G-70
MUSIC WORKSTATION

SERVICE NOTES

Second edition

Issued by RES

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SPECIFICATIONS

■ Keyboard:
76-note synthesizer-action keys with aftertouch

■ Sound source:
New WX sound engine

Max. polyphony	128 voices
Sounds	1596 tones in 16 families, 48 Drum Sets
SRX-series expansion board	1 slot (board optional)
Multitimbral parts	32
Effects processors	8 programmable units: 8x Reverb, 8x Chorus for Arranger/Recorder/16-track sequencer
	12x Reverb, 6x Chorus for Keyboard parts
	84x Multi-FX for Keyboard parts
	84x Multi-FX for External Audio Input
	Parametric equalizer & multi-band compressor
Compatibility	GM2/GS

■ Harmonic Bars:
Adjustable via assignable sliders

Upper1, Lower1	9 harmonic bars (16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1')
MBass	2 harmonic bars (16', 8')
Percussion	On, Off, 2-2/3', 4', Slow, Fast
Effects	Leakage Level, Overdrive, Vibrato/Chorus (On, Off, V1, C1, V2, C2, V3, C3), Rotary Speaker Simulation (Slow/Fast, Motor on/off via MODULATION lever)
Memories	8x3 (Upper1, Lower1, MBass), programmable registrations

■ Styles:
285 Styles in 12 families
120 programmable links to additional Styles (CUSTOM)

Unlimited access	Internal memory, memory card, floppy disk (via FINDER)
Style Cover	30 ALL Covers
	18 Drum Covers
	24 Bass Covers
Style Makeup Tools	Instrument-oriented editing
User Style Composer	8 tracks with microscope and macro editing
One Touch	4 programmable registrations per Style

■ Songs:

Real-time SMF player	4 programmable MARK & JUMP locations
Song Cover	30 ALL Covers
	18 Drum Covers
	24 Bass Covers
Song Makeup Tools	Instrument-oriented editing
Lyrics & chord display, score display	
Other functions	PLAY LIST function (99 steps)
	NEXT SONG function
	Text Import/Export & lyrics synchronization
Song Finder	Manages up to 99,999 songs
	Play & Search function

■ Sequencer:
16-track sequencer with microscope and macro editing functions

■ Display type & controls

Color 1/4 VGA	Touch-screen with 3D-SG (3D simulated graphics)
Contrast potentiometer	

■ Panel controls:

9 assignable sliders	Harmonic bars, mixer
DATA ENTRY dial with switching function	Data entry
Cursor	6 switches (data entry): INC, DEC, Up, Down, Right, Left
PITCH BEND/MODULATION lever, D Beam controller (with macro settings), MASTER VOLUME knob, KEYBOARD/ ACCOMP BALANCE, EXTERNAL SOURCE volume knob	
Keyboard Part switches	UP1, UP2, UP3, LW1, LW2, MBS
Tone Assign	UP1, UP2, UP3, LW1, LW2, MBS

■ User Programs:
144 Set List references for access via front panel

Unlimited access	Internal memory, memory card, floppy disk (via FINDER)
Additional functions	Parameter Hold
	Song Link
	MIDI Set Link

■ Music Assistant registrations:
500 factory registrations
Unlimited number of programmable entries

■ Vocal Harmonist:

4 presets	Talk, Voice-FX (12 presets), Auto Pitch, Singer (programmable)
2 Harmony modes	Small (30 macros), Ensemble (30 macros)
Vocoder	24 presets
Effects processors	
Voice	Noise Gate, Compressor, Reverb (9 types), Delay (9 types), programmable
Harmony	Reverb (9 types), Delay (9 types), Chorus (9 types), programmable
Others	Adjustable input gain, Level switch

■ Data storage

Floppy disk drive	3,5", 2HD/2DD
Internal memory	Solid-State Disk
Memory card	PCMCIA (Compact Flash, Memory Stick, Smart Media, Microdrive)
Type of files managed	Styles, Songs (SMF), User Programs, MIDI Sets, Play Lists, .txt files

■ Other functions:

Keyboard Modes	Split (2 split points), Whole
Easy Setting	Arranger, Organ, Piano
Chord voicing	ACV (Adaptive Chord Voicing)
Melody Intelligence	18 types
Metronome	With headphone output & LEVEL control
Singer Key Adapter	–6~+5 semi-tones (automatic SMF transposition)
Assignable switches	2 (programmable)
Miscellaneous	Tap Tempo, Sync Start/Stop, V-Link, interactive demo (in several languages)
System updates	Flash memory
USB	Data transfer & MIDI communication

■ Connectors

Headphone sockets	1x main, 1x metronome (with LEVEL control)
Pedal & footswitch sockets	FC-7 (programmable) HOLD FOOTSWITCH FOOT SWITCH (programmable) FOOT PEDAL
Audio connections	
Vocal Harmonist (with MIC/LINE switch)	Input: XLR & TRS phone (balanced/unbalanced) Outputs: Separate Left/Right or added to MAIN
External Source	Audio inputs: Left & Right, line level (with separate effects processor) (RCA/phono)
Metronome	OUTPUT (for headphones), LEVEL control
MAIN outputs	L/Mono, R (1/4")
DIRECT outputs	L/Mono, R (1/4")
Video output	Composite, PAL & NTSC Independent lyrics and chord display

Data exchange

PCMCIA slot (CompactFlash, Memory Stick, Smart Media, Microdrive)
USB port (data storage & MIDI communication)
MIDI IN/OUT/THRU

■ General specifications:

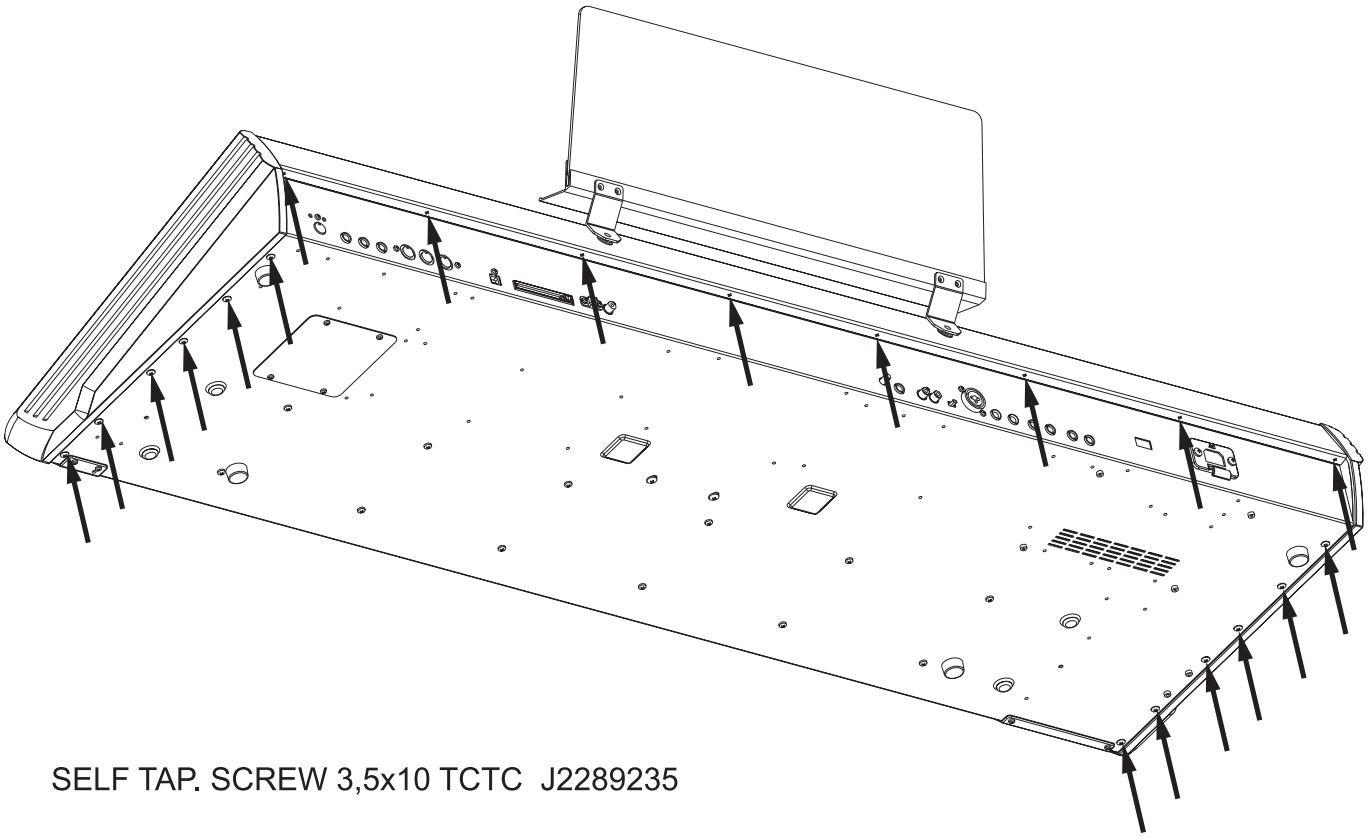
Power supply	100~240V (universal), 29W
Dimensions (mm)	1294.5 (W) x 158 (H) x 437 (D)
Weight	20.5kg
Supplied accessories	Owner's Manual, power cord, metal music stand, CD-ROM

Options

PK-5A Dynamic MIDI Pedal, FC-7 Foot Controller, MSA/MSD/MSE series floppy disks (Roland & third-party), RH-25/50/200 Headphones, DP-2 Pedal switch, DP-6 Pedal switch (piano type), BOSS FS 5U Foot switch, EV-5/7 Expression pedal, BOSS FV-300L Volume/Expression pedal, KC-150/350/550 Keyboard amplifiers
Memory cards (third-party manufacturers)

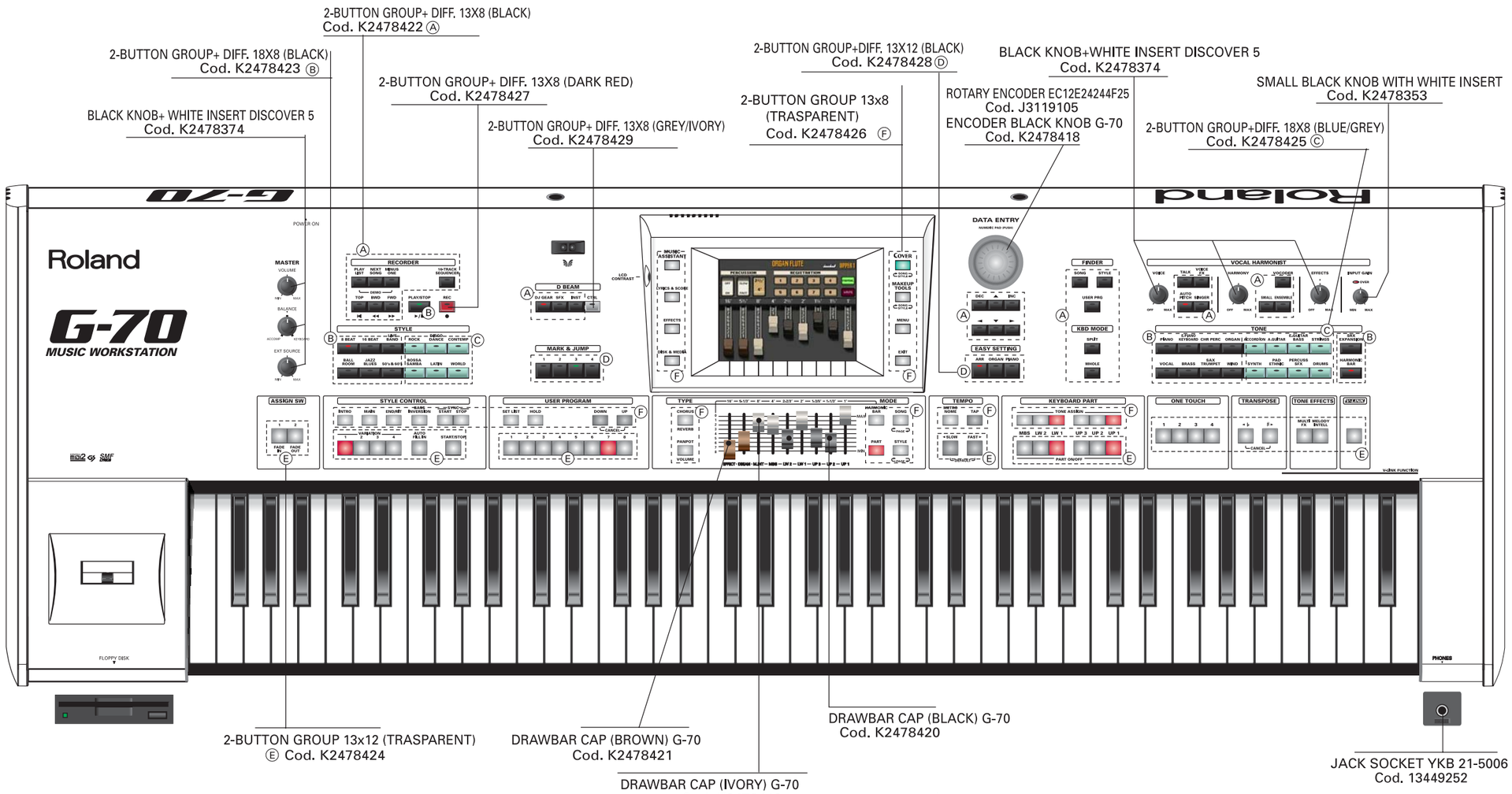
Note: Specifications are subject to change without prior notice.

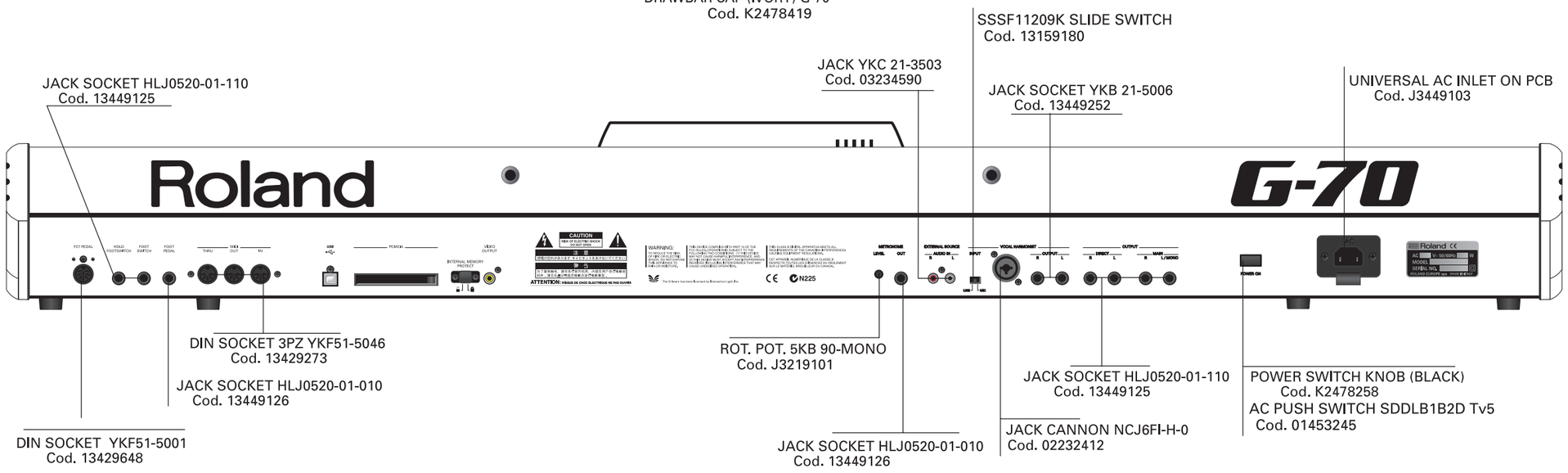
DISASSEMBLY



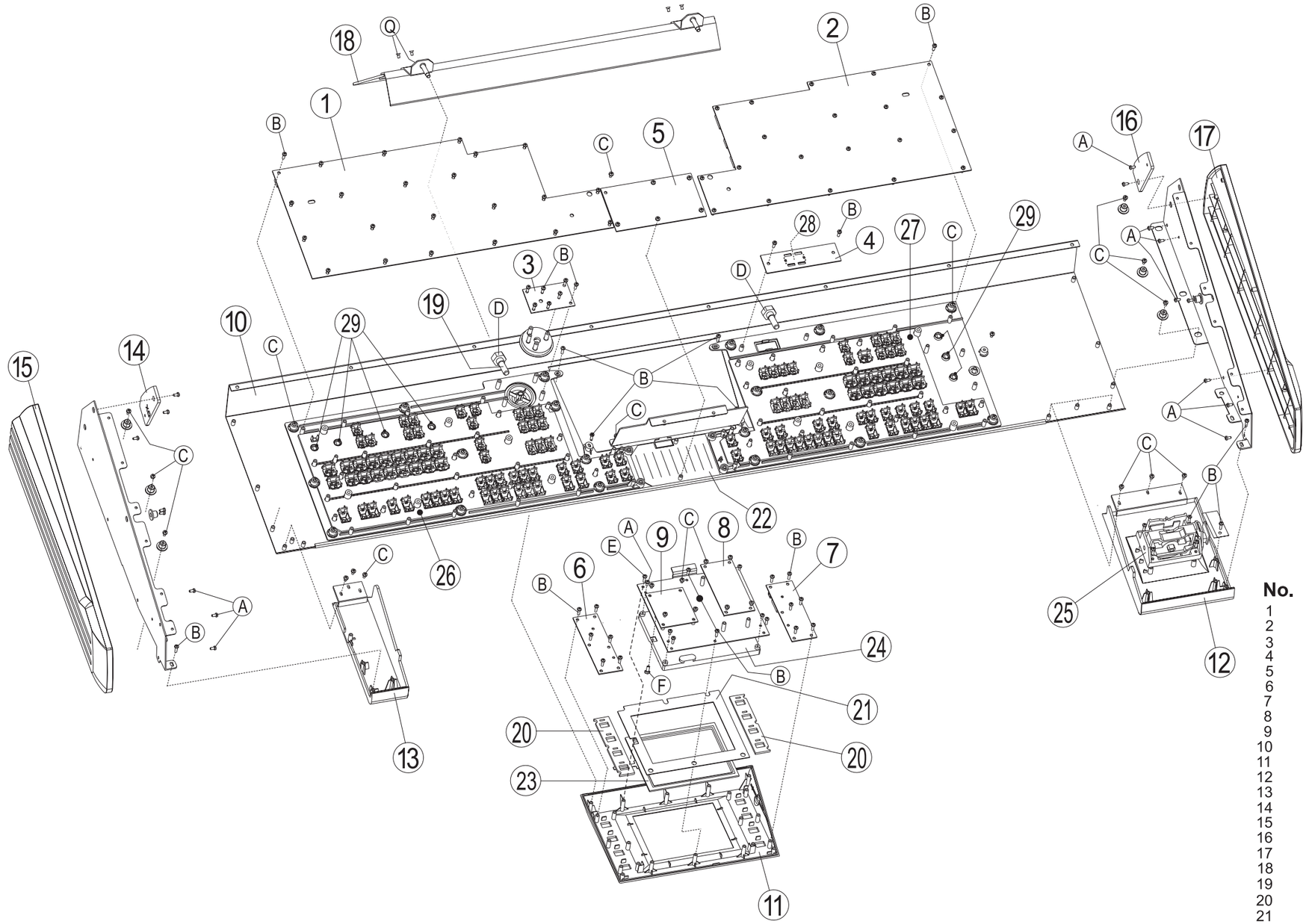
SELF TAP. SCREW 3,5x10 TCTC J2289235

LOCATION OF CONTROLS



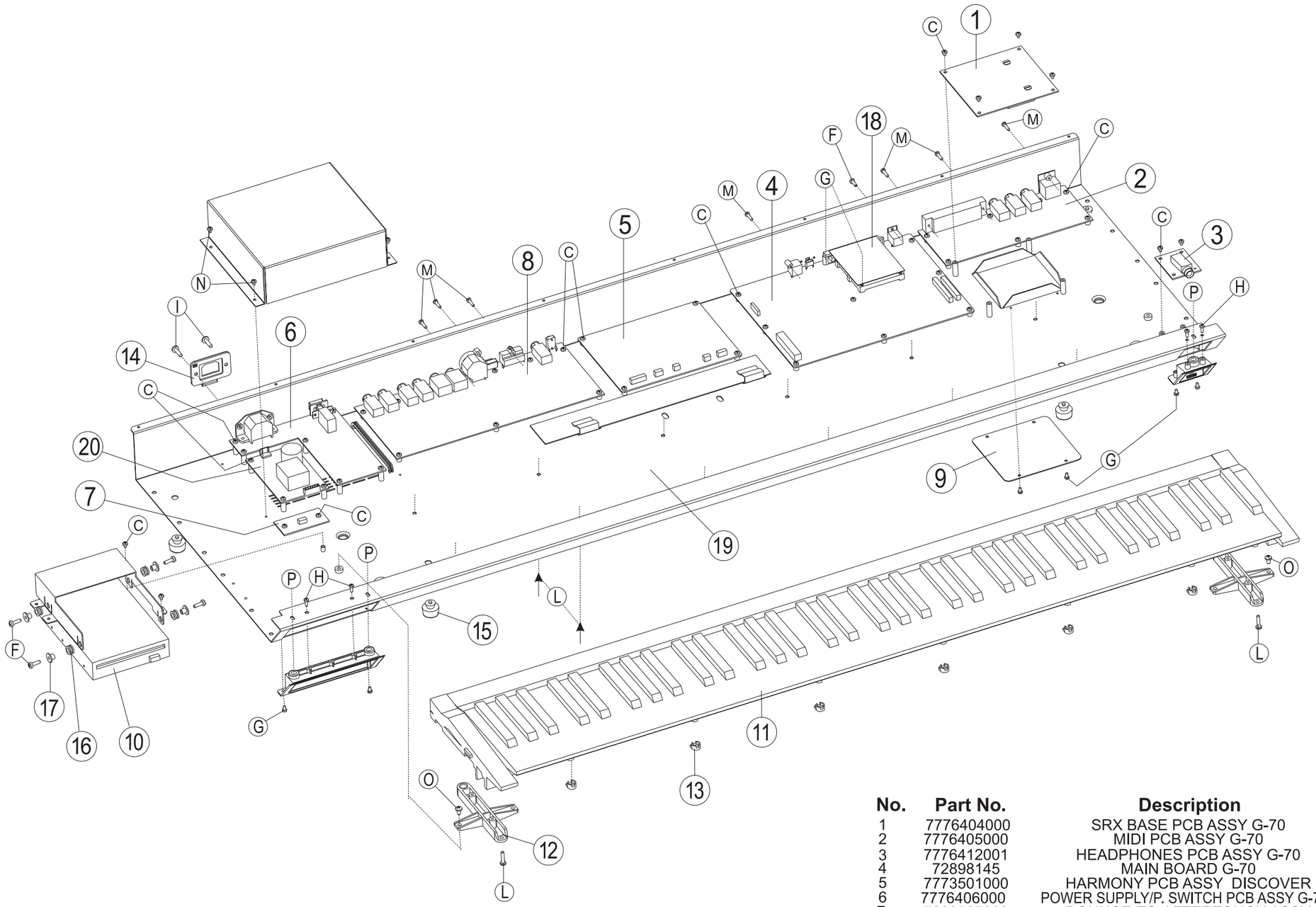


EXPLODED VIEW - TOP



No.	Part No.	Description
1	7776407000	RIGHT CONTROL PCB ASSY G-70
2	7776410001	LEFT CONTROL PCB ASSY G-70
3	7776411001	ENCODER ASSY G-70
4	7700609000	CONTROL PCB ASSY F/D-BEAM
5	7776413000	HARMONIC BAR PCB ASSY G-70
6	7776408000	RIGHT LCD CTRL PCB ASSY G-70
7	7776409000	LEFT LCD CONTROL ASSY G-70 ASSY
8	7776414000	INVERTER PCB ASSY G-70
9	7776403000	LCD CONTROL PCB ASSY G-70
10	7776416000	VARN+SILKSCR. TOP CABINET G-70
11	7776421000	VARN+SILKSCR. LCD COVER G-70
12	7776420000	VARN+SILKSCR. LEFT END-BLOCK G-70
13	7776419000	VARN+SILKSCR. RIGHT END-BLOCK G-70
14	7776423000	VARN. RIGHT SIDE PANEL CAP G-70
15	7776417000	RIGHT VARN. SIDE PANEL G-70
16	7776424000	VARN. LEFT SIDE PANEL CAP G-70
17	7776418000	LEFT VARN. SIDE PANEL G-70
18	7776422000	MUSIC REST G-70
19	K2158111	METAL NUT FOR MUSIC REST DISCOVER 5
20	K2268195	LCD VIBRATION-DAMPING (HLC30) G-70
21	K2248188	LCD ANTIDUST COVER (PL45) G-70
22	K2248189	ANTIDUST COVER PL45 (F/DRAWBAR) G-70
23	02126390	POSITION SENSOR EMU601A2MA16
24	03560889	LCD KCG057QV1DB-G00
25	03234723	PITCH BENDER PB-H0204
26	K2268193	RIGHT VIBRATION-DAMPING G-70
27	K2268194	LEFT VIBRATION-DAMPING G-70
28	01343089	D-BEAM CONTROLLER ESCT BLK
29	J2159114	BUSHING F/POTENTOMETER KNOB H.7.2I.9.2
(SCREW)		
A	J2289124	SELF TAP.SCREW 2,9x6 TCTCPR BZ
B	J2289125	SCREW 2,9x10 TC TC PR TROP
C	J2289193	SELF LOCK. SCREW M3x6 TC TC H.6
D	J2289222	NUT 10 MA TH.8 UNI 5588
E	J2289130	SCREW 2,9x13 TC TC PR TROP
F	J2289108	SELF LOCK. SCREW M3x10 TCTC H.6
Q	J2289292	SCREW M3x6 TC TSP BRUN

EXPLODED VIEW - BOTTOM

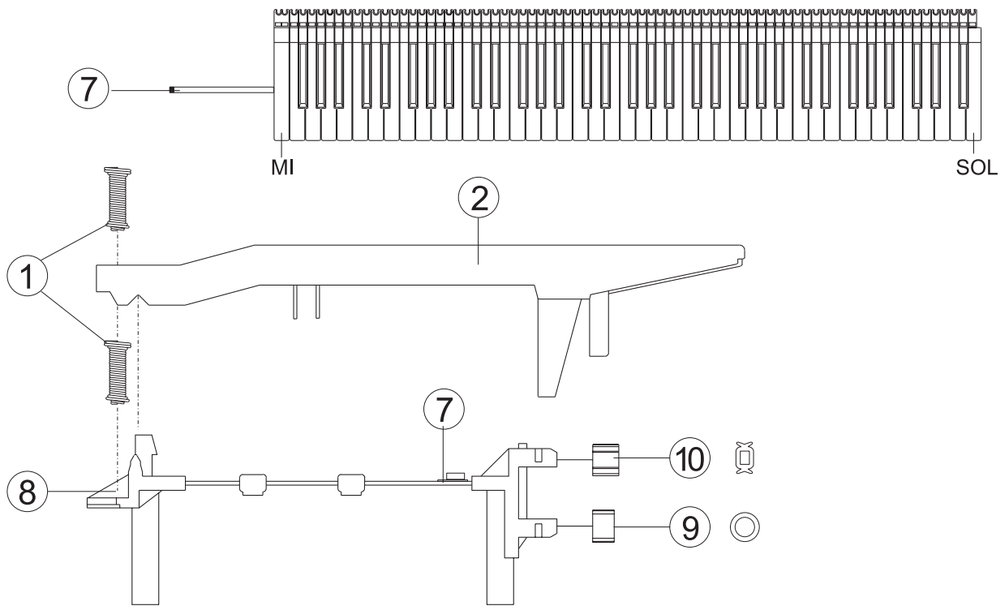


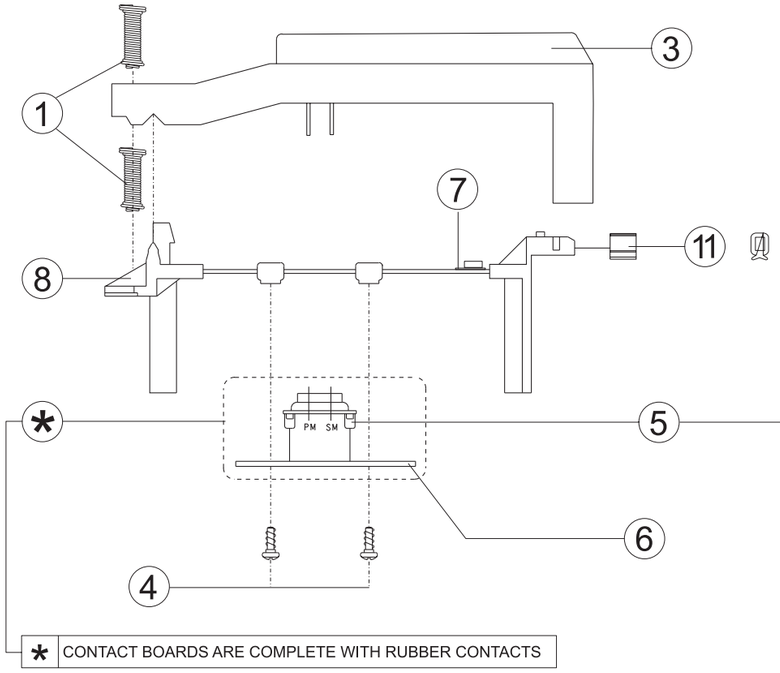
(SCREW)		
C	J2289193	SELF LOCK. SCREW M3x6 TC TC H.6
F	J2289108	SELF LOCK. SCREW M3x10 TCTC H.6
G	J2289101	SELF TAP.SCREW 2,9x6 TCTC
H	J2289126	SELF TAP. SCREW 2,9x8TCTCPRBZ
I	J2289213	SELF TAP. SCREW 3,9x16 TC TC
L	J2289131	SELF TAP.SCREW 3,5x16 TCTC PR BZ
M	J2289160	SELF TAP.SCREW 2,9x13 TCTCPR BR
N	J2289111	SELF LOCK.SCREW M3x4 TCTC H.6
O	J2289135	SELF LOCK.SCREW M4x7 TC TC T.8
P	J2289274	SCREW 2,9x13 TC BZ TFR T.7 TROP HILO

No.	Part No.	Description
1	7776404000	SRX BASE PCB ASSY G-70
2	7776405000	MIDI PCB ASSY G-70
3	7776412001	HEADPHONES PCB ASSY G-70
4	72898145	MAIN BOARD G-70
5	7773501000	HARMONY PCB ASSY DISCOVER
6	7776406000	POWER SUPPLY/P. SWITCH PCB ASSY G-70
7	7699507000	BOUNCE-TO-AFTERTOUCH ASSY
8	7776401001	AUDIO PCB ASSY G-70
9	7776432000	VARN. SRX SLOT COVER G-70
10	J240910701	FLOPPY DISK DRIVER JU-257A 907P
11	7699510001	76-KEY KEYBOARD ASSY TP/8S-AT
12	K1188128	KEYBOARD SUPPORT G-1000
13	K2168125	KEYBOARD SECURING SPACER
14	K2248160	AC SOCKET HOLDER
15	J2359105	PRESSURE RUBBER SFF-018
16	22265242	RUBBER GUIDE BUSHING
17	22165134	BRASS BUSHING
18	03562156	FANTOM-X6 PC CARD BSCT BLK
19	7776415000	SILKSCR+VARN. BOTTOM CBN G-70
20	01785823	SWITCHING POWER SUPLLY A1DU2L3B034

KEYBOARD PARTS LIST

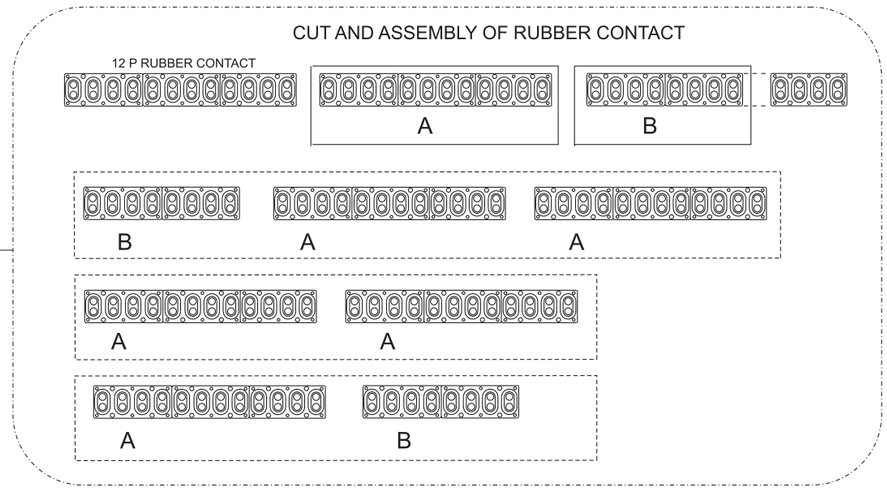
76-KEY KEYBOARD ASSY TP/8S-AT code 7699510001





KEYBOARD PARTS LIST

Ref	Description		Code	n.
1	KEY SPRING gr60 or 122		J2179107	76
2	NATURAL KEY C8 (gr20) TP/8S-AT	MI(I)	J2579171	1
	NATURAL KEY C (gr20) TP/8S-AT	DO	J2579172	6
	NATURAL KEY D (gr20) TP/8S-AT	RE	J2579173	6
	NATURAL KEY E (gr20) TP/8S-AT	MI	J2579174	6
	NATURAL KEY F (gr20) TP/8S-AT	FA	J2579175	7
	NATURAL KEY G (gr20) TP/8S-AT	SOL	J2579176	6
	NATURAL KEY A (gr20) TP/8S-AT	LA	J2579177	6
	NATURAL KEY B (gr20) TP/8S-AT	SI	J2579178	6
	NATURAL KEY G2 (gr20) TP/8S-AT	SOL(F)	J2579179	1
3	SHARP KEY (gr16) TP/8S		J257918001	31
4	SELF TAP SCREW 2,9x8mm TC TC PR BZ		J2289126	42
5	12P RUBBER CONTACT		2218523802	7**
6	CONTACT PCB ASSY 76 KEYS W/RUBBER/CABLE		7773405000	1
7	SENSOR AFTER_TOUCH		J3169108	1
8	76-KEY KEYBOARD CHASSIS TP/8S-AT		J2579181	1
9	GUIDE BUSHING INFERIOR		J2359104	45
10	GUIDE BUSHING SUPERIOR FOR NATURAL KEY		J2359109	45
11	GUIDE BUSHING SUPERIOR FOR SHARP KEY		J2359110	31



PARTS LIST

SAFETY PRECAUTIONS :

The parts marked ⚠ 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***

⚠ *The parts marked ⚠ 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.***

CASING

			Q.ty
#	7776415000	SILKSCR+VARN. BOTTOM CBN G-70	1
#	7776432000	VARN. SRX SLOT COVER G-70	1
#	7776416000	VARN+SILKSCR. TOP CABINET G-70	1
#	7776417000	RIGHT VARN. SIDE PANEL G-70	1
#	7776418000	LEFT VARN. SIDE PANEL G-70	1
#	7776419000	VARN+SILKSCR. RIGHT END-BLOCK G-70	1
#	7776420000	VARN+SILKSCR. LEFT END-BLOCK G-70	1
#	7776423000	VARN. RIGHT SIDE PANEL CAP G-70	1
#	7776424000	VARN. LEFT SIDE PANEL CAP G-70	1
#	7776421000	VARN+SILKSCR. LCD COVER G-70	1
#	7776422000	MUSIC REST G-70	1

KNOB BUTTON

			Q.ty
#	K2478418	ENCODER BLACK KNOB G-70	1
#	K2478419	DRAWBAR CAP (IVORY) G-70	4
#	K2478420	DRAWBAR CAP (BLACK) G-70	3
	K2478353	SMALL BLACK KNOB WITH WHITE INSERT	1
#	K2478421	DRAWBAR CAP (BROWN) G-70	2
	K2478258	POWER SWITCH KNOB (BLACK)	1
#	K2478422	2-BUTTON GROUP+DIFF. 13X8 (BLACK)	14
#	K2478423	2-BUTTON GROUP+DIFF. 18X8 (BLACK)	8,5
#	K2478424	2-BUTTON GROUP 13X12 (TRANSPARENT)	16,5
#	K2478425	2-BUTTON GROUP+DIFF. 18X8 (BLUE/GREY)	7
#	K2478426	2-BUTTON GROUP 13X8 (TRANSPARENT)	16
#	K2478427	2-BUTTON GROUP+DIFF. 13X8 (DARK RED)	0,5
#	K2478428	2-BUTTON GROUP+DIFF. 13X12 (BLACK)	3,5
#	K2478429	2-BUTTON GROUP+DIFF. 13X8 (GREY/IVORY)	0,5
	K2478374	BLACK KNOB+WHITE INSERT DISCOVER 5	6

SWITCH

				Q.ty
⚠	01453245	AC PUSH SWITCH	SDDLB1B2D TV5	1
	J3169105	SWITCH	TP-1101A / EVQ-PAE 05 R	133
	13159180	SLIDE SWITCH	SSSF11209K	1

JACK, SOCKET

					Q.ty
A	02232245	RCA(PIN) JACK	RCA(PIN) YKC21-3661	JK2 on main Board	1
A	02781101	USB CONNECTOR	YKF45-0020	JK1 on main Board	1
A	02232412	JACK CANNON	NCJ6FI-H-0		1
A	03234590	JACK	YKC21- 3503		1
	13449252	JACK SOCKET	YKB 21-5006		3
	13449125	JACK SOCKET	HLJ0520-01-110		6
	13449126	JACK SOCKET	HLJ0520-01-010		2
	13429273	DIN SOCKET 3PZ	YKF51-5046		1
	13429648	DIN SOCKET	YKF51-5001		1

DISPLAY UNIT

			Q.ty
	03560889	LCD KCG057QV1DB-G00	1

DISK DRIVE UNIT

			Q.ty
Note :	J240910701	FLOPPY DISK DRIVER JU-257A 907P	1

BENDER UNIT

			Q.ty
Note : #	03234723	PITCH BENDER PB-H0204	1

KEYBOARD ASSY

			Q.ty
	7699510001	76-KEY KEYBOARD ASSY TP/8S-AT	1

NOTE: For details, refer to KEYBOARD PARTS LIST

POWER SUPPLY UNIT

Note :	01785823	SWITCHING POWER SUPPLY A1DU2L3B034	1

Replacement SWITCHING POWER SUPPLY A1DU2L3B034 should be made on a unit basis.
No replacements available for individual parts. Replacement only be a unit.

PCB ASSY

	7699507000	BOUNCE-TO-AFTERTOUCH ASSY	1
	7700609000	CONTROL PCB ASSY F/ D-BEAM	1
	7773501000	HARMONY PCB ASSY DISCOVER	1
	7773405000	CONTACT PCB ASSY 76 KEYS W/RUBBER/CABLE	1
#	7776401001	AUDIO PCB ASSY G-70	1
#	7776403000	LCD CONTROL PCB ASSY G-70	1
#	7776404000	SRX BASE PCB ASSY G-70	1
#	7776405000	MIDI PCB ASSY G-70	1
#	7776406000	POWER SUPPLY/P.SWITCH PCB ASSY G-70	1
#	7776413000	HARMONIC BAR PCB ASSY G-70	1
#	7776407000	RIGHT CONTROL PCB ASSY G-70	1
#	7776408000	RIGHT LCD CTRL PCB ASSY G-70	1
#	7776409000	LEFT LCD CONTROL ASSY G-70	1
#	7776410001	LEFT CONTROL PCB ASSY G-70	1
#	7776411001	ENCODER ASSY G-70	1
#	7776412001	HEADPHONES PCB ASSY G-70	1
#	7776414000	INVERTER PCB ASSY G-70	1
Note :#	72898145	MAIN-BOARD G-70	1

Replacement MAIN-BOARD G-70 should be made on a unit basis.
No replacements available for individual parts. Replacement only be a unit.
We only supply:

A	02232245	RCA(PIN) JACK	RCA(PIN) YKC21-3661	JK2 on main Board	1
A	02781101	USB CONNECTOR	YKF45-0020	JK1 on main Board	1
A	02900867	CARD EJECTOR	SCAB1A5600	CN24 on Main Board	1
A	02900834	CARD CONECTR	SCAA1A2300	CN24 on Main Board	1
A	02455212	IC (CUSTOM)	SLAC02AF2H (KSM) KEY SCAN	IC74 on Main Board	1

IC

A	02455212	IC (CUSTOM) SLAC02AF2H (KSM) KEY SCAN		IC74 on Main Board	1
A	03561389	EL-INVERTOR TRANS DHE1105B-5VE	INVERTER MODULE		1
	15229718RI	I.C.6N 137	PHOTO-COUPLER		1
	02456634	I.C. HD6433060G25F	FLAT		1
	15169547RI	I.C. 74 HC 08	DIP CMOS		4
	J5159114	I.C.. 74 HC 14			1
	15169550RI	I.C. 74 HC138	DIP CMOS		4
	J5259155	I.C.M11B416256A-35J			2
	02231767	I.C. TC223C080AF-101	FLAT		2
	15159113	I.C. 4051 BCP	CMOS		2
	K5258146	I.C. TC74VHC139F	FLAT		1
	J5259158	I.C. TC4053 BFN	(FLAT)		1
	J5259159	I.C. TC7WH241FU	FLAT		1
	01893334	I.C. 67.7376M-PHCL SG-800 JC			1
	15169334	I.C. 74 LS 05 N			1
	15189251	I.C. M5218 P	(OP AMP)		2
	15189186	I.C. UPC 4570C	(OP AMP)		3
	15289105	I.C. UPC 4570G	(OP AMP)		12
	15189189	I.C. UPC 4570HA VERT.	(OP.AMP.)		1
	01451578	I.C. AK4324-VF-E2 DAC			1
	02566367	I.C. M62320P	DIP		14
	01902045	I.C. AK5351-VF-E2	FLAT		1
	15189261	I.C. BA 5218 AFP-600E	FLAT		6
	15289123	I.C. M51953 AFP-600E	FLAT		1
	J5199102	I.C. UA 7812 CV TO220			1
	J5199103	I.C. 7912F TO220			1
	J5259133	I.C. TA7805 AF			1
	02561601	I.C. TA48M033F(TE16L S)			1

TRANSISTOR

A	00901523	TRANSISTOR	2SA-1681K	1
A	02671023	TRANSISTOR	2SC-3052	2
A	02671267	TRNSISTOR	RT1N141C-T12-1	1
#	15329103T0	TRANSISTOR	2SK880GR (TE85R)	1
	15119155RI	TRANSISTOR	BC/560-B	1
	15119154RI	TRANSISTOR	BC/549-B	2
	15129114	TRANSISTOR	2SC-1815GR	1
	15319101	TRANSISTOR	2SC-2412K	4
	15129427	TRANSISTOR	2SC-2235Y	1
	15319105	TRANSISTOR	2SC-3326A	12
	15129164	TRANSISTOR	DTC-114ES	41
	15329511	TRANSISTOR	DTC-114TK	1
	15329516	TRANSISTOR	DTC-114EK	3
	15119163	TRANSISTOR	RN2227	36
	J5119104	TRANSISTOR	DTA-114 EK CHIP	3
	00898201	TRANSISTOR	RN2421 CHIP	1

	15119141	TRANSISTOR	DTA-114 ESATP	9
	15319107	TRANSISTOR	2SC-4116GR	3
	J5119106	TRANSISTOR	2SC-4213-A (TE85L)	2
	J5119107	TRANSISTOR	2SA-1586-GR (TE85R)	3

DIODE

A	00129767	DIODE ZENER	RD10M-T1B-B2	1
A	01897189	DIODE	MA147-(TX) CHIP	1
#	J5029118	LED DIODE	SLR-343EBT3F (GREEN)	21
#	J5029119	LED DIODE	SLI-343URC3F (RED)	98
	15019159RI	DIODE	1N-4148	278
	15339108	DIODE	DA-204K	7
	01121323	DIODE DA-204U	T-106 CHIP	5
	15339119TO	DIODE	1SS-352 TPH3	2
	01341623	DIODE	LED TLN 201	1
	01342578	PHOTO	DIODE TPS 708	1
	01121689	LED	SPR-325MVWT31	2
	J5019120	LED DIODE	SLA 560BBT3F XJ (BLUE)	1
	J5029117	DIODE LED	L-934MBDL BLUE	1
	J5019106	ZENER DIODE	BZX55C 5.1V	2
	J5339104	ZENER DIODE	EDZ7.5B 7.5V CHIP	2

RESISTOR

	J3709119	RESISTOR	4.7K OHM 1/8W 5%	3
	13910103RI	RESISTOR ARRAY	S.L.8X10K +C	10
A	01906667	R-ARRAY	MNR14EOABJ100	4
	J3919108	RESISTOR	ARRAY EXB-V8V-103-JV	2
	01566190	CEA	R-ARRAY EXB-E10C-473-J	4
	J3919118	RESISTOR	ARRAY EXB-V8V-473-JV	4
	13819132RI	UNINFL.RES.	100 OHM 0.6W 5%	14
	13819131RI	UNINFL.RES.	10 OHM 0.6W 5%	1
	J3809136	UNINFL. RES.	56 OHM 1/4W	4
	J3809142	UNINFL.RESISTOR	680 OHM 0.6W 5%	10
A	01450490	CEA THERMISTOR	R NTH5G16P33B103J07TH	1
#	J3809160	RESIST. 2010	47 OHM1/2W 5%	8
#	J3809161	RESISTOR 2512	100 OHM 1W 5% (MCR100)	2

POTENTIOMETER

#	J3219110	ROT. POT.	(10K) RK14J11A000G	1
	13289186	ROT.POT.	10KB 11K1130	2
	00459901	ROT. POT.	10KB 14K 1230	2
	13289185	ROT. POT.	10KB 11K1130	3
	J3219101	ROT.POT.	5KB 90 - MONO	1
	J3339101	LIN. POT. CURSOR	100KB 10 MS	9

CAPACITOR

	J3549105	POLY.COND.	10NF 5% P.5	3
	01015878	POL.COND. 0805	330P 5%	6
	15359774	POLYEST.COND. 0805	680P 5%	2
	J3629144	ELCTRL.COND.	470UF 16V AX	2
#	J3629167	ELECTR. CAPACITOR	6800UF 6.3V R.	3
	13639154	ELECTRL.COND.-V	1000UF 16V	2
	J3469156	ELECTR. COND.	33U 35V P.5	2
	J3629103	ELECTRL.COND.	100U 25V P5	5
	J3629135	ELECTRL. COND.	470U 35V P5	1
	J3629105	ELECTRL.COND.	47U 50V P5	2
	J5369103	ELECTR.CAPACITOR RV2	100U 16V (SMD)	13
	J5369104	ELECTR. COND. RV2	10U 16V (SMD)	44
	J5369107	ELECTR. COND. RV	330U 16V (SMD)	2
	J5369105	ELECTR.CAPACITOR RV3	33U 16V (SMD)	20
	J5369102	ELECTR.COND. RV2	47U 16V SMD	17
	J5369111	ELECTR. COND. RV2	10U 25V (SMD)	3
	J5369108	CONDENSER SMD RV2	4.7U 25V ELET. ELNA	2
	J5369106	ELECTR. COND. RV2	1U 50V (SMD)	4
	J3629149	ELECTR.COND. 100U	16V H.7	18
	J3629143	ELECTR. COND. 10U	16V H.7	2
	J3629137	ELECTR. COND. 33U	16V H.7	6
	J3629142	ELECTR. COND.	1U 63V H.7	1

INDUCTOR, COIL, FILTER

<<EMI>>	22448240	NOISE SUP.	BL02RN2-R62	3
<<EMI>>	12449370	NOISE SUP.	SBT-0160W	5
<<EMI>>	12449326	NOISE SUP.	SBT-0460	3
<<EMI>>	13529187	NOISE SUP.	ELKTR391CA	9
<<EMI>>	01340834	FERRITE BEAD	EXCML 20A390	10
<<EMI>>A	01567501	FERRITE BEAD	EXC3BB102H	2
<<EMI>>A	01909645	FERRITE BEAD	EXCML16A270U	16

CRYSTAL, RESONATOR

	00894034	X-TAL	16 MHZ MA-406	1

BUZZER

#	J2429102	BUZZER	PK-21N30P	1

ENCODER

	J3119105	ROTARY ENCODER	EC12E24244F25		1

CONNECTOR

A	02900867	CARD EJECTOR	SCAB1A5600	CN24on Main Board	1
A	02900834	CARD CONECTR	SCAA1A2300	CN24on Main Board	1
A	13369541	20P MALE CONN.	B10B-PH-K-S (JST)		3
A	13369567	4P MALE CONNECTOR	B4B-PH-K-S (JST)		1
#	J3439203	11P MALE CONNECTOR	B11B-PH-K-S (JST)		2
A	02019001	FEM. CONNECTOR	32FE-BT-VK-N		1
A	02018990	FEM. CONNECTOR	34FE-BT-VK-N		1
A	02010078	CONNECTOR	TX25-80P-6ST-E1		1
#	J3439204	15P MALE	53015-1510-90 P2 M		1
A	03457478	CEM CONNECTOR	20FLT-SM1-TB		1
#	J3439205	2P MALE CONNECTOR	SM02(8R0)B-BHS-TB		1
#	J3439206	15P MALE CONN.	B15B-PH-K-S (JST)		1
#	J3439200	4P MALE CONNECTOR 90	S4B-PH-K-S P.2 JST		1
#	J3439207	14P MALE CONN.(90)	S14B-PH-K-S P.2 (JST)		1
	00451401	16P FEM. CONNECTOR AMP 1.27			1
	03347456	20P FEM. CONNECTOR AMP 1.27			1
	J3429122	14P FEM. CONNECTOR AMP 1.27			2
	J3429125	FEMALE CONNECTOR	52043-0410		1
	13369688RI	4P MALE CONN. P 2.5 M			2
	J3439120	4P MALE CONN. P.2 M			2
	J3439121	6P MALE CONN. P.2 M			2
	J3439122	8P MALE CONNECTOR P.2 M			1
	J3439125	5P MALE CONNECTOR P.2 M			2
	J3439151	9P MALE CONNECTOR P.2 M			2
	J3439124	10P MALE CONN. P. 2 M 90			4
	J3439142	3P MALE CONNECTOR P/2.5 M			1
	J3429120	3P MALE CONNECTOR P.2 M			4
	J3439148	7P MALE CONNECTOR P.2 M			1
	13369898	2P MALE CONNECTOR B2P3-VH			1
	13369592	7P MALE CONNECTOR P.2.5 JST			1
	J3439158	4P MALE CONN. (90)	76382-404		1
	J3439163	15P MALE CONNECTOR P.2 M			1
	13369564	B12B-PH-K-S CONNECTOR			1
	J3439172	8P MALE CONNECTOR 90 P.2 M			3
	J3439182	5P MALE CONNECTOR 90 P.2 M			3
	J3439175	11P MALE CONNECTOR 90 P.2 M			2
	J3439183	3P MALE CONNECTOR 90 P.2 M			1
	J3439187	7P MALE CONNECTOR 90	S7B-PH-K-S P.2 JST		2

WIRING, CABLE

	K3468264	14P FLAT CABLE (12) -2C D/R	1
	K3468177	16P FLAT CABLE (56) -2C	1
#	K3468291	34P FLAT CABLE (86) 2C D/R	1
#	K3468292	CABLE 32X90-BDX10(BL)-P1.25-S5-M UL2896	1
#	K3468293	CABLE 34X90-BDX10(BL)-P1.25-S5-M UL2896	1
#	K3468294	CABLE CD20X190-BDX6-P0.50S4 FMN(35)UL289	1
	J3469159	AWG18 CBL (12) GREEN + FASTON (2)	5
	7770713000	3-CABLE ASSY (44) 2G/1R -2C (W/3PC+4PC)	1
	7771009000	3P CABLE (28) -2C P.2 D/R	1
#	7776433000	2P AWG18 CABLE ASSY 1N/1B (25) 2C+FERR.	1
#	7776427000	4P CABLE ASSY (44) -2C P.2 D/D (JST)	1
	7773520000	7P CABLE ASSY (14) -2C P.2.5 JST/AWG22	1
	7699417000	8P CABLE ASSY (56) -2C P.2	1
#	7776428000	8P CBL ASSY (76) W/2-10PC (JST) D/R	1
	7699413000	10P CABLE ASSY (12) -2C P.2	2
#	7776429000	10P CABLE ASSY (12) -2C P.2 JST D/R	1
	7700424000	11P CABLE ASSY (12) -2C P.2	1
#	7776430000	11P CABLE ASSY (14) -2C P.2 JST D/R	1
#	7776425000	LEFT CTRL WIRING STRAND G-70	1
#	7776426001	RIGHT CTRL WIRING STRAND G-70	1
#	7776431000	BOTTOM WIRING STRAND G-70	1
#	K3468296	20P FLAT CABLE (40) -2C D/R	1

AC INLET

⚠	J3449103	UNIVERSAL AC INLET ON PCB	1

SCREW

	J2289101	SELF TAP.SCREW	2.9X 6 TC TC	14
	J2289235	SELF TAP. SCR.	3.5X10 C.C	20
	J2289213	SELF TAP.SCREW	3.9X16 TC TC	2
	J2289124	SELF TAP.SCREW	2.9X 6 TCTCPRBZ	20
	J2289126	SELF TAP.SCREW	2.9X 8 TCTCPRBZ	4
	J2289125	SCREW	2.9X10 TC TC PR TROP	79
	J2289130	SCREW	2.9X13 TC TC PR TROP	4
	J2289131	SELF TAP.SCREW	3.5X16 TCTCPRBZ	16
	J2289160	SELF TAP.SCREW	2.9X13 TCTCPR BR	7
	J2289108	SELF LOCK.SCREW	M3X10 TCTC H.6	8
	J2289221	SELFLOCK. SCREW	M4X10 TC TC TFR 9.5	2
	J2289111	SELF LOCK.SCREW	M3X4 TCTC H. 6	4
	J2289193	SELF LOCK.SCREW	M3X6 TC TC H.6	97
	J2289135	SELF LOCK.SCREW	M4X 7 TCTC T.8	2

#	J2289292	SCREW	M3X6 TC TSP BRUN	6
	J2289274	SCREW	2.9X13 TC BZ TFR T.7 TROP HILO	3

PACKING

	K2678116	CARTENE ENVELOPE HD 70X190	1
	K2678102	POLYETH. ENVELOPE 25X45	1
	K2678106	POLYETH.ENVELOPE 4OX55	1
#	K2638317	RIGHT LDPE PROTECTION G-70	1
#	K2638318	LEFT LDPE PROTECTION G-70	1
#	K2638319	CENTRAL LDPE PROTECTION G-70	1
	K2618306	OUTER CARTON G-70	1

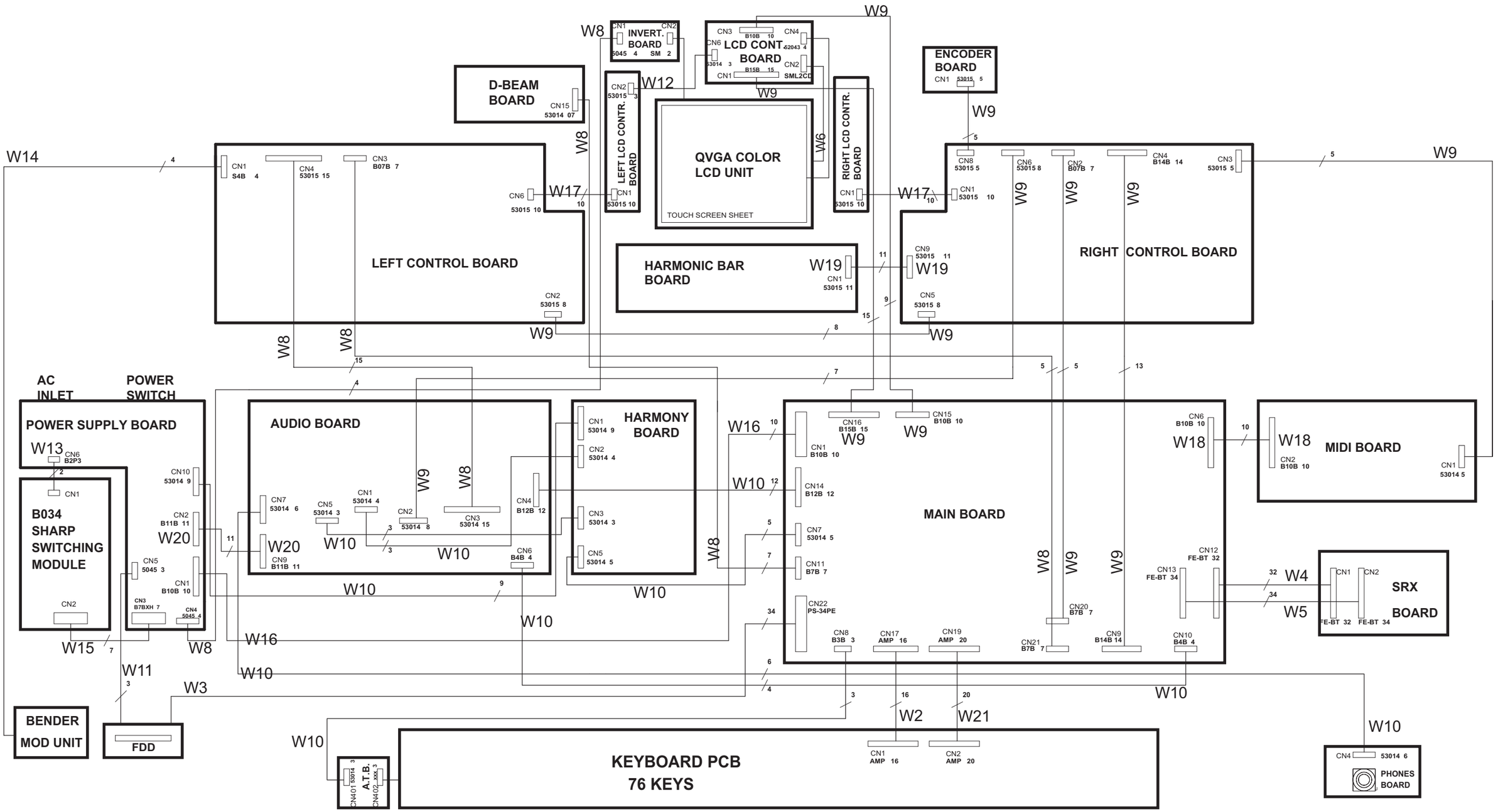
MISCELLANEOUS

	J2289113	NUT 3MA H.3	2
	J2289222	NUT 10 MA TH.8 UNI 5588	2
	22165134	BRASS BUSHING	4
	K2158111	METAL NUT FOR MUSIC REST DISCOVER 5	2
	J2159114	BUSHING F/POTENTOMETER KNOB H.7.2 I.9.2	7
	00453223	LED SPACER H. 7 E.D. 5	2
#	K2268193	RIGHT VIBRATION-DAMPING G-70	1
#	K2268194	LEFT VIBRATION-DAMPING G-70	1
	J2359105	PRESSURE RUBBER SFF-018	4
	22265242	RUBBER GUIDE BUSHING	4
	02126390	POSITION SENSOR EMU601A2MA16	1
A	03562156	FANTOM-X6 PC CARD BSCT BLK	1
#	K2168125	KEYBOARD SECURING SPACER	6
	K1188128	KEYBOARD SUPPORT G-1000	2
	01343089	D-BEAM CONTROLLER ESCT BLK	1
	K2248160	AC SOCKET HOLDER	1
	K253810302	FUSE WARNING LABEL	1
#	K2268195	LCD VIBRATION-DAMPING (HLC30) G-70	2
#	K2248188	LCD ANTIDUST COVER (PL45) G-70	1
#	K2248189	ANTIDUST COVER PL45 (F/DRAWBAR) G-70	1

ACCESSORIES

⚠	J3439155	CABLE CEE XVIIG-H05VVF2X1-C17W	(only for 230V)	1
⚠	13499152RI	CABLE BS/13/H05VV-F3G0 75-V	(only for 230VE)	1
⚠	J343916701	CBL SAA/2-H05VV5 2X1-C17W -INSULATED PIN	(only for 240VA)	1
⚠	J3439128	CABLE 498/3 SJT 2X18 AWG-C17	(only for 117V)	1
#	K237813403	CD-ROM USB DRIVER G-70		1
#	K6018569	OWNER'S MANUAL (E) G-70		1
#	K601856401	OWNER'S MANUAL (D) G-70		1
#	K6018573	OWNER'S MANUAL (F) G-70		1
#	K6018570	PARAMETER REFERENCE MANUAL G-70		1

WIRING DIAGRAM



W	Code	Description		Qty
W1	K3468264	14P FLAT CABLE (12) -2C D/R	(On Keyboard assy)	1
W2	K3468177	16P FLAT CABLE (56) -2C		1
W3	K3468291	34P FLAT CABLE (86) 2C D/R		1
W4	K3468292	CABLE 32X90-BDX10(BL)-P1.25-S5-M UL2896		1
W5	K3468293	CABLE 34X90-BDX10(BL)-P1.25-S5-M UL2896		1
W6	K3468294	CABLE CD20X190-BDX6-P0.50S4 FMN(35)UL289		1
W7	J3469159	AWG18 CBL (12) GREEN + FASTON (2)	(Ground cables)	5
W8	7776425000	LEFT CTRL WIRING STRAND G-70		1
W9	7776426001	RIGHT CTRL WIRING STRAND G-70		1
W10	7776431000	BOTTOM WIRING STRAND G-70		1
W11	7770713000	3-CABLE ASSY (44) 2G/1R -2C (W/3PC+4PC)		1
W12	7771009000	3P CABLE (28) -2C P.2 D/R		1
W13	7776433000	2P AWG18 CABLE ASSY 1N/1B (25) 2C+FERR.		1
W14	7776427000	4P CABLE ASSY (44) -2C P.2 D/D (JST)		1
W15	7773520000	7P CABLE ASSY (14) -2C P.2.5 JST/AWG22		1
W16	7776428000	8P CBL ASSY (76) W/2-10PC (JST) D/R		1
W17	7699413000	10P CABLE ASSY (12) -2C P.2		2
W18	7776429000	10P CABLE ASSY (12) -2C P.2 JST D/R		1
W19	7700424000	11P CABLE ASSY (12) -2C P.2		1
W20	7776430000	11P CABLE ASSY (14) -2C P.2 JST D/R		1
W21	K3468296	20P FLAT CABLE (40) -2C D/R		1

INFORMATION ON THE UPDATING OF THE MUSICAL DATA AND OPERATIVE SYSTEM OF THE G-70

This document is meant to try and clarify on the various modes of updating the data and operative system of the G-70.

The operative system and boot program are included in the 64 M bit Nor Flash IC82 TC58FVM6B2ATG65.

The musical data are stored in the 512 Mbit Nand Flash IC81 TC58DVM92A1TG00BBH.

The Nand flash is treated as a virtual drive by means of a Disk Operative System.
Before using it, it has to be formatted as a normal drive. The formatting also creates a directory needed for the functioning of the G-70.
The data (user program, built-in styles, songs, etc.) are stored in the instrument's memory under the form of files.
The data's structure is made by the following directories:

- Chain — contains the files for the Play List
- Db — contains the files for the database
- Demo — contains the files of the demo
- Midiset — contains the files of the MIDI Set
- Put New MusicAssistant Here — to import new Music Assistants
- Put New Styles Here — to import new Styles
- Put New Song Here — to import new Songs
- ROMStyle — contains the factory styles (built-in styles)
- Song — contains the user songs
- Style — contains the user styles
- Text — contains the texts
- Update — to update the instrument
- Userprg — contains the files of the User Programs

It is possible to access this structure by connecting the G-70 to a PC fitted with win98ME, Win2000/XP, MAC by means of a USB cable:

- Connect the G-70 to a PC by means of a USB cable.
- Press the switch MENU.
- Press the button "USB DATA STORAGE" on the touch screen.
- Press "INTERNAL MEMORY": a new G-70 virtual drive will be added on Computer Resources.
- Double-click the icon of the drive will show the G-70's internal structure.

Attention:
The tests to follow refer to the software version 1.06.
Before carrying out any updating, please update the G-70 with the software 1.06 or higher (some parts of the tests might not be correct, as the differ from version 1.05).

Tools needed:

- Oscilloscope
- Digital multimeter
- Computer
- USB Cable
- n° 2 MIDI cables
- Pen to gauge the touch screen
- PCMCIA Adaptor
- Compact flash
- FC7
- EV5 expression pedal
- Sustain pedal
- Stereo Headphones

UPDATING OF MUSICAL DATA

ATTENTION!!!
The data's updating entails the loss of personal data contained in the G-70.

There are two modes of updating the Data in the G-70:

Mode 1: by means of a Card

It is carried out by means of a card of at least 64 Mbytes and of a PCMCIA adaptor for this card.

Mode 2: by means of USB connection.

It is carried out by means of a connection USB PC → G-70.

MODE 1 – UPDATING MUSICAL DATA BY MEANS OF A CARD:

A. FORMAT A CARD WITH A G-70

- Switch on the instrument.
- Insert a Card in the PCMCIA slot (at least 64Mb).
- Press the switch "DISK & MEDIA" .
- Press the button "Format" on the touch screen.
- Press the button "External Memory on the touch screen.
- Wait for the end of the formatting.

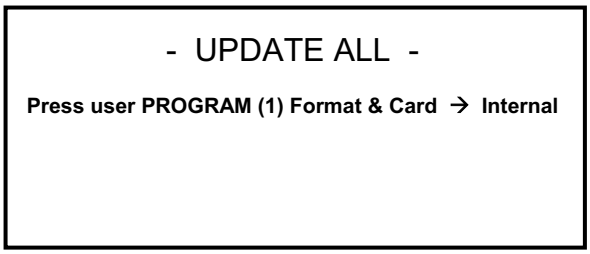
B. COPY THE MUSICAL DATA INTO THE CARD BY MEANS OF A PC

- Insert the card into a PC with the relative adaptor.
- Open the file previously created in the PC called for instance “G-70”, containing the data drawn from the CD ROM USB DRIVER
- Copy, selecting and drawing all the files from the PC to the card.

<u>ATTENTION!!!</u> Before withdrawing the card, disconnect the drive of the card from the PC by means of the appropriate function. NOT MAKING THE DISCONNECTION MAY CAUSE THE COPY OF THE FILES TO BE INCOMPLETE.

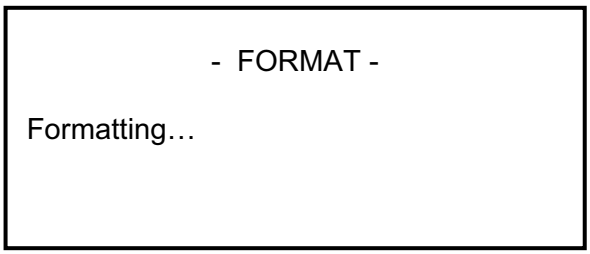
C. UPDATING OF THE BUILT-IN DATA

- Insert the card with its adaptor into the PCMCIA slot of the G-70.
- Switch on the instrument by keeping pressed the switches “SONG” “STYLE”,”USER PRG” in the section FINDER.
- Wait for the instrument to show the video “Update All ” .
  After a few seconds the display will show:

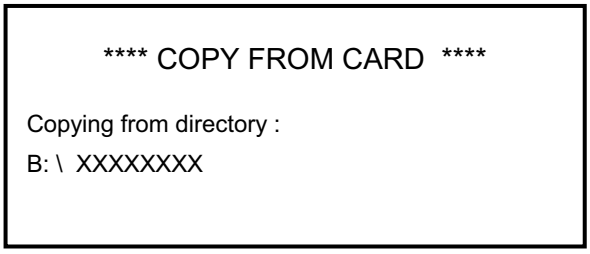


- Press the switch “USER PROGRAM 1”.

With this operation the instrument will effect the following operations:
- the formatting of the built-in memory.
The display shows:



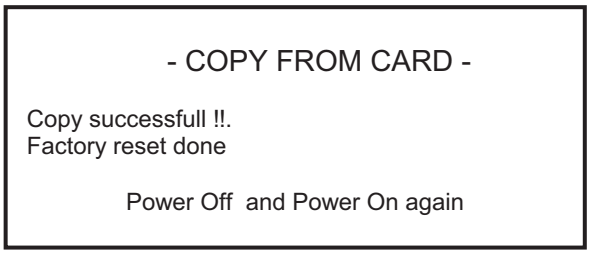
- the copy of all the files container from the CARD to the built-in memory.
The display shows:



- the Factory Reset loading the User Program set and MIDI set.

The operation will end when the G-70 shows the following messages:
“Copy Successful” “Factory Reset Done”.

The display shows:



After the display of the message “Power Off and Power On again”, switch off the instrument.

MODE 2 - UPDATING MUSICAL DATA BY MEANS OF A USB

A. Formatting the G-70’s built-in memory

Switch on the instrument while keeping “CURSOR DOWN”, “EASY SETTING ARR”, “EASY SETTING PIANO” buttons.

Press the switch “USER PROGRAM 1”.

Wait for the end of the formatting

Switch off the G-70.

B. Copy the musical data into the built-in memory

Connect the G-70 to a PC by means of a USB cable.

Press the switch “MENU”.

Press the button “USB DATA STORAGE” on the touch screen.

Press “INTERNAL MEMORY”: a new G-70 virtual drive will be added on Computer Resources.

Open the folder previously created in the PC called “G-70” containing the data drawn CD ROM USB DRIVER.

Copy, selecting and drawing all the files from the PC to the new G-70 virtual drive.

ATTENTION!, before withdrawing the USB cable and switching off the instrument, disconnect the G-70 virtual drive from the PC by means of the appropriate function. NOT MAKING THE DISCONNECTION MAY CAUSE THE COPY OF THE FILES TO BE INCOMPLETE.

C. Factory Reset

Switch on the instrument.

Press the switch MENU.

Press the button “UTILITY” on the touch screen.

Press “FACTORY RESET”

Press “EXECUTE” and wait until the operation is completed.

Updating of the Operative System

There are 3 modes to update the G-70 Operative System.

Mode 1: by means of a Card.
It is carried out by means of a card of at least 64 Mbytes and of a PCMCIA adaptor for this card.

Mode 2: by means of USB connection.
It is carried out by means of a connection USB PC → G-70.

Mode 3: by means of a Floppy Disk (Rescue Mode).
It is carried out by means of the Rescue Floppy Disks and I used to update or recover an instrument deprived of its operative system.

Mode 1 – Updating the Operative System by means of a card:

The point A. shown below may not be carried out if we have a card previously formatted with the G-70.
It is also possible, and advisable, to use the same card where the musical data were previously updated.
The card may include both the musical data and operative system.

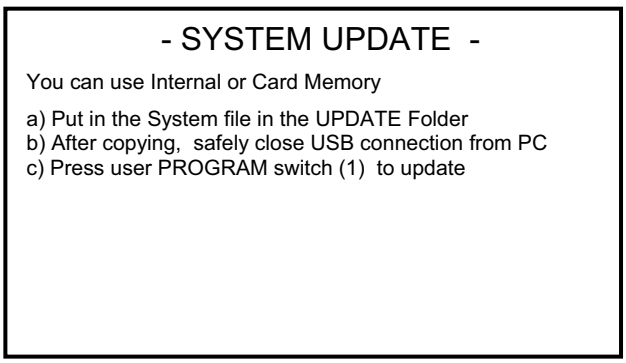
A. Formatting a card with a G-70
- Switch on the instrument.
- Insert a Card into the PCMCIA slot (at least 64Mb).
- Press the switch "DISK & MEDIA".
- Press the button "Format" on the touch screen.
- Press the button "External Memory on the touch screen.
  Wait for the end of the formatting.

B. Copy the operative system into the "UPDATE" directory of the Card
- Insert the card with the relative adaptor into a PC.
- Cancel a possible previous operative system from the "UPDATE" directory of the card.
- Open the folder previously created in the PC containing the operative system.
- Copy, selecting and drawing the file "G70_Ver_01_XX.sys" of the operative system from the PC into the "UPDATE" directory of the card.

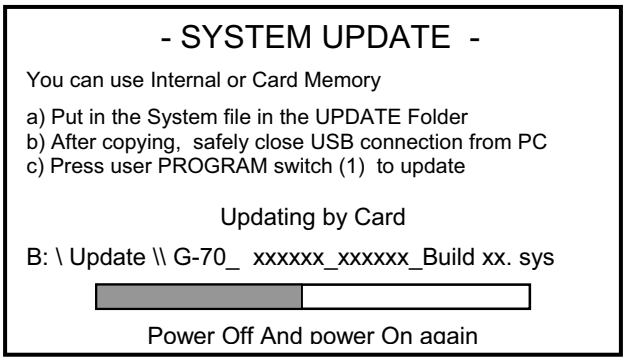
ATTENTION!!! Before withdrawing the card, disconnect the drive of the card from the PC by means of the appropriate function. NOT MAKING THE DISCONNECTION MAY CAUSE THE COPY OF THE FILES TO BE INCOMPLETE.

C. Updating the operative system
- Insert the card with its adaptor into the PCMCIA slot of the G-70.
- Switch on the instrument by keeping pressed the switch "DISK & MEDIA".
- Wait for the instrument to show the video "Update All " .

- The display shows:



- Press the switch “USER PROGRAM 1”.
- The display shows:



- The G-70 will make a deep check of the system file; should the file be correct, it will start the updating. A progression bar will show its status.
- At the end of the updating, switch off the instrument.

D. Factory Reset

- Switch on the instrument.
- Press the switch MENU.
- Press the button “UTILITY” on the touch screen.
- Press “FACTORY RESET”
- Press “EXECUTE” and wait until the operation is completed.

<u>Mode 2</u> - Updating the Operative System by means of USB connection

A. Copy the operative system into the “UPDATE” directory of the built-in memory

- Connect the G-70 to a PC by means of a USB cable.
- Press the switch MENU.
- Press the button “USB DATA STORAGE” on the touch screen.
- Press “INTERNAL MEMORY”.

A new G-70 virtual drive will appear on the Computer Resources (the directory “UPDATE” will be created within it).

- Open the folder previously created in the PC containing the operative system.
- Copy, selecting and drawing the file “G70_Ver_01_XX.sys” of the operative system from the PC into the “UPDATE” directory of the built-in memory.

ATTENTION!, before withdrawing the USB cable and switching off the instrument, disconnect the G-70 virtual drive from the PC by means of the appropriate function. NOT MAKING THE DISCONNECTION MAY CAUSE THE COPY OF THE FILES TO BE INCOMPLETE.

B. Updating the operative system

- Switch on the instrument by keeping pressed the switch “DISK & MEDIA”.
- Wait until the instrument shows the video “Update All ” .
- Press the switch “USER PROGRAM 1”.
- The G-70 will make a deep check of the system file; should the file be correct, it will start the updating. A progression bar will show its status.
- At the end of the updating, switch off the instrument.

C. Factory Reset

- Switch on the instrument.
- Press the switch MENU.
- Press the button “UTILITY” on the touch screen.
- Press “FACTORY RESET”
- Press “EXECUTE” and wait until the operation is completed.

Mode 3 – Updating the Operative System by means of a Floppy Disk (Rescue Mode)

The Rescue Disks are meant to resume a first operative system.
Once the recovery is carried out, update the G-70 with the latest version by means of the normal procedures described above.

A. Preparation of the Rescue Disk

- Format the floppy disk by means of a PC.
- Decompress the file “Disc 1.zip” and copy it’s content into the floppy disk “Disk1”.
- Perform the same operation for the Disc 2 and following ones.

B. Updating the operative system

- Switch on the instrument by keeping pressed the switches “USER PROGRAM 1” and “USER PROGRAM 2”.
- Insert the disc “Disk1” into the G-70’s floppy drive.

The G-70 will start the updating. Red horizontal bars will show its status. Green and black horizontal bars will show the end of the updating of disc 1.

- Switch off the instrument.
- Switch on the instrument again by keeping pressed the switches “USER PROGRAM 1” and “USER PROGRAM 2”.
- Insert the disc “Disk2” into the G-70’s floppy drive.

The G-70 will start the updating. Red horizontal bars will show its status. Green and black horizontal bars will show the end of the updating of disc 2.

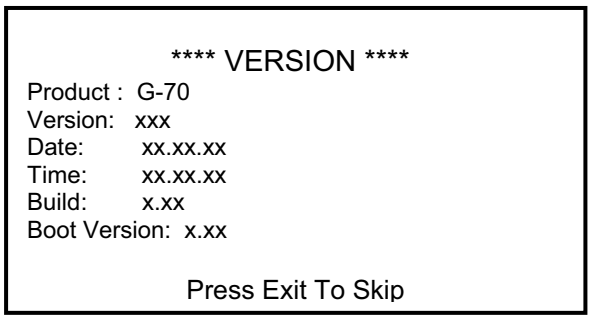
- Switch off the instrument.
- Perform the same operations for the remainder discs.

CHECK OF THE SOFTWARE VERSION WITH THE INSTRUMENT SWITCHED ON

With the instrument switched on, check the software version by pressing the switch MENU and then by selecting on the display, the ambient UTILITY and then INFO. The display will show the software version and its date.

PROCEDURE TO CHECK THE SOFTWARE VERSION WHEN SWITCHING ON

Switch on the instrument keeping pressed the switch MUSIC ASSISTANCE; after a few seconds the display will show:



To exit the video press the Exit button: the instrument will show the main video.

TEST MODE

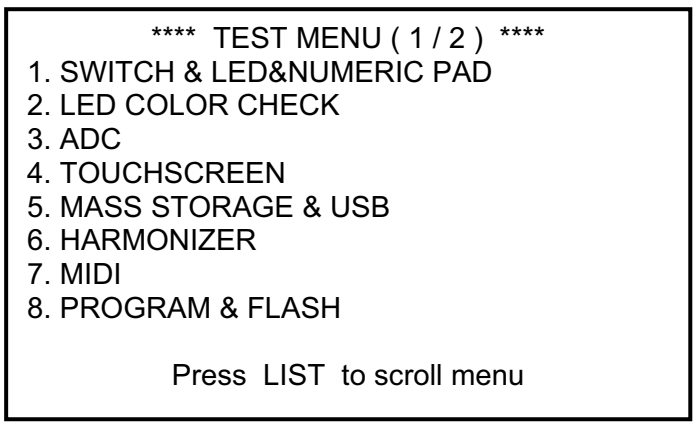
There are two test modes:

A) Switch on the instrument by pressing the switches VARIATION 1, MAIN and VARIATION 4 in the “STYLE CONTROL” section.
Wait until the display shows the first page of the main menu of the tests.

B) With the instrument on, by proceeding in the following way: Switch on the instrument and wait until the master video is displayed.
Pressing the switches VARIATION 1, MAIN and VARIATION 4 in the “STYLE CONTROL” section, the display will show the first page of the main menu of the tests.

Pressing the switch LIST, the display will show the second page of the main menu of the tests.

FIRST GROUP OF TESTS (**** TEST MENU (1 / 2) ****)



SECOND GROUP OF TESTS (**** TEST MENU (2 / 2) ****)

```
**** TEST MENU ( 2 / 2 ) ****
1. VIDEO OUTPUT
2. AUDIO TEST
3. KEYSCAN
4.
5.
6.
7. PITCH CALIBRATION
8. SAVE SISTEM ON CARD

Press LIST to scroll menu
```

Pressing the switch LIST again, the display will show the first page of the main menu of the tests.

To exit the tests, switch off the instrument.

FIRST GROUP OF TESTS (**** TEST MENU (1 / 2) ****)

1- TEST SWITCH & LED & NUMERICAL PAD

Press the switch USER PROGRAM 1, the display shows:

```
** SWITCH & LED & NUMERIC PAD **

PLAY LIST

NUMERIC PAD : XXXXX
PROTECT SWITCH : unProtect

To EXIT press the MENU and then EXIT switch
```

In the middle of the display appears the name of the first switch to be pressed, and the led of the switch to be pressed flashes.

Pressing the switch, the led will stop flashing and an acoustic signal will be heard at the same time.

The display will show the name of the next switch to be pressed.

Turning the knob DATA ENTRY clockwise, the value Numeric Pad will increase, turning it anticlockwise it will decrease.

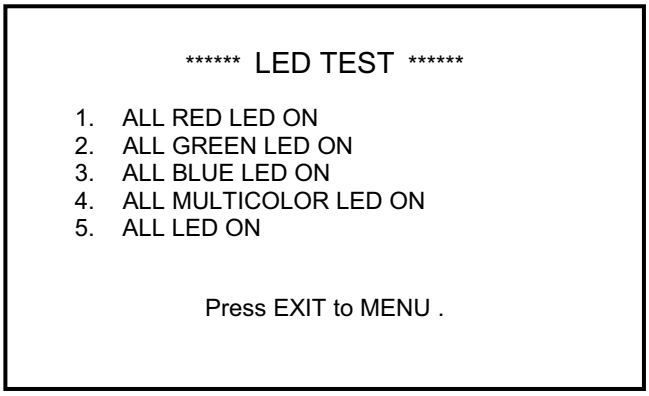
Note : the test of the switches also includes the test of the FC_7 and Protect Switch of the PCMCIA slot, both being located in the rear part of the bottom.
To access the Protect Switch, remove the appropriate plastic protection.

At the end of the Test the display will show “COMPLETED“; to revert to the Main Menu video, press EXIT.

Note : if the switch test has been carried out previously, you may exit pressing MENU and EXIT at the same time.

2- LED COLOR CHECK

Press the USER PROGRAM 2 button, the display shows:



Action:

If you press the USER PROGRAM 1, all the RED LED buttons will light;
If you press the USER PROGRAM 2, all the GREEN LED buttons will light;
If you press the USER PROGRAM 3, all the BLUE LED buttons will light;
If you press the USER PROGRAM 4, all the two-colour (ORANGE) LED buttons will light;
If you press the USER PROGRAM 4, all the LED buttons will light;

Please refer to the following chart:

LED COLOUR	BUTTONS' NAME
GREEN NO.: 21	STYLE CONTROL SECTION ➡ (INTRO - NAIN - END / RIT)
	MARK & JUMP SECTION ➡ (FROM NO.: 1 BUTTON TO NO.: 4)
	(AROUND THE DISPLAY) ➡ (LYRICS & SCORE - EFFECTS - DISK & MIDIA – COVER - MAKEUP TOOLS - MENU)
	TIPE MODE SECTION ➡ (CHORUS - PAN POT)
	KYB. PART TONE ASSIGN SECTION ➡ (MBS - LW 2 - LW 1 - UP3 - UP2 - UP 1)
BLUE NO.: 2	(AROUND THE DISPLAY) ➡ (MUSIC ASSISTANT) V- LINK SECTION ➡ (V-LINK)
TWO-COLOUR ORANGE NO.: 2	STYLE CONTROL SECTION ➡ (START/ SOP) RECORDER SECTION ➡ (PLAY/ SOP)
RED NO.: 101	REMAINING LEDS

To exit press the EXIT button.

3 - ADC

Press the USER PROGRAM 3 button, the display shows:

```
****** ADC ******

Pbender : 0000 – 4000 - 7F7F      16' :          0 – 255
Modul :       0 – 127             5 – 1 / 3' :   0 – 255
A .Touch :    0 – 127             8' :           0 – 255
Foot Pedal : 0 – 127              4' :           0 – 255
Dbeam :       0 –127              2 – 2 / 3' :   0 – 255
Balance :     – 127  000  +127    2' :           0 – 255
Voice :       0 – 127             1 – 1 / 5' :   0 – 255
Harmony :     0 – 127             1 – 1 / 3' :   0 – 255
Effects :     0 – 60 – 127        1' :           0 – 255

Press EXIT to Skip.
```

The LCD visualizes the values of the functions you are testing.
These values vary from 0 to +/-127 and the values of the slider potentiometers vary from 0 to 255:

- ROTATIVE Potentiometers:
  - Balance
  - Voice
  - Harmony
  - Effect
- SLIDER potentiometers "Harmonic Bar"

After Touch (Check to carry out on the Keyboard)
Check on the keyboard that the After Touch value varies from 0 to 127 considering the pressure carried on the button.

Foot Pedal
Insert the Expression EV 5 pedal in the socket Foot Pedal and verify, pressing the pedal forwards, that the value will increase up to (127) and pressing it backwards the value will decrease at the minimum one (0).

D-beam
This test is carried out working, at the same time, on the Trimmer VR1 of the CPU and on the D-Beam as follows:
-Place your hand on the D-Beam pressure sensor at 13cm height (see picture 1) and gauge the trimmer VR1 placed at the left lower corner of the CPU board, so that you can read a value from 115 to 118 on the display .
-After the gauging, verify, moving your hand on the D-Beam, that there is a variation of the value from 0 to 127.
Of course, when the D-Bean is not used, the value must be 0.

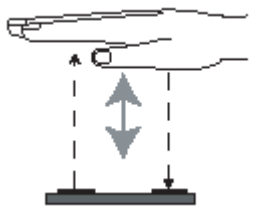


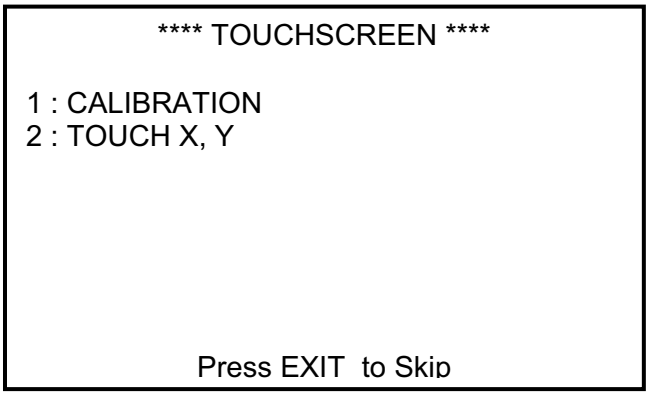
Fig. 1

To exit press EXIT button.

4 - TOUCH SCREEN TEST

Note: To carry out this test, it is better to use the original pen (Touch Pen for PMA-5, code 00900545).

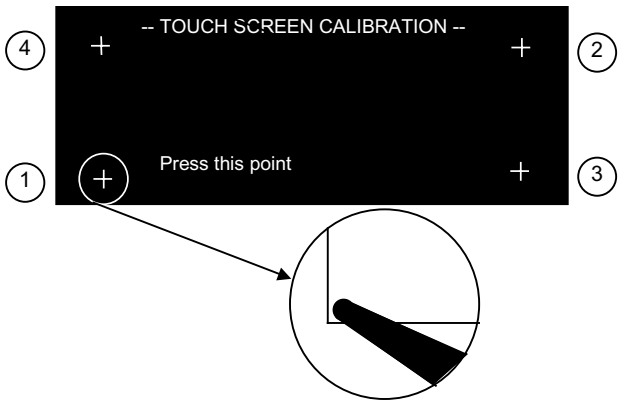
Press the USER PROGRAM 4 button the display shows:



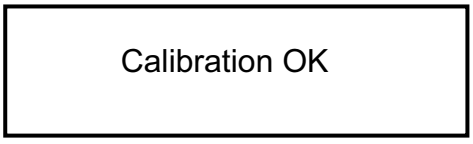
Pressing USER PROGRAM 1 button, you can enter in the CALIBRATION test;
Pressing USER PROGRAM 2 button, you can enter in the “blue” section test.

4.1 - TOUCH SCREEN CALIBRATION

Press the USER PROGRAM 1 button the display shows:



Calibrate the Touch Screen position as mentioned below.
Use the original pen (Touch Pen for PMA-5, code 00900545).
Touch with the pen the Touch Screen corners in the middle of the “+” symbol following the numbering shown in the picture. When the G-70 recognizes the touch, the symbol “+” changes into “0”.
The writing “PRESS THIS POINT” should appear to show the correct order. During the calibration, we recommend not to touch any other point expect for the ones shown with the writing “PRESS THIS POINT”.
After touching the four points, the calibration is over and the display will show one of the following videos:



In case of a positive outcome of the calibration.

NG. Calibration

In case of a negative outcome of the calibration.

Should the calibration fail, the operation has to be repeated from the start.

Press EXIT to continue with the following check.

4.2 - X - Y TOUCH SCREEN TEST

Press the USER PROGRAM 2 button, the display shows:

**** TOUCHSCREEN ****
X =
Y =

Press Exit to Skip.

Pass with the original pen above the display in the dark area in horizontal first, from the right side to the left side and check that the X value on the display is progressively from 0 to 320. After go up and down and check that the Y value is progressively from 0 to 240.
Some variations minimum or maximum +/- 5% may take place.

To revert to the Main Menu video, press EXIT.

5 - MASS STORAGE

Press the USER PROGRAM 5 button the display shows:

**** MASS STORAGE ****

1. FLOPPY CONTROLLER 2DD
2. FLOPPY CONTROLLER 2HD
3. PCMCAI COMPACT FLASH
4. NAND FLASH
5. FORMAT NAND FLASH
6. USB

Press EXIT to Skip

5.1- 2DD FLOPPY DISK CONTROLLER

Press the USER PROGRAM 1 the display shows:

```
**** FLOPPY CONTROLLER 2DD ****
Insert a 2DD DISK, please…..

Press EXIT to Skip.
```

Insert a formatted diskette 2DD into the driver to carry out the test.

After a while, the display shows:

```
**** FLOPPY CONTROLLER 2DD ****
Checking disk type, Wait Please….

Press EXIT to Skip.
```

Afterwards, the display shows:

```
**** FLOPPY CONTROLLER 2DD ****
Testing , Wait Please….

Press EXIT to Skip.
```

At the end, if the result is OK the display shows:

```
**** FLOPPY CONTROLLER 2DD ****
** DISK TEST OK . **

Eject disk and press EXIT
```

If a protected disk is inserted, the display shows:

WRITE PROTECTED MEDIA ERROR EJECT DISK AND PRESS EXIT.

If you do not insert any diskette 2DD, the display shows:
** Insert a 2DD Disk , Please…**

If the result of the test is negative, the display mentions one of the following errors:
READ ERROR, WRITE ERROR, DISK TEST ERROR,
** NO SUCH FILES / DIRECTORY **
If the result is ok, the display mentions * DISK TEST OK . **

Extract the FDD.

5.2 2HD FLOPPY DISK CONTROLLER

Press the USER PROGRAM 2 button to carry out the 2HD test.

Use the same procedure stated in **§ 5.1 – FLOPPY DISK CONTROLLER 2DD**

To revert to the MASS STORAGE, press EXIT.

Attention: Use only a formatted diskette 2DD and 2HD type.
To revert to the Main Menu, press EXIT.

5.3 - PCMCIA COMPACT FLASH TEST

Press the USER PROGRAM 3, the display shows:

```
* PCMCIA COMPACT FLASH *

Insert Card, please…..

Press EXIT to Skip.
```

When you insert your card into the slot, the test will be carried out, the display shows:

```
* PCMCIA COMPACT FLASH *

wait please checking …..

Press EXIT to Skip.
```

If the test is OK the display shows:

```
* PCMCIA COMPACT FLASH *

**CARD TEST OK **

Eject Card and press Exit
```

If the test fails, the writing CARD TEST ERROR should appear.
To revert, press EXIT.

5.4 - NAND FLASH TEST

- Press the USER PROGRAM 4 button, the display shows:

```
**** NAND FLASH ****

** TEST OK **

Press EXIT to Skip.
```

If the Test fails, you should carry out the **"§ 5.5 NAND FLASH FORMAT "**
To revert, press EXIT.

5.5 - FORMAT NAND FLASH

- Press the USER PROGRAM 5 button, the display shows:

**** NAND FORMAT ****
** FORMAT OK **
Press EXIT to Skip

To revert, press EXIT.

5.6 - USB

- Press the USER PROGRAM 6 button, the display shows:

**** USB MASS STORAGE ****
Connect USB cable to PC please…….
Press EXIT to Skip.

Once the USB cable is connected to the PC, the display shows:

**** USB MASS STORAGE ****
Connection USB OK
Press EXIT to Skip.

To revert, press EXIT.
Press the EXIT button again to revert to the Main Menu video.

6 - HARMONIZER

- Press the USER PROGRAM 6 button, the display shows:

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

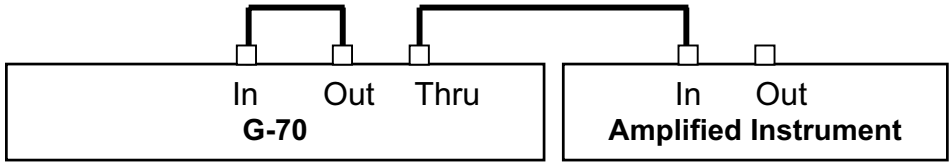
Make sure that the display shows the version 1.0.
Pressing EXIT the display will revert to the Main Menu.

7 - MIDI & THRU TEST

Press the USER PROGRAM 7 button, the display shows:

```
**** MIDI ****
Connect   MIDI  OUT - - >  IN

Press EXIT to Skip.
```

Connection of the cables for the test of the MIDI sockets



Connection ➡ IN / OUT **Connection THRU / IN ➡ Amplified Instrument**

Remain in the MIDI Test video and connect the appropriate MIDI cables basing upon the above description.

Leave the MIDI In/Out cable inserted into the G-70 and connect, by means of the MIDI cable, the MIDI Thru socket of the G-70 to the MIDI IN socket of second instrument.
If the MIDI Test shows OK, you will hear an intermittent piano note on the second instrument's loudspeakers.

The display will show OK or ERROR.

Pressing EXIT the display will revert to the Main Menu.

8 - DATA FLASH PROGRAM

- Press the USER PROGRAM 8 button, the display shows:

```
**  PROGRAM & DATA FLASH  **

Program    OK

Press  EXIT  to Skip
```

The display will show OK or ERROR.

Pressing EXIT the display will revert to the Main Menu.

SECOND GROUP OF TESTS (**** TEST MENU (2 / 2) ****)

```
****  TEST MENU ( 2 / 2 )  ****
1. VIDEO OUTPUT
2. AUDIO TEST
3. KEYSCAN
4.
5.
6.
7. PITCH CALIBRATION
8. SAVE SISTEM ON CARD

          Press  LIST  to scroll menu
```

1 - VIDEO OUTPUT TEST

Press the USER PROGRAM 1 button, the display shows:

```
****  VIDEO OUTPUT  ****
1. PAL
2. NTSC



5.Bars / Monoscope
Press EXIT to Skip
```

Remark: before carrying out the test, connect the G-70 VIDEO OUTPUT to the appropriate “PAL / NTSC Video Monitor” by means of a shielded cable.

Pressing the USER PROGRAM 1 button, you will inter the PAL system test.

Pressing the USER PROGRAM 2 button, you will inter the NTSC system test.

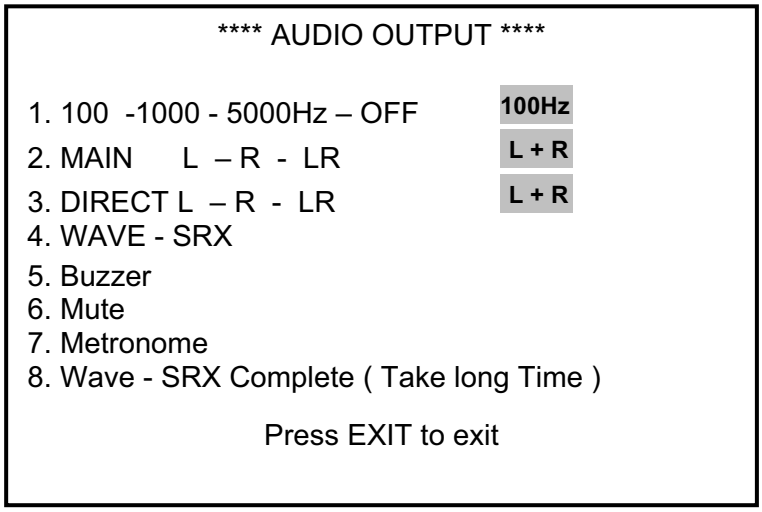
Pressing the USER PROGRAM 5 button, you will inter the Bars / Monoscope test.

Check that the picture displayed on the video is clear and does not flicker both with the PAL, NTSC systems and Bar / Monoscope videos.

To revert, press EXIT.

2 - AUDIO TEST

- Press the USER PROGRAM 2 button, the display shows:



Note :
The USER PROGRAM 1/2/3 buttons enable this function.
On the right side of the display appears the name of the latter.

2.2 - OUTPUT MAIN TEST

Place the knob of the G-70's MASTER VOLUME potentiometer in the CENTER before effecting the check of the level of the output signal on the L/R MAIN and DIRECT Outputs.

Press the USER PROGRAM 1 button, you will hear an acoustic 100 Hz sinusoidal signal on the "L and R OUT" outputs, basing upon the MAIN output selected by means of the ➡ User Prog. 2 button.

Press the USER PROGRAM 1 button again, you will hear an acoustic 1000 Hz sinusoidal signal on the "L and R OUT" outputs, basing upon the MAIN output selected by means of the ➡ User Prog. 2 button.

Press the USER PROGRAM 1 button again, you will hear an acoustic 5000 Hz sinusoidal signal on the "L and R OUT" outputs, basing upon the MAIN output selected by means of the ➡ User Prog. 2 button.

Press the USER PROGRAM 1 button again, you will hear no acoustic signal "OFF", basing upon the MAIN or DIRECT output selected.

2.3 - OUTPUT DIRECT TEST

Press the USER PROGRAM 3 button, you will hear an acoustic signal on the right (R) and left (L) OUT DIRECT ➡ basing upon the frequency selected by means of the User Prog. 1 button.

Press the USER PROGRAM 3 button again, you will hear an acoustic signal only on the left (L) OUT DIRECT ➡ basing upon the frequency selected by means of the User Prog. 1 button.

Press the USER PROGRAM 3 button again, you will hear an acoustic signal only on the right (R) OUT DIRECT ➡ basing upon the frequency selected by means of the User Prog. 1 button.

Press the USER PROGRAM 2 button again, you will hear an acoustic signal on the right (R) and left (L) OUT DIRECT outputs ➡ basing upon the frequency selected by means of the User Prog. 1 button.

Note: The measurements on the R/L outputs have to be carried out with the jacks inserted into the outputs, basing upon the MAIN or DIRECT output selected. The sounds heard from the R/L Mono channels are mixed and may be adjusted by means of the MASTER VOLUME potentiometer.
Basing upon the OUT output selected, a sinusoidal wave sound comes out of the RIGHT and LEFT channels with a frequency and amplitude expressed in Vpp measured by the oscilloscope.

OUTPUT LEVELS ON THE L/R MAIN OUTPUTS

User Pgm 1 Button	Wave shape	Frequency (Hz)	L/R Output	L Output	R Output
1 SINE WAVE		100 Hz	1.8 Vpp	2.7 Vpp	2.7 Vpp
2 SINE WAVE		1000 Hz	1.7 Vpp	2.5 Vpp	2.5 Vpp
3 SINE WAVE		5000 Hz	0.3 Vpp	0.42 Vpp	0.42 Vpp

OUTPUT LEVELS ON THE L/R DIRECT OUTPUTS

User Pgm 1 Button	Wave shape	Frequency (Hz)	L/R Output	L Output	R Output
1 SINE WAVE		100 Hz	1,5Vpp	2,2 Vpp	1,8Vpp
2 SINE WAVE		1000 Hz	1,7Vpp	2,4 Vpp	1,8Vpp
3 SINE WAVE		5000 Hz	0,3Vpp	0,4 Vpp	1,8Vpp

To revert, press EXIT.

2.4 - WAVE&SRX CARD

- Press the USER PROGRAM 3 button, the display shows:

```
**** WAVE ****
Wave ROM  0   OK
Wave ROM  1   OK
Wave ROM  2   OK
Wave ROM  3   OK
Wave ROM  4   OK
Wave ROM  5   OK
Found SRX : SRX –03  Studio SRX
Checksum :  ACDFA4AE
Press  EXIT  to Skip
```

The display will show OK or ERROR.

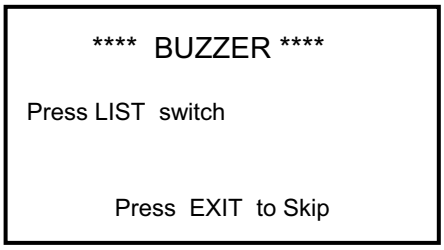
If the SRX card has been inserted into the appropriate slot located on the right side of the bottom cabinet, the test senses the type of card and its checksum, basing upon the schedule shown below:

SRX	CHECKSUM
SRX – 01 Dynamic Drm	8F834871
SRX – 02 ConcertPno	1DD3A64E
SRX – 03 Studio SRX	ACDFA4AE
SRX – 04 Symph.str	69CF3B62
SRX – 05 SupDance	ADD625A1
SRX – 06 Comp Orch	0A001E81
SRX – 07 Ulti Keys	6BDF51B1
SRX	
SRX – 09 World Cl	9F2CB1EC
SRX – 10 BigBrsEns	26AABB57

Should the SRX card not be inserted, the test visualizes “SRX Card Not Found”.
Pressing EXIT, the instrument will revert to the main video.

2.5 – BUZZER

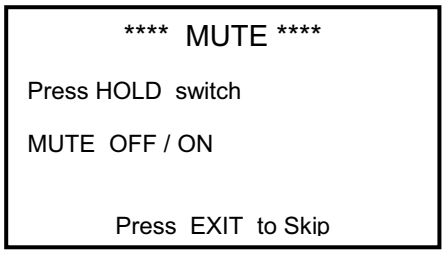
- Press the USER PROGRAM 5 button, the display shows:



Press the LIST button, a Buzzer sound will be heard coming from inside the instrument.
Pressing EXIT, the instrument will revert to the main video.

2.6 - MUTE

- Press the USER PROGRAM 6 button, the display shows:



Playing some notes while keeping the “HOLD” button pressed and selecting “MUTE/ON”, the sound will be interrupted; pressing the HOLD button in “MUTE OFF” will resume the sound.

Pressing EXIT, the instrument will revert to the main video.

2.7 - METRONOME

Remain in the main video (**** AUDIO OUTPUT ****) and press the USER PROGRAM 7 button, a METRONOME sound will be heard coming from the OUT Metronome output of the G-70.

Action : Insert the headphones into the appropriate OUT Metronome socket located in the rear of the bottom cabinet. Pressing the USER PROGRAM 7 button, a Metronome sound will be heard in the headphones: check the volume adjustment by means of the potentiometer placed near the socket.

2.8 - WAVE – SRX COMPLETE (Take long time)

- Press the USER PROGRAM 8 button, the display shows:

```
**** WAVE COMPLETE ****
Wave ROM  0   OK
Wave ROM  1   OK
Wave ROM  2   OK
Wave ROM  3   OK
Wave ROM  4   OK
Wave ROM  5   OK
Found SRX : SRX –03  Studio SRX
Checksum :   ACDFA4AE
Press  EXIT  to Skip
```

If the SRX card has been inserted into the appropriate slot located on the right side of the bottom cabinet, the test senses the type of card and its checksum.
The display will show OK or ERROR.

Pressing EXIT, the instrument will revert to the main video.

3 - KEYSCAN TEST

- Press the USER PROGRAM 3 button, the display shows:

```
**** KEYSCAN ****

Note num : XX
Velocity   : XXX
Press EXIT to Skip.
```

Pressing any key of the keyboard will make a piano sound be heard.
The display will show the number of the key (XX) and the dynamics value (XXX).

Pressing EXIT, the instrument will revert to the main video.

7 - PITCH CALIBRATION

- Press the USER PROGRAM 7 button, the display shows:

```
** BENDER  CALIBRATION **

Calibrating the CENTER POSITION :
Release The Pitch Bend lever, Press LIST SW
```

Place the Bender lever at the center and press the SET LIST SW button, the display will show:

```
** BENDER  CALIBRATION **

Calibrating the HARD LEFT POSITION :
Move Pitch Bend lever to the left and press LIST SW
```

Move the Bender lever completely to the left and press the SET LIST SW button, the display will show:

```
** BENDER   CALIBRATION **

Calibrating the HARD RHIGT POSITION :
Move Pitch Bend lever, to the Right and press LIST SW
```

Move the Bender lever completely to the right and press the SET LIST SW button, the display will show:

```
** MODUL   CALIBRATION **

Release the Modulation Lever :
Press the LIST SW
```

Release the Bender lever at the center and press the SET LIST SW button, the display will show:

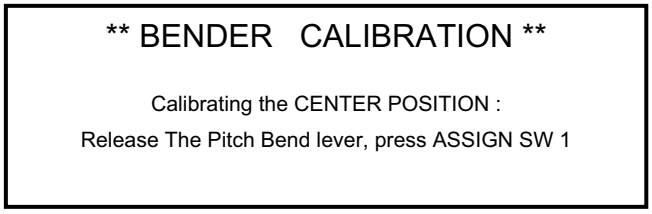
```
** MODUL   CALIBRATION **

Press the Modulation Lever To the back of  the G-70
and  press  LIST SW
```

Push the Bender lever completely to the center and press the SET LIST SW button. To confirm the calibration, the instrument exits the test, resets itself and reverts to the video of the main menu.

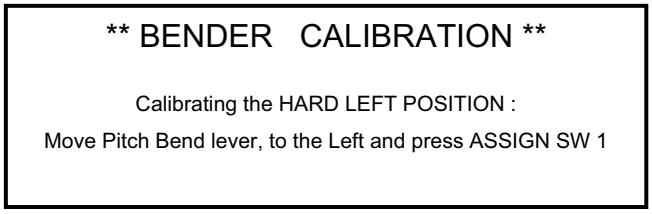
8 - SAVE SYSTEM ON CARD (INTERNAL USE ONLY)

HOW TO ENTER IN BENDER CALIBRATION UPON SWITCH ON.

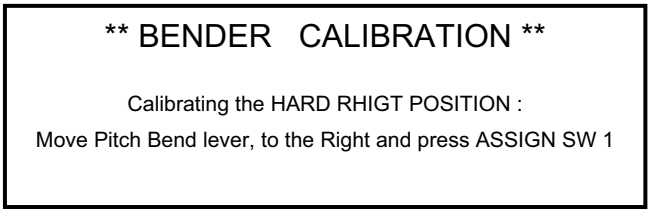
Switch on the instrument keeping the “ASSIGN SW 1 ” button pressed.
After a few seconds the display will show:



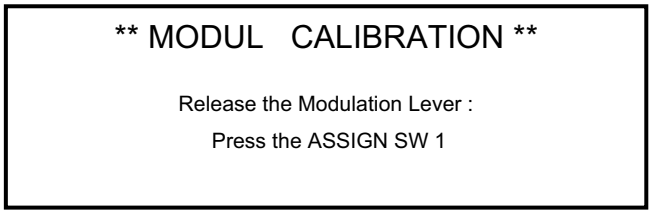
Place the Bender lever at the center and press the ASSIGN SW 1 button, the display will show:



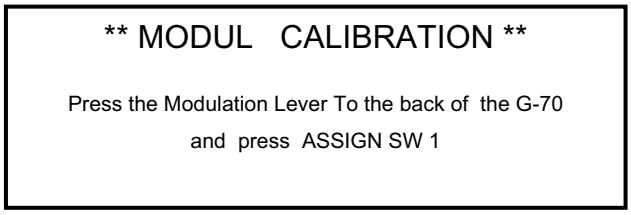
Move the Bender lever completely to the left and press the ASSIGN SW 1 button, the display will show:



Move the Bender lever completely to the right and press the ASSIGN SW 1 button, the display will show:



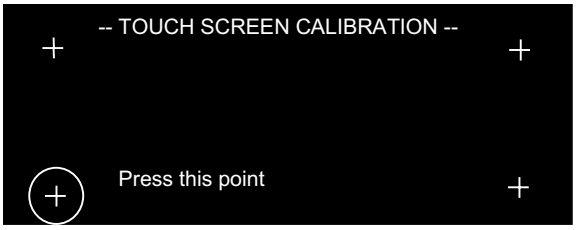
Release the Bender lever at the center and press the ASSIGN SW 1 button, the display will show:



Push the Bender lever completely to the center and press the ASSIGN SW 1 button. To confirm the calibration, the instrument exits the test, resets itself and reverts to the video of the main menu.

HOW TO ENTER THE TOUCH SCREEN CALIBRATION UPON SWITCH ON.

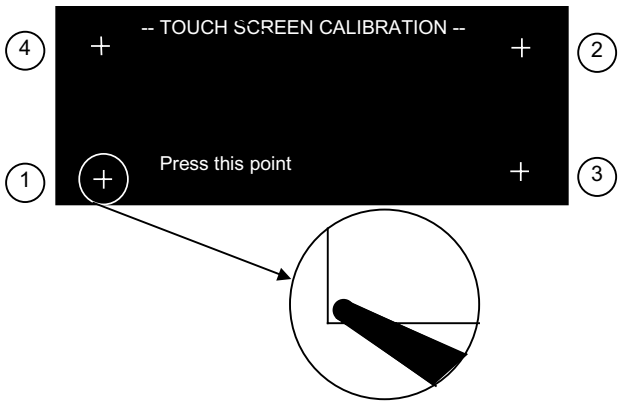
Turn the instrument ON while keeping the “ASSIGN SW 2” button pressed. Some seconds later the display visualizes:



Note: when you enter in Calibration Test, you cannot exit unless you have finished the calibration operation.

HOW TO CARRY OUT THE TOUCH SCREEN CALIBRATION

Calibrate the position of the TOUCH SCREEN using the original pen (touch pen for PMA-5, code #00900545).
Touch with the pen the Touch screen corners in the middle of the “+” symbol following the numbering mentioned here under. When the G-70 recognizes the touching of the pen, the “+” symbol change in “0”.



The writing “PRESS THIS POINT” should appear to show the correct order.
During the calibration, we recommend not to touch any other point except for the ones mentioned with the writing PRESS THIS POINT.
After touching the four points, the calibration is over, the display will show the following:

Calibration OK

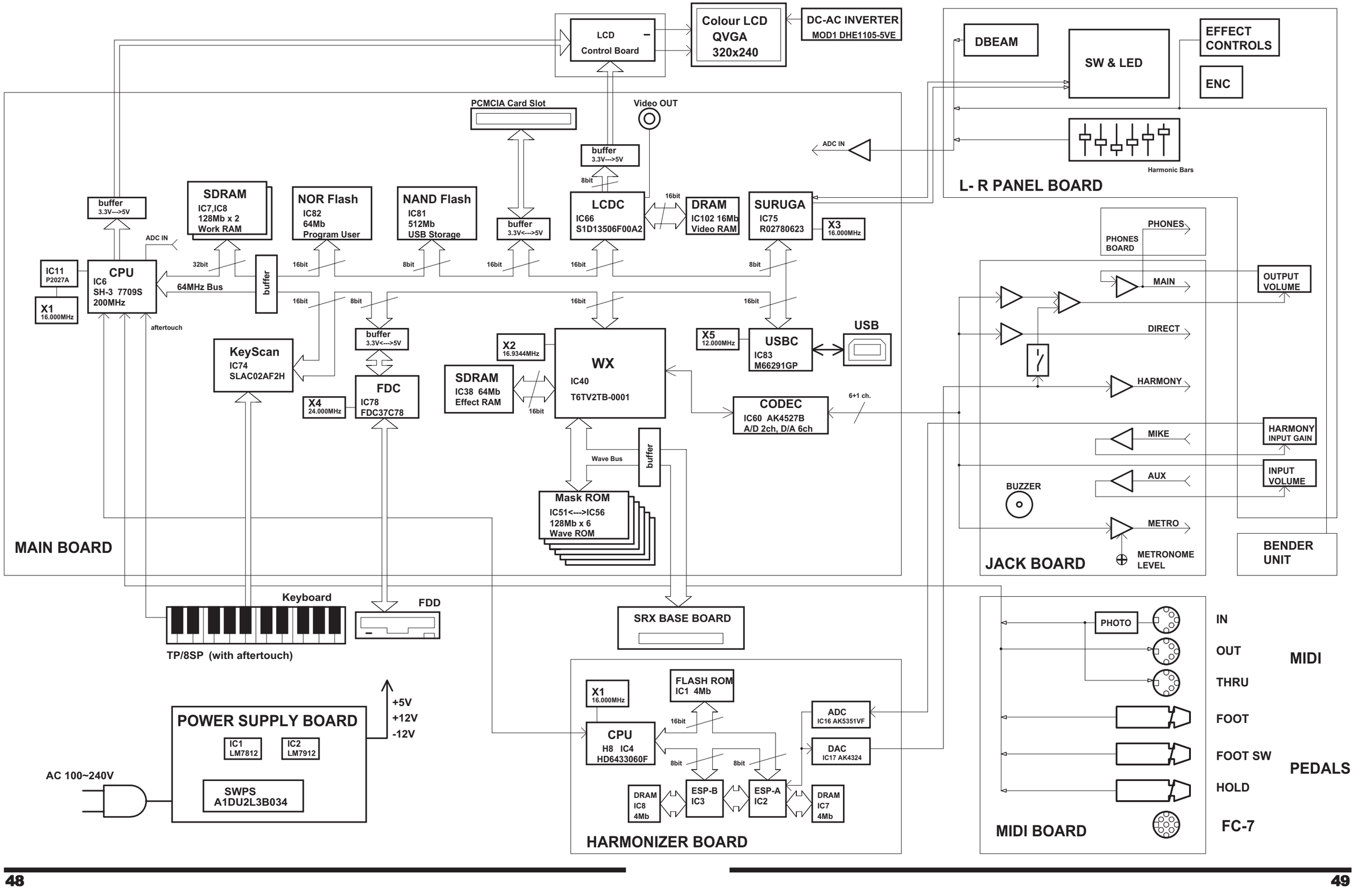
If the result is positive, the instrument will reset and will come back to the normal working display.

If the calibration fails the following display appears

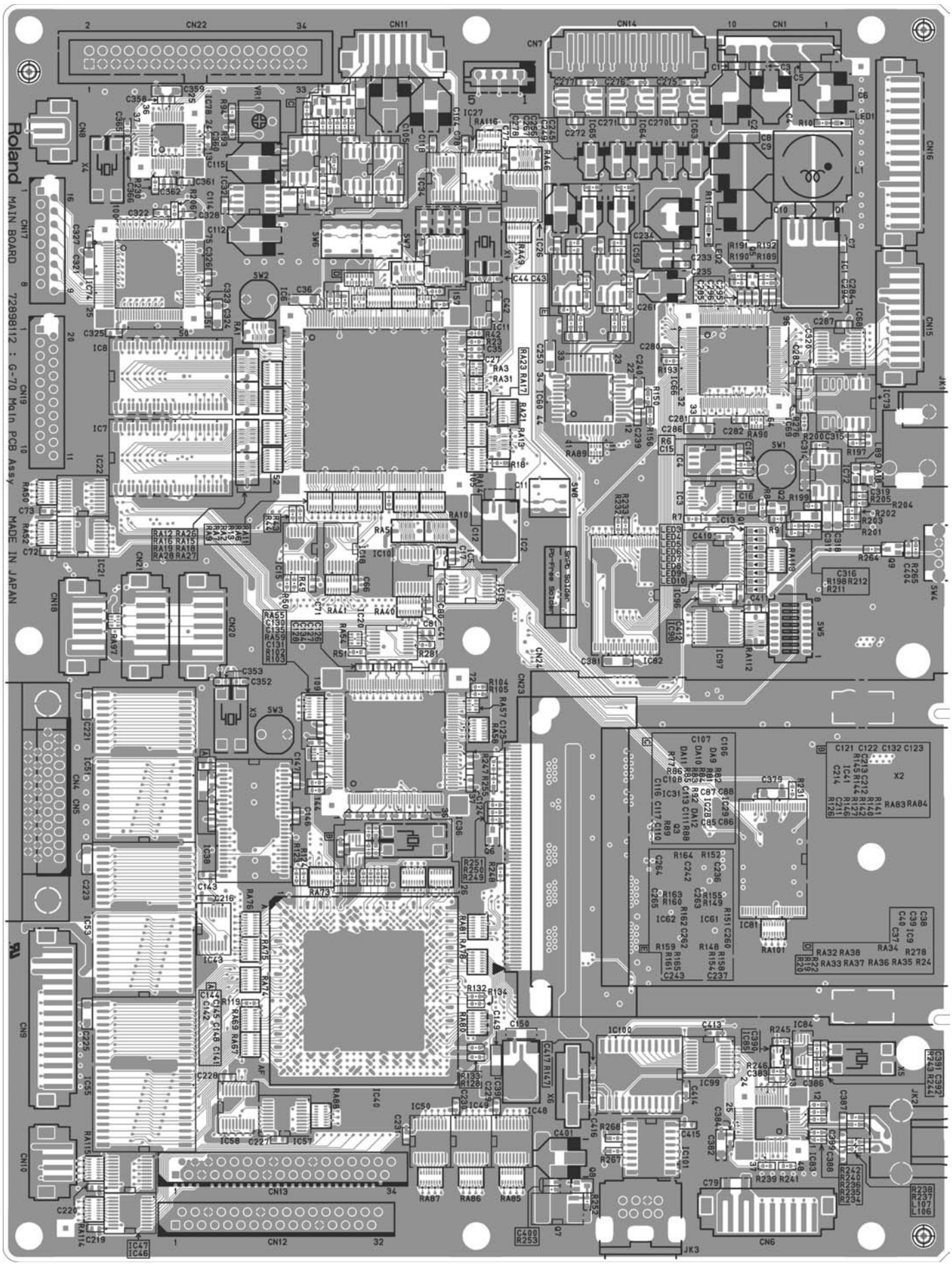
NG Calibration

You have to carry out the calibration again.

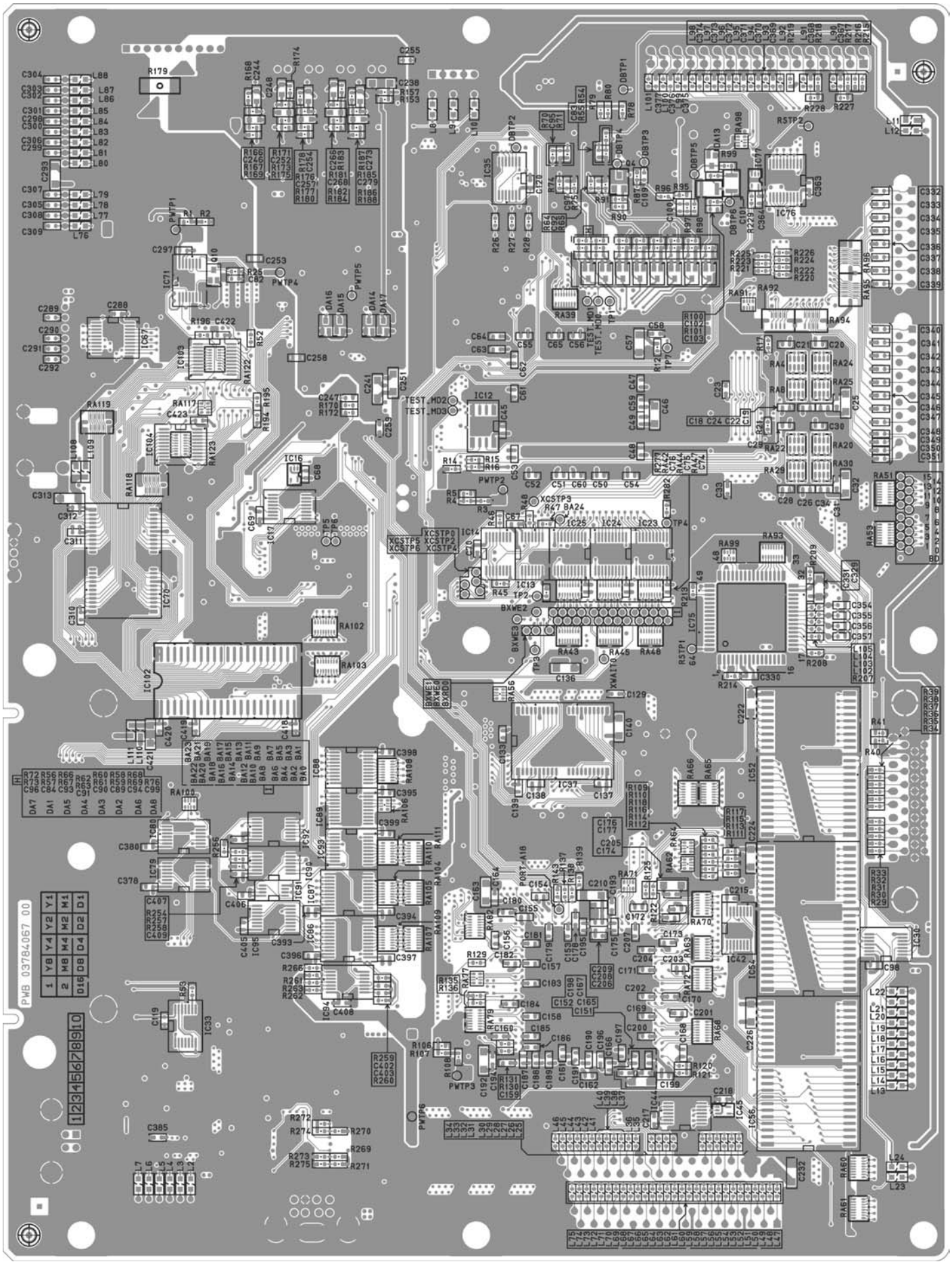
BLOCK DIAGRAM



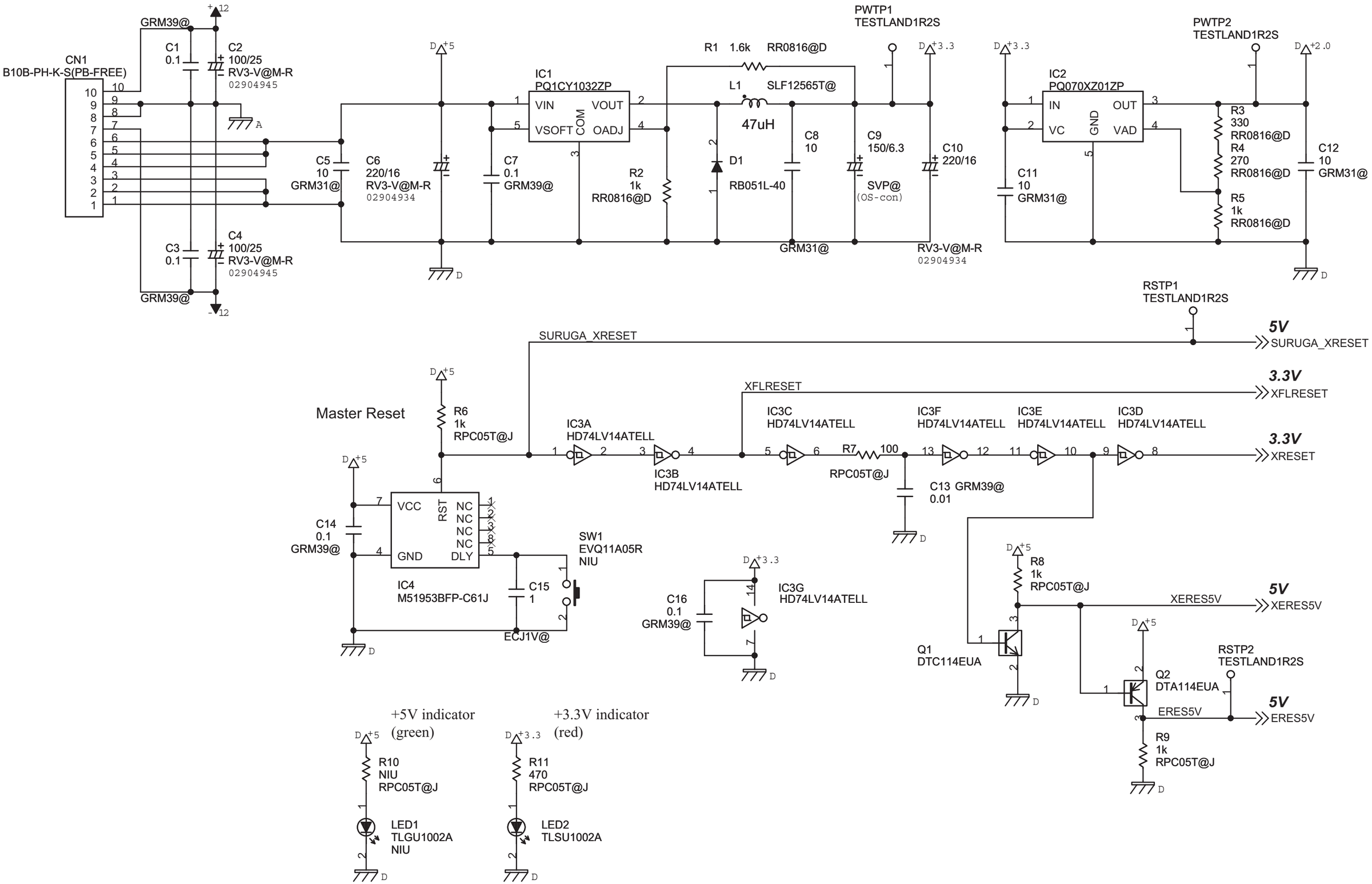
CIRCUIT BOARD (MAIN)



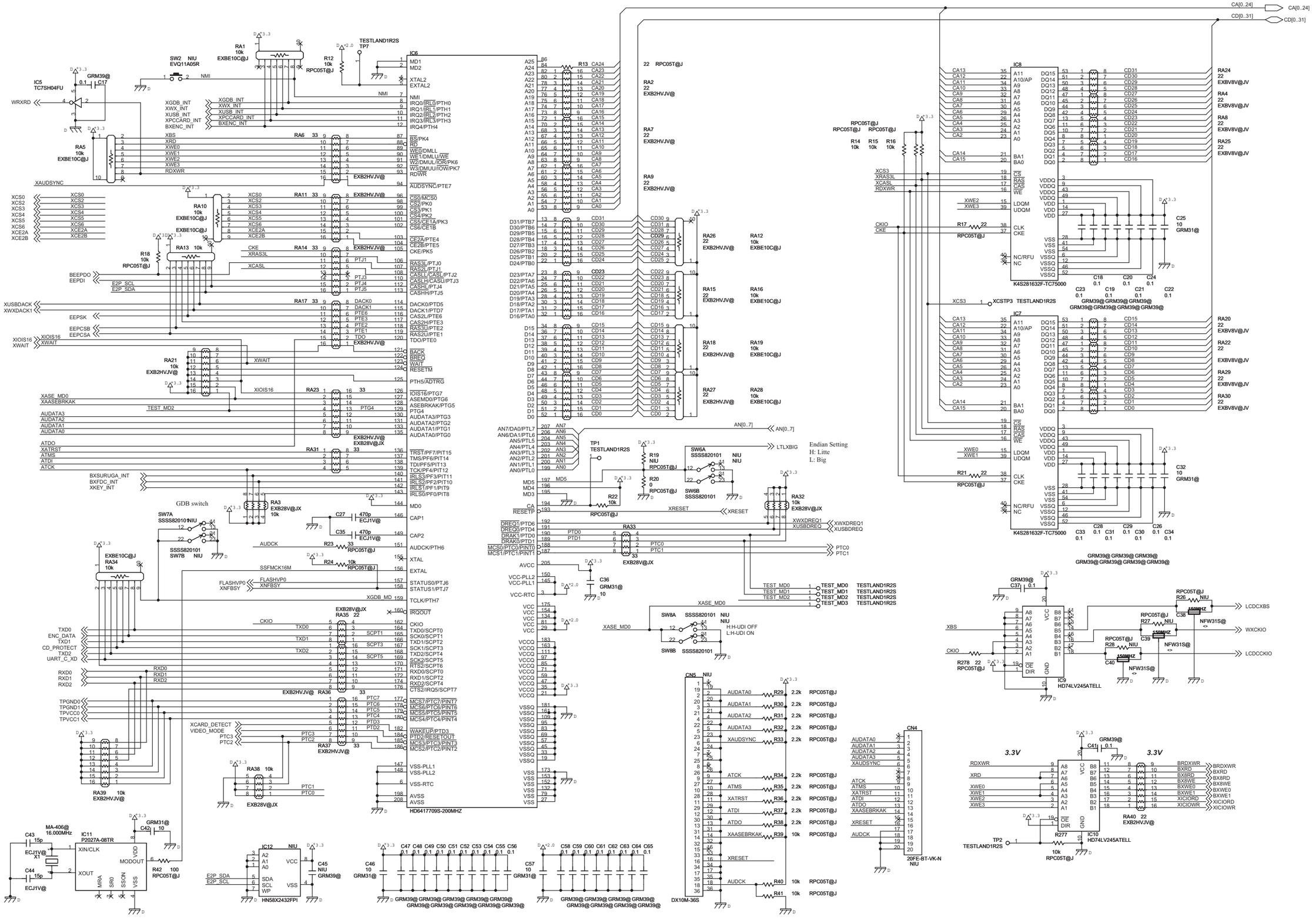
CIRCUIT BOARD (MAIN)



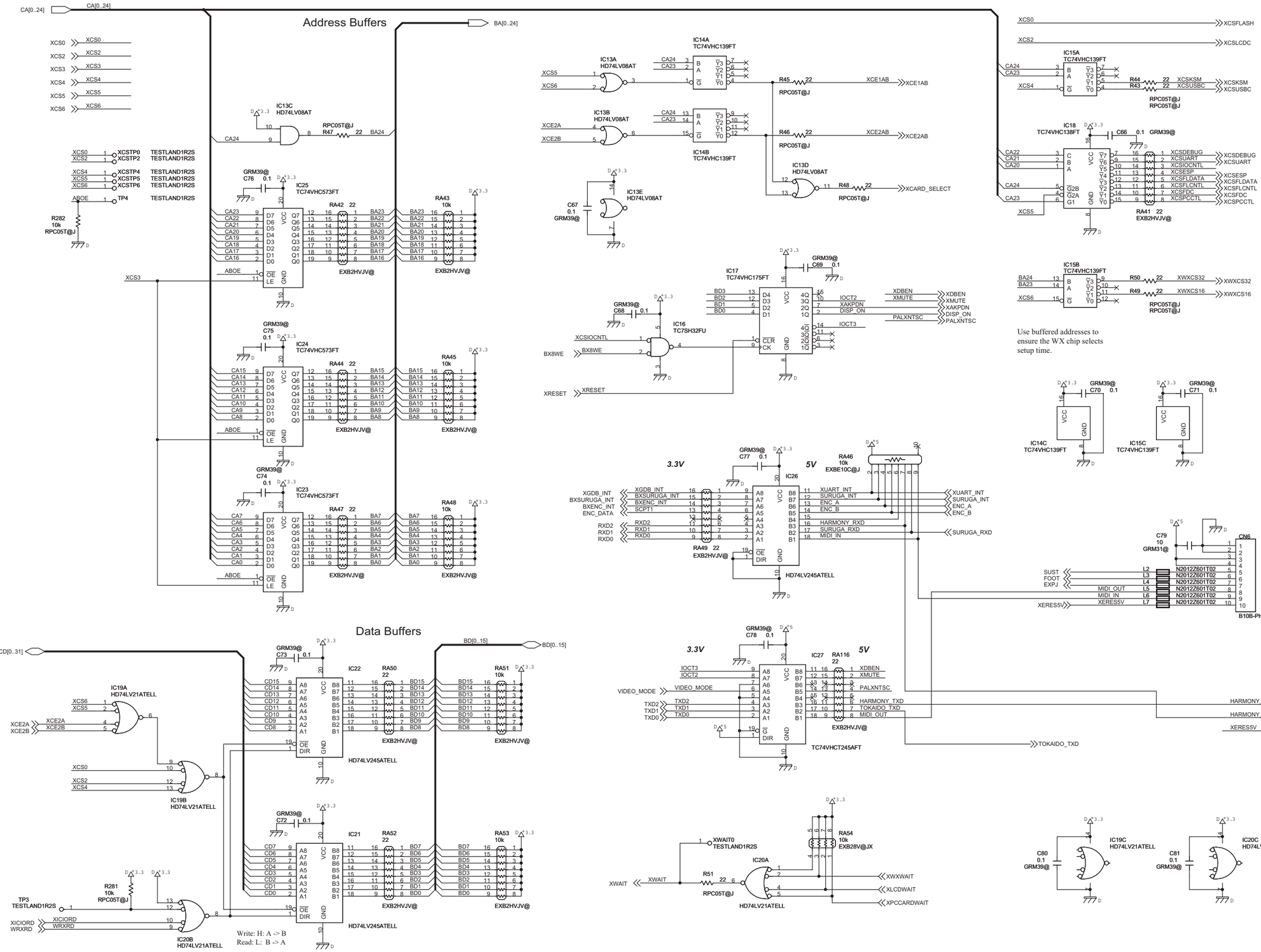
CIRCUIT DIAGRAM (MAIN 1/14)



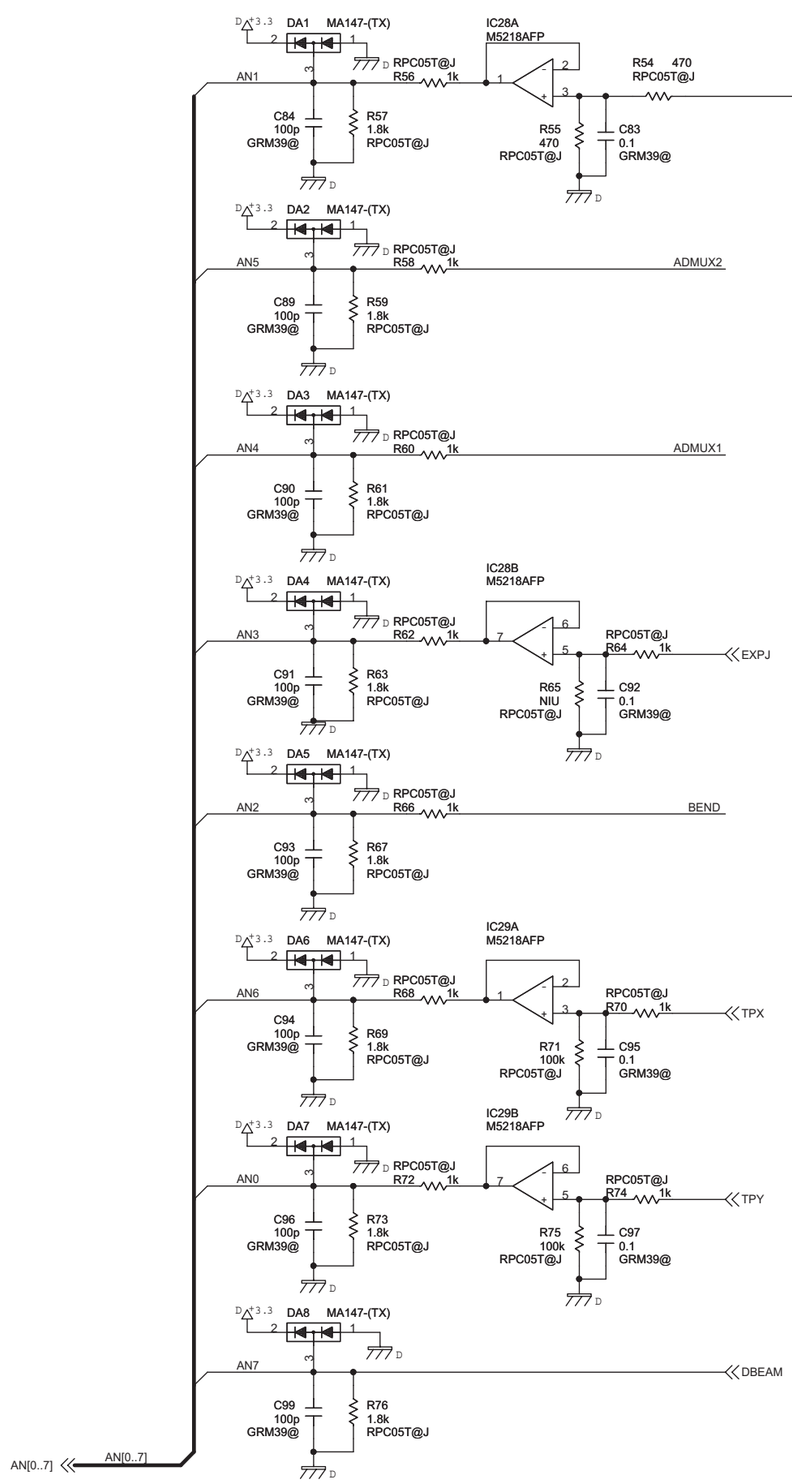
CIRCUIT DIAGRAM (MAIN 2/14)

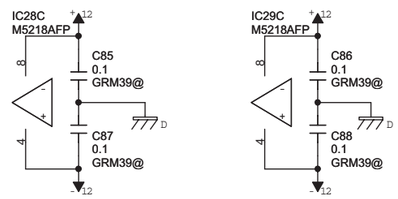


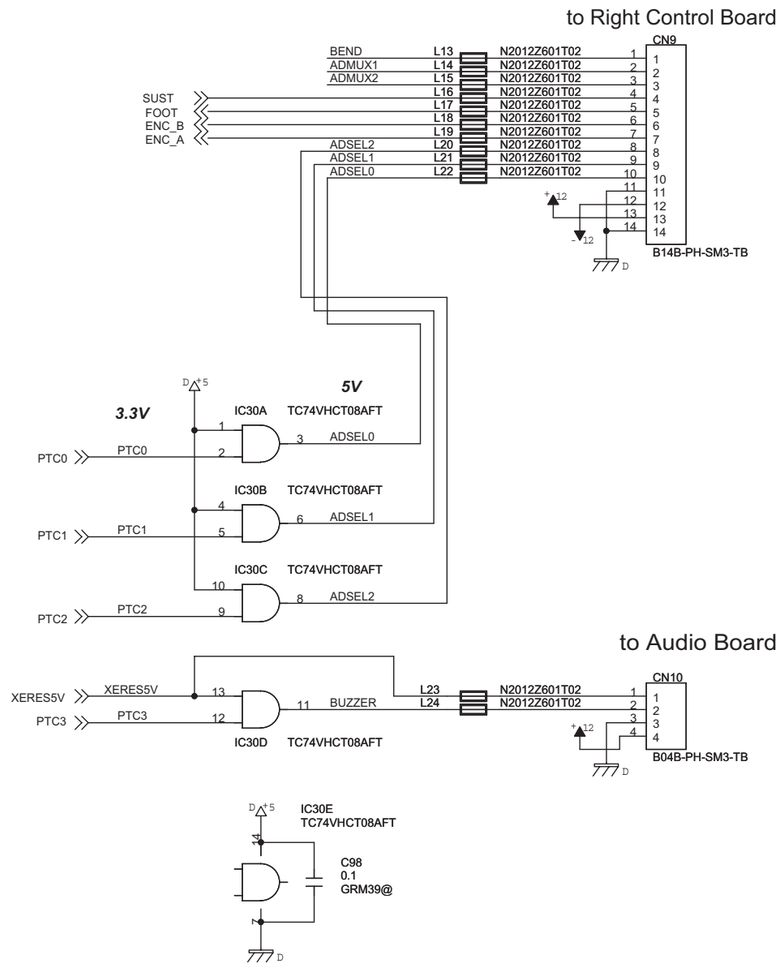
CIRCUIT DIAGRAM (MAIN 3/14)



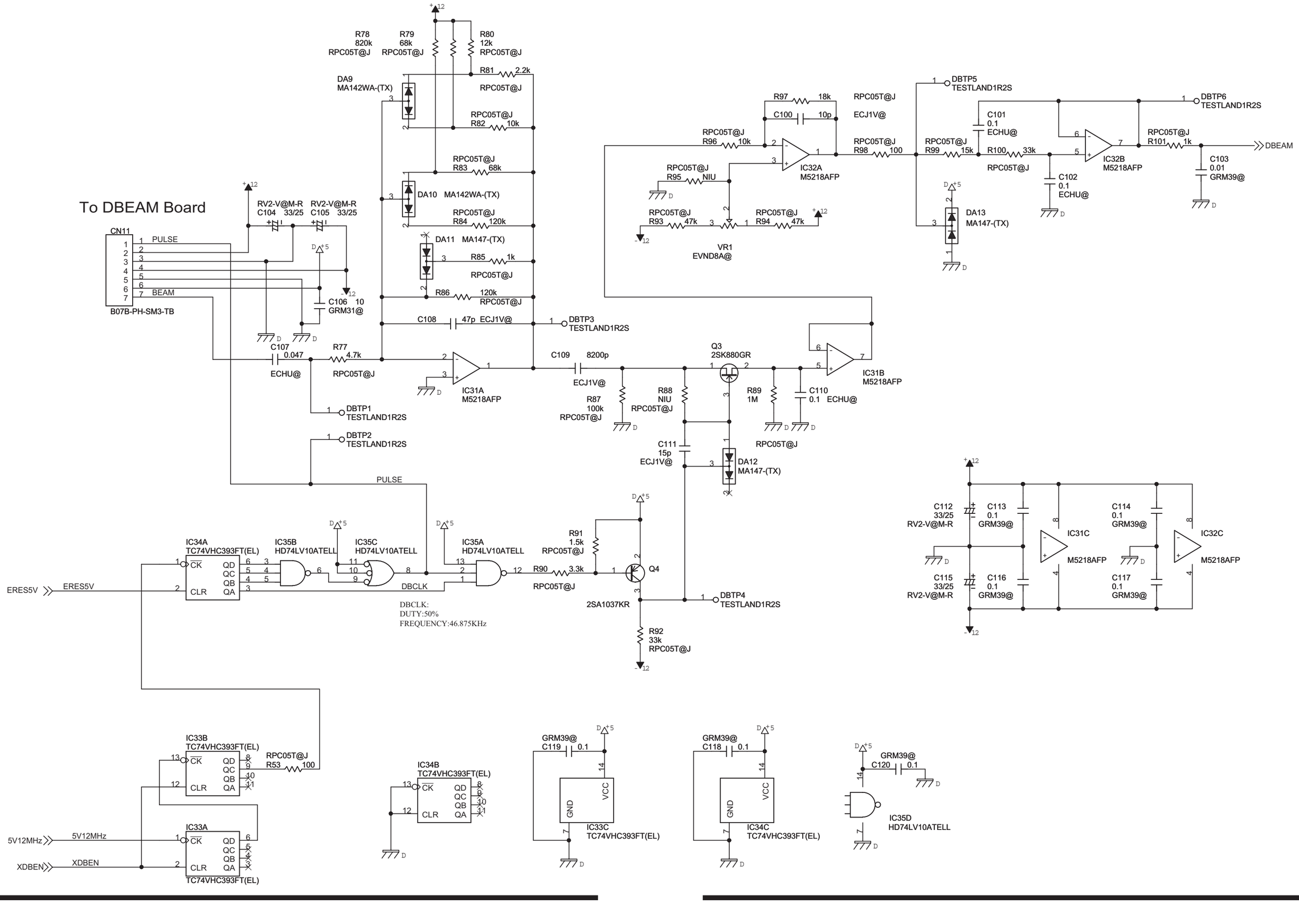
CIRCUIT DIAGRAM (MAIN 4/14)



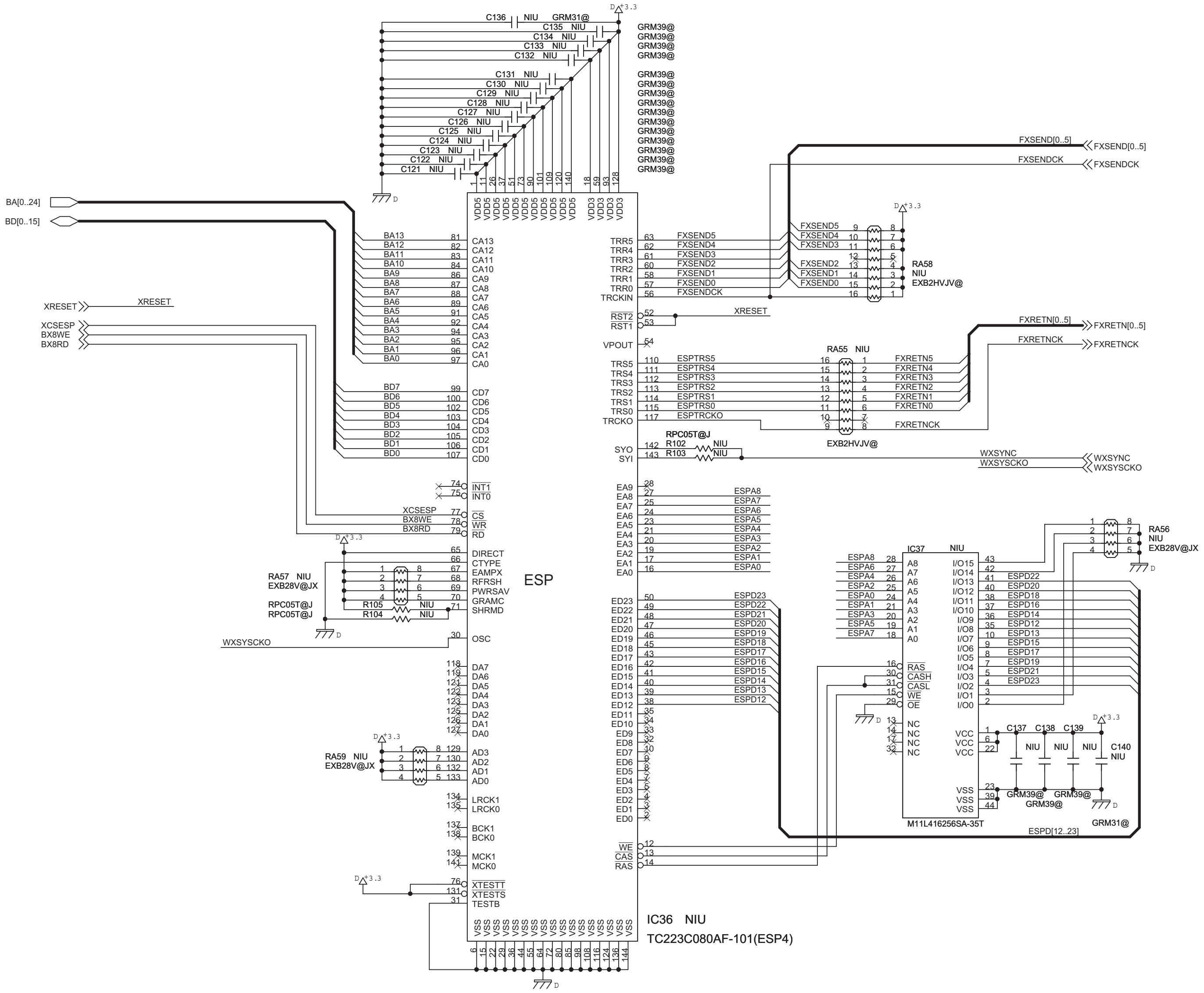




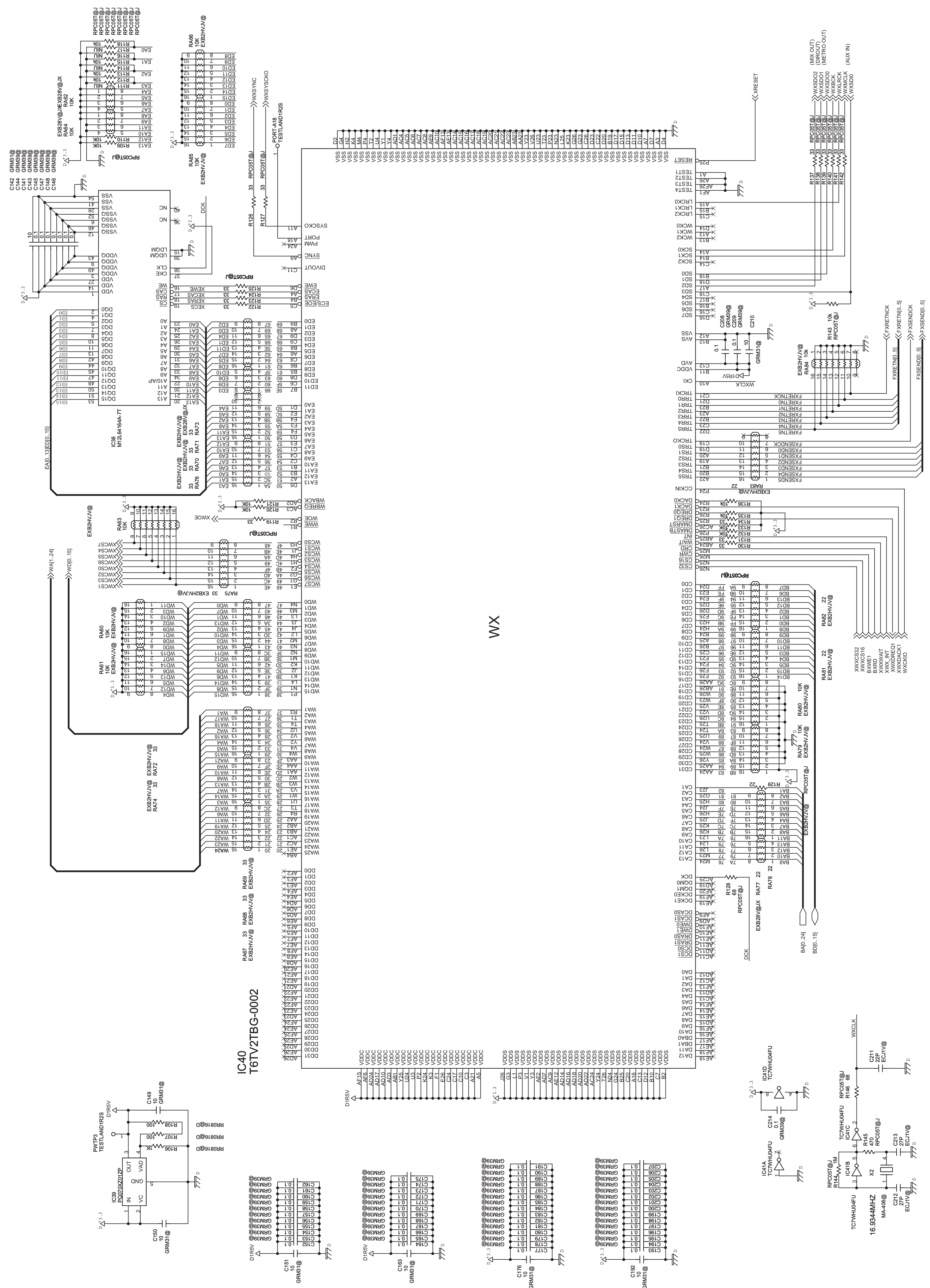
CIRCUIT DIAGRAM (MAIN 5/14)



CIRCUIT DIAGRAM (MAIN 6/14)



CIRCUIT DIAGRAM (MAIN 7/14)



CIRCUIT DIAGRAM (MAIN 8/14)

WA[1..24]
WD[0..15]
XWCS7
XWCS6
XWCS5
XWCS4
XWCS3
XWCS2
XWCS1
XWCS0
XWOE

Onboard Waveform ROMs

IC42A
IC42B
IC43A
IC43B
TC74VHC139FT
XWROMCS5
XWROMCS4
XWROMCS3
XWROMCS2
XWROMCS1
XWROMCS0

IC42C TC74VHC139FT
IC43C TC74VHC139FT
C215 0.1 GRM39@
C216 0.1 GRM39@

IC44C HD74LV21ATELL
IC44B HD74LV21ATELL
IC44A HD74LV21ATELL
C217 0.1 GRM39@

IC47 HD74LV245ATELL
IC46 HD74LV245ATELL
RA115 22 EXB2HVJV@
RA114 22 EXB2HVJV@
GRM39@ C220 0.1
GRM39@ C219 0.1

IC45 TC7SH32FU
GRM39@ C218 0.1

IC50 HD74LV245ATELL
IC49 HD74LV245ATELL
IC48 HD74LV245ATELL
RA87 22 EXB2HVJV@
RA86 22 EXB2HVJV@
RA85 22 EXB2HVJV@
GRM39@ C231 0.1
GRM39@ C230 0.1
GRM39@ C229 0.1

IC58 HD74LV245ATELL
GRM39@ C228 0.1
XRESET
BEEPDO
EEPDI
EEPSK
EEPCSB
EEPCSA
EEPDO

IC57 HD74LV245ATELL
GRM39@ C227 0.1
RA88 22 EXB2HVJV@
BXWOE
BSRXCS0
BSRXCS1
BSRXCS2
BSRXCS3

Wave ROM 1

IC51
M27W1282-001
XWROMCS0
XWOE
C221 10 GRM31@

Wave ROM 2

IC52
M27W1282-002
XWROMCS1
XWOE
C222 10 GRM31@

Wave ROM 3

IC53
M27W1282-003
XWROMCS2
XWOE
C223 10 GRM31@

Wave ROM 4

IC54
M27W1282-004
XWROMCS3
XWOE
C224 10 GRM31@

Wave ROM 5

IC55
M27W1282-005
XWROMCS4
XWOE
C225 10 GRM31@

Wave ROM 6

IC56
M27W1282-006
XWROMCS5
XWOE
C226 10 GRM31@

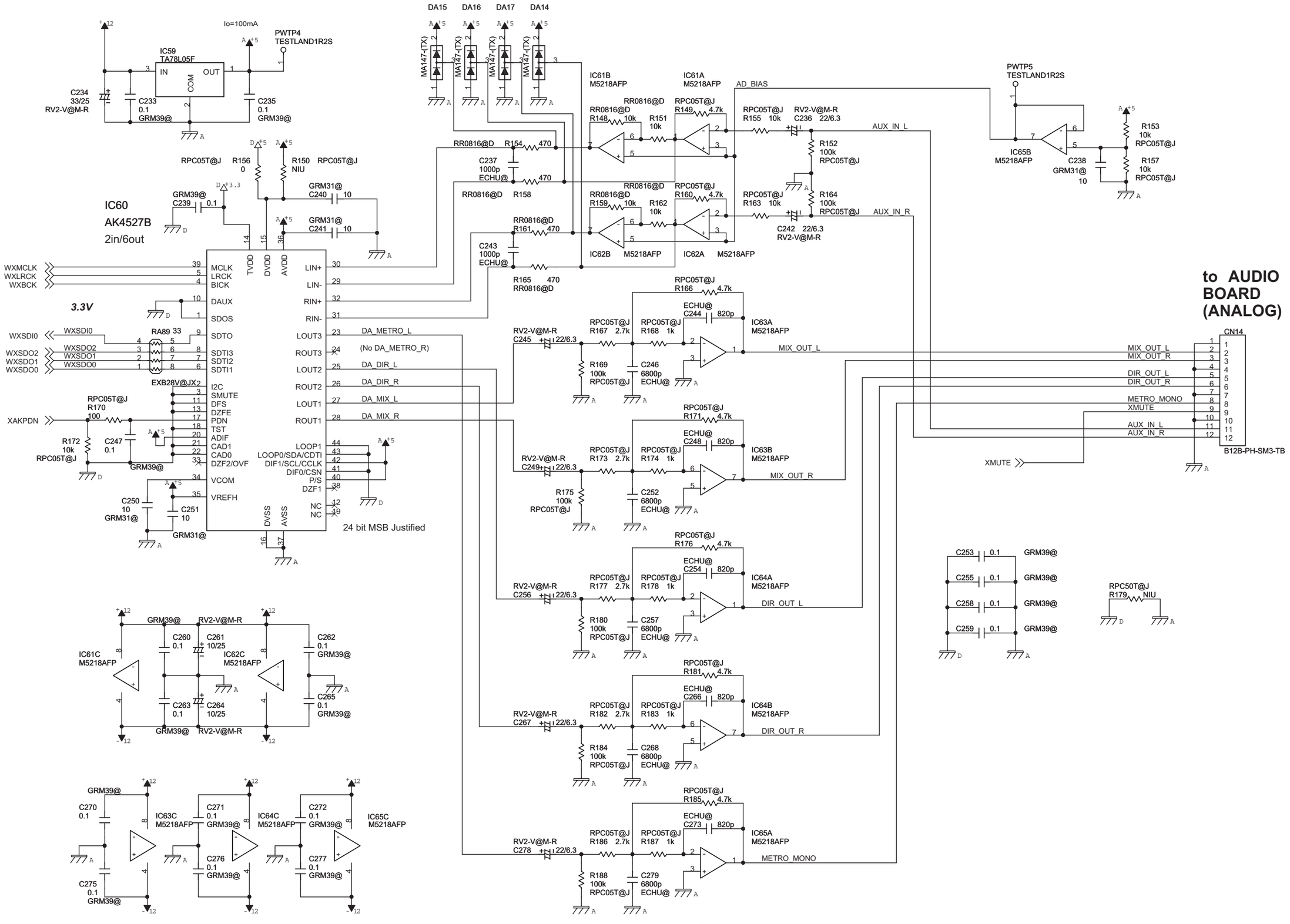
to SRX EXP Board

CN12
32FE-BT-VK-N
EWA23 L75
EWA22 L74
EWA20 L73
EWA21 L72
EWA19 L71
EWA18 L70
EWA9 L69
EWA8 L68
EWA10 L67
EWA7 L66
EWA11 L65
EWA6 L64
EWA12 L63
EWA5 L62
EWA13 L61
EWA4 L60
EWA14 L59
EWA3 L58
EWA15 L57
EWA2 L56
EWA16 L55
EWA24 L54
EWA1 L53
EWA17 L52
BXWOE L51
EWD15 L50
EWD0 L49
EWD7 L48
EWD8 L47

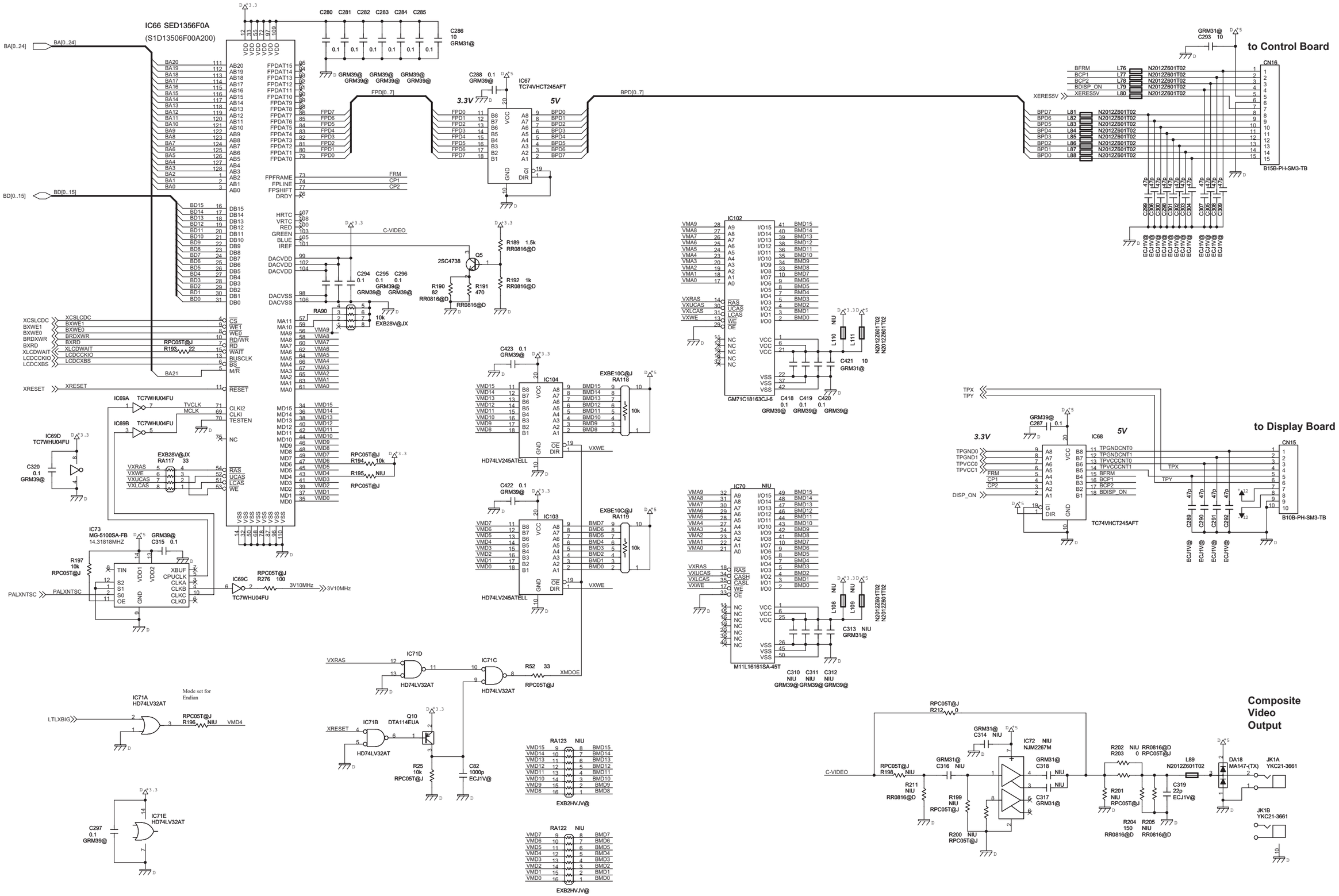
to SRX EXP Board

CN13
EWD14 L46
EWD1 L45
EWD6 L44
EWD9 L43
EWD13 L42
EWD2 L41
EWD5 L40
EWD10 L39
EWD12 L38
EWD3 L37
EWD4 L36
EWD11 L35
BSRXCS0 L34
BSRXCS1 L33
BSRXCS2 L32
BSRXCS3 L31
BSRXRST L30
BEEPSK L29
BEEPCSB L28
BEEPCSA L27
BEEPDI L26
EEPDO L25
C232 10 GRM31@
34FE-BT-VK-N

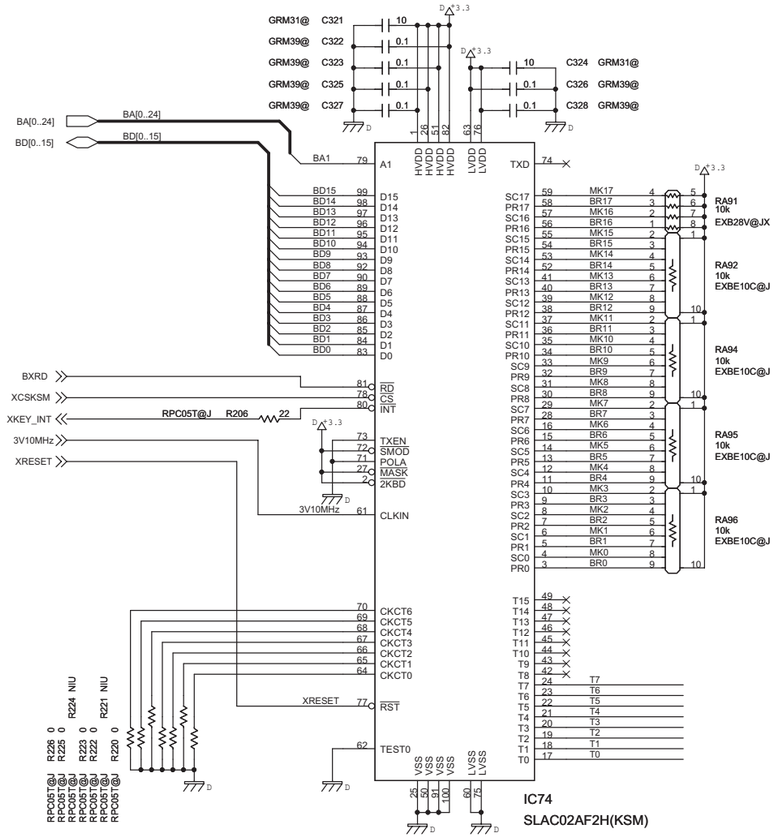
CIRCUIT DIAGRAM (MAIN 9/14)

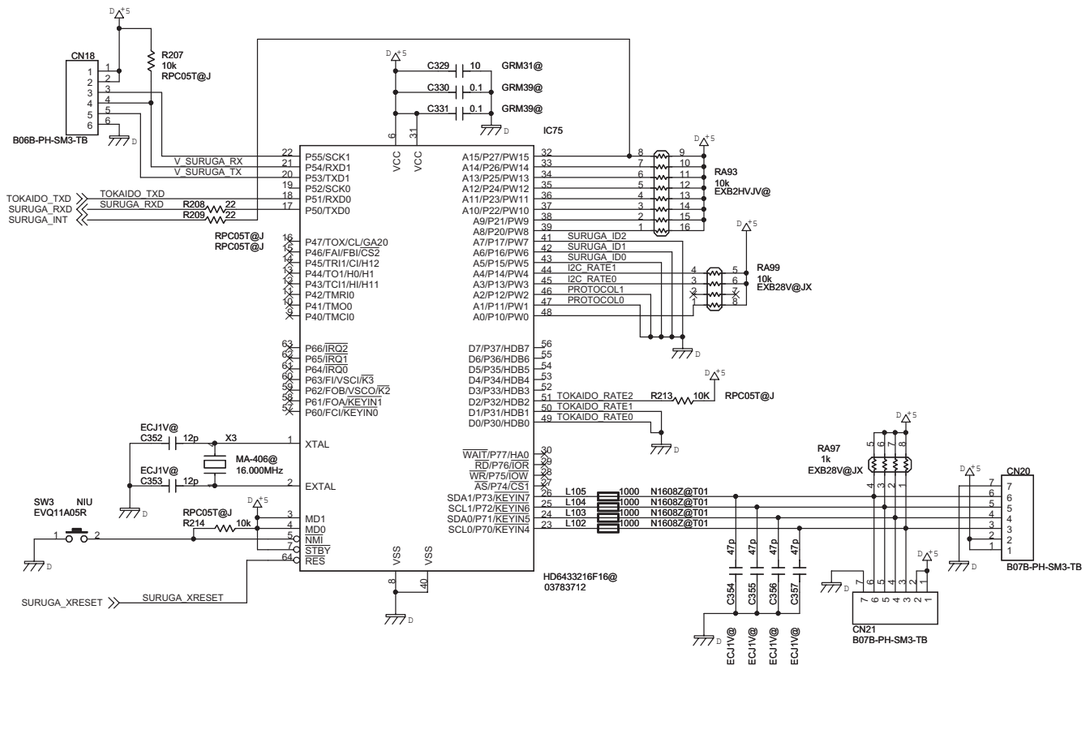


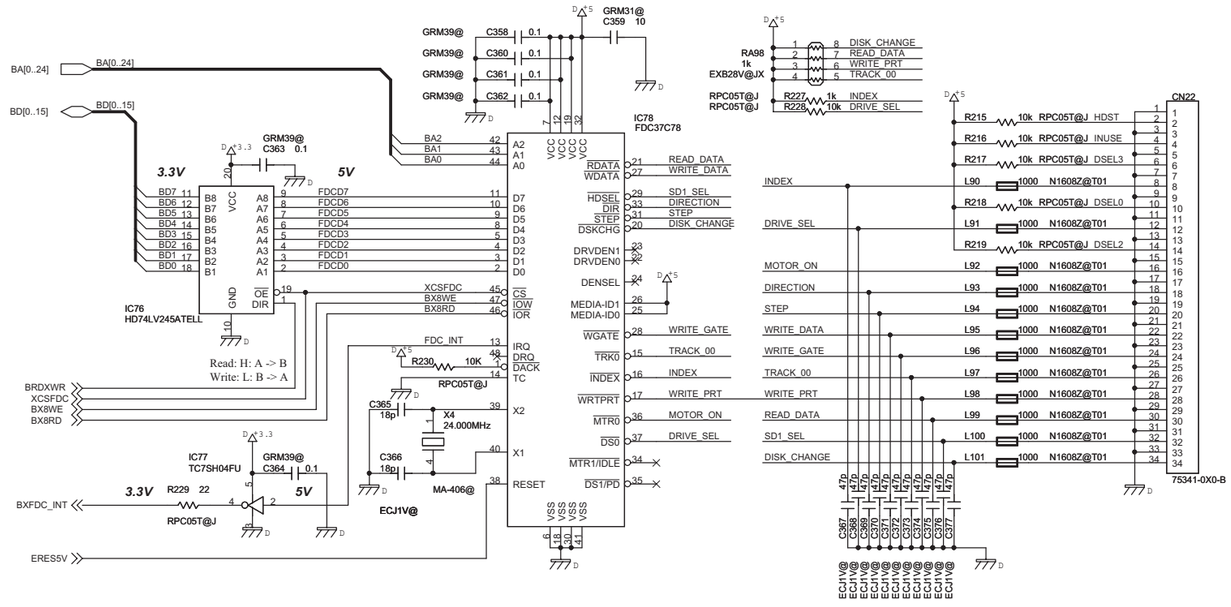
CIRCUIT DIAGRAM (MAIN 10/14)



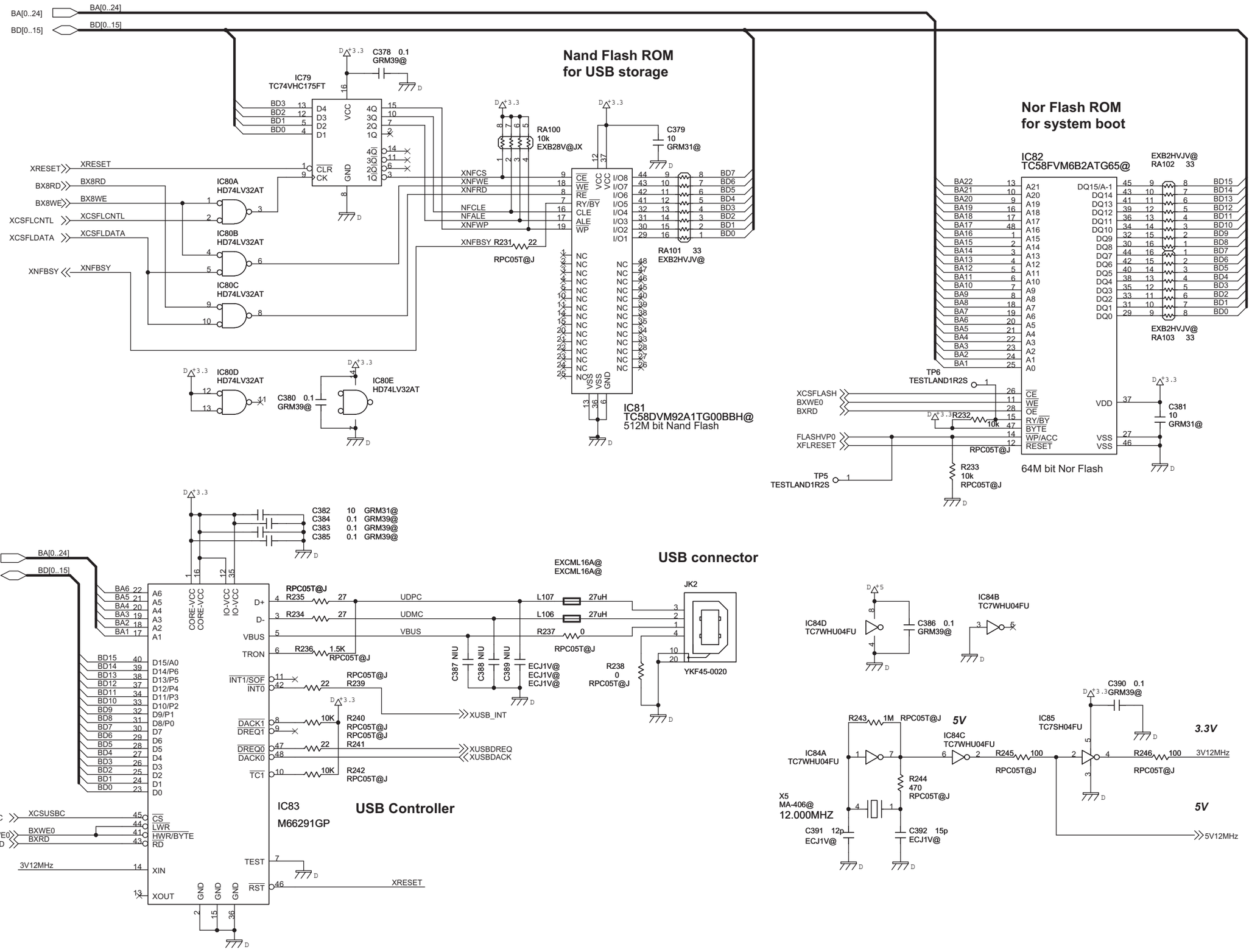
CIRCUIT DIAGRAM (MAIN 11/14)



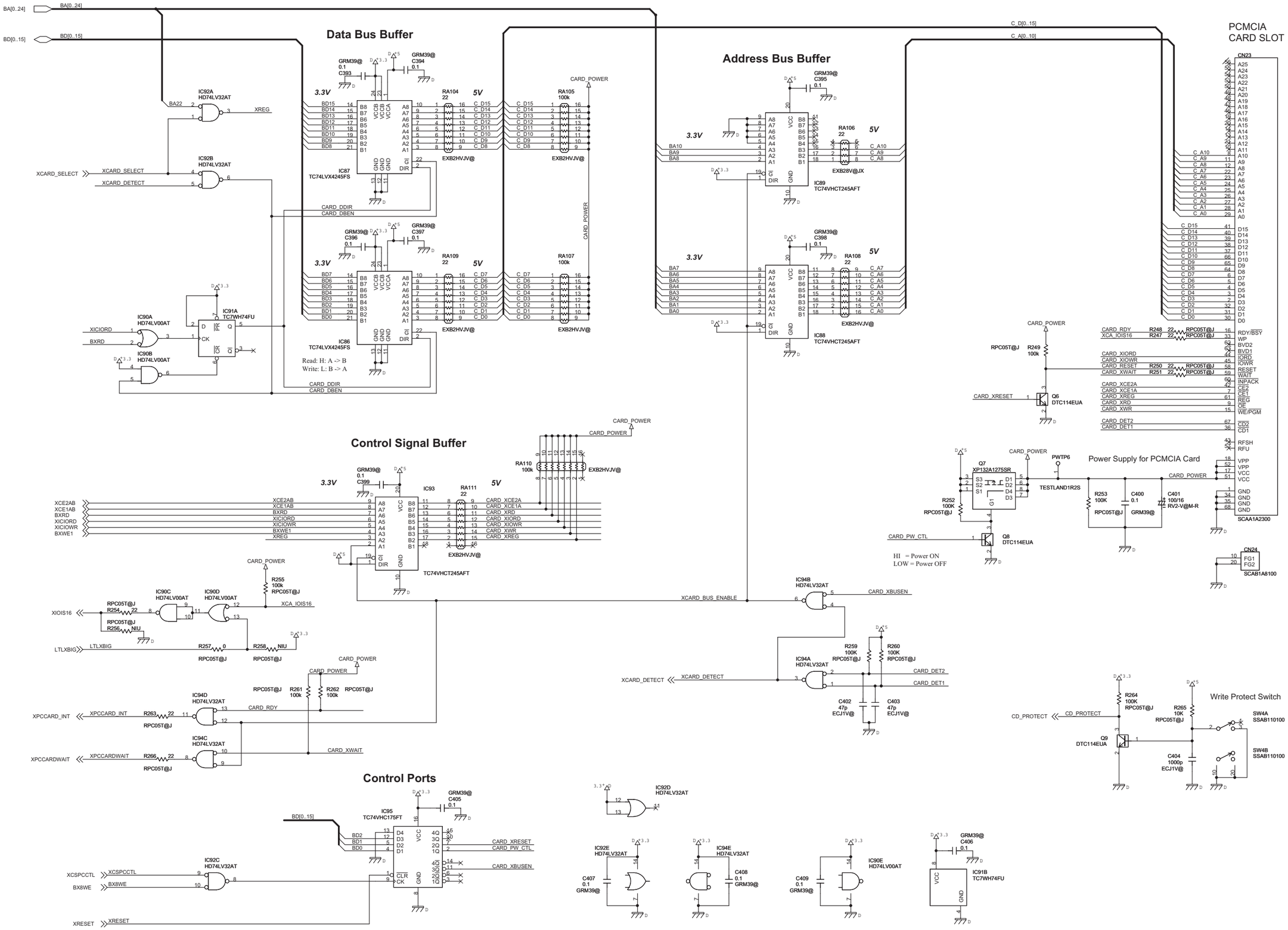




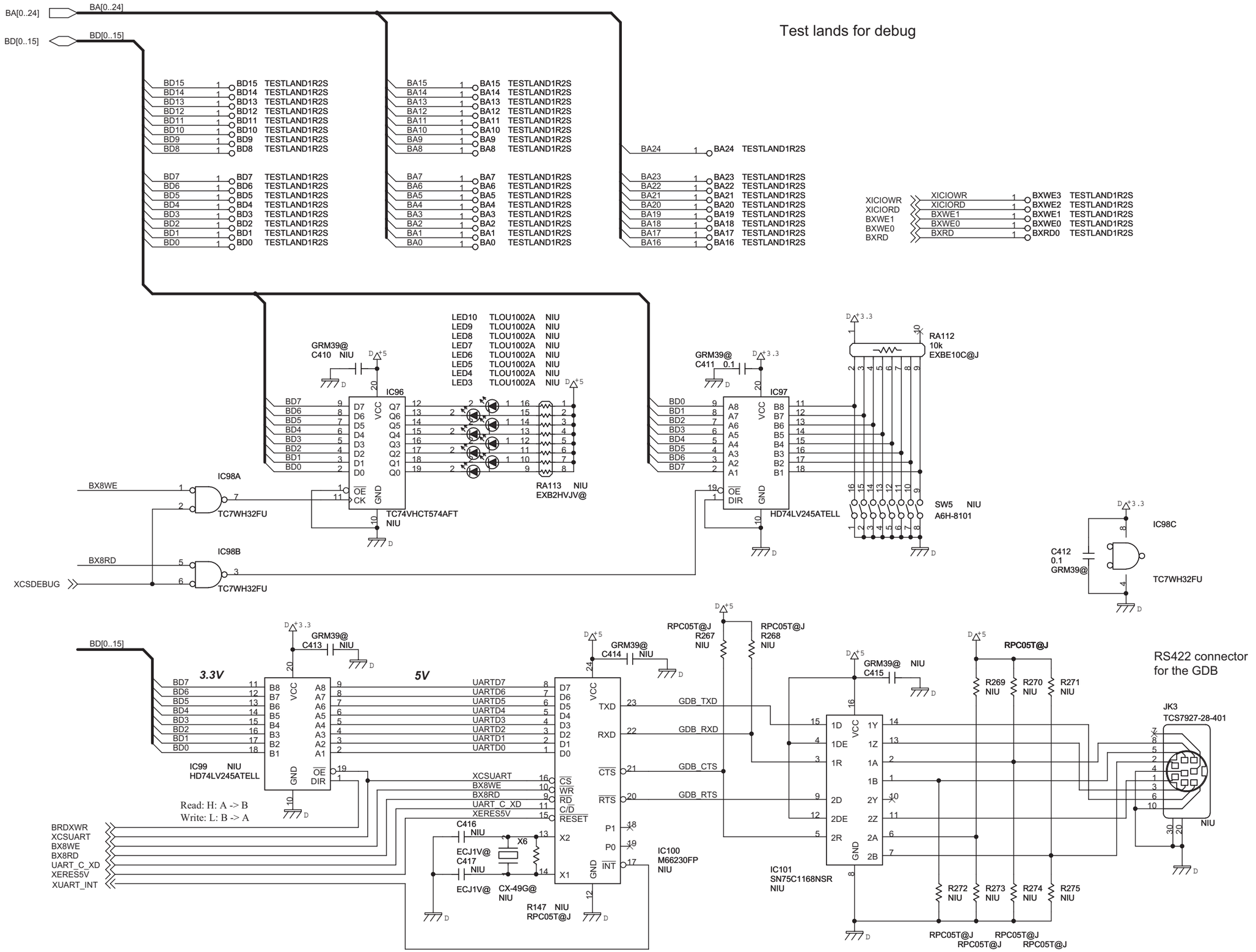
CIRCUIT DIAGRAM (MAIN 12/14)



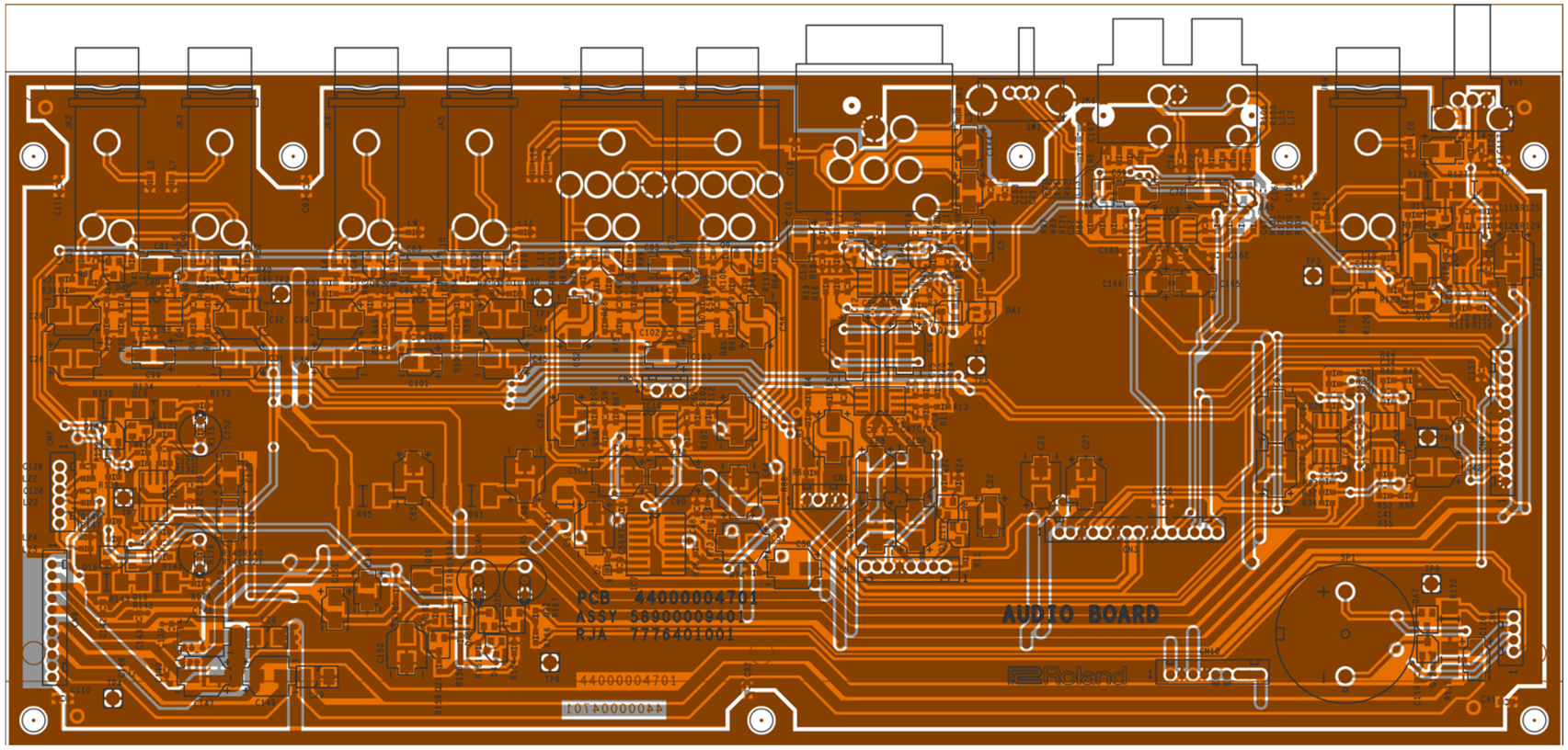
CIRCUIT DIAGRAM (MAIN 13/14)



CIRCUIT DIAGRAM (MAIN 14/14)

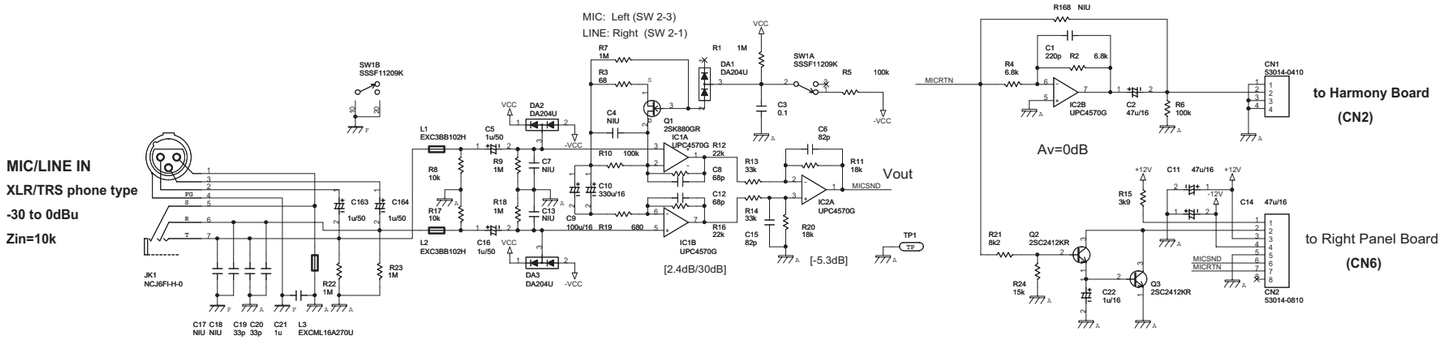


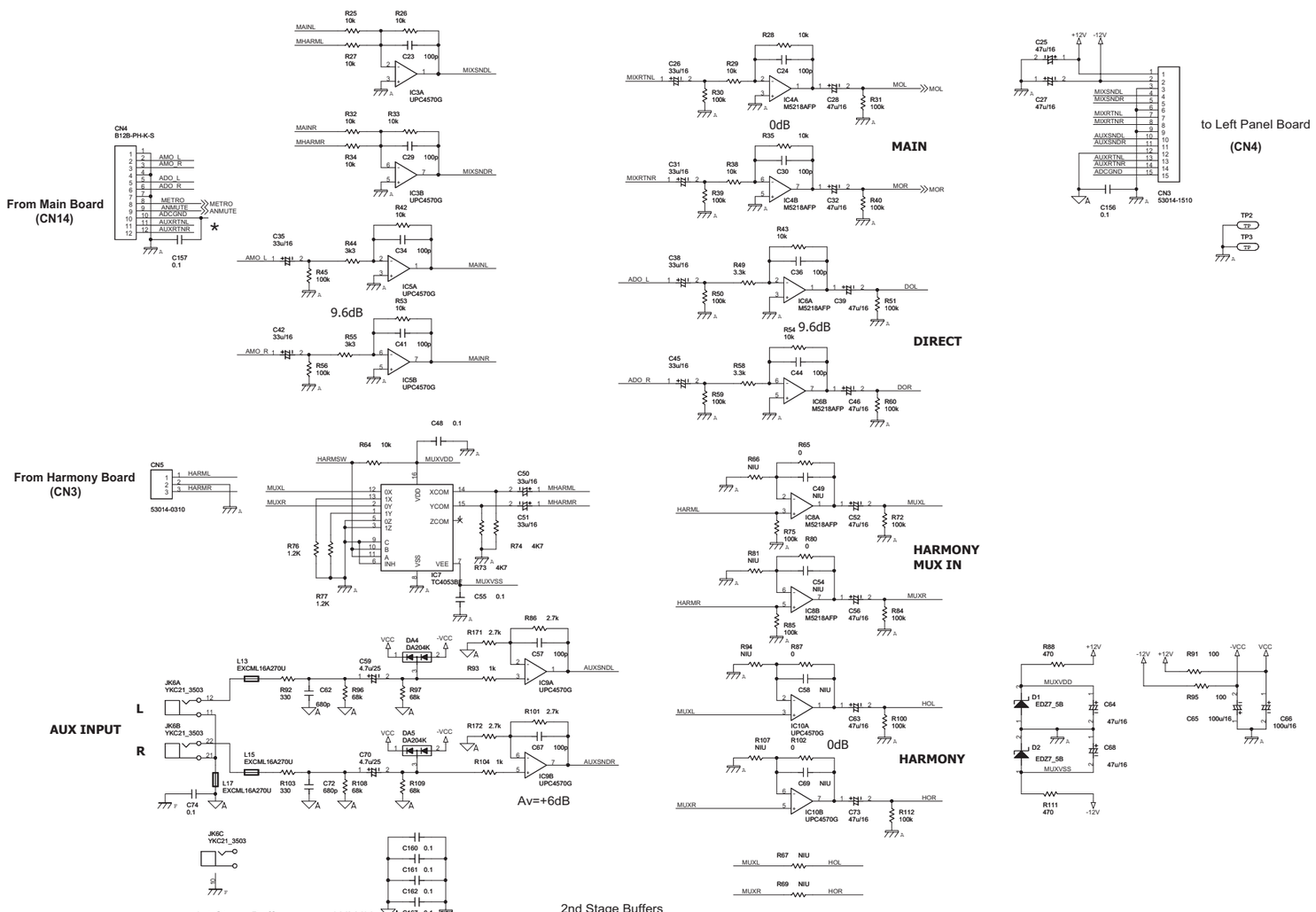
CIRCUIT BOARD (AUDIO)



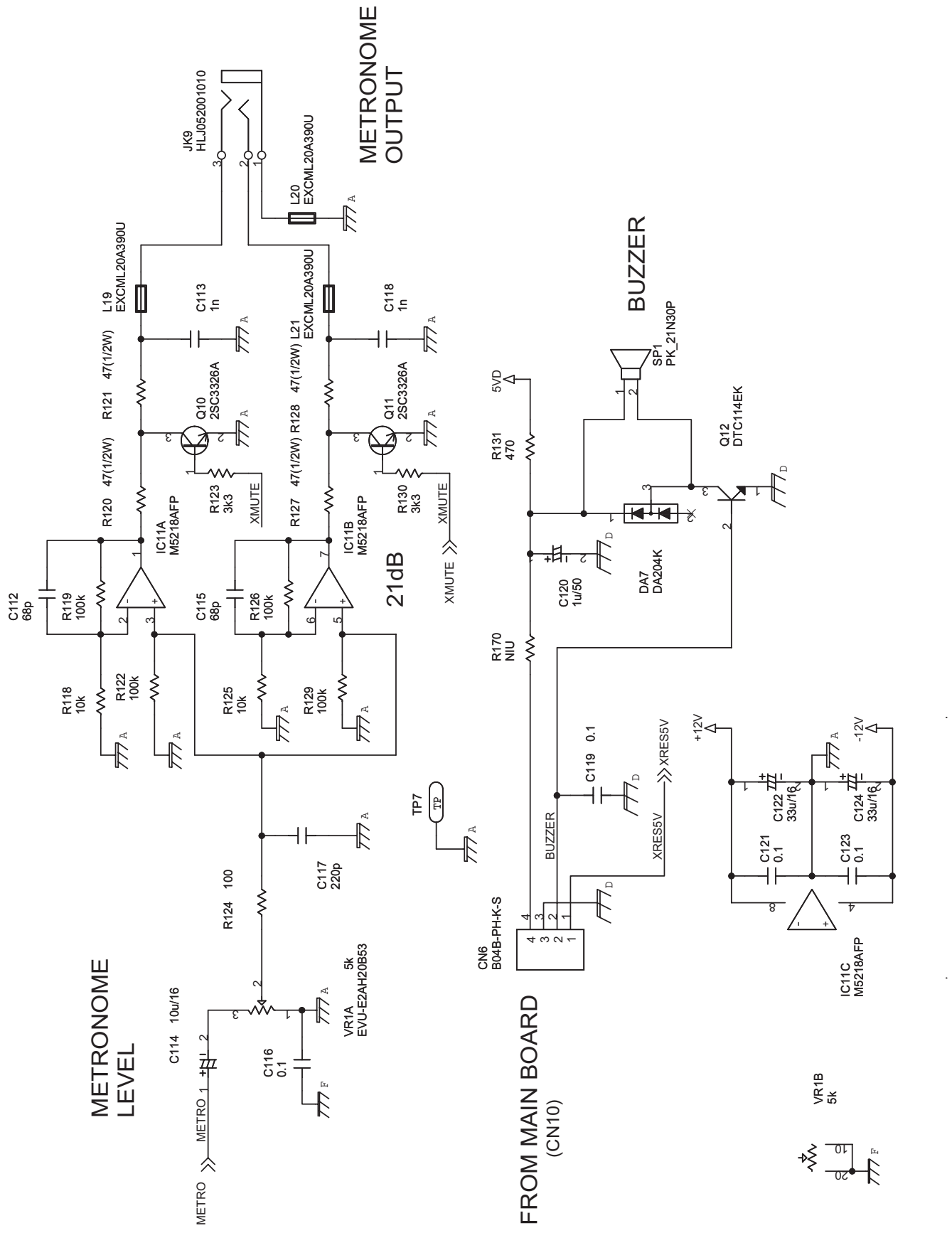
View from component side

CIRCUIT DIAGRAM (AUDIO 1/4)

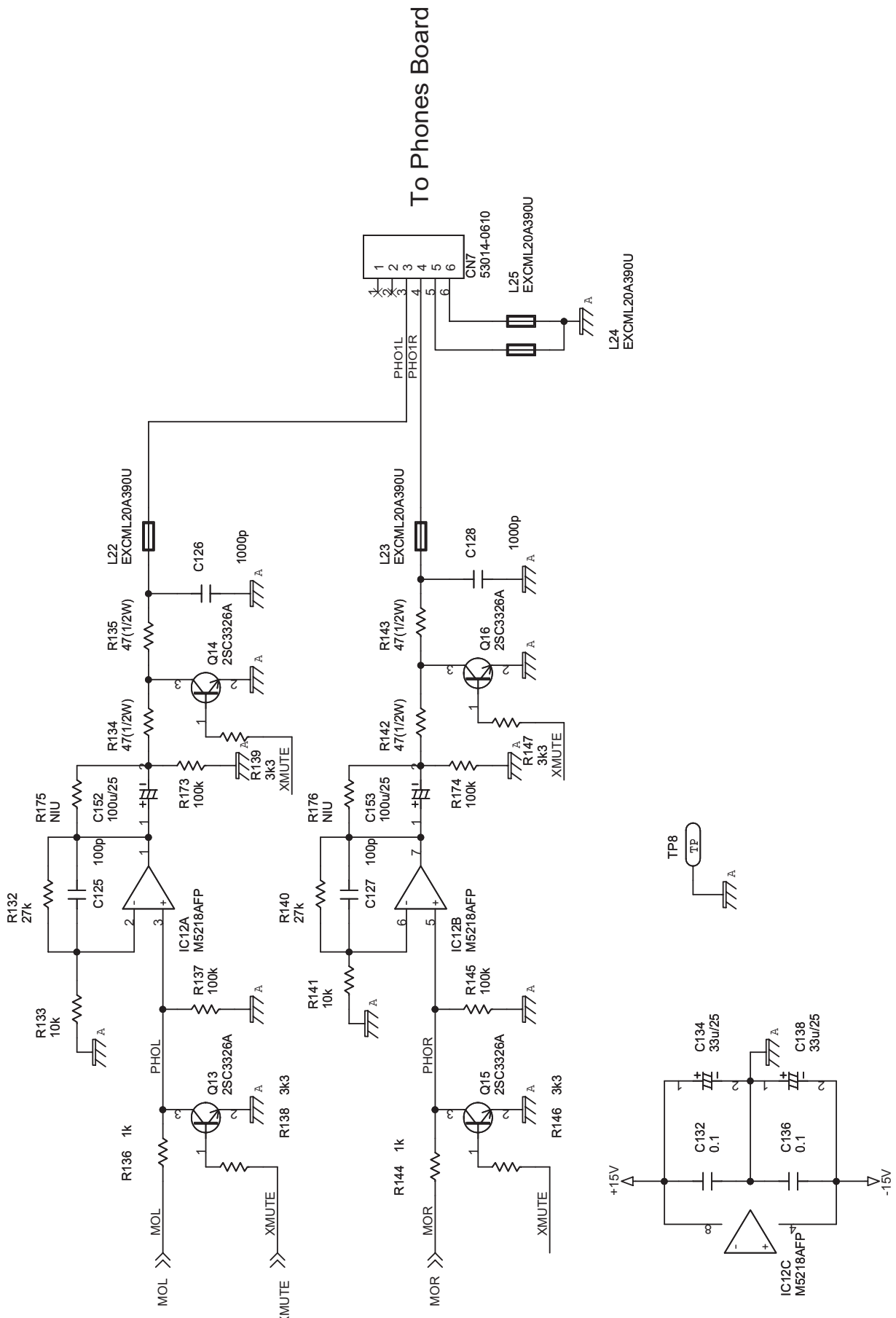




CIRCUIT DIAGRAM (AUDIO 2/4)

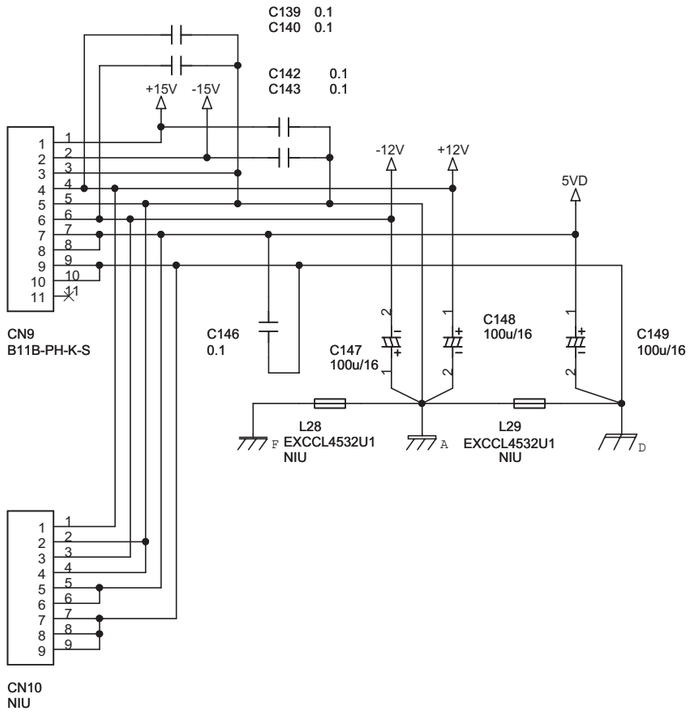


CIRCUIT DIAGRAM (AUDIO 3/4)

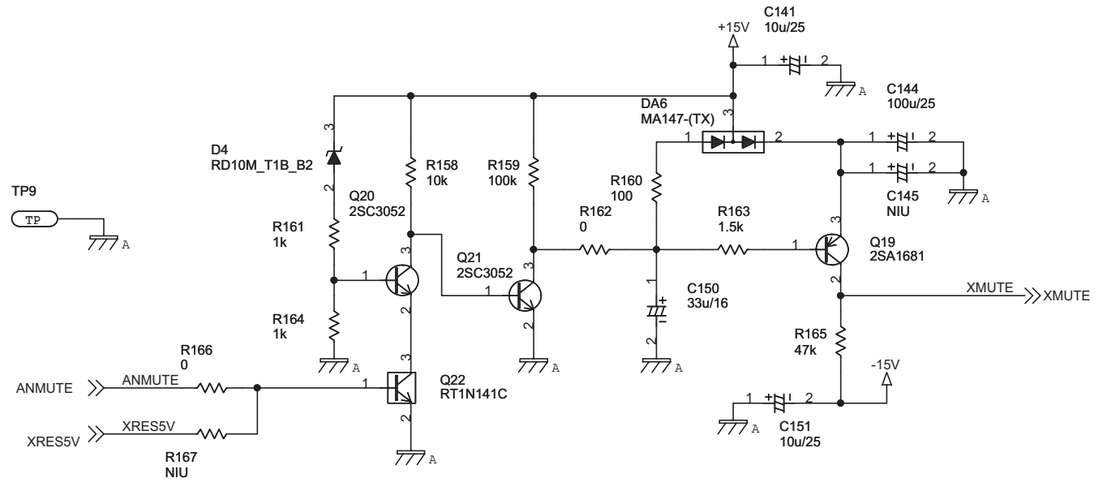


CIRCUIT DIAGRAM (AUDIO 4/4)

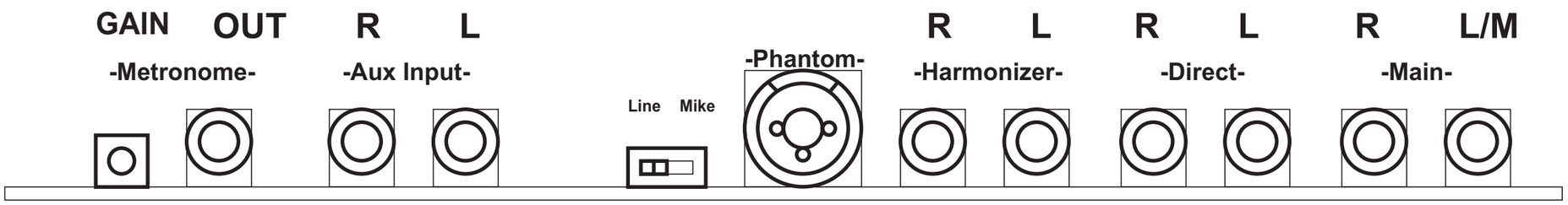
From Power Supply Board
(CN2)



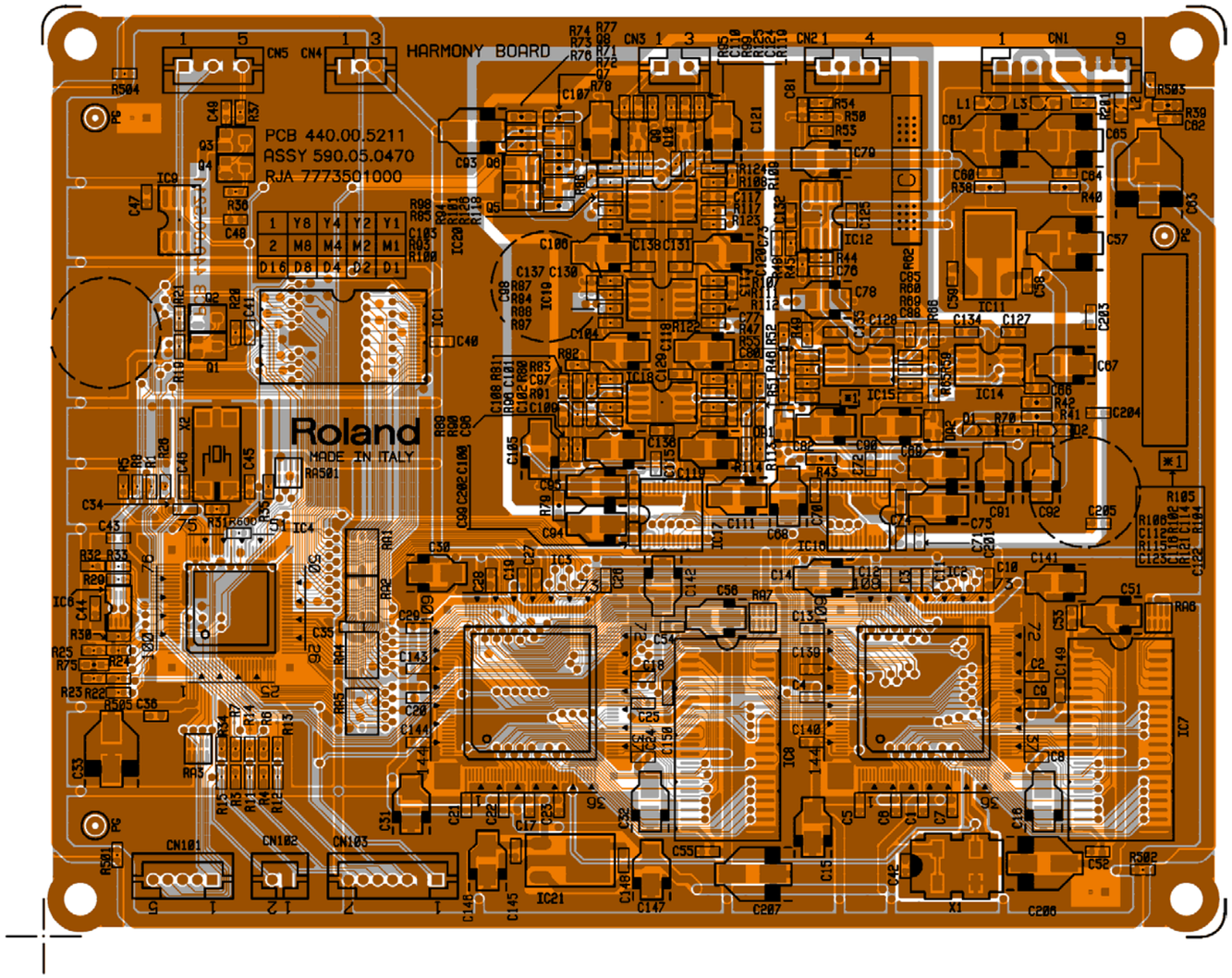
To Harmony Board
(CN1)



Rear Panel

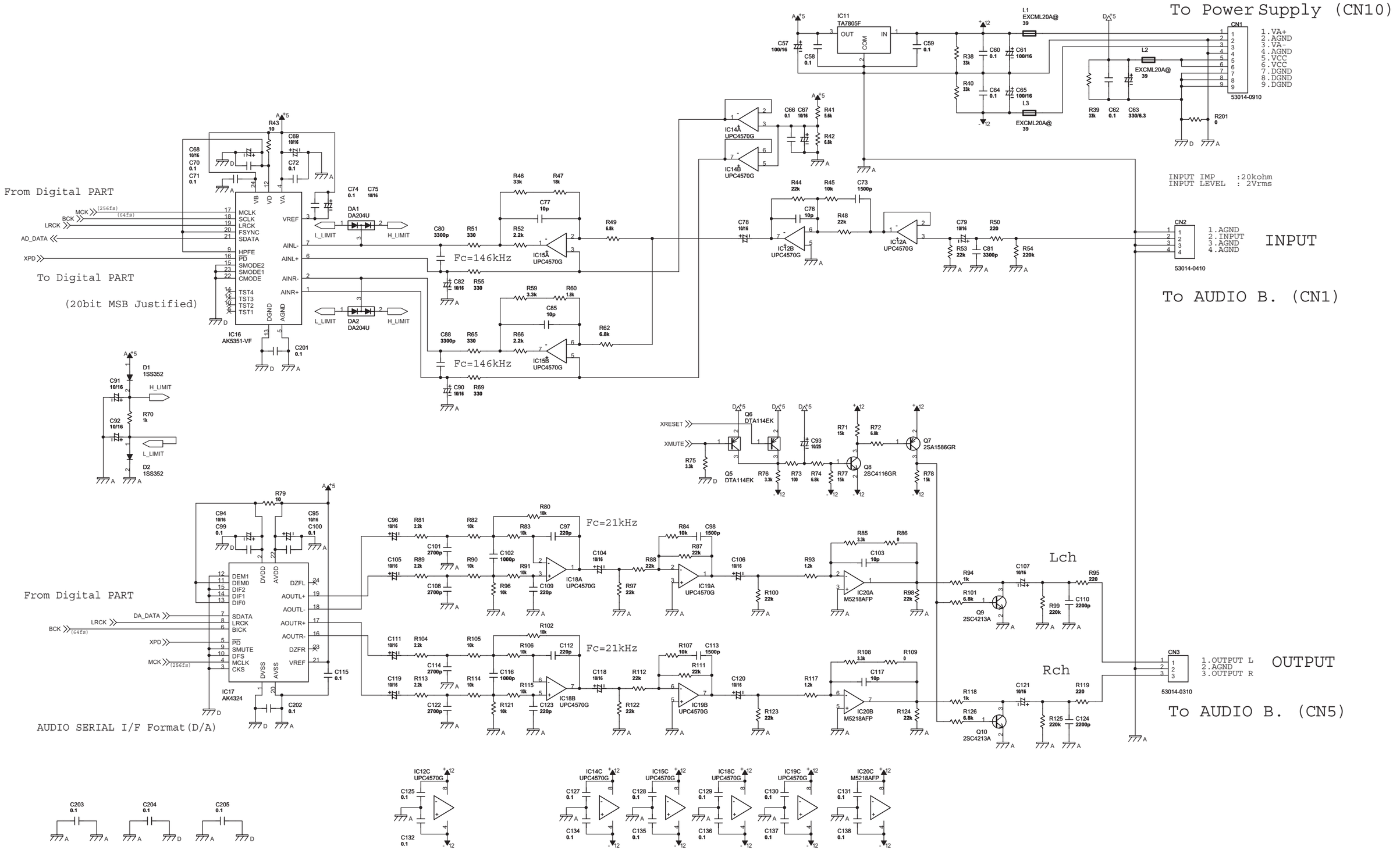


CIRCUIT BOARD (HARMONY)

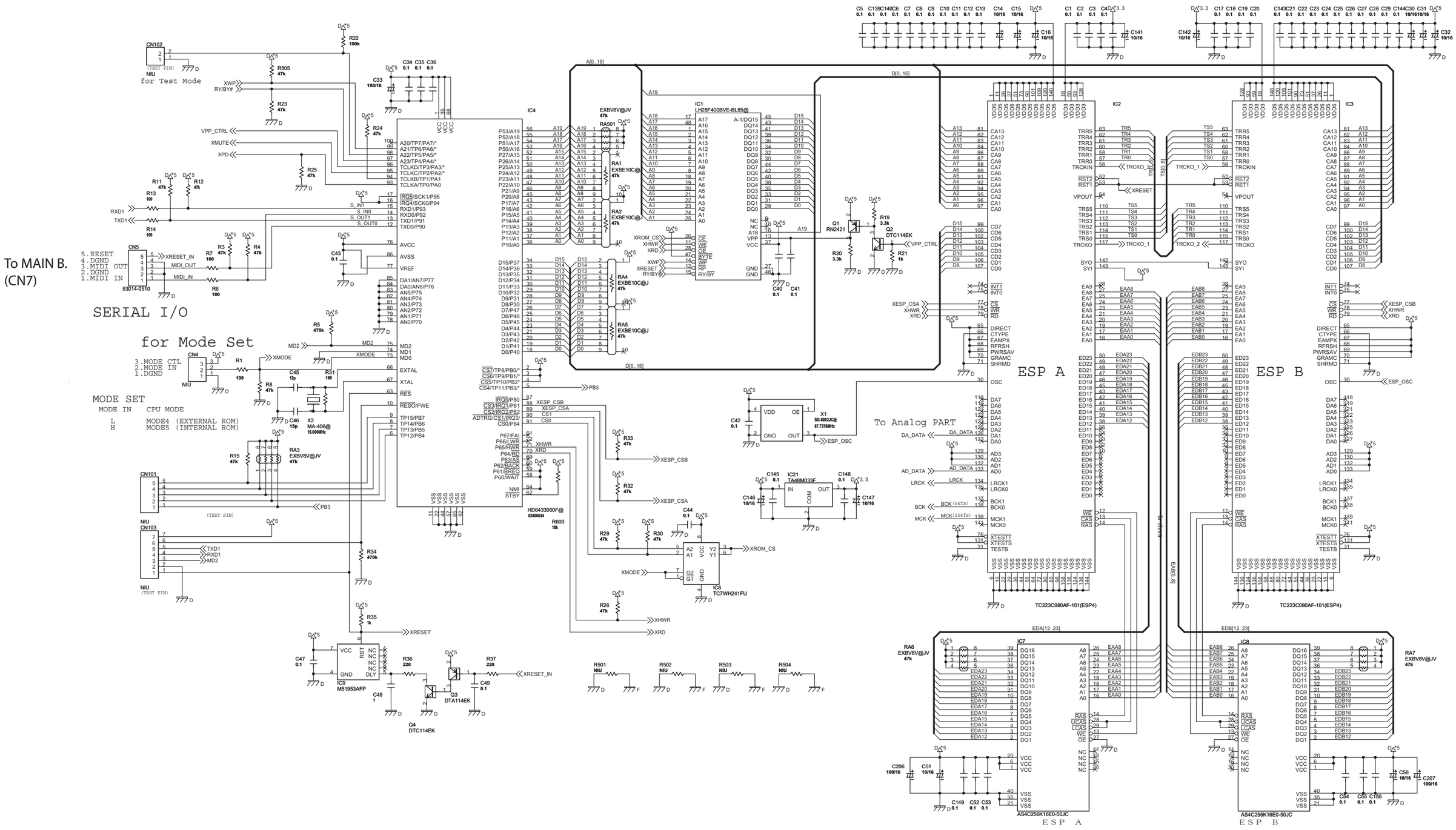


View from component side

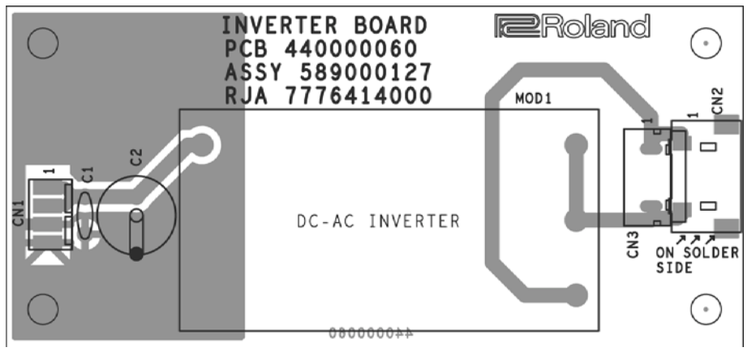
CIRCUIT DIAGRAM (HARMONY 1/2)



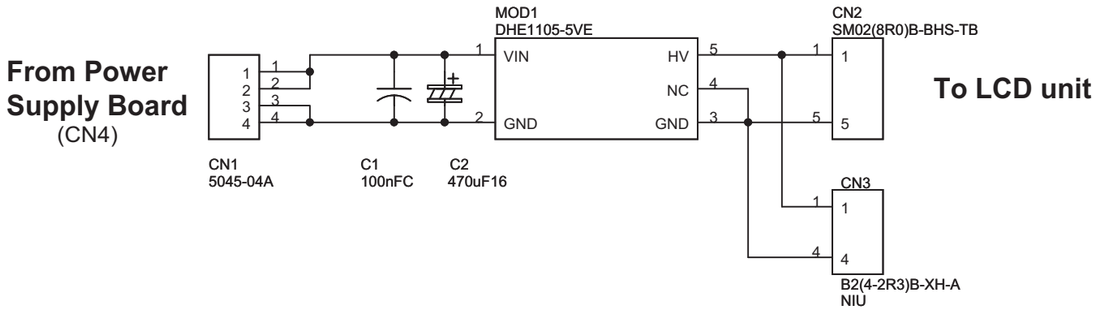
CIRCUIT DIAGRAM (HARMONY 2/2)



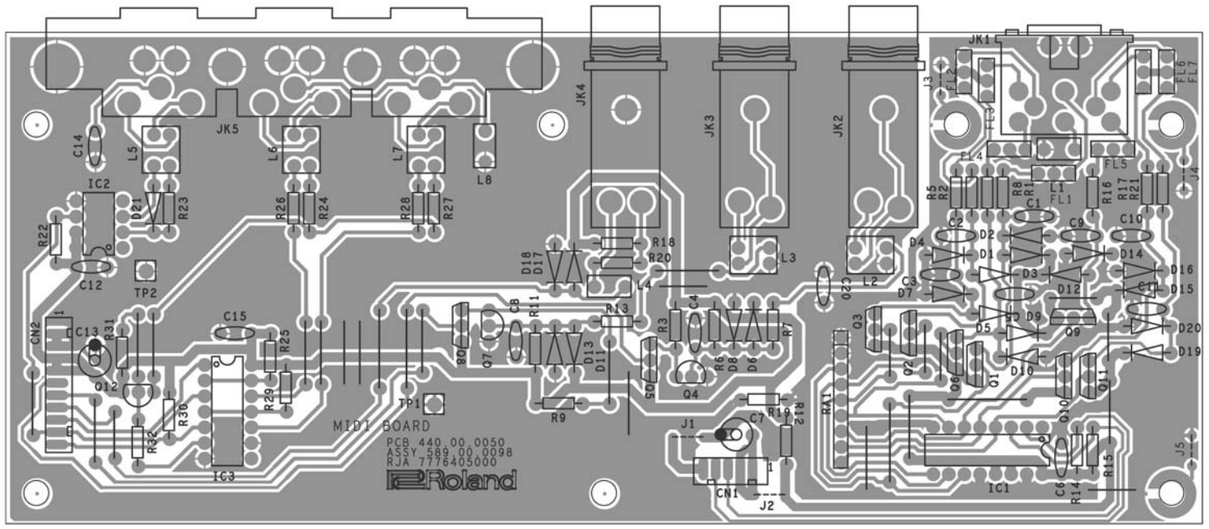
CIRCUIT BOARD& CIRCUIT DIAGRAM (INVERTER)



View from component side

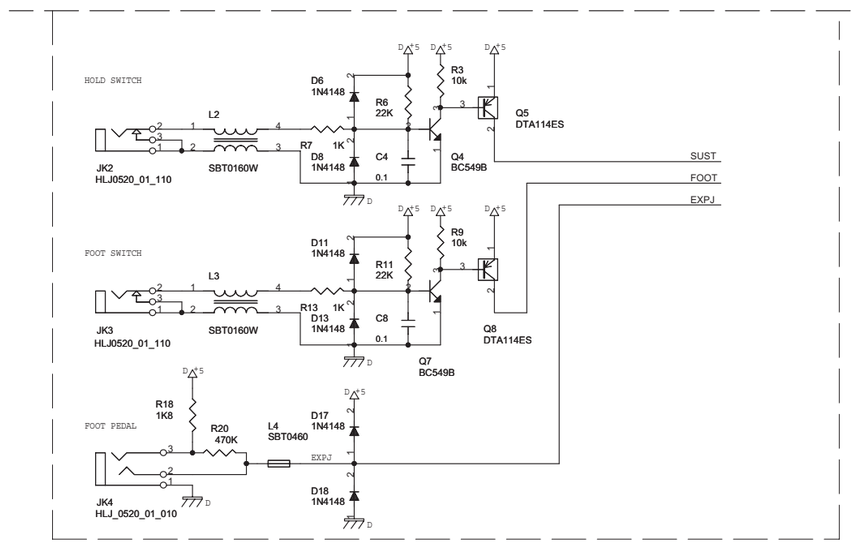


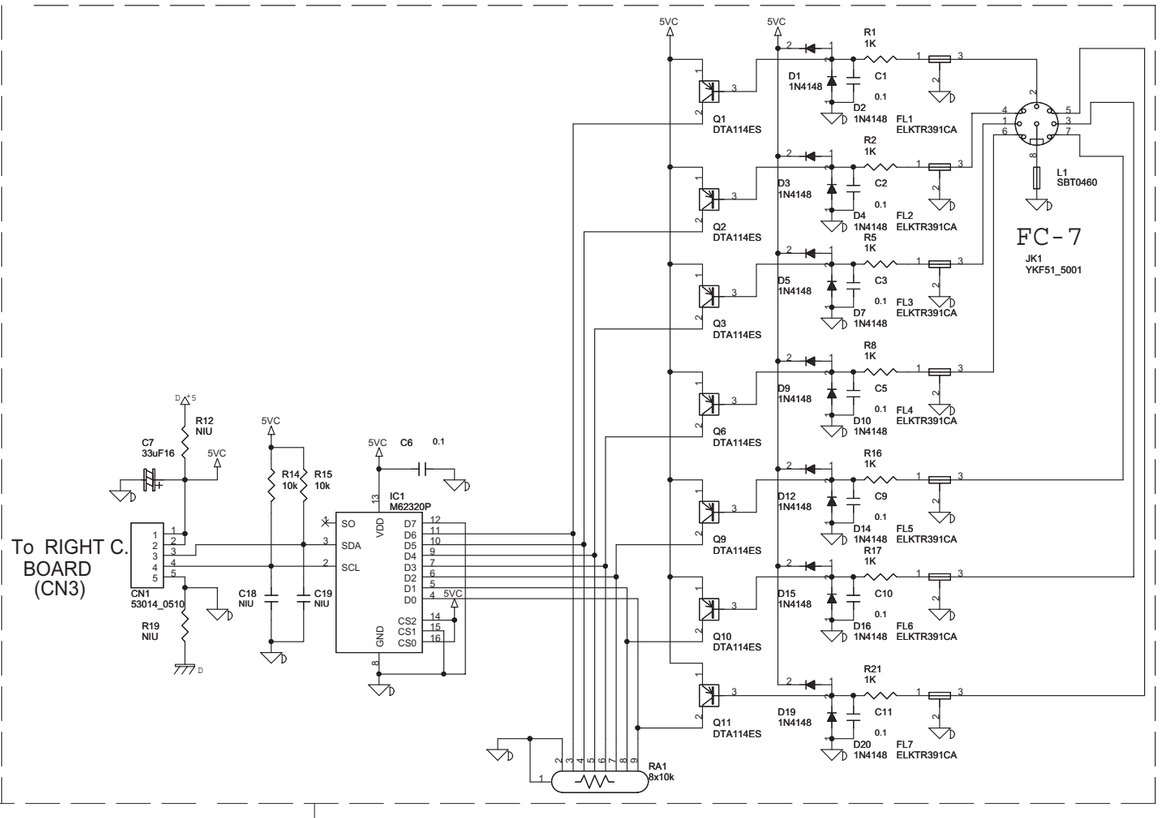
CIRCUIT BOARD (MIDI)

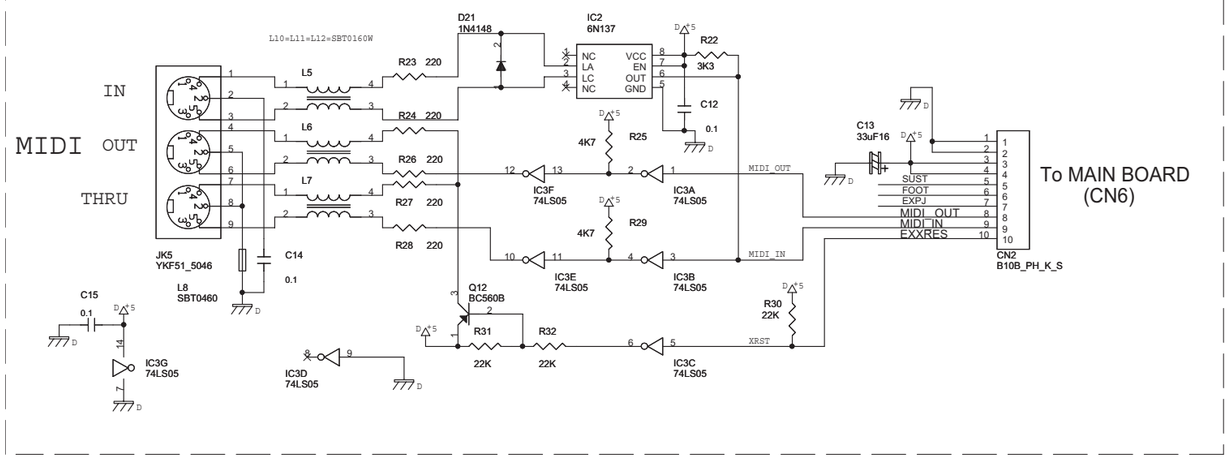


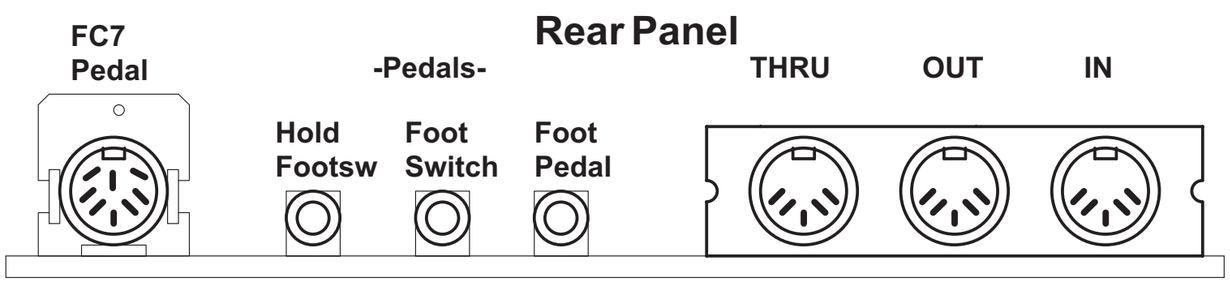
View from component side

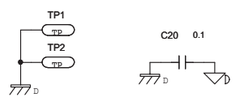
CIRCUIT DIAGRAM (MIDI)



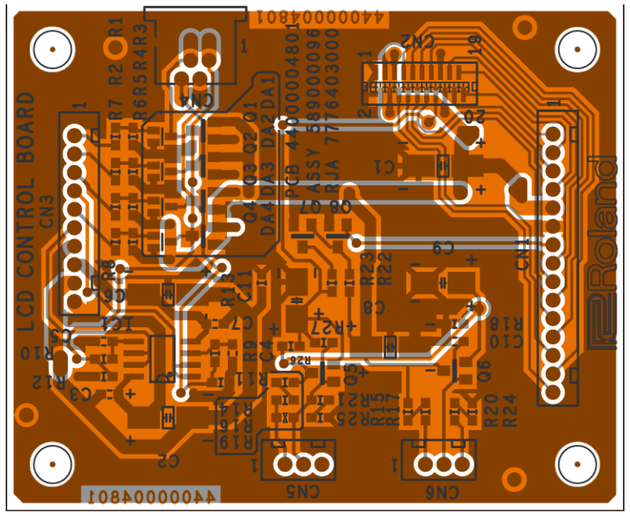




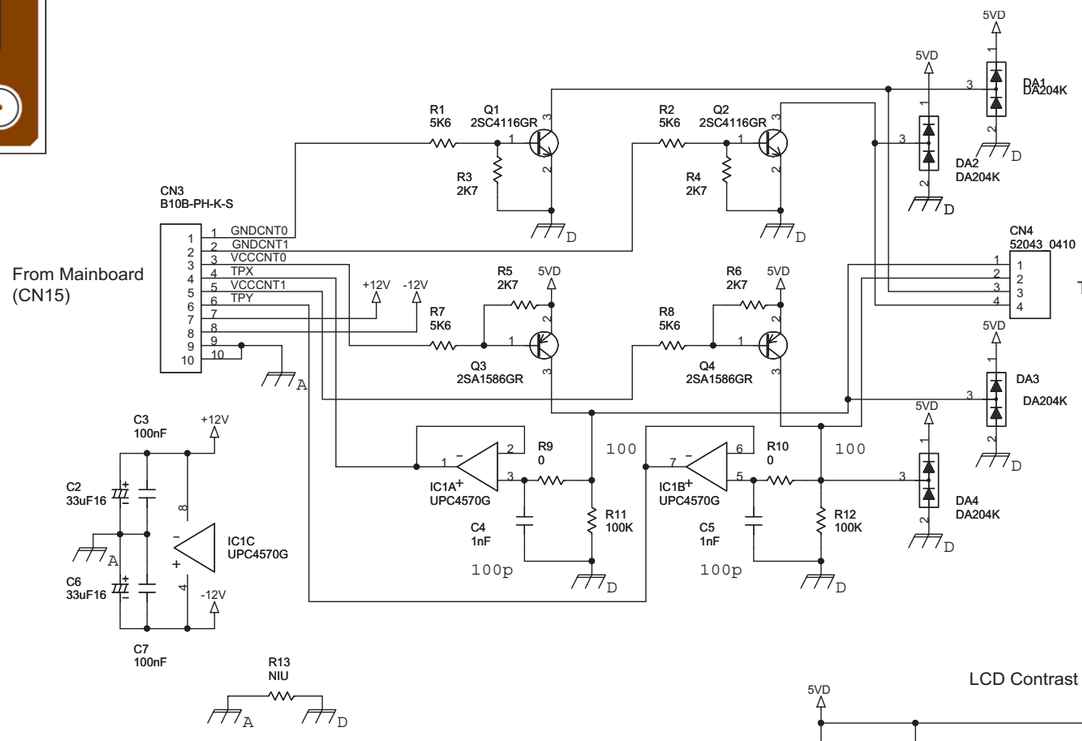


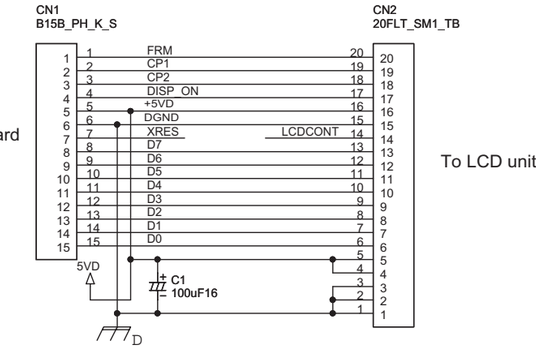


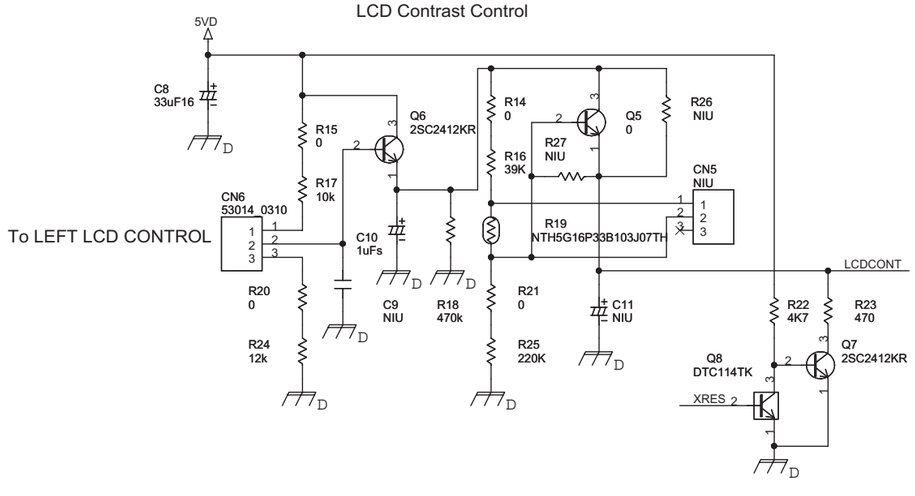
CIRCUIT BOARD& CIRCUIT DIAGRAM (LCD CONTROL)



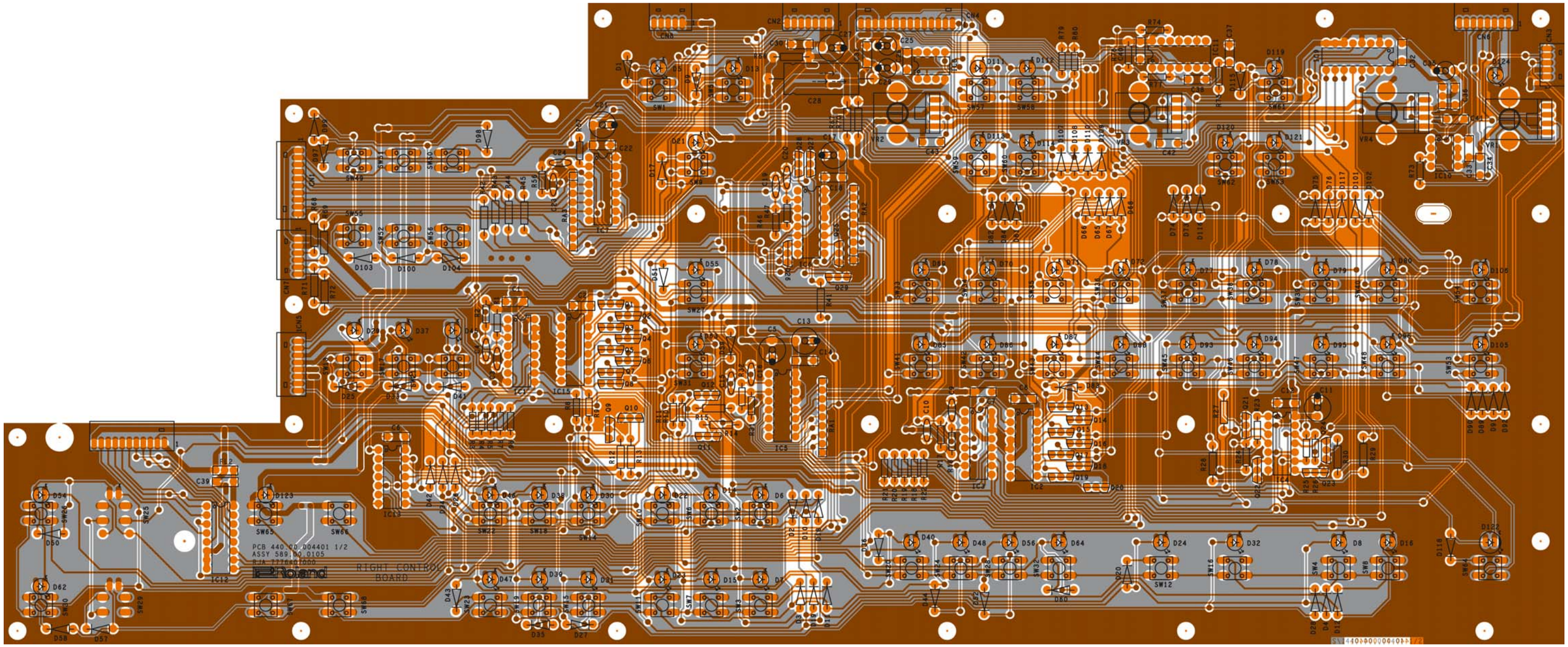
View from component side







CIRCUIT BOARD (RIGHT CONTROL)

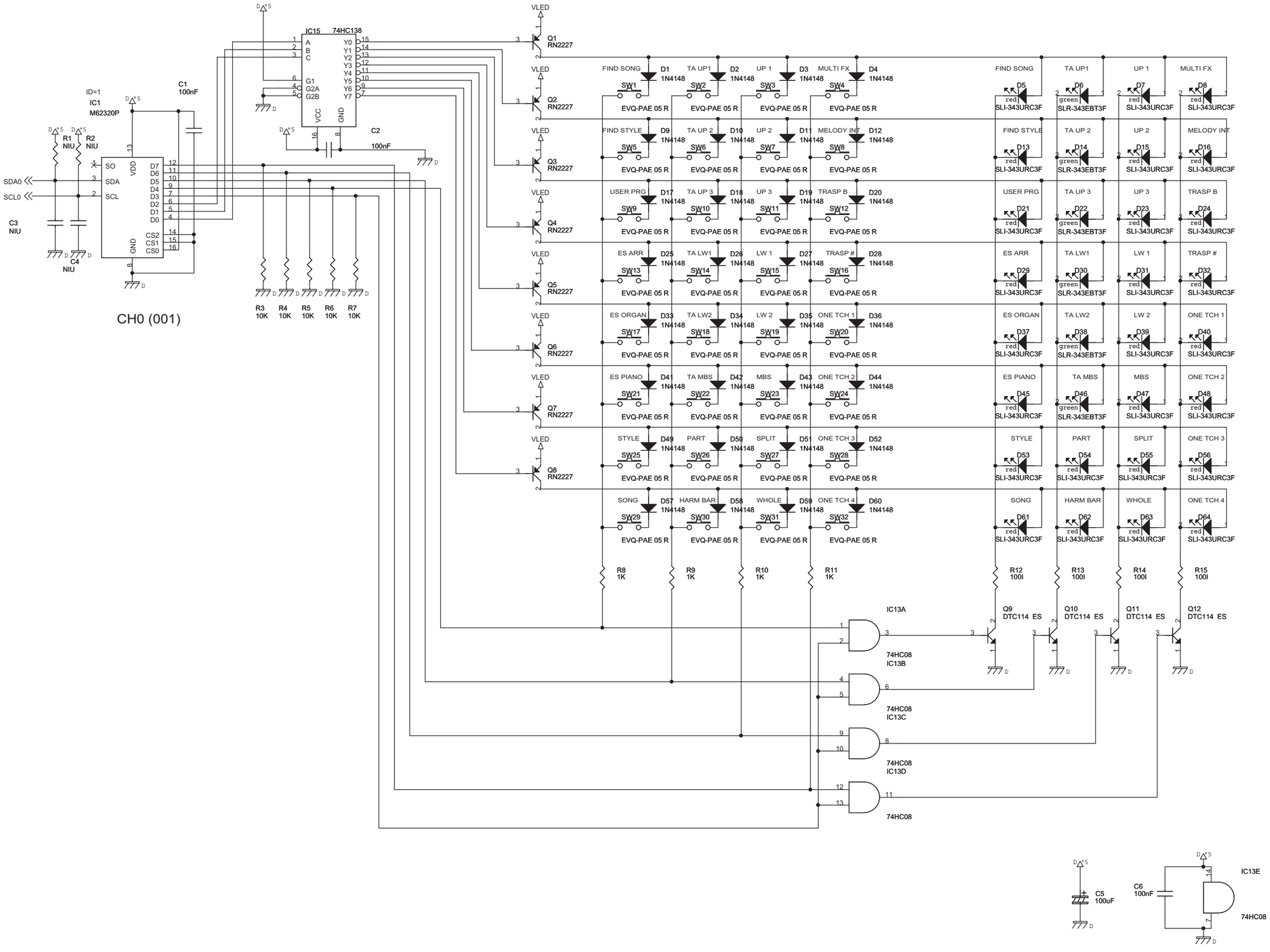


View from component side

CIRCUIT DIAGRAM (RIGHT CONTROL 1/4)

ALL DIODES ARE 1N4148.

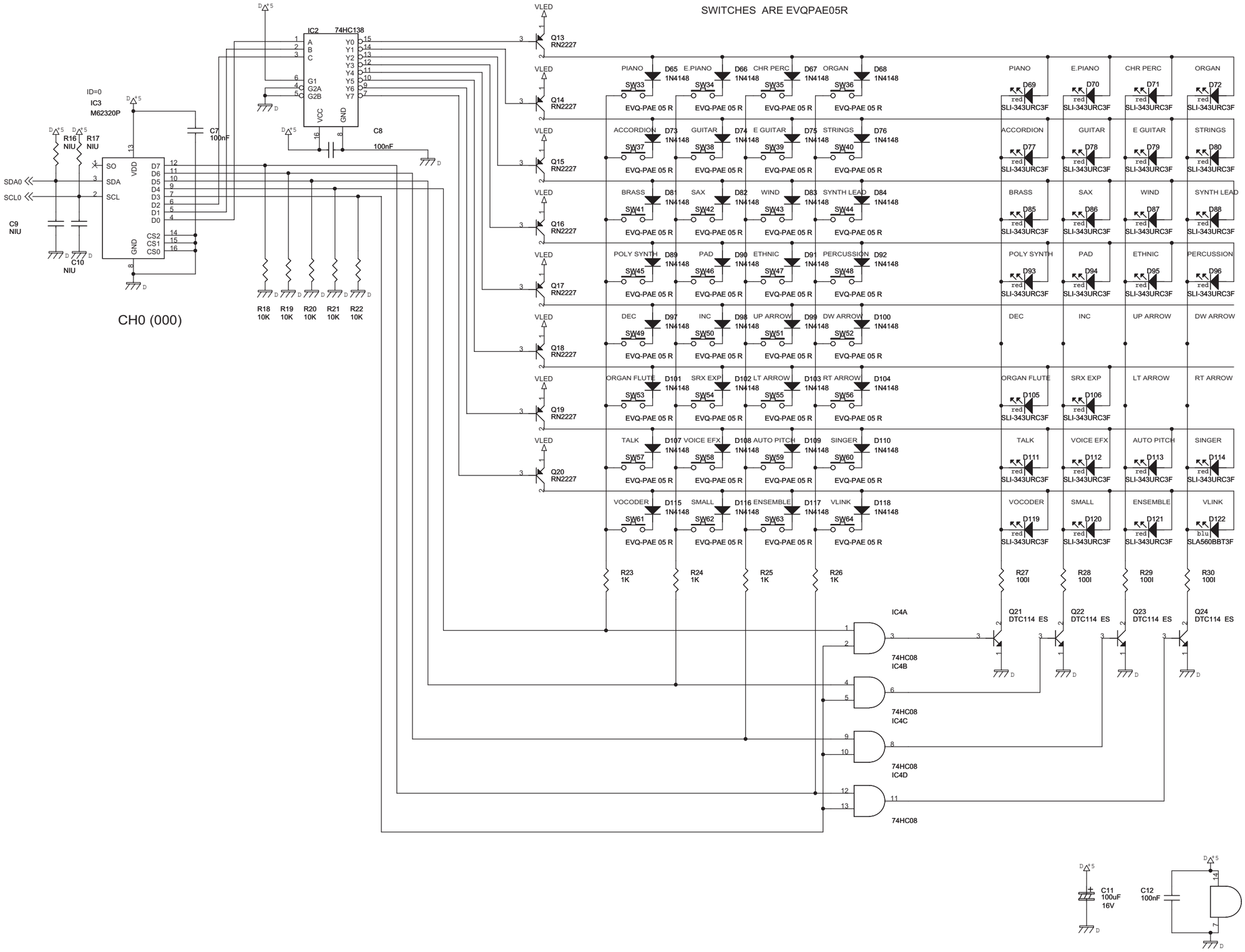
SWITCHES ARE EVQPAE05R



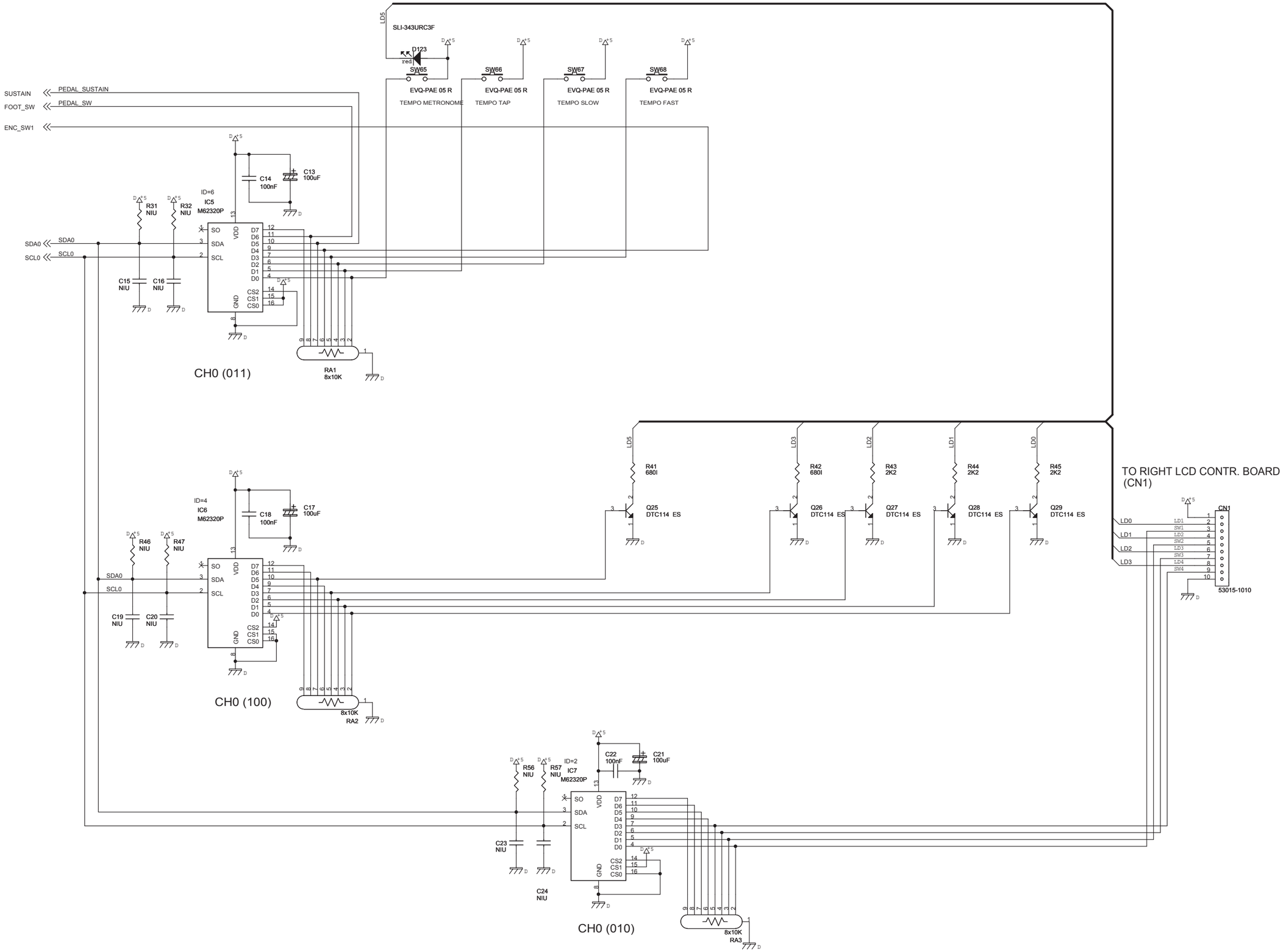
CIRCUIT DIAGRAM (RIGHT CONTROL 2/4)

ALL DIODES ARE 1N4148.

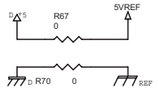
SWITCHES ARE EVQPAE05R

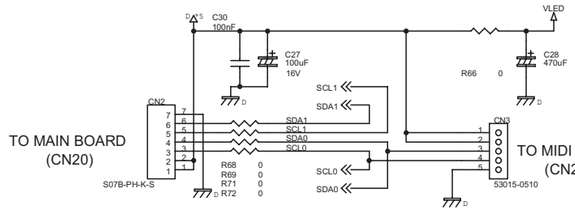


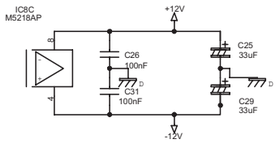
CIRCUIT DIAGRAM (RIGHT CONTROL 3/4)

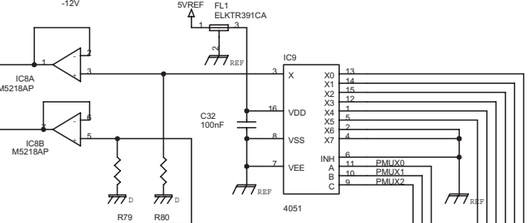


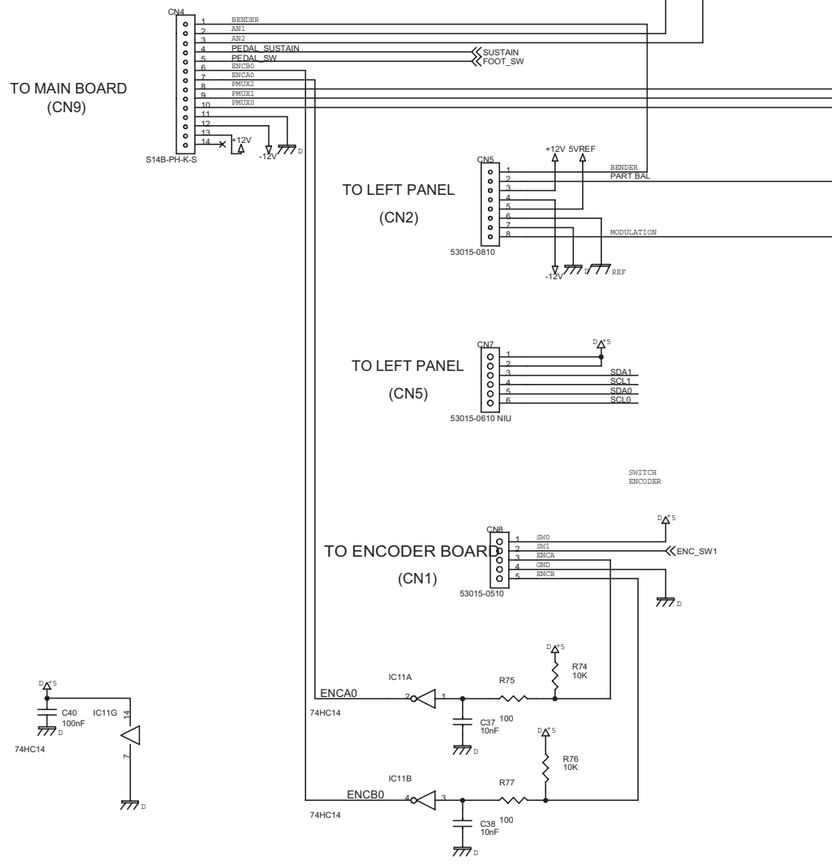
CIRCUIT DIAGRAM (RIGHT CONTROL 4/4)

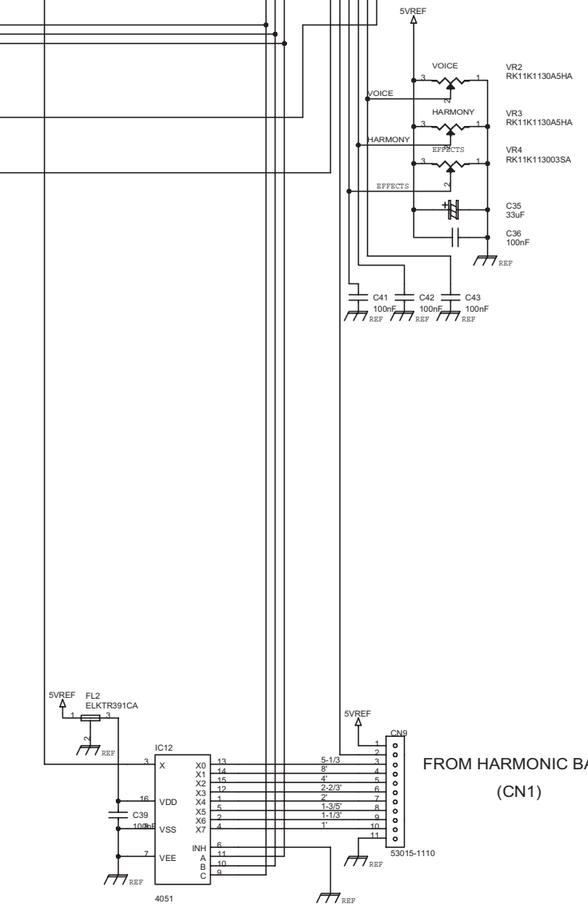


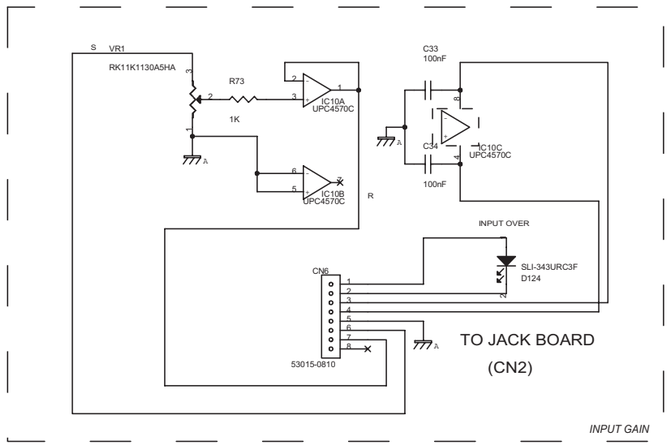


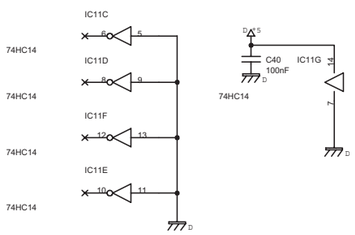




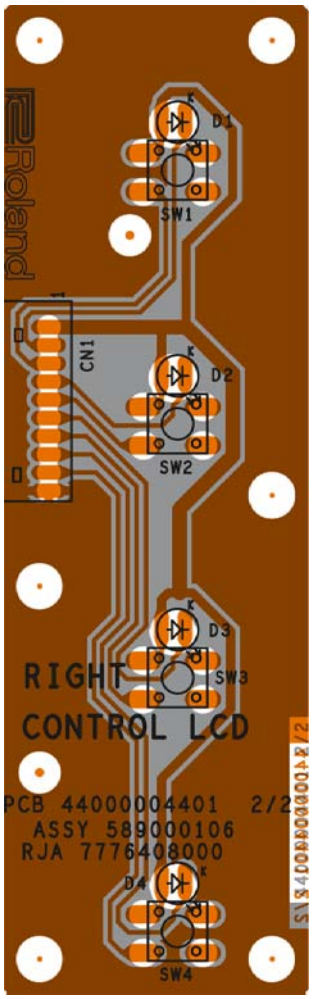




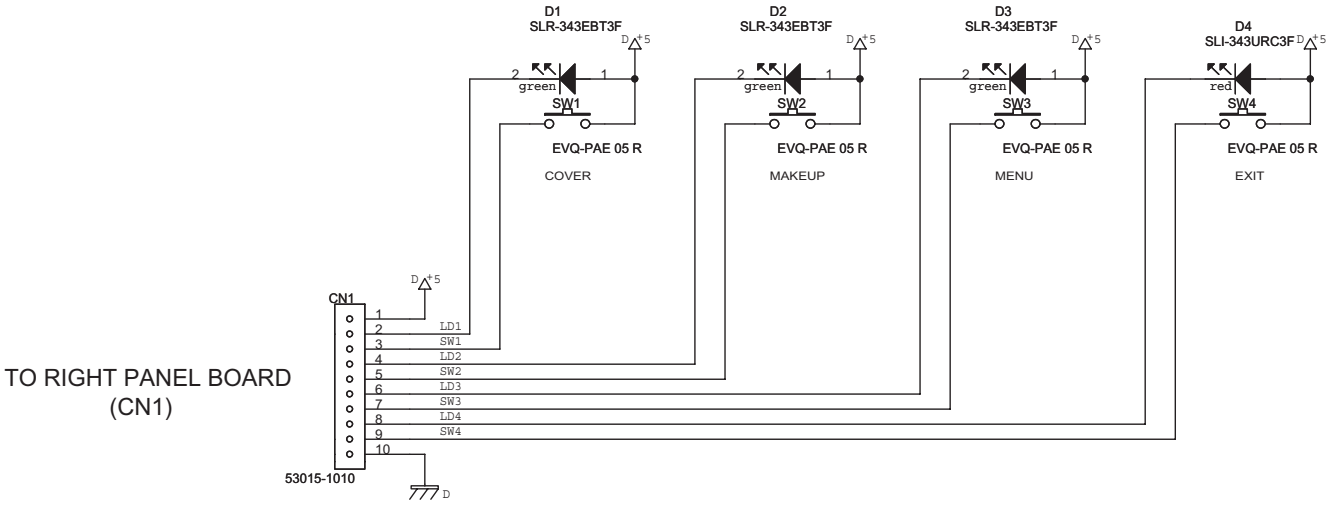




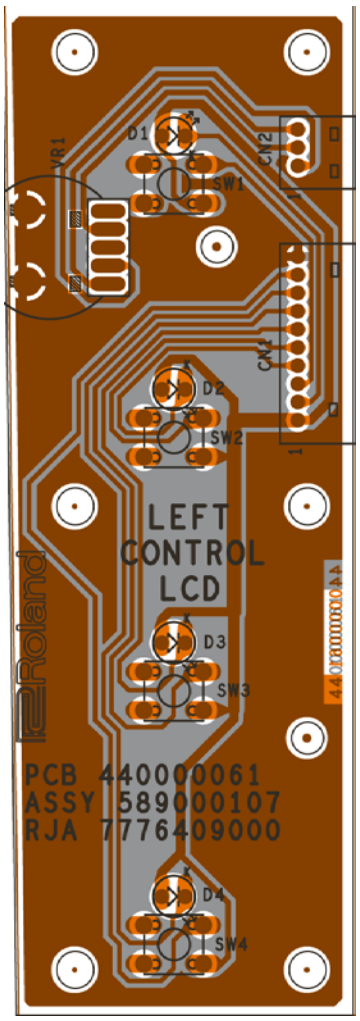
CIRCUIT BOARD & CIRCUIT DIAGRAM (RIGHT CONTROL LCD)



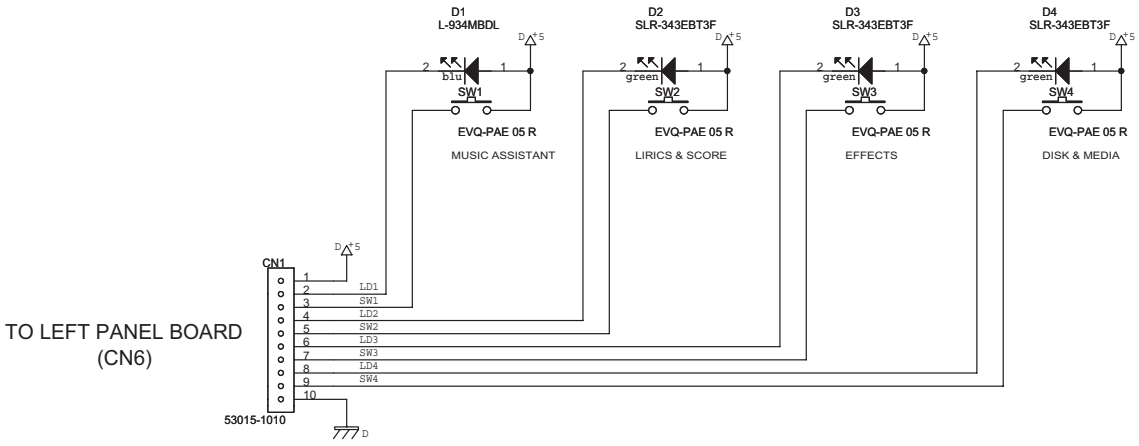
View from component side

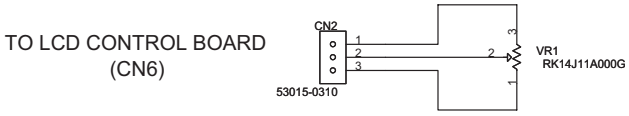


CIRCUIT BOARD & CIRCUIT DIAGRAM (LEFT CONTROL LCD)

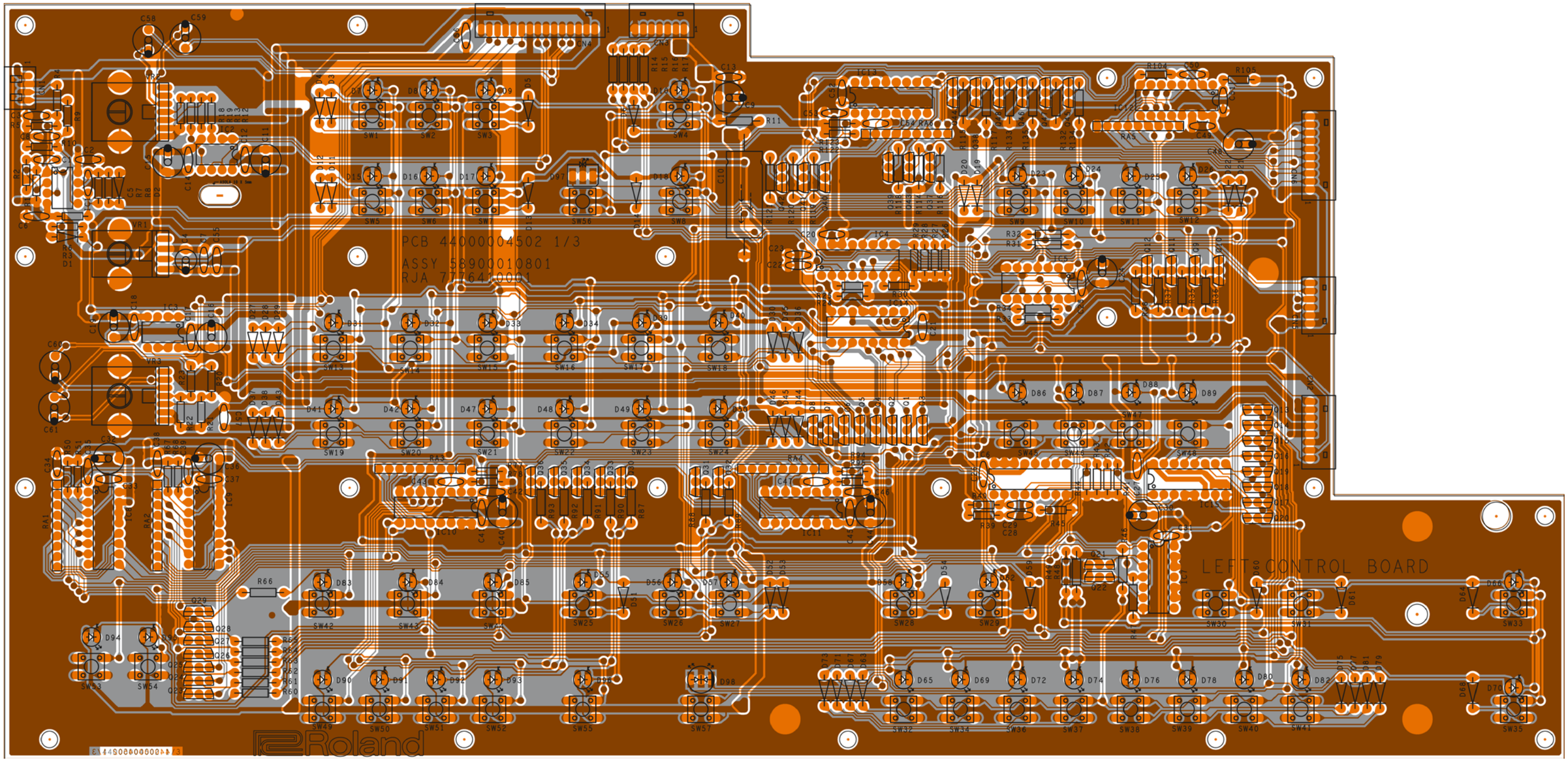


View from component side



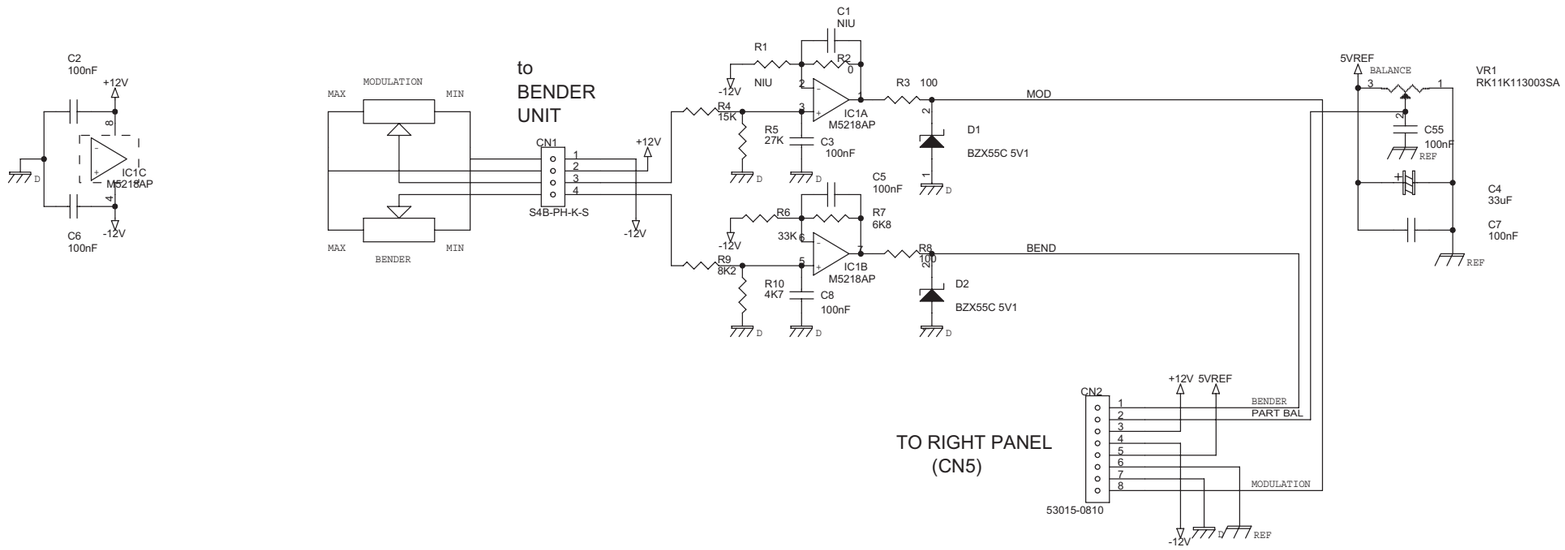


CIRCUIT BOARD (LEFT CONTROL)

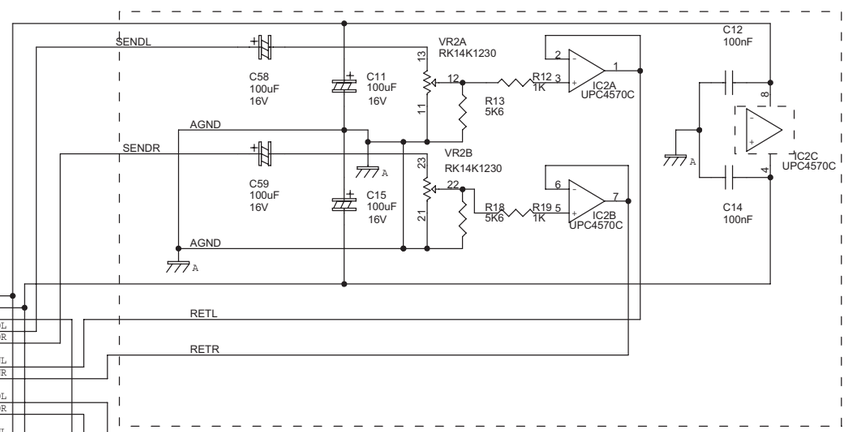


View from component side

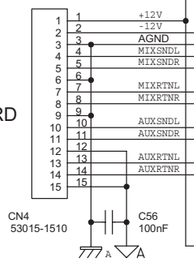
CIRCUIT DIAGRAM (LEFT CONTROL 1/6)



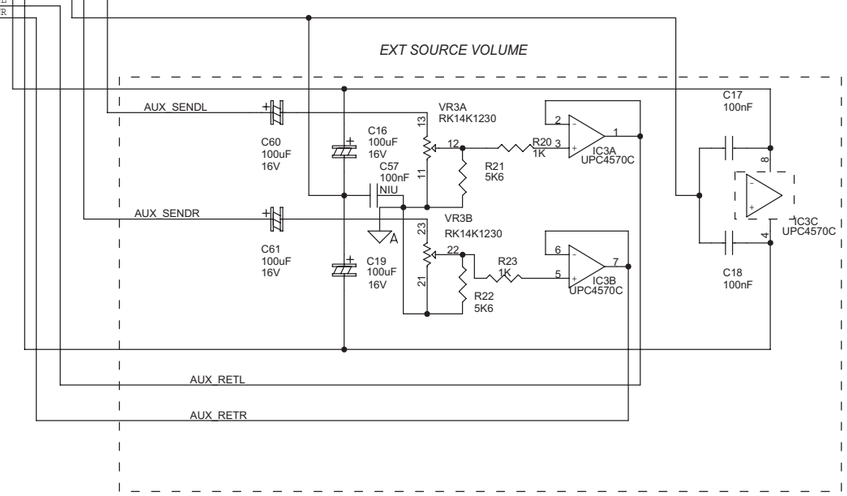
MASTER VOLUME

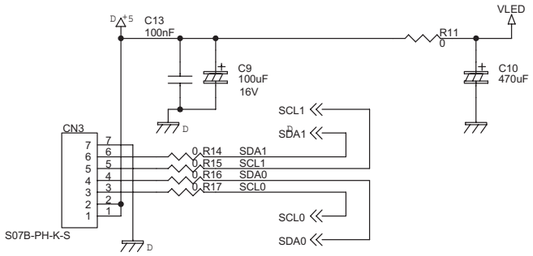


TO AUDIO BOARD
(CN3)

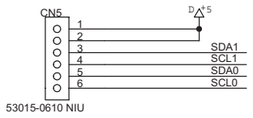


EXT SOURCE VOLUME





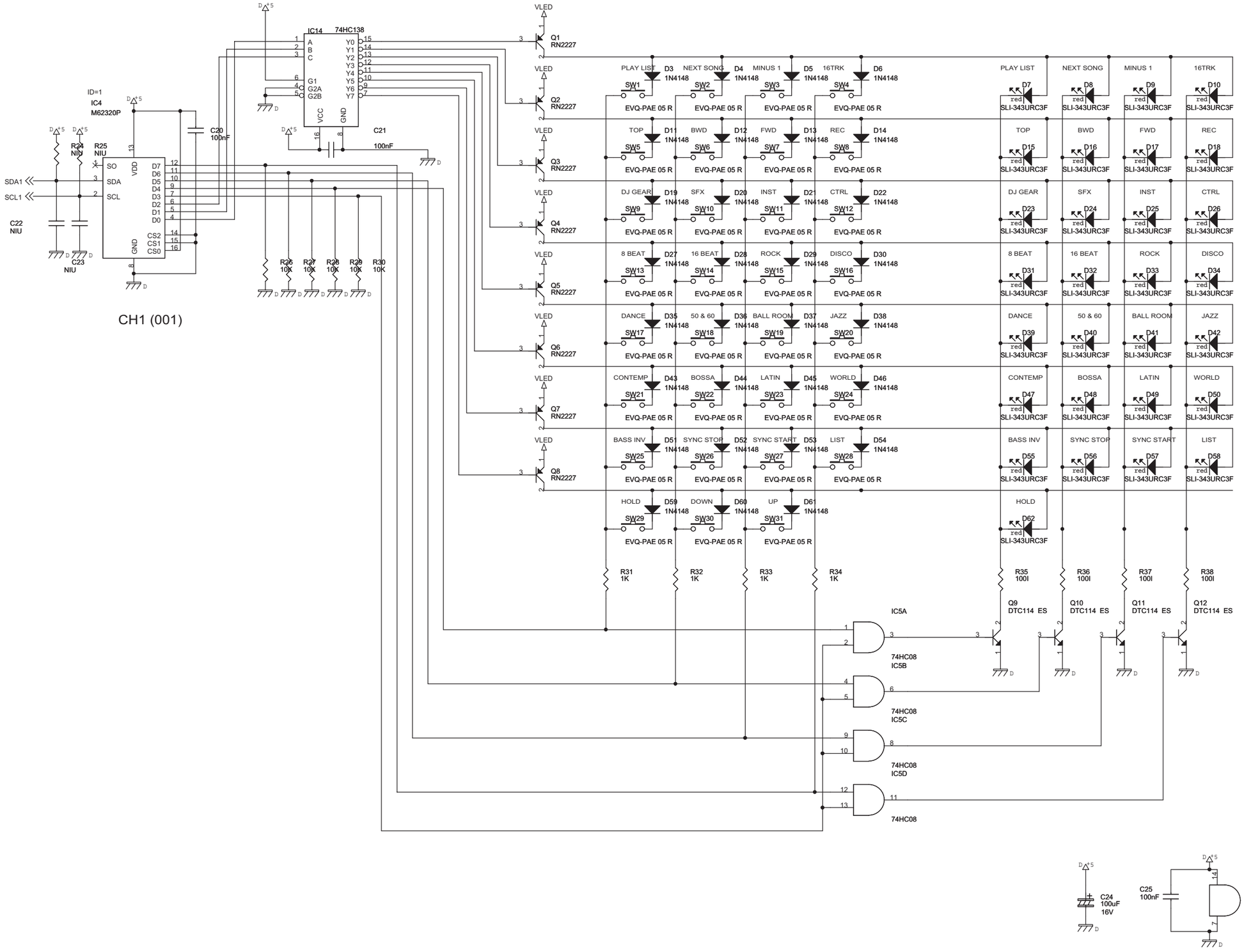
TO MAIN BOARD
(CN21)



CIRCUIT DIAGRAM (LEFT CONTROL 2/6)

ALL DIODES ARE 1N4148.

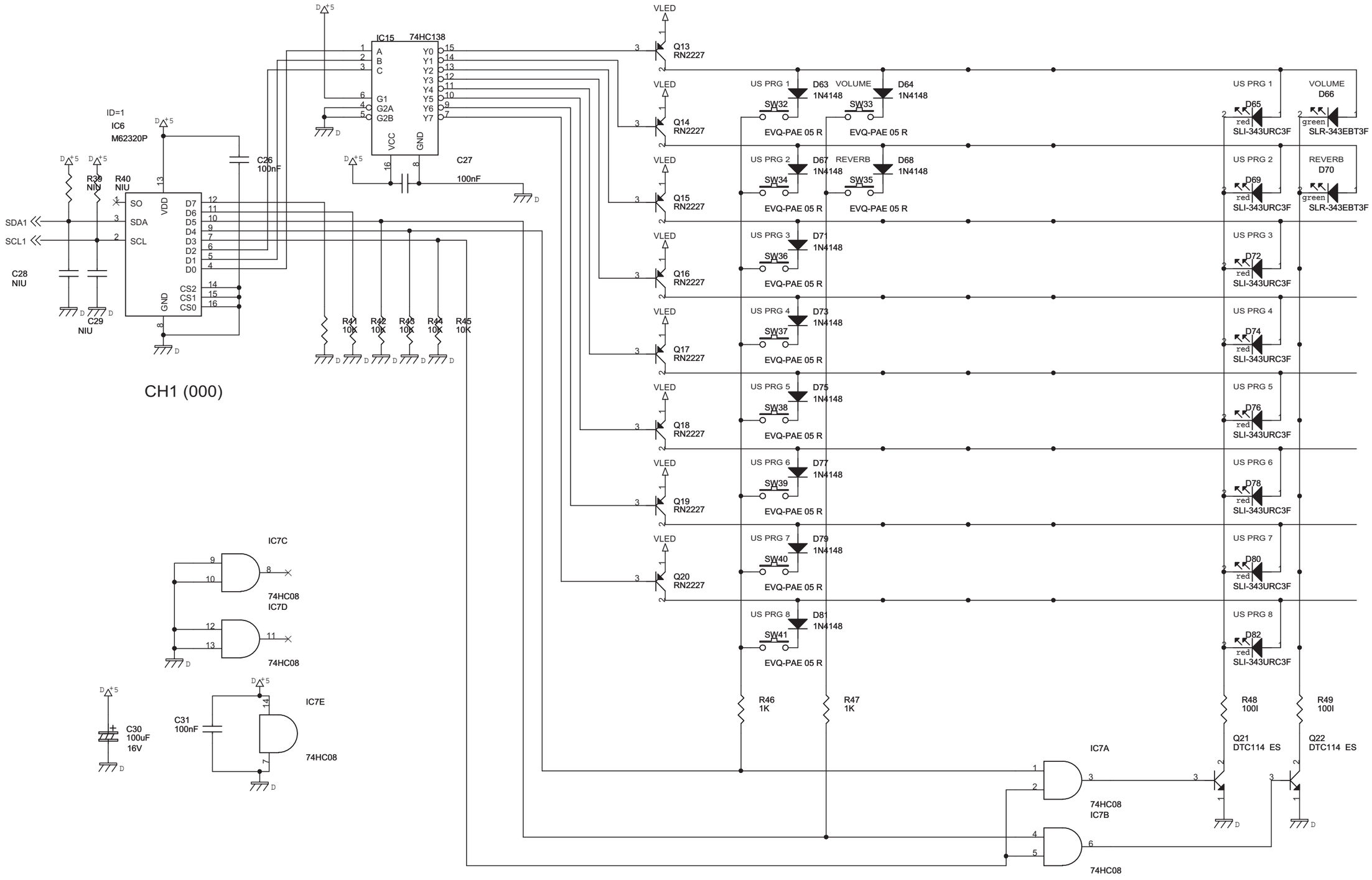
SWITCHES ARE EVQPAE05R



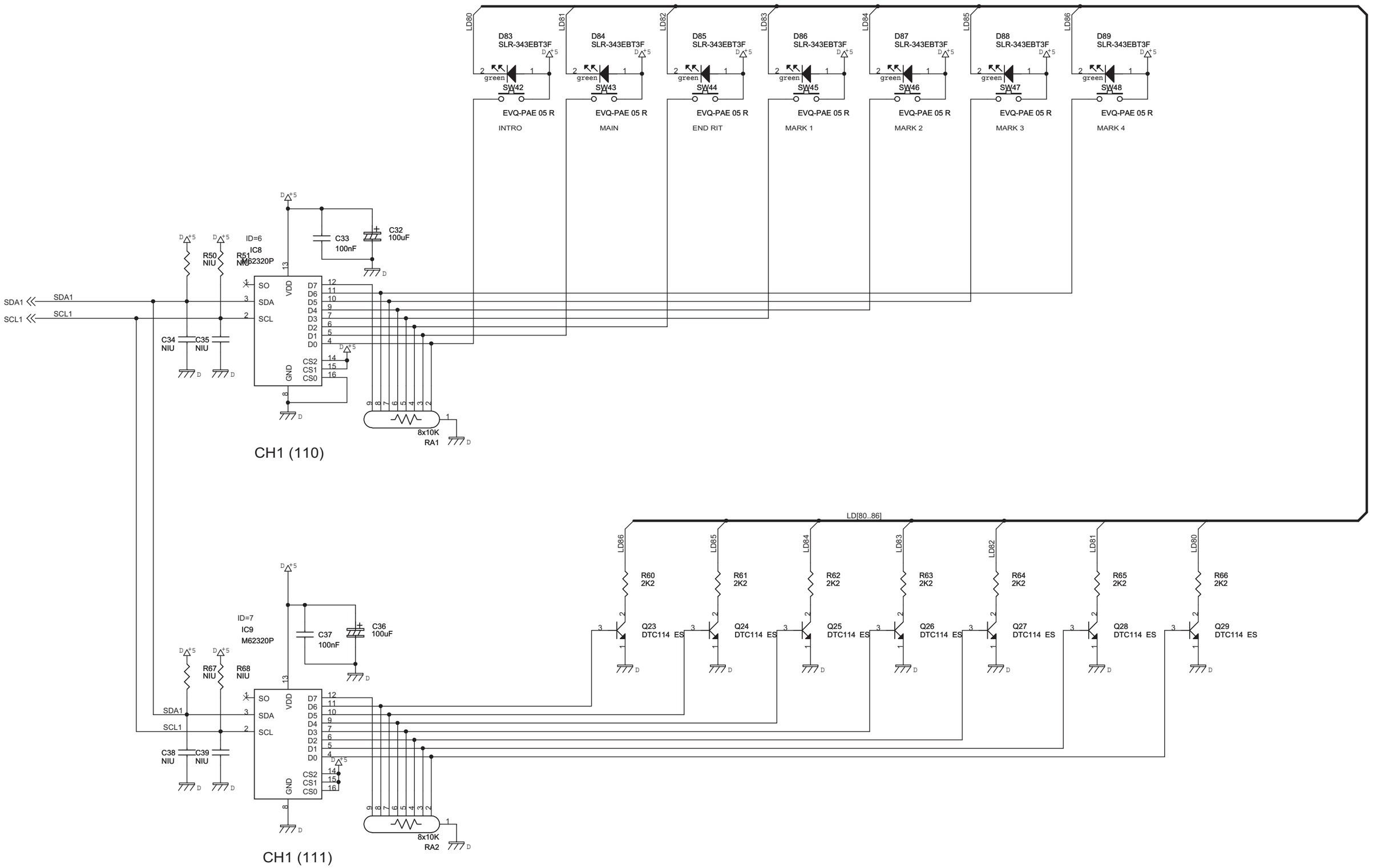
CIRCUIT DIAGRAM (LEFT CONTROL 3/6)

ALL DIODES ARE 1N4148.

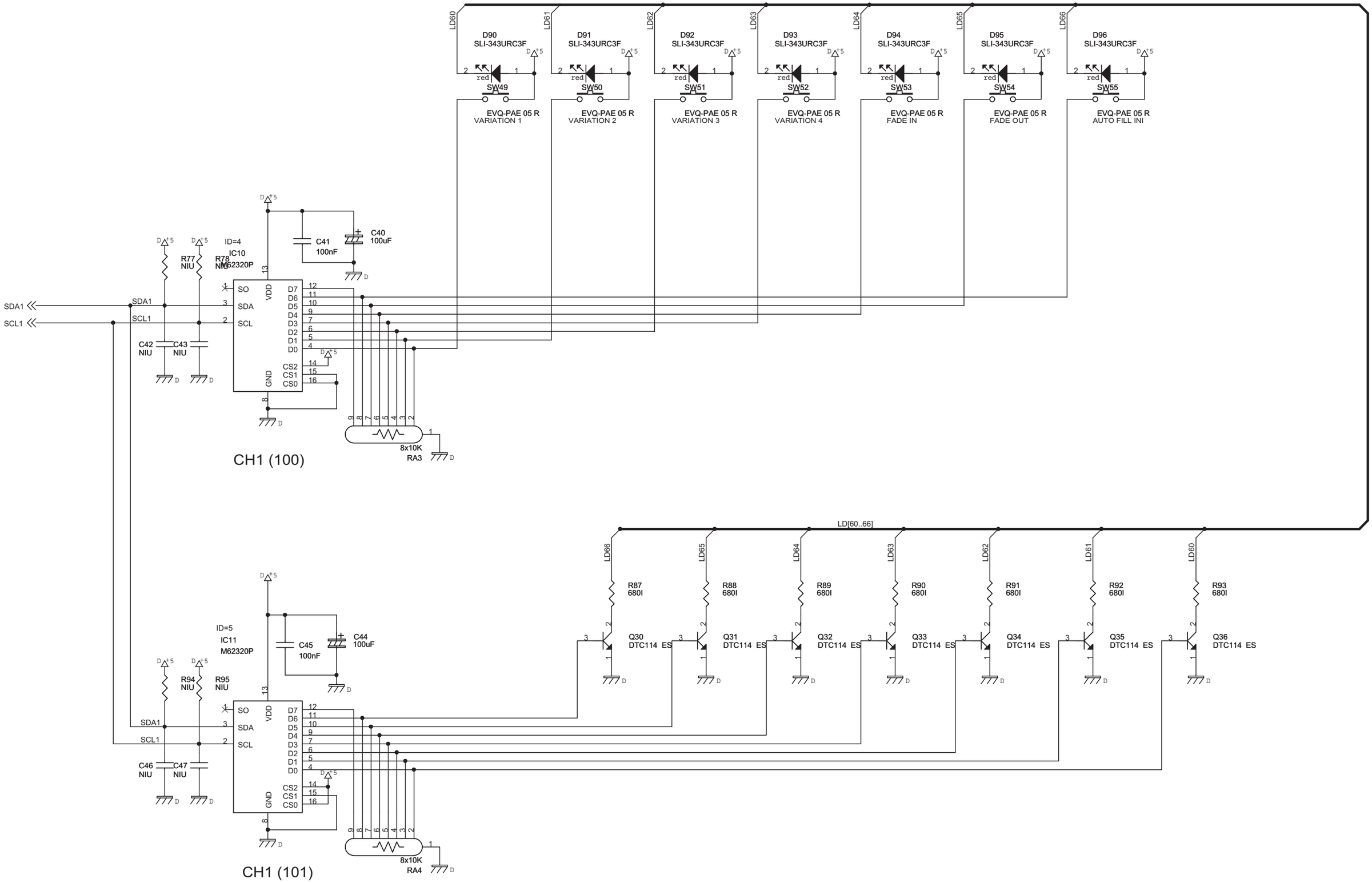
SWITCHES ARE EVQPAE05R



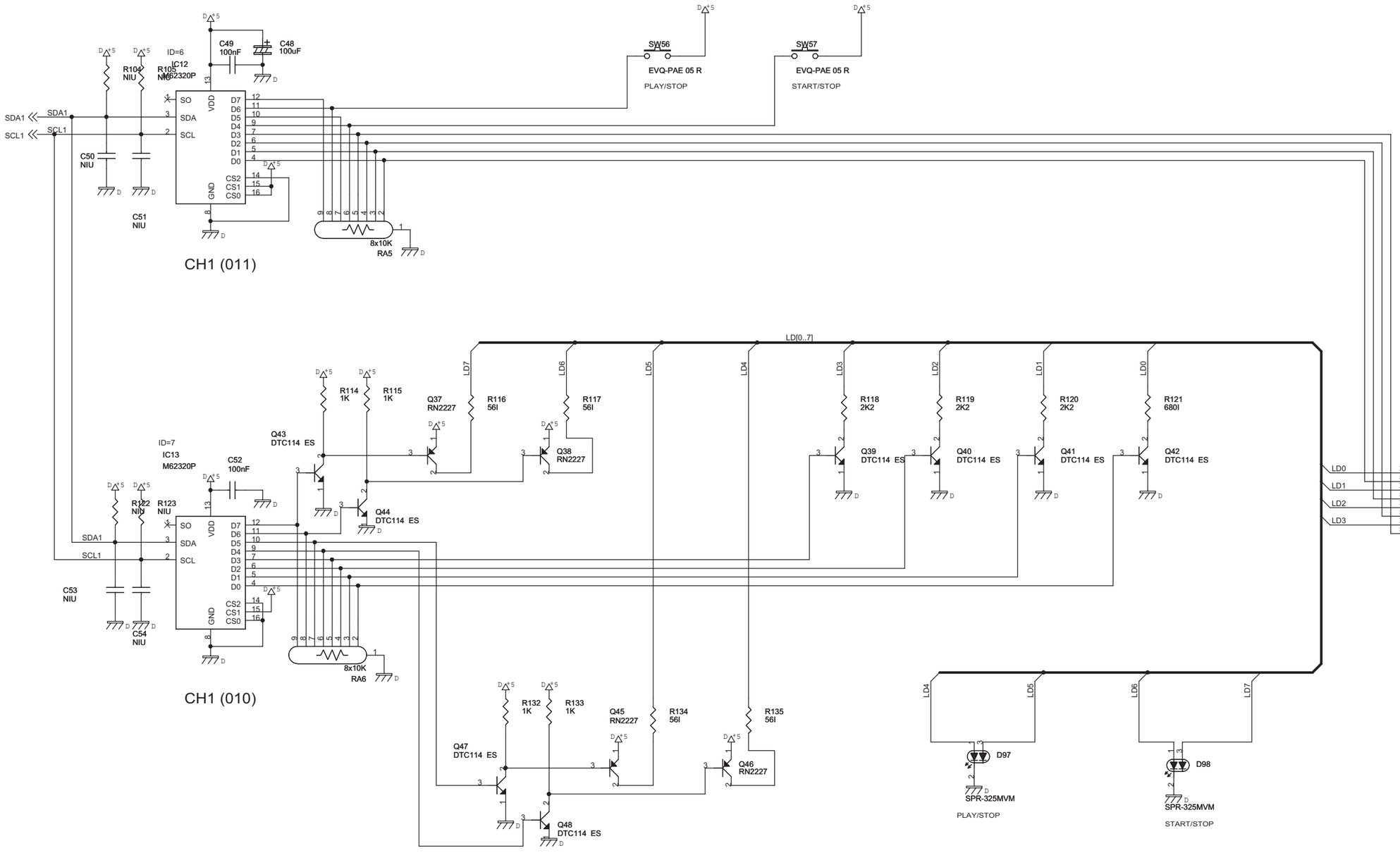
CIRCUIT DIAGRAM (LEFT CONTROL 4/6)



CIRCUIT DIAGRAM (LEFT CONTROL 5/6)

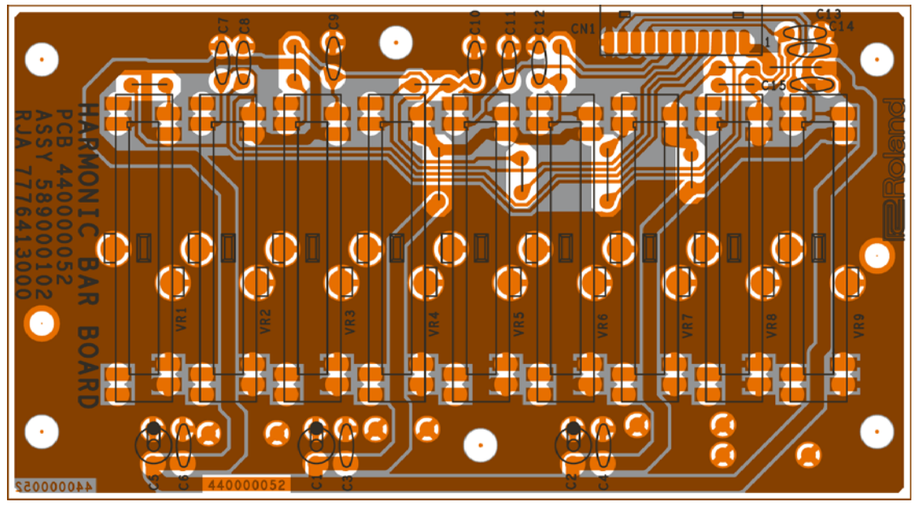


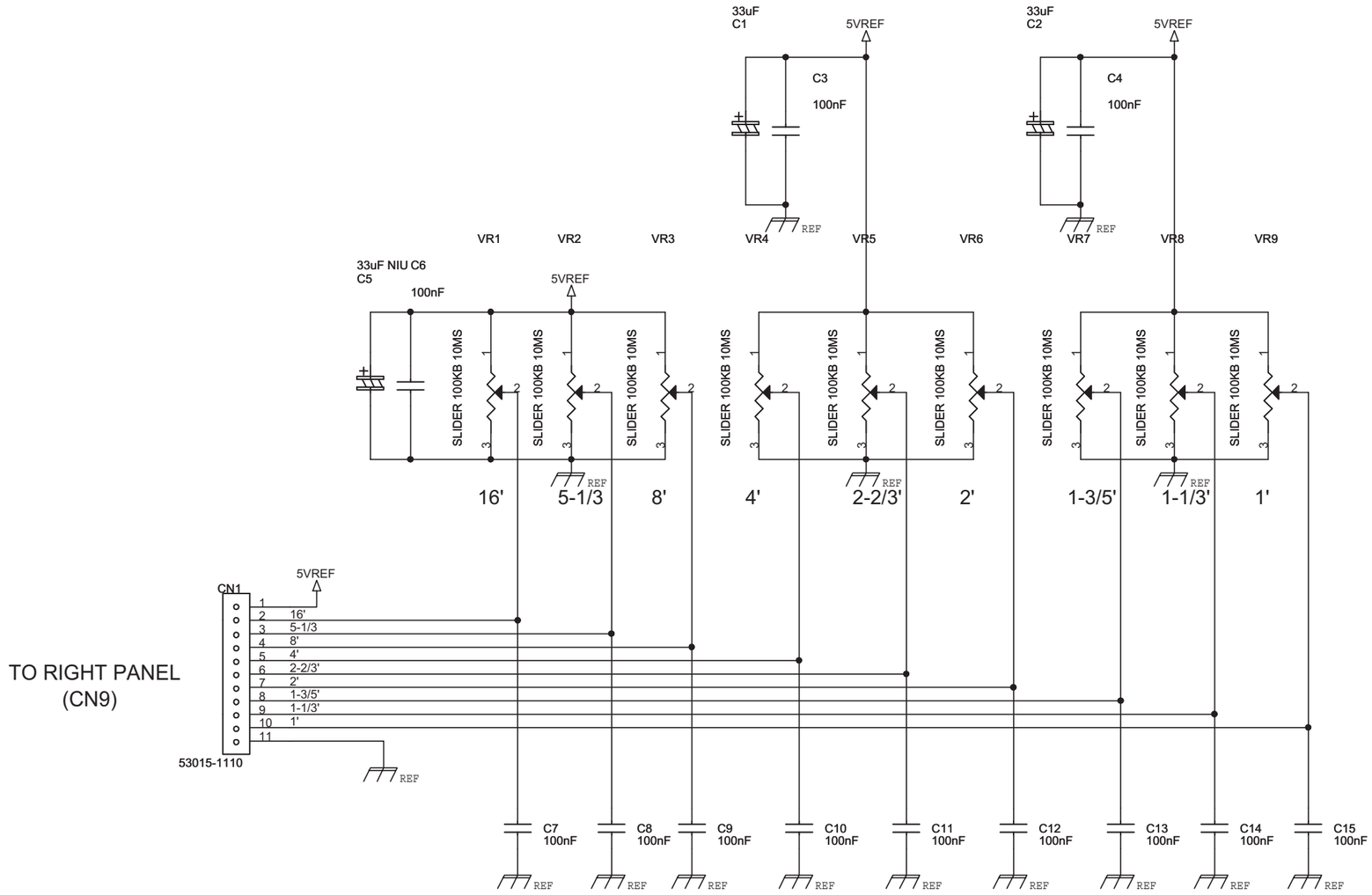
CIRCUIT DIAGRAM (LEFT CONTROL 6/6)



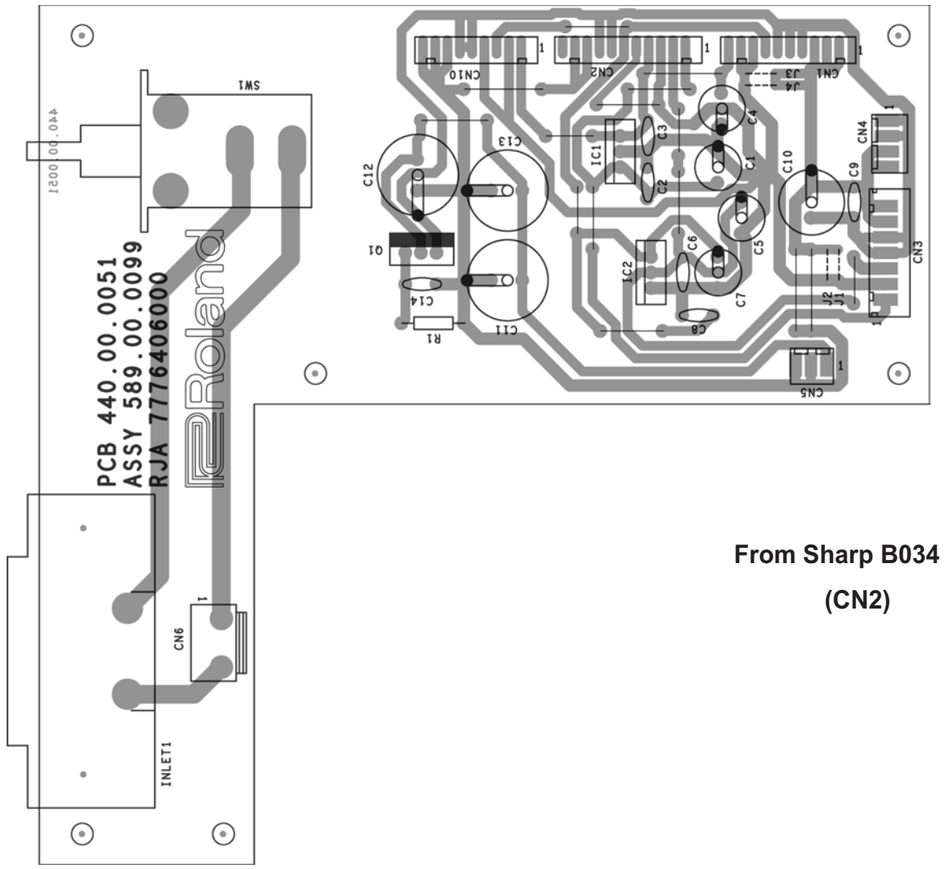
CIRCUIT BOARD & CIRCUIT DIAGRAM (HARMONIC BAR)

View from component side





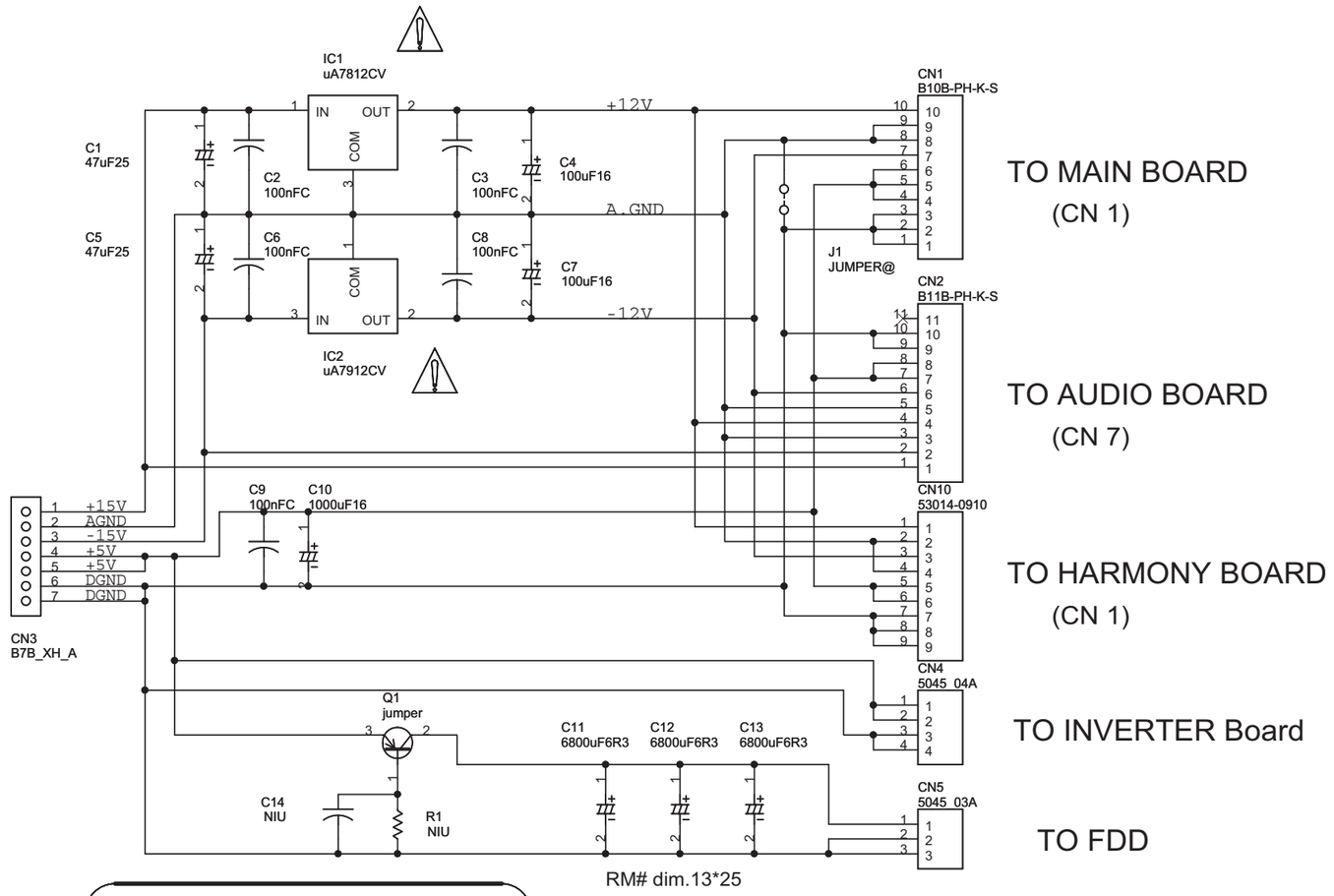
CIRCUIT BOARD & CIRCUIT DIAGRAM (POWER)



View from component side

From Sharp B034 SWPS

(CN2)



TO MAIN BOARD

(CN 1)

TO AUDIO BOARD

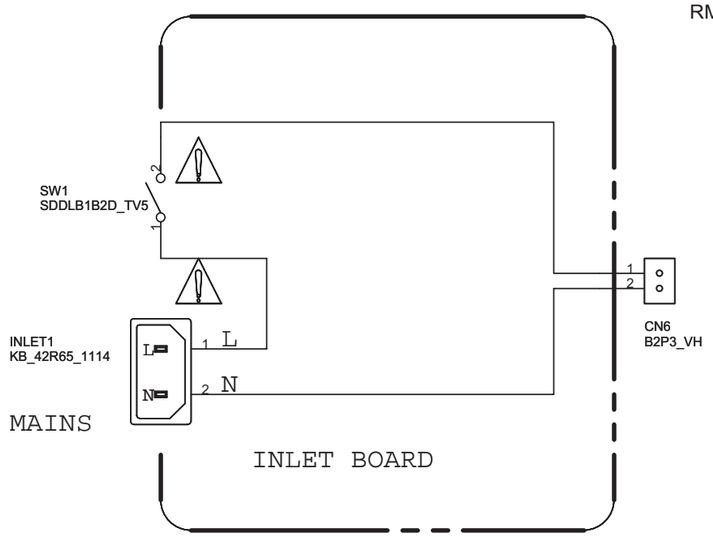
(CN 7)

TO HARMONY BOARD

(CN 1)

TO INVERTER Board

TO FDD



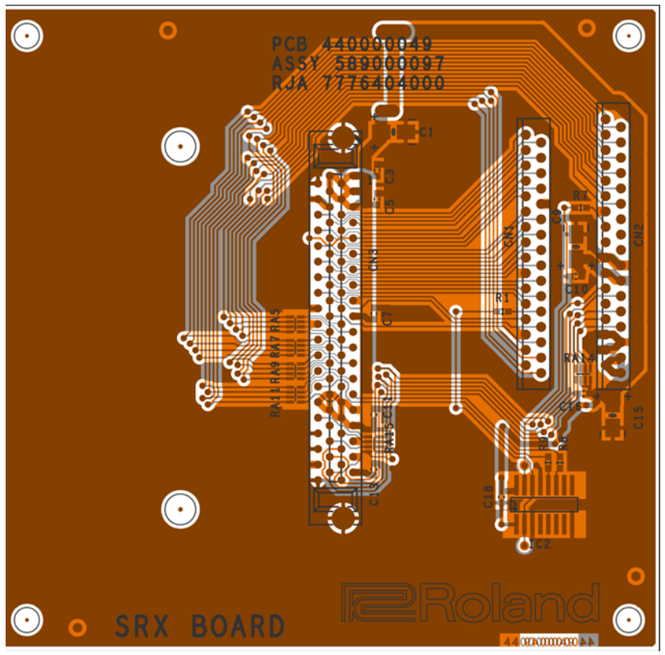
To Sharp B034 SWPS

(CN1)

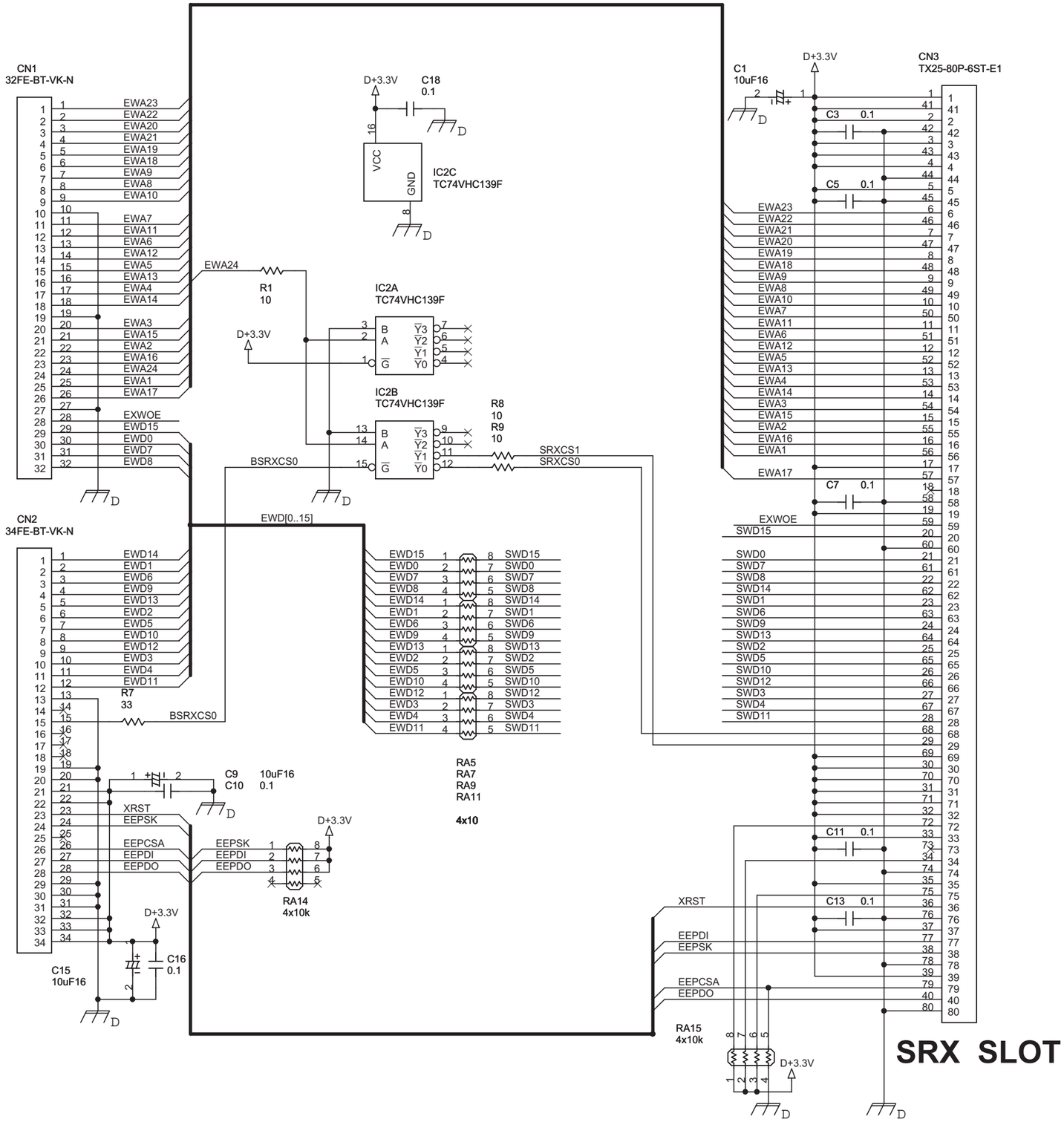
SAFETY PRECAUTIONS:

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

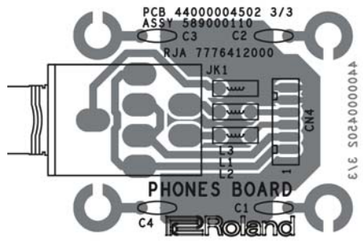
CIRCUIT BOARD & CIRCUIT DIAGRAM (SRX)



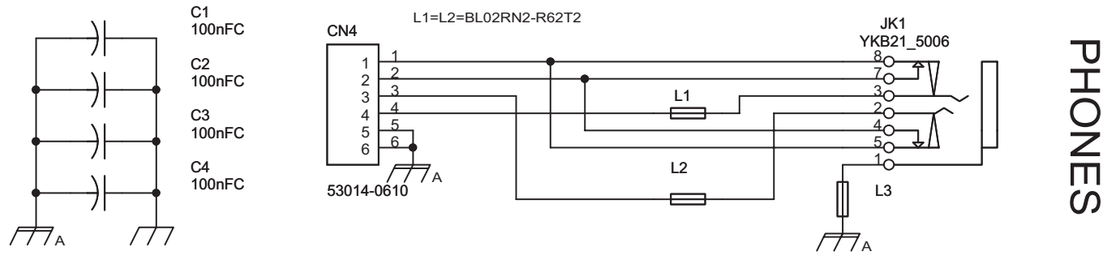
View from component side



CIRCUIT BOARD & CIRCUIT DIAGRAM (PHONES)

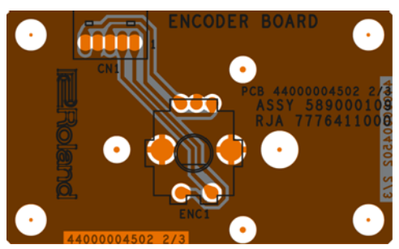


View from component side

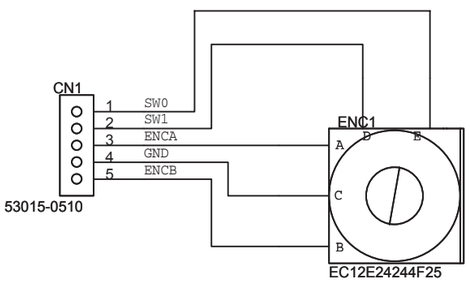


PHONES

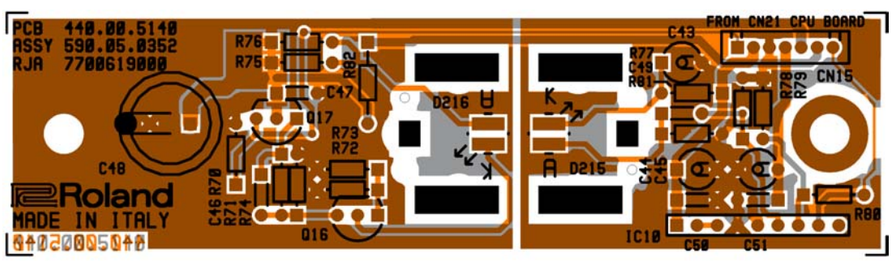
CIRCUIT BOARD & CIRCUIT DIAGRAM (ENCODER)



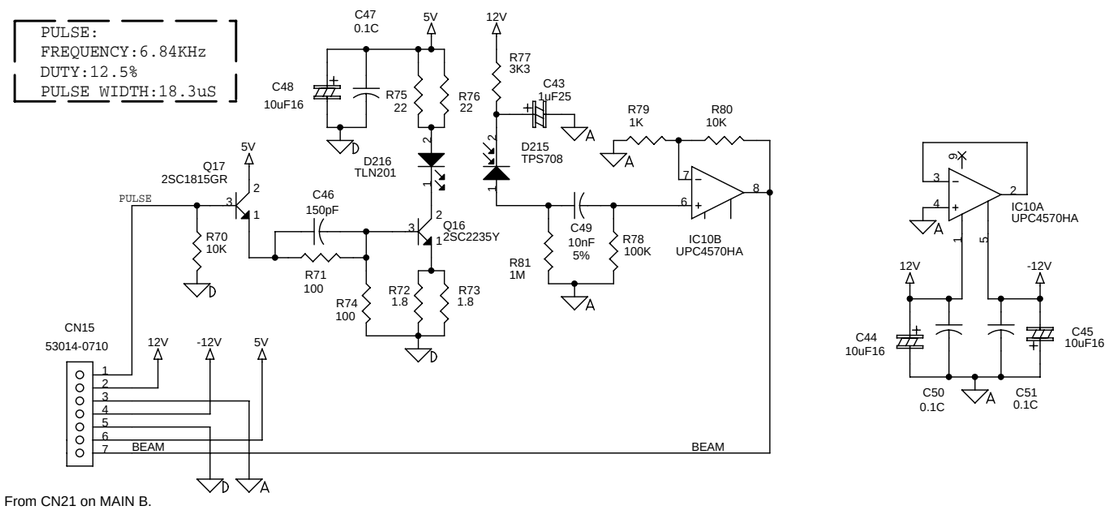
View from component side



CIRCUIT BOARD & CIRCUIT DIAGRAM (D-BEAM)

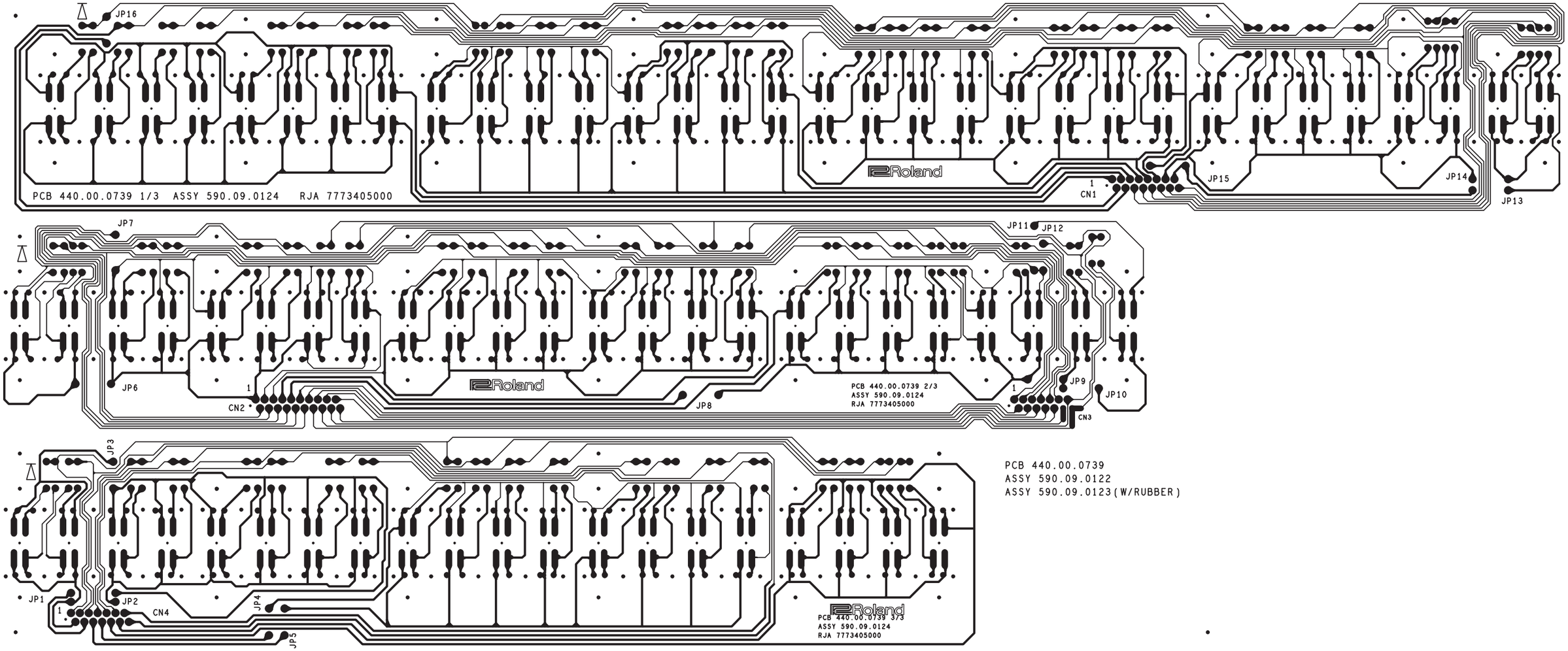


View from component side



From CN21 on MAIN B.

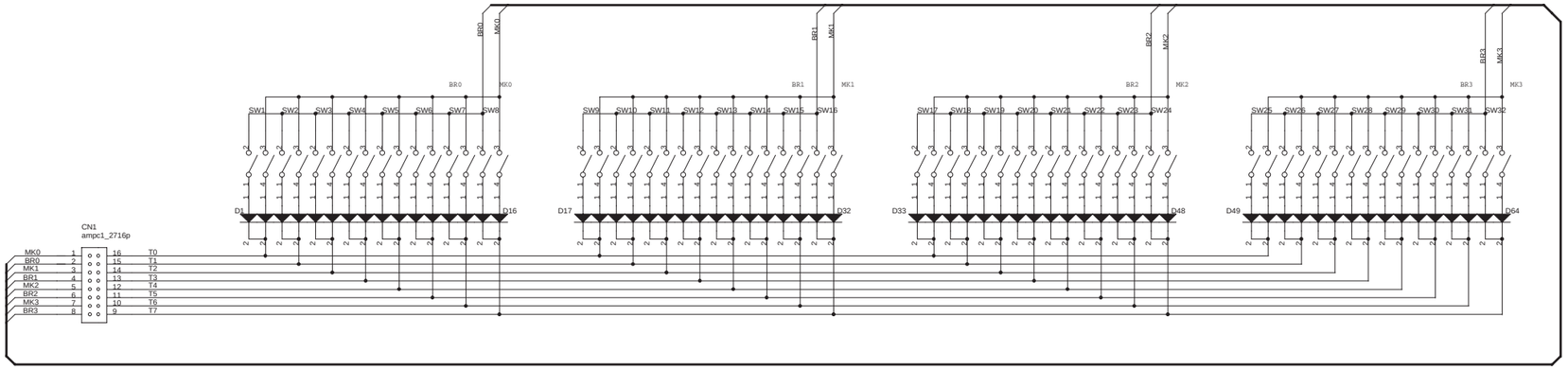
CIRCUIT BOARD (CONTACT w/RUBBER)



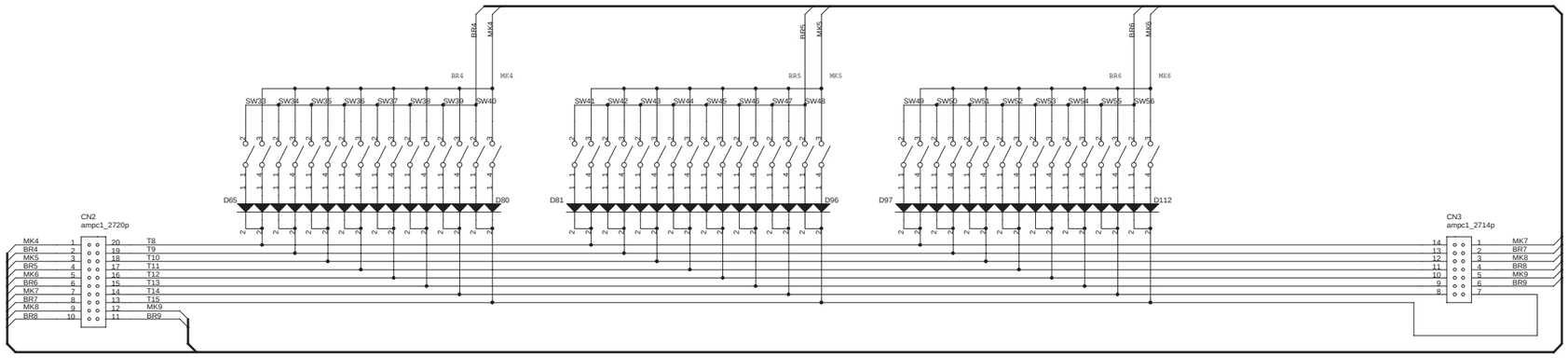
PCB 440.00.0739
ASSY 590.09.0122
ASSY 590.09.0123(W/RUBBER)

View fromsolder side

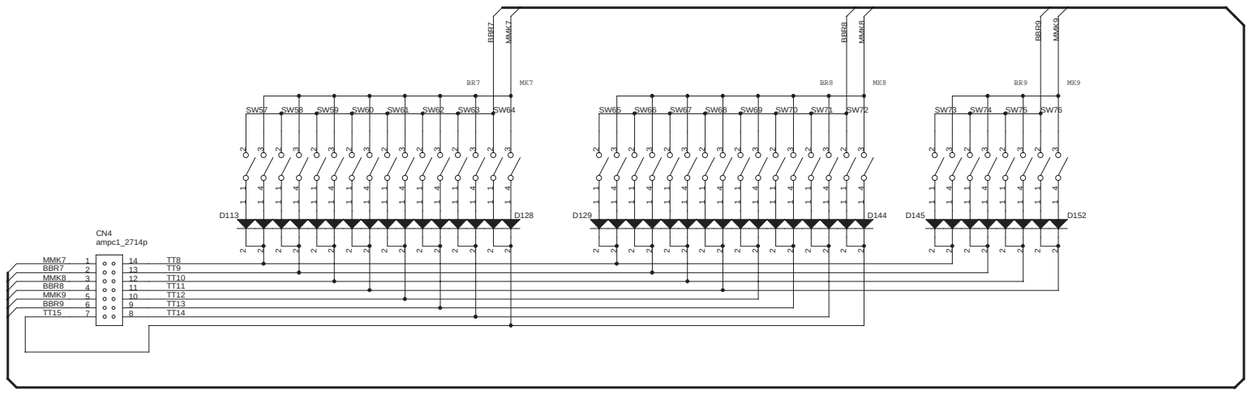
CIRCUIT DIAGRAM (CONTACT BOARD)



LEFT CONTACT PCB ASSY



CENTER CONTACT PCB ASSY



RIGHT CONTACT PCB ASSY