



SK760

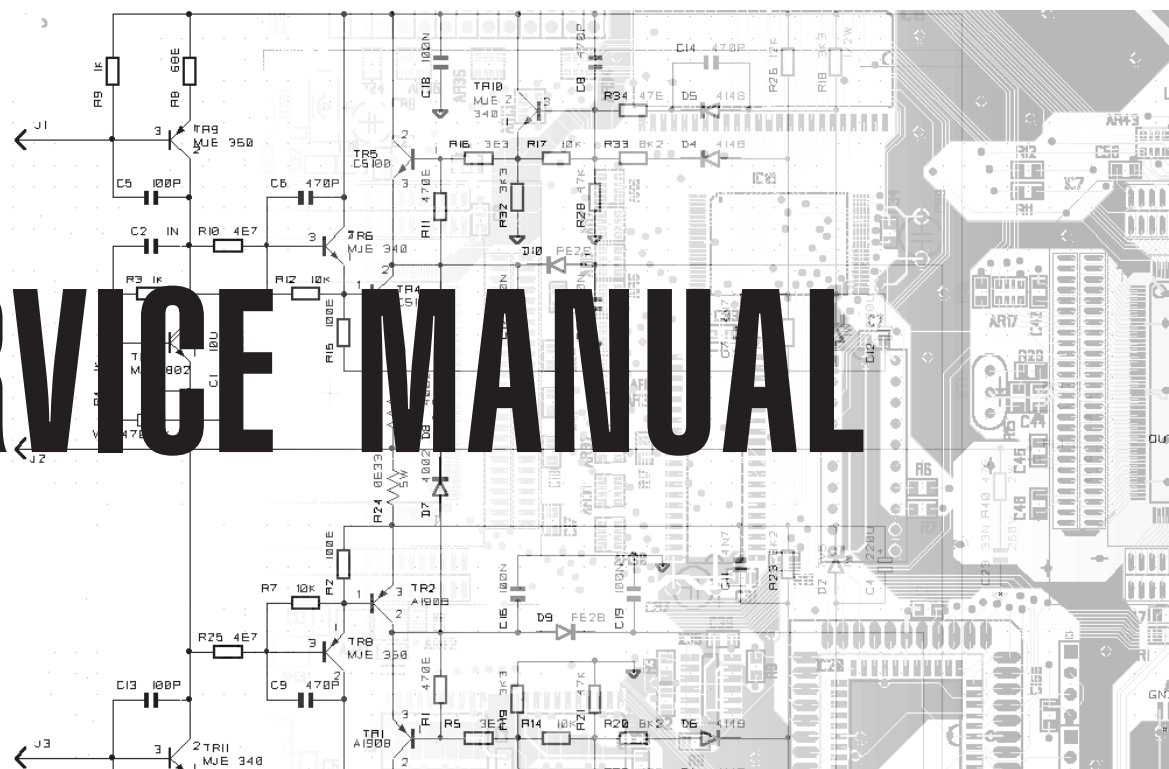
WORLD KEYBOARD

SK880

WORLD KEYBOARD

FOURTH EDITION APRIL 2000

SERVICE MANUAL



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NOTE: The SK series is manufactured in two versions:

The TRF version has a traditional supply (transformer and power supply board with mixer).

The SWT version has a switching supply (switching unit and mixer board).

All the specifications remain the same, unless the mains voltage:

The TRF version has two nominal mains voltages 115Vac-60Hz for U.S.A. or 230Vac-50Hz for CEE & other countries.

The SWT version accept all mains voltages into the range of 100-230Vac and 50-60Hz.

Warnings



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.

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 1/8 Ω unless otherwise specified.

All switches shown in the "OFF" position. All DC voltages measured to ground with a voltmeter 20K Ω m/V.

← Soldering point.

↑ Supply voltage.

⊥ Logic supply ground.

• Male connector.

□ Test point.

⊥ Analog supply ground.

○ Female connector.

◊ Flag joined with one or more flags

⊥ Chassis ground.

⊔ M/F faston connector.

with the same signal name inscribed.

⊕ Earth ground.



ATTENTION

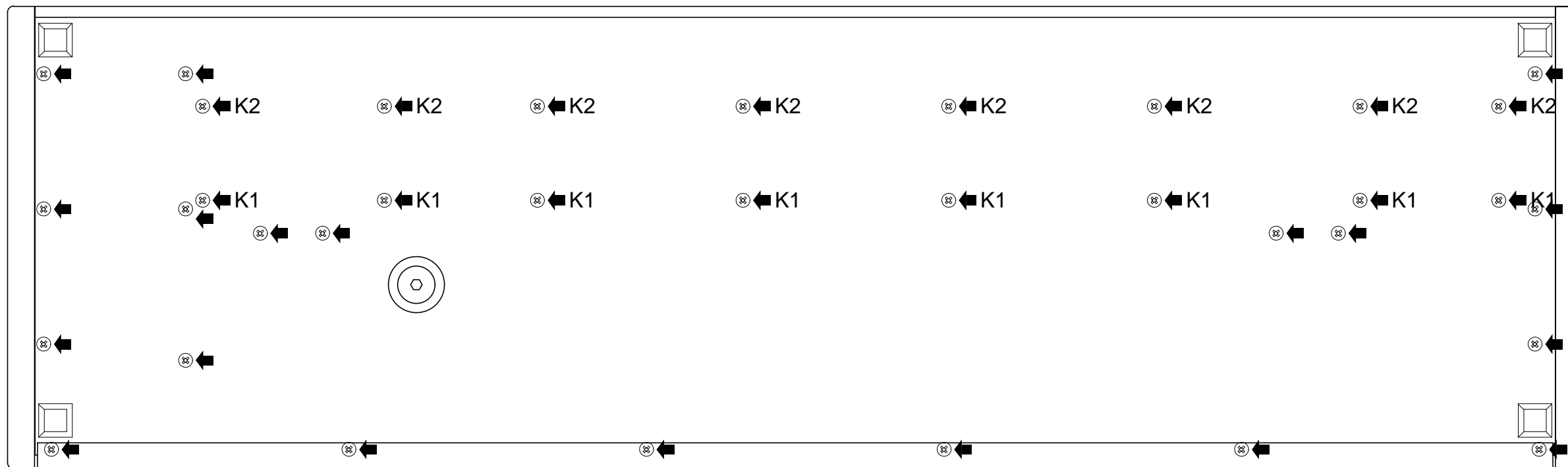
Observe precautions when handling electrostatic sensitive devices.


Address

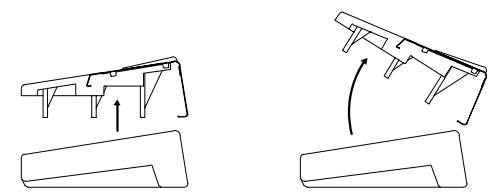
GENERALMUSIC S.p.A. Sales Division: 47842 S.Giovanni in Marignano (RN) ITALY - Via delle Rose, 12 - tel. 0541/959511 - fax 0541/957404
GENERALMUSIC on the NET: <http://www.generalmusic.com>





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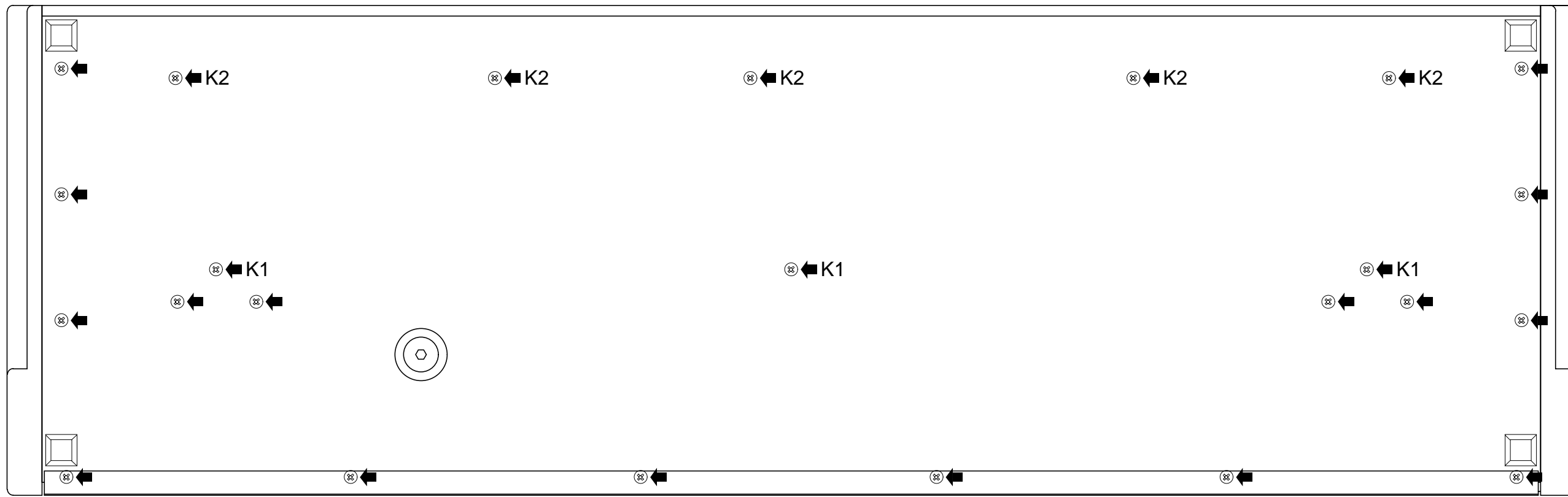


Opening Instructions
 Disconnect the instrument from the mains.
 Carefully turn the instrument over and unscrew the screws marked with the arrows. 
 Hold the chassis (top & bottom) tightly and turn the instrument the right way up, lift off the top chassis as shown below with care without forcing or disconnecting the cables.



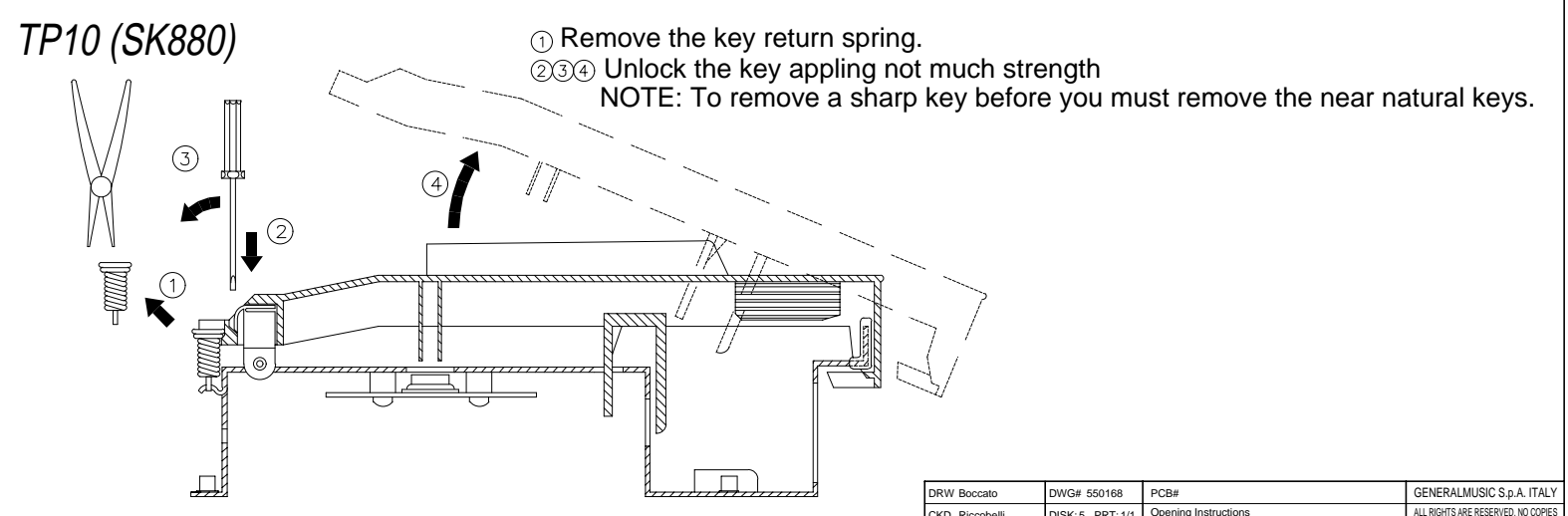
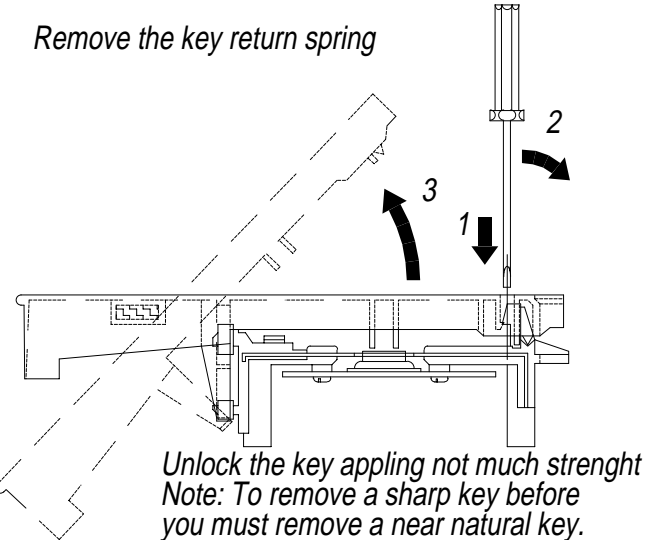
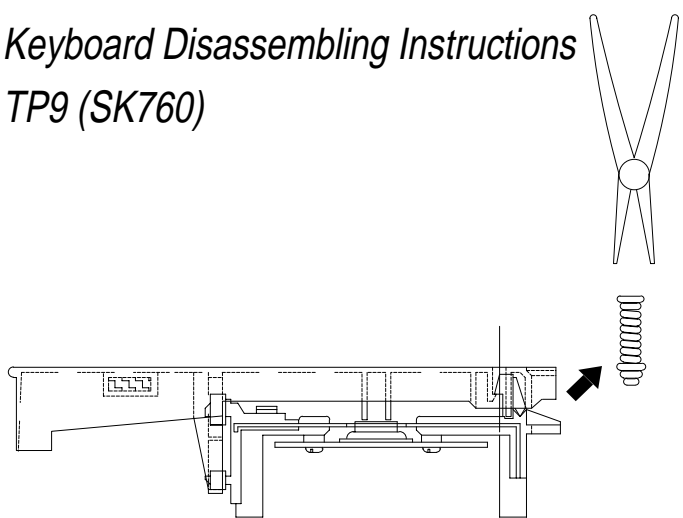
Keyboard Separation
 (open the instrument before proceed)
 To separate the keyboard from chassis, carefully turn the bottom chassis from horizontal to vertical, remove the screws marked by  K1, put it back horizontal, holding top & bottom chassis move these tightly to the end of your job table, now unscrew the screws marked with  K2 to reassemble the keyboard & the chassis follow the instructions in reverse order.

SK760

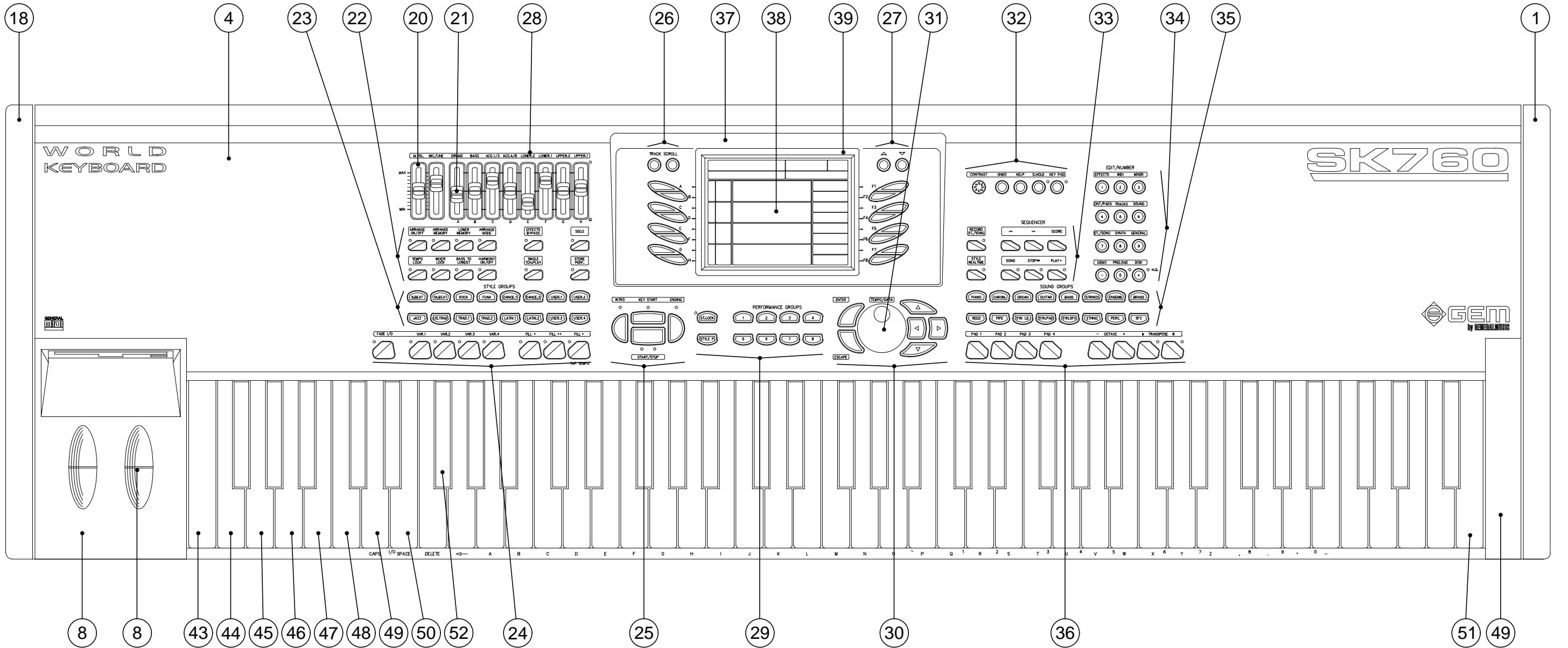
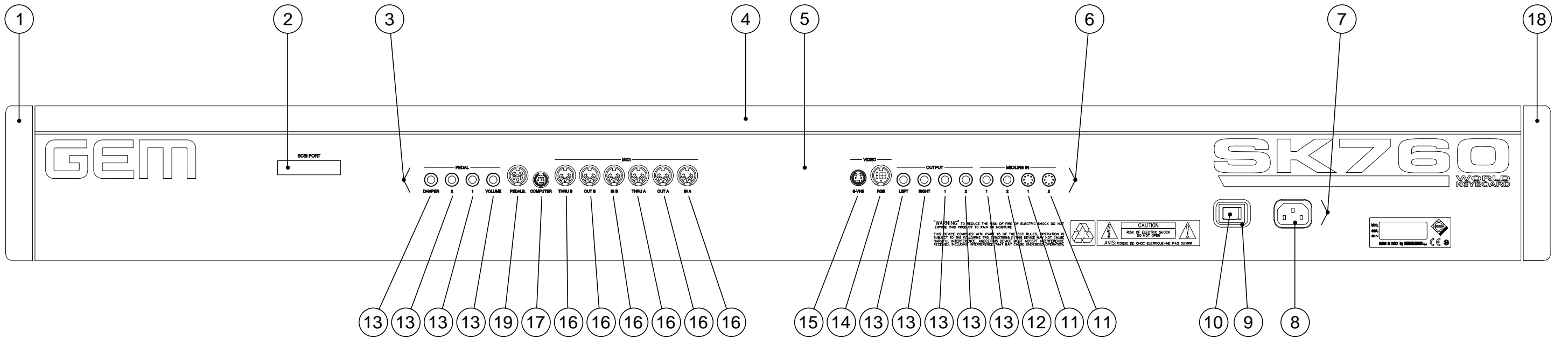


SK880

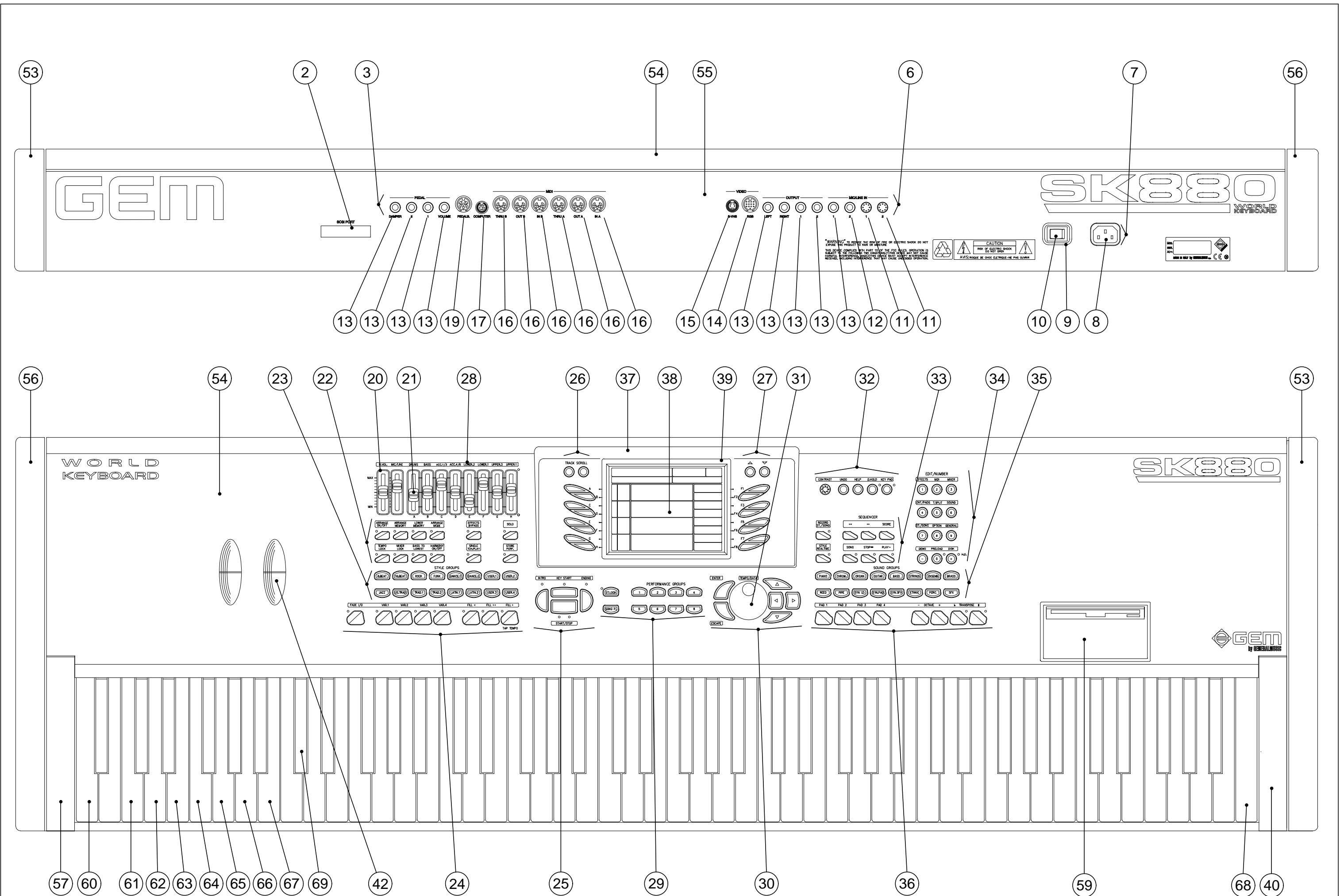
Keyboard Disassembling Instructions
 TP9 (SK760)



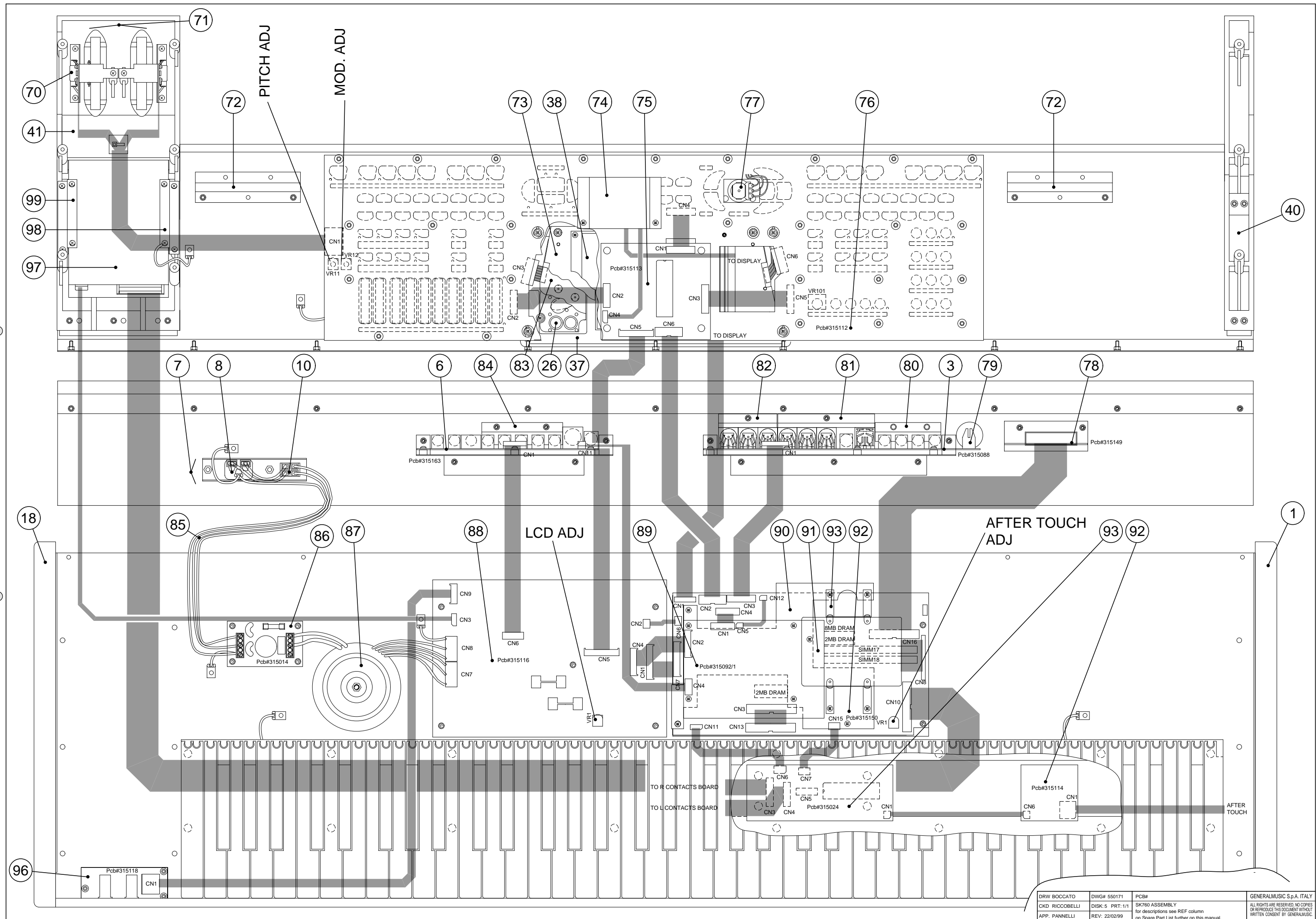
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CKD Riccobelli	DISK:5 PRT:1/1	Opening Instructions	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP. Pannelli	REV: 30/01/99	Keyboard Disassembling Instructions	



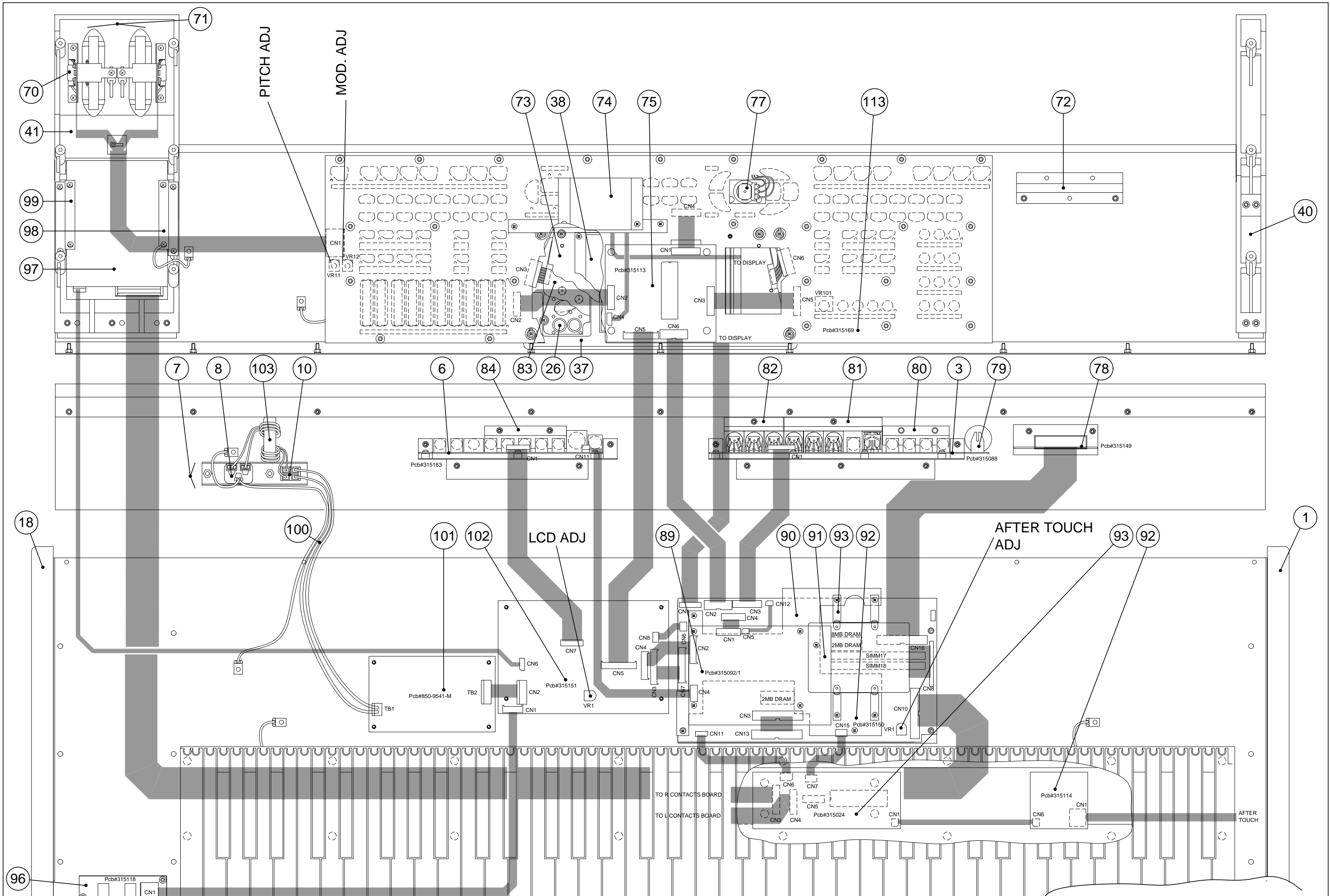
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APP. Pannelli	REV: 18/02/99	for descriptions see the REF column on Spare Part List further on this manual.	



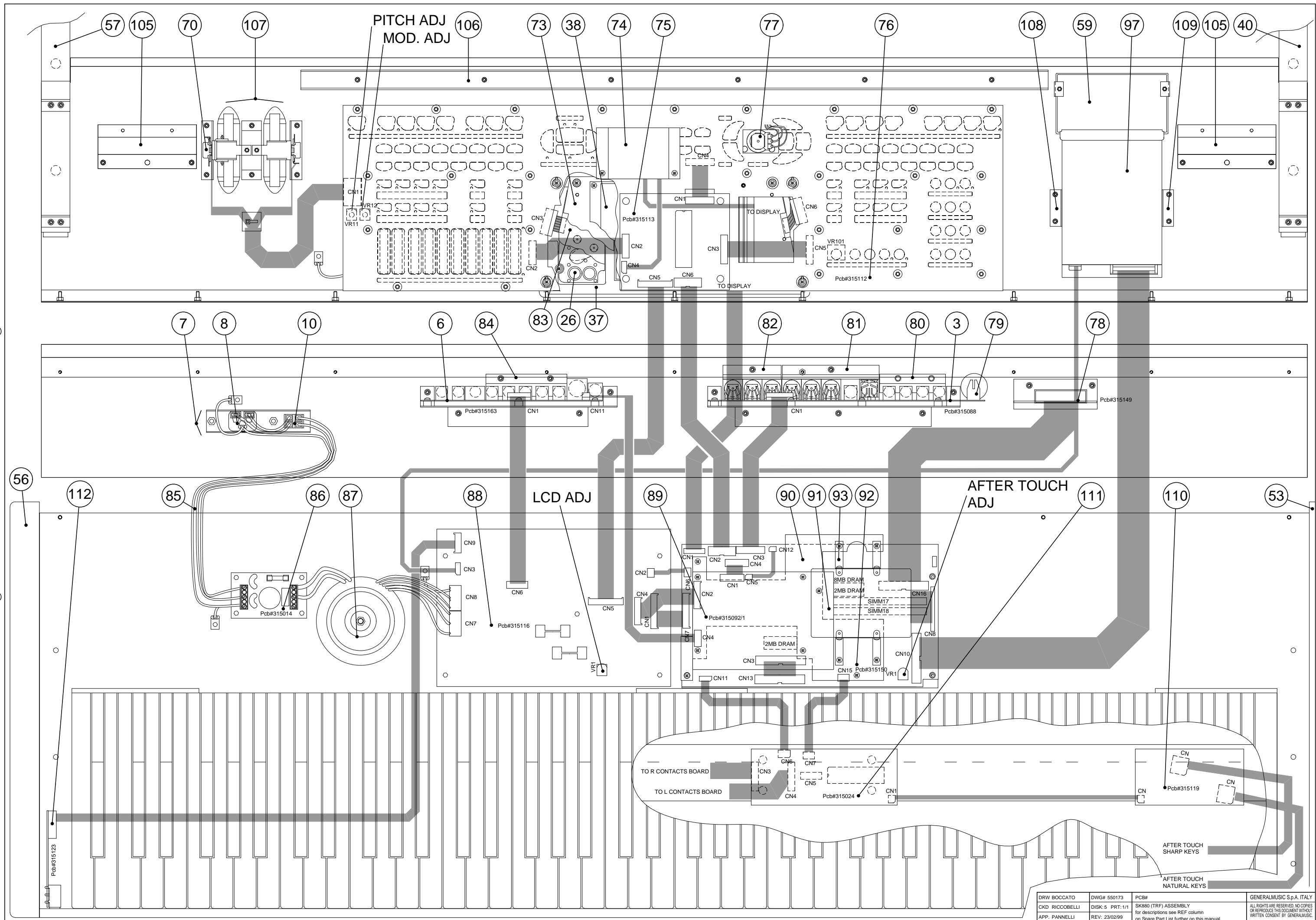
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CKD Riccobelli	DISK: 5 PRT: 1/1	SK880 Layout	ALL RIGHTS ARE RESERVED. NO COPIES
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		on Spare Part List further on this manual.	WRITTEN CONSENT BY GENERALMUSIC



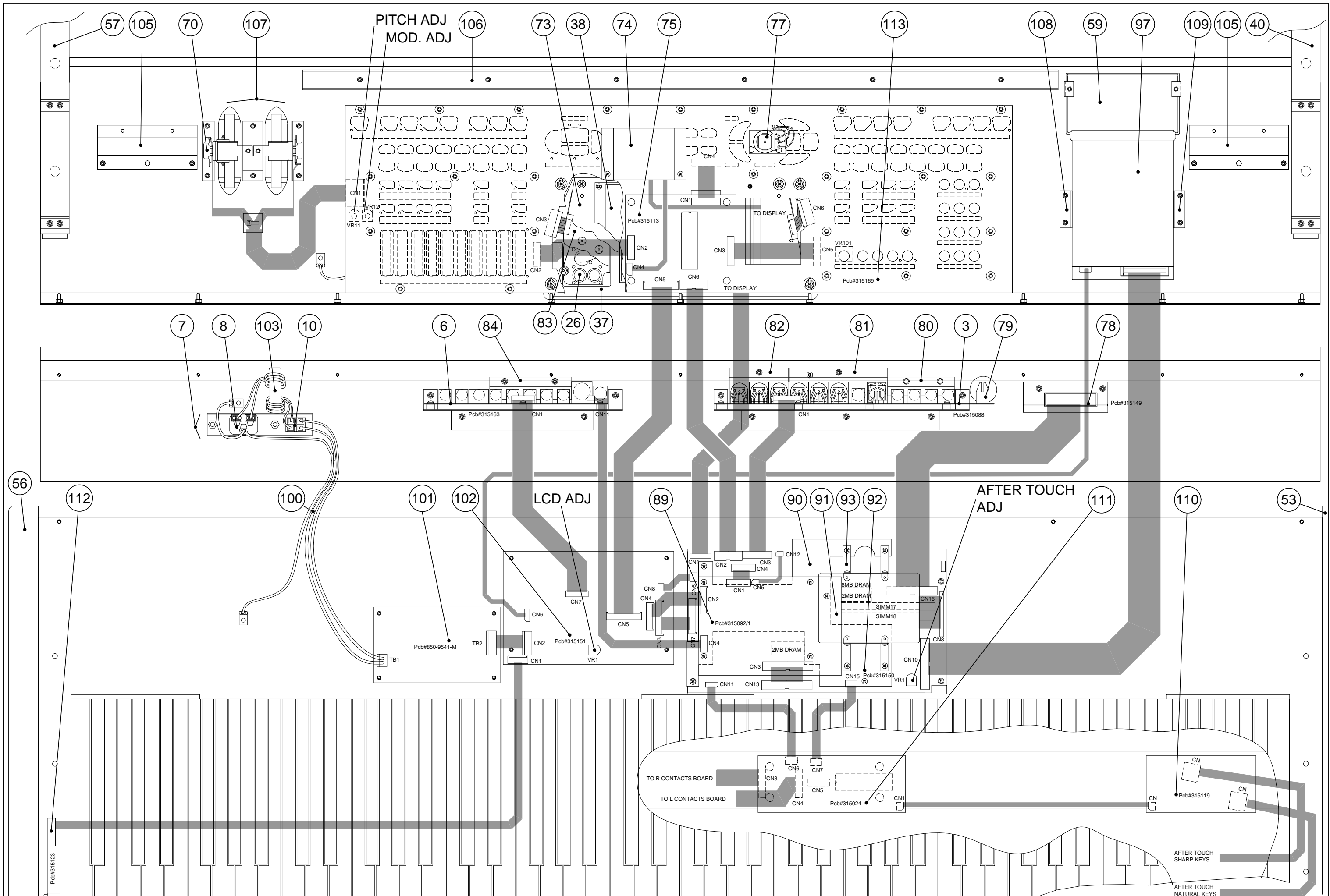
DRW BOCCATO	DWG# 550171	PCB#	GENERALMUSIC S.p.A. ITALY
CKD RICCOBELLI	DISK: 5 PRT: 1/1	SK760 ASSEMBLY	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCTIONS OF THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP. PANNELLI	REV: 22/02/99	for descriptions see REF column on Spare Part List further on this manual.	



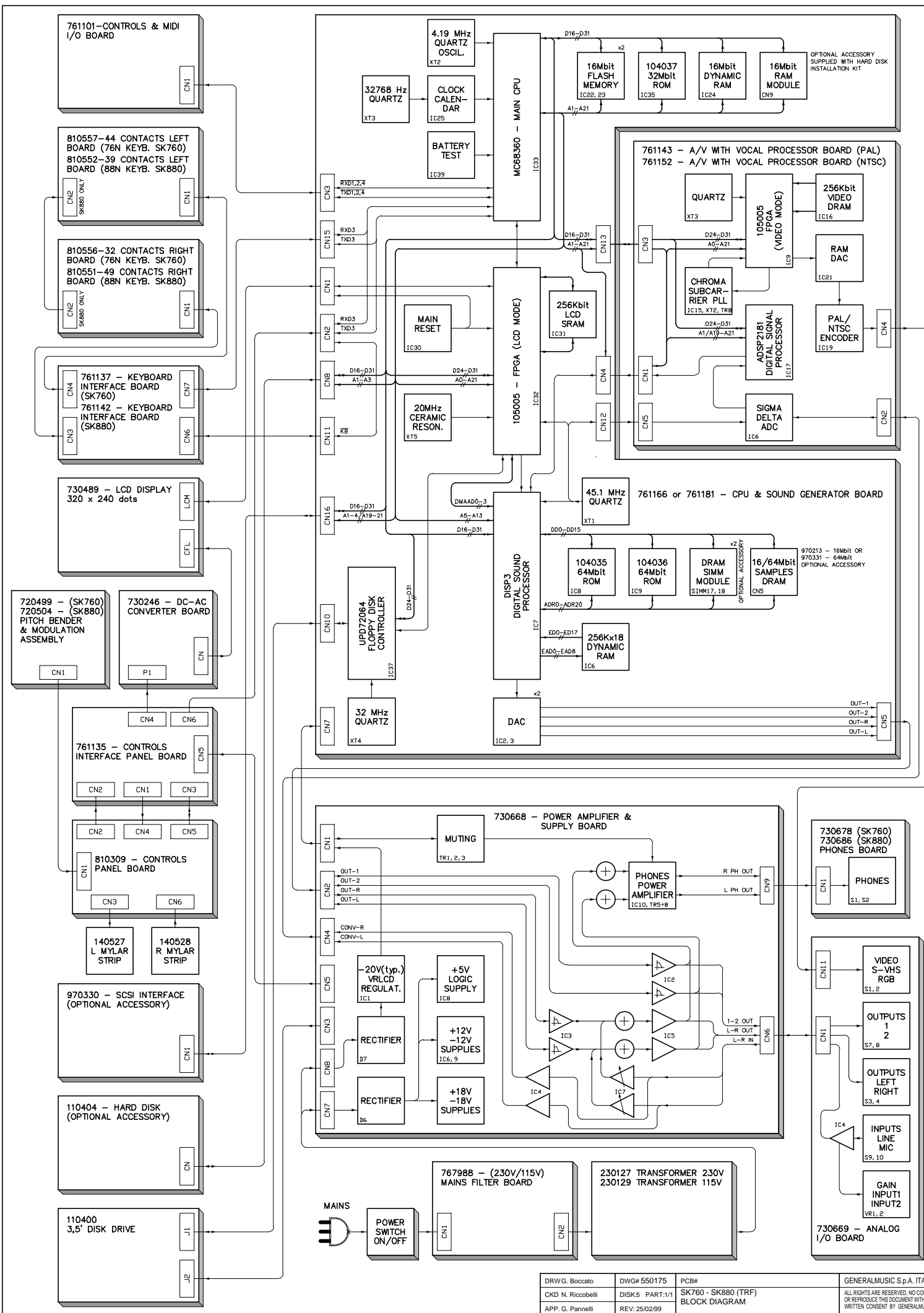
DRW BOCCATO	DWG# 550172	PCB#	GENERALMUSIC S.p.A. ITALY
CKD RICCOBELLI	DISK: 5 PRT: 1/1	SK760 (SWT) ASSEMBLY	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP. PANNELLI	REV: 22/02/99	for descriptions see REF column on Spare Part List further on this manual.	



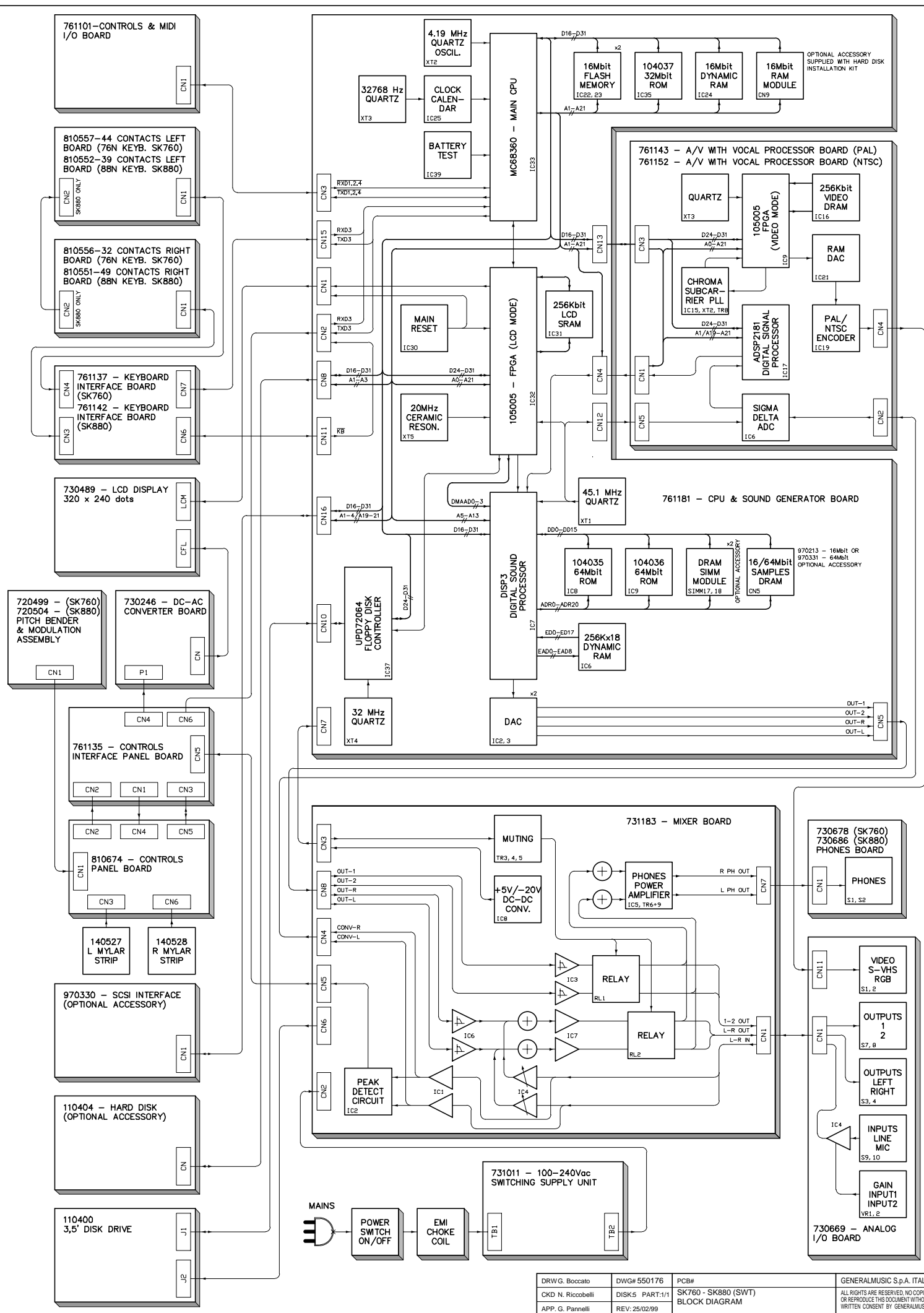
DRW BOCCATO	DWG# 550173	PCB#	GENERALMUSIC S.p.A. ITALY
CKD RICCOBELLI	DISK 5 PRT: 1/1	SK880 (TRF) ASSEMBLY	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCTIONS OF THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
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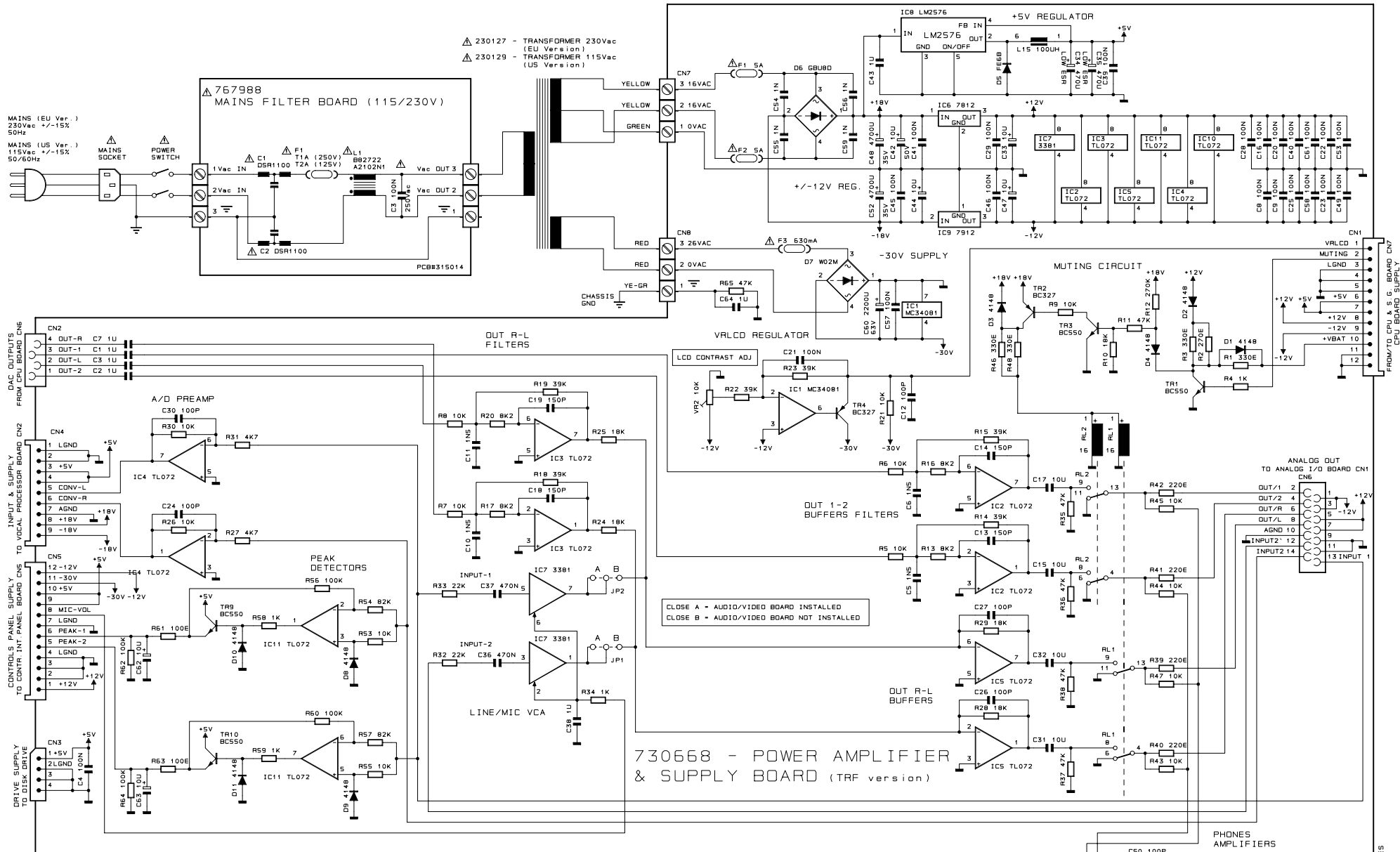
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CKD RICCABELLI	DISK: 5 PRT: 1/1	SK980 (SWT) ASSEMBLY	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP. PANNELLI	REV: 23/02/99	for descriptions see REF column on Spare Part List further on this manual.	



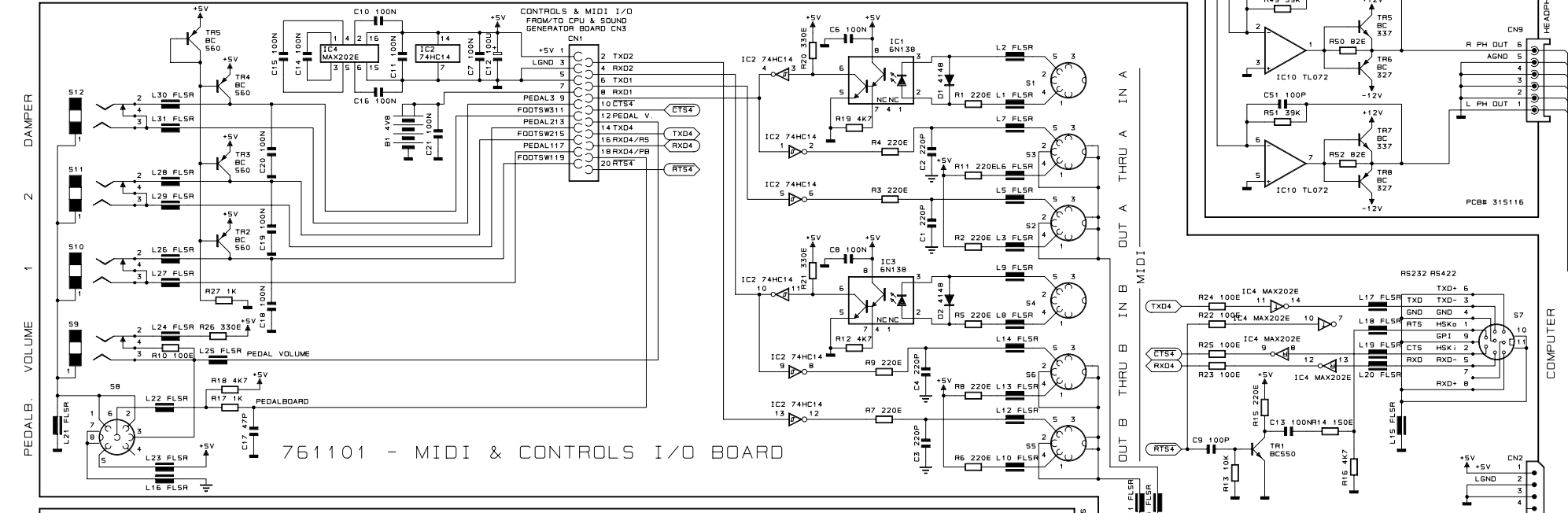
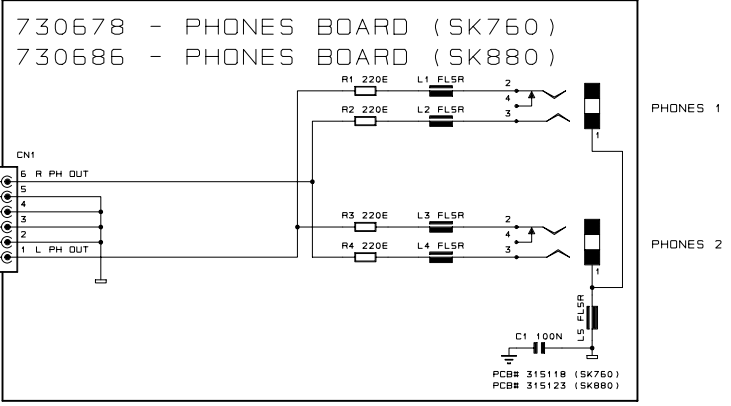
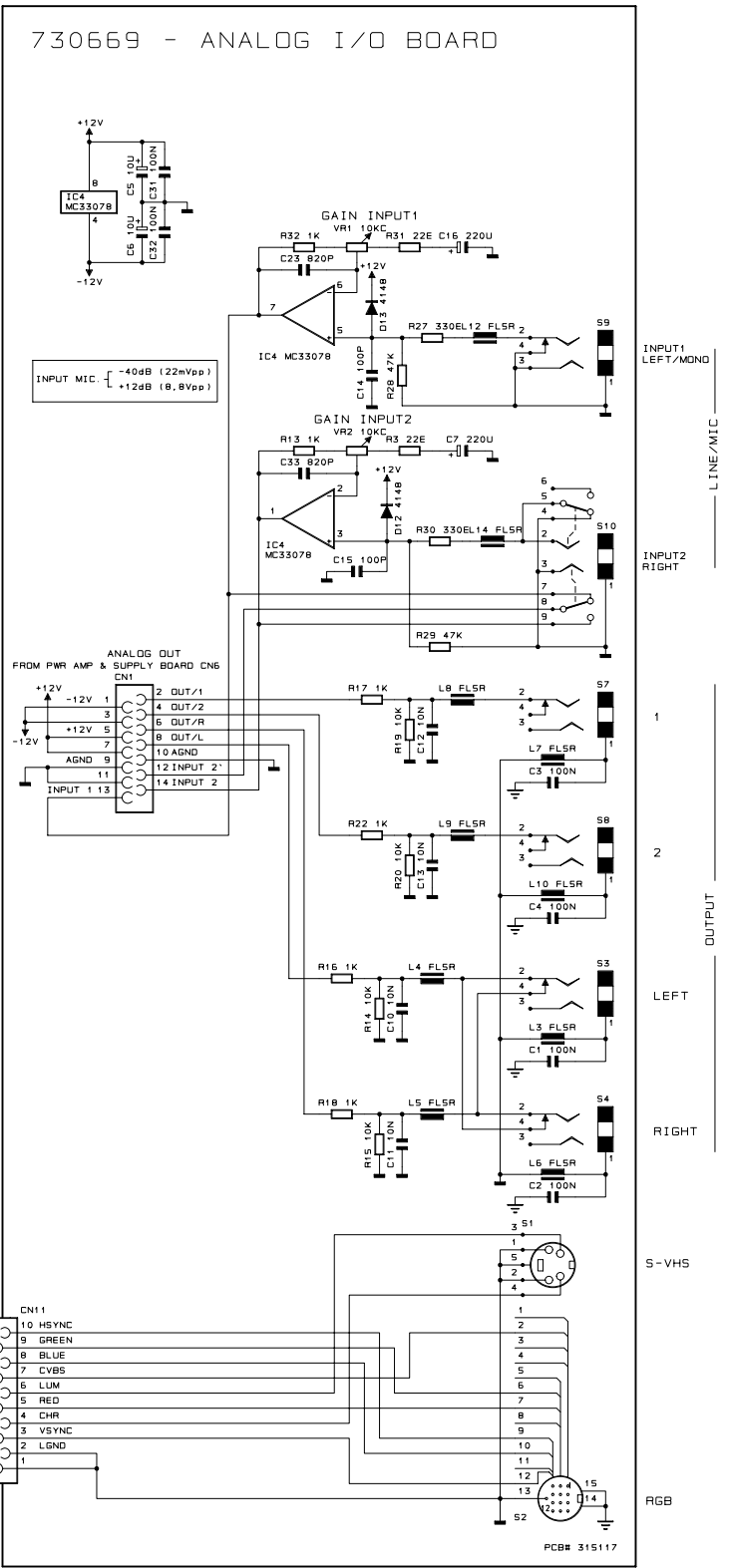
DRWG. Boccato DWG# 550175 PCB#
CKD N. Riccobelli DISK.S PART:1/1 SK760 - SK880 (TRF)
APP. G. Pannelli REV. 25/02/99 BLOCK DIAGRAM
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DRWG. Boccato DWG# 550176 PCB#
CKD N. Riccobelli DISK.S PART:1/1 SK760 - SK880 (SWT)
APP. G. Pannelli REV. 25/02/99 BLOCK DIAGRAM
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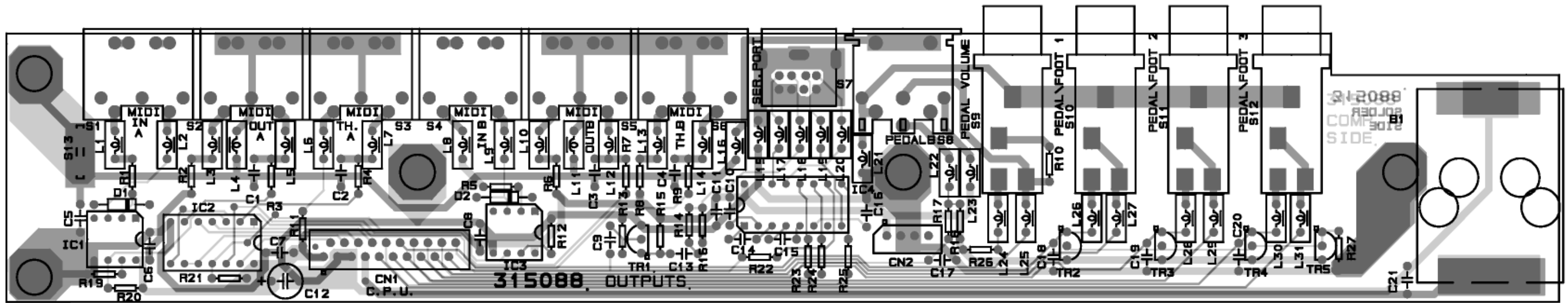


730668 - POWER AMPLIFIER & SUPPLY BOARD (TRF version)

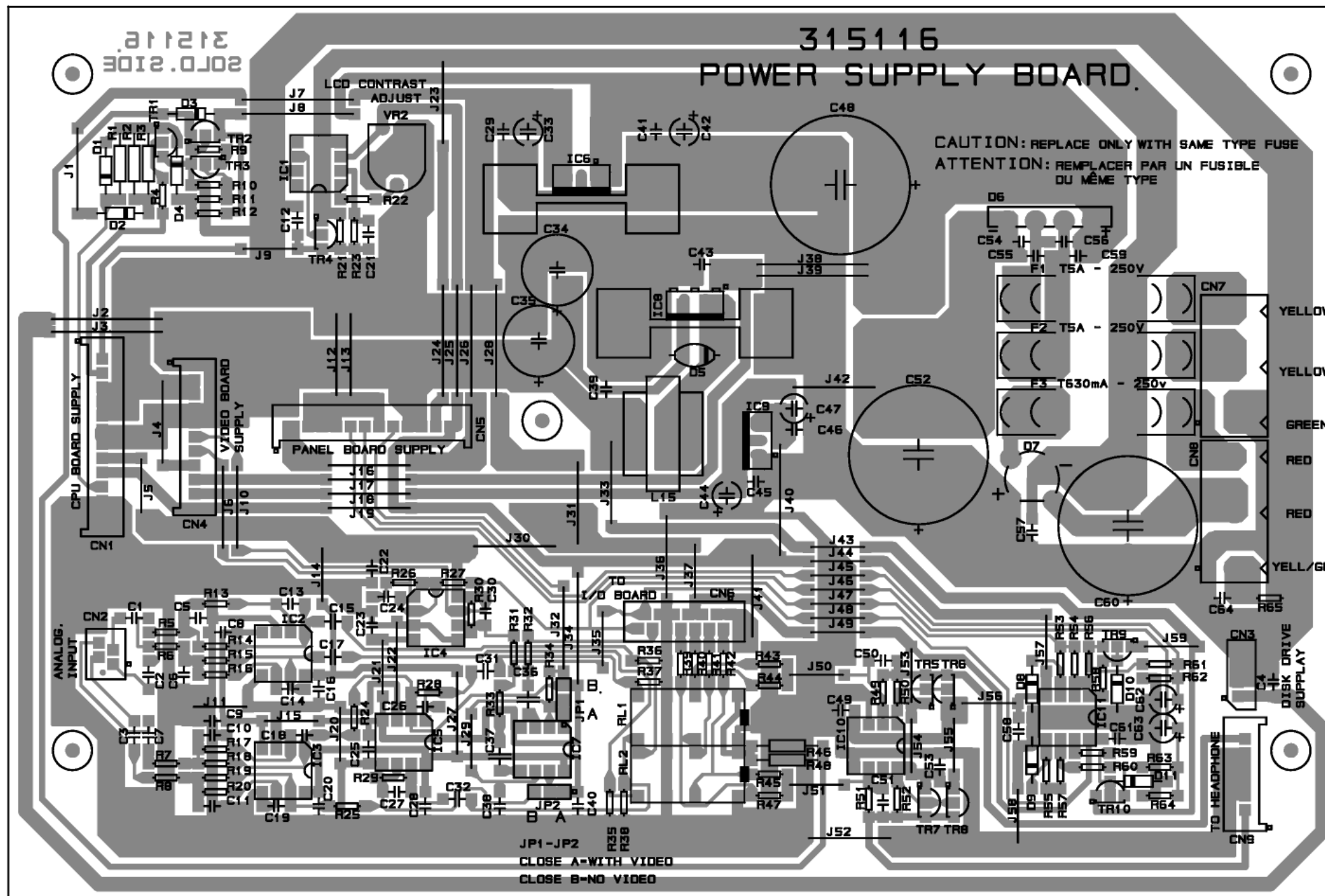


761101 - MIDI & CONTROLS I/O BOARD

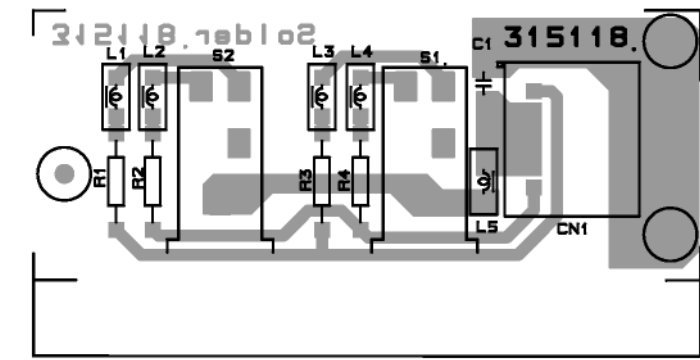
ADJUSTMENT TABLE						
N.	ADJUSTMENT TYPE	TEST POINT	KEY PRESSED	OPERATION POINT	READING VALUE	NOTE:
1	LCD CONTRAST ADJ.	SEE NOTE	NONE	VR2 POWER AMPLIFIER & SUPPLY BOARD	SEE NOTE	PUT THE CONTRAST POTENTIOMETER ON THE CONTROLS PANEL AT HALF STROKE, TURN THE TRIMMER TO OBTAIN THE BEST CONTRAST. VERIFY THE ADJUSTMENT MOVING THE POTENTIOMETER.
2	AFTERTOUCH ADJ.	VR1 SIDE CN15	ANY KEY	VR1	~2Vcc	APPLY A 700 (TP9) 1350 (TP10) g weight ON THE KEY FRONT END, TO OBTAIN A VALID MEASURE PRESS THE KEY NOTE TWO OR THREE TIMES WITH MORE PRESSURE. TURN THE TRIMMER TO HAVE THE VALUE SPECIFIED.
3	PITCH CENTRE ADJ.	R1 SIDE C1 CONTROLS PANEL BOARD	WHEEL AT CENTRE	VR11 CONTROLS PANEL BOARD	2.5Vcc	SET THE OSCILLOSCOPE ON D.C. AT 1V/div. 1ms/div. VERIFY THAT THE VOLTAGE VALUE SWING FROM 0 TO 5V WHEN YOU ROTATE THE WHEEL FROM MINIMUM TO MAXIMUM POSITION.
4	MODULATION CENTRE ADJ.	R8 SIDE C6 CONTROLS PANEL BOARD	WHEEL AT CENTRE	VR12 CONTROLS PANEL BOARD	2.5Vcc	SET THE OSCILLOSCOPE ON D.C. AT 1V/div. 1ms/div. VERIFY THAT THE VOLTAGE VALUE SWING FROM 0 TO 5V WHEN YOU ROTATE THE WHEEL FROM MINIMUM TO MAXIMUM POSITION.



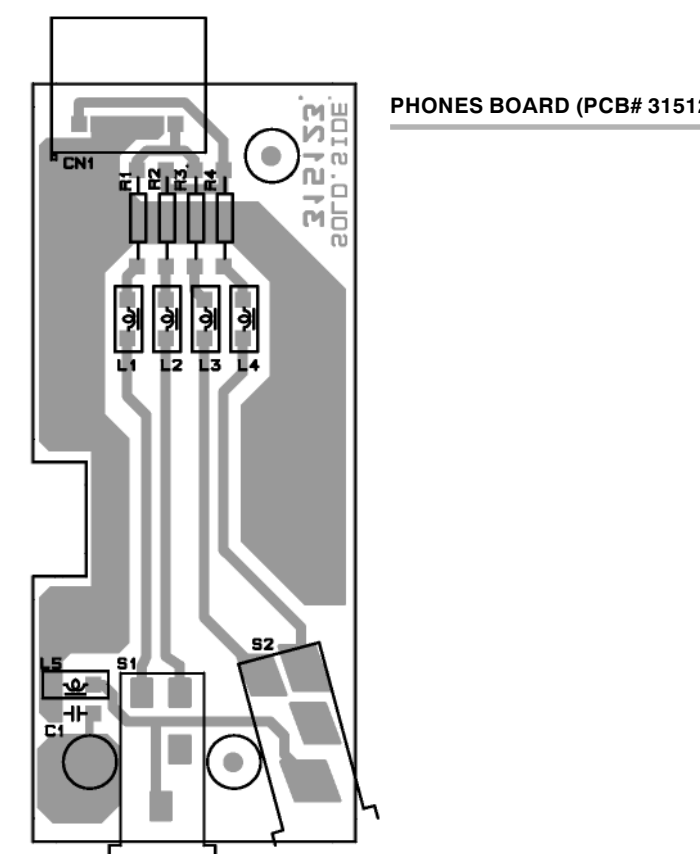
CONTROLS & MIDI I/O BOARD (PCB# 315088)



POWER SUPPLY BOARD (PCB# 315116) TRF version

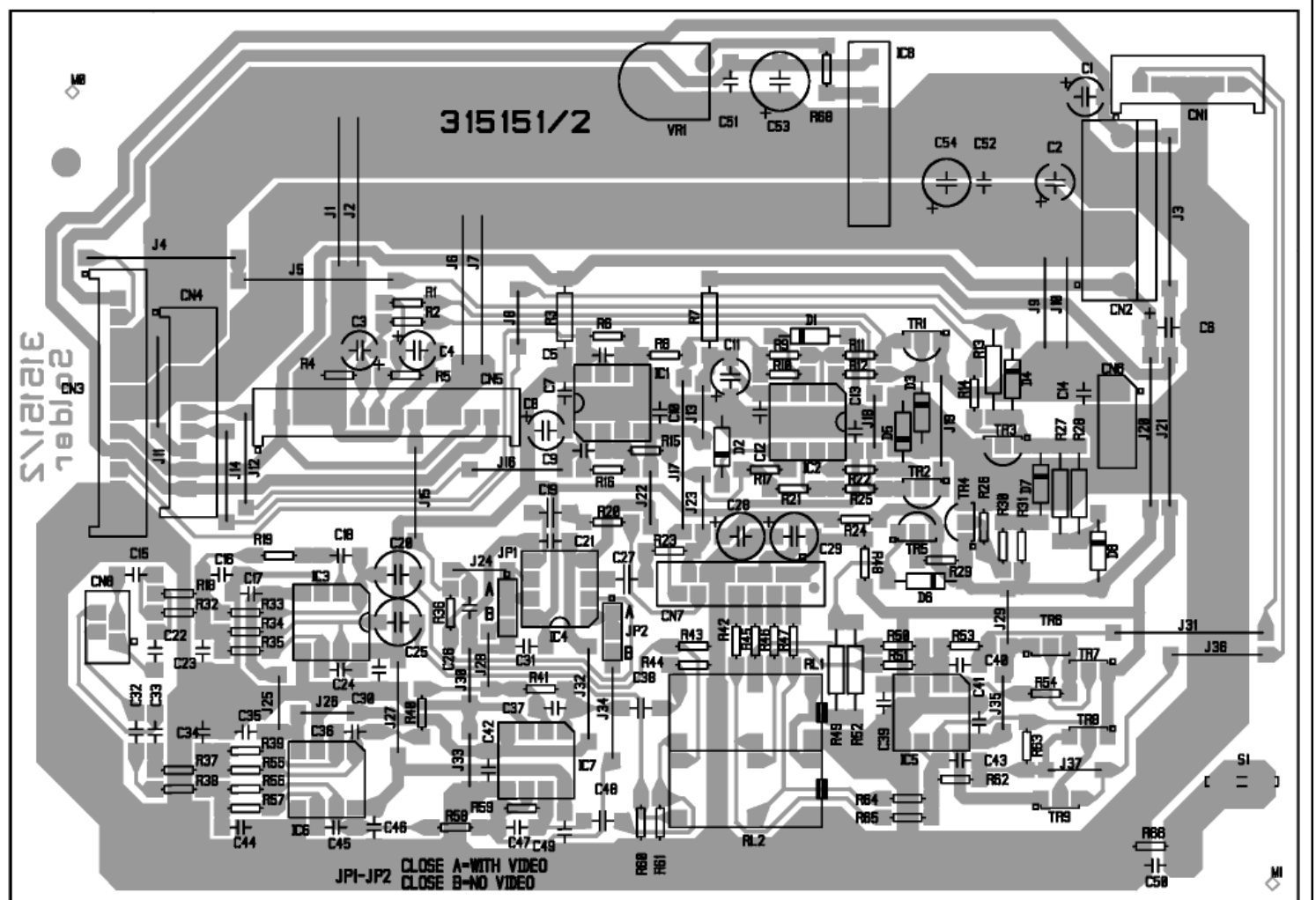
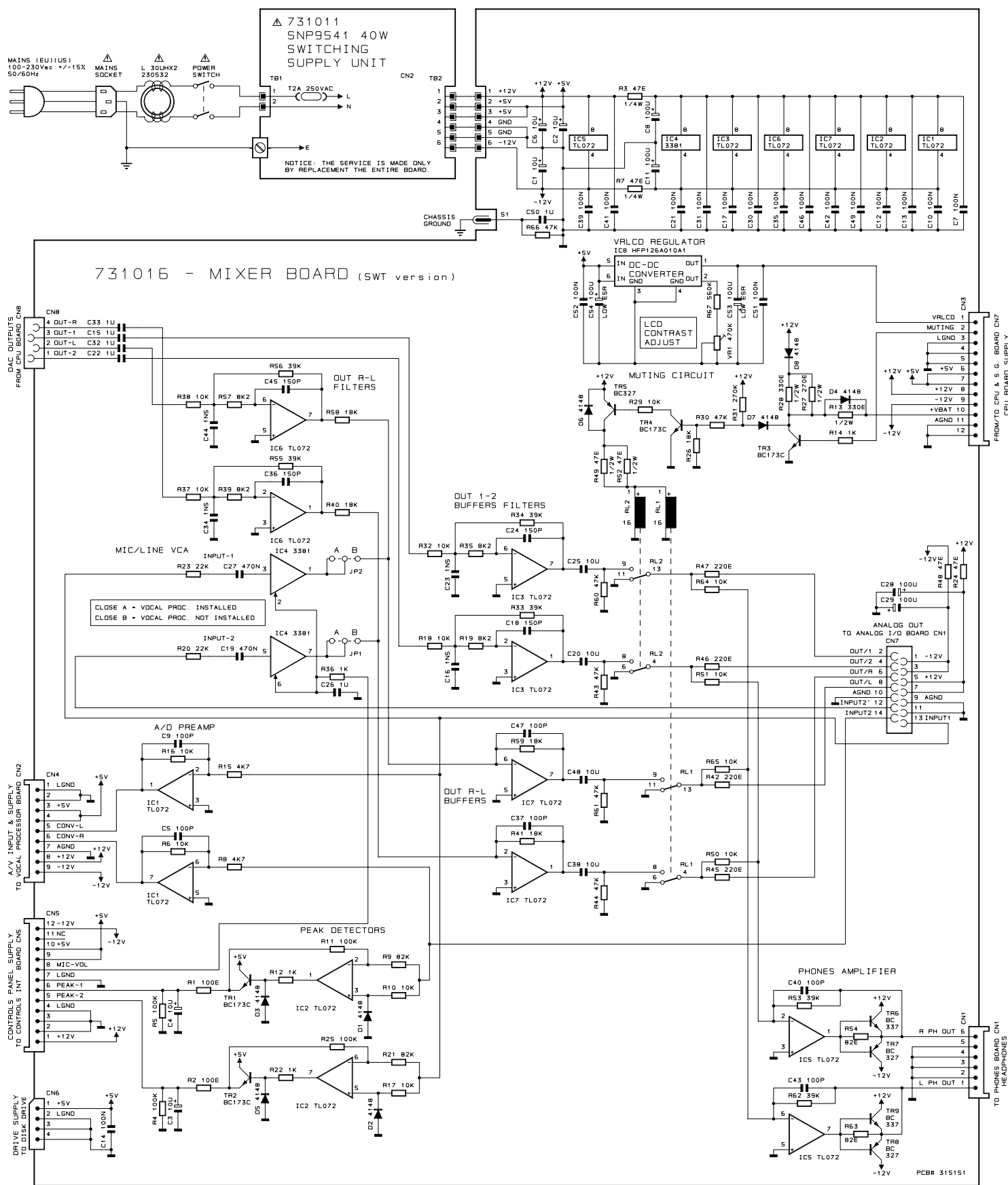


PHONES BOARD (PCB# 315118)

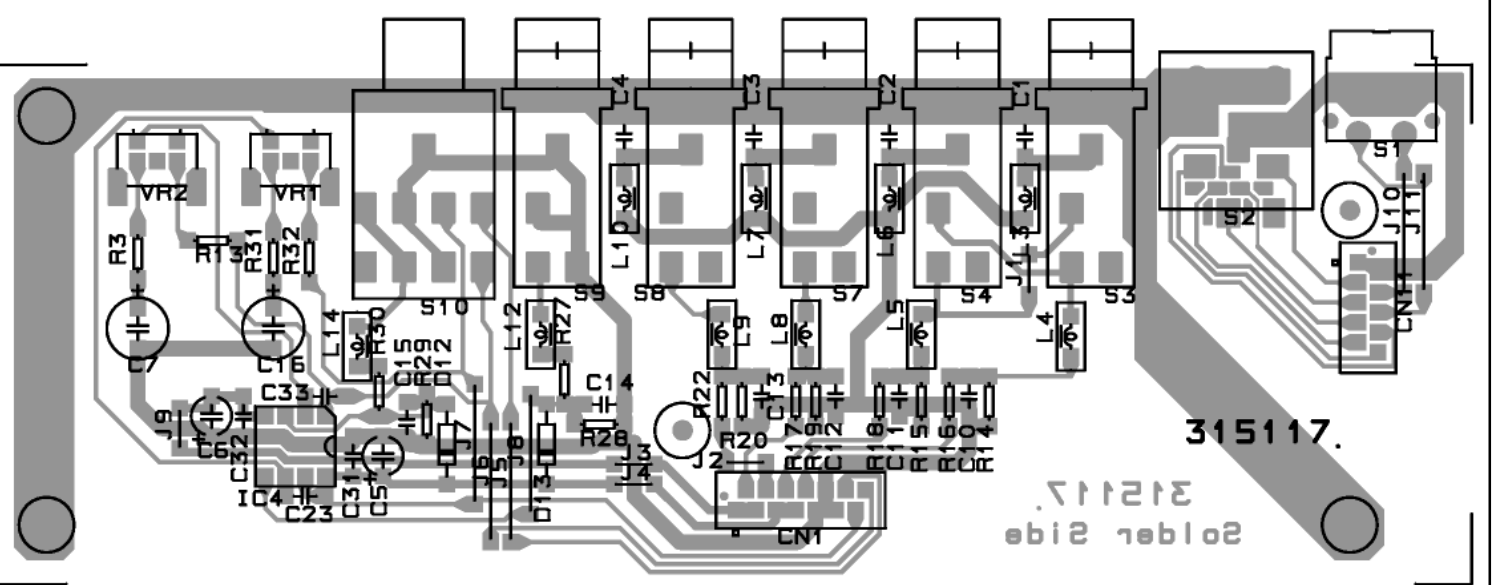


PHONES BOARD (PCB# 315123)

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CKD: RICCABELLI	DISK 5 PART: 1/1	Power Supply (TRF), Phones and Controls & MIDI I/O Board Pcb Layouts	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP: PANNELLI	REV: 25-02-99		



MIXER BOARD (PCB# 315151-2) SWT version.



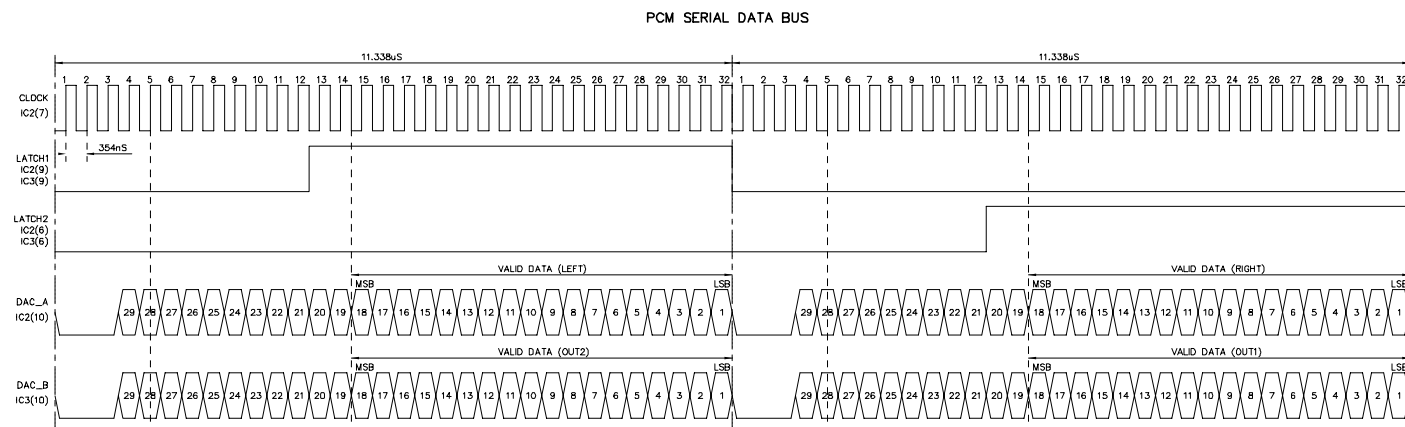
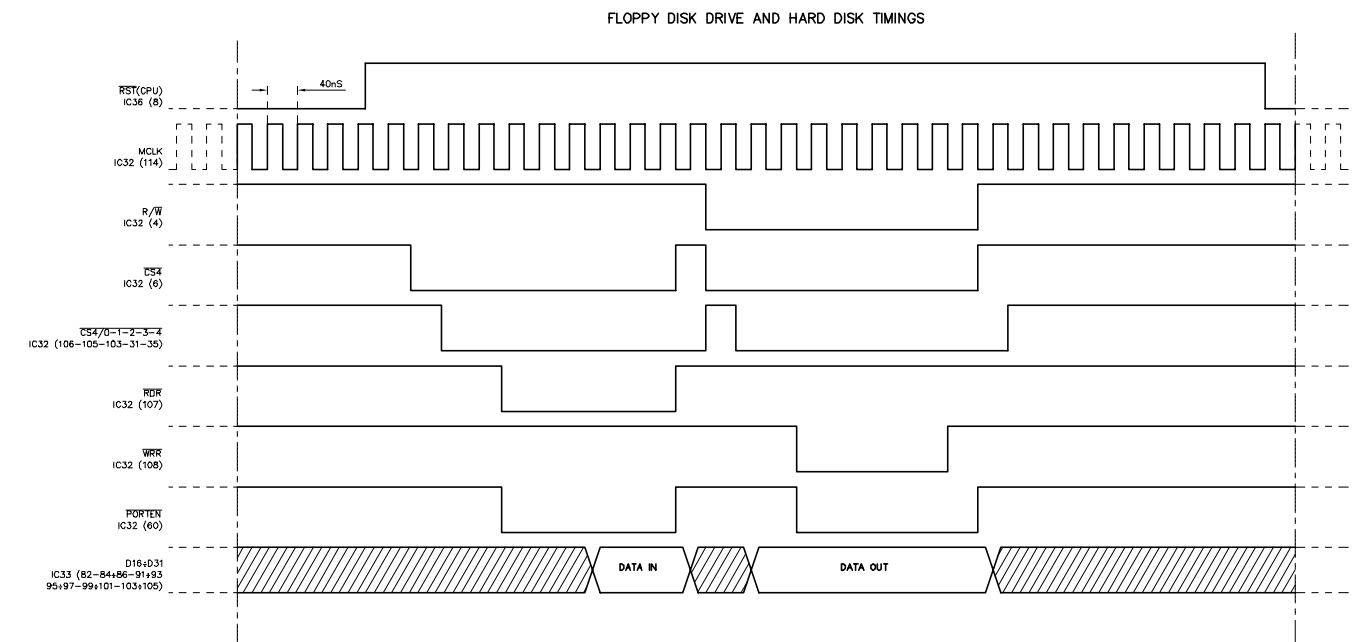
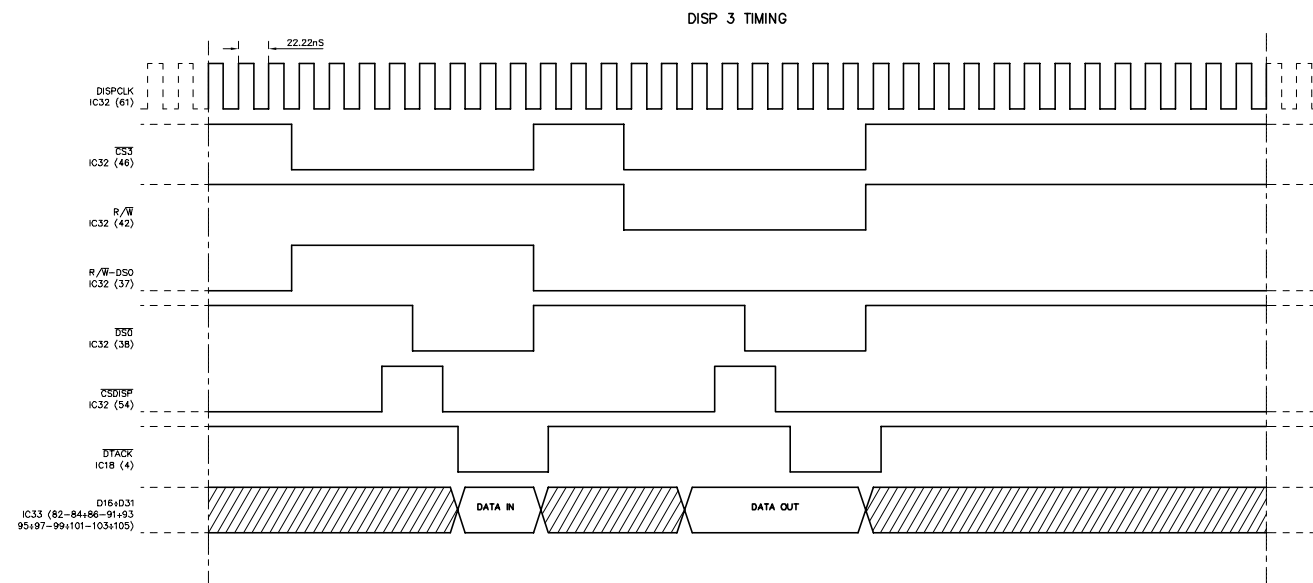
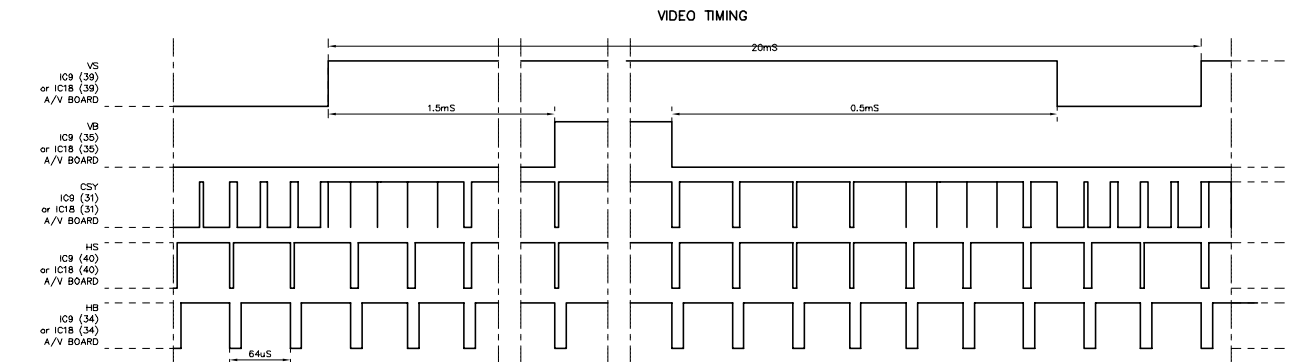
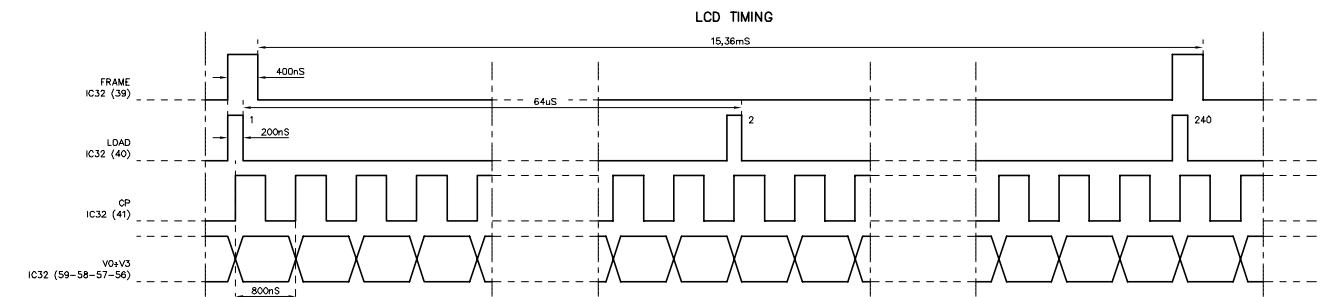
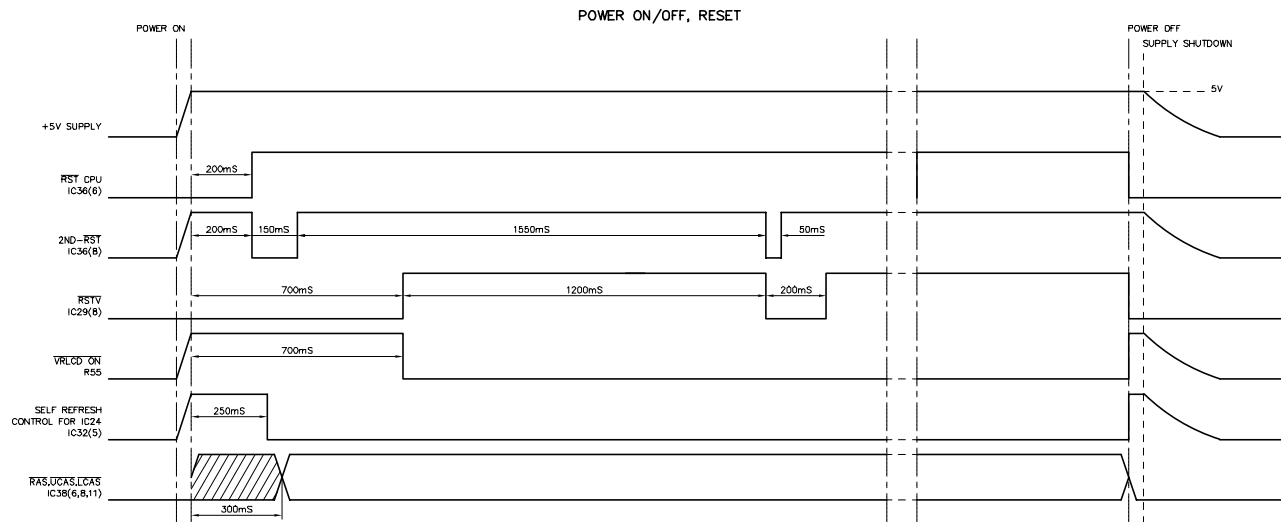
ANALOG I/O BOARD (PCB# 315117).

ADJUSTMENT TABLE

N.	ADJUSTMENT TYPE	TEST POINT	KEY PRESSED	OPERATION POINT	READING VALUE	NOTE:
1	LCD CONTRAST ADJ	SEE NOTE	NONE	VR1 MIXER BOARD	SEE NOTE	PUT THE CONTRAST POTENTIOMETER ON THE CONTROLS PANEL AT HALF STROKE, TURN THE TRIMMER TO OBTAIN THE BEST CONTRAST, VERIFY THE ADJUSTMENT MOVING THE POTENTIOMETER.
2	AFTERTOUCH ADJ	VR1 SIDE CN15	ANY KEY	VR1	~2Vcc	APPLY A 700 (TP9) 1350 (TP10) GRAPE WEIGHT ON THE KEY FRONT END, TO OBTAIN A VALID MEASURE PRESS THE KEY TWO OR THREE TIMES WITH MORE PRESSURE, TURN THE TRIMMER TO HAVE THE VALUE SPECIFIED.
3	PITCH CENTRE ADJ	R1 SIDE C1 CONTROLS PANEL BOARD	WHEEL AT CENTRE	VR11 CONTROLS PANEL BOARD	2.5Vcc	SET THE OSCILLOSCOPE ON D.C. AT 1V/div, 1ms/div, VERIFY THAT THE VOLTAGE VALUE SWING FROM 0 TO 5V WHEN YOU ROTATE THE WHEEL FROM MINIMUM TO MAXIMUM POSITION.
4	MODULATION CENTRE ADJ	R8 SIDE C6 CONTROLS PANEL BOARD	WHEEL AT CENTRE	VR12 CONTROLS PANEL BOARD	2.5Vcc	SET THE OSCILLOSCOPE ON D.C. AT 1V/div, 1ms/div, VERIFY THAT THE VOLTAGE VALUE SWING FROM 0 TO 5V WHEN YOU ROTATE THE WHEEL FROM MINIMUM TO MAXIMUM POSITION.

DRW BOCCATO	DWG# 550178	PCB# 315151	MUSIC MEDIA SOFT s.r.l.
DEPT RICCOBELLI	DATE 5/1/1	DESCRIPTION SK760-880 (SWT)	ALL RIGHTS ARE RESERVED, NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY MMS s.r.l.
PART#PANNELL1	REV# 24-02-99	MIXER BOARD	

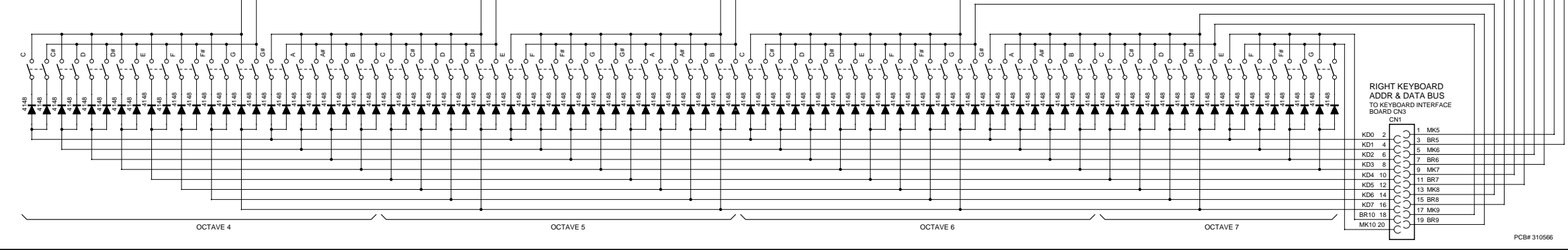
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CKD: RICCOBELLI	DISK: 5 PART: 1/1	Mixer Board and Analog I/O Board Pcb Layouts	ALL RIGHTS ARE RESERVED, NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
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NOTE: ALL COMPONENTS PIN REFERENCE ARE LOCATED ON "CPU & SOUND GENERATOR BOARD" UNLESS OTHERWISE SPECIFIED.

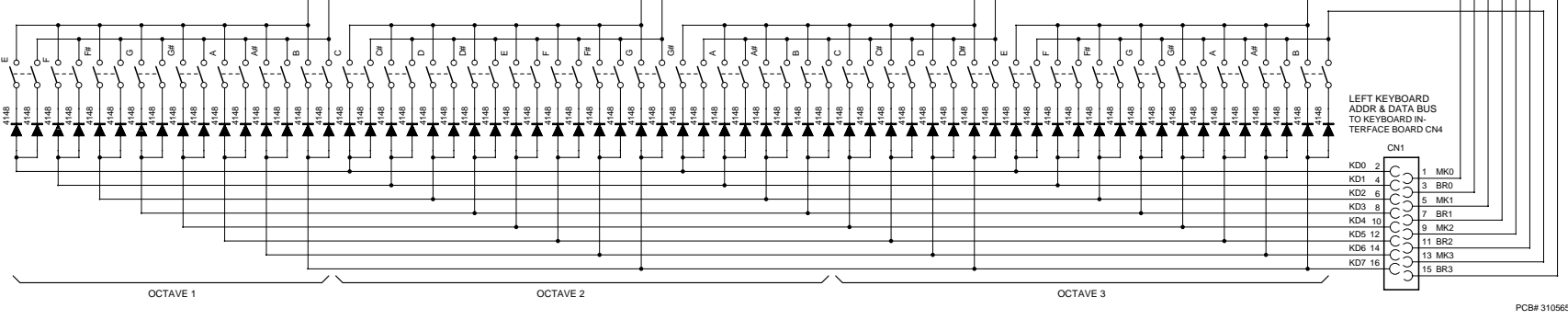
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CKD RICCABELLI	DISK: 64 PART:		ALL RIGHTS ARE RESERVED. NO COPIES
APP. PANNELLI	REV: 17-04-98	TIMING TABLE	OR REPRODUCE THIS DOCUMENT WITHOUT
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810557
44N RIGHT CONTACTS
BOARD
 (76NOTES DYNAMIC KEYBOARD)



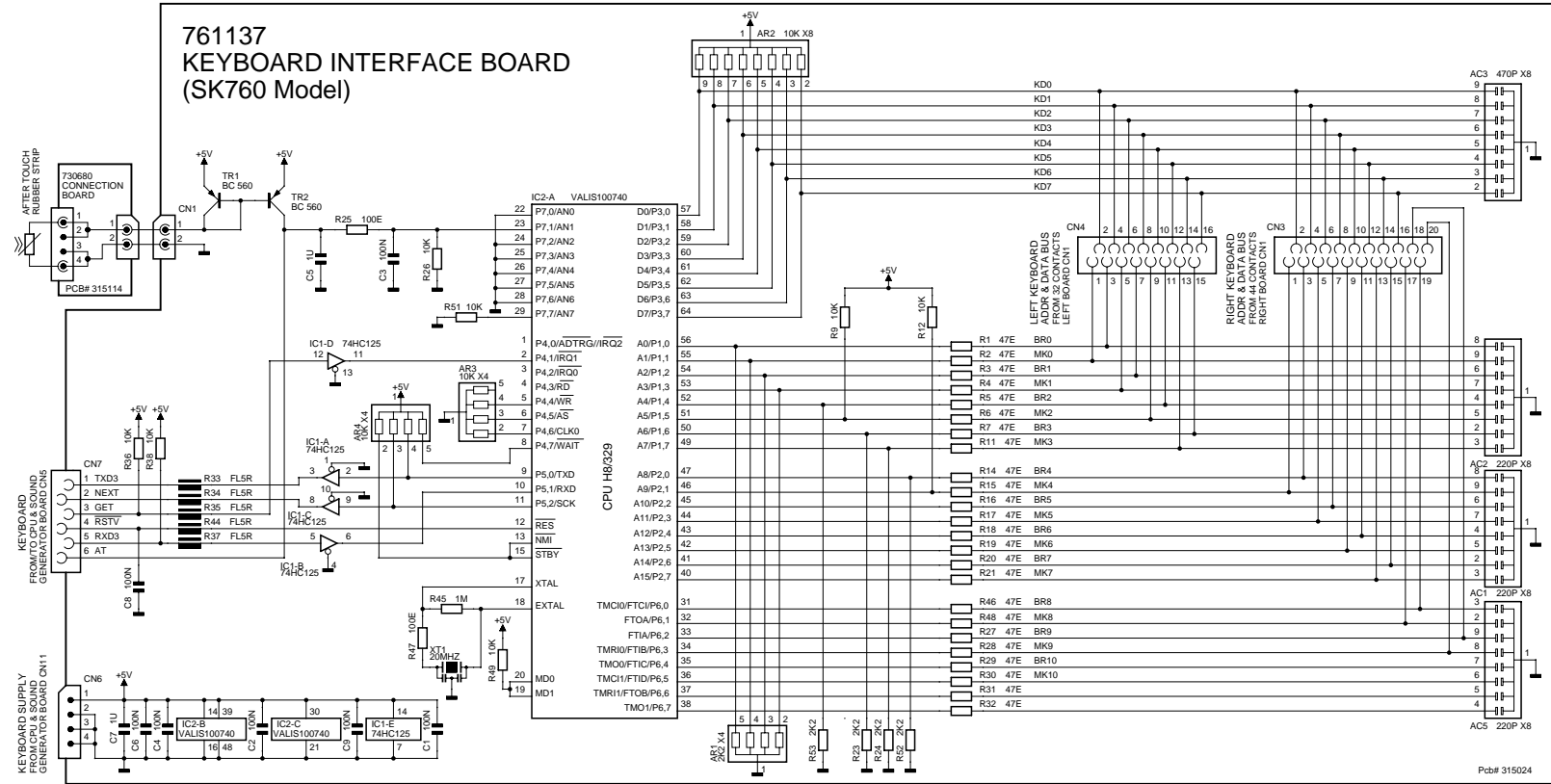
PCB# 310566

810556
32N LEFT CONTACTS
BOARD
 (76NOTES DYNAMIC KEYBOARD)



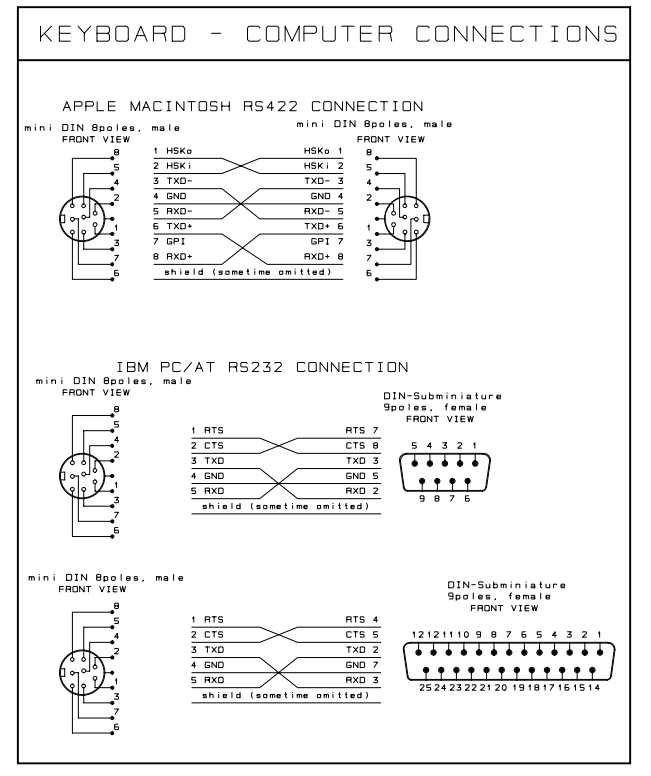
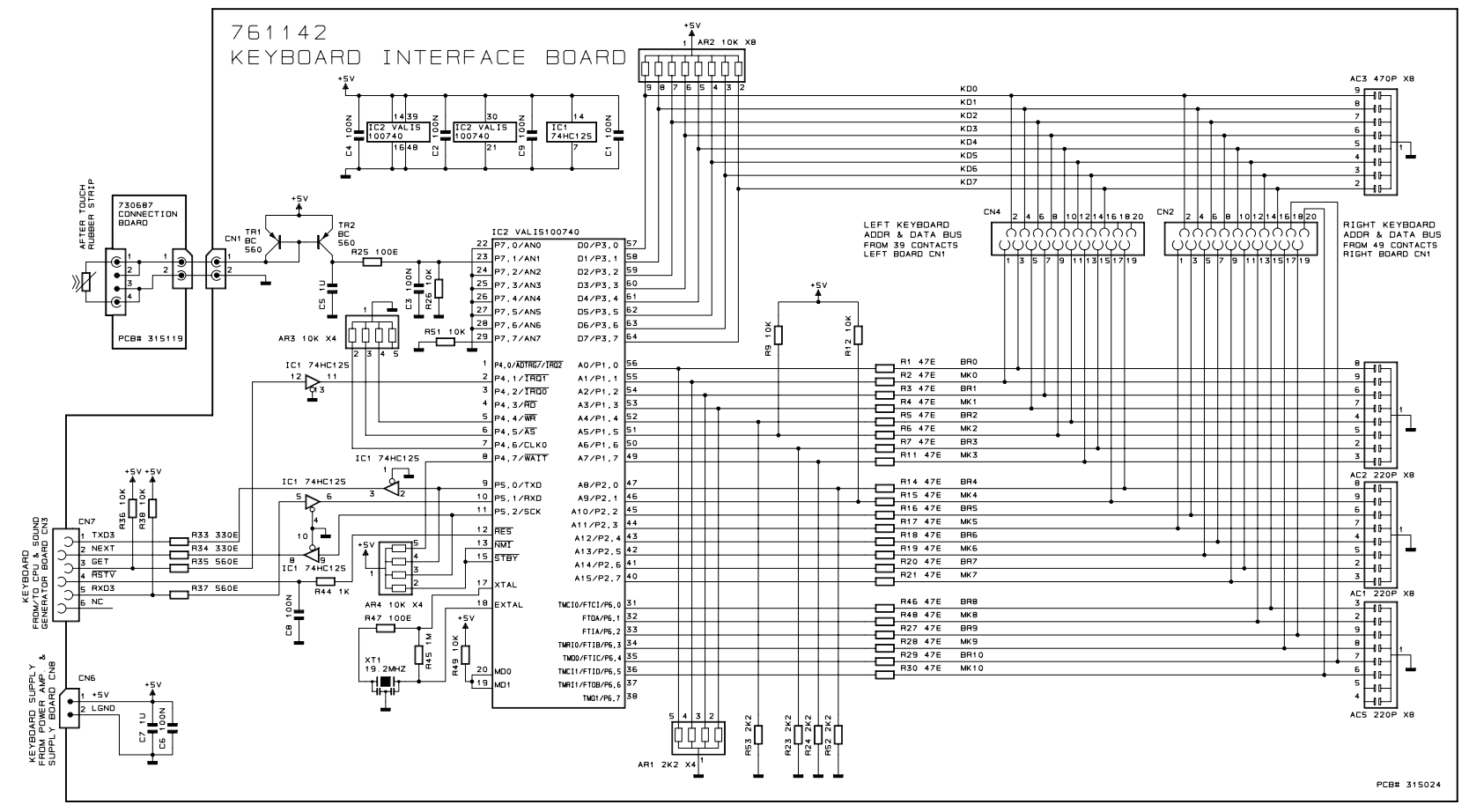
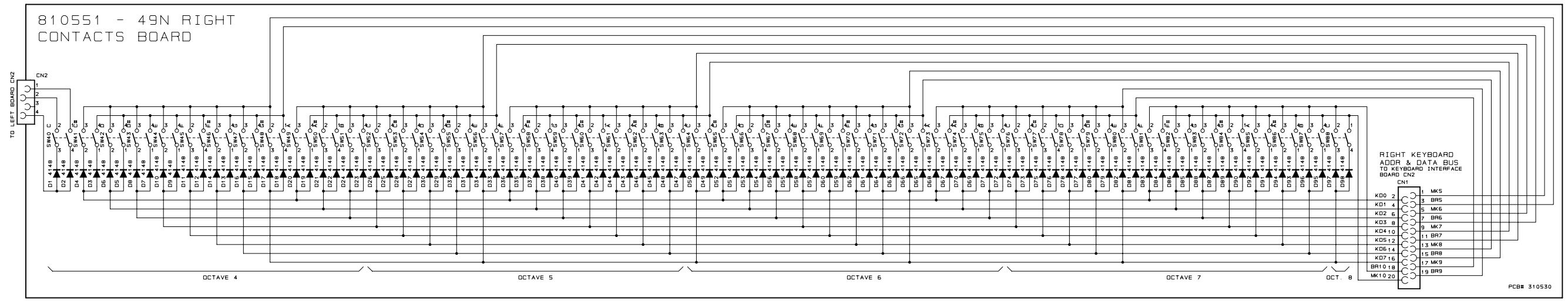
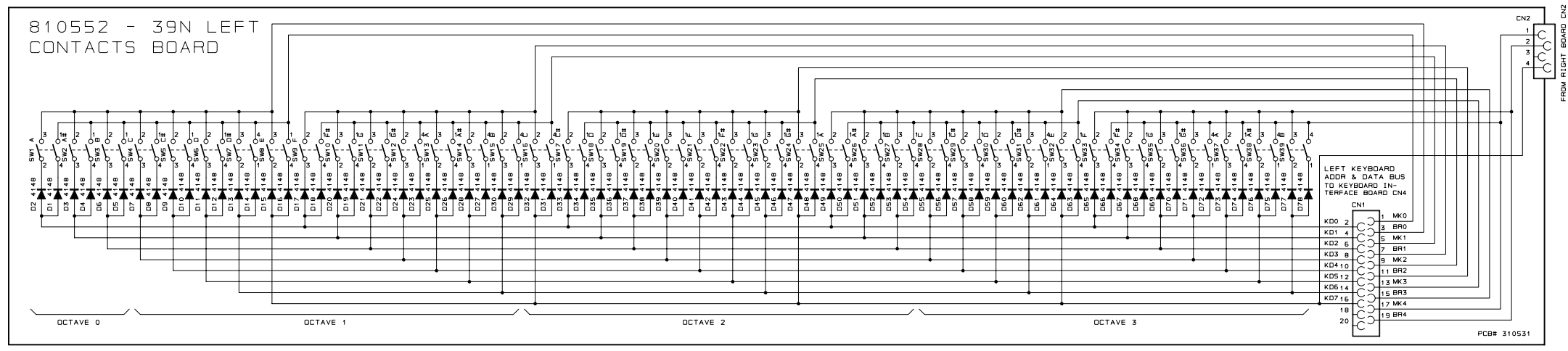
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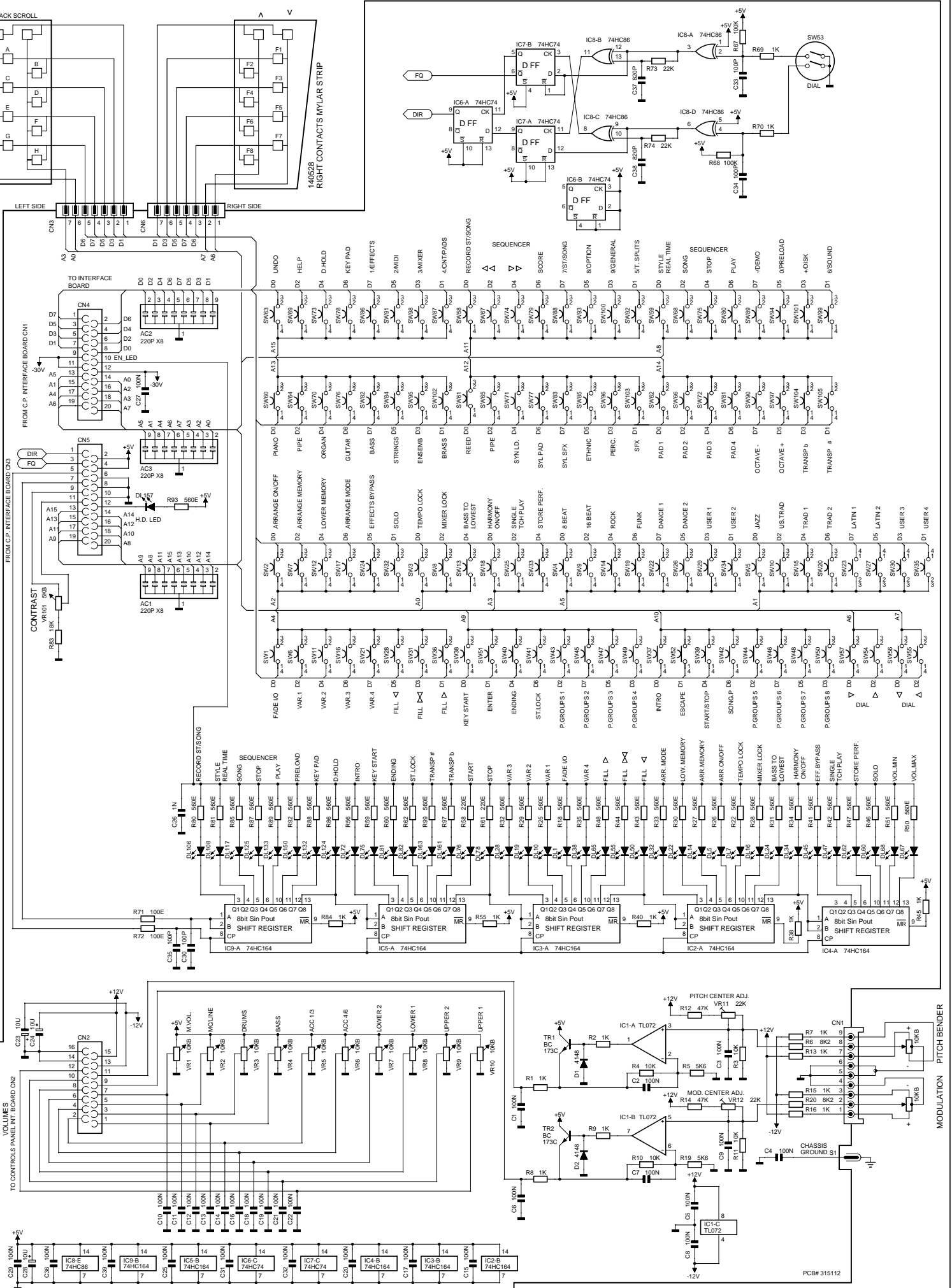
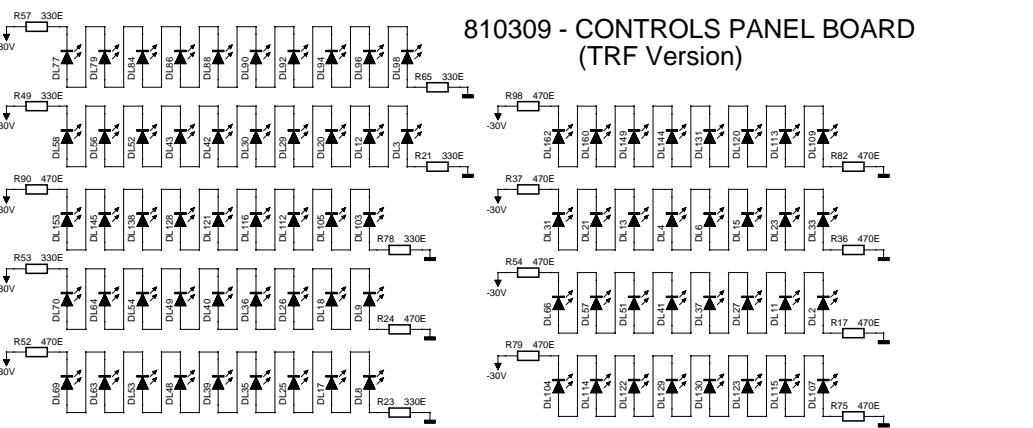
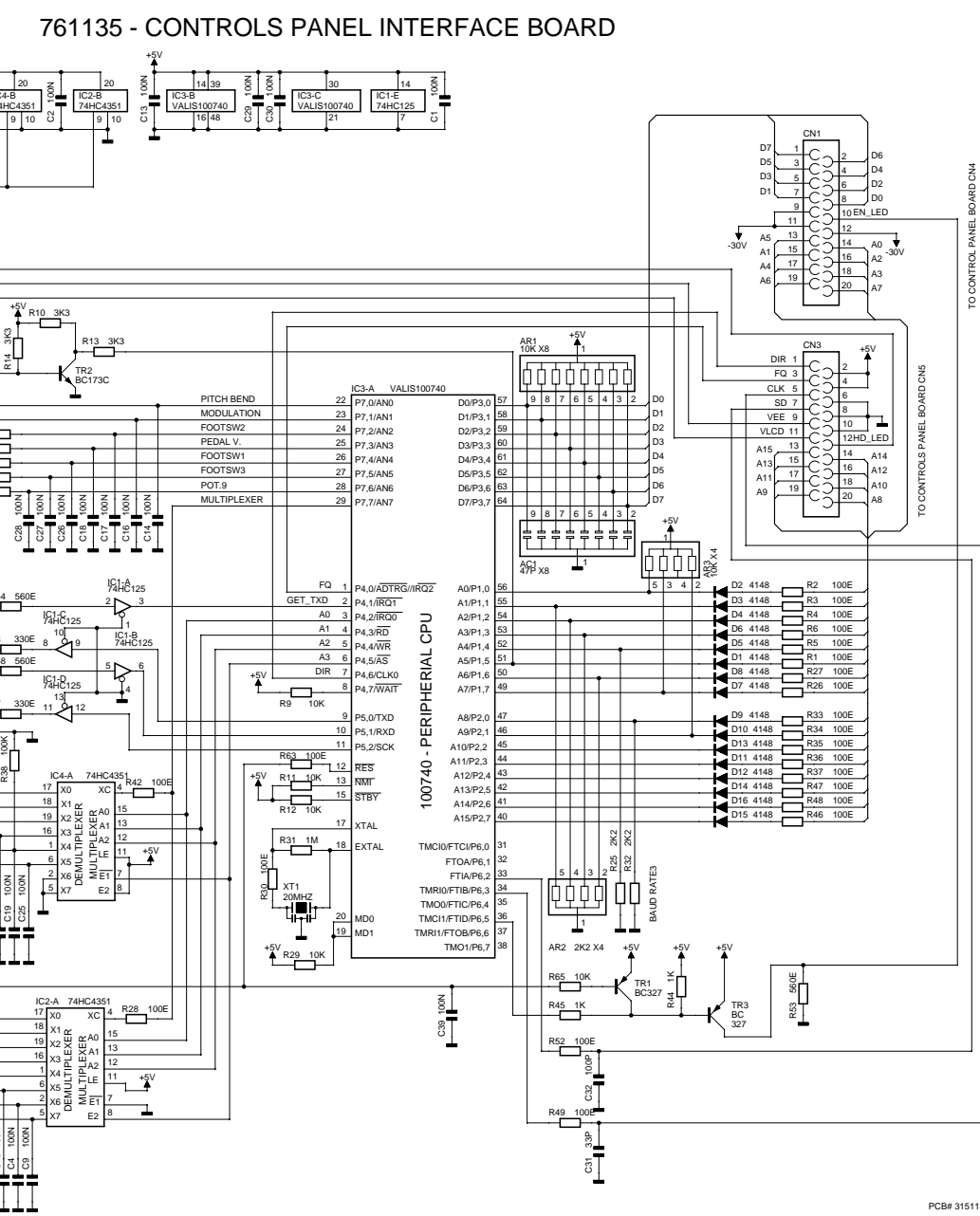
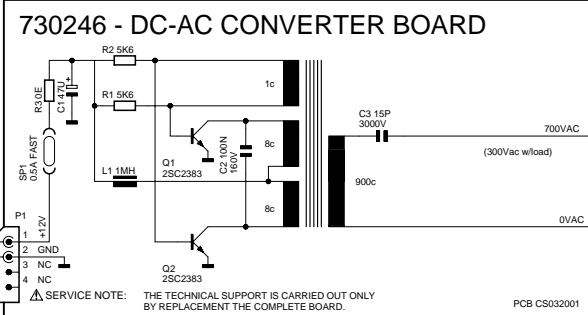
761137
KEYBOARD INTERFACE BOARD
 (SK760 Model)



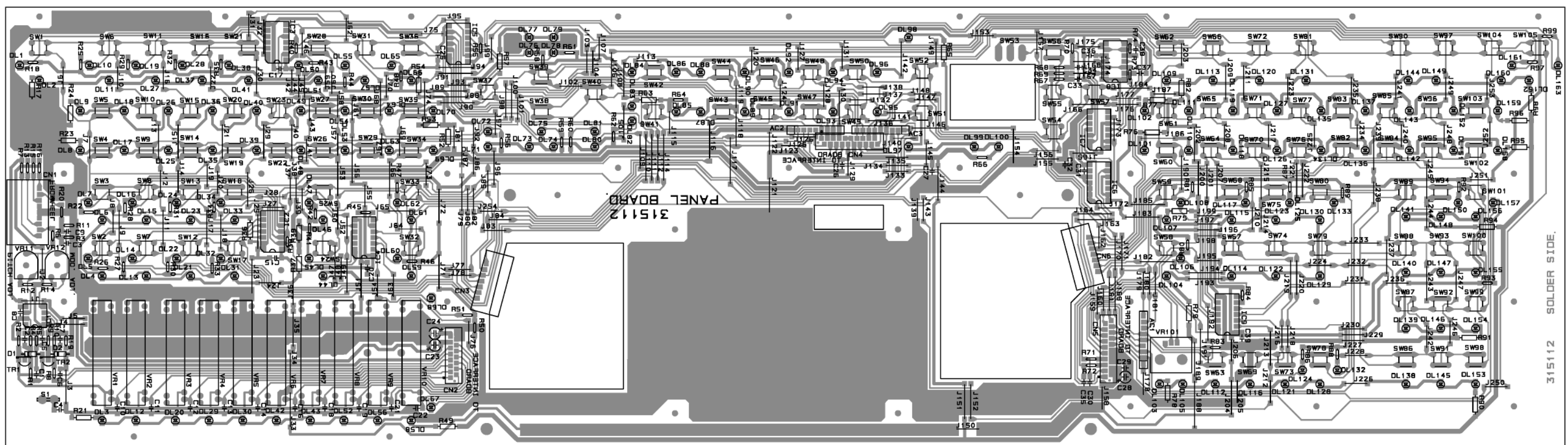
PCB# 315024

DRW: BOCCATO	DWG#: 550180	PCB#: 310565	310566	315024	GENERALMUSIC S.p.A. ITALY
CKD: RICCOBELLI	DSK# 5 PART: 1/1	SCHEMATIC DIAGRAM SK760 CONTACTS BOARD & KEYBOARD INTERFACE BOARD			ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP: PANNELLI	REV: 22/02/99				

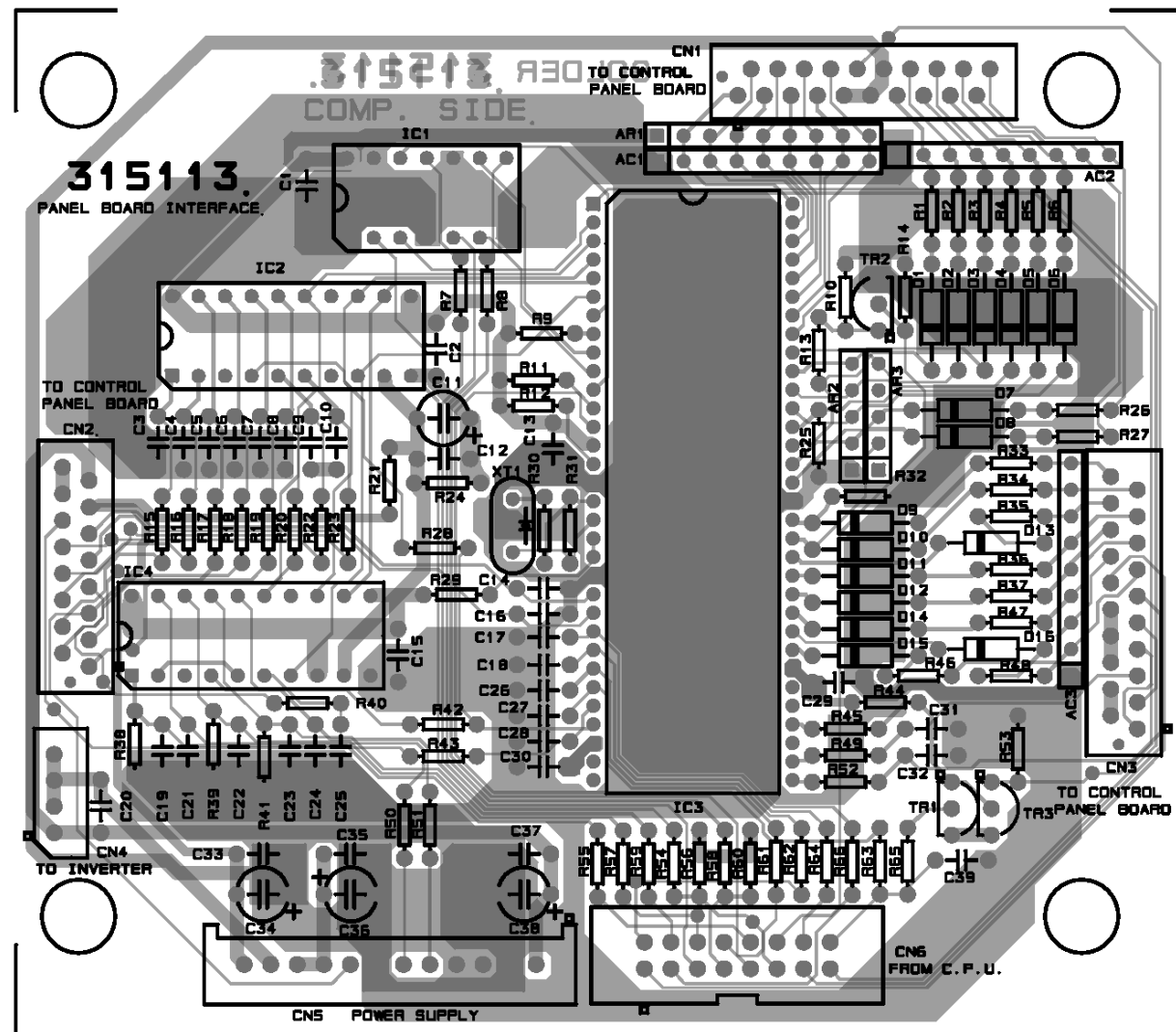




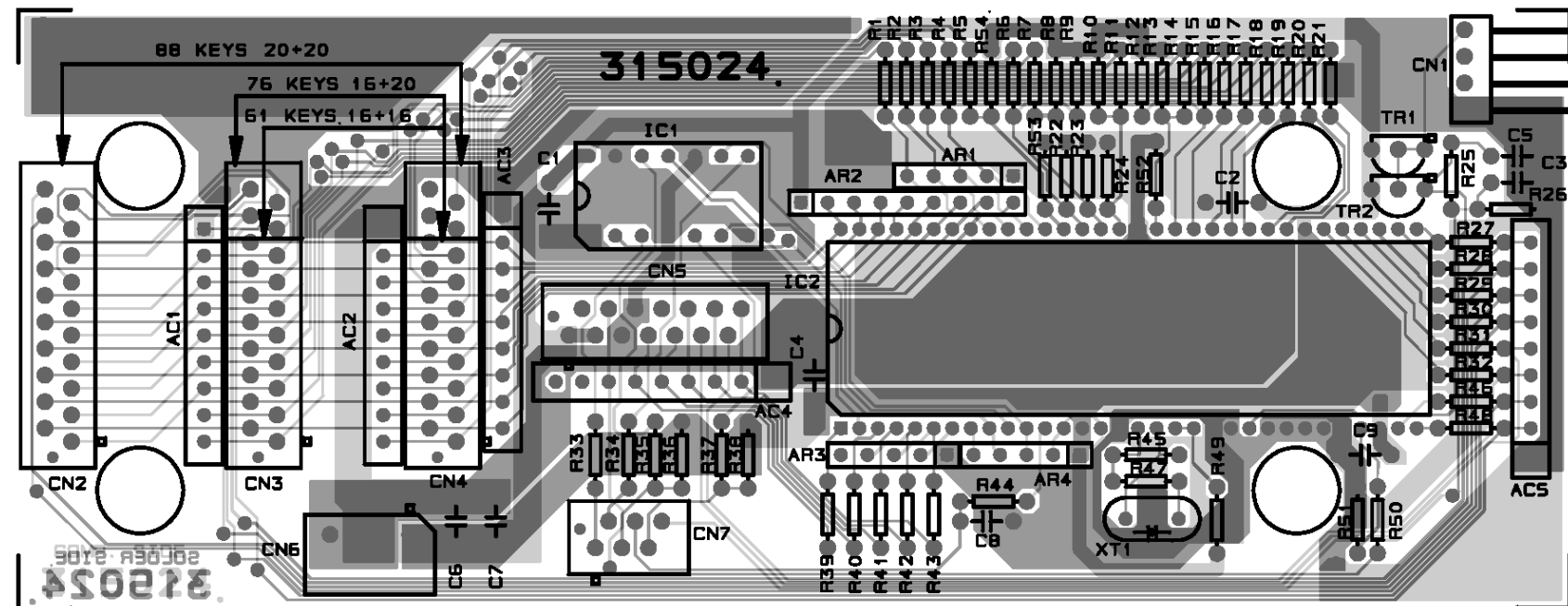
DRW G.BOCCATO	DWG# 550182	PCB# 315112/315113/CS032001	GENERALMUSIC S.p.A. ITALY
CXD RICCABELLI	DSK# 5 PART: 1/1	SCHMATIC DIAGRAM (8/76/0/880 (TRF))	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCTIONS WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP PANNELLI	REV: 25/02/99	CONTROLS PANEL BOARDS	



CONTROLS PANEL BOARD (TRF)(PCB# 315112) (reverse layout)

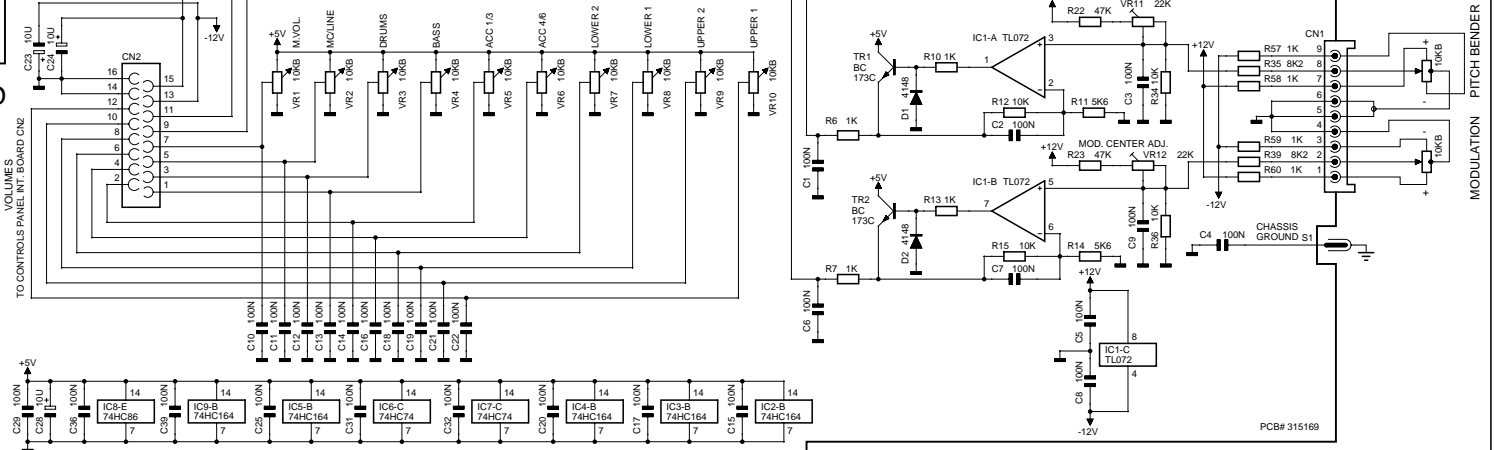
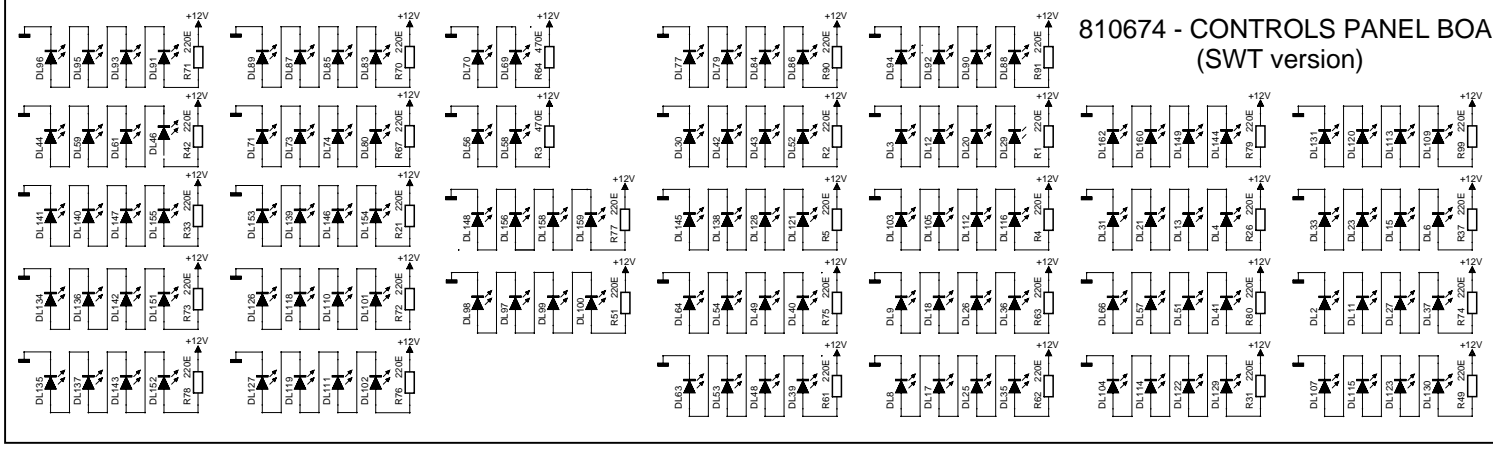
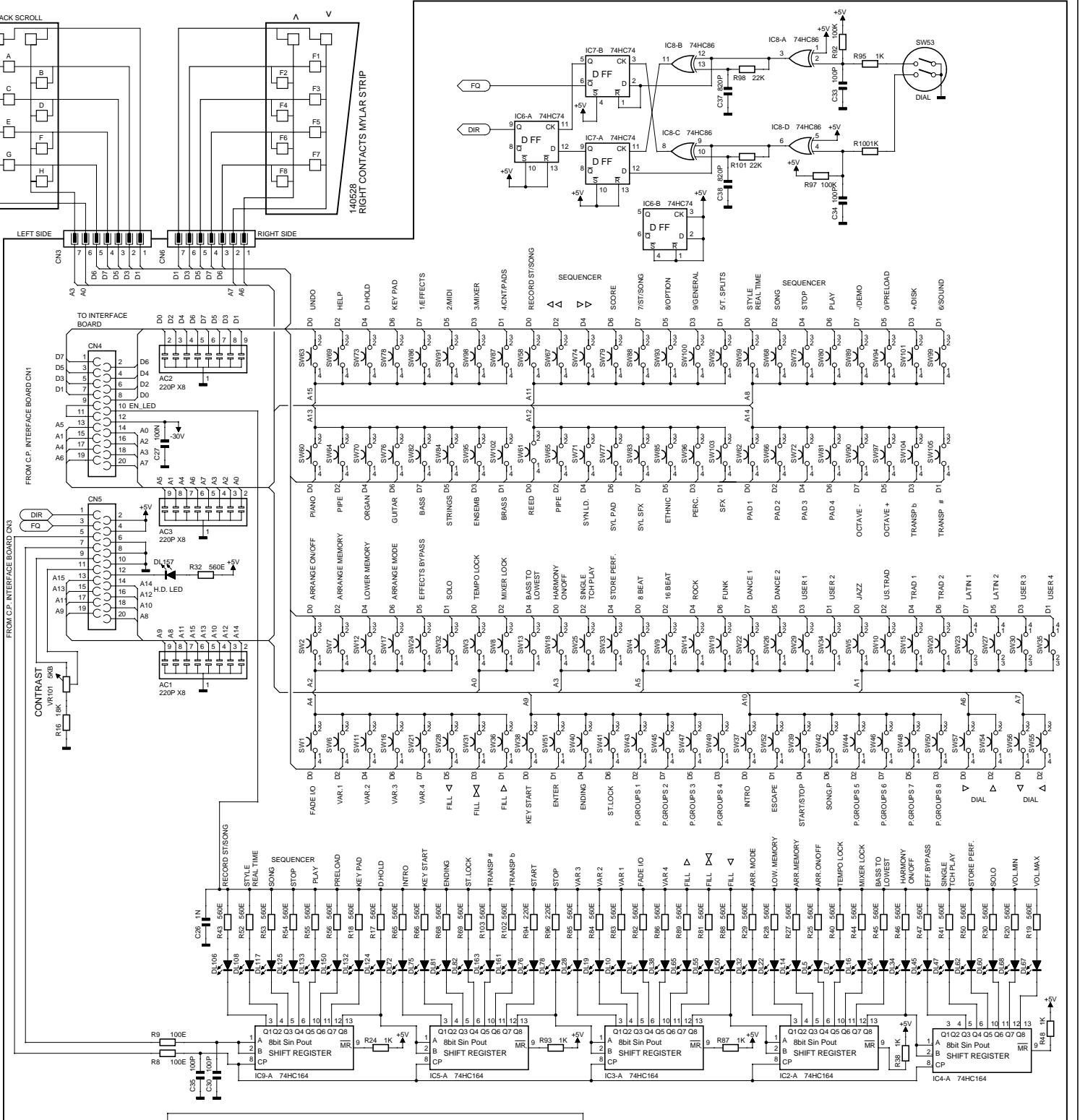
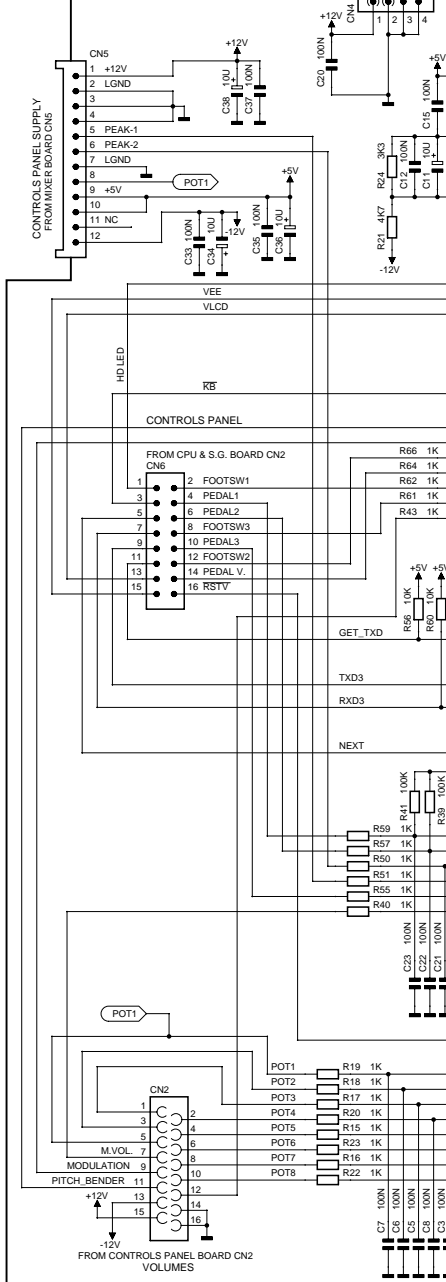
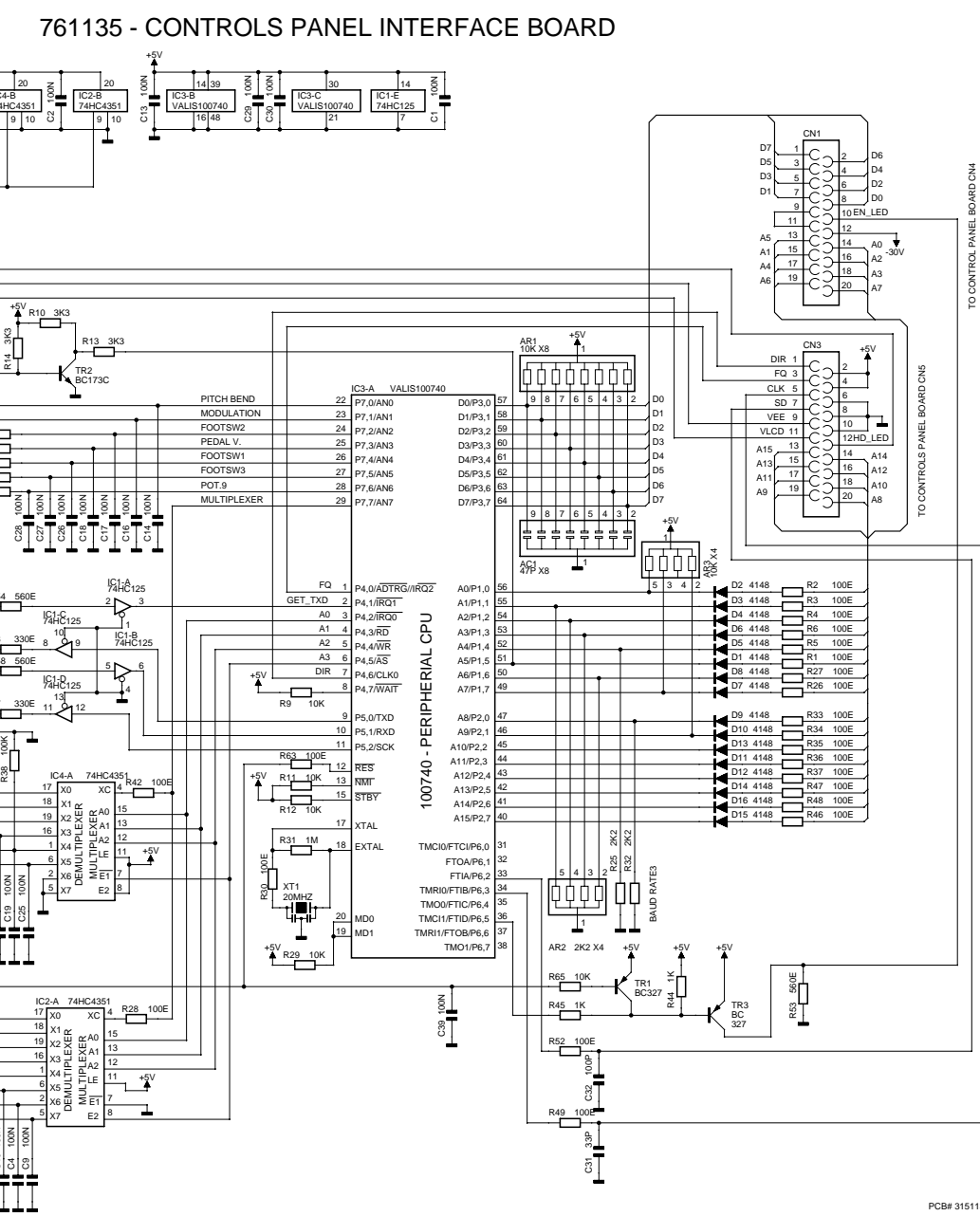
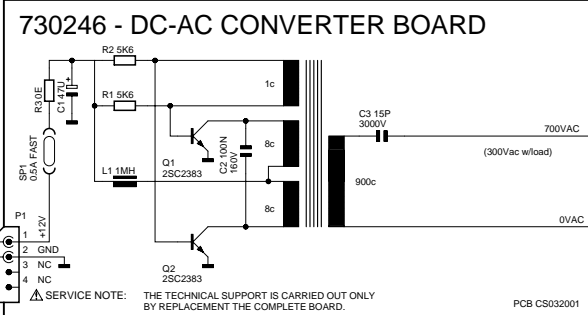


CONTROLS PANEL INTERFACE BOARD (PCB# 315113)

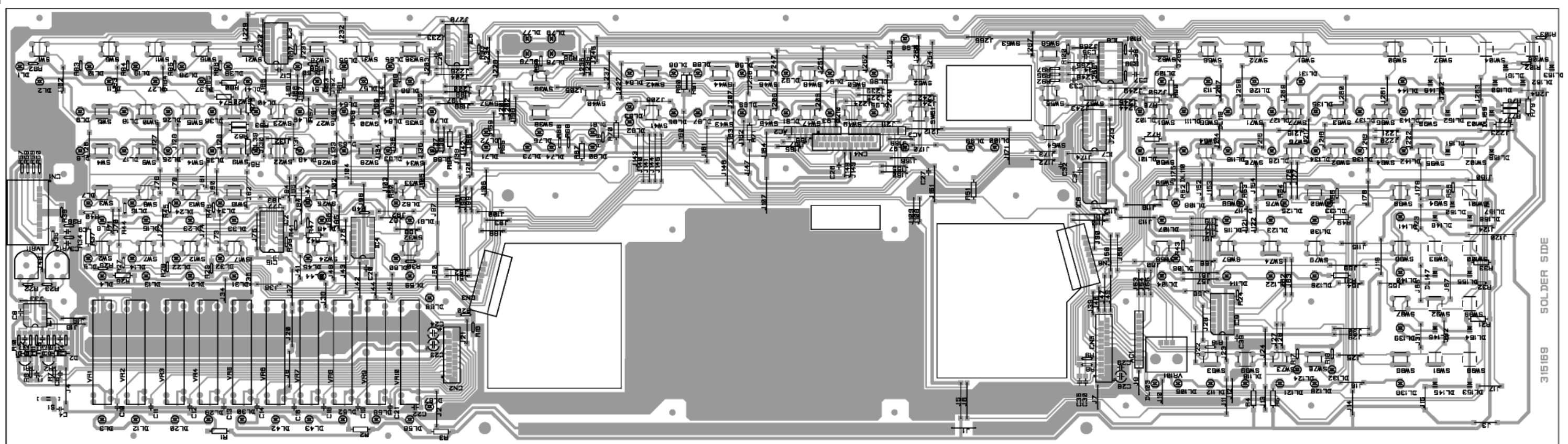


KEYBOARD INTERFACE BOARD (PCB# 315024)

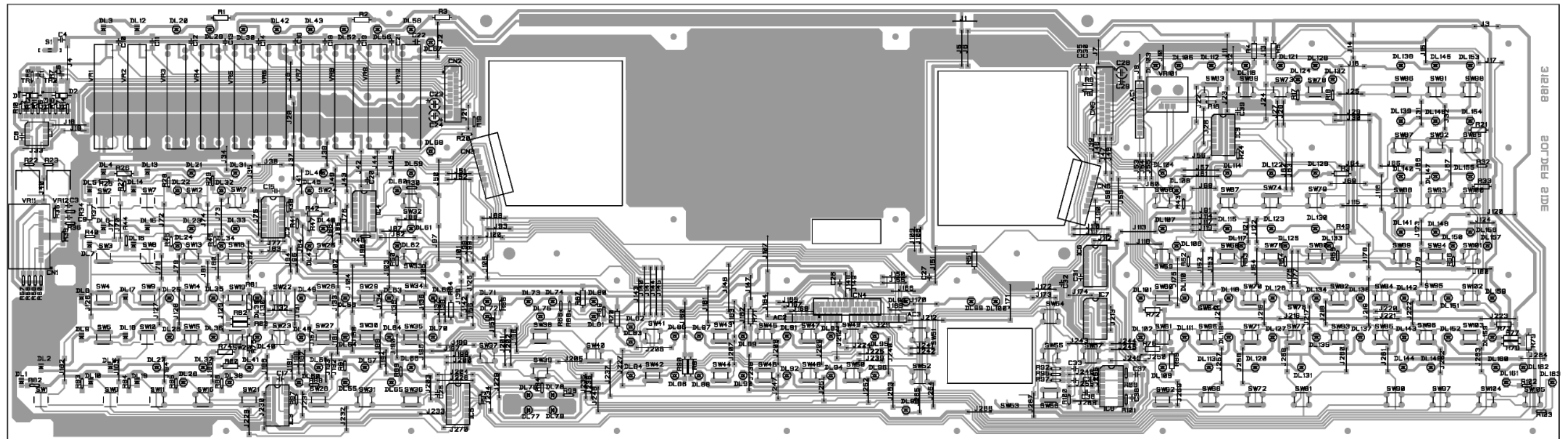
DRW: BOCCATO	DWG: 315112/113 315024	SCHEMATIC DIAGRAM SK760/880	GENERALMUSIC S.p.A. Italy
CKD: RICCABELLI	DISK 5 PART: 1/1	Controls Panel with its Interface and Keyboard Interface Board Pcb Layouts	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP: PANNELLI	REV: 28-07-97		



DRW G.BOCCATO	DWG# 550185	PCB# 315169/315113/CS032001	GENERALMUSIC S.p.A. ITALY
CXD RICCABELLI	DSK# 5 PART: 1/1	SCHEMATIC DIAGRAM	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCTIONS WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP PANNELLI	REV: 25/02/99	CONTROLS PANEL BOARDS	



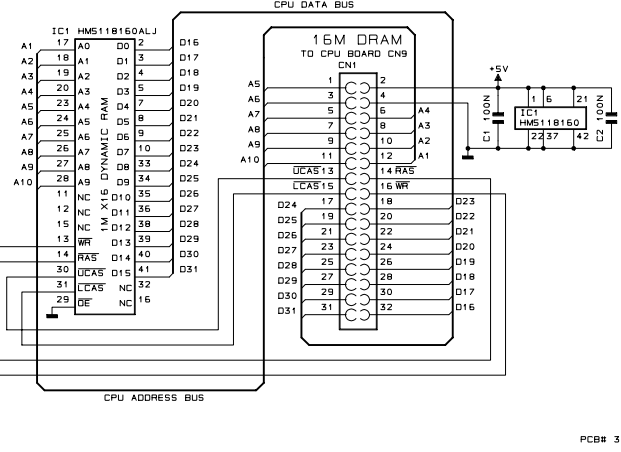
CONTROLS PANEL BOARD (SWT) (PCB# 315083)(reverse layout)



CONTROLS PANEL BOARD (SWT) (PCB# 315083)

DRW: BOCCATO	DWG: 315189	SCHEMATIC DIAGRAM SK760/880	GENERALMUSIC S.p.A. Italy
CKD: RICCIBELLI	DISK: 5 PART: 1/1	Controls Panel Board Pcb Layout (SWT)	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP: PANNELLI	REV: 25-02-99		

761094 - 2Mbyte DRAM MODULE
 SUPPLIED WITH THE OPTIONAL "HARD DISK INSTALL KIT"
 OR AS OPTIONAL "2MBYTE BACKED SAMPLE PROGRAM KIT"



PCB# 315094

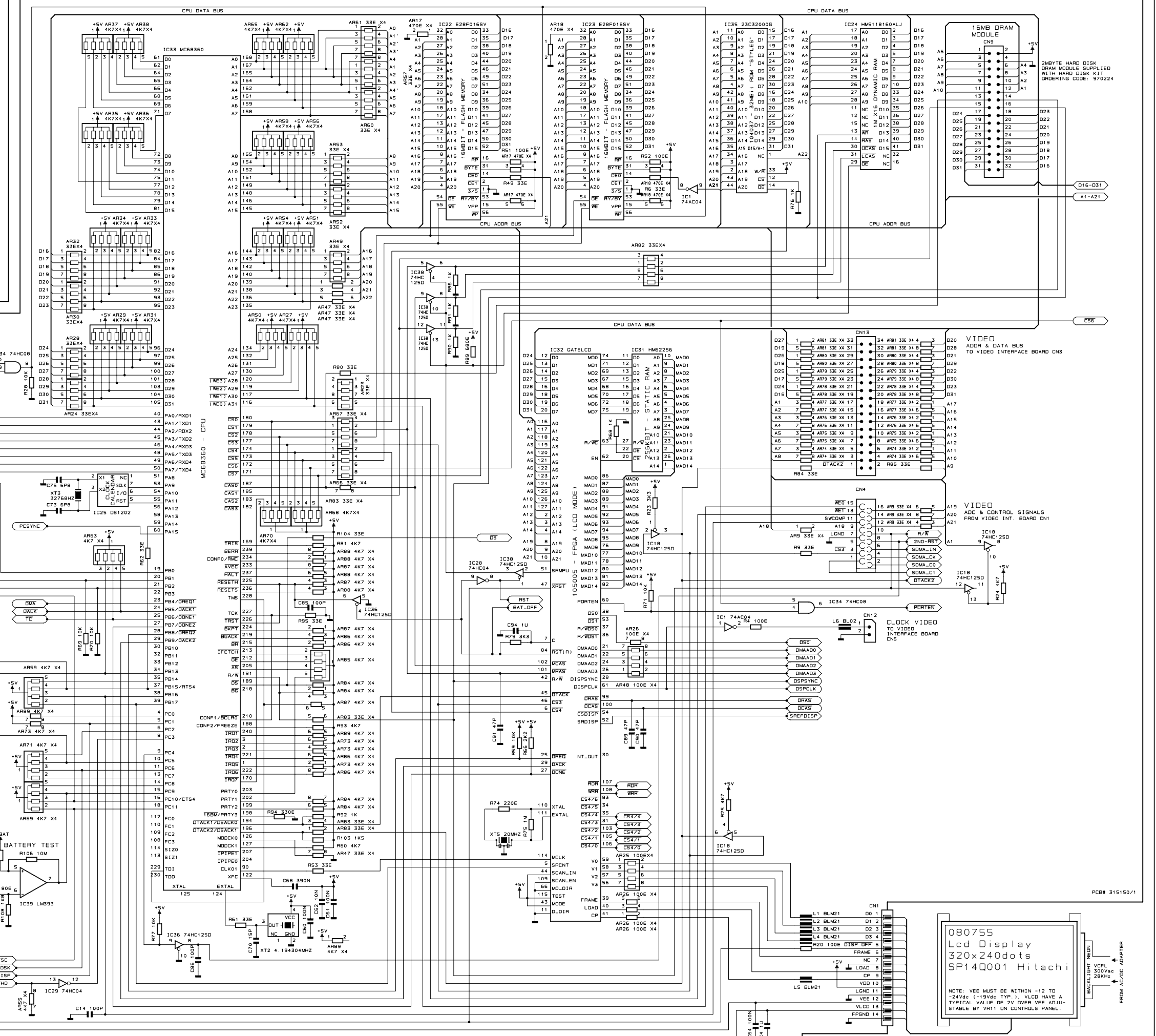
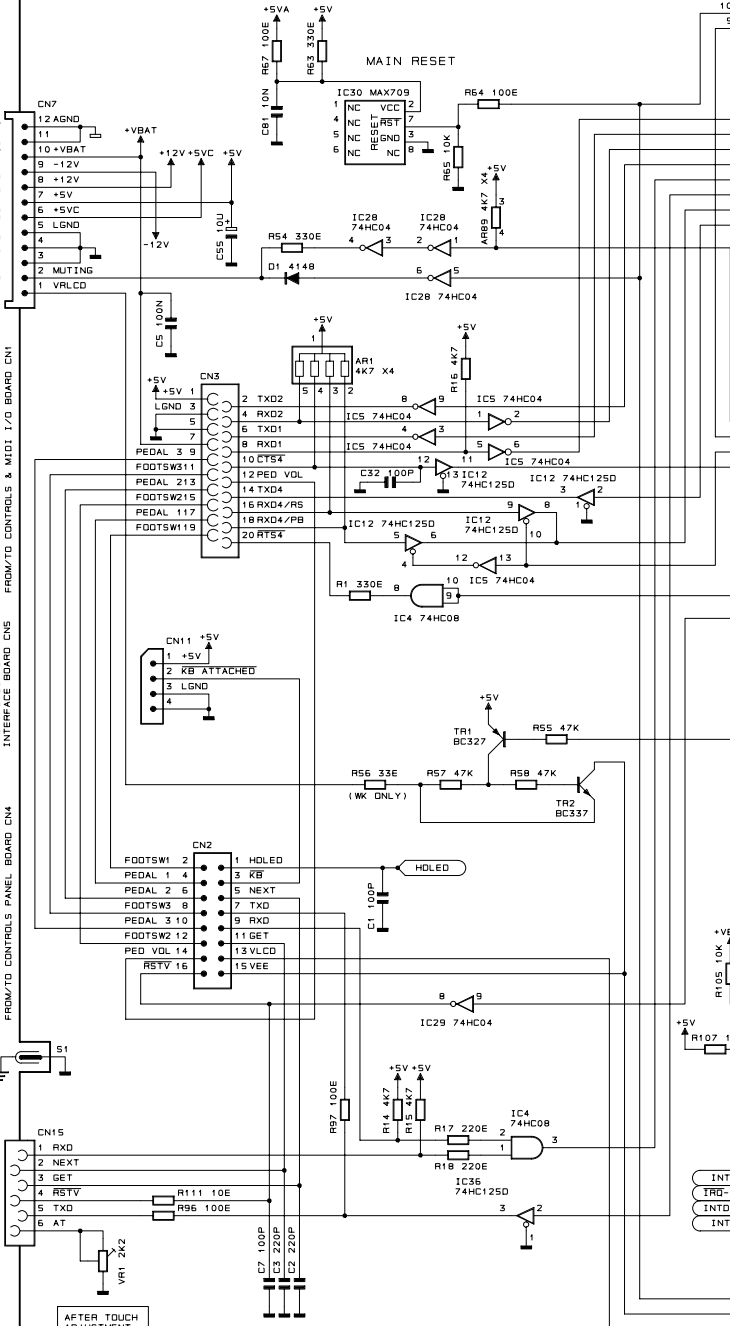
CPU & SOUND GENERATOR BOARD (PART 1 OF 2)
 761155 - first TRF version only
 761181 - TRF and SWT versions

CPU BOARD SUPPLY FROM POWER AMP & SUPPLY BOARD CNS (TRF)
 FROM MIXER BOARD CN1 (SWT)

KEYBOARD SUPPLY FROM KEYBOARD INTERFACE BOARD CNS

KEYBOARD INTERFACE BOARD CN7

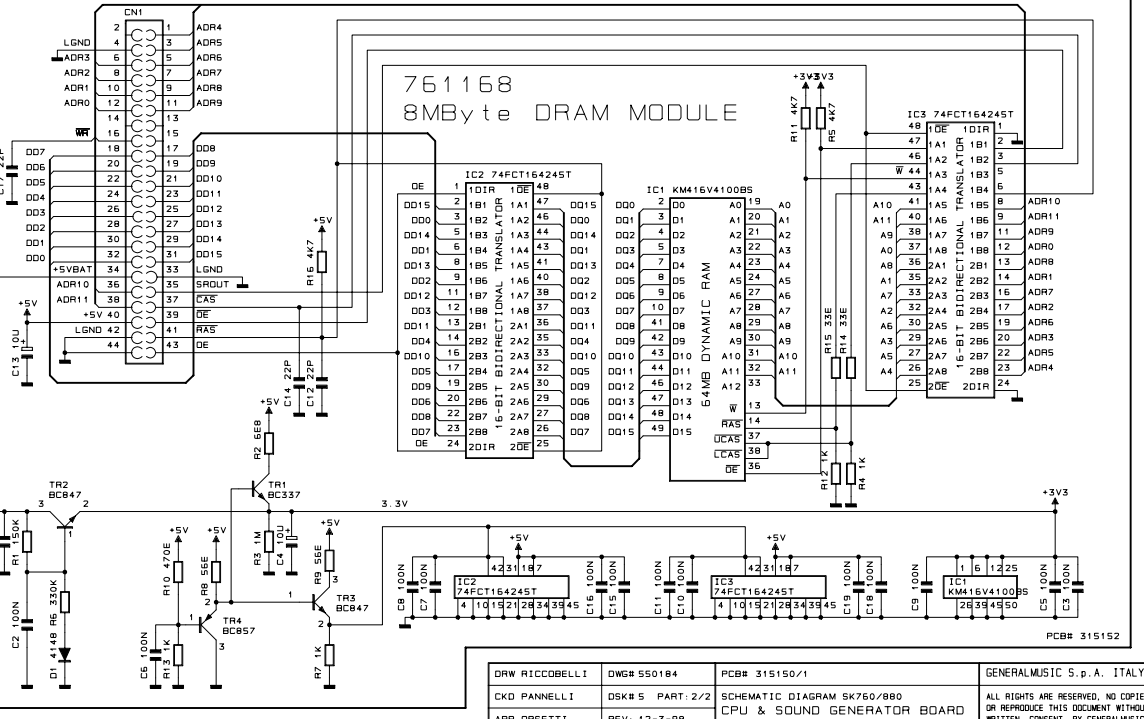
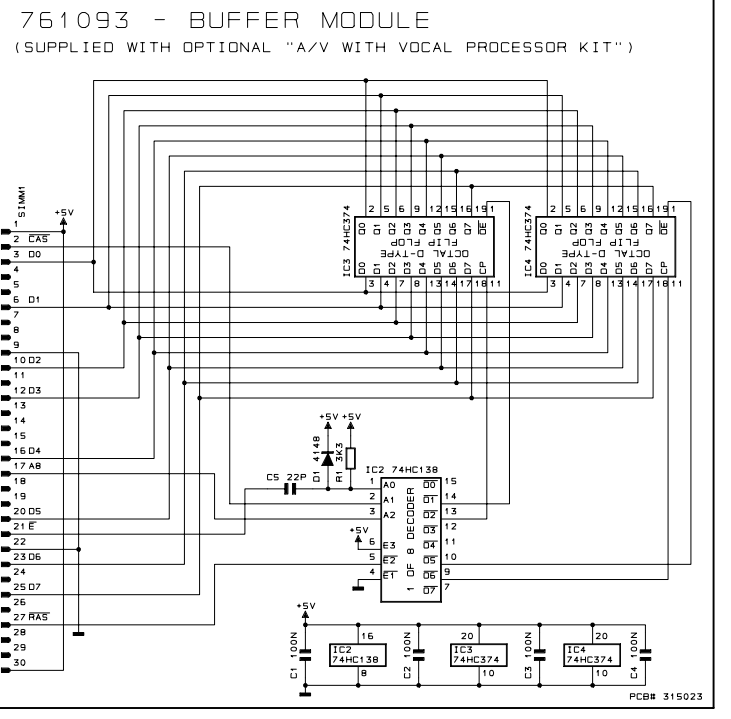
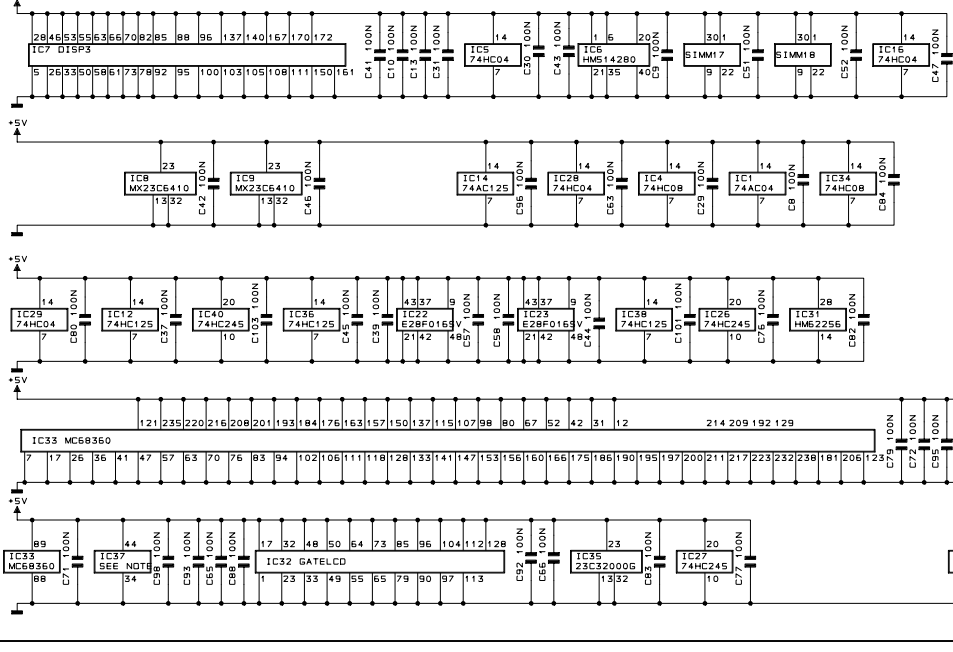
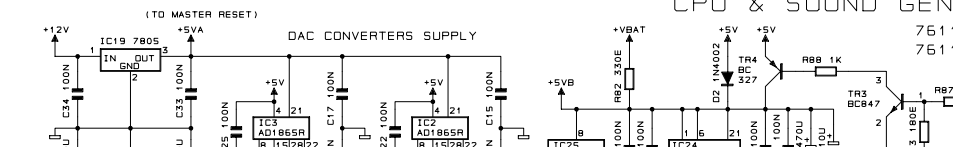
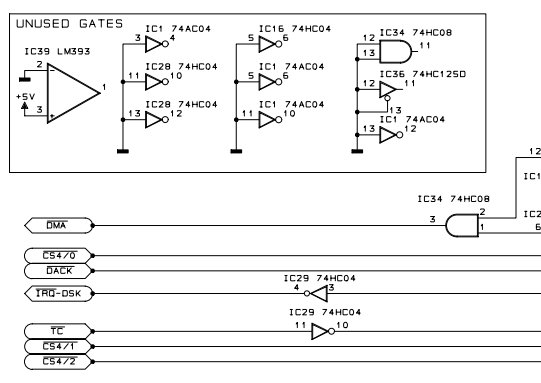
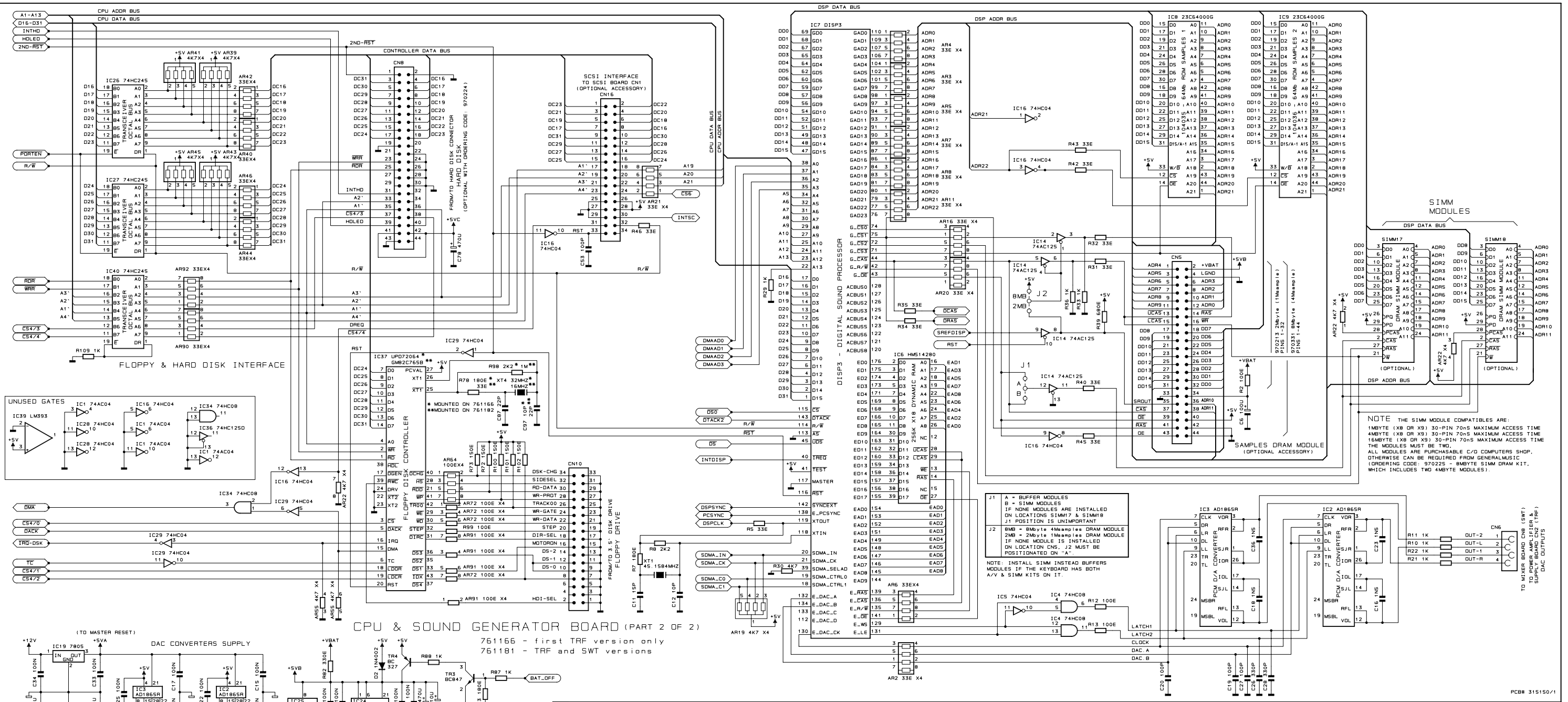
KEYBOARD INTERFACE BOARD CN7



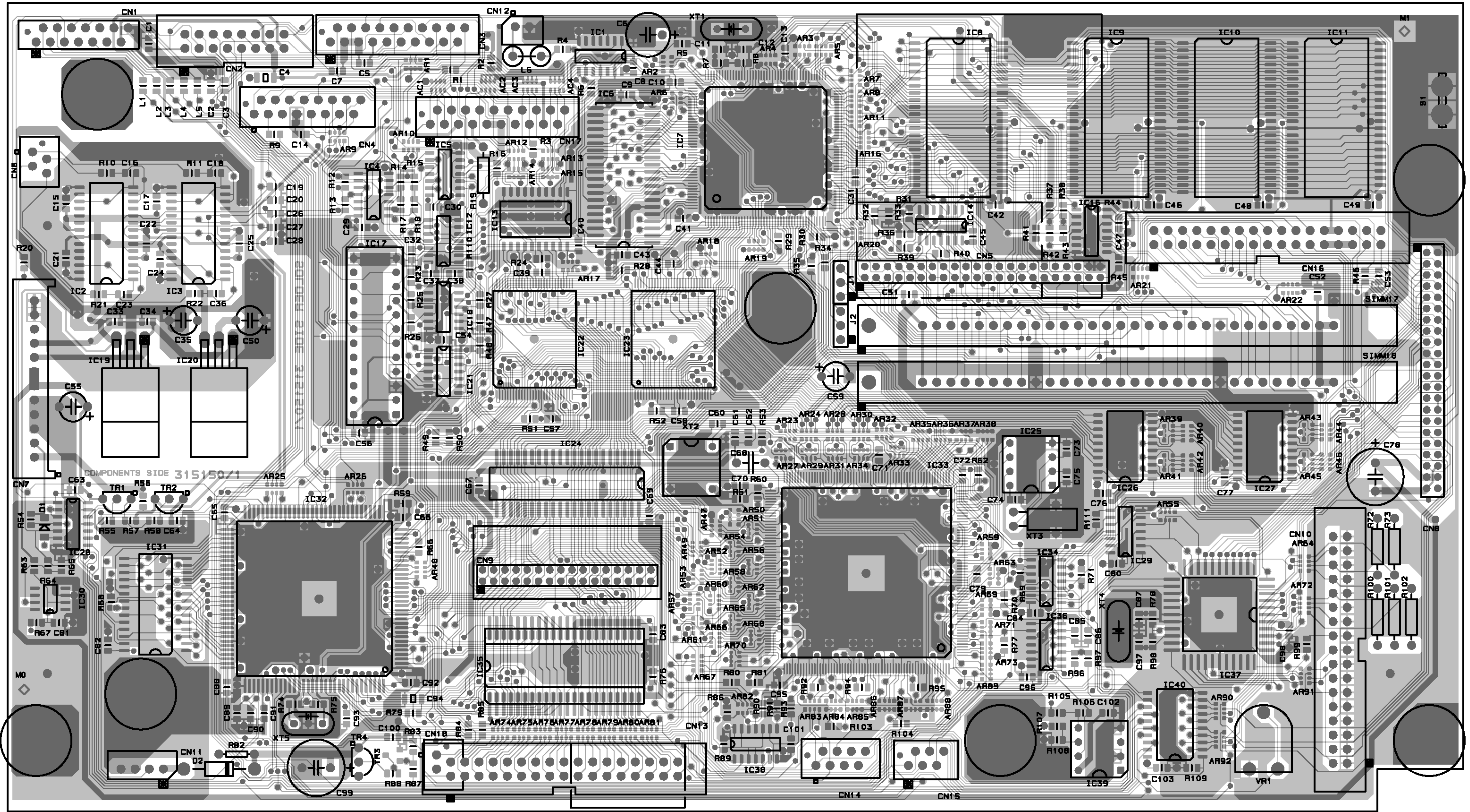
PCB# 315150/1

O80755
 Lcd Display
 320x240dots
 SP14Q001 Hitachi

NOTE: VEE MUST BE WITHIN -12 TO -24VDC (1-19VDC TYP.). VLCD HAVE A TYPICAL VALUE OF 2V OVER VEE ADJUSTABLE BY VR11 ON CONTROLS PANEL.

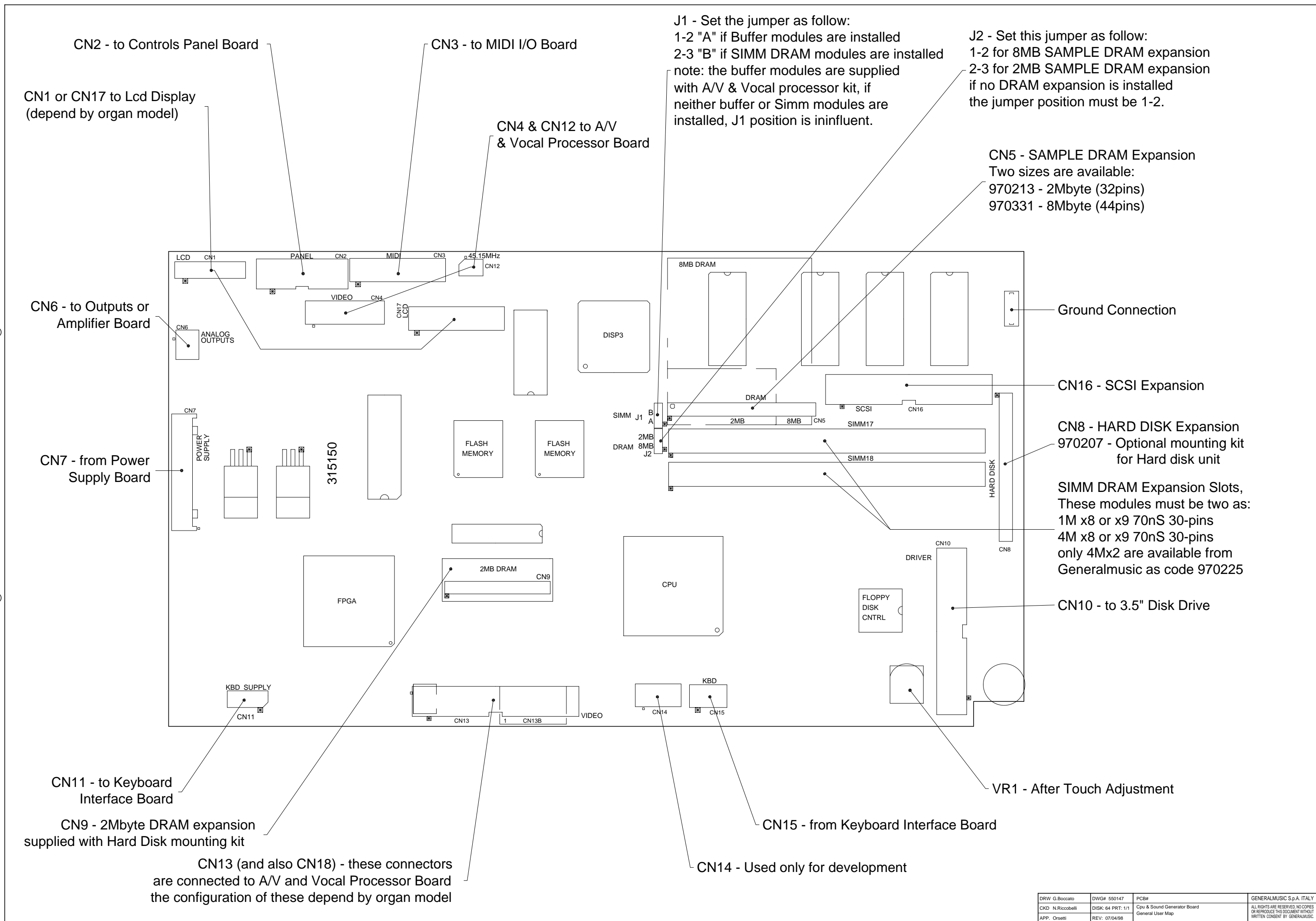


DRW R1CCOBELL1 DWG# 550184 PCB# 315150/1 GENERALMUSIC S.p.A. ITALY
 CKD PANNELL1 DSK# 5 PART: 2/2 SCHEMATIC DIAGRAM SK760/880 ALL RIGHTS ARE RESERVED. NO COPIES
 APP. ORSETTI REV: 12-3-98 CPU & SOUND GENERATOR BOARD OR REPRODUCE THIS DOCUMENT WITHOUT
 WRITTEN CONSENT BY GENERALMUSIC.



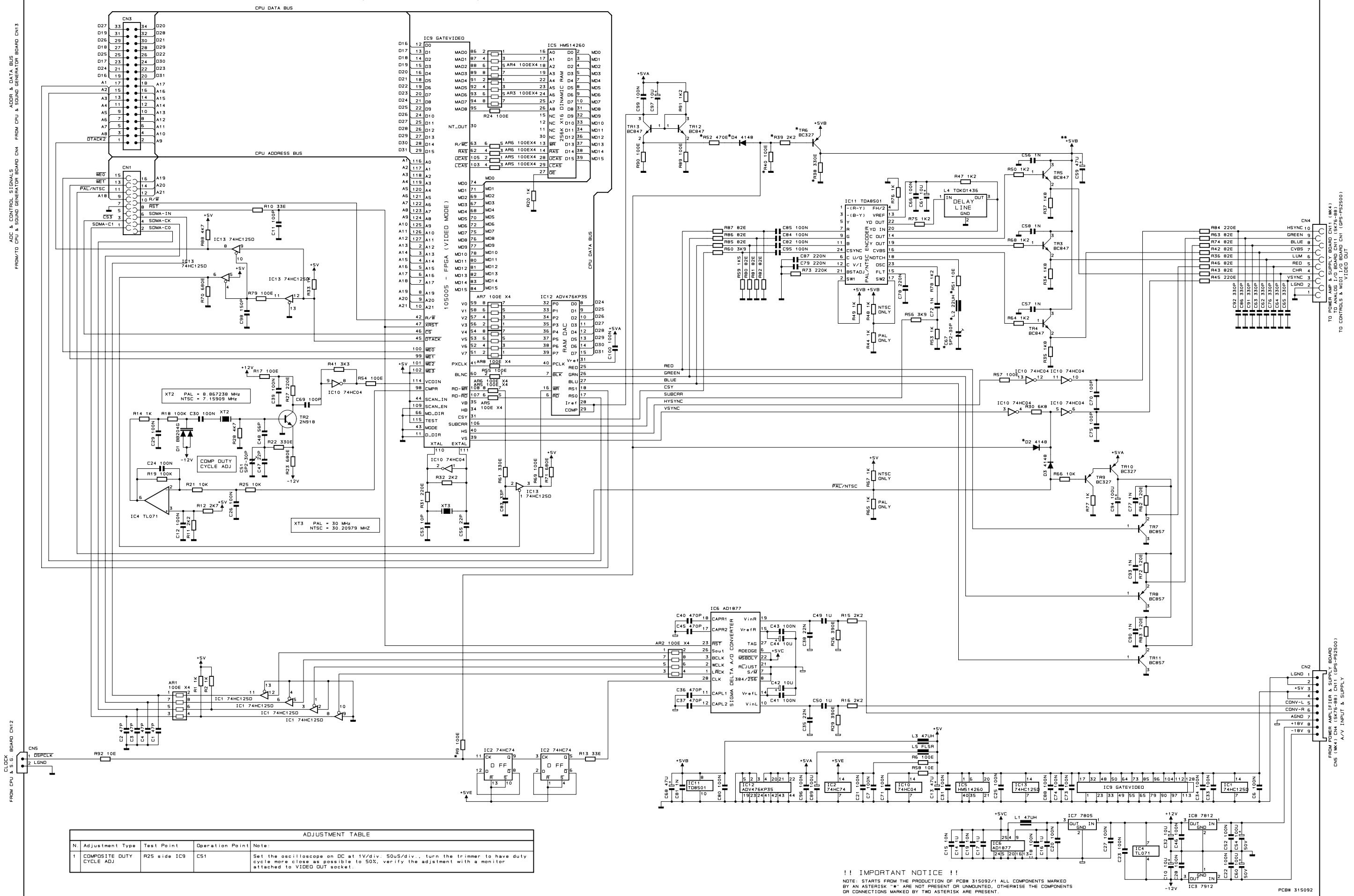
CPU & SOUND GENERATOR BOARD (PCB# 315150/1)

DRW: BOCCATO	DWG: 315150/1	SCHEMATIC DIAGRAM SK760/880	GENERALMUSIC S.p.A. Italy
CKD: RICCOBELLI	DISK: 5 PART: 1/1	Cpu & Sound Generator Board Pcb Layout	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP: PANNELLI	REV: 25-02-99		



DRW G. Boccato	DWG# 550147	PCB#	GENERALMUSIC S.p.A. ITALY
CKD N. Riccobelli	DISK 64 PRT: 1/1	Cpu & Sound Generator Board	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC.
APP. Orsetti	REV: 07/04/98	General User Map	

760993 - AUDIO/VIDEO INTERFACE BOARD (PAL VERSION)
 760994 - AUDIO/VIDEO INTERFACE BOARD (NTSC VERSION)

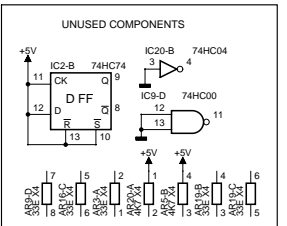
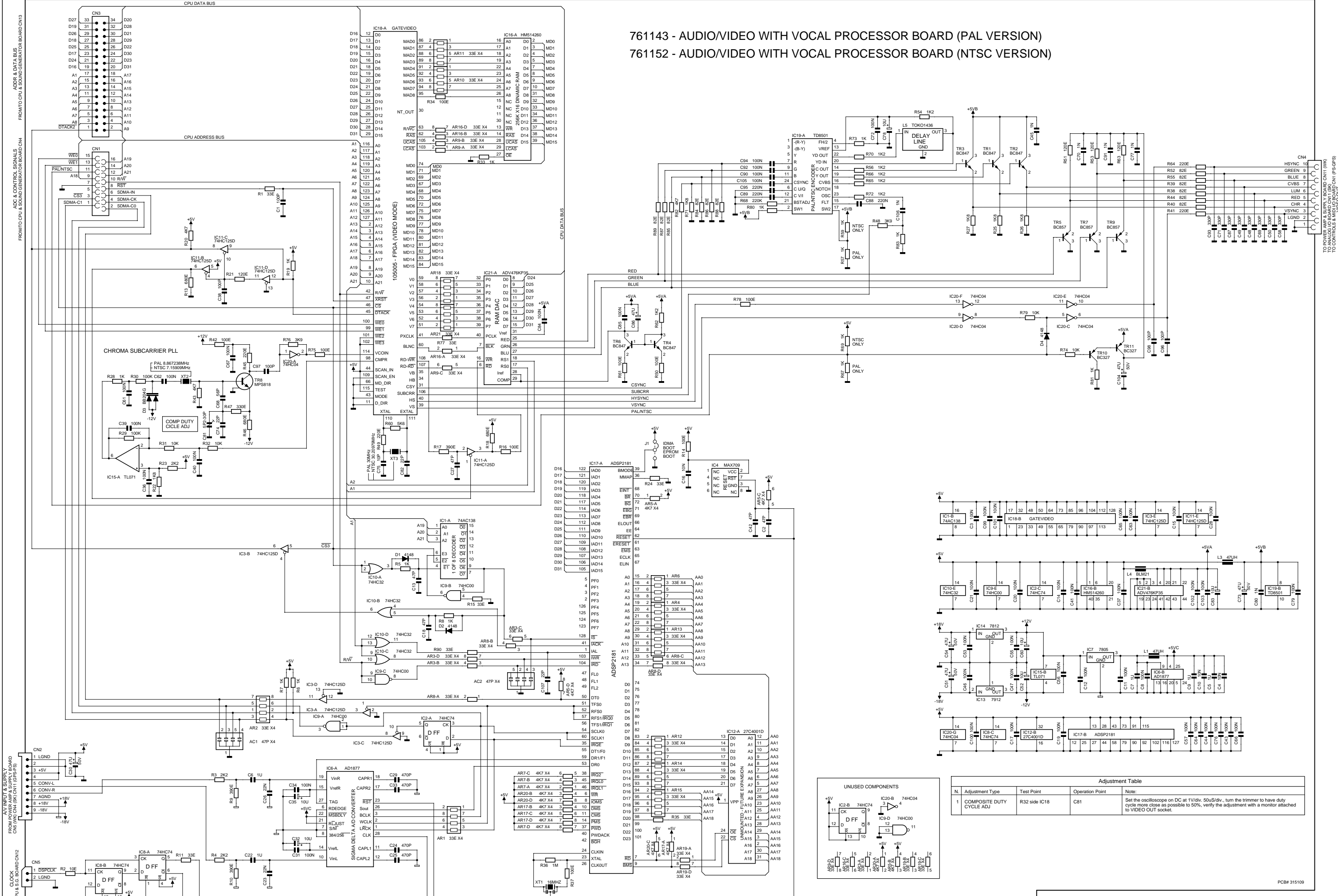


ADJUSTMENT TABLE

N	Adjustment Type	Test Point	Operation Point	Note:
1	COMPOSITE DUTY CYCLE ADJ.	R25 side IC9	CS1	Set the oscilloscope on DC at 1V/div. 50uS/div., turn the trimmer to have duty cycle more close as possible to 50%. verify the adjustment with a monitor attached to VIDEO OUT socket.

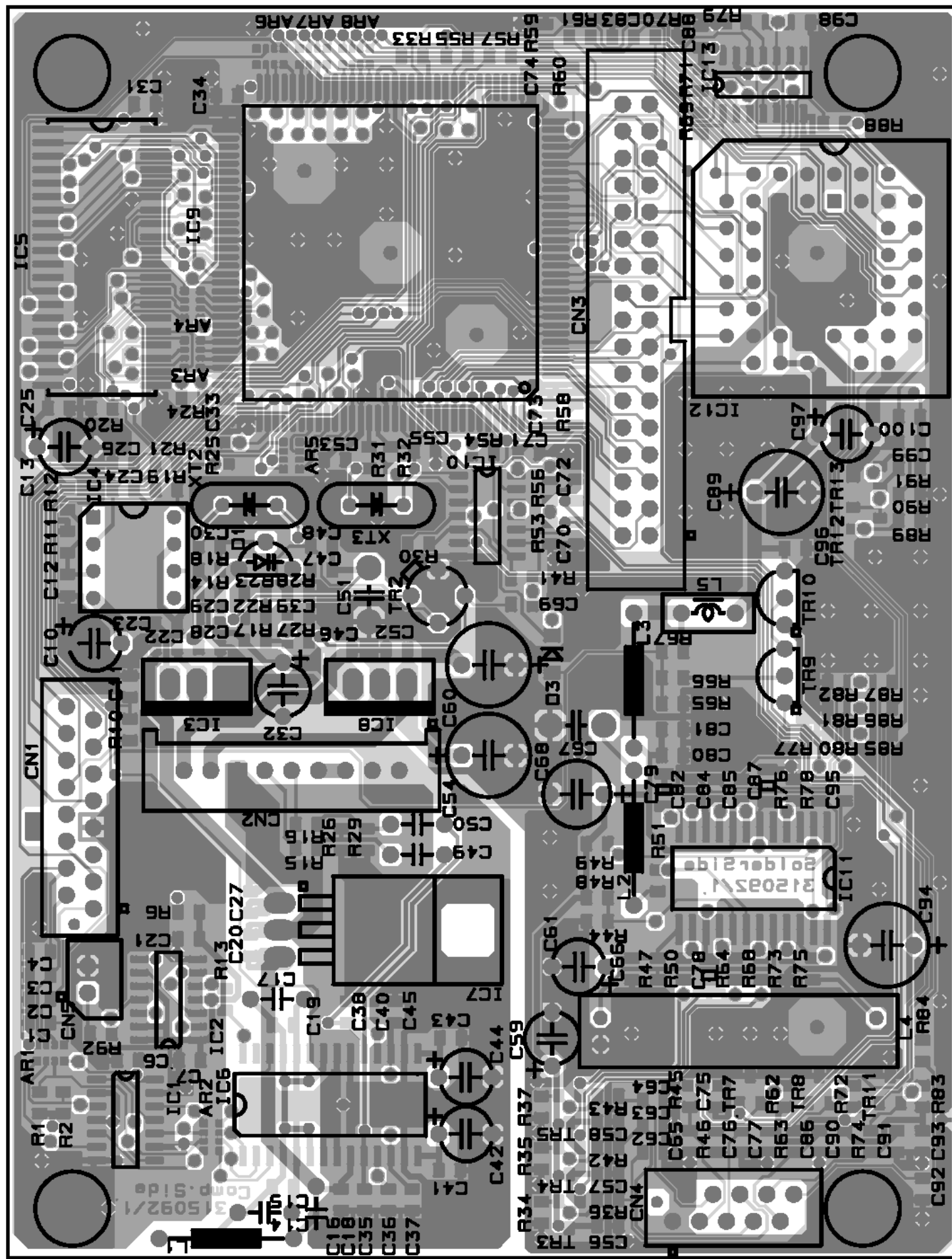
!! IMPORTANT NOTICE !!
 NOTE: STARTS FROM THE PRODUCTION OF PCB# 315092/1 ALL COMPONENTS MARKED BY AN ASTERISK * ARE NOT PRESENT OR UNMOUNTED, OTHERWISE THE COMPONENTS OR CONNECTIONS MARKED BY TWO ASTERISK ** ARE PRESENT.

761143 - AUDIO/VIDEO WITH VOCAL PROCESSOR BOARD (PAL VERSION)
 761152 - AUDIO/VIDEO WITH VOCAL PROCESSOR BOARD (NTSC VERSION)

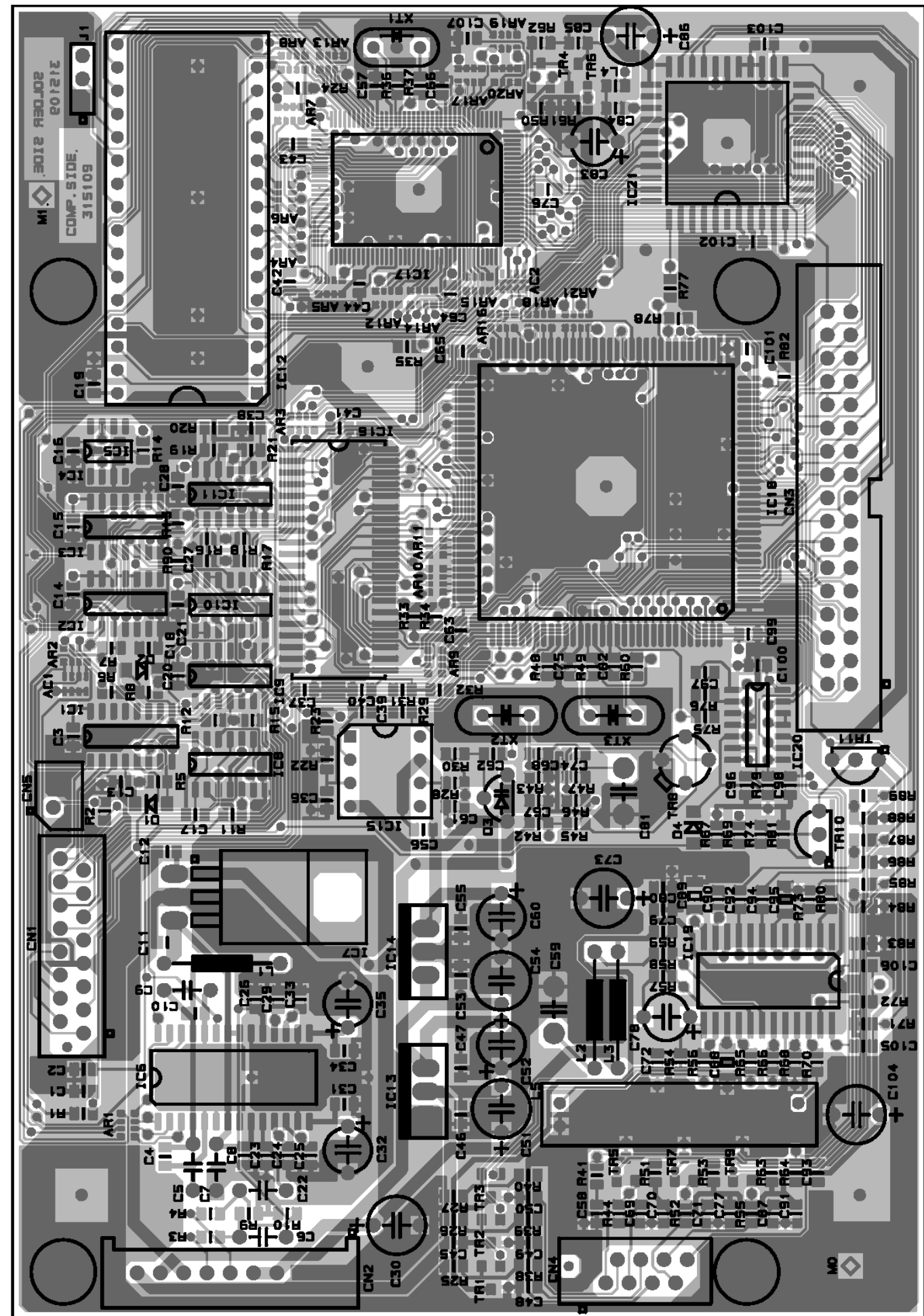


Adjustment Table

N.	Adjustment Type	Test Point	Operation Point	Note:
1	COMPOSITE DUTY CYCLE ADJ	R32 side IC18	C81	Set the oscilloscope on DC at 1V/div, 50uS/div., turn the trimmer to have duty cycle more close as possible to 50%, verify the adjustment with a monitor attached to VIDEO OUT socket.



AUDIO/VIDEO INTERFACE BOARD (PCB# 315092)



AUDIO/VIDEO INTERFACE BOARD (PCB# 315113)

DRW: BOCCATO	DWG: 315150	SCHEMATIC DIAGRAM SK760/880	GENERALMUSIC S.p.A. Italy
CKD: RICCOBELLI	DISK: 5 PART: 1/1	Cpu & Sound Generator Board Pcb Layout	ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY GENERALMUSIC
APP: PANNELLI	REV: 25-02-99		

Test Procedure and Adjustment

The procedures that follow must be executed subsequently in the order specified.

These procedures are not intended to repair a fault but only to check the correct instrument operations after a repairing execution.

Test Instruments

- Dual trace oscilloscope
- Digital Multimeter

Accessories

- 8Mbyte DRAM module
- 2Mbyte DRAM module
- 2 x 4Mbyte SIMM DRAM modules
- 1 Hard Disk Kit
- 1 Vocal Processor Kit
- 1 3.5inch Diskette
- 1 SCSI Kit
- Read/write SCSI device (ZIP, JAZ, Hard disk etc...)
- RS232 loopback (terminal 1-2 and 3-5 shorted)
- 2 jack-jack cables with a resistor divider inside plugs (10K/82ohm).

To check completely the keyboard are necessities all the optional accessories installed, normally this keyboard have installed from the manufacturer the 2Mbyte DRAM module only.

Setup

Install all the optional accessories: Hard disk and its 2Mbyte module (CN9), 8Mbyte module instead the pre-installed 2Mbyte module on Sample Dram connector CN5, the 2 SIMM modules, the SCSI and the Vocal processor kits, insert the diskette into 3.5" disk drive.

Set the jumpers on CPU board as follow: J1 at position B and J2 at position 8MB.

Set the JP1 and JP2 jumpers on Supply or Mixer board at position A.

Connect the R and L outputs to the MIC/LINE inputs using the appropriate cable.

Connect the external SCSI device to the SCSI socket.

Plug the RS232 loopback into the socket.

Checks and Adjustments

Aftertouch

To adjust the keyboard aftertouch locate the VR1 trimmer on CPU board, connect the scope CH1 probe tip to its center terminal, probe clip connected at ground, adjust VR1 to obtain an excursion from 0 to 5V every time a note key is pressed with different pressure, or to obtain a better adjustment follow the instructions on ADJUSTMENT TABLE (page 10 or 12).

MIDI, RS232 and RS422 mode

Press GENERAL and go to page 3 using the page scroll keys, select MODE(F8) and set PC1 with cursor keys, press ENTER to confirm; press MIDI, select COMMON/ARRG.(F5) and set Common Ch. to 1 using the DIAL, press (F7) to set LOCAL OFF, verify that the keyboard plays thru RS232 by unplugging and re-inserting the RS232 loopback into the socket.

Press GENERAL and select MODE(F8), select MACINTOSH using the cursor keys, press ENTER, check the 1MHz clock appear on pin 1 of COMPUTER socket (use the second probe tip to do that). Go to page 4 and press SET DATE(F1) button, set the day, month and year using the DIAL or numeric keypad, press ENTER; also set the time pressing SET TIME(F2), finally return to the first page of GENERAL settings.

Panel Key and Led

Press GENERAL, SYSTEM INFO (F2) and (F8) the display show a warning message: press ENTER to continue, select PANEL TEST(A) and then press all the panel buttons checking their operation on display, at the same time every led of pressed button must light up, except DISK led.

Trackball (Pitch and Modulation)

Rotate the Trackball in vertical way (Modulation) verifying the excursion displayed, it ranges from 0 to 127.

Rotate the Trackball in horizontal way (Pitch) verifying the excursion displayed, it ranges from 0 to 127 with 64 on center position.

A slightly difference may be adjusted by VR11(Pitch) or VR12(Mod.) on Controls panel board, major differences may be adjusted repositioning the knob or the potentiometer.

Press ENTER and ESCAPE simultaneously to return to HARDWARE test menu.

Memories and Optional Accessories

Press ALL PART (F1), the instrument self-test check subsequently the follow devices: SIMM modules (F2 Volatile DRAM), 8Mbyte sample dram (F3 Backed DRAM), Internal Hard Disk (F4 HardDisk), 3.5" disk drive (F5 Floppy Disk), Video interface (F6 Video) and SCSI interface (F7 SCSI Test) and marking with "Pass" all devices checked successfully, with "Not Present" all devices not attached, with "Fault" all device defective. Theoretically all test must be passed, if you have a mistake on a device re-check its installation.

Press ENTER if necessary.

Inputs, Dsp and Vocal Processor

Put MASTER - INPUT - LEVEL sliders to maximum position and rotate full clockwise GAIN1 and GAIN2 potentiometer located on the rear side.

Turn on the 1KHz test tone pressing HARDWARE SET(C), measure a sinusoidal signal at 4Vpp on OUT 1 and OUT 2 outputs sockets (the 1KHz tone gets out OUT R and L, re-input thru MIC 1 and 2 by the appropriate cable, pass thru DSPs and finally get out from OUT 1 and 2).

Turn off the signal by means HARDWARE SET(C).

Noise level

Turn off the instrument, disconnect the signal cable, wait at least 30 seconds, turn on again the keyboard and check the noise level is acceptable (if not verify the insulation between electrical and chassis ground is at least 40Kohms).

Data Hold

Press GENERAL, SYSTEM INFO(F2), (F8), ENTER and DATA HOLD (F8) and then wait until the display show PASS.

Turn off the keyboard and then remove not included optional kits (the SK base version is equipped with 2Mbyte SAMPLE DRAM only), restore the jumpers positions: J1 to A, J2 to 2MB, JP1 & 2 to B. Turn on again the instrument and verify, repeating the test, that only Backed DRAM pass, press ESCAPE.

Final

Verify the keyboard correct operation playing something on it, finally launch the Demo sequence pressing DEMO and ENTER. When it is finished you have tested the keyboard.

Reliability Check

Before reassembling the instrument and before deliver it to the user, it is a goal verify its reliability:

To do that switch it off, or leaving it switched on but operating with greatest caution, carefully shake the boards and connections inside it using an insulated tool (for example the handle of the screwdriver) to find wrong contacts and so on.

Turn on the instrument and verify that it operates correctly repeating the Final Check.

Disconnect the instrument from the mains, reassemble it and shake it carefully without causing aesthetics damages, reconnect it to the mains, turn on and re-check its functionality, finally leave it switched on for a long time verifying its functionality occasionally.

