CXA-M10AL	1
	15229718RI	I.C. 6N 137	PHOTO-COUPLER	1
#	K525818110	I.C. HD6437034 AE82F K525818110	IC6 on MI	1
#	02456634	I.C. HD6433060G25F	IC4 on MB	1
	J5159114	I.C.. 74 HC 14	IC4 on HA	1
	15169550RI	I.C. 74 HC138	IC3 on RCB	2
	J5159107	I.C. 74 HC574	IC6, 7 on RCB	1
	00232645	I.C. TC7W14F	CMOS	2
	J5259127	I.C. 74 HC 10	IC23, 123 on MB	2
#	J5259154	I.C. TC 74HC32AF	FLAT	1
	J5259102	I.C. 74 HC 273	IC29 on MB	1
	J5259128	I.C. 74 HC 393	IC118 on MB	1
	00343823	I.C. M60205-0601FP	FLAT CMOS	1
	00129278	I.C. SSC1080 FOB	IC40 on MB	1
	00788356	I.C. M38881M2-058FP	FLAT	1
	J5259120	I.C. HM5118160CJ-6	(CUSTOM IC)	1
	01126612	I.C. LC324260AJ60/AS4C256K16E050JCT	(CUSTOM IC)	1
#	J5259155	I.C. M11B416256A-35J	IC10 on MB	2
	01561945	I.C. FLASH MEM LH28F160S5T-70	IC12 on MB	1
	15199780	I.C. HD63266FP-64A	IC112 on MB	1
#	J5259156	I.C. S1D13506F00A	IC16 on MB	1
#	02231767	I.C. TC223C080AF-101	IC11 on MB	2
	15159113	I.C. 4051 BCP	FLAT	1
	15259884	I.C. TC7S08F	IC2, 3 on HA	1
	15259885	I.C. TC7S32F	CMOS	1
	15259887	I.C. TC7SU04F	MOS CMOS	1
	J5169105	I.C. TC7W08F	CMOS	2
	15249121	I.C. TC7W04F	FLAT CMOS	2
	J5259149	I.C. TC74VHC541FT	FLAT	1
#	J5259157	I.C. TC74VHCT245AFT	IC36, 102 on MB	2
#	01670789	I.C. TC74VHCT08AF	FLAT	1
#	J5259158	I.C. TC4053 BFN	IC116 on MB	1
#	J5259159	I.C. TC7WH241FU	IC117, 119 on MB	2
#	01893334	I.C. 67.7376M-PHCL SG-800 JC	FLAT	1
	15169334	I.C. 74 LS 05 N	IC120 on MB	1
	15219183	I.C. M51953 AL	IC113 on MB	1
	15189251	I.C. M5218 P	IC17 on AUD	1
	15189210	I.C. BA 5218F	IC6 on HA	1
	15189186	I.C. UPC 4570C	X1 on HA	1
	15289105	I.C. UPC 4570G	IC5 on MI	1
			(STANDING)	1
			(OP AMP)	2
			(OP AMP)	2
			(OP AMP)	3
			(OP AMP)	10

	15189189	I.C. UPC 4570HA VERT.	(OP.AMP.)	IC10 on DBM	1
	15199904	I.C. M51953 BL	(STANDING)	IC5 on AUD	1
	J5189102	I.C. TD 62593 AP	DIP	IC4 on RCB	1
	00458312	I.C. NJM 2360M	FLAT	IC1 on LCD	1
	01451578	I.C. AK4324-VF-E2	DAC	IC17 on HA/ IC108 on MB	2
	15289117	I.C. NJM 5532MD-TE1	OP AMP	IC14 on AUD/ IC107 on MB	2
#	01902045	I.C. AK5351-VF-E2	FLAT	IC16 on HA	1
#	15189261	I.C. BA 5218 AFP-600E	FLAT	IC20 on HA	1
#	15289123	I.C. M51953 AFP-600E	FLAT	IC9 on HA	1
△	J5199102	I.C. UA 7812 CV TO220		IC1 on PRB	1
△	J5199103	I.C. 7912F TO220		IC2 on PRB	1
	15199286	I.C. AN78L05M	FLAT (REGULAT.)	IC105 on MB	1
	J5259133	I.C. TA7805 AF		IC11 on HA/ IC104 on MB	2
#	02561601	I.C. TA48M033F(TE16L S)		IC21 on HA	1
#	01899790	I.C. UPC29L33T-E2	REGULATOR	IC115 on MB	1

TRANSISTOR

	15119155RI	TRANSISTOR	BC/560-B	Q5 on AUD/ Q9 on MI	2
	15119154RI	TRANSISTOR	BC/549-B	Q1, 3 on MI	2
	15129114	TRANSISTOR	2SC-1815GR	Q1, 2, 3 on LCD/ Q3 on DBM	4
	15119113	TRANSISTOR	2SA-1015 GR	Q4, 5 on LCD	2
	15319101	TRANSISTOR	2SC-2412K	Q4, 6, 7 on AUD	3
	15309101	TRANSISTOR	2SA-1037KR	Q7 on MB	1
	15129427	TRANSISTOR	2SC-2235Y	Q16 on MB	1
	15139124	TRANSISTOR	2SK-363 GR FET	Q3 on AUD	1
	15329516	TRANSISTOR	DTC-114EK	Q2, 4 on HA	2
	15119163	TRANSISTOR	RN2227	Q1, 2, 3, 4, 5, 6, 7 on RCB	7
	J5119104	TRANSISTOR	DTA-114 EK CHIP	Q3, 5, 6 on HA	3
	00898201	TRANSISTOR	RN2421 CHIP	Q1 on HA	1
	15329104	TRANSISTOR	2SK-368GR FET CHIP	Q8 on MB	1
	15319107	TRANSISTOR	2SC-4116GR	Q8 on HA/ Q9 on MB	2
#	J5119106	TRANSISTOR	2SC-4213-A (TE85L)	Q9, 10 on HA	2
#	J5119107	TRANSISTOR	2SA-1586-GR (TE85R)	Q7 on HA	1

DIODE

	15019159RI	DIODE	1N-4148	On LCB/ on FR/ on CCB/ on RCB/ on MI/ on RB and LB	187
	15119126	DIODE	1SS-133T REDUCED PITCH	D6, 7 on AUD	2
	15339105	DIODE	DAN-202K	D1 on AUD/D13, 14 on MB	3
	15339108	DIODE	DA-204K	D4 on AUD/D1, 2, 3, 4, 5, 7, 8, 16 on MB	9
	00893912	DIODE	SFPB-56 CHIP	D1 on LCD	1
	15339109	DIODE	DAP 202K CHIP	D12,15 on MB	2
	01121323	DIODE	DA-204U T-106 CHIP	DA1,2 on HA	2
#	15339119	DIODE	1SS-352 TPH3	D1,2 on HA	2
	01341623	DIODE LED	TLN 201	D216 on DBM	1
	01342578	PHOTO DIODE	TPS 708	D215 on DBM	1
	J5029111	LED DIODE	L-59SRSGW-CC	D19 on LCB/D34,35 on RCB	3
	J5029112	LED DIODE	5 L-53 SRD-D / RED	On LCB/ on FR/ on CCB/ on RCB/ D42 on RPOT	48
	J5029113	LED DIODE	5 L-53 SED / ORANGE	D27,34 on LCB/D43 on RCB	3
	J5019110	ZENER DIODE	BZX79C 7.5V	D8,9 on AUD	2
	J5019105	DIODE	1N 4002	D3 on AUD	1

RESISTOR

	J3919104	RESISTOR ARRAY	EXB-A10E-103-J	On MB	15
	J3919107	RESISTOR ARRAY	EXB-V8V-101-JV	RA12, 13, 45 on MB	3
	J3919108	RESISTOR ARRAY	EXB-V8V-103-JV	On MB	9
	J3919109	RESISTOR ARRAY	EXB-V8V-470-JV	On MB	10
	J3919110	RESISTOR ARRAY	EXB-V8V-R00-0V	RA48, 49 on MB	2
	J3919111	RESISTOR ARRAY	EXB-V8V-391-JV	RA34 on MB	1
#	01566190	CEA R-ARRAY	EXB-E10C-473-J	RA1, 2, 4, 5 on HA	4
#	J3919118	RESISTOR ARRAY	EXB-V8V-473-JV	RA3, 6, 7, 501 on HA	4
	13819132RI	UNINFL.RES.	100 OHM 0.6W 5%	R42, 51 on AUD	2
	13819131RI	UNINFL.RES.	10 OHM 0.6W 5%	R82 on DBM	1
	J3809155	UNINF. RESISTOR	2200 0.6W 5%	R20, 21 on LCD	2
	J3809153	UNINFL.RESISTOR	0.22 0.6W 5%	R1 on LCD	1
	J3809134	UNINFL.RES.	27 OHM 0.6W 5%	R6 on RCB	1
	J3809150	UNINFL.RES.	33 OHM 1/4W 5%	R116, 117 on AUD/ R177, 178 on MB	4
	J3809156	UNINFL. RES.	47 OHM 0.6W 5%	On RCB	10
	J3809157	THERMISTOR NTC	10K PH 5%	On TB	1

POTENTIOMETER

	13289186	ROT.POT.	10KB 11K1130	VR1 on LPOT/ VR4 on RPOT	2
	00459901	ROT. POT.	10KB 14K 1230	VR5 on LPOT	1
	13289185	ROT. POT.	10KB 11K1130	VR2, 3, 5 on RPOT	3
	13299206	TRIMMER POT.	EVND 8AA03B24	VR1 on MB	1
	J3219101	ROT.POT.	5KB 90° - MONO	VR2 on AUD	1

CAPACITOR

15359774	POLYEST.COND. 0805	680P 5%	C40 on AUD	1
J5369110	CONDENSER 0603	150P NP0 5%	C231, 235 on MB	2
J3629144	ELCTRL.COND.	470UF 16V AX	C12 on RCB	1
13639154	ELECTRL.COND.-V	1000UF 16V	C48 on DBM	1
J3629103	ELECTRL.COND.	100U 25V P5	On AUD/ on MI/ on PRB/ on MB/ 2 on PRB	10
J3629147	ELECTR. COND.	220U 25V P.5	C209, 210 on AUD/ C245, 246 on MB	4
J3629135	ELECTRL. COND.	470U 35V P5	C2 on INV	1
J3629132	ELECTRL.COND.	100U 50V P5	C2, 4 on LCD	2
J3629105	ELECTRL.COND.	47U 50V P5	C199 on AUD/ C1, 3, 7, 8 on LCD	5
J5369103	ELECTR. COND. RV2	100U 16V (SMD)	C208 on AUD/C33,57,61,65,206,207 on HA/ C71,216,232,236 on MB	11
J5369104	ELECTR. COND. RV2	10U 16V (SMD)	C198,204,205,211,212,213,215 on AUD/ on HA/ C2,38,50,219,222,227,228,276,286 on MB	50
J5369101	ELECTR. COND. RV2	22U 16V (SMD)	C38, 202 on AUD	2
J5369107	ELECTR. COND. RV	330U 16V (SMD)	C63 on HA	1
J5369105	ELECTR. COND. RV3	33U 16V (SMD)	On MB	15
J5369102	ELECTR.COND. RV2	47U 16V SMD	C203, 214, 216 on AUD	3
# J5369111	ELECTR. COND. RV2	10U 25V (SMD)	C93 on HA	1
J5369106	ELECTR. COND. RV2	1U 50V (SMD)	C201 on AUD	1
J3629149	ELECTR.COND.	100U 16V H.7	C17, 19 on LPOT	2
J3629143	ELECTR. COND.	10U 16V H.7	C44, 45 on DBM	2
J3629137	ELECTR. COND.	33U 16V H.7	C3, 8, 12 on LPOT/ C2, 4, 11 on RCB/ C4 on RPOT	7
J3629150	ELECTR.COND.	47U 16V H.7	C9 on RCB	1
J3629142	ELECTR. COND.	1U 63V H.7	C43 on DBM	1
13649103J0	UNPOL.COND.	10U 50 P5	C109, 113, 117, 118 on AUD	4
00239412	POLYEST.COND.	AMZV0050J122 0200	C53, 61 on AUD	2
00239390	POLYEST.COND.	AMZV0050J561 0200	C56, 64 on AUD	2

INDUCTOR, COIL, FILTER

<<EMI>>	22448240	NOISE SUP.	BL02RN2-R62	L1, 2, 3 on PHB	3
<<EMI>>	12449370	NOISE SUP.	SBT-0160W	On AUD/ on MI	10
<<EMI>>	12449326	NOISE SUP.	SBT-0460	L6,12 on MI	2
<<EMI>>	13529187	NOISE SUP.	ELKTR391CA	On LPOT/ on RCB	10
<<EMI>>	12449358	NOISE SUP.	FL5R200N PNT	L17 on AUD	1
<<EMI>>	J2399104	CHIP NOISE SUP.	EXCCL4532U1	On AUD/ on MB	18
<<EMI>>	00452034	CHIP NOISE SUP.	BK2125HM102	On MB	10
<<EMI>>	00907856	NOISE SUP.	BLM21A601SPT CHIP	L3, 5, 6 on AUD	3
<<EMI>>	12449449	INDUCTOR	RCH-875-151K	L1 on LCD	1
<<EMI>>	01340834	FERRITE BEAD	EXCML 20A390	L1, 2, 3 on HA	3
<<EMI>>	00903167	NOISE SUP.	N2012Z601T02 CHIP	L52, 58, 59 on MB	3
<<EMI>>#	J2399109	NOISE SUP.	ELKE471FA CHIP	FL2, 4, 5 on MB	3

CRYSTAL, RESONATOR

00894023	X-TAL	20 MHZ	MA-406	X1 on MB	1
00894034	X-TAL	16 MHZ	MA-406	X2 on HA/ X2 on MB	2
# 02566612	MG5100SA	14.31818MHZ	OSCILLATOR	IC101 on MB	1

RELAY

12439224RI	RELAY	DS2YS-12V	RL1 on AUD	1
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ENCODER

01013223	ENCODER	EVQ-VEM F01-24B	ENC1 on RCB	1
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CONNECTOR

13419677RI	16P FEM. CONNECTOR AMP 1.27	CN15, 16, 25 on MB/ CN1 on LB/ CN2 on RB	5
J3429122	14P FEM. CONNECTOR AMP 1.27	CN1, 2 on LCB/ CN8, 9 on RCB	4
01454112	12P CONN. 006216012100808	CN1 on LCD	1
J3429125	FEMALE CONNECTOR 52043-0410	CN7 on LCD	1
J3429127	28V FEMALE CONN. 1.25 90° FE-ST-VK-N	CN1 on SM/ CN31 on MB	2
# J3429128	SMART CARD CONNECTOR	CN2 on SM	1
13419676RI	8P MALE CONN. P/2.5 MOLEX	CN6 on MB/ CN2 on MI	2
13369688RI	4P MALE CONN. P 2.5 M	CN4, 5 on PRB/ CN1 on INV	3
J3439103	6P MALE CONNECTOR P 2.5 M	CN4 on AUD	1
J3439106	9P MALE CONNECTOR P 2.5 M	CN9 on AUD/ CN9, 10 on MB/ CN1 on MI	4
J3439113	7P MALE CONNECTOR P 2.5 M	CN10 on AUD/ CN3 on PRB	2
J3439117	6P MALE CONN. 90° P. 2.5	On PHB	1
J3439120	4P MALE CONN. P.2 M	CN16 on AUD/ CN2 on HA/ CN29 on MB	3
J3439121	6P MALE CONN. P.2 M	CN12 on AUD	1
J3439122	8P MALE CONNECTOR P.2 M	CN7 on AUD/ CN7 on MB	2
J3439125	5P MALE CONNECTOR P.2 M	CN14 on AUD/ CN5 on HA	2
J3439151	9P MALE CONNECTOR P.2 M	CN17 on AUD/ CN1 on HA	2
J3439141	10P MALE CONNECTOR P.2 M	CN11 on AUD/ CN4 on MB	2
J3439143	34P MALE CONN. P. 1.27 M	CN17 on MB	1
J3439123	6P MALE CONN. P. 2 M 90°	CN5 on LPOT/ CN1 on FR/ CN7 on RCB/ CN1 on PHB	4

J3439124	10P MALE CONN. P. 2 M 90°	CN4 on LPOT/ CN6 on RCB	2
J3439126	12P MALE CONN. P.2 M	CN1 on MB	1
J3439142	3P MALE CONNECTOR P/2.5 M	CN18 on AUD/ CN30 on MB	2
J3439146	11P MALE CONNECTOR P.2 M	CN3 on MB	1
J3429120	3P MALE CONNECTOR P.2 M	CN13,15 on AUD/ CN3 on HA/ CN27 on MB/ CN5 on LCD/ CN10 on RPOT	6
J3439148	7P MALE CONNECTOR P.2 M	CN1 on AUD/ CN21 on MB/ CN15 on DBM	3
13369898	2P MALE CONNECTOR B2P3-VH	CN1 on PRB	1
13369592	7P MALE CONNECTOR P.2.5 JST	CN2 on PRB	1
J3439162	13P MALE CONN. P.2 M	CN23 on MB/ CN2 on LCD	2
13369568	B3B-PH-K-S CONNECTOR	CN4 on LCD/ CN3 on AUD	2
13369503	B7B-PH-K-S CONNECTOR	CN24 on MB/ CN6 on LCD	2
01349645	2P MALE CONNECTOR S2(4-2.3)B-XH-A	CN2 on INV	1
J3439171	4P MALE CONNECTOR 90° P.2 M	CN4 on RCB	1
J3439172	8P MALE CONNECTOR 90°P.2 M	CN11 on LPOT/ CN2 on RCB	2
J3439182	5P MALE CONNECTOR 90°P.2 M	CN3 on RCB/ CN2 on RPOT	2
J3439173	7P MALE CONNECTOR 90°P.2 M	CN1 on RPOT	1
J3439175	11P MALE CONNECTOR 90° P.2 M	CN1 on RCB	1
J3439176	12P MALE CONNECTOR 90°P.2 M	CN5 on RCB	1
J3439183	3P MALE CONNECTOR 90°P.2 M	CN10 on RPOT	1

WIRING, CABLE

# K3468156	4P CABLE (90) 2C D/D	For details refer to "WIRING DIAGRAM" on page 6	1
# K3468268	3P CABLE (20) -2C P. 2.5 D/R	" " " "	1
# K3468269	7P CABLE (50) -2C P.2.5 D/R	" " " "	1
K3468171	9P CABLE (22) -2C D/R	" " " "	1
# K3468270	9P CABLE (12) -2C P.2.5 D/R	" " " "	1
K3468166	16P FLAT CABLE (44) -2C	" " " "	1
K3468186	16P FLAT CABLE (36) -2C	" " " "	1
K3468146	34P FLAT CABLE (26) -2C	" " " "	1
# K3468271	28P MYLAR CABLE (40) 1.25B SMCD28X350	" " " "	1
7697220001	8P CABLE (32) -2C	" " " "	1
# 7773515000	WIRING ASSY (LCD/MAIN/AUDIO)	" " " "	1
# 7773516000	WIRING ASSY (POT/AUD/MB/CNTR./HEAD/D.B)	" " " "	1
# 7773517000	WIRING ASSY (POT/AUDIO/MB/R.CONTROL)	" " " "	1
7699407000	5P CBL ASSY (28) -2C P.2	" " " "	1
7770306000	5P CABLE (8) -2C P.2 D/R VA-5	" " " "	1
7771006000	3 CABLE ASSY 2N/1R (130) -2C 4P D/D	" " " "	1
7773406000	4P CABLE ASSY (20) -2C P.2 D/R	" " " "	1
# 7773518000	2P AWG18 CABLE ASSY 1N/1B (8) 2C	" " " "	1
# 7773519000	1P COAXIAL CABLE (20) 2C P.2 D/R	" " " "	1
7699517000	6P CABLE ASSY (24) -2C P.2	" " " "	1
# 7773520000	7P CABLE ASSY (14) -2C P.2.5 JST/AWG22	" " " "	1
# 7773521000	5+1P COAXIAL CABLE ASSY (20) 2C P.2 D/R	" " " "	1
# 7773522000	9P CABLE ASSY (14) -2C P.2 D/R	" " " "	1

AC INLET

△ J3449103	UNIVERSAL AC INLET ON PCB	On PRB	1
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SCREW

J2289101	SELF TAP.SCREW	2.9X 6 TC TC	2
J2289116	SELF TAP.SCREW	3.5X13 TC TC	19
J2289213	SELF TAP.SCREW	3.9X16 TC TC	2
J2289126	SELF TAP.SCREW	2.9X 8 TCTCPRBZ	2
J2289125	SCREW	2.9X10 TC TC PR TROP	72
J2289130	SCREW	2.9X13 TC TC PR TROP	21
# J2289254	SCREW	2.9X10 TC TC PR BRUN	18
J2289160	SELF TAP.SCREW	2.9X13 TCTCPR BR	5
J2289120	SELFTAP.SCREW	2.9X13 TC TSP PR	2
J2289107	SELF LOCK.SCREW	M3X6 TC TC H.6	4
J2289108	SELF LOCK.SCREW	M3X10 TCTC H.6	16
J2289111	SELF LOCK.SCREW	M3X4 TCTC H. 6	4
J2289193	SELF LOCK.SCREW	M3X6 TC TC H.6	59
# J2289255	SCREW TORX	2.9X16 PR BRON.	2

PACKING

# K2638293	LDPE CENTRAL PROTECTION		2
K2678119	CARTENE ENVELOPE HD CM.170X56		1
K2678102	POLYETH. ENVELOPE 25X45		1
K2678106	POLYETH.ENVELOPE 40X55		1
# K2618289	OUTER CARTON DISCOVER 5		1

MISCELLANEOUS

J2289113	NUT 3MA H.3		2
J2289222	NUT 10 MA TH.8 UNI 5588		2
J2139101	FLAT WASHER I/D 4		4

	J2139106	PLASTIC WASHER TH.2 E/D 13		5
#	K2158111	METAL NUT FOR MUSIC REST DISCOVER 5		2
	K2168114	LED SPACER H.1.8 E.D.9		3
	00453223	LED SPACER H. 7 E.D. 5		2
	K2168117	LED SPACER H.1.5 D.E.5.5		51
	J2359105	PRESSURE RUBBER SFF-018		4
	02126390	TOUCH SCREEN SENSOR EMU601A2MA16		1
#	K2268176	BLACK ANTI DUSTING PL30N LCD		1
#	K2268177	VIBRATION DUMPER COVER LCD HLC/30		1
	K2248127	PROTECTING BOX COVER F/INVERTER		1
	K2248128	PROTECTING BOX BASE F/INVERTER		1
	01343089	D-BEAM CONTROLLER ESCT BLK		1
	K2238127	DIFFUSER FOR LED VA-7		8
	K2248160	AC SOCKET HOLDER		1
	K253810302	FUSE WARNING LABEL		1
#	K2268174	R. VIBRATION DUMPER HLC/30 (GREY)		1
#	K2268175	L. VIBRATION DUMPER HLC/30 (GREY)		1

ACCESSORIES

△	J3439155	CABLE CEE XVIIIG-H05VVF2X1-C17W	only for 230V	1
△	J3439167	CABLE SAA/2-H05VV5 2X1-C17W	only for 240VA	1
△	13499152RI	CABLE BS/13/H05VV-F3G0 75-V	only for 230VE	1
△	J3439128	CABLE 498/3 SJT 2X18 AWG-C17	only for 117V	1
#	K6018504	QUICK REF. OWNER'S MANUAL DISCOVER 5		1
#	K6018505	OWNER'S MANUAL (TONE/DRUM) DISCOVER 5		1
#	K6018503	OWNER'S MANUAL 2ND. DISCOVER 5		1
#	7773533000	SMART CARD (132 SONGS) DISCOVER 5		1

HOW TO SAVE - HOW TO VERSION UP

Since Discover5 has a flash memory for the System Program registration, you can update it by floppy disk.

Items required:

Software Update Disk Discover5 (code: 7773536000)
Test Update Disk Discover5 (code: 7773537000)

ATTENTION:

The **Test Program** has not been installed in this instrument (otherwise it would have occupied too much memory).

If you want to install it, you have to load the test program from the Discover5 Test program disk you've been provided with.

WARNING:

Loading the Test Program causes the System Program of your Discover5 to be lost.

Therefore every time you want to carry out some checks in your Discover5 and consequently have to install the Test Program, **we strongly recommend** you to make a back-up copy of your Discover5 current System Program, according to the procedure described in the paragraph "HOW TO SAVE THE SOFTWARE ON A FLOPPY DISK"

Of course, once you've completed your tests, you'll have to re-load the System Program (that has been cancelled when installing the Test Program), following the procedure described in the paragraph "HOW TO UPDATE THE SOFTWARE AND/OR TO LOAD THE TEST PROGRAM FROM FLOPPY DISK"

HOW TO VISUALIZE THE "SYSTEM PROGRAM" VERSION

Turn the instrument on while keeping the CHAIN, TOP and FADE OUT/IN buttons pressed.
The display visualizes:

```

**** SYSTEM MENU ****

1 . DISPLAY VERSION
2 . LOAD SYSTEM
3 . SAVE SYSTEM
  
```

You can check the instrument software version, pressing the TONE/ USER PROGRAM 1 button.
After a few seconds the display shows:

```

Discover5

Ver. XX.XX
Day  Month  Day no.  Time  Year
CPU Bios Version: Ver. XX.XX
Flash : xxxxxxxx Size : xxxxxxxx byte
  
```

To exit from this screen display, turn the instrument off.

HOW TO SAVE THE SOFTWARE ON A FLOPPY DISK

Turn the power on by keeping the buttons CHAIN, TOP and FADE OUT/IN pressed. The display visualizes:

```

**** SYSTEM MENU ****

1 : DISPLAY VERSION
2 : LOAD SYSTEM
3 : SAVE SYSTEM
  
```

Insert a formatted (by the instrument) HD floppy disk into the floppy disk drive.
Pressing the button TONE/USER PROGRAM 3, you enter the software saving procedure.
The display visualizes:

```

**** SAVE SYSTEM ****

1: CONTINUE
2: EXIT
  
```

Pressing the button TONE/USER PROGRAM 2 you exit the saving procedure and the instrument goes back to the initial display.

Pressing the button TONE/USER PROGRAM 1 you go on saving the software on disk. The display visualizes:

```

**** SAVE SYSTEM ****

Checksum Calculation ....DONE

System saving ....XXXXXXX

ATTENTION !! Do not turn instrument off
  
```

When the display requires it, insert the second floppy disk.
When the saving operation is completed, the display visualizes:

```

**** SAVE SYSTEM ****

Checksum Calculation ....      DONE

System saving ....            COMPLETED

<< TURN INSTRUMENT ON AGAIN >>
  
```

The correct saving of the software is confirmed by the writing: SYSTEM SAVING COMPLETED.

Turn the power off and on again to go back to the initial program.

HOW TO UPDATE THE SOFTWARE AND/OR TO LOAD THE TEST PROGRAM FROM FLOPPY DISK

Insert the floppy disk containing either the Software program **Software Update Disk Discover5 (code: 7773536000)** or the Test program **Test Update Disk Discover5 (code: 7773537000)** into the FDD.

Turn the instrument on, keeping the buttons CHAIN, TOP and FADE OUT/IN pressed. The display visualizes:

```

**** SYSTEM MENU ****
1 . DISPLAY VERSION
2 . LOAD SYSTEM
3 . SAVE SYSTEM
  
```

Press the button TONE/ USER PROGRAM 2. The display visualizes:

```

**** LOAD SYSTEM ****
1 . CONTINUE
2 . EXIT
  
```

Press the button TONE/ USER PROGRAM 1 to load the flash ROM. The display visualizes:

```

**** LOAD SYSTEM ****
Program      loading  ....  -----
Program      checking ....  -----
Flash        updating ....  -----

<< TURN INSTRUMENT ON AGAIN >>
  
```

If the loading has been completed successfully, the writing COMPLETED appears on the display. In case the loading fails, press the button TONE/ USER PROGRAM 2 to go back to the main menu. Turn the power off and then turn it on again after a few seconds.

Test Mode

Turn the power on while keeping pressed the button ON/OFF in the D. BEAM CONTROLLER section. The display visualizes the first page of the test main menu.

Test Main Menu

```

**** TEST MENU ( 1 / 2 ) ****
1. SWITCH & LED
2. ADC & ENCODER
3. LCD
4. KEYSKAN
5. TOUCH SCREEN
6. SMARTMEDIA
7. HARMONIZER
8. MIDI
Press GROUP to scroll menu
  
```

Pressing the button GROUP, the display visualizes the second page of the test main menu.

```

**** TEST MENU ( 2 / 2 ) ****
1. FLASH
2. VIDEO OUTPUT
3. AUDIO TEST
4. DISK TEST
5.
6.
7.
8.
Press GROUP to scroll menu
  
```

Turn the power off to exit test mode.

FIRST GROUP

1 SWITCH AND LED CHECK

Pressing the button TONE/ USER PROGRAM1 the display visualizes:

```

***** SWITCH & LED TEST *****
XXXX XX XXX
  
```

Every time you press a button, you hear a sound when you release it. On the upper left side of the display, the name of the button pressed and the one of the next button to press are visualized. At the end of the test, the display visualizes the writing COMPLETED. Press Exit to go back to the main menu.

Note: If the Switch test has been already carried out, you can exit by pressing the buttons HARMONIZER and EXIT at the same time.

2 ADC AND ENCODER CHECK

Pressing the button TONE/ USER PROGRAM 2, the display visualizes:

```

*****ADC & ENCODER TEST*****
BENDER ..... 0 / +127 - 127
MODULATION ..... 0 - 127
BALANCE ..... - 127 0 + 127
VOICE ..... 0 + 127
HARMONY ..... 0 + 127
EFFECTS ..... 0 - 60 +127
DBEAM ..... 0 - 127
SUSTAIN FOOTSWITCH..... XXX
FOOTSWITCH ..... XXX
FOOTPEDAL ..... 0 - 127
ENCODER ..... 0 - 255

Press EXIT to Skip.
  
```

You can carry out all the test in sequence, as follows:

- ENCODER check: turning the encoder leftwards, its value increases up to 255. Turning it rightwards, its value decreases to 0.
- BENDER, MODULATION, BALANCE, VOICE, HARMONY, EFFECTS, FOOTPEDAL checks: the display visualizes the values of all these functions. These values go from 0 to +/-127.
- XXX indicates the ON/OFF status of the FOOT SWITCH and SUSTAIN FOOT SWITCH pedals.
- D-BEAM check: make sure that moving your hand vertically above the D-Beam, the value shown on the display changes from 0 to 127. When your hand is not on the D-Beam the value must be 0.

Press EXIT to skip each test.

3 LCD CHECK

Press the button TONE/ USER PROGRAM 3. The display visualizes:

```
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01234567890123456789012345678
01234567890123456789012345678
```

Press EXIT to skip.

4 KEYSKAN CHECK

Pressing the button TONE/USER PROGRAM 4, the display visualizes:

```
**** KEY SCAN TEST ****

Note num : XX
Velocity : XXX

Press EXIT to Skip.
```

Every time you press a key, you hear a DYNO RHODES piano sound. The display visualizes the number of the key and the value of its dynamic.

Press EXIT to skip.

5 TOUCH SCREEN CHECK

Pressing the button TONE/USER PROGRAM 5, the display visualizes:

```
**** TOUCH SCREEN TEST ****

1 : Calibration
2 : Touch X, Y

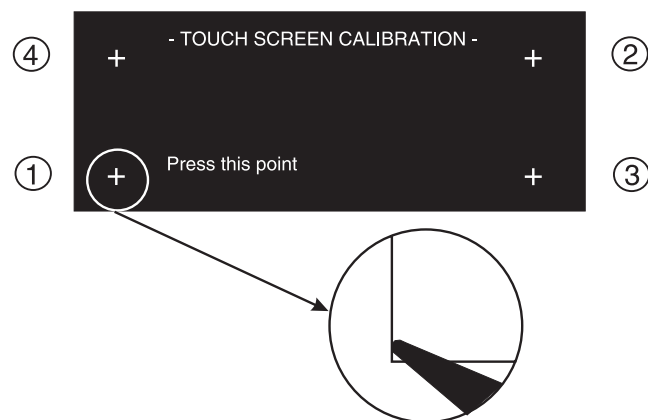
Press EXIT to Skip
```

Pressing the button TONE/USER PROGRAM 1 you enter the CALIBRATION test;
Pressing the button TONE/USER PROGRAM 2 you enter in the display darker area test.

Press EXIT to skip.

Touch Screen calibration

Pressing the button TONE/USER PROGRAM 1, the display visualizes:



Follow the instructions below in order to calibrate the Touch Screen.
Touch with a pen the corner of the Touch Screen on the point "+", following the order indicated in the picture above. When the instrument recognizes the touch, the symbol "+" turns into "O".
In order to help you following the correct order, the writing PRESS THIS POINT appears. During the calibration, don't touch any other point except those indicated.
After touching the four points, the calibration step is ended and the display shows one of the following writings.

```
Calibration OK
```

In case the calibration operation is successful.

```
NG. Calibration
```

In case the calibration operation fails.

In case of failure, the operation must be repeated from the beginning.

Press EXIT to go on to the following test.

Touch Screen X - Y Test

Pressing the button TONE/USER PROGRAM 2, the display visualizes:

```
Touch X - 1
Touch Y - 1

Press Exit to Skip.
```

Go with the pen on the darker area of the display horizontally from the right to the left hand and check that the X value on the display goes from 0 to 320. Then go from the top to the bottom and check that the Y value goes from 0 to 240. Highest and lowest values can vary of +/- 5%.

Press EXIT to leave this test and go back to the main menu.

6 SMART MEDIA CHECK

Pressing the button TONE/USER PROGRAM 6, the display visualizes:

```
**** SMARTMEDIA TEST ****

Insert a PROTECTED card, please....
Press EXIT to Skip.
```

Insert the protected Smart Media card, the display visualizes:

```
**** SMARTMEDIA TEST ****

Remove the card, please....
Press EXIT to Skip.
```

Take out the protected Smart Media card, the display visualizes:

```
**** SMARTMEDIA TEST ****

Insert an UNPROTECTED card, please....
Press EXIT to Skip.
```

Insert the protected Smart Media card, the display visualizes:

```

**** SMARTMEDIA TEST ****
Please Wait....
Press EXIT to Skip.
  
```

Then, the display visualizes:

```

**** SMARTMEDIA TEST ****
Remove the card , please....
Press EXIT to Skip.
  
```

After a few seconds, in case the test is successful, the display visualizes:

```

**** SMARTMEDIA TEST ****
OK !!!
Press EXIT to Skip.
  
```

Press EXIT to skip and go back to the main menu.

7 HARMONIZER CHECK

Pressing the button TONE/USER PROGRAM 7, the display visualizes:

```

**** HARMONIZER TEST ****
Harmony Board Ver. 1.0
Press EXIT to Skip.
  
```

Make sure that the display visualizes version 1.0.

Press EXIT to go back to the main menu.

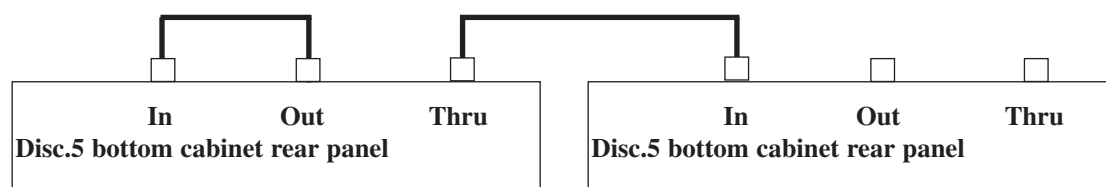
8 MIDI (& THRU) CHECK

Pressing the button TONE/USER PROGRAM 8, the display visualizes:

```

**** MIDI TEST ****
Connect MIDI OUT --> IN
Press EXIT to Skip.
  
```

How to connect the cables to check the MIDI socket



IN/OUT Connections

THRU/IN Connections

While you are in MIDI Check environment, connect the midi cables as shown above. Make sure that the display visualizes the writing OK or ERROR.

Leave the In/Out MIDI cable inserted and connect an external instrument through the Midi Thru socket. If the Midi check is OK, you hear some intermittent sound coming from the external instrument. Press EXIT to go back to the main menu.

SECOND GROUP

Pressing the button GROUP, the display visualizes the second group of tests:

```

**** TEST MENU ( 2 / 2 ) ****
1. FLASH
2. VIDEO OUTPUT
3. AUDIO TEST
4. DISK TEST
5.
6.
7.
8.

Press GROUP to scroll menu
  
```

1 FLASH CHECK

Pressing the button TONE/USER PROGRAM 1, the display visualizes:

```

**** FLASH TEST ****

****OK****
Press EXIT to Skip.
  
```

The display shows:

- OK in case the test is successful;
- ERROR in case the test fails.

Press EXIT to skip.

2 VIDEO OUTPUT CHECK

Before carrying out this check, connect the Discover5 VIDEO OUTPUT to the AV socket of a TV, by means of a shielded cable.

Pressing the button TONE/USER PROGRAM 2, the display visualizes:

```

**** VIDEO OUTPUT TEST ****
1. PAL
2. NTSC
Press EXIT to Skip.
  
```

Make sure that the display on the TV is well defined.

3 AUDIO CHECK

Pressing the button TONE/USER PROGRAM 3, the display visualizes:

```

**** AUDIO TEST ****
1 SINE WAVE 100 Hz
2 SINE WAVE 1000 Hz
3 SINE WAVE 5000 Hz
4 SINE WAVES OFF
Press EXIT to exit
  
```




Put the VOLUME potentiometer at MAX.

Pressing the button TONE/USER PROGRAM 1, you hear a sinu wave sound of 100 Hz on the Right and Left outputs.

Pressing the button TONE/USER PROGRAM 2, you hear a sinu wave sound of 1000 Hz on the Right and Left outputs.

Pressing the button TONE/USER PROGRAM 3, you hear a sinu wave sound of 5000 Hz on the Right and Left outputs.

Note: The measurements on the R/L outputs have to be carried out with the jacks inserted into the outputs. The sounds coming out from the R/L Mono channels are mixed and can be adjusted by the VOLUME potentiometer. A sinu wave sound comes out of the RIGHT and LEFT channels outputs. Its frequency and amplitude are measured in VpPROGRAM by an oscilloscope and should have the values shown below (possible variation: +/- 5%).

Button	Wave shape	Frequency (Hz)	Output	Volt (mVpp)
1 SINE WAVE		100 Hz	R/L	Min 690 Max 735
2 SINE WAVE		1000 Hz	R/L	Min 760 Max 840
3 SINE WAVE		5000 Hz	R/L	Min 150 Max 170

Press EXIT to skip.

4 DISK CHECK

Pressing the button TONE/USER PROGRAM 4, the display visualizes:

```

**** FDC TEST ****
Insert DISK, please.....
Press EXIT to Skip.
    
```

Insert a formatted disk into the driver in order to carry out this test: After a few seconds, the display visualizes:

```

**** FDC TEST ****
** DISK TEST OK . **
EJECT DISK AND PRESS EXIT
Press EXIT to Skip.
    
```

If you don't insert a protected disk, the display visualizes:
****WRITE PROTECTED MEDIA ERROR** EJECT DISK AND PRESS EXIT.**

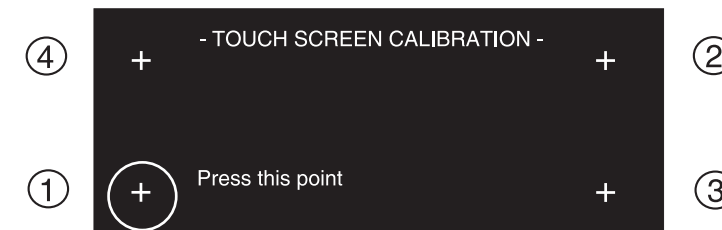
If the test fails, the display visualizes one of the following writings:
 READ ERROR, WRITE ERROR, VERIFYING.

CAUTION: Use a HD type formatted disk only.

Press EXIT to skip.

HOW TO ENTER TOUCH SCREEN CALIBRATION BY SOFTWARE

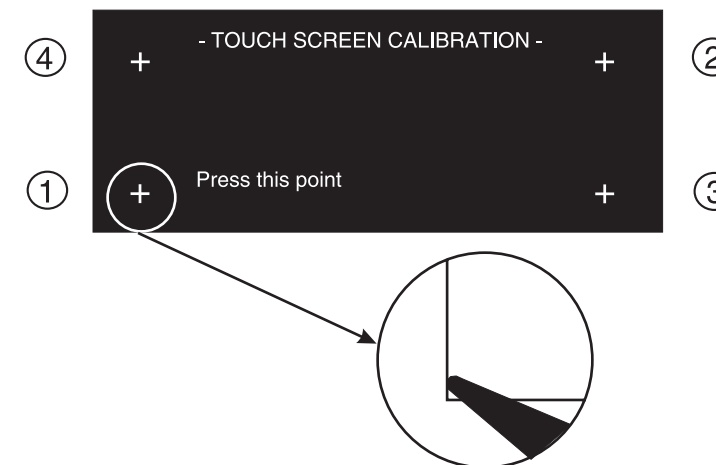
Turn the power on by keeping pressed the button VERSE in the MARK JUMP section. The display visualizes:



Note: Once you've entered the calibration check, you cannot exit until the operation is completed.

HOW TO CALIBRATE THE TOUCH SCREEN BY SOFTWARE

Calibrate the TOUCH SCREEN position by using a pen. Touch with a pen the corner of the Touch Screen on the point "+", following the order indicated in the picture above. When the instrument recognizes the touch, the symbol "+" turns into "O".



In order to help you follow the correct order, the writing PRESS THIS POINT appears. During the calibration, don't touch any other point except those indicated. After touching the four points indicated, the calibration step is ended and the display shows one of the following writings.

```

          Calibration OK
    
```

In case the calibration operation is successful, the instrument resets and go back to the normal working.

```

          NG. Calibration
    
```

In case the calibration operation fails, you have to repeat the calibration operation again.

HOW TO CALIBRATE THE PITCH BENDER BY SOFTWARE

Turn the power on by keeping the button TOP pressed. After a few seconds, the display visualizes:

```
----- PITCH BENDER CALIBRATION -----  
                CENTER POSITION  
    Then Press Fade OUT/IN Key
```

Place the Bender lever at half-stroke and press the button FADE OUT/ IN. The display visualizes:

```
----- PITCH BENDER CALIBRATION -----  
                ALL LEFT POSITION  
    Then Press Fade OUT/IN Key
```

Place the Bender lever to the left and press the button FADE OUT/IN. The display visualizes:

```
----- PITCH BENDER CALIBRATION -----  
                ALL RIGHT POSITION  
    Then Press Fade OUT/IN Key
```

Place the Bender lever to the right and press the button FADE OUT/IN.

If the calibration is successful, the instrument exit from test mode, resets and go back to the initial display.

HOW TO INITIALIZE THE INTERNAL SETTINGS BY SOFTWARE

Turn the power on by keeping the button COVER pressed. After a few seconds, the display visualizes:

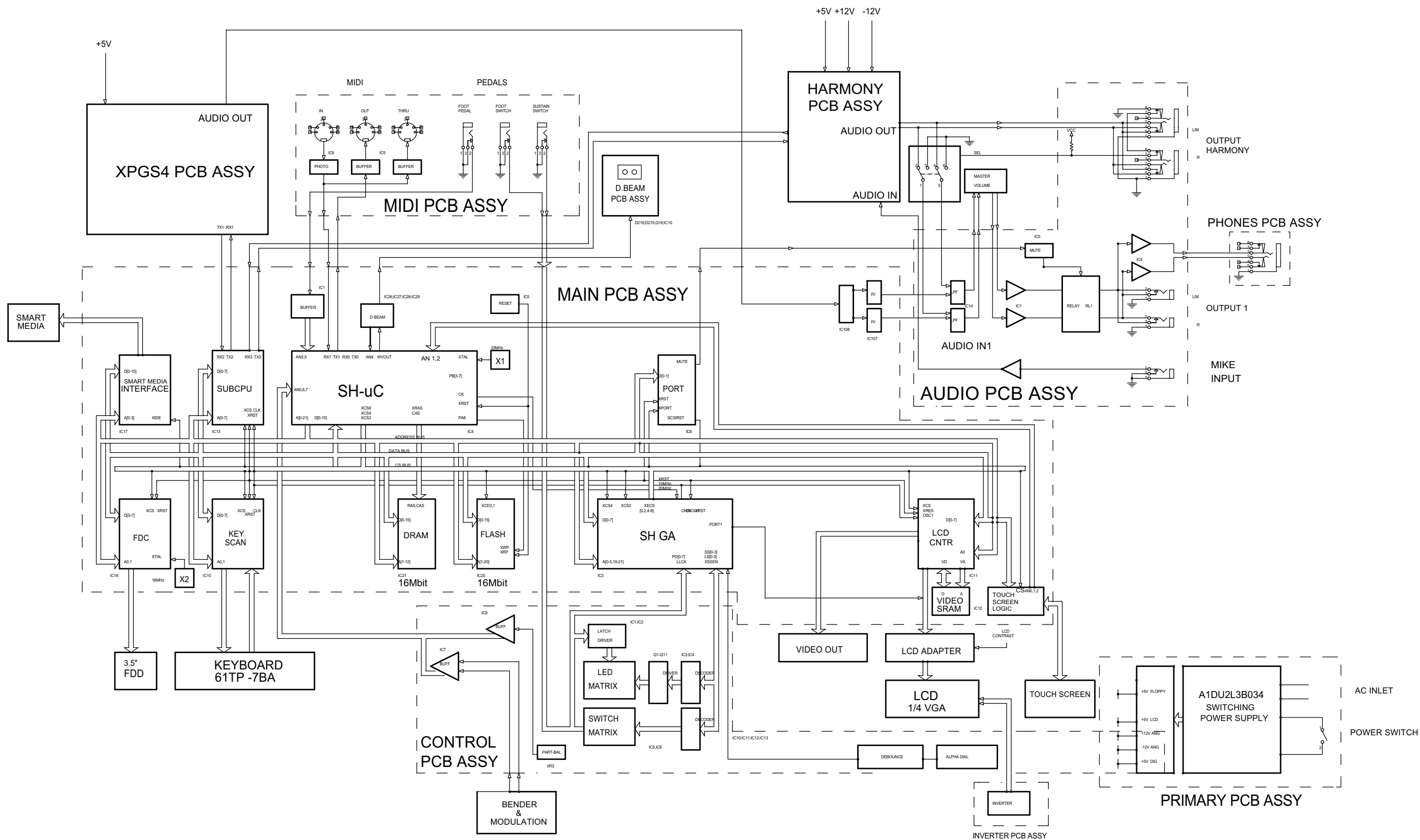
```
---- FLASH PARAMETER LOAD ----  
                WAIT PLEASE
```

If the initialization is successful, the instrument exits from test mode, resets and go back to the initial display.

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BLOCK DIAGRAM

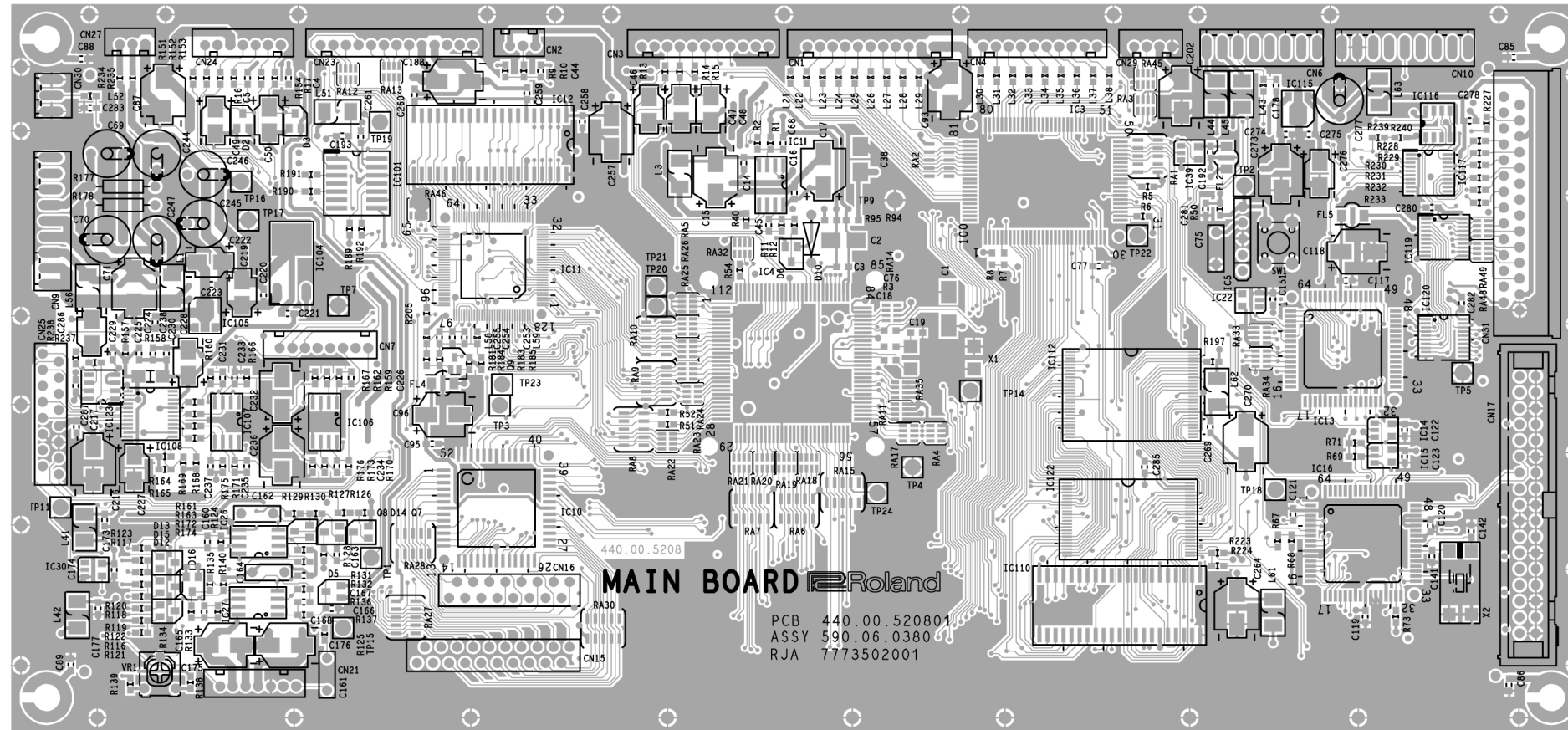


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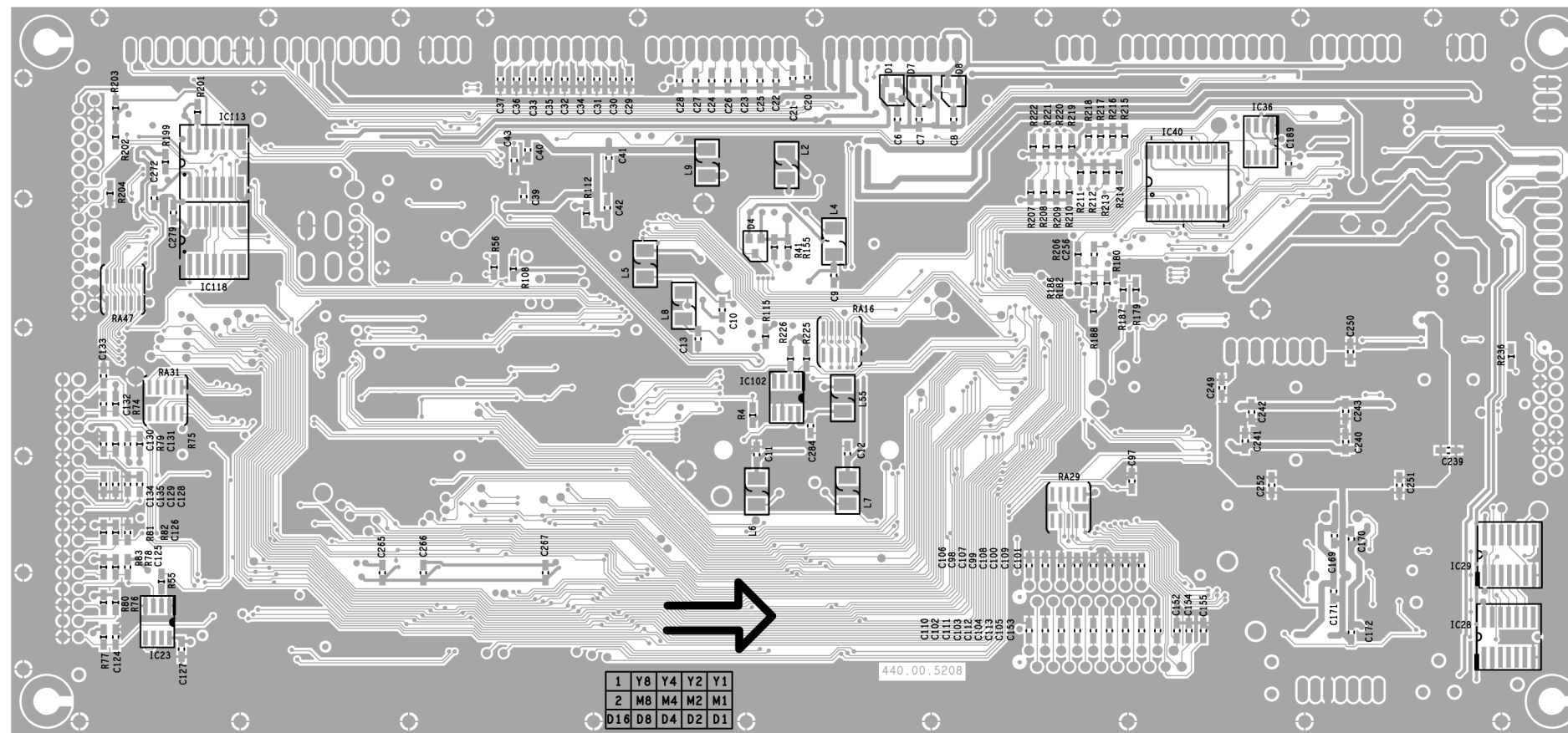
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MAIN PCB ASSY

ASSY 7773502001



View from component side

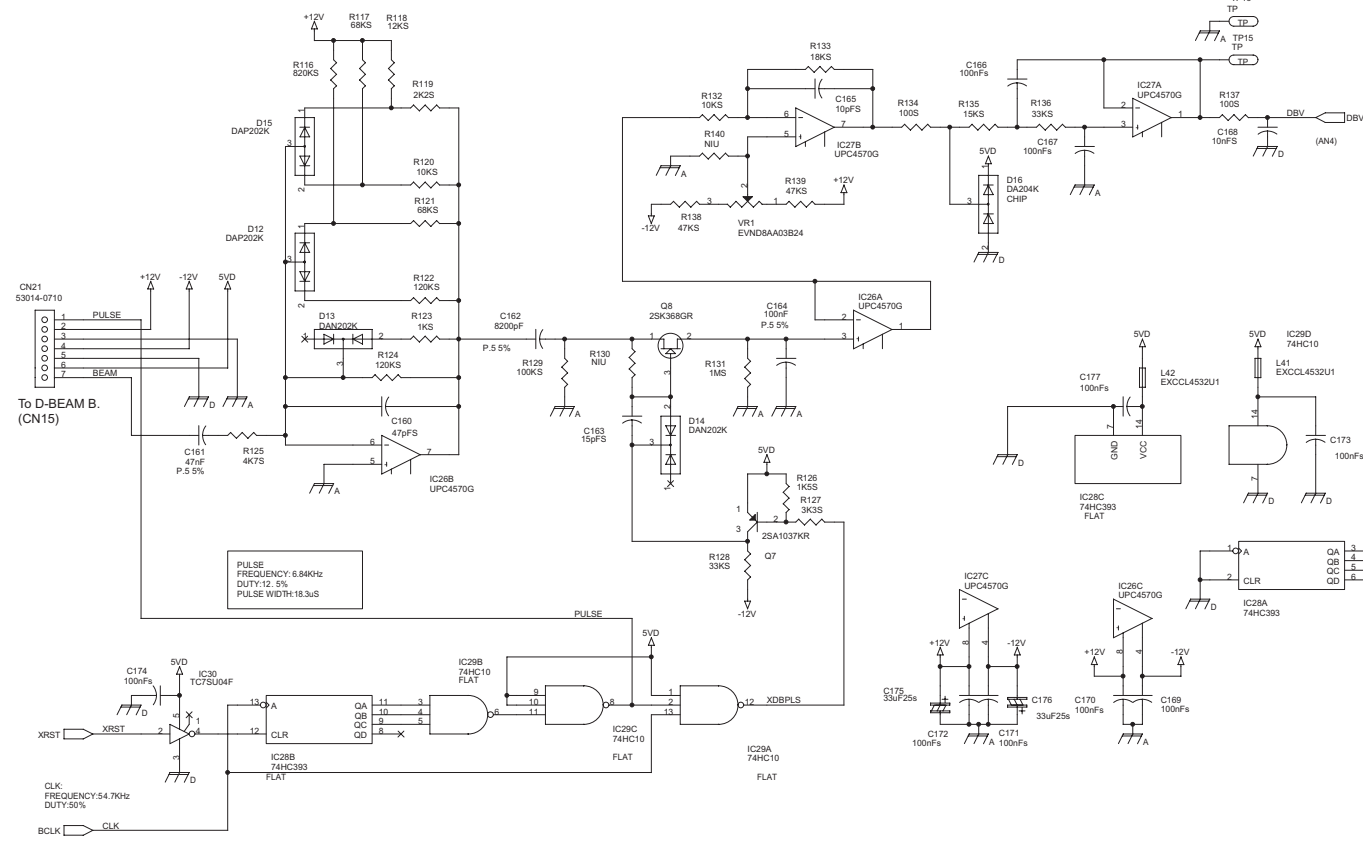


View from solder side

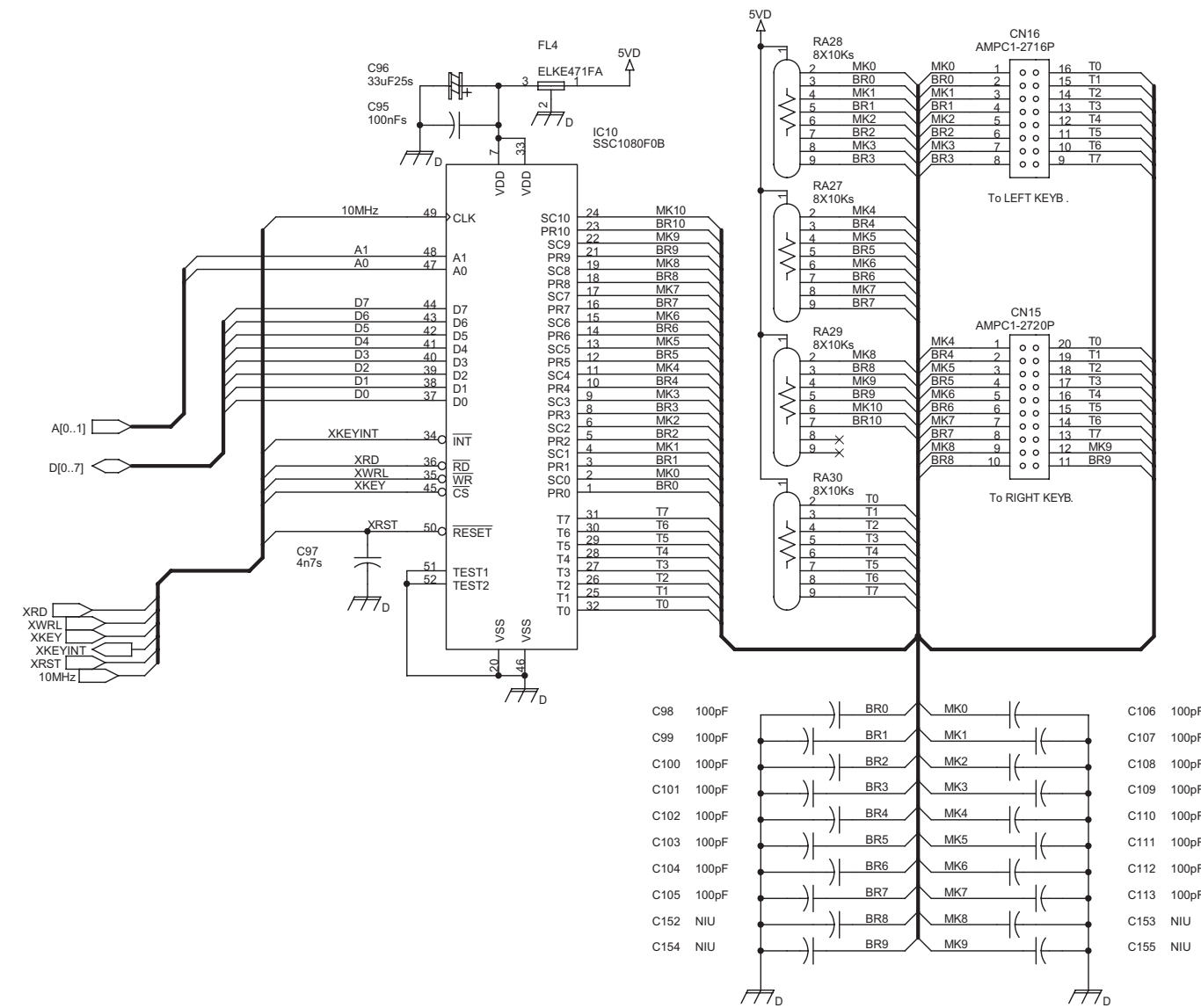
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CIRCUIT DIAGRAM (MAIN PCB ASSY/ Beam Control. Block)



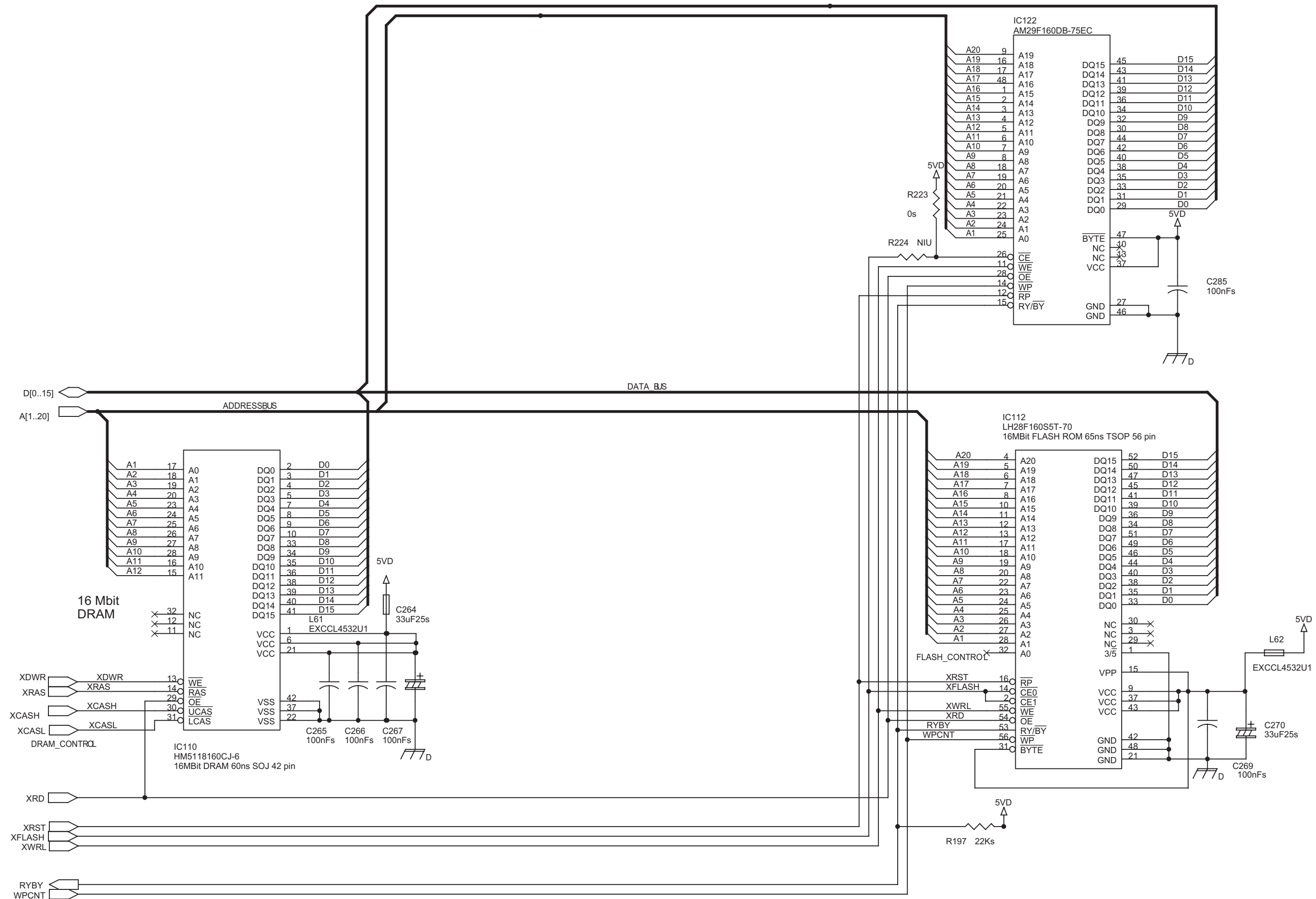
CIRCUIT DIAGRAM (MAIN PCB ASSY/ Keyscan Block)



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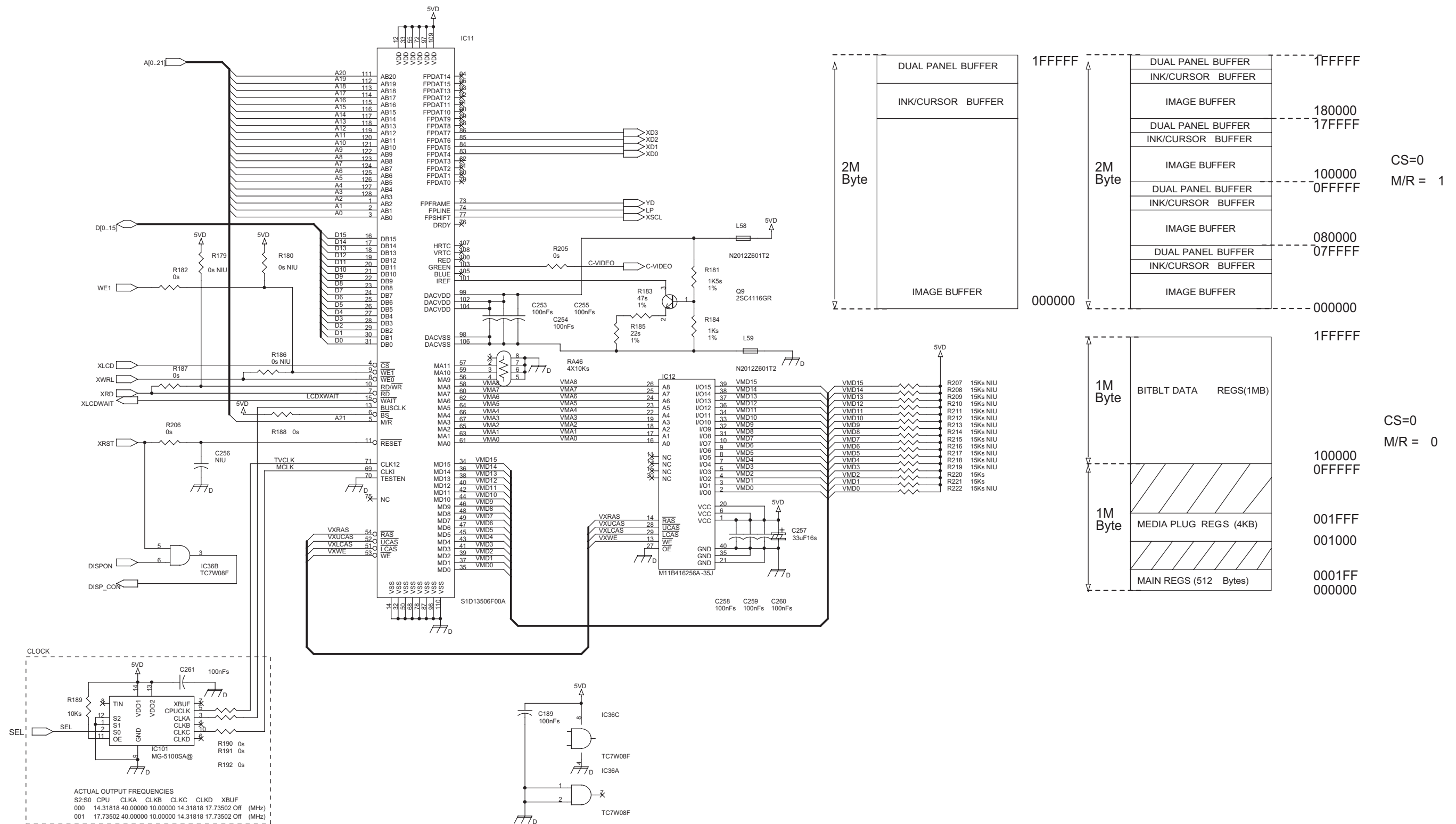
CIRCUIT DIAGRAM (MAIN PCB ASSY/ Memory Bank Block)



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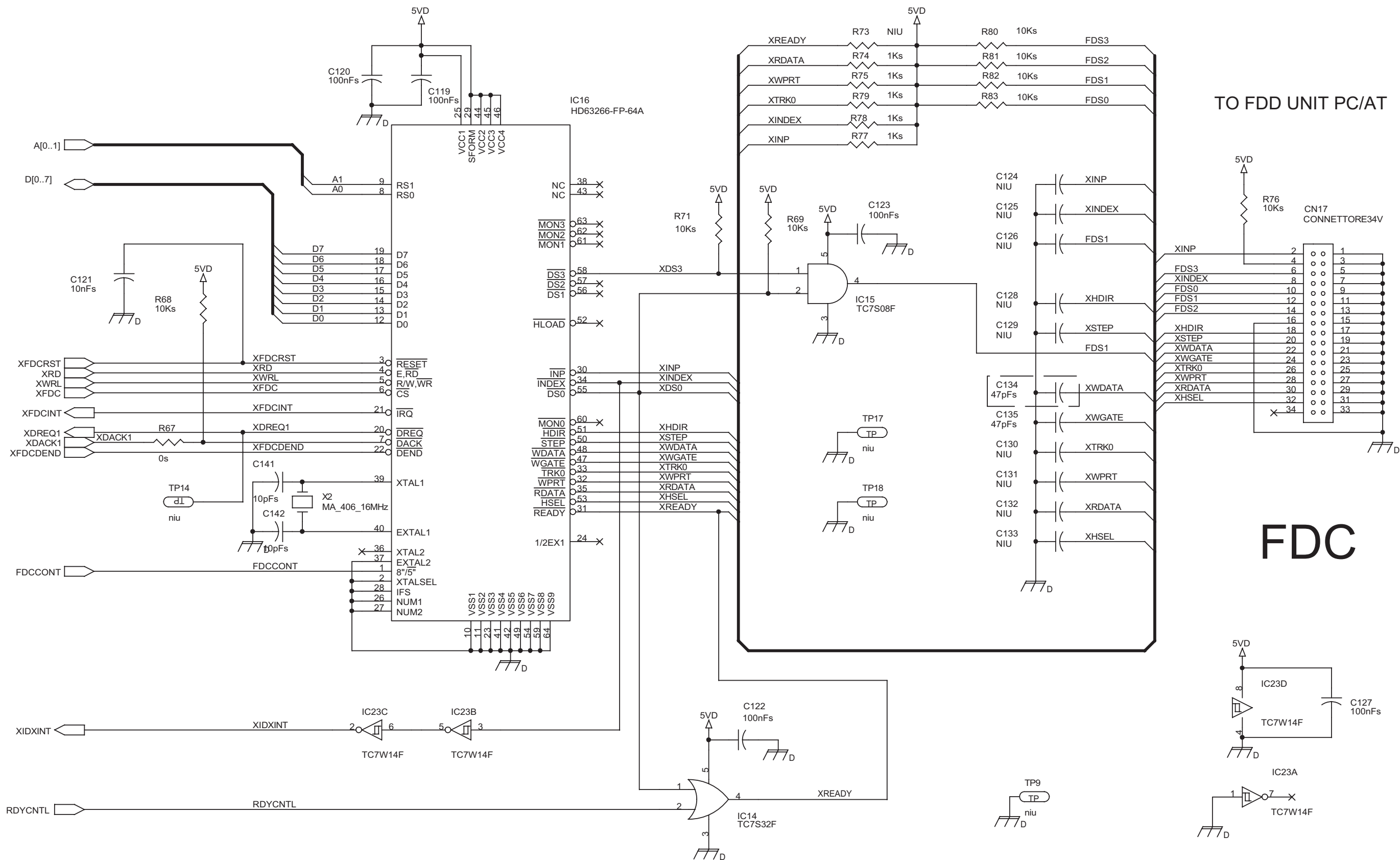
CIRCUIT DIAGRAM (MAIN PCB ASSY/ LCD Contr. Block)



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CIRCUIT DIAGRAM (MAIN PCB ASSY/ FDC Contr. Block)

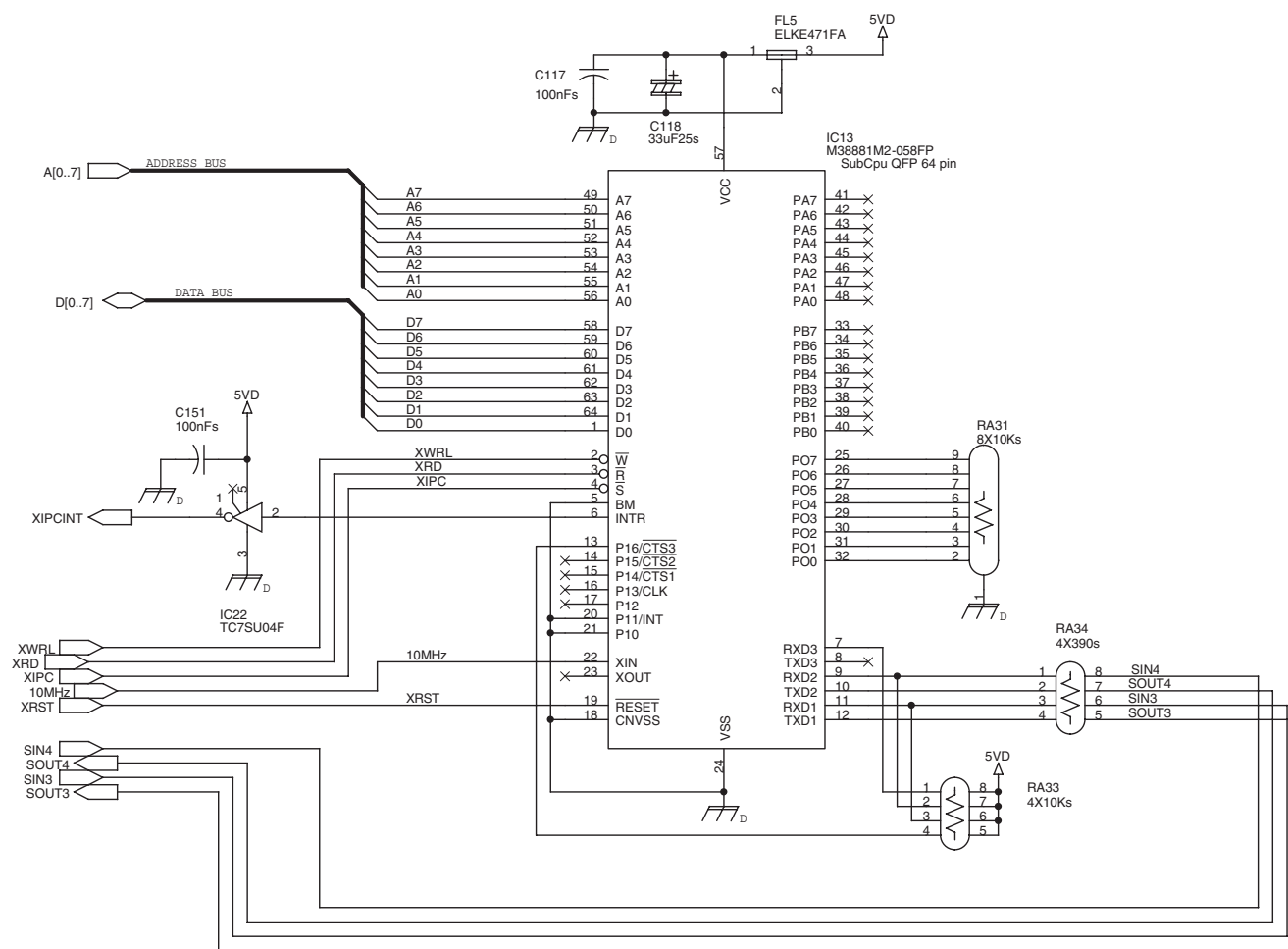


FDC

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CIRCUIT DIAGRAM (MAIN PCB ASSY/ Sub CPU Contr. Block)

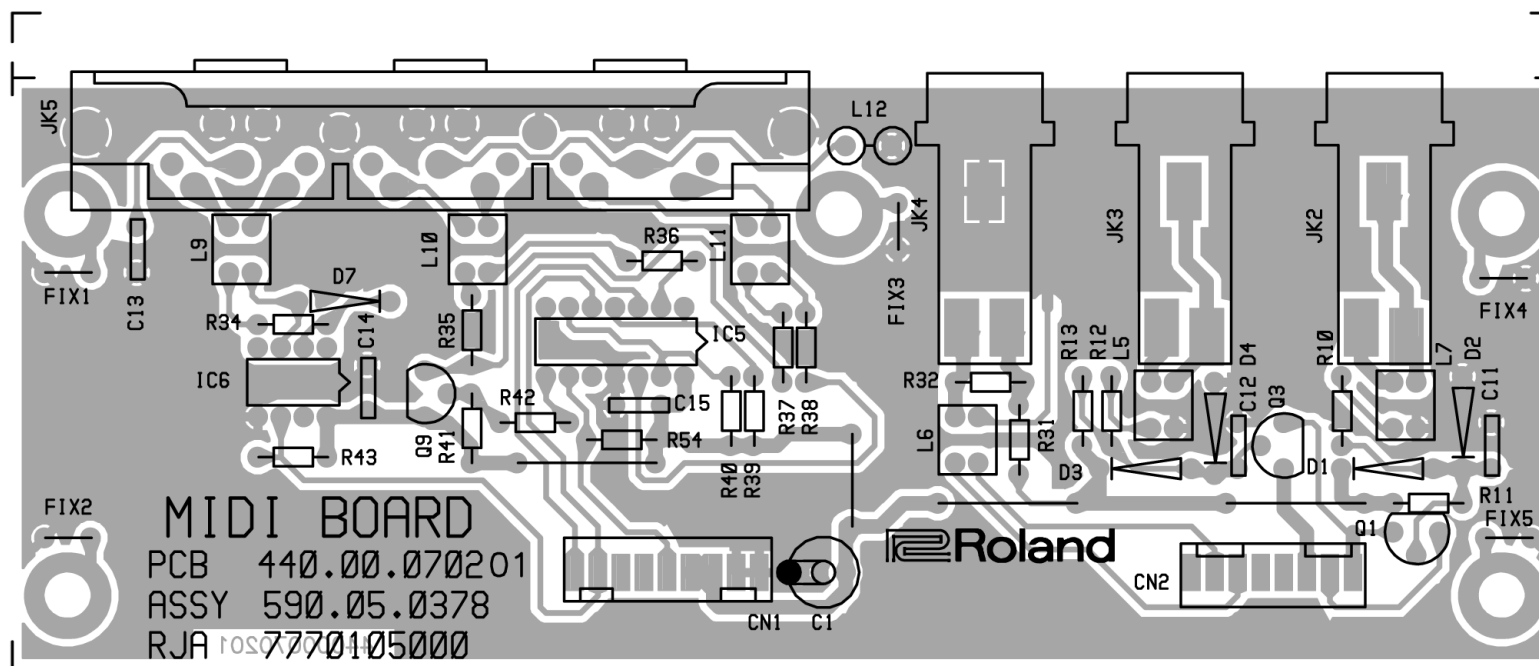


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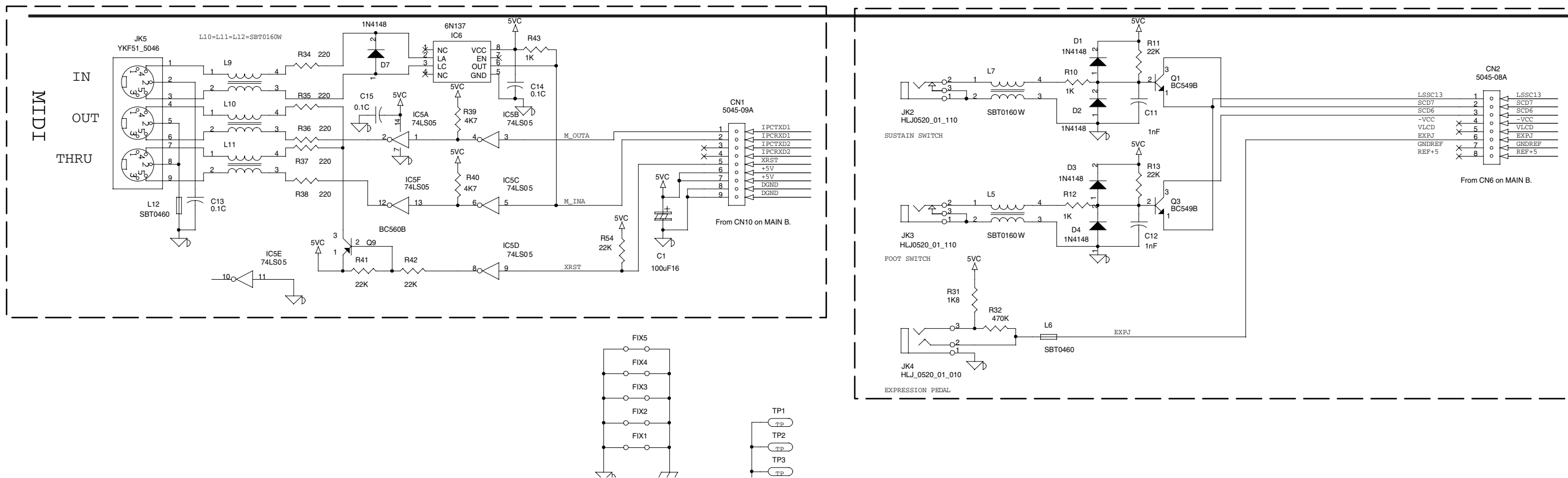
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MIDI PCB ASSY & CIRCUIT DIAGRAM

ASSY 7770105000



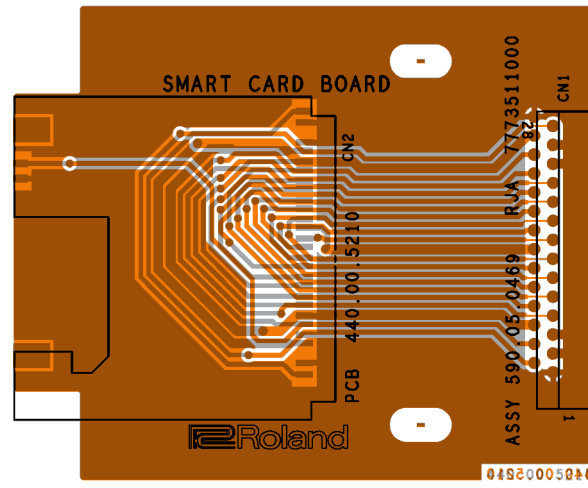
View from component side



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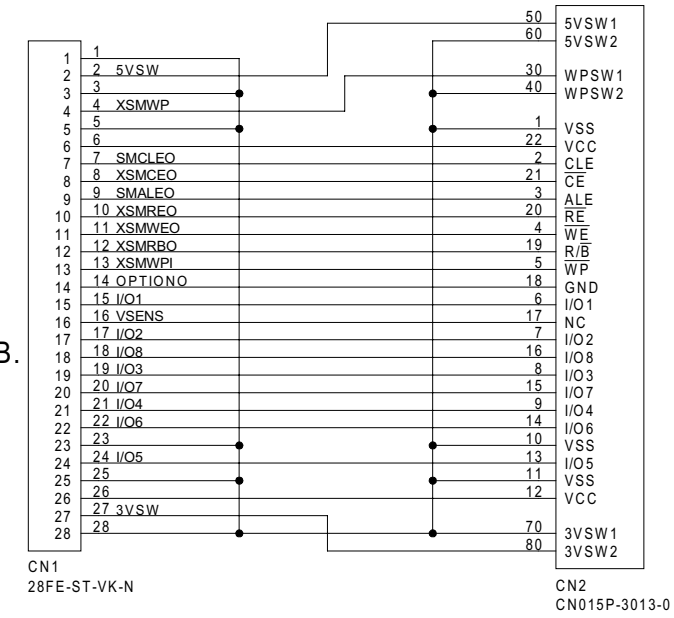
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SMART CARD PCB ASSY ASSY 7773511000



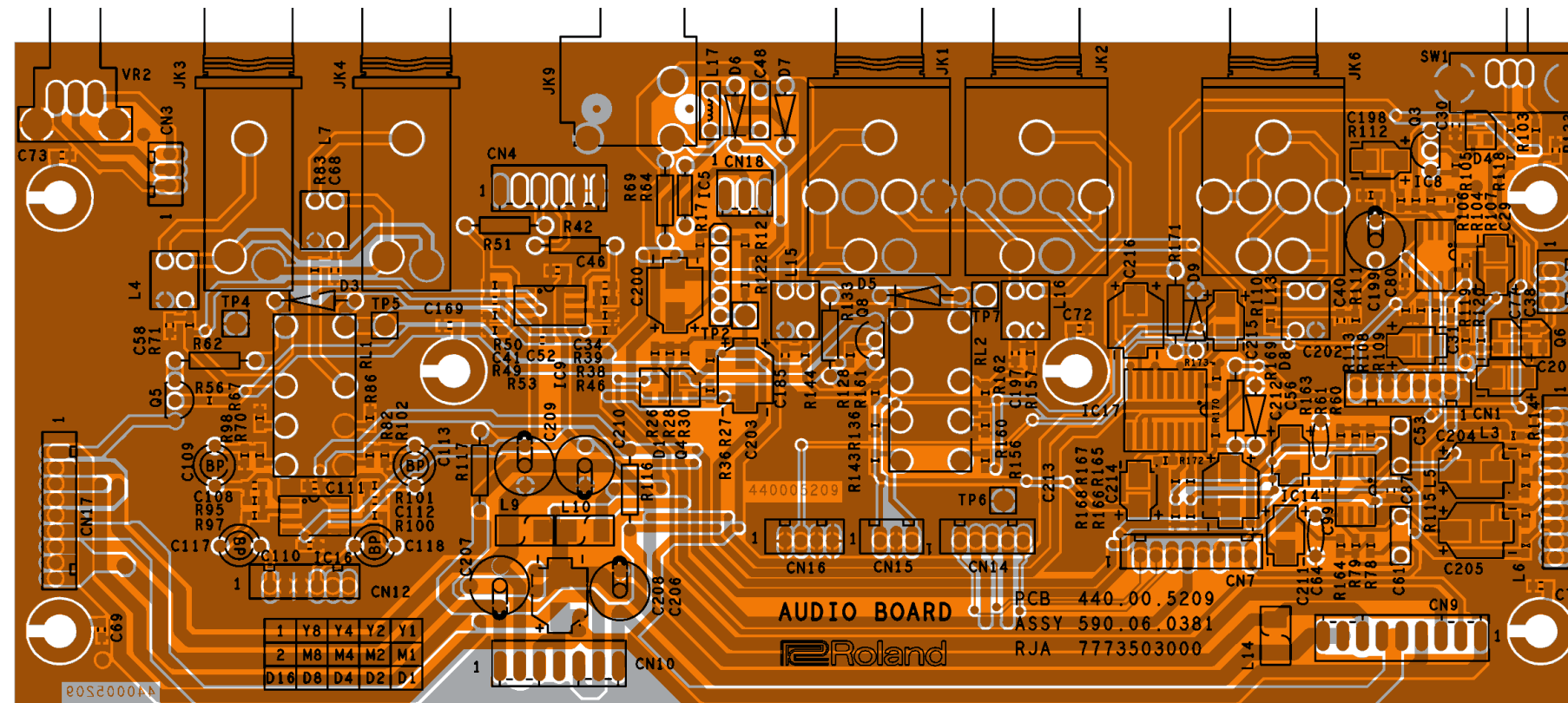
View from component side

To MAIN B.



Smart Media

AUDIO PCB ASSY ASSY 7773503000

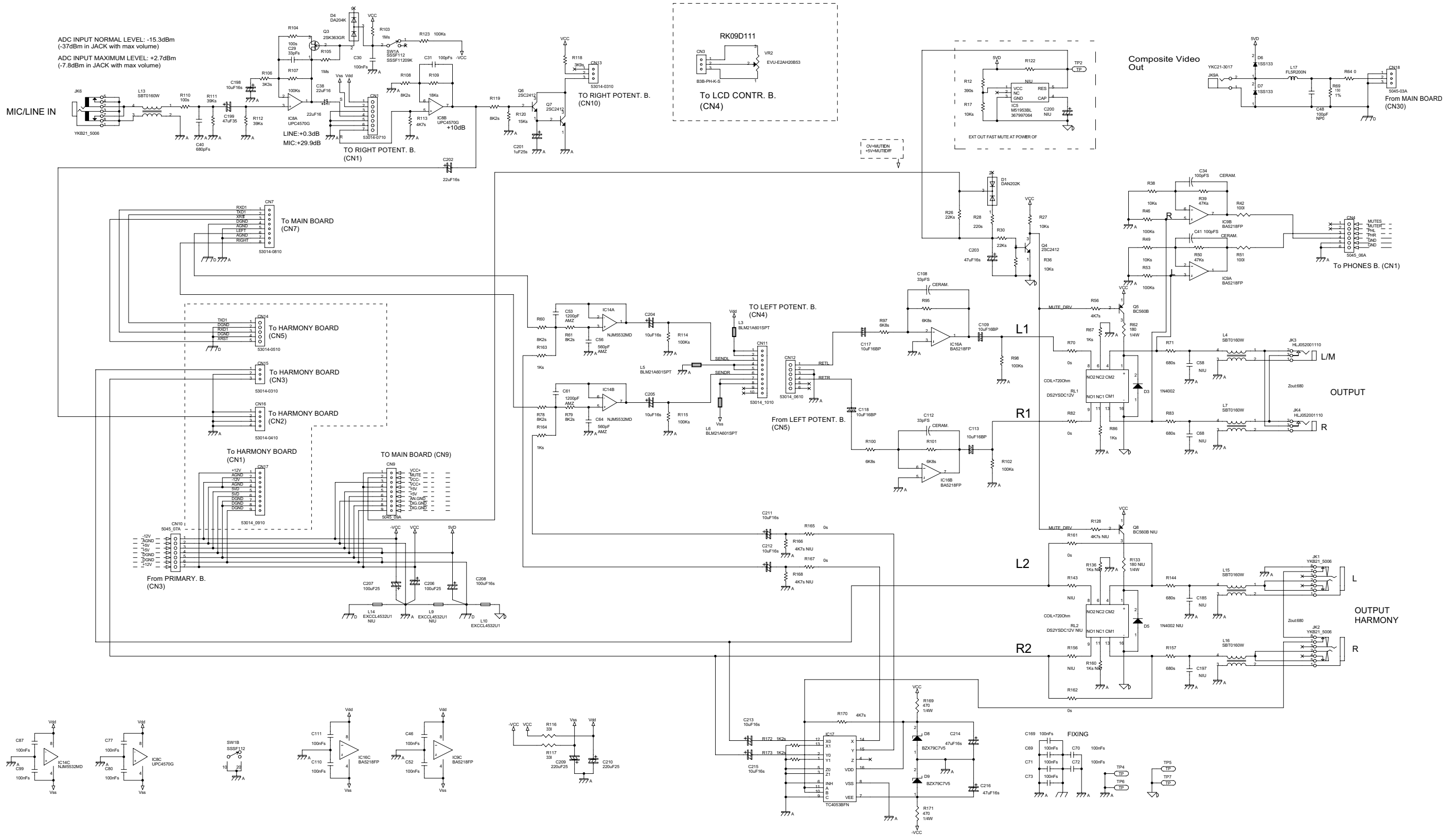


View from component side

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 29 30

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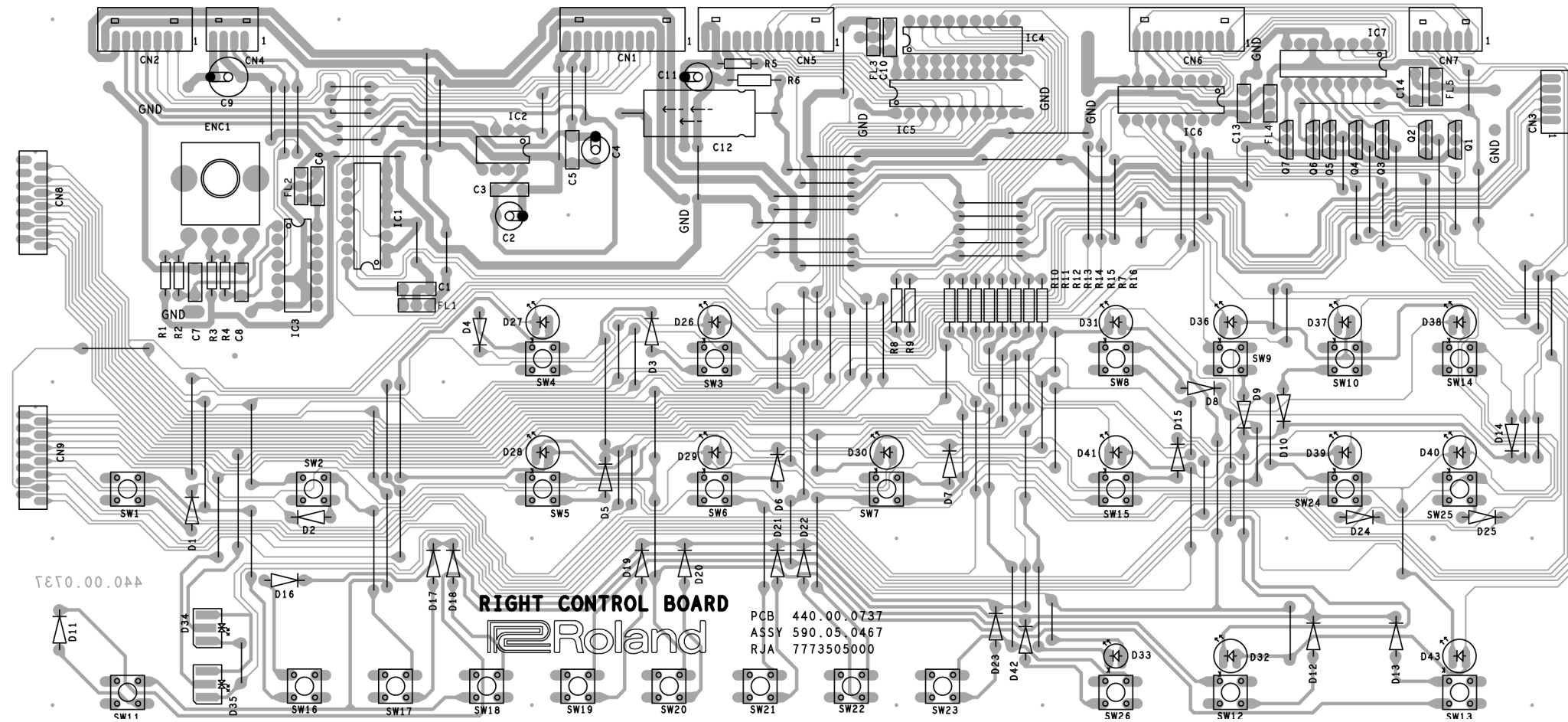
CIRCUIT DIAGRAM (AUDIO PCB ASSY)



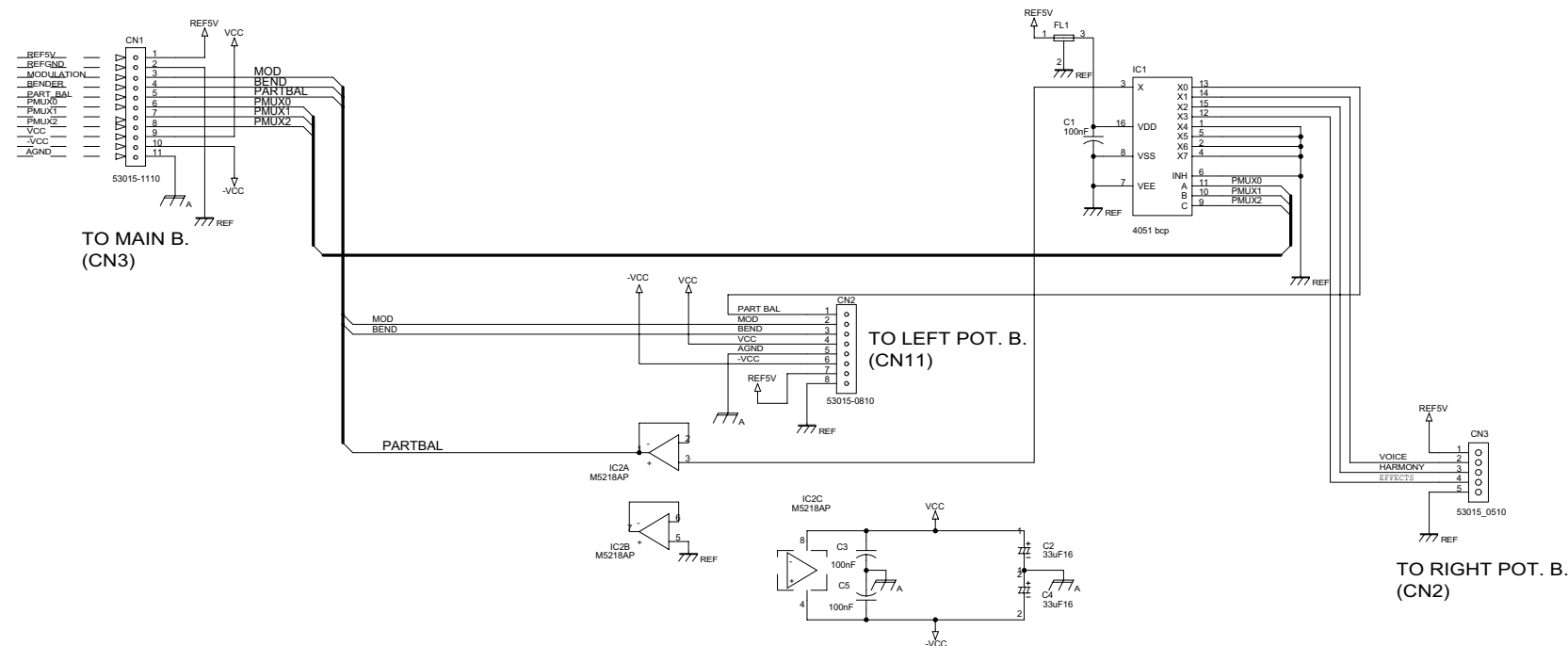
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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RIGHT CONTROL PCB ASSY ASSY 7773505000



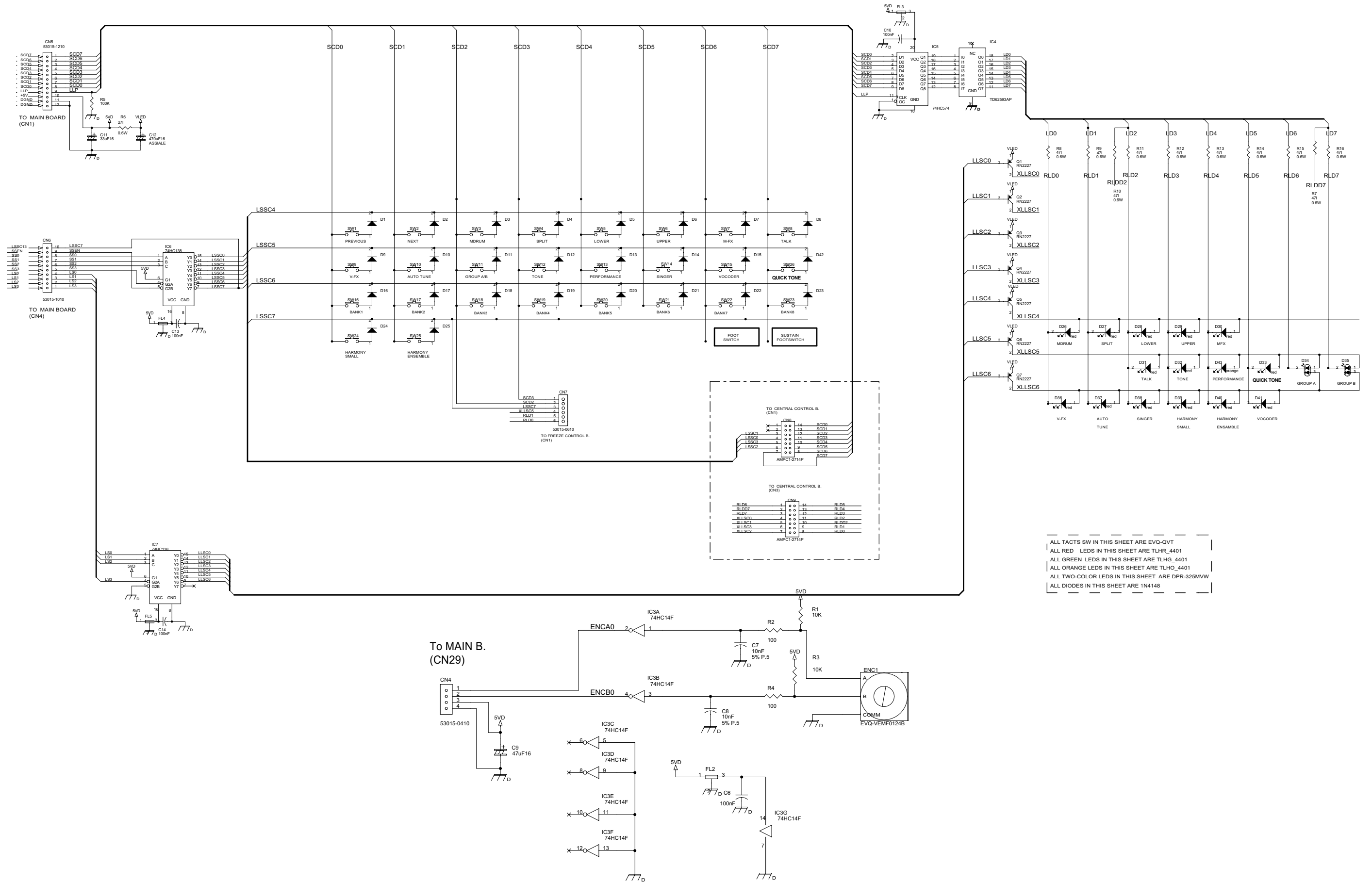
View from component side



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 29 30

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CIRCUIT DIAGRAM (RIGHT CONTROL PCB ASSY)



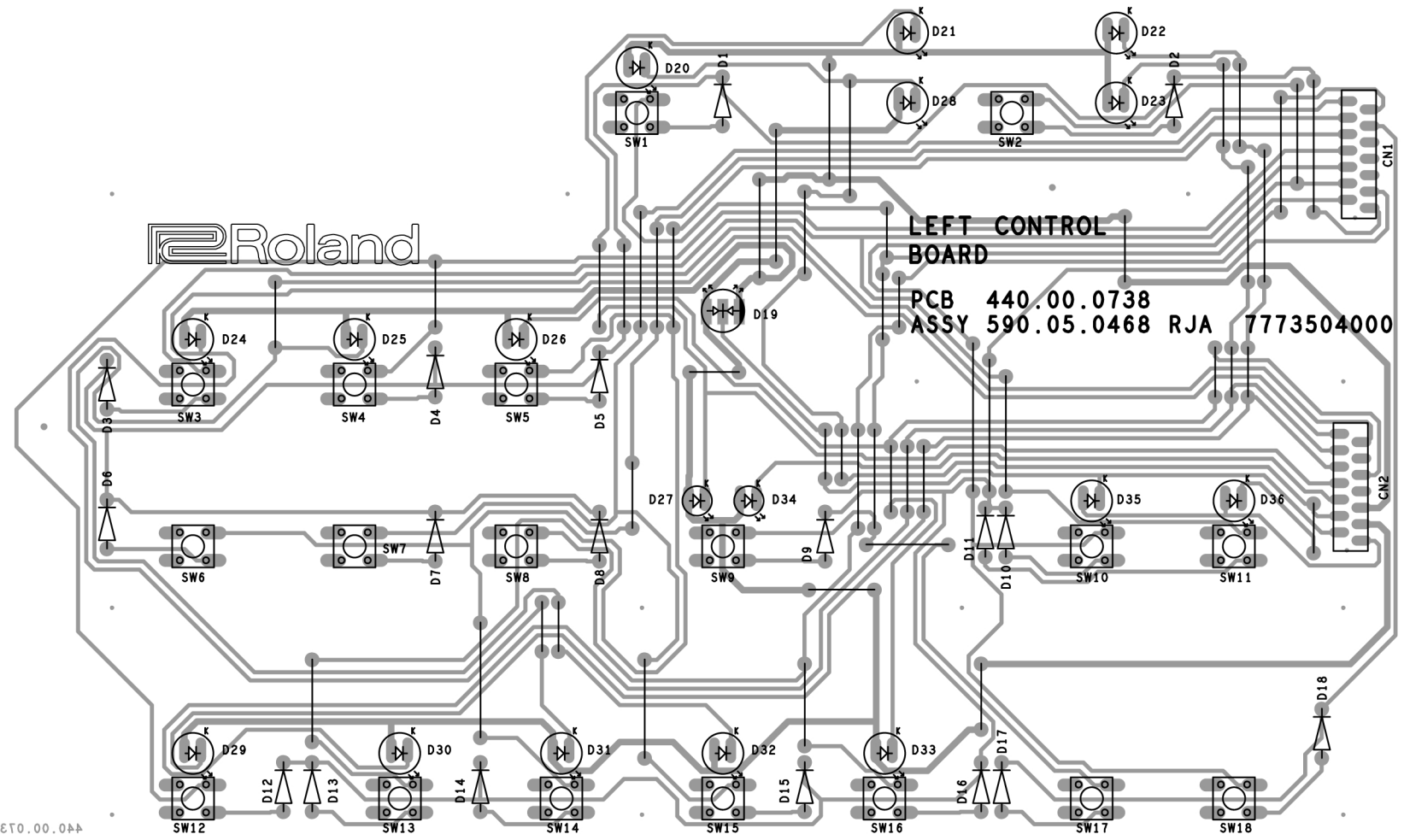
ALL TACTS SW IN THIS SHEET ARE EVQ-QVT
 ALL RED LEDS IN THIS SHEET ARE TLHR_4401
 ALL GREEN LEDS IN THIS SHEET ARE TLHG_4401
 ALL ORANGE LEDS IN THIS SHEET ARE TLHG_4401
 ALL TWO-COLOR LEDS IN THIS SHEET ARE DPR-325MWW
 ALL DIODES IN THIS SHEET ARE 1N4148

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LEFT CONTROL PCB ASSY

ASSY. 7773504000..

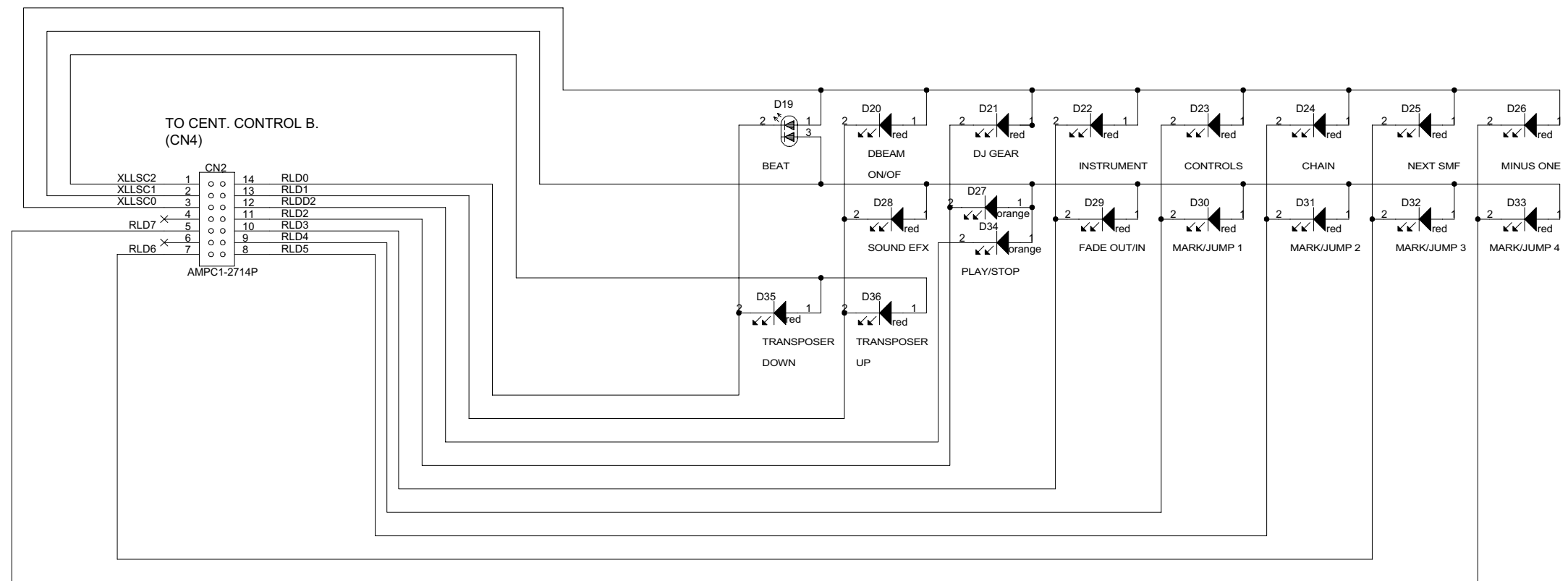
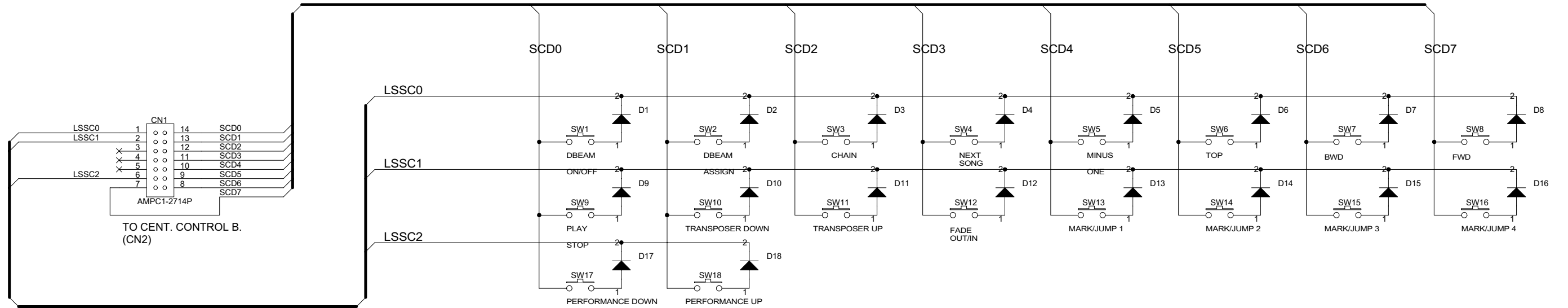


View from component side

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CIRCUIT DIAGRAM (LEFT CONTROL PCB ASSY)



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 29 30

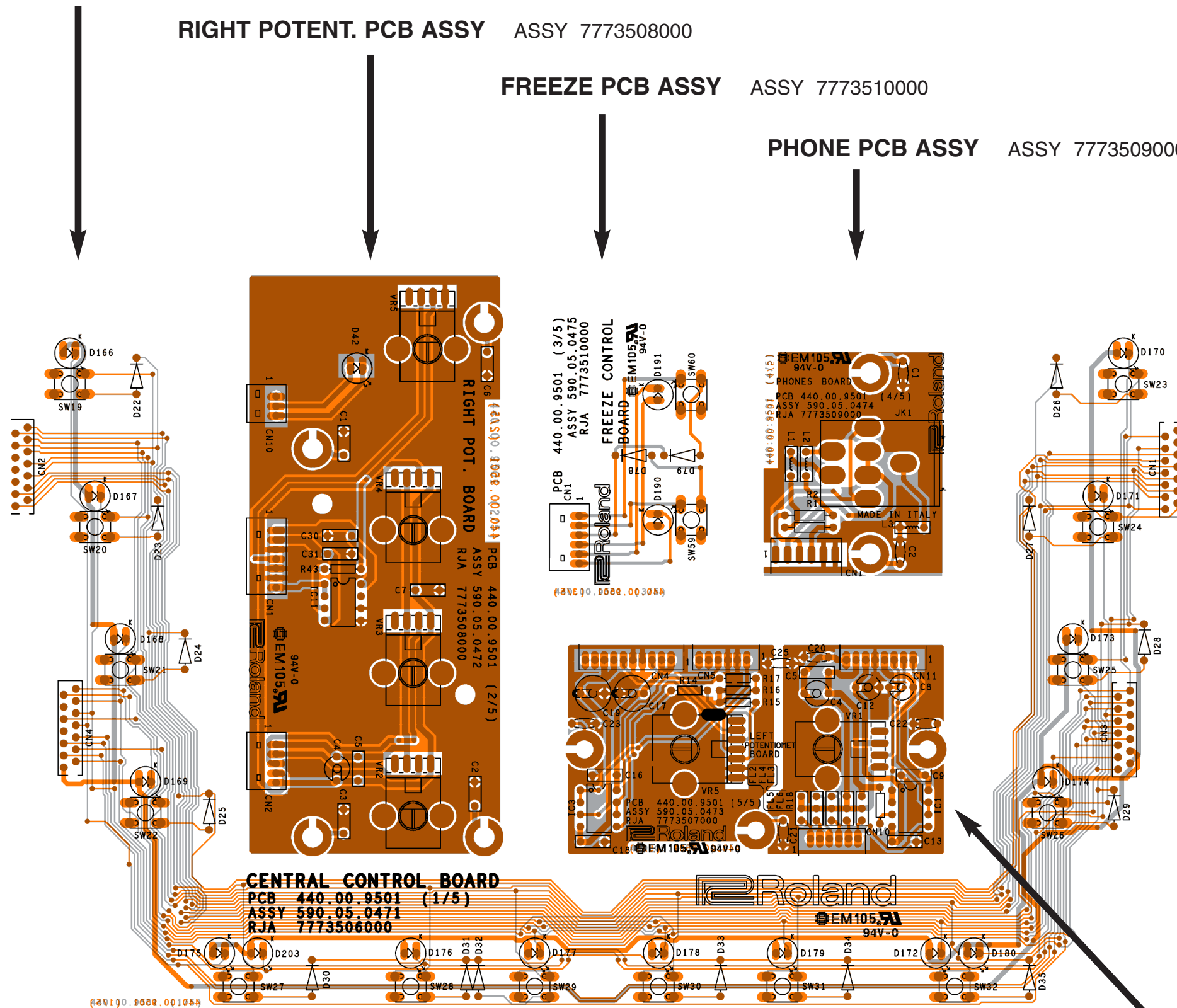
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CENTR. CONTR. PCB ASSY ASSY 7773506000

RIGHT POTENT. PCB ASSY ASSY 7773508000

FREEZE PCB ASSY ASSY 7773510000

PHONE PCB ASSY ASSY 7773509000



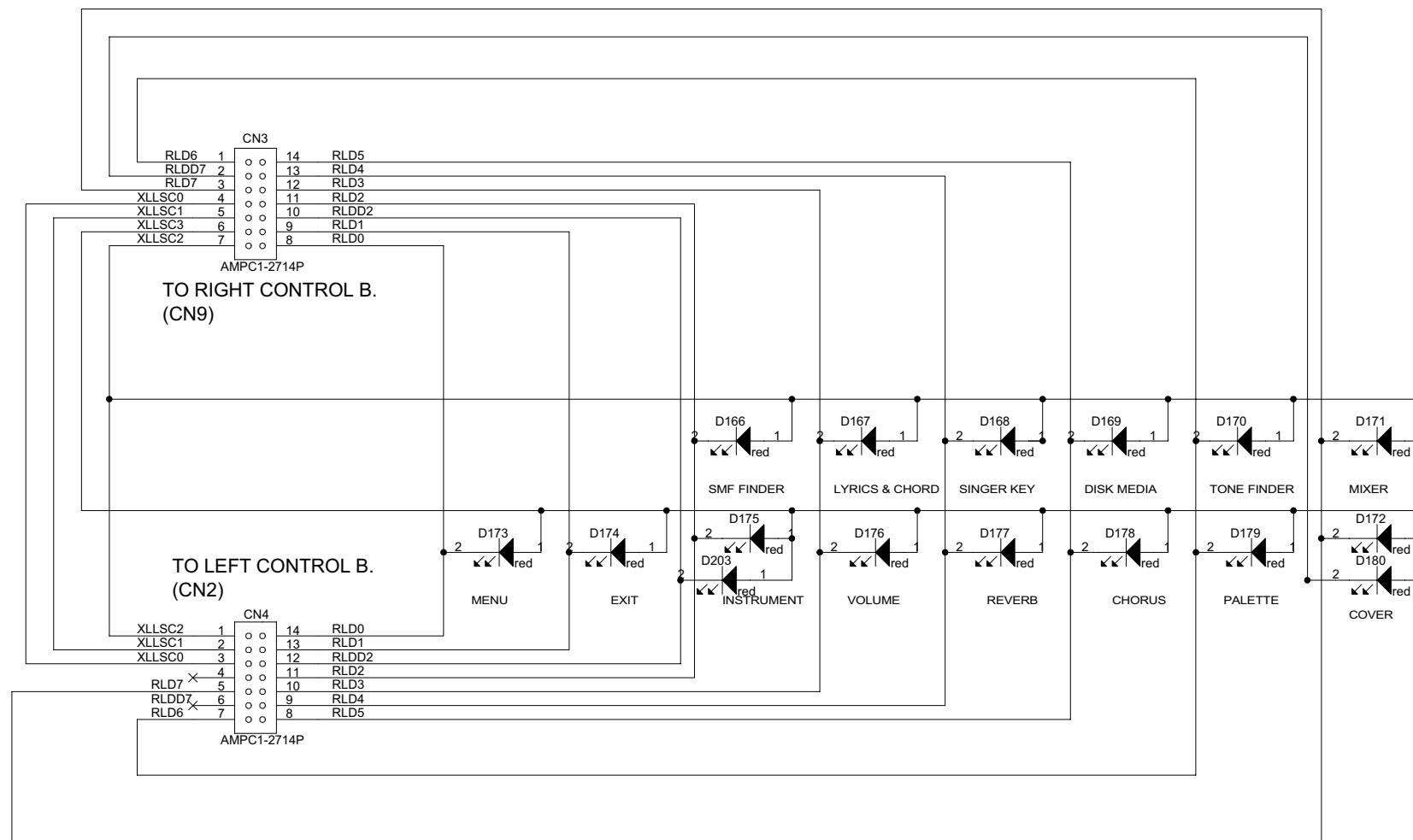
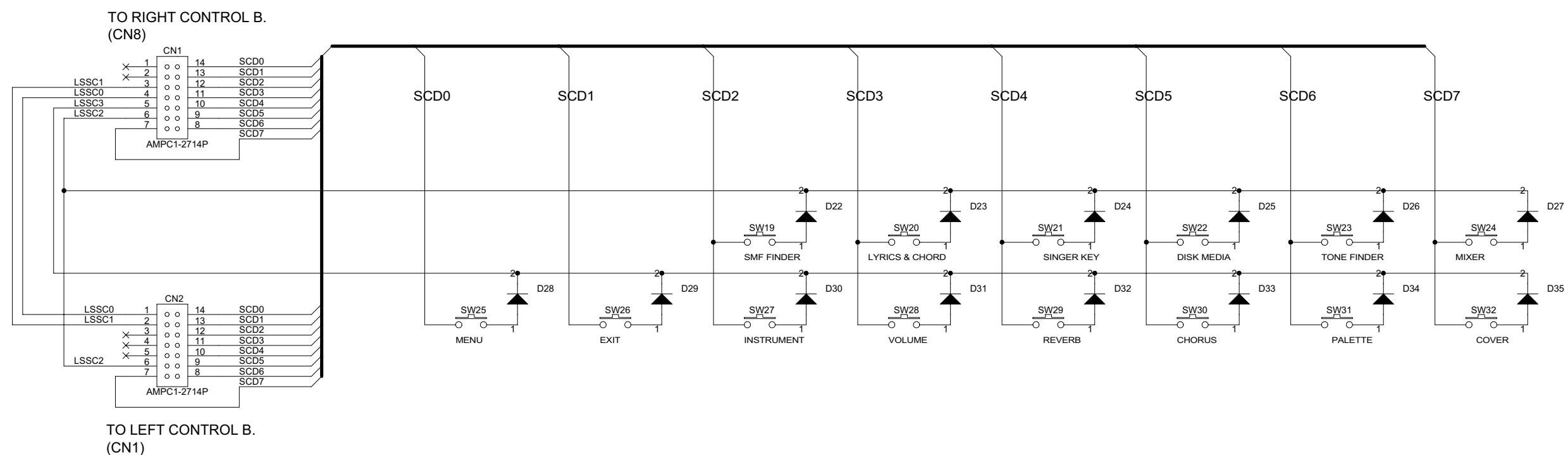
View from component side

LEFT POTENT. PCB ASSY ASSY 7773507000

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 29 30

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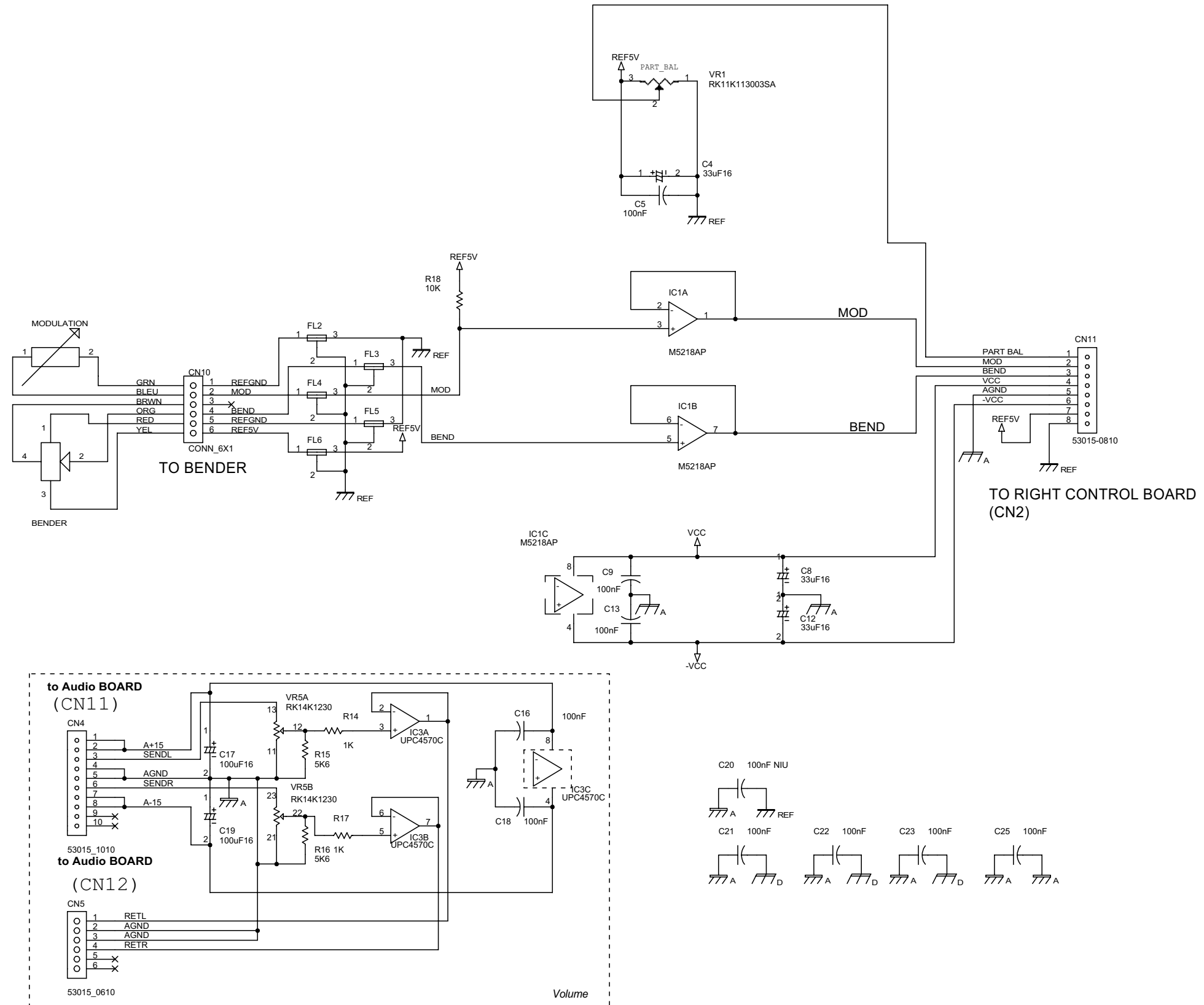
CIRCUIT DIAGRAM (CENTR. CONTR. PCB ASSY)



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 29 30

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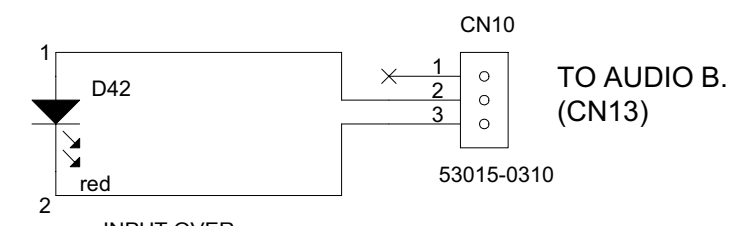
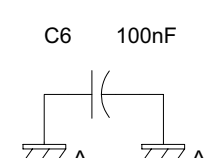
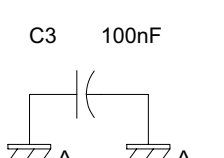
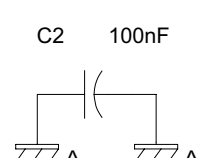
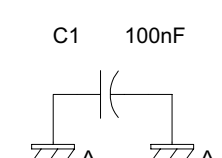
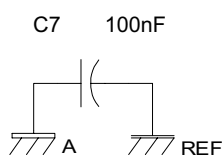
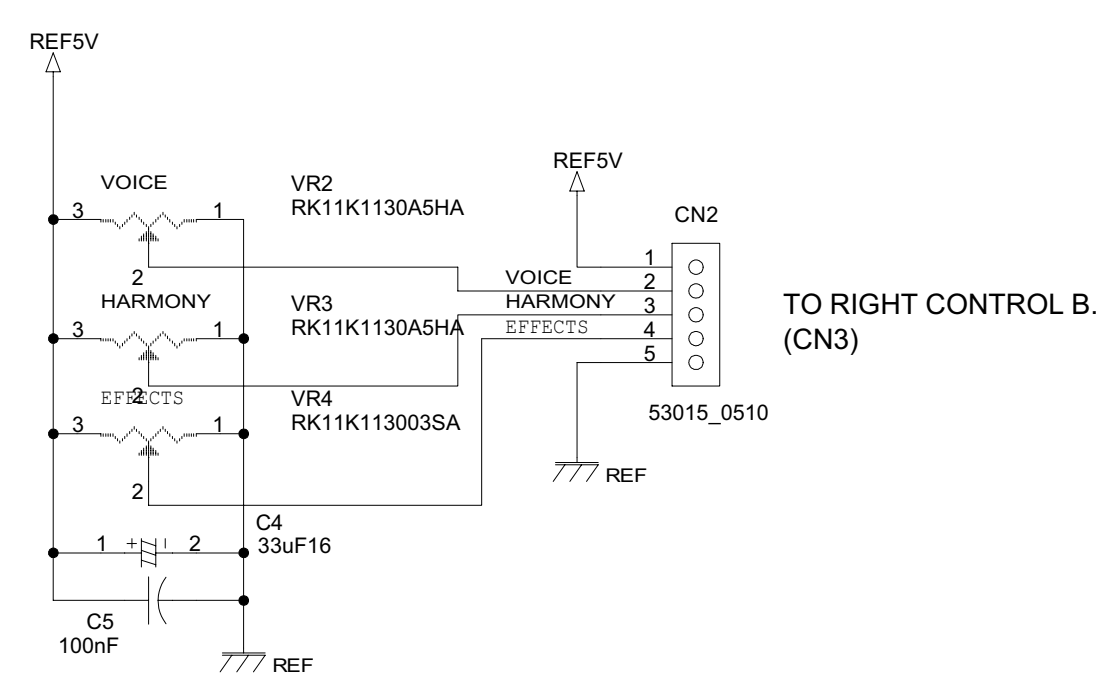
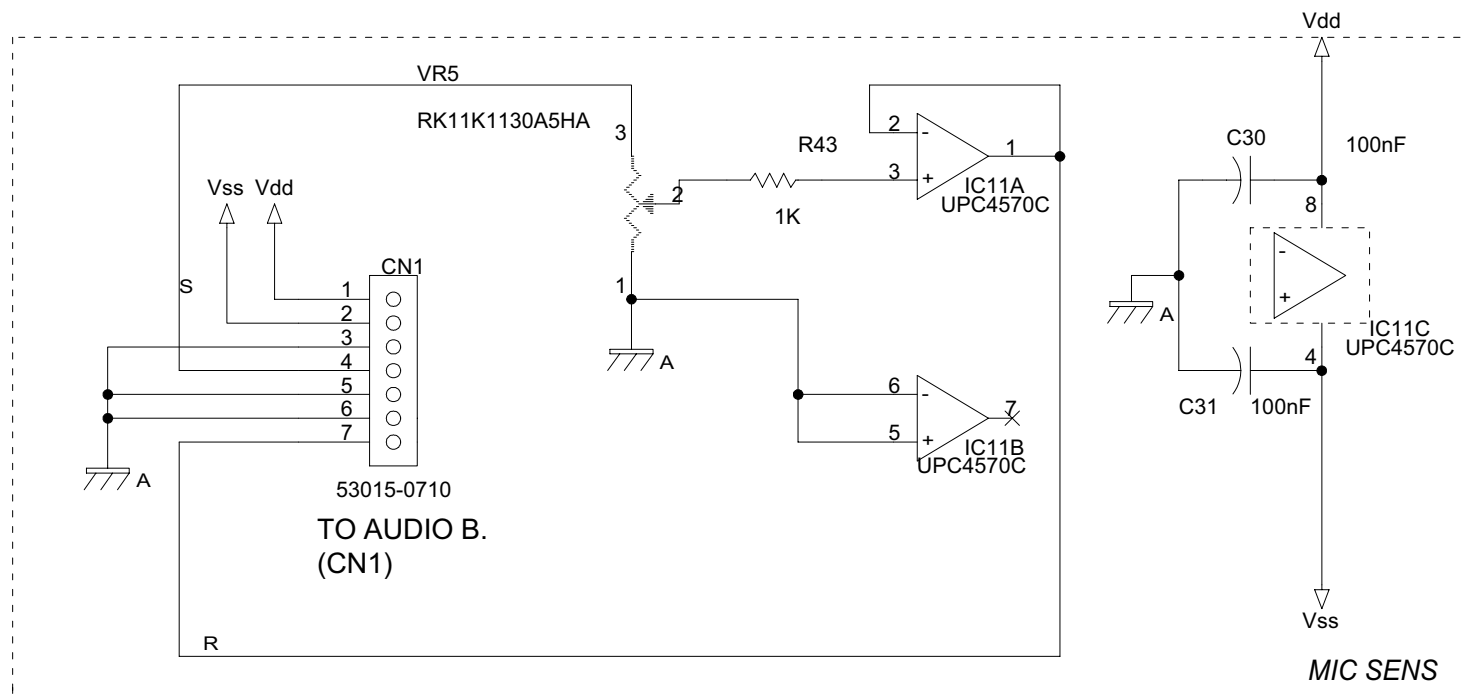
CIRCUIT DIAGRAM (LEFT POTENT. PCB ASSY)



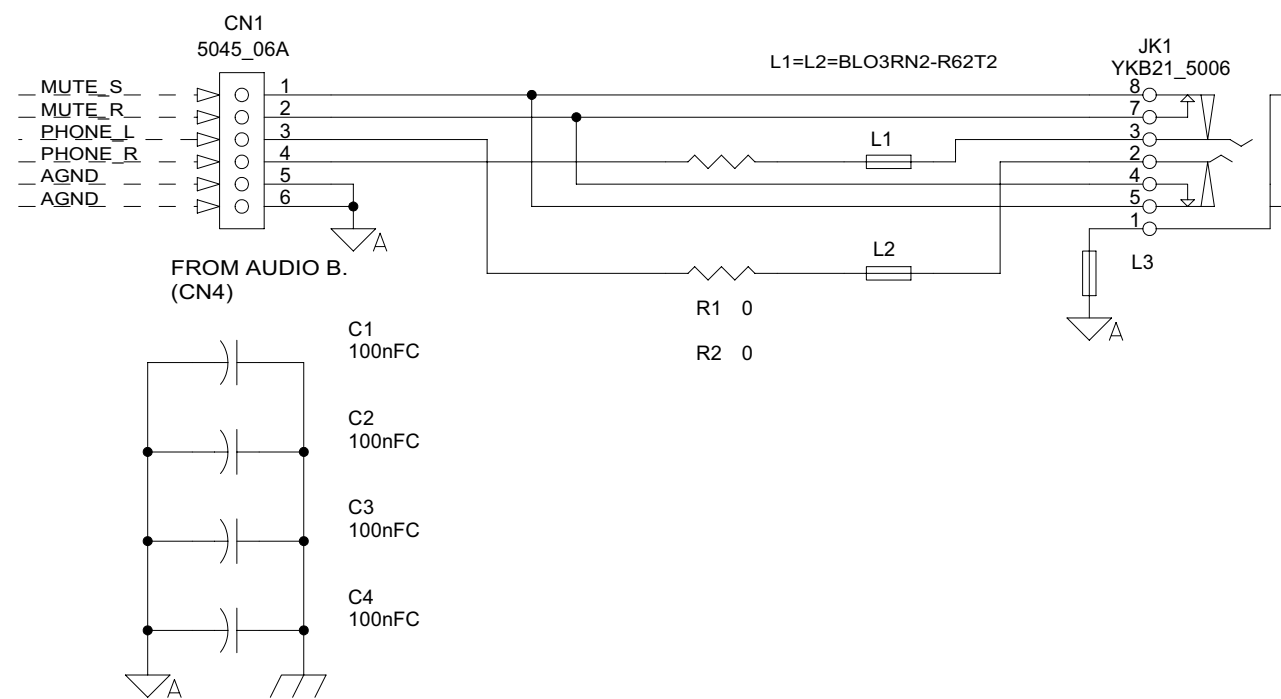
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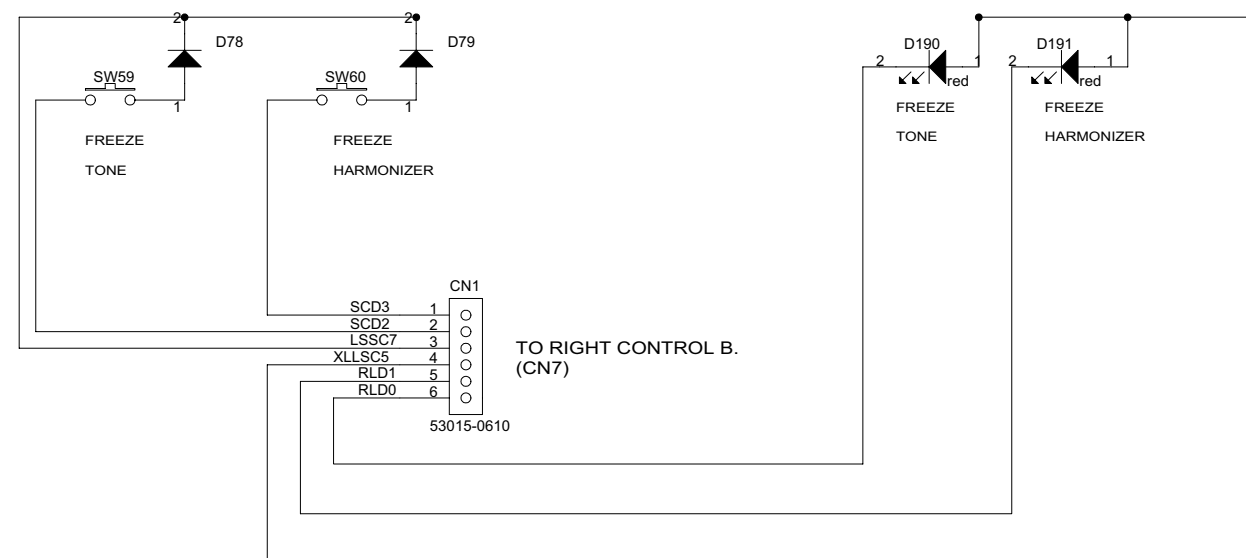
CIRCUIT DIAGRAM (RIGHT POTENT. PCB ASSY)



CIRCUIT DIAGRAM (PHONE PCB ASSY)



CIRCUIT DIAGRAM (FREEZE PCB ASSY)



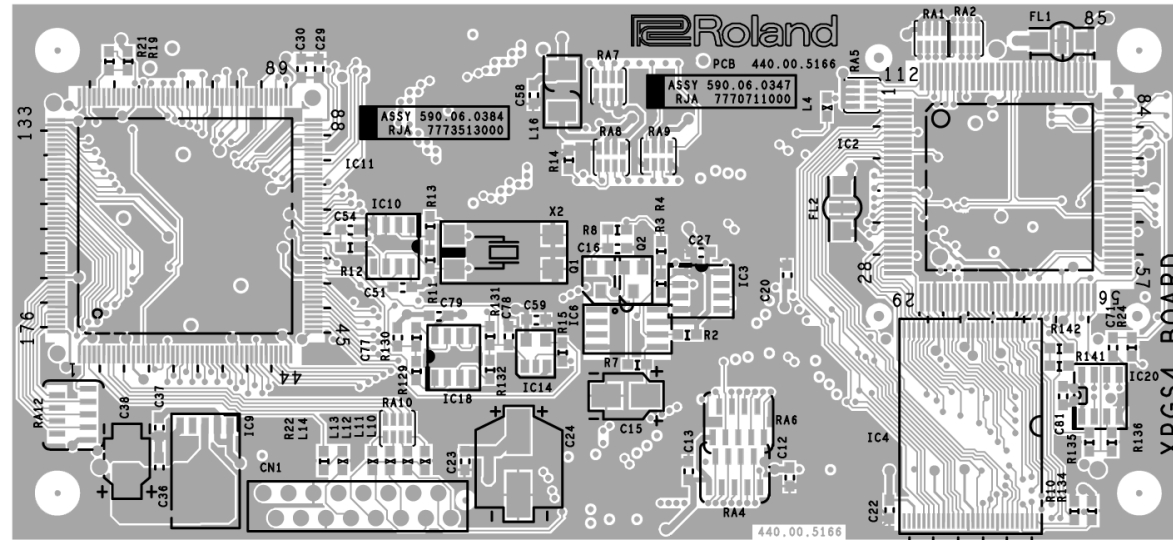
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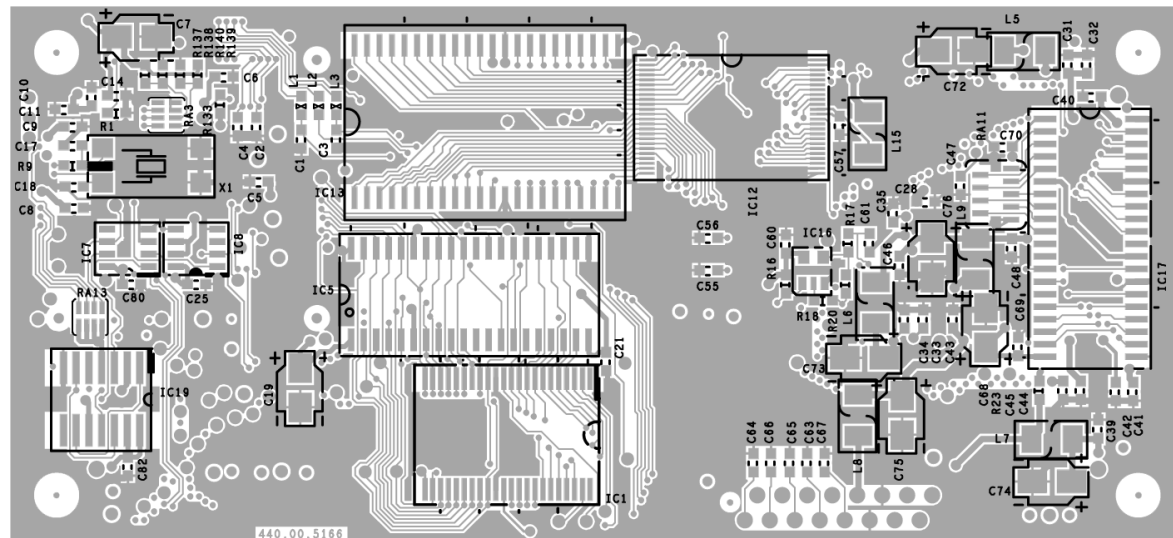
MODULE XPGS-4 PCB ASSY ASSY 7773513000

Note: Replacement should be made on a unit basis. No replacements available for individual parts. Replacement only be a unit.

View from component side



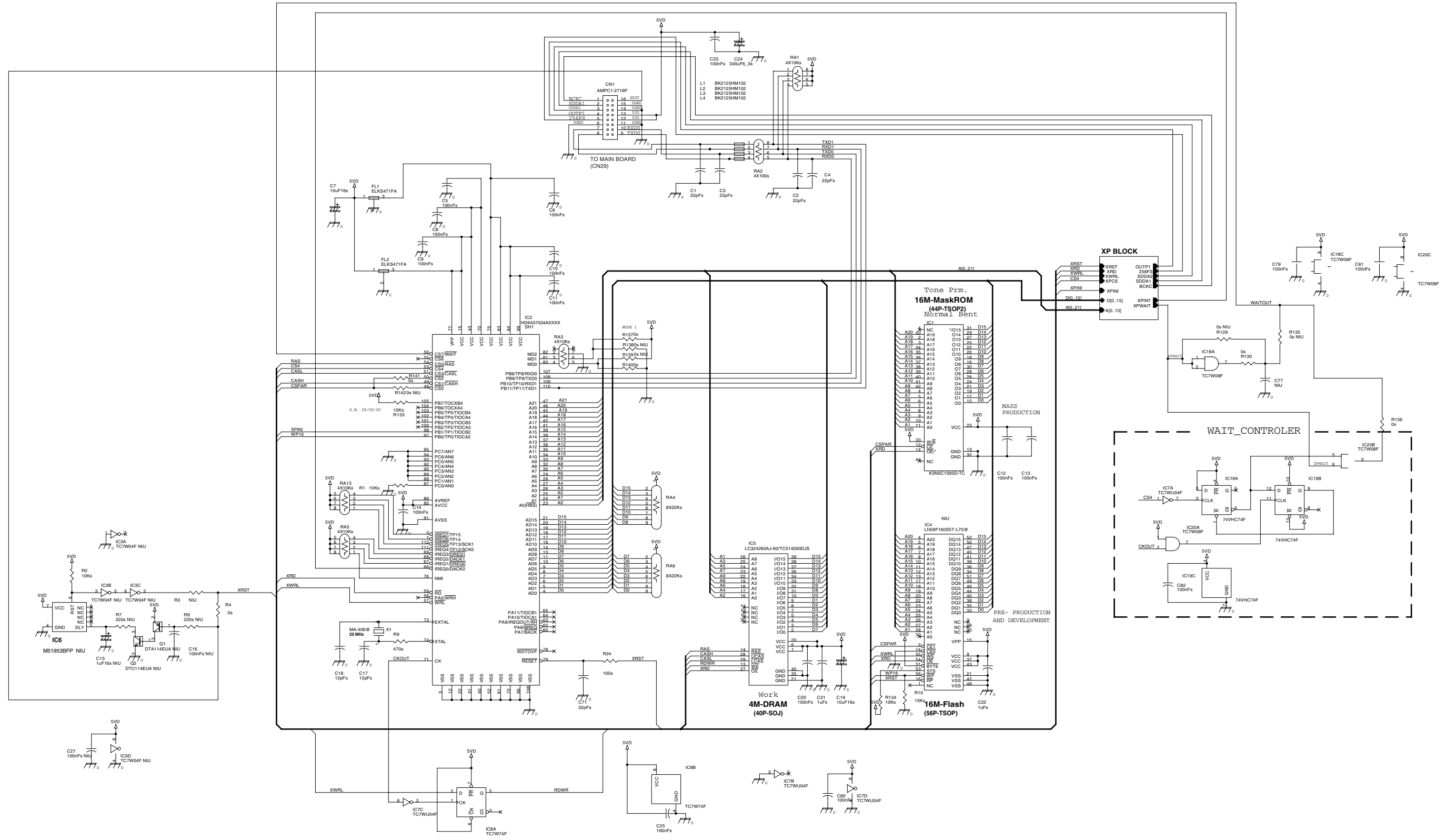
View from solder side



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 29 30

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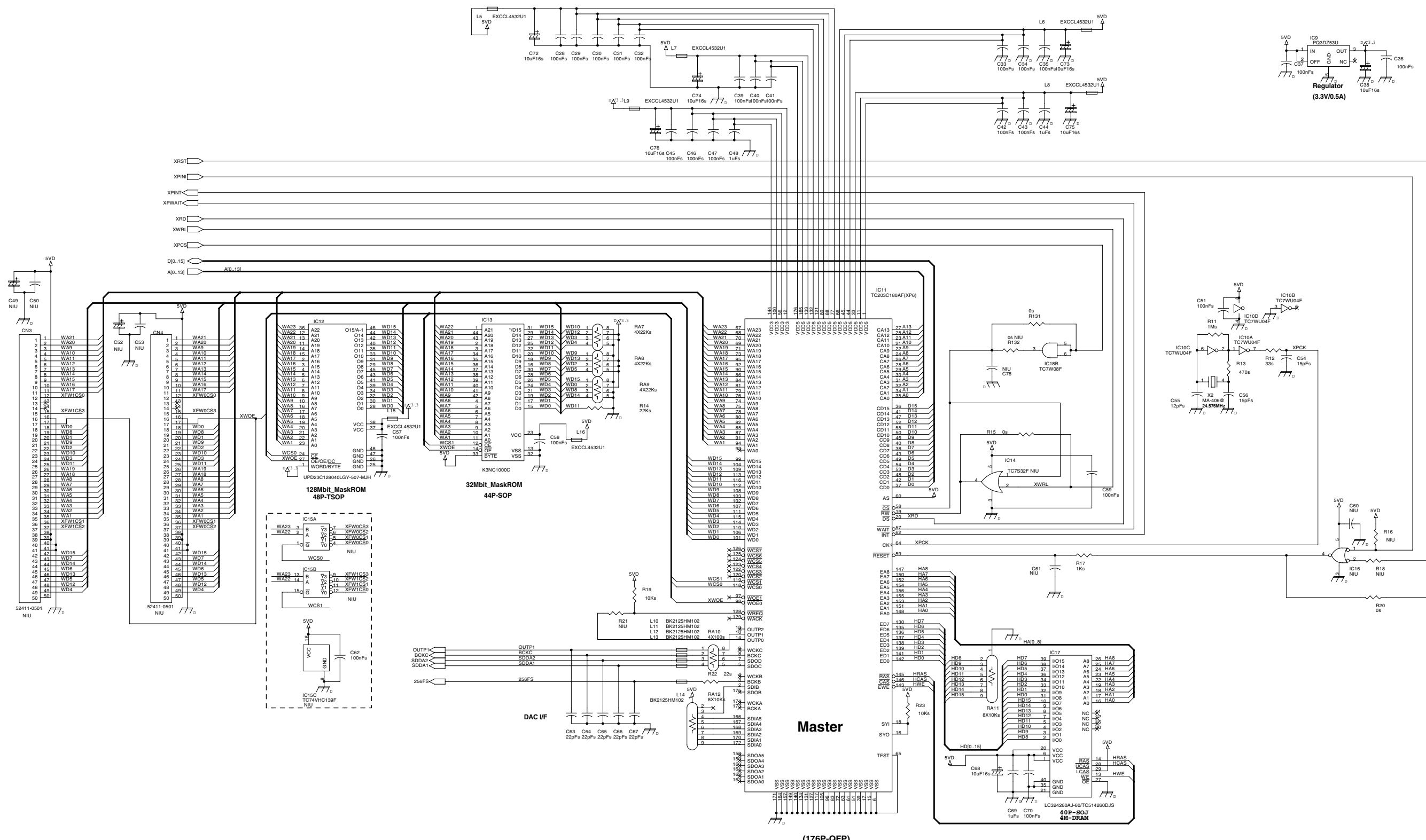
CIRCUIT DIAGRAM (XPGS-4 PCB ASSY/ Section 1)



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 29 30

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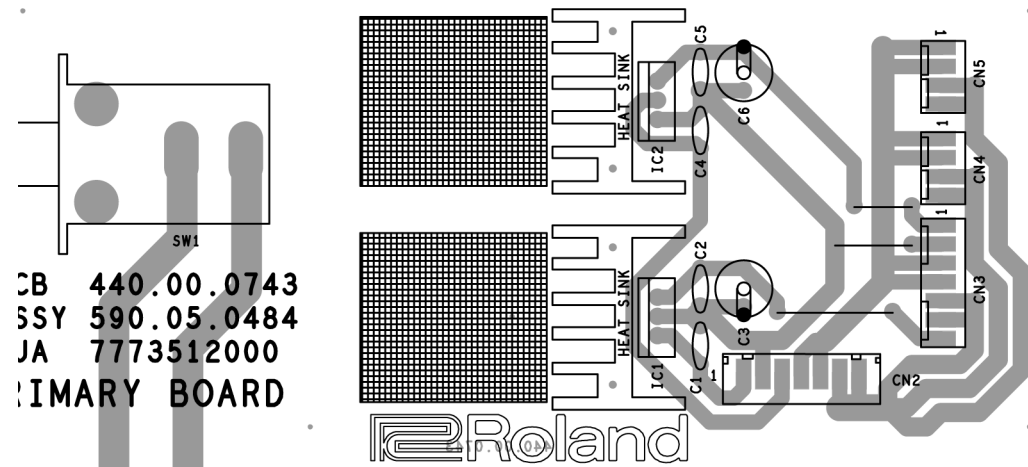
CIRCUIT DIAGRAM (XPGS-4 PCB ASSY/ Section 2)



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 29 30

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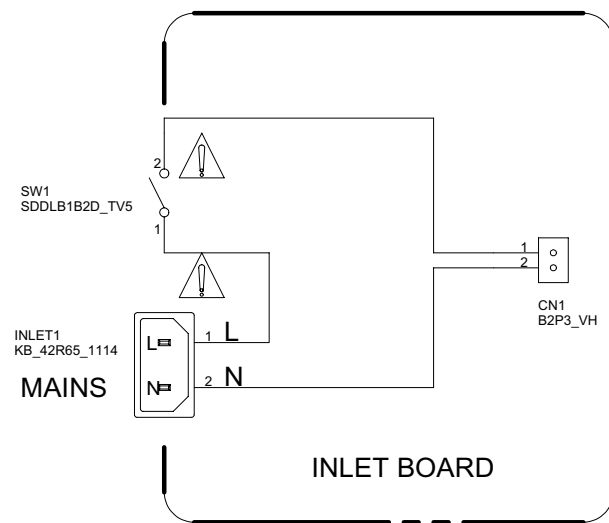
PRIMARY PCB ASSY & CIRCUIT DIAGRAM ASSY 7773512000



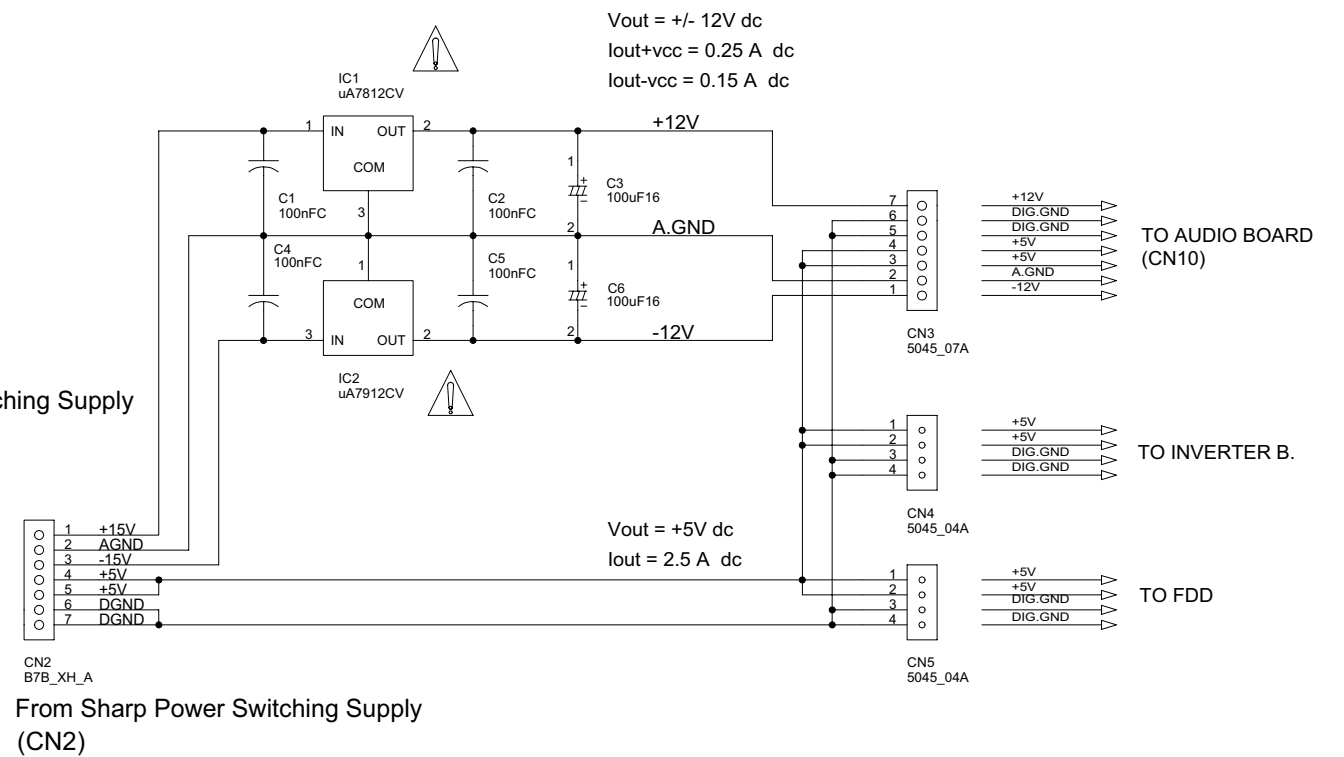
CB 440.00.0743
SSY 590.05.0484
JA 7773512000
PRIMARY BOARD

View from component side

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



To Sharp Power Switching Supply (CN1)

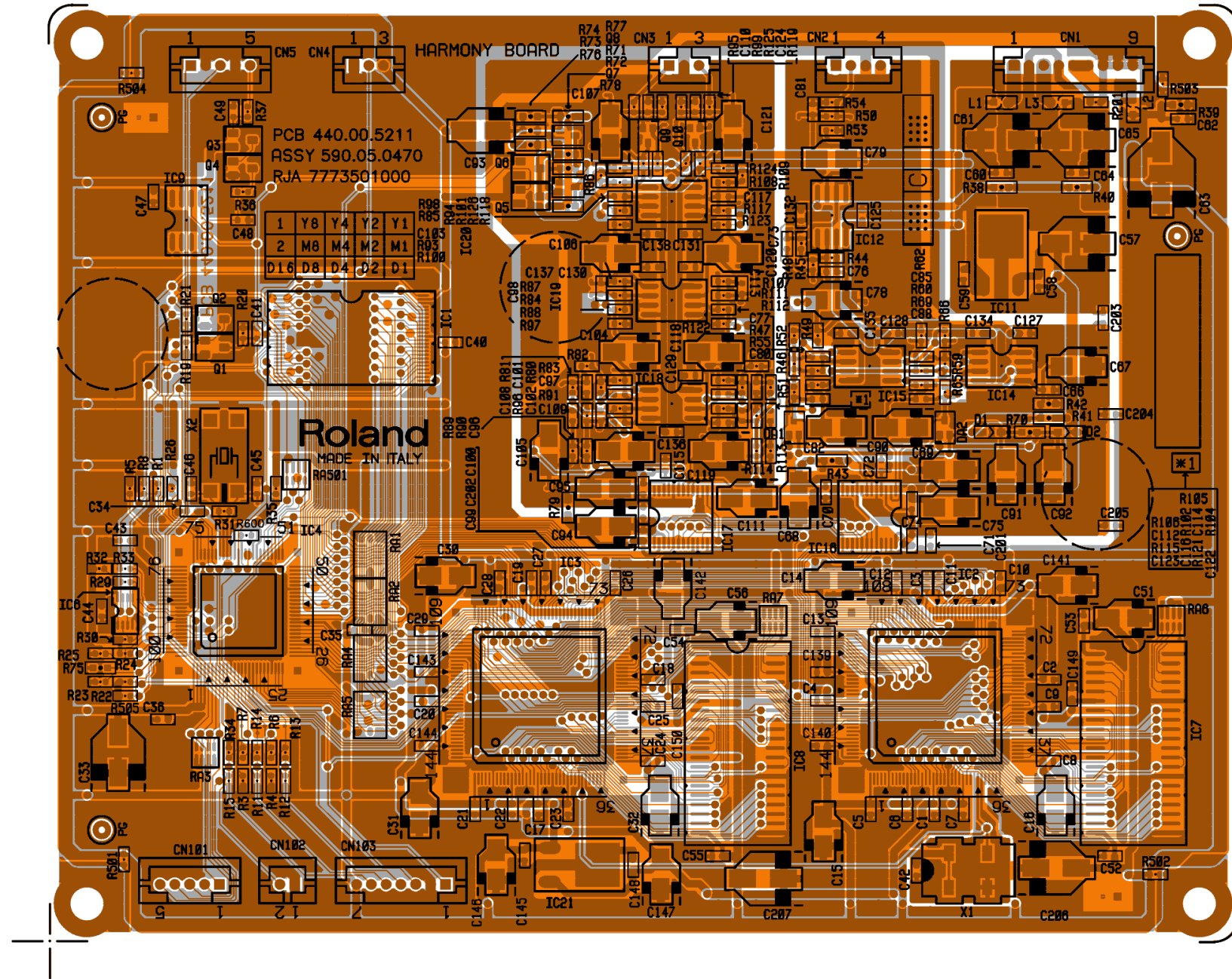


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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HARMONY PCB ASSY

ASSY 7773501000

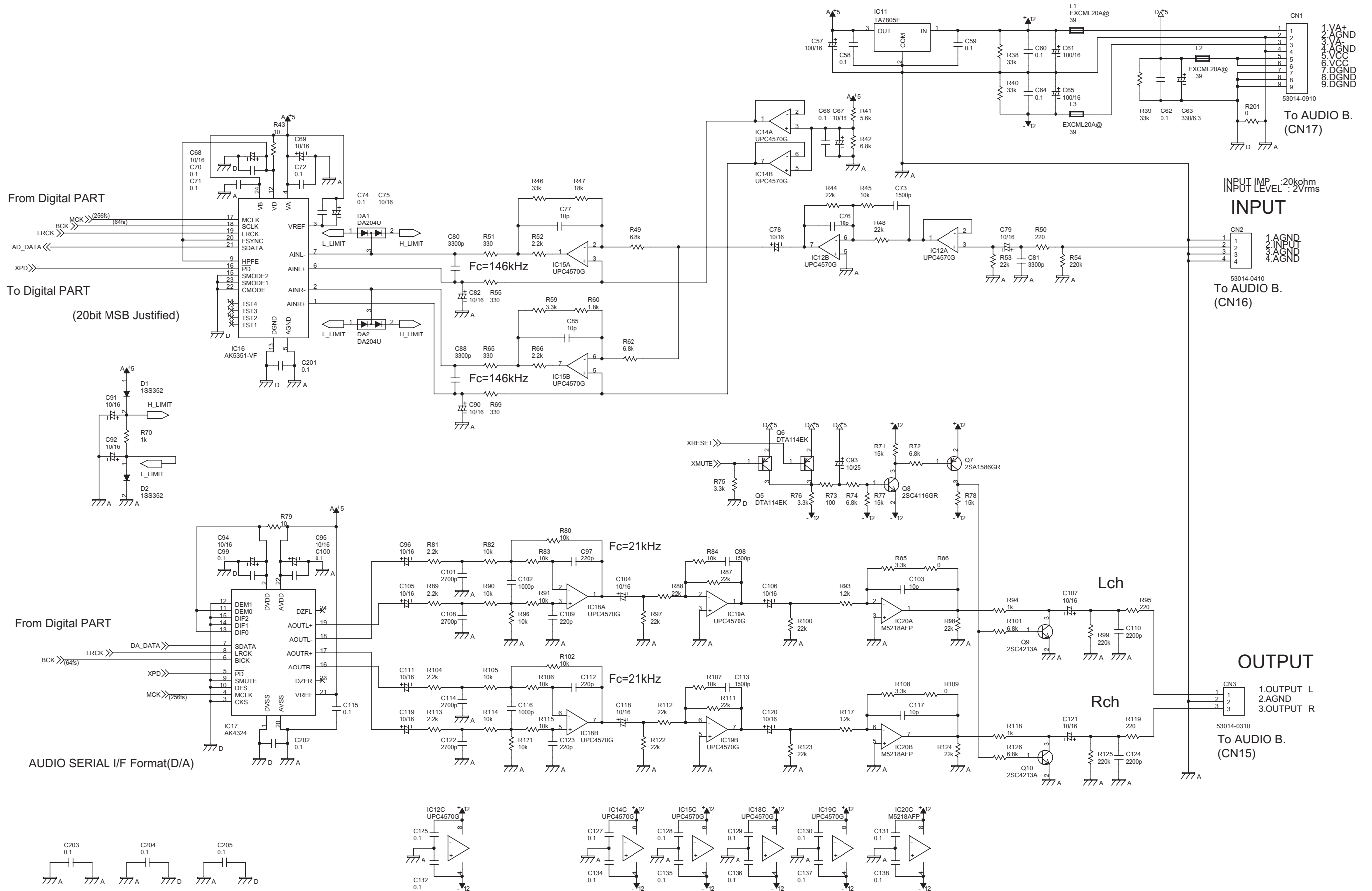


View from component side

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 29 30

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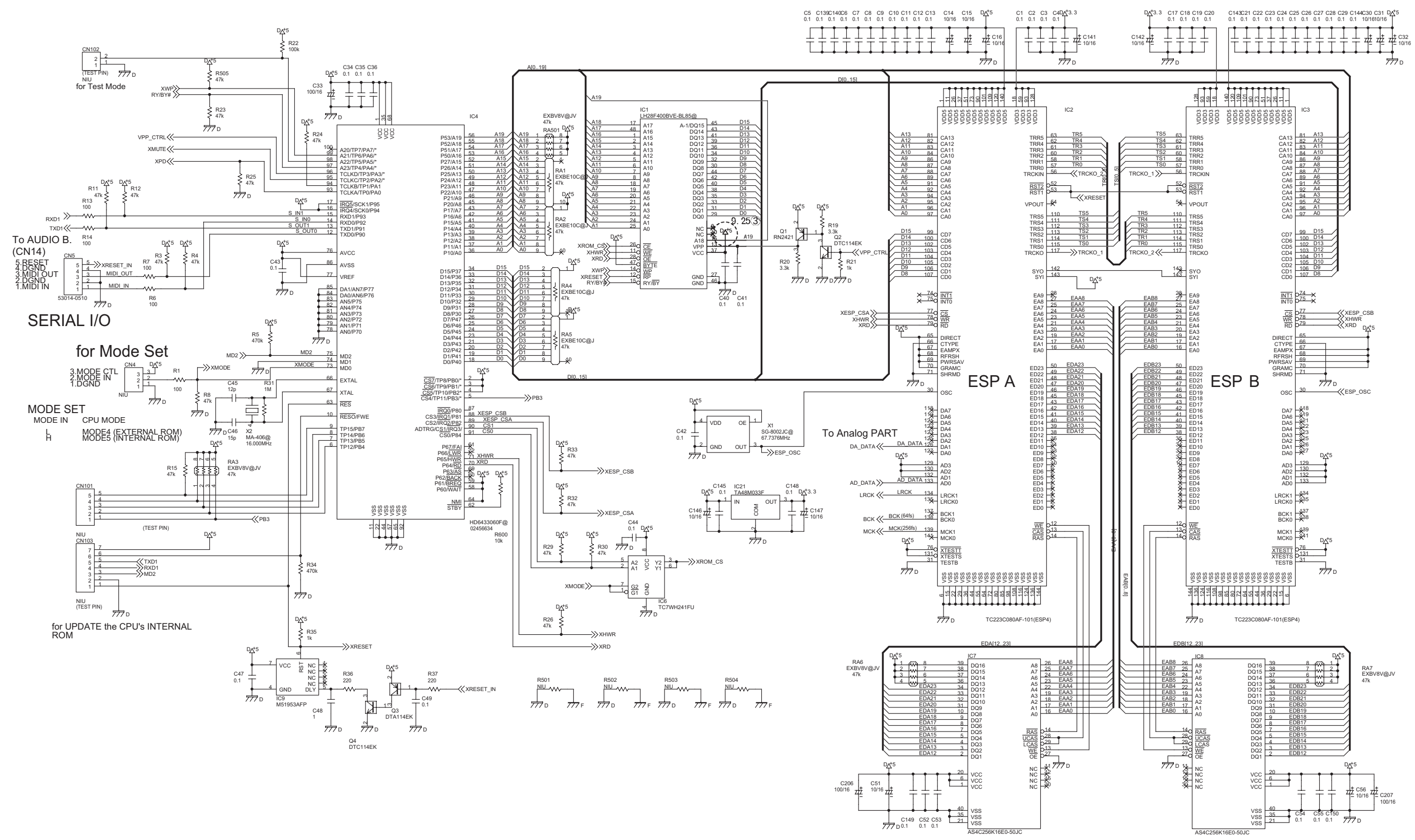
CIRCUIT DIAGRAM (HARMONY PCB ASSY/Section 1)



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 29 30

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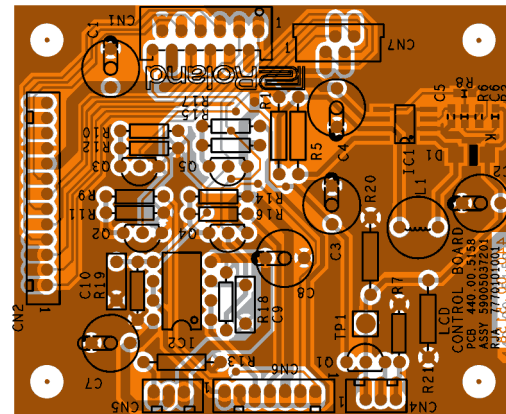
CIRCUIT DIAGRAM (HARMONY PCB ASSY/Section 2)



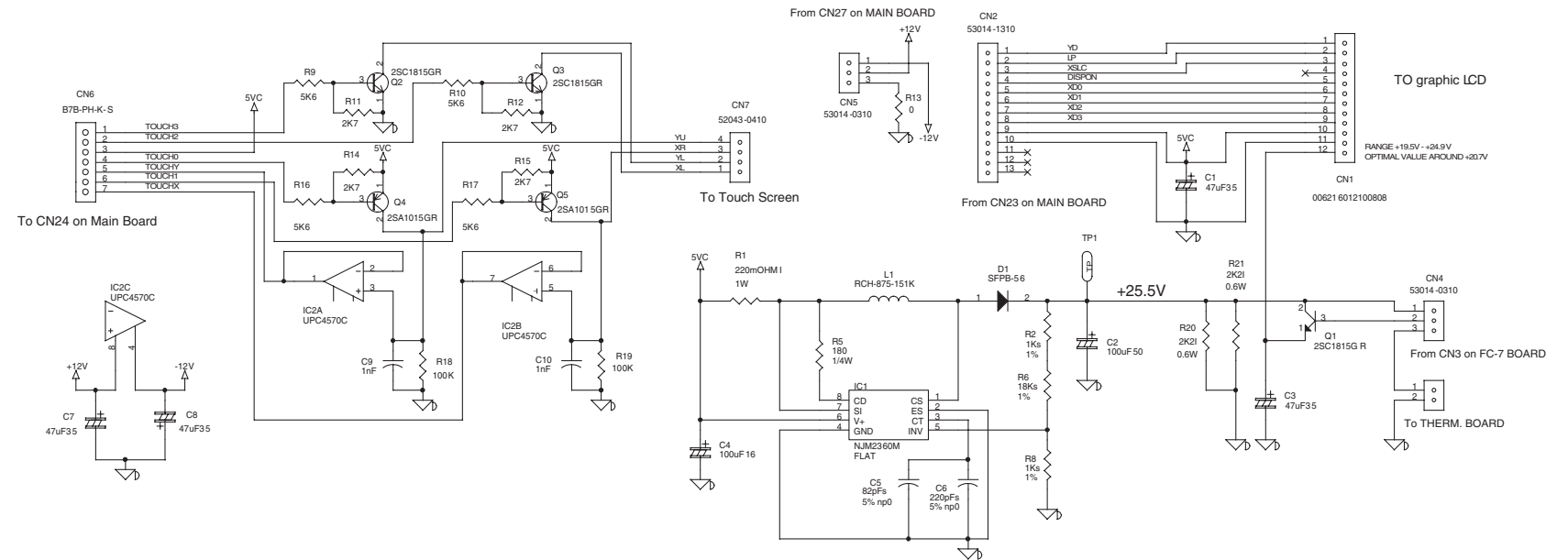
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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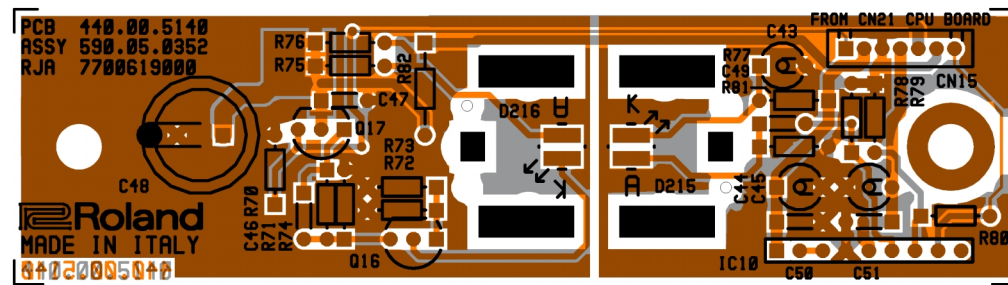
LCD CONTROL PCB ASSY & CIRCUIT DIAGRAM
ASSY 7770101001



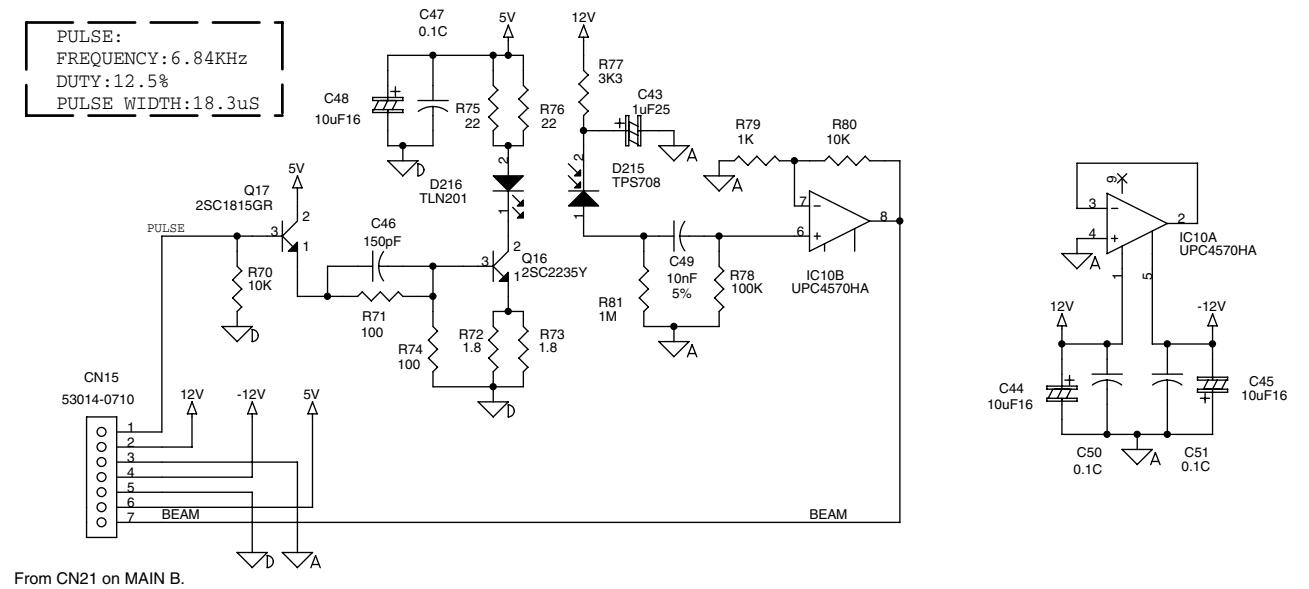
View from component side



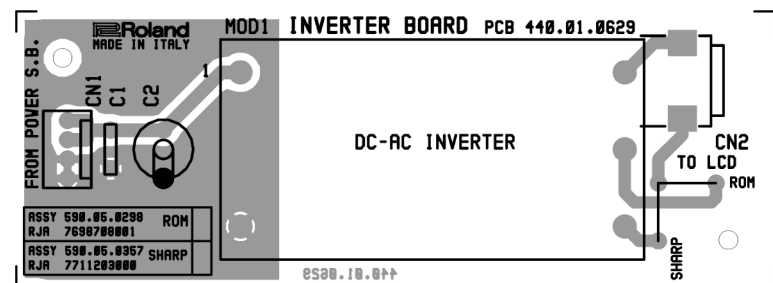
D-BEAM PCB ASSY & CIRCUIT DIAGRAM
ASSY 7700609000



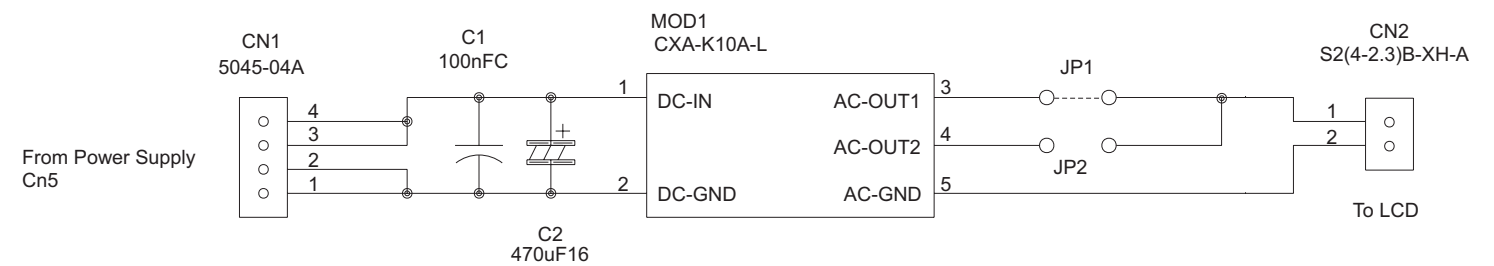
View from component side



INVERTER PCB ASSY & CIRCUIT DIAGRAM
ASSY 7711203000

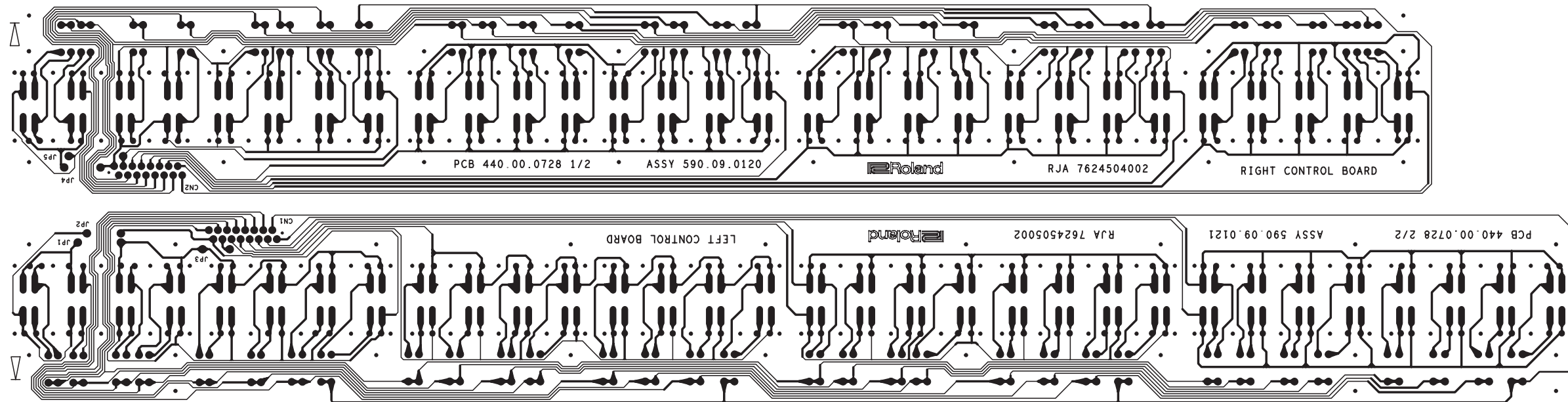


View from component side



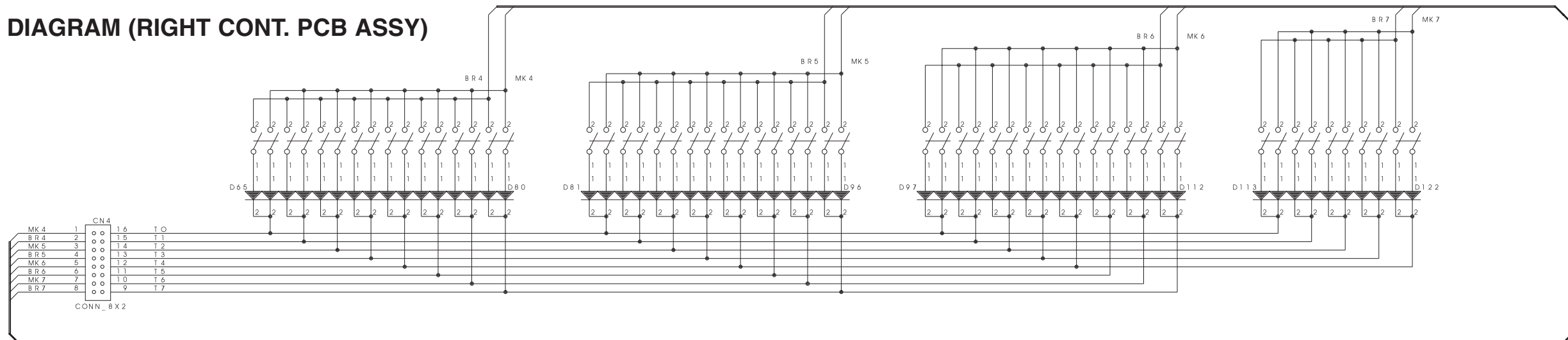
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A RIGHT & LEFT CONTACT PCB ASSY w/RUBBER ASSY 7624508000



View from solder side

J CIRCUIT DIAGRAM (RIGHT CONT. PCB ASSY)



P CIRCUIT DIAGRAM (LEFT CONT. PCB ASSY)

