

RealPiano

DIGITAL

RPBasic

RP8

RP88

SERVICE MANUAL

Schematic Diagrams



CODE : 270197



Index & Warnings

Block Diagram, Autotest Chart	2
Power amplifier & Supply Board, AUX & MIDI I/O Board, Phones Board	3
Keyboard & Keyboard Interface Board	4
CPU & Sound Generator Board	5
Spare Parts List	6

GENERALMUSIC S.p.A. Sales Division: 47842 S.Giovanni in Marignano (RN) ITALY - Via delle Rose, 12 - tel. 0541/959511 - fax 0541/957404 - <http://www.generalmusic.com>



Notice

Service must be carried out by qualified personnel only. Any tampering carried out by unqualified personnel during the guarantee period will forfeit the right to guarantee.

For a correct operation of the instrument, after having switched off, be careful to wait at least 3 seconds before switching on again. To improve the device's specifications, the schematic diagrams may be subject to change without prior notice.

Schematic Notes

All components marked by this symbol have special safety characteristics, when replacing any of these components use only manufacturer's specified parts.

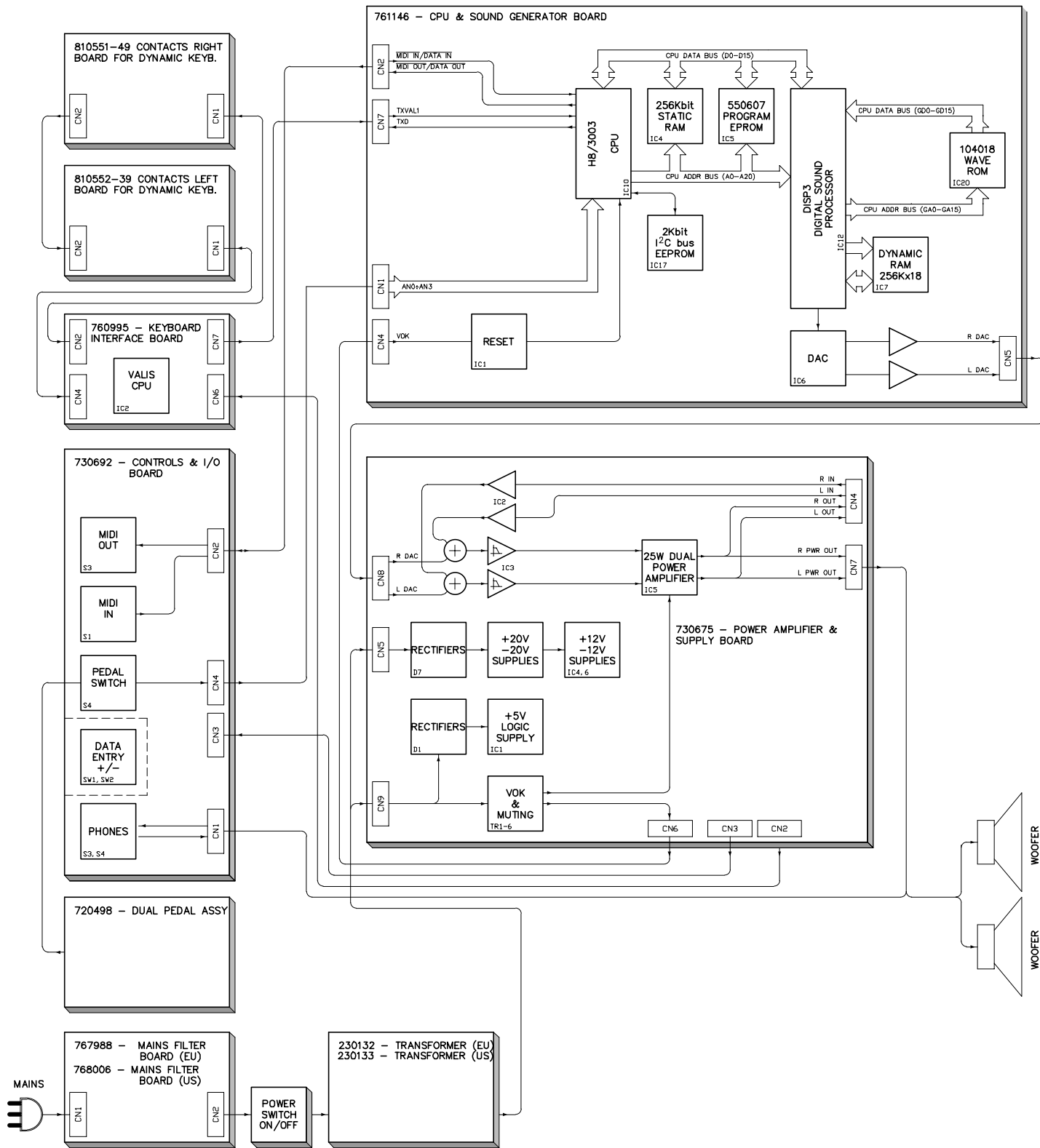
The (μ) micro symbol of capacitance value is substituted by U. The (Ω) omega symbol of resistance value is substituted by E. The electrolytic capacitors are 25Vdc rated voltage unless otherwise specified. All resistors are 1/8W unless otherwise specified. All switches shown in the "OFF" position. All DC voltages measured to ground with a voltmeter 20KOhm/V.

- ← Soldering point.
- Male connector.
- Female connector.
- ⊖ M/F faston connector.
- Test point.
- ⊞ Flag joined with one or more flags with the same signal name inscribed.
- ↑ Supply voltage.
- ⊥ Logic supply ground.
- ⊕ Analog supply ground.
- ⇩ Signal ground.
- ⊚ Chassis ground.



ATTENTION
Observe precautions when handling electrostatic sensitive devices

BLOCK DIAGRAM



RP-BASIC, RP8, RP88 INITIAL CHECK

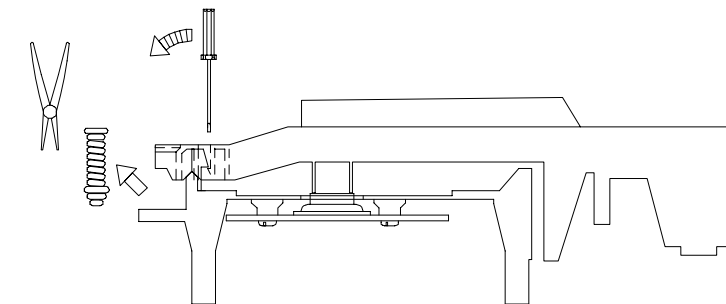
Operations Description	Event Description																														
The following procedures must be executed subsequently in the specified order.																															
Before turning on the instrument, check the jumpers setting on CPU & SOUND GENERATOR BOARD to be corresponding to the model accordingly the following table:	<table border="1"> <tr> <td>MODEL</td> <td>J1</td> <td>J2</td> <td>J3</td> <td>J4</td> </tr> <tr> <td>RPBASIC</td> <td>NO</td> <td>NO</td> <td>YES</td> <td>1-2</td> </tr> <tr> <td>RP8</td> <td>YES</td> <td>NO</td> <td>YES</td> <td>1-2</td> </tr> <tr> <td>RP88</td> <td>YES</td> <td>NO</td> <td>YES</td> <td>1-2</td> </tr> <tr> <td>RPT114</td> <td>YES</td> <td>YES</td> <td>YES</td> <td>2-3</td> </tr> <tr> <td>RPT114DL</td> <td>YES</td> <td>YES</td> <td>NO</td> <td>2-3</td> </tr> </table>	MODEL	J1	J2	J3	J4	RPBASIC	NO	NO	YES	1-2	RP8	YES	NO	YES	1-2	RP88	YES	NO	YES	1-2	RPT114	YES	YES	YES	2-3	RPT114DL	YES	YES	NO	2-3
MODEL	J1	J2	J3	J4																											
RPBASIC	NO	NO	YES	1-2																											
RP8	YES	NO	YES	1-2																											
RP88	YES	NO	YES	1-2																											
RPT114	YES	YES	YES	2-3																											
RPT114DL	YES	YES	NO	2-3																											
Remove the secondary fuses F1, F2, F3, F4, located on POWER AMPLIFIER & SUPPLY BOARD; turn on the instrument and verify the supply AC voltages:	(CN9) between pin1 and pin2 = 16±1Vac (CN9) between pin1 and pin3 = 16±1Vac (CN9) between pin2 and pin3 = 32±2Vac (CN5) between pin1 and pin3 = 13±0,5Vac																														
Turn off the instrument and put the fuses back on its holders.																															
Turn on the instrument.																															
Check the supply DC voltages on CPU & SOUND GENERATOR BOARD:	(CN4) between pin9 and pin6 = +5±0,25Vdc (CN4) between pin1 and pin4 = +12±0,6Vdc (CN4) between pin1 and pin5 = -12±0,6Vdc																														

RP-BASIC, RP8, RP88 AUTOTEST PROCEDURE

Operations Description	Event Description
To start the AUTOTEST mode, you must turn on the instrument and press 4 times the data "+" button within one second. Note: During the autotest procedure the instrument does not respond at any keyboard action. The volume is set by its position at the moment of power on switching.	The instrument plays 3 different tones.
Active whole the following controls within 20 seconds: "+" button, "-" button, SOFT, SOSTENUTO and DAMPER pedals, VOLUME potentiometer.	At each action the instrument plays a tone and when all actions are performed it plays three tones.
If you have not activated some controls or their do not work properly, after some seconds the instrument will play: Note: the MIDI LOOP is checked if you connect a midi cable between MIDI OUT and MIDI IN sockets.	1 tones for "-" button fault, 2 tones for "+" button fault, 3 tones for MIDI LOOP fault, 4 tones for DAMPER pedal fault, 5 tones for SOFT pedal fault, 6 tones for VOLUME potentiometer fault, 7 tones for SOSTENUTO pedal fault.

TO REMOVE A KEY INSERT A SCREWDRIVER OR OTHER SIMILAR OBJECT IN THE SPLIT AT THE KEY BACK, APPLY A LIGHT PRESSURE AND PUSH IN THE DIRECTION SHOWN.
NOTE: BEFORE YOU REMOVE A NATURAL KEY YOU MUST REMOVE THE KEYBOARD, IF YOU REMOVE A SHARP KEY THIS OPERATION IS NOT NECESSARY

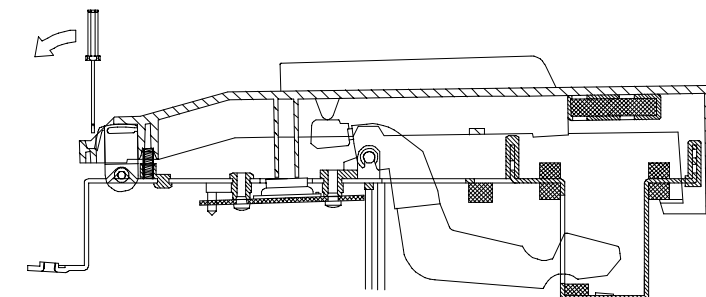
TP8
RPBasic

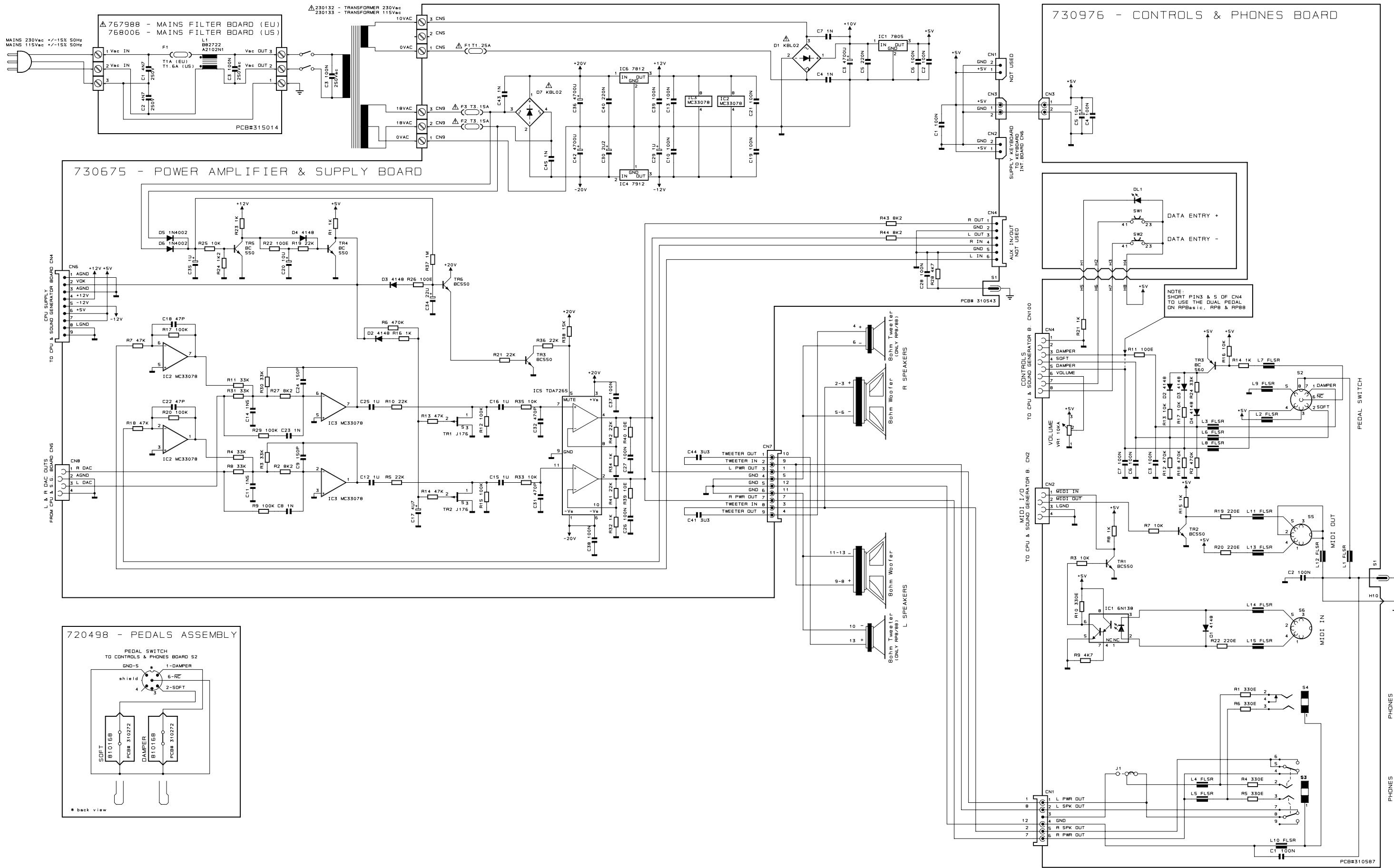


REMOVE THE KEY RETURN SPRING.
UNLOCK THE KEY APPLYING NOT MUCH STRENGTH.
NOTE: TO REMOVE A SHARP KEY BEFORE YOU MUST REMOVE THE NEAR NATURAL KEYS.

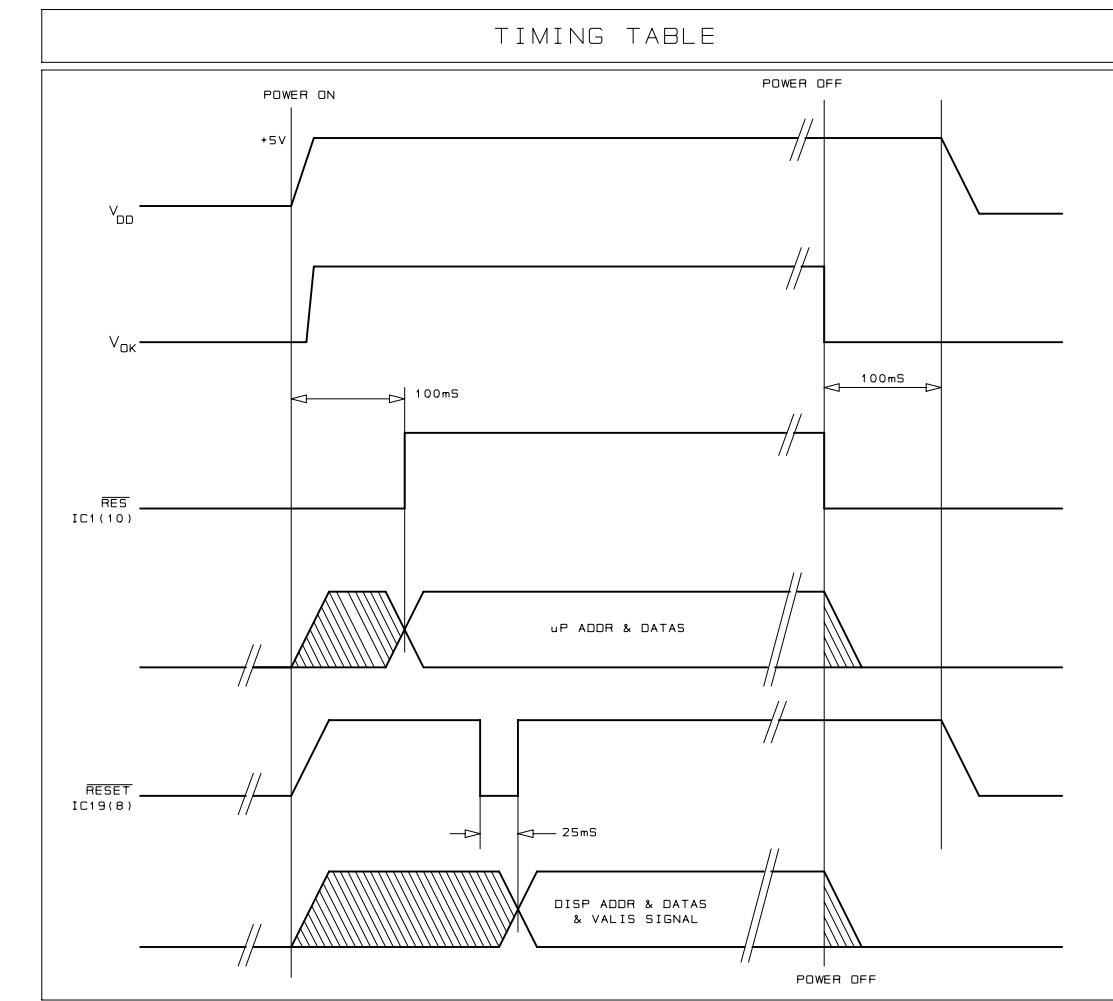
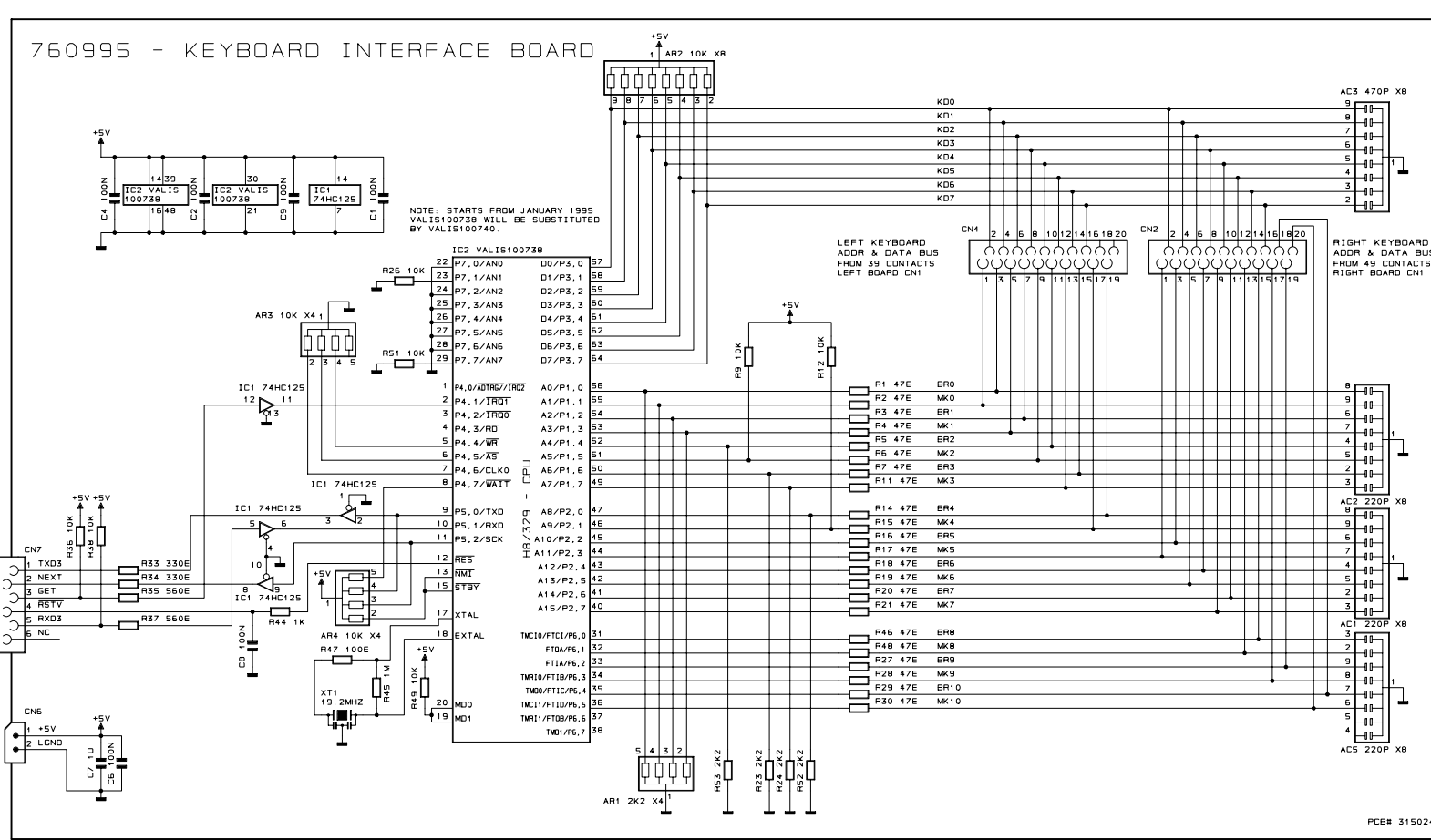
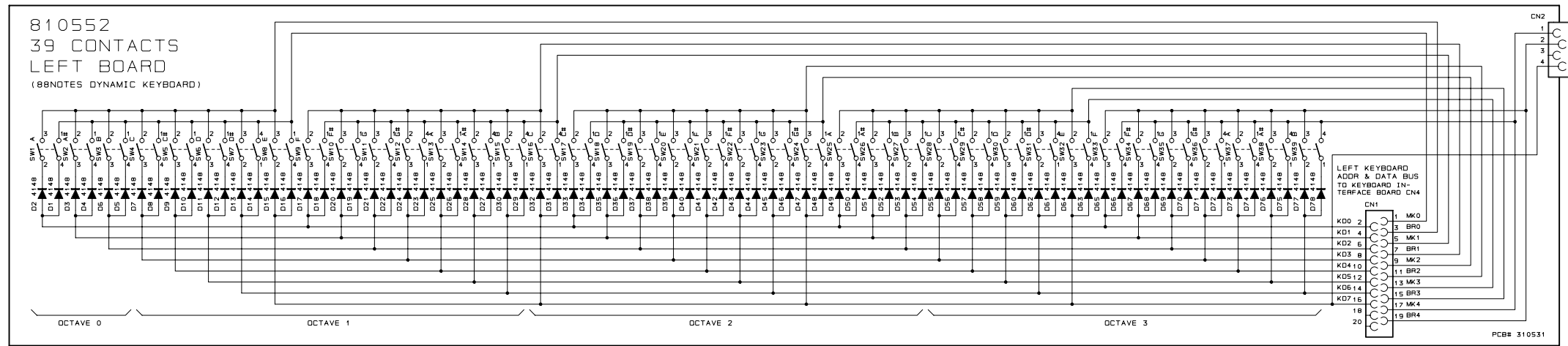
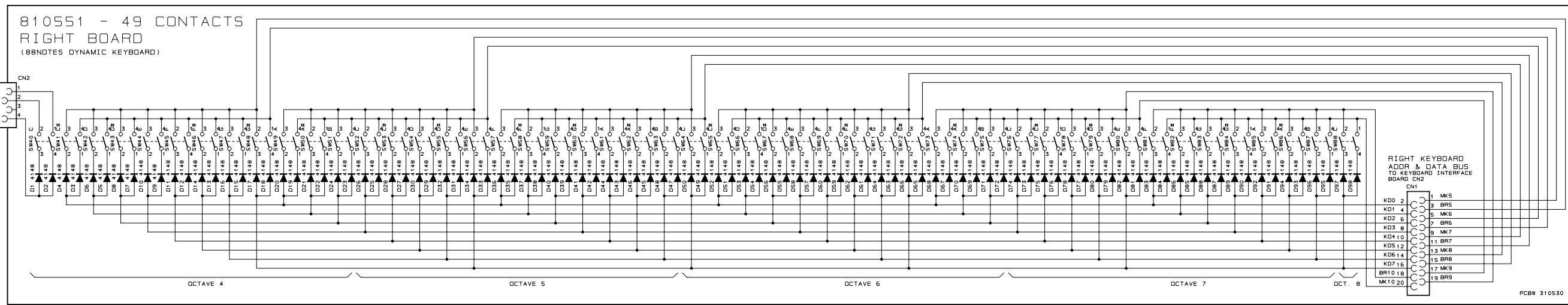
TO REMOVE A KEY INSERT A SCREWDRIVER OR OTHER SIMILAR OBJECT IN THE SPLIT AT THE KEY BACK, APPLY A LIGHT PRESSURE AND PUSH IN THE DIRECTION SHOWN.
NOTE: BEFORE YOU REMOVE A NATURAL KEY YOU MUST REMOVE THE KEYBOARD, IF YOU REMOVE A SHARP KEY THIS OPERATION IS NOT NECESSARY

TP20
RP8-88



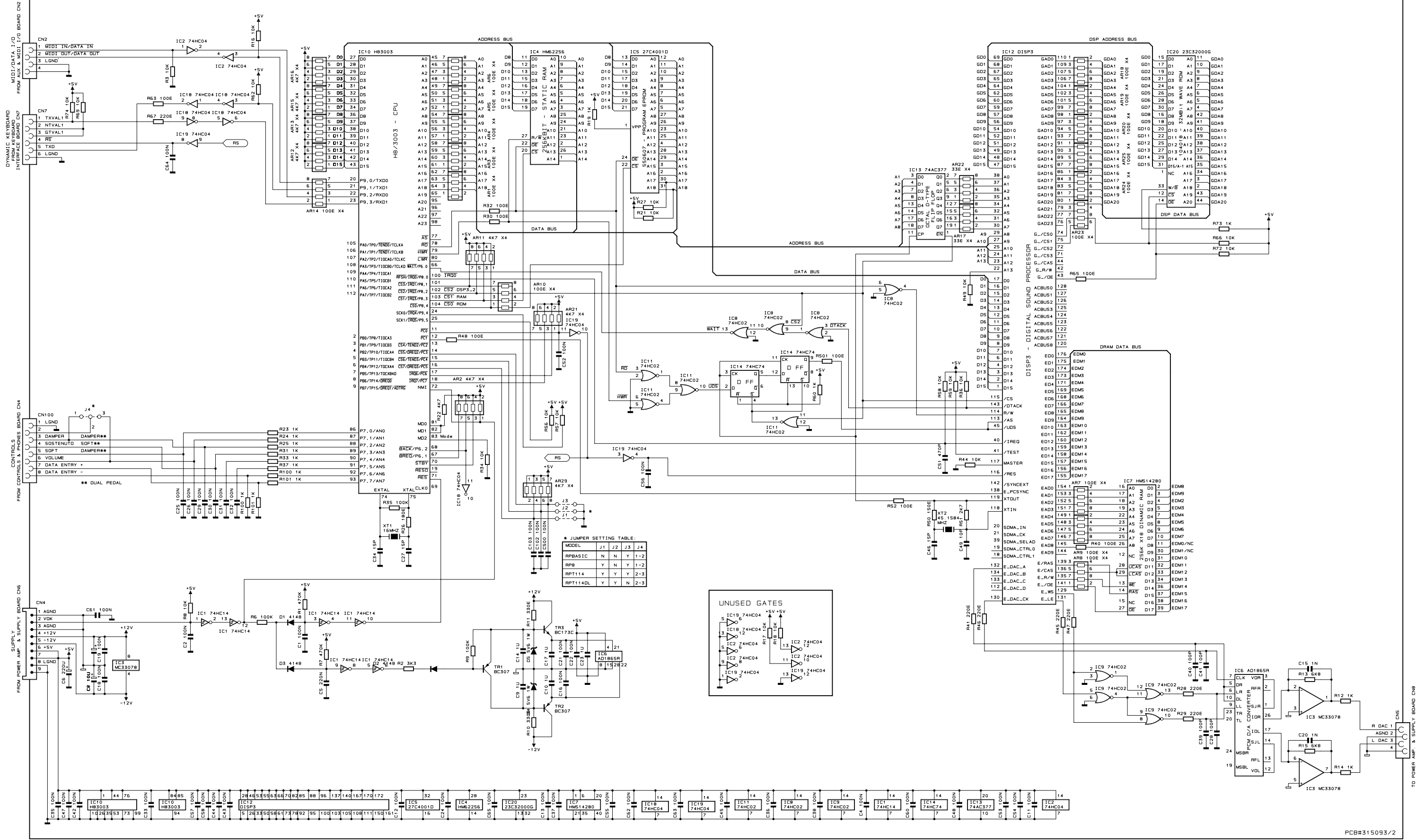


DRW M. PALANGHI	DWG# 500B03	PCB# 310551, 310541, 310542, 310543	GENERALMUSIC S.p.A.
CKD R. GIORGI	DATE 54 1/1	DESCRIPTION RP BASIC POWER AMPLIFIER & SUPPLY BOARD, AUX & MIDI I/O B., PHONES BOARD	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP M. GALANTI	REV# 27-05-97		



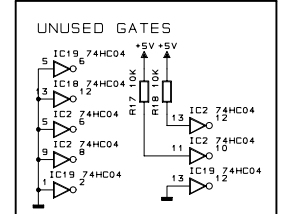
DRW BOCCATO	DWG# 500735	PCB# 310531 310530	GENERALMUSIC S.p.A. ITALY
CKD GIORGI	DSK# 39 PART:1/1	SCHEMATIC DIAGRAM RPT 114	ALL RIGHTS ARE RESERVED. NO COPIES
APP GALANTI	REV: 12/07/95	CONTACTS BOARD & KEYBOARD INTERFACE BOARD	OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.

761146 - CPU & SOUND GENERATOR BOARD



*** JUMPER SETTING TABLE ***

MODEL	J1	J2	J3	J4
RPBASIC	N	N	Y	1-2
RPB	Y	N	Y	1-2
RPT114	Y	Y	Y	2-3
RPT114DL	Y	Y	N	2-3



PCB#315093/2

SPARE PART LIST

Legend	
(EU)	= European Version
(US)	= American Version
(RP8)	= RP8 Gem/Generalmusic Version
(RPBasic)	= RPBasic Gem/Generalmusic Version
(RP88)	= RP88 Baldwin Version

Accessories

271207	Owner's Manual (RP88)
271190	Owner's Manual (RP8)(RPBasic)
710400	Music Stand

Stand Assembly

970289	Legs Wooden Parts
660549	Leg Fixing Square
340102	Plastic Foot
261364	Higher Cross Bar
261363	Lower Cross Bar
261361	Left Leg
261360	Right Leg
170768	Metal Foot Support
720498	Double Pedals Assembly
810168	* Reed Switch Board (PCB#310272)
770717	* Connection Cable
500035	* Mechanical Part
340105	** Chassis Support
170880	** Screen Panel
170875	** Right Pedal
170874	** Left Pedal
170777	** Pedal Return Spring
170767	** Metal Support
340274	* Pedal Rubber
190181	* Pedals Clog
190178	* Permanent Magnet
190015	* Adhesive Rubber Foot
150226	* Cord Lock for Pedal Cable
130063	* Cable

Cabinet Assembly

660585	Front Bar (RPBasic)
660584	Front Bar (RP88)
660583	Front Bar (RP8)
660404	Speakers Protection Grid
651563	Control Board Cloth
340821	Music Stand Stop
340090	Music Stand Bush
340075	Nylon Board Spacer
261362	Cover
230132	Transformer 230Vac 130W (EU)
230133	Transformer 115Vac 130W (US)
220107	8ohm Woofer Speaker
210248	Speaker Gasket
210020	1.5x12mm Adhesive Red Felt (specify mt)
210016	1x10mm Adhesive Black Felt (specify mt)
190133	Lateroid Insulator For Screw Block
110013	T1.25A Fuse 5x20mm (EU)
110011	T1A Fuse 5x20mm (EU)
110003	T3.15A Fuse 5x20mm (EU)
110026	T1.25A Fuse 6.5x32mm (US)
110055	T1.6A Fuse 6.5x32mm (US)
110061	T3.15A Fuse 6.5x32mm (US)
020493	100n 250Vac MKP EMI Capacitor "Siemens"

Mains Assembly

767988	Mains Filter Board (PCB# 315014) (EU)
768006	Mains Filter Board (PCB#31014) (US)
230568	* 10mH 250Vac 1A AC Line EMI Coil "Siemens"
140010	* 3 Contacts P=10 Vert Terminal Block
110113	* Fuse Clip 5x20mm 6A max (EU)
110114	* Fuse Clip 6.5x32mm 10A (US)
020493	* 100n 250Vac MKP EMI Capacitor "Siemens"
010545	* 4n7F 20% 250V Capacitor
130294	Mains Cord (EU)
130277	Mains Cord (US)

Power Amplifier & Supply Board

730675 Power Amplifier & Supply Board (PCB#310543)

141010	* 4 Contacts Vert Female Connector
140917	* 2 Contacts Vert Male Connector
140352	* 9 Contacts Hor Male Connector
140351	* 6 Contacts Hor Male Connector
140010	* 3 Contacts P=10 Vert Terminal Block
110119	* Fuse Clip 10A max (EU) (US)
100958	* TDA7265 Dual 25W Power Amplifier
100919	* MC33078 Dual LN J-Fet Operational Amplifier
100059	* 7805 +5V 1A Voltage Regulator
100045	* 7812 +12V 1A Voltage Regulator
100043	* 7912 -12V 1A Voltage Regulator
090856	* J176 TO92 P-Channel J-Fet Transistor
090183	* Bc550 To92 Ln Npn Transistor
080156	* 1N4002 1A 100V Rectifier Diode
080103	* 1N4148 100mA 75V Signal Diode
030554	* 4700u 35v 20% Snap-In Electrolytic Capacitor
010599	* 1u 50V -20+80% Ceramic Cap. Multilayer

Keyboard & Interface Assembly (RP Basic)

720486	Keyboard & Interface Assembly (TP8)
840762	* 20 Wires 25cm Length Flat Cable
840761	* 20 Wires 12.5cm Length Flat Cable
760995	* Keyboard Interface Board (PCB#315024)
141018	** 20 Contacts Vert Female Connector
141011	** 6 Contacts Vert Female Connector
140918	** 2 Contacts Hor Male Connector
100740	** HD6433278 Cpu F=20MHz
100605	** 74HC125 Quad 3-State Buffer
050493	** Resistor Array 10K X4 1/8w 5%
050492	** 10Kx8 1/8w 5% Resistor Array
050414	** 2K2 X4 1/8w 5% Resistor Array
010726	** 19.2MHz Ceramic Resonator With Capacitors
010662	** 220p 10% 50V X8 Cap Array
010661	** 47p 10% 50V X8 Cap Array
720482	* Keyboard with Contacts Assembly (TP8)
810552	** 39 Contacts L Board For Dynamic Keyb. (PCB#310531)
340764	*** 3 Dual Contacts Rubber Strip
340211	*** 12 Dual Contact Rubber Strip
141018	*** 20 Contacts Vert Female Connector
141010	*** 4 Contacts Vert Female Connector
080103	*** 1N4148 100mA 75V Signal Diode
810551	** 49 Contacts R Board For Dynamic Keyb. (PCB#310530)
340212	*** 13 Dual Contact Rubber Strip
340211	*** 12 Dual Contact Rubber Strip
141018	*** 20 Contacts Vert Female Connector
141010	*** 4 Contacts Vert Female Connector
080103	*** 1N4148 100mA 75V Signal Diode
500070	** Mechanical Keyboard Assembly (TP8)
160211	*** Key Return Spring
151182	*** Last C Key
151181	*** First A Key
151180	*** Sharp Key
151179	*** B Key
151178	*** A Key
151177	*** G Key
151176	*** F Key
151175	*** E Key
151174	*** D Key
151173	*** C Key

Keyboard & Interface Assembly (RP8) (RP88)

720489	Keyboard & Interface Assembly (TP20)
840762	* 20 Wires 25cm Length Flat Cable
840761	* 20 Wires 12.5cm Length Flat Cable
760995	* Keyboard Interface Board (PCB#315024)
141018	** 20 Contacts Vert Female Connector
141011	** 6 Contacts Vert Female Connector
140918	** 2 Contacts Hor Male Connector
100740	** HD6433278 Cpu F=20MHz
100605	** 74HC125 Quad 3-State Buffer
050493	** Resistor Array 10K X4 1/8w 5%
050492	** 10Kx8 1/8w 5% Resistor Array
050414	** 2K2 X4 1/8w 5% Resistor Array
010726	** 19.2MHz Ceramic Resonator With Capacitors
010662	** 220p 10% 50V X8 Cap Array
010661	** 47p 10% 50V X8 Cap Array
720490	* Keyboard with Contacts Assembly (TP20)
810552	** 39 Contacts L Board For Dynamic Keyb. (PCB#310531)
340764	*** 3 Dual Contacts Rubber Strip
340211	*** 12 Dual Contact Rubber Strip

141018	*** 20 Contacts Vert Female Connector
141010	*** 4 Contacts Vert Female Connector
080103	*** 1N4148 100mA 75V Signal Diode
810551	** 49 Contacts R Board For Dynamic Keyb. (PCB#310530)
340212	*** 13 Dual Contact Rubber Strip
340211	*** 12 Dual Contact Rubber Strip
141018	*** 20 Contacts Vert Female Connector
141010	*** 4 Contacts Vert Female Connector
080103	*** 1N4148 100mA 75V Signal Diode
500069	** Mechanical Keyboard Assembly (TP20)
160211	*** Key Return Spring
151172	*** Last C Key
151171	*** First A Key
151170	*** Sharp Key
151169	*** B Key
151168	*** A Key
151167	*** G Key
151166	*** F Key
151165	*** E Key
151164	*** D Key
151163	*** C Key
340092	* 5mm Board Spacer

Controls & Phones Assembly

730693	Controls & Phones Assembly
730976	* Controls & Phones Board (PCB#310587)
230569	** FL5R200PNT EMI Coil For Signal
141058	** Con V M 6 C Mini Mate Burndy
141012	** Con V F 8 C P=1.27 Mmatch Amp
141010	** 4 Contacts Vert Female Connector
140917	** 2 Contacts Vert Male Connector
140529	** Microswitch 12V 50mA 0.25mm
140217	** Horizontal Jack Stereo Slim Socket
140216	** Horizontal Female 6 Poles Din Socket
140212	** Horizontal Female 5 Poles Din Socket
140207	** Horizontal Female Jack Socket
100035	** 6N138 Optocoupler
090194	** BC560 TO92 LN Pnp Transistor
090183	** BC550 TO92 LN Npn Transistor
080705	** Led 3mm 60deg Diffused Red
080103	** 1N4148 100mA 75V Signal Diode
074699	** 50Kb C.C. 11mm Horr. Rotary Potentiometer
030245	** 10u 50V 20% Vert Electrolytic Capacitor
010595	** 100n 50V -20+80% Ceramic Cap. Multilayer
652239	* 2 Keys <<>> Rubber Pad
347360	* Gray Knob
110285	* Power Switch

CPU & Sound Generator Board

761146	CPU & Sound Generator Board (PCB#315093)
141012	* Con V F 8 C P=1.27 Mmatch Amp
141011	* 6 Contacts Vert Female Connector
141010	* 4 Contacts Vert Female Connector
140889	* Dual In Line Vert Male Strip (specify contacts)
140874	* Single In Line Vert Male Strip (specify contacts)
140352	* 9 Contacts Hor Male Connector
106001	* MC33078P Smd Dual LN J-Fet Operational Amplifier
105006	* HD6413003F16 Cpu Smd F=16MHz
104020	* HM62256AFP-7T SOP Sram 256K Ta=70nS
104018	* 23C32000G SOP Rom 32Mbit Wave Rps
104010	* HM514280AJ SOJ Dram 4M5bit Ta=70nS
103010	* 74HC04D SOIC Hex Inverter
103009	* 74HC02D SOIC Quad 2-In Nor Gate
103007	* 74HC74D SOIC Dual Flip-Flop
103004	* AD1865R SOP 18bit D/A Converter
103000	* 74HC14D Soic Hex Inverter Schmitt Trigger
101501	* 74AC377DW SOIC Octal Dtype Flip Flop
090194	* BC560 TO92 LN Pnp Transistor
090183	* BC550 TO92 LN Npn Transistor
081000	* PMLL4148 Smd 100mA 75V Signal Diode
080241	* 5V6 1W 5% Zener Diode
010727	* 45.1584MHz Quartz Resonator
010704	* 16MHz Quartz Resonator
010599	* 1u 50V -20+80% Ceramic Cap. Multilayer
550607	* 27C1001 1Mbit Program Eprom
140877	* Jumper For Contacts Strip (p=2.54mm)

Wiring Connections

841088	4 Wires 70cm Length Flat Cable
841087	8 Wires 70cm Length Flat Cable
841086	2 Wires 75cm Length Crimp Terminal Cable
840903	9 Wires 12.5cm Flat Cable

840902	9 Wires 10cm Flat Cable
840796	2 Wires 45cm Length Crimp Terminal Cable
840770	6 Wires 25cm Length Flat Cable
840768	4 Wires 10cm Length Flat Cable
770796	Mains Cables Ass'y
770756	Speakers Cables Ass'y (RP8)(RP88)
770811	Speakers Cables Ass'y (RPBasic)

Note:

Each spare part is single quantity unless otherwise specified.

Asterisk prefix explanation:

Omitted = First level spare part.

One asterisk = Second level, part of previous listed first level part.

Two asterisk = Third level, part of previous listed second level part.

Three asterisk =

Any request for not above mentioned part must encompass specific description including:

- 1) Model name,
- 2) Section name,
- 3) Module code,
- 4) Reference name,
- 5) Quantity number.