

G-600

ARRANGER WORKSTATION
64-VOICE POLYPHONY

SERVICE NOTES

First Edition

Issued by RES

TABLE OF CONTENTS

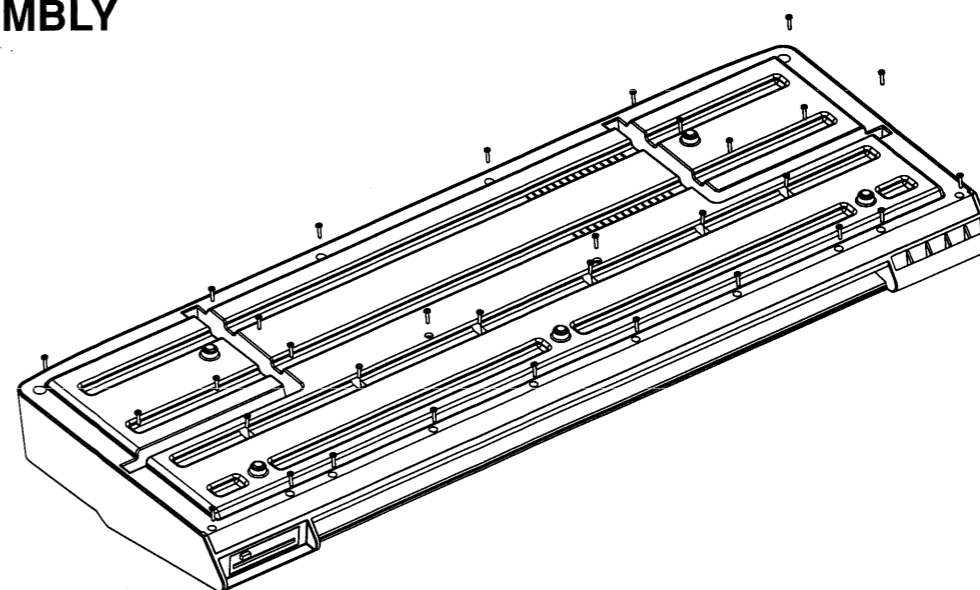
	Page
SPECIFICATIONS	1
DISASSEMBLY	1
LOCATION OF CONTROLS & REAR VIEW	2
EXPLODED VIEW	3
KEYBOARD PARTS LIST	4
WIRING DIAGRAM	4
BLOCK DIAGRAM	5
FC7 PCB ASSY & CIRCUIT DIAGRAM	6
VOLUME PCB ASSY & CIRCUIT DIAGRAM	6
CONTROL PCB ASSY	6
CIRCUIT DIAGRAM CONTROL PCB ASSY	7
CPU PCB ASSY	8
CIRCUIT DIAGRAM CPU PCB ASSY	9
MIDI PCB ASSY & CIRCUIT DIAGRAM	10
AUDIO PCB ASSY & CIRCUIT DIAGRAM	11
XPGS PCB ASSY	12
CIRCUIT DIAGRAM XPGS PCB ASSY	13
RIGHT CONTACT PCB ASSY w/RUBBER CONTACT & CIRCUIT DIAGRAM	14
LEFT CONTACT PCB ASSY w/RUBBER CONTACT & CIRCUIT DIAGRAM	14
TEST MODE	15/16
PARTS LIST	17
CHANGE INFORMATION	18

SPECIFICATIONS

- Keyboard 61 Keys, velocity sensitive
- Sound Source Newly developed sound source, GM/GS compatible, 16 Parts.
- Maximum polyphony 64 Voices
- Tones 689 Enhanced variations tones (654 top-notch sounds and 35 JV series variations) + 25 Drum Sets including one Oriental Set.
Vibrato Rate, Vibrato Depth, Vibrato Delay, Cutoff Freq, Resonance, Attack Time, Decay Time, Release Time.
- Macro Editing 128 at high definition (120 CPT/quarter note, including Pitch Bend, Control Change, etc.), 8 polyphonic tracks for each division.
- Music Styles 8 completely programmable User Styles (8 tracks per Style) with Memory Back-Up at Power-Off.
- User Styles 192
- Performance Memories 8
- MIDI Sets Direct to Disk
- Song Composer Digital Reverb, Chorus, Delay, Parametric Equalizer.
- Built-in effects 2DD/2HD, SMF playback without loading. Load/Save for User Style, User Style Set, Performance Memories, MIDI Sets, Chord Sequences.
- Floppy Disk Drive Graphic 240x64 pixel backlit LCD with software window management.
- Display Phones, Output L (Mono)/R, Sustain Footswitch, Expression Pedal, External Multi Switch Pedal (FC7), MIDI (In, Out, Thru).
- Jack/Connectors
- Stereo Output Level -2 dBm Master Volume : Max
Tone : Sine Wave
Play : C4 Key (Vel=Max)
Reverb : 0 (Zero)
- Stereo Output Impedance 1K7 KOhm
- Phones Output Level 2 dBm Master Volume : Max
Stereo Phones : 30 Ohm
Tone : Sine Wave
Play : C4 Key (Vel=Max)
Reverb : 0 (Zero)
- Phones Output Impedance 100Ohm
- Minimum Phones Impedance 8 Ohm
- Power Supply AC 100V - 240V
- Power Consumption 12 W (AC 100V)
12 W (AC 117V)
12 W (AC 230V)
12 W (AC 240V)
- Dimensions 1150 (W) x 410 (D) x 140 (H) mm.
- Weight 12.5 Kg
- Options MSA/MSD Music Style Disks, SMF Music Data, Headphones (RH-20/80/120), LVC-1 Lyrics to Video Converter, KS-12 Keyboard Stand, DP-2 Pedal Switch, EV-5 Expression Pedal, PK-5 Dynamic MIDI Pedal, FC-7 Foot Controller.




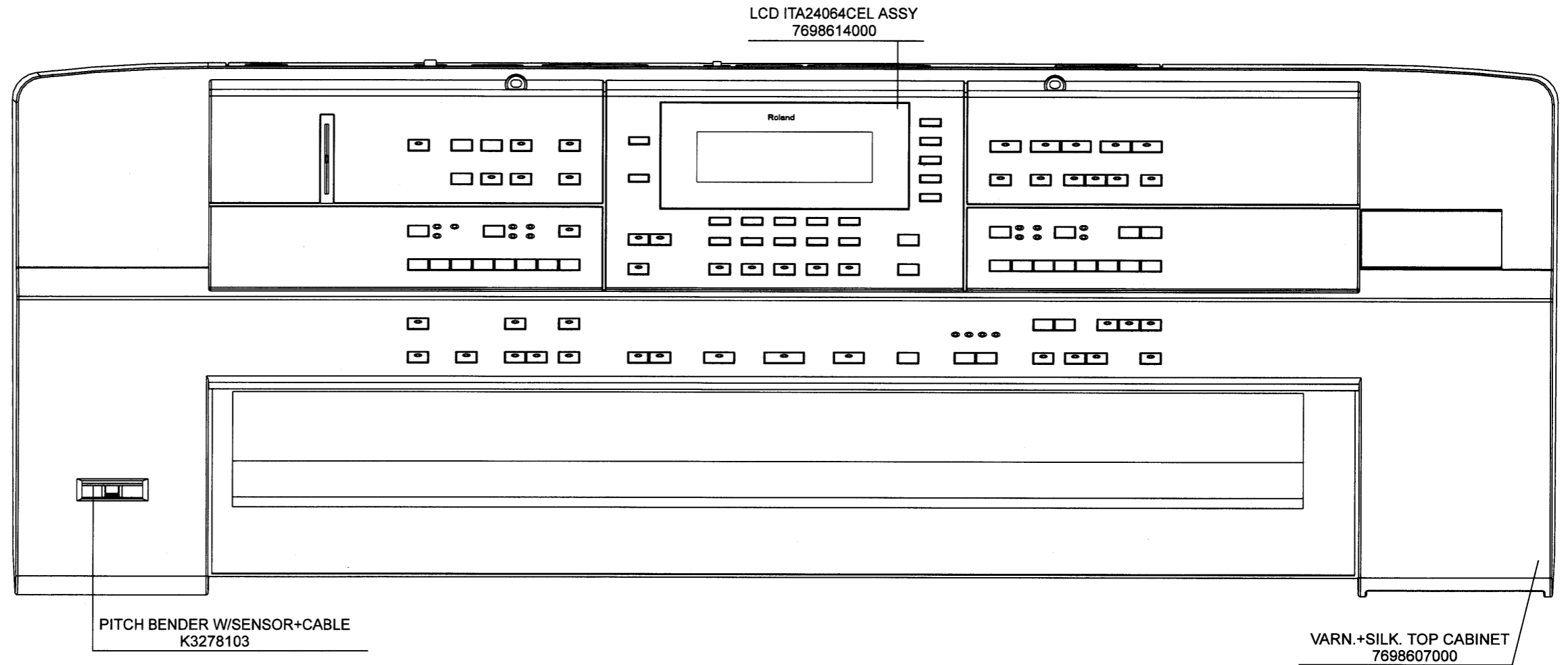
DISASSEMBLY



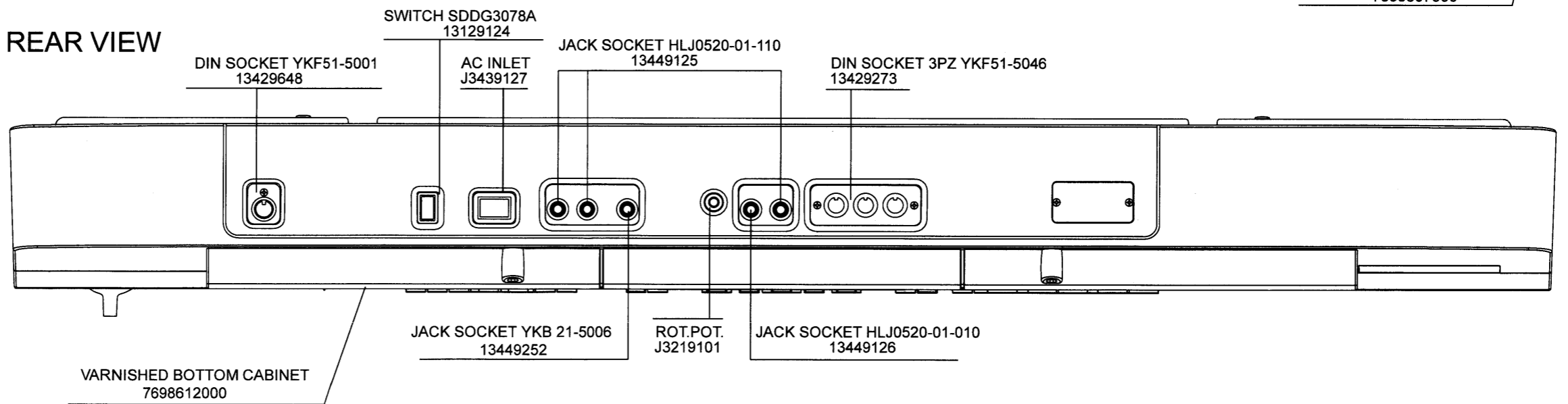
SELF TAP SCREW 3,5X16 TCTCPRBZ J2289131

LOCATION OF CONTROLS

-  BUTTON mm 29x8 (BLACK + DIFF.)
K2478199
-  BUTTON GROUP mm 15x8 + DIFF. BLACK
K2478201
-  BUTTON GROUP mm 15x8 BLACK
K2478203
-  BUTTON GROUP mm 22x8 + DIFF. BLACK
K2478200
-  BUTTON mm 15x5 BLACK
K2478204

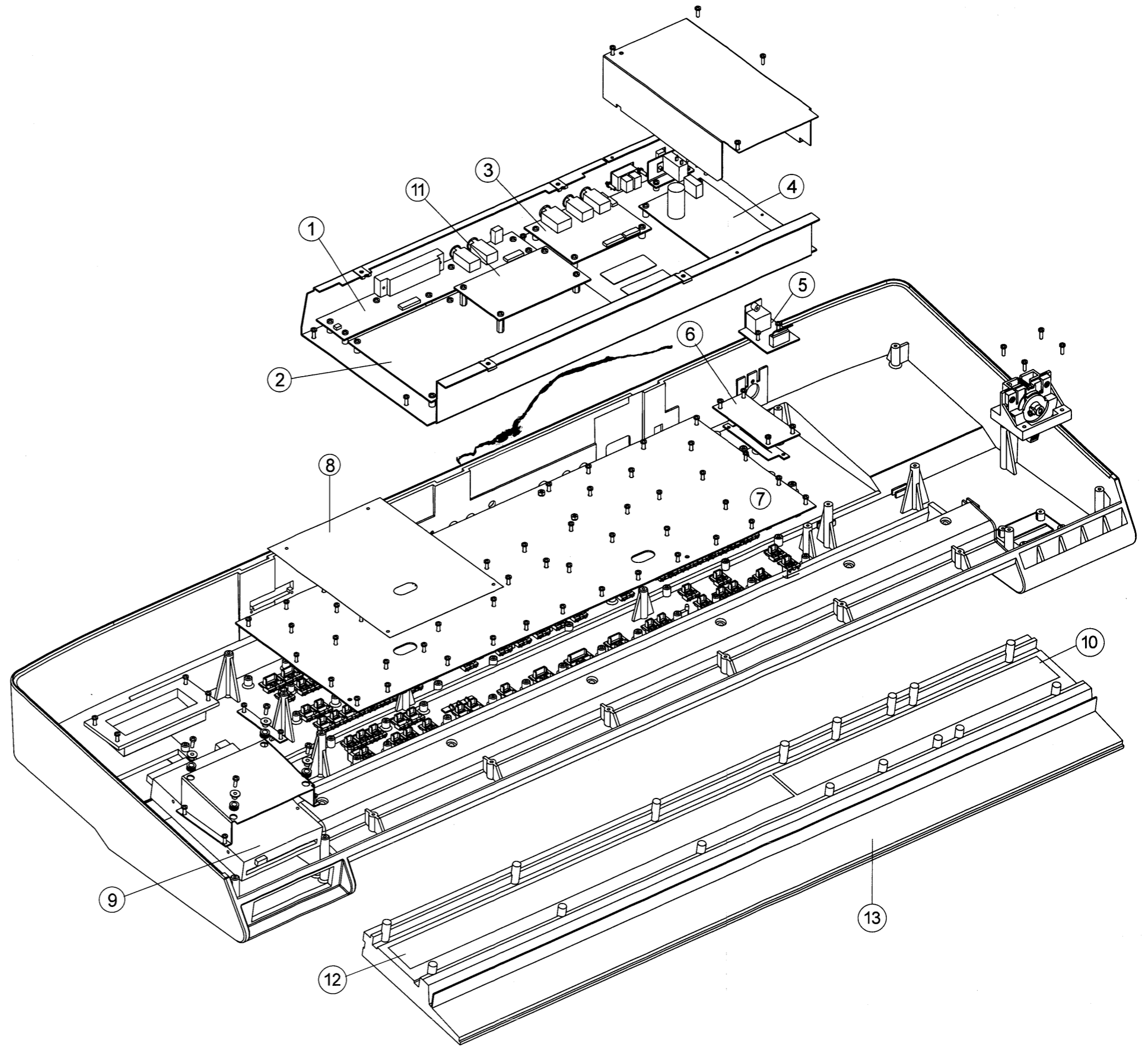
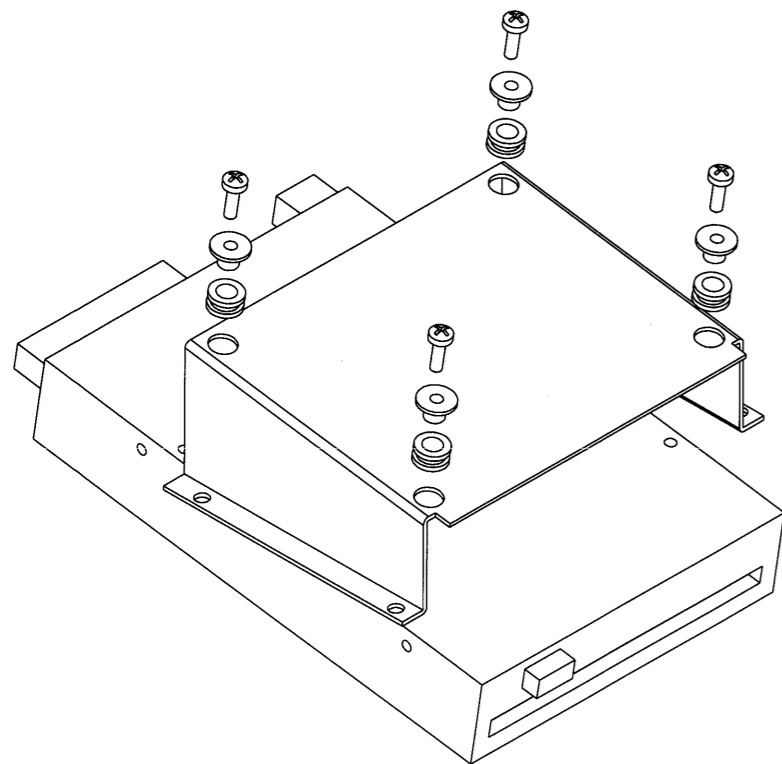


REAR VIEW



No	PARTS NAMES	PARTS NUMBERS
1	MIDI PCB ASSY	7698604000
2	CPU PCB ASSY	7698602000
3	AUDIO PCB ASSY	7698601000
4	SWITCHING POWER SUPPLY SWM 18N	K2458138
5	FC7 PCB ASSY	7697206000
6	VOLUME POT. ASSY	7698610000
7	CONTROLS PCB ASSY	7698605000
8	MYLAR SHIELD	K2258114
9	FLOPPY D. DRIVER	J2409101
10	LEFT CONT. PCB ASSY W/RUBBER	7624505000
11	XPGS MODULE ASSY	7698603000
12	RIGHT CONT. PCB ASSY W/RUBBER	7624504000
13	61-KEY KEYBOARD ASSY TP/9	7626223001

EXPLODED VIEW

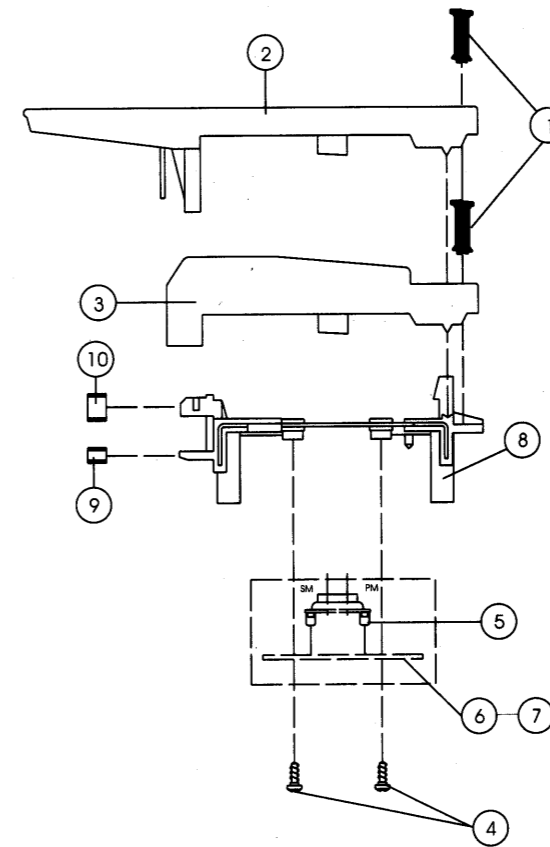


KEYBOARD PARTS LIST

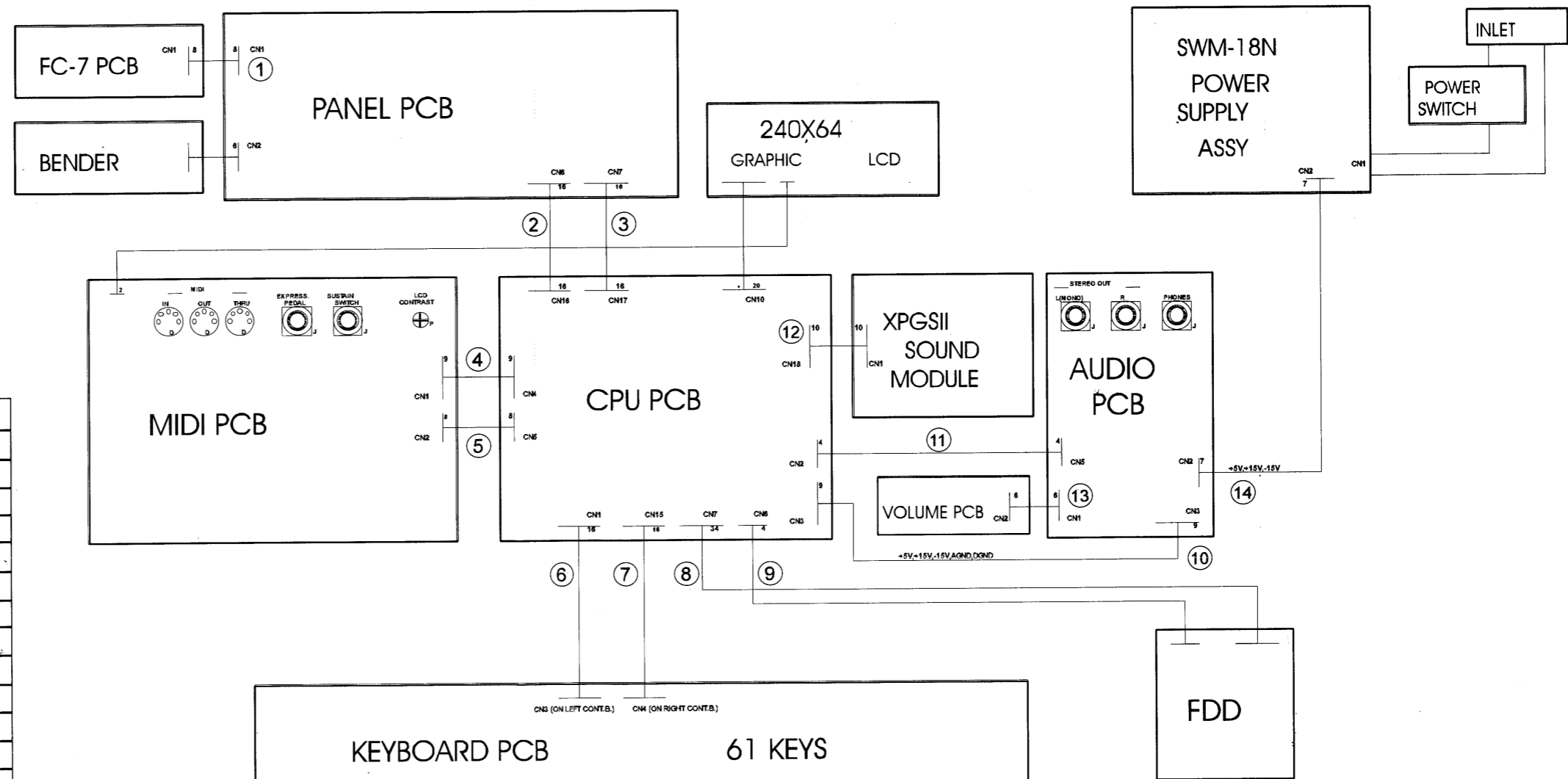
KEYBOARD ASSY (61key)

ASSY 7625001000

No.	Description	Code
1	KEY SPRING	22178233
2	NATURAL KEY C5 (DO)	22578319
	NATURAL KEY D6 (RE)	22578328
	NATURAL KEY E7 (MI)	22578329
	NATURAL KEY F1 (FA)	22578330
	NATURAL KEY G2 (SOL)	22578331
	NATURAL KEY A3 (LA)	22578332
	NATURAL KEY B4 (SI)	22578333
3	NATURAL KEY C8 (DO fin)	22578334
	SHARP KEY	22578335
4	2,9 x 8 mm Self-Tapping Screw TCTC PRBZ (Screw. No.J2289104 or 206132908)	
5	12P RUBBER CONTACT	22185238
	13P RUBBER CONTACT	22185239
6	LEFT CONTACT PCB ASSY +RUBBER CONTACT	7624505000
7	RIGHT CONTACT PCB ASSY +RUBBER CONTACT	7624504000
8	PLASTIC CHASSIS	22818761
9	GUIDE BUSHING INFERIOR	J2359104
10	GUIDE BUSHING SUPERIOR	22158789



WIRING DIAGRAM

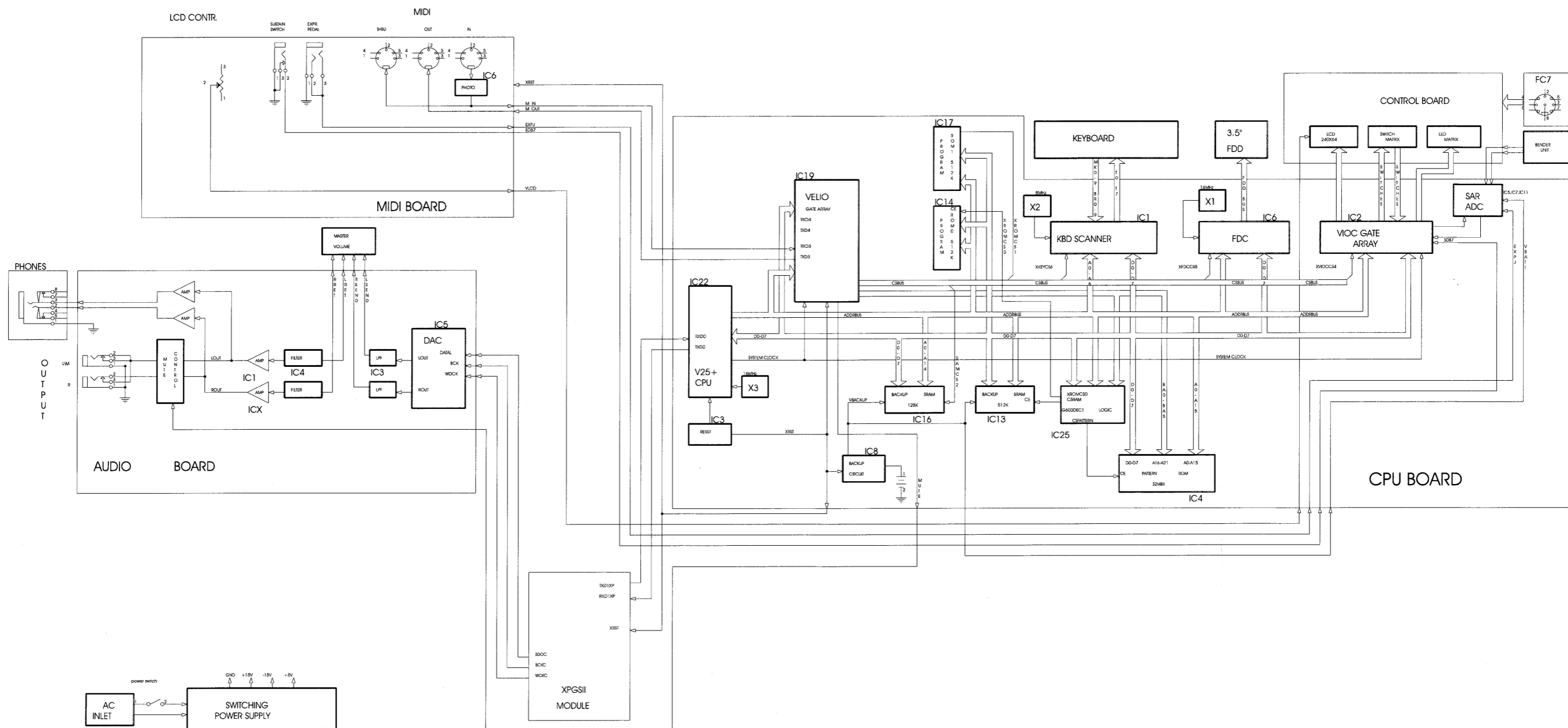


1	K3468170	8P CABLE	(18)	-2C D/R
2	K3468173	16P FLAT CABLE	(54)	-2C
3	K3468173	16P FLAT CABLE	(54)	-2C
4	K3468171	9P CABLE	(22)	-2C D/R
5	K3468170	8P CABLE	(18)	-2C D/R
6	K3468173	16P FLAT CABLE	(54)	-2C
7	K3468172	16P FLAT CABLE	(46)	-2C
8	K3468150	34P FLAT CABLE ASSY	(60)	-2C
9	7698909000	2P COAXIAL CBL ASSY	(48)	-2C
10	7697317001	9P CABLE	(40)	-2C
11	K3468168	4P CABLE	(12)	-2C D/R
12	K3468164	10P CABLE	(6.5)	-2C P.2
13	7698613000	3P-CBL ASSY	(48)	(W/4PC+4PC)
14	K3468169	7P CABLE+FERRITE	(30)	-2C D/R

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

A BLOCK DIAGRAM

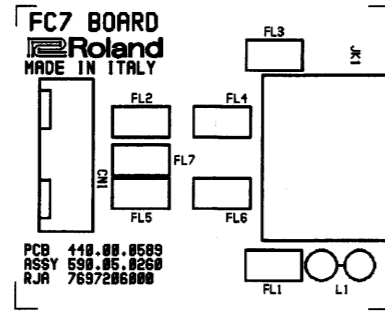
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



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

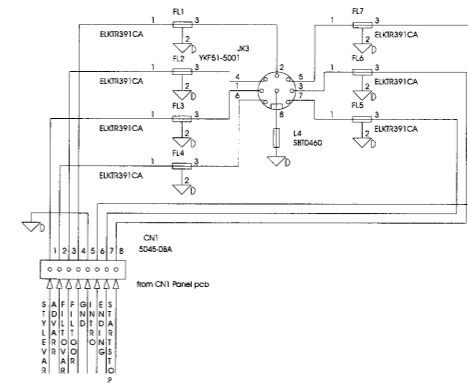
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

FC-7 PCB ASSY ASSY 7697206000

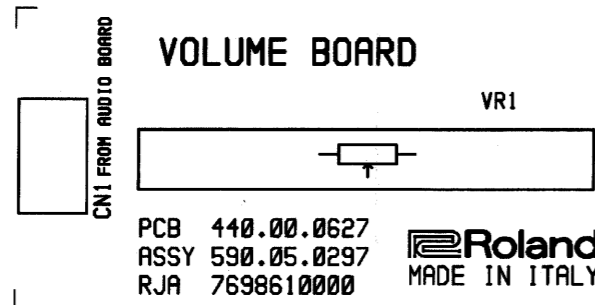


View from component side

CIRCUIT DIAGRAM FC-7 PCB ASSY

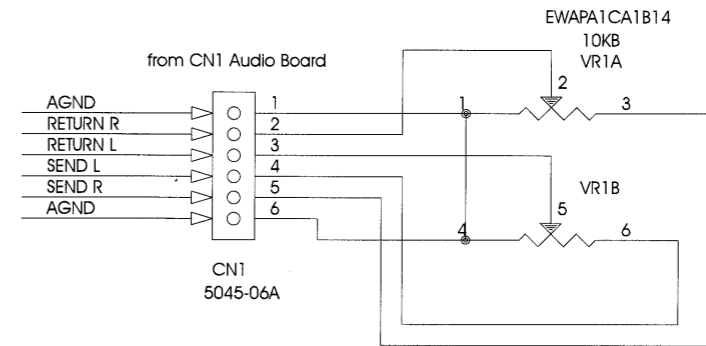


VOLUME PCB ASSY ASSY 7698610000

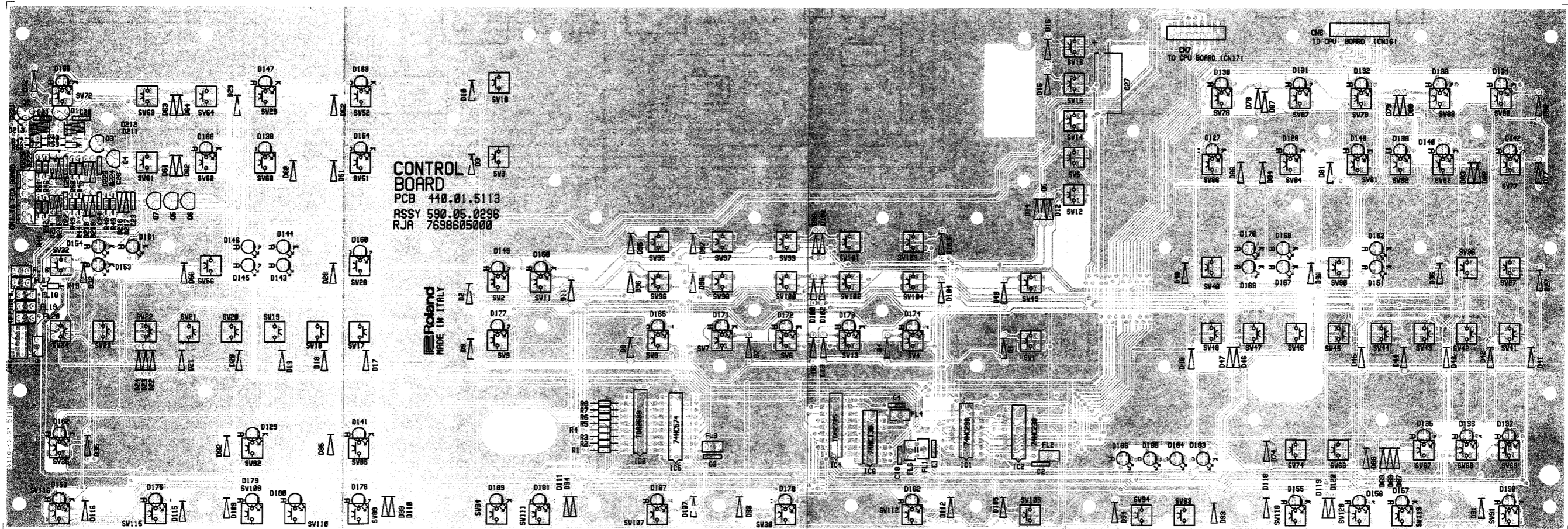


View from component side

CIRCUIT DIAGRAM VOLUME PCB ASSY



CONTROL PCB ASSY ASSY 7698605000

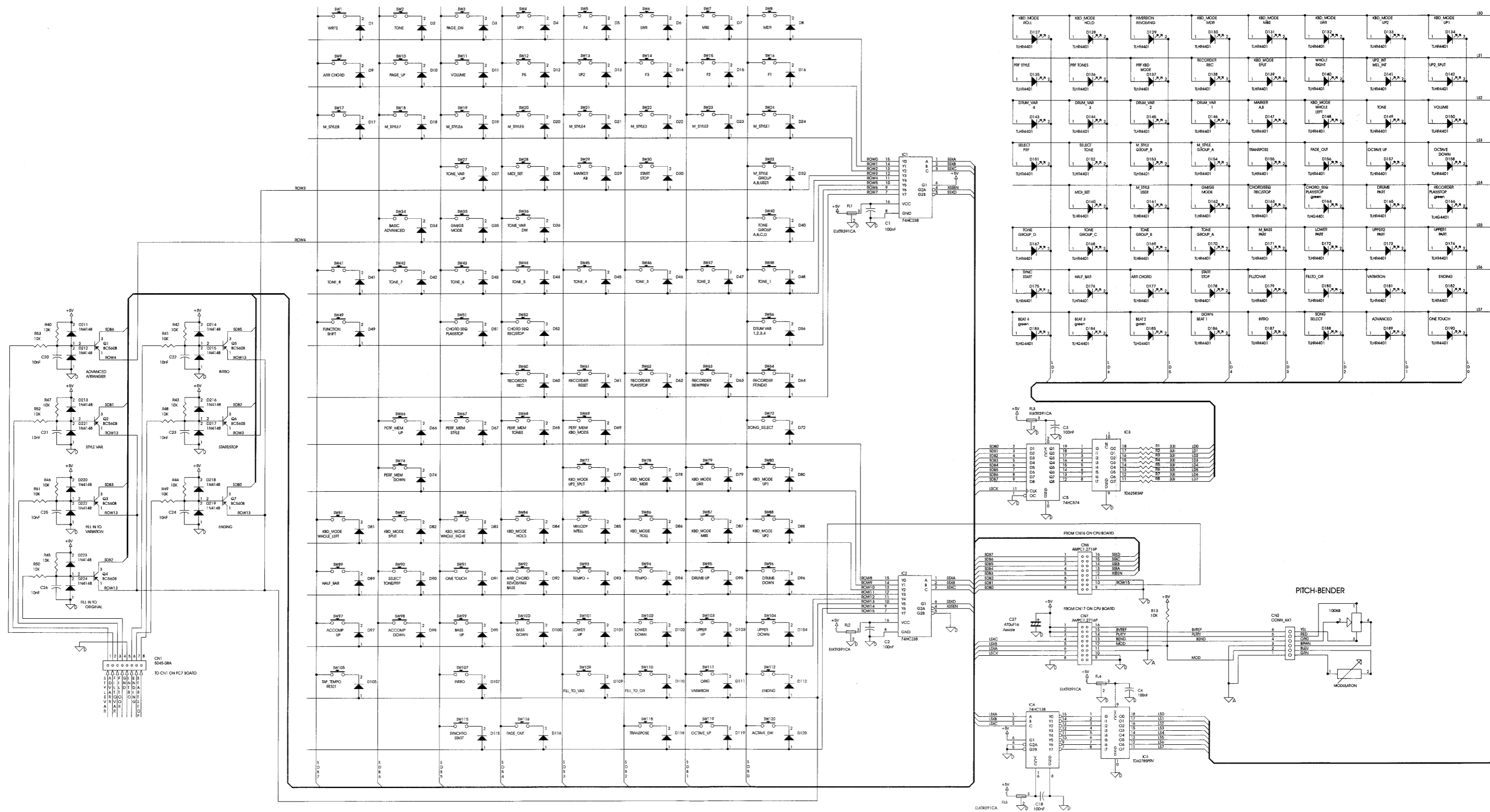


View from component side

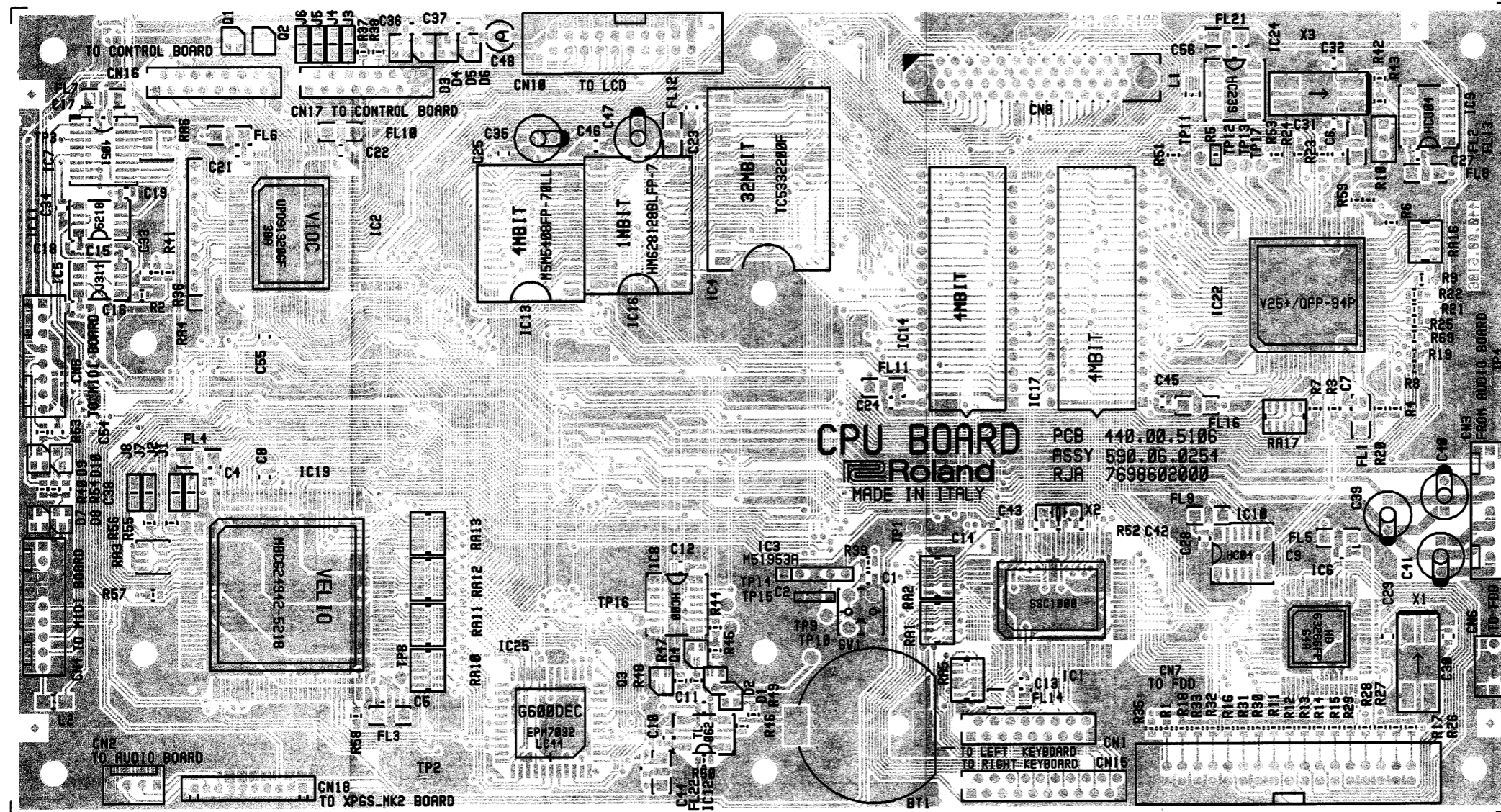
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

CIRCUIT DIAGRAM (CONTROL PCB ASSY)



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

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U**E CPU PCB ASSY** ASSY 7698602000

View from component side

For Nordic Countries

**Apparatus containing
Lithium batteries****ADVARSEL!**

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare.
Ved udskiftning benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING!

Eksplosionsfare ved felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparatillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

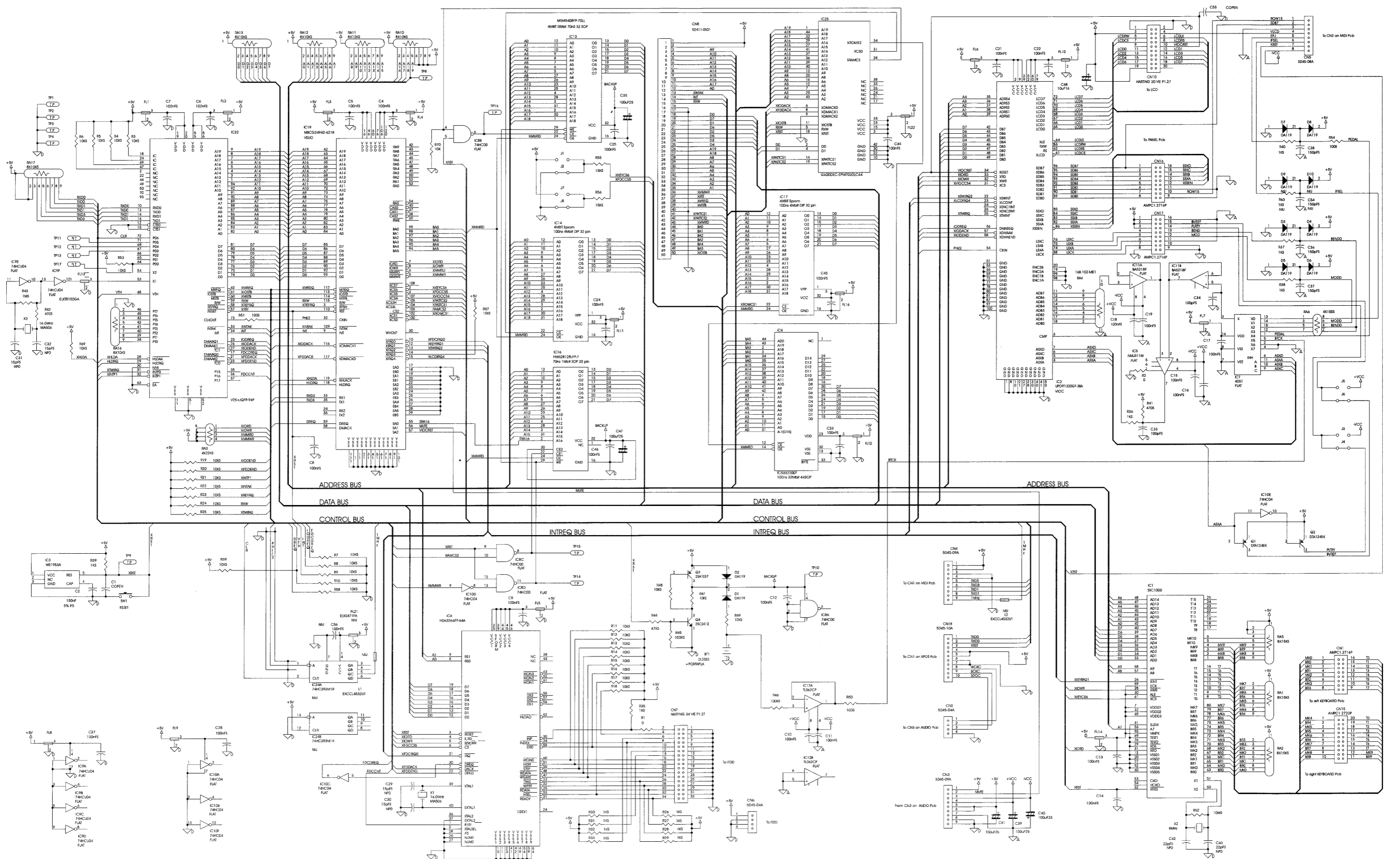
VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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

CIRCUIT DIAGRAM (CPU PCB ASSY)

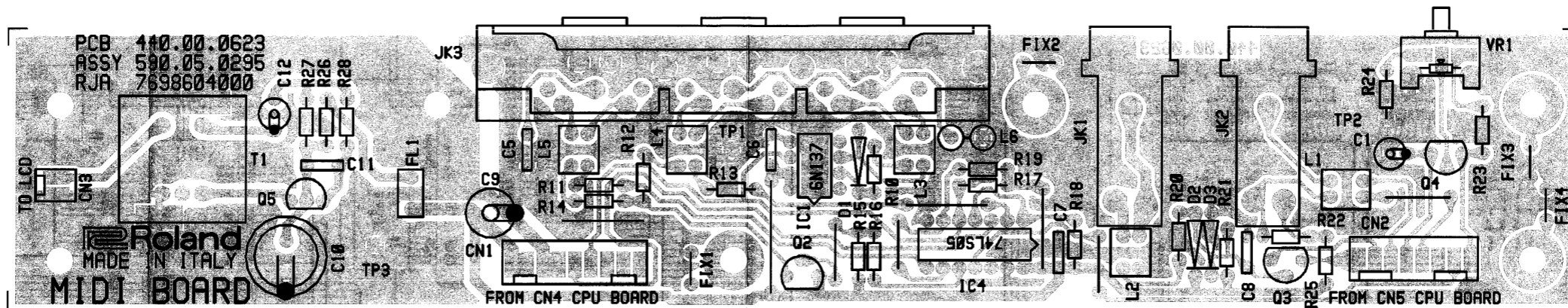
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



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

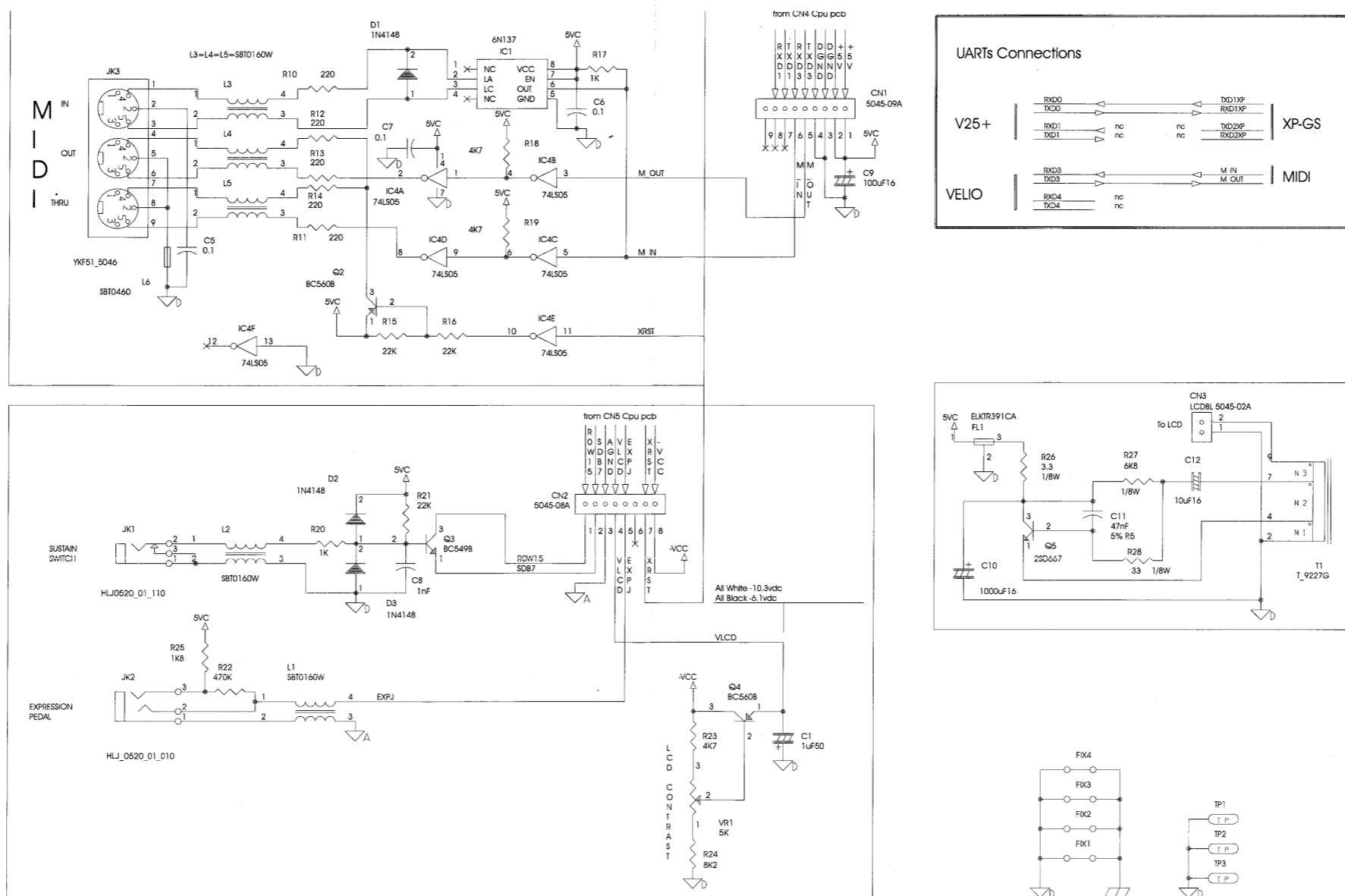
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

MIDI PCB ASSY ASSY 7698604000



View from component side

CIRCUIT DIAGRAM (MIDI PCB ASSY)

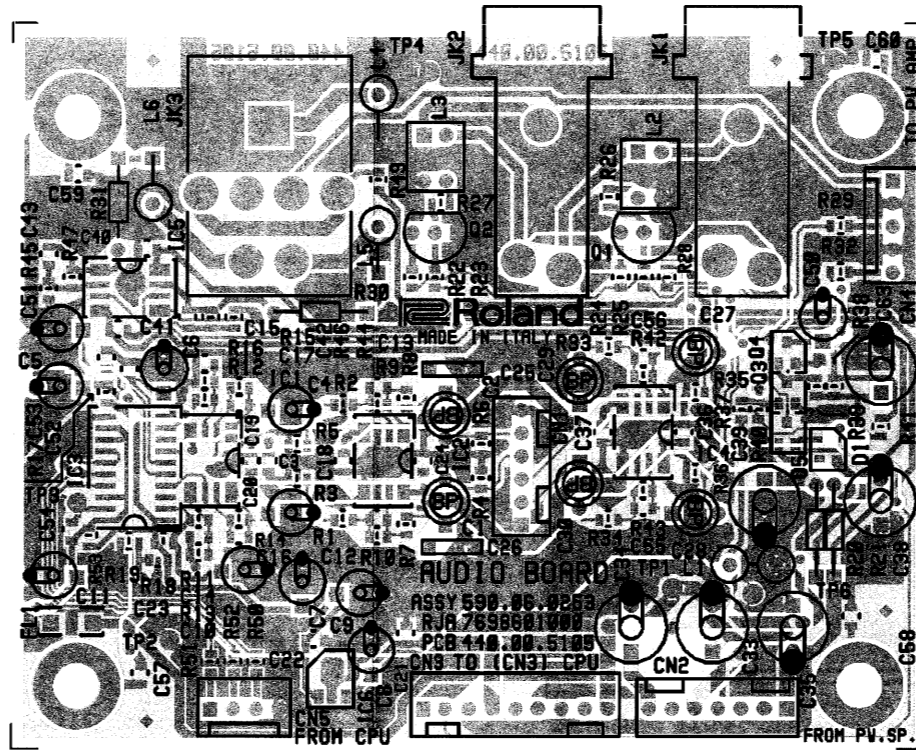


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A B C D E F G H I J K L M N O P Q R S T U

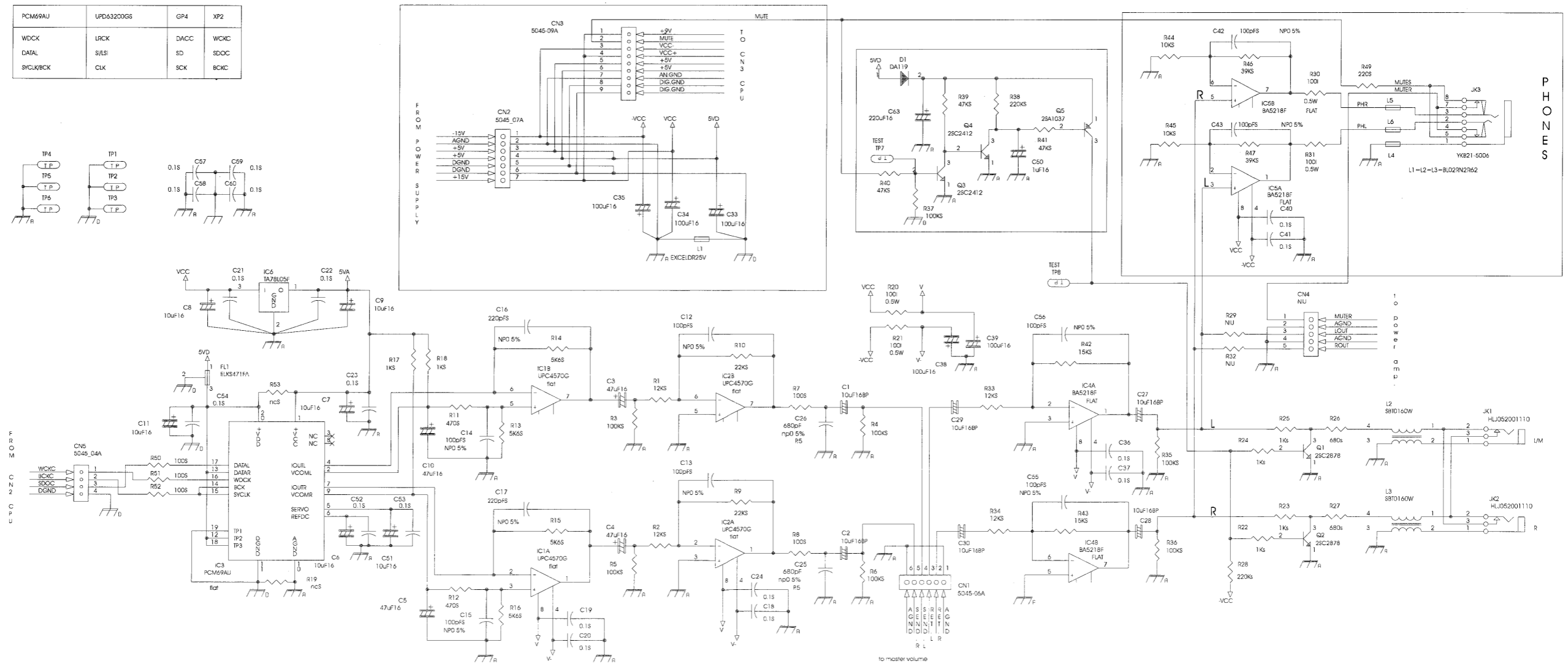
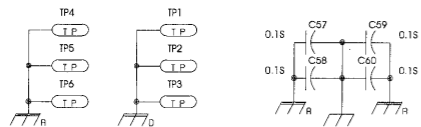
AUDIO PCB ASSY & CIRCUIT DIAGRAM

ASSY 7698601000



View from component side

PCM69AU	LPD63200GS	GP4	XP2
WDCK	LRCK	DACC	WCIC
DATAL	S/LSI	SD	SDOC
SYCLK/CK	CLK	SK	BCK



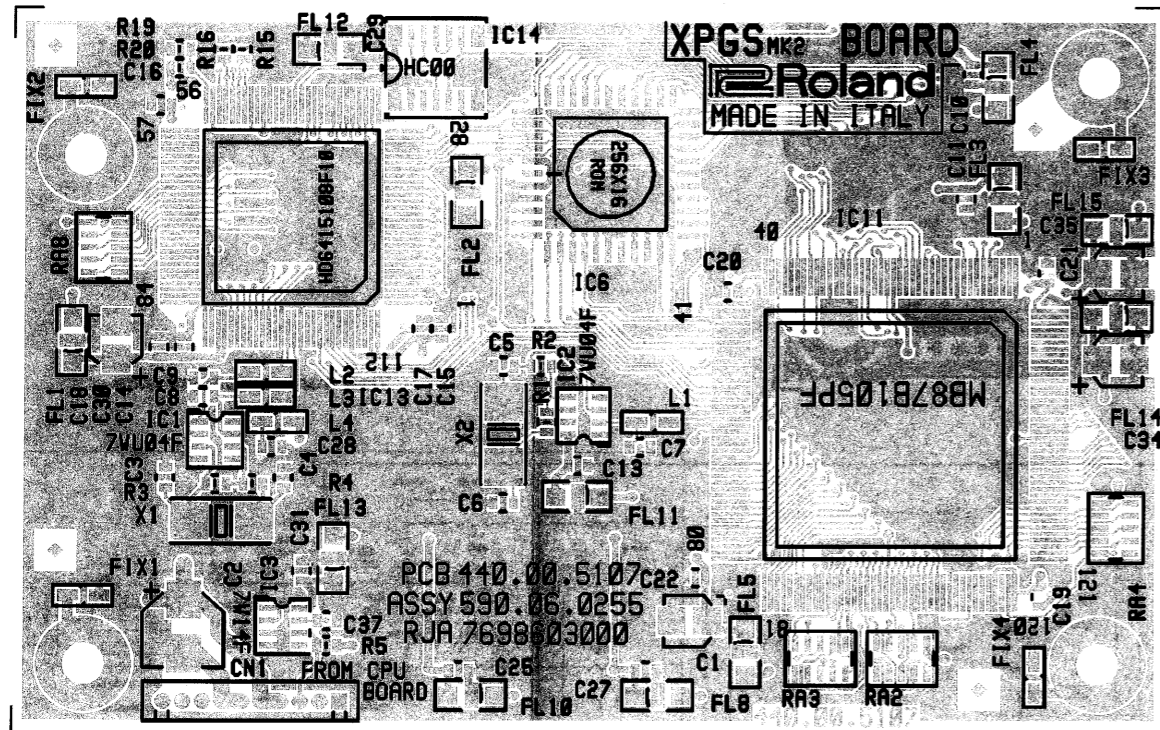
P H O N E S

O U T P U T

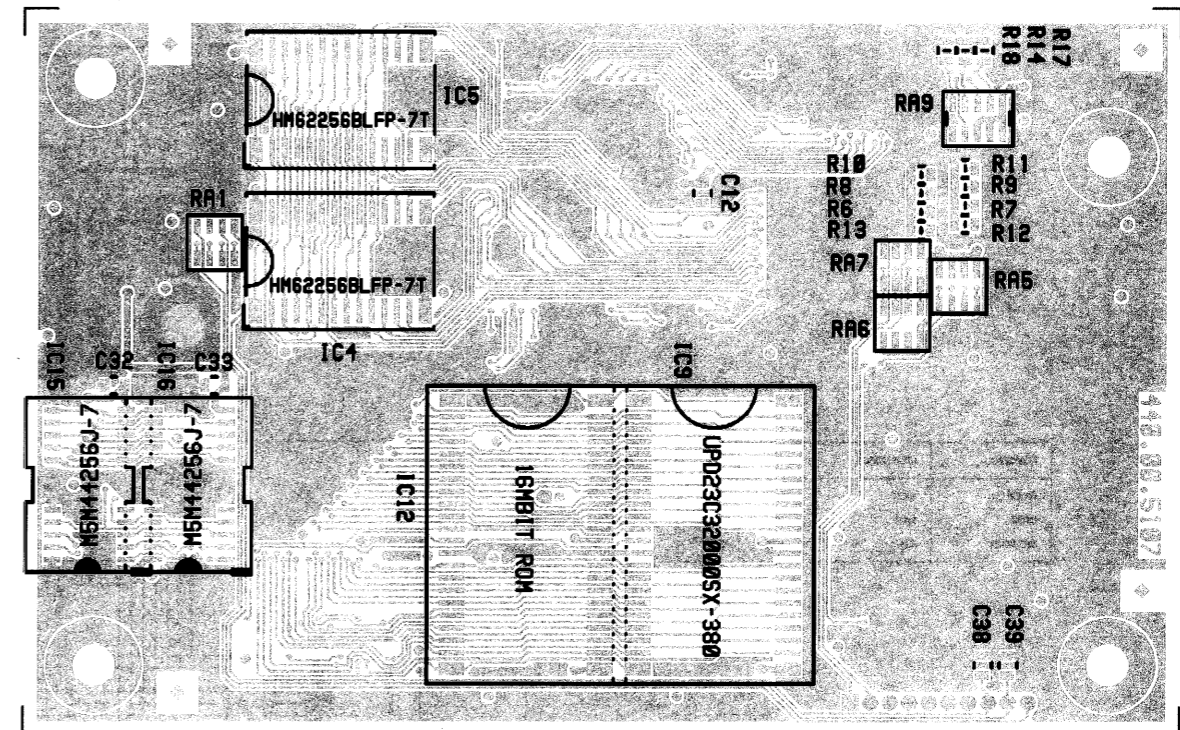
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

E XPGSMK2 PCB ASSY ASSY 7698603000



View from component side

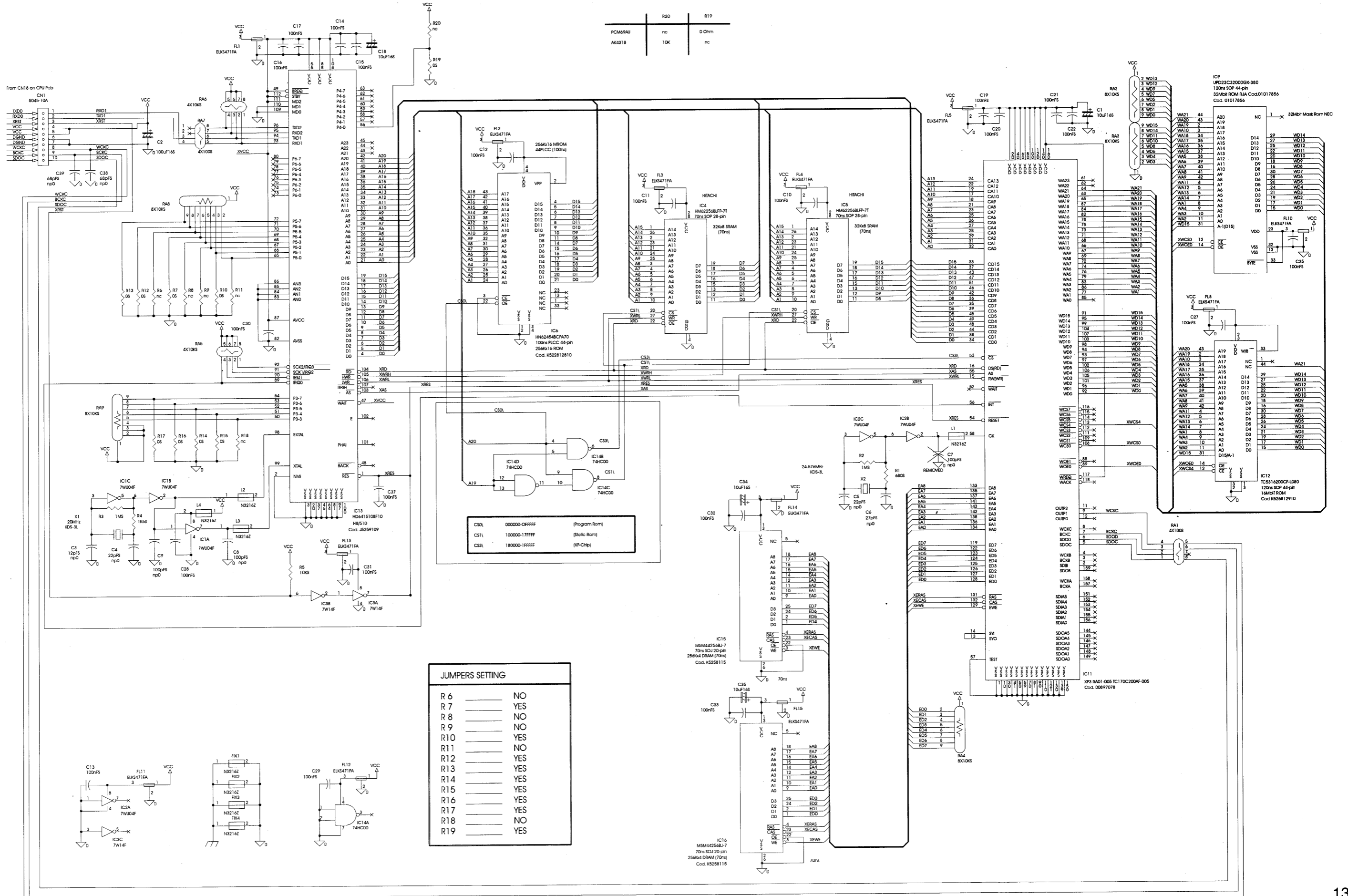


View from solder side

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

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

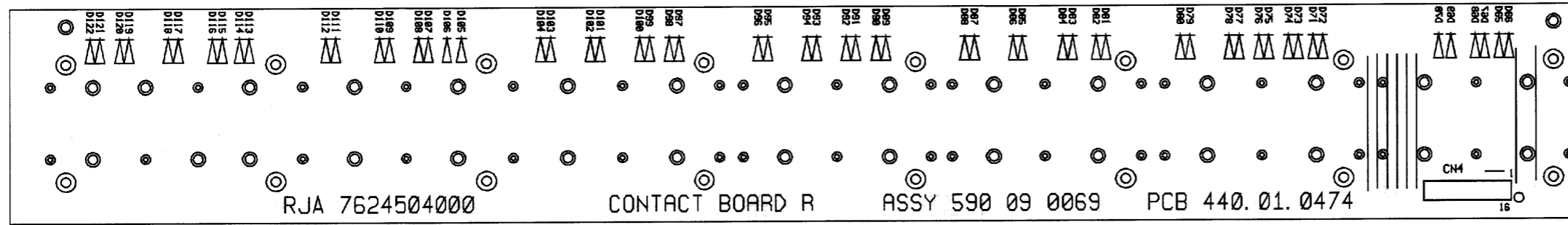
CIRCUIT DIAGRAM (XPGSMK2 PCB ASSY)



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

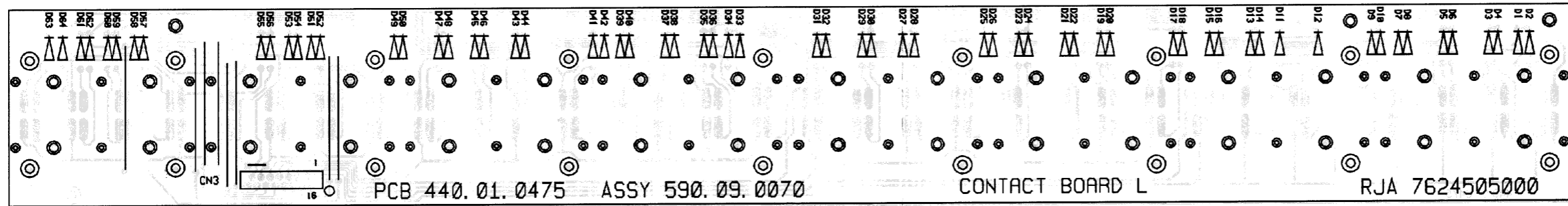
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

RIGHT CONTACT PCB ASSY w/RUBBER ASSY 7624504000



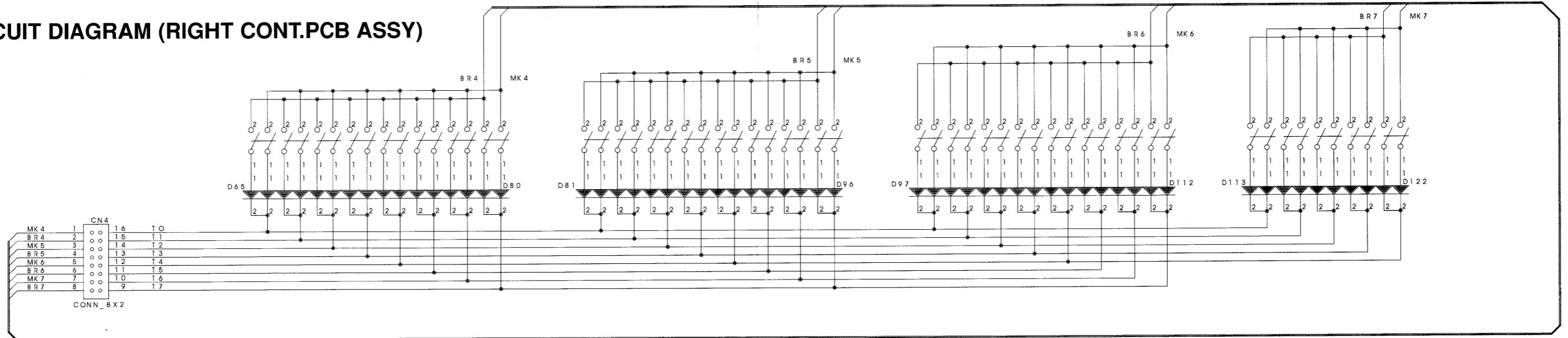
View from component side

LEFT CONTACT PCB ASSY w/RUBBER ASSY 7624505000

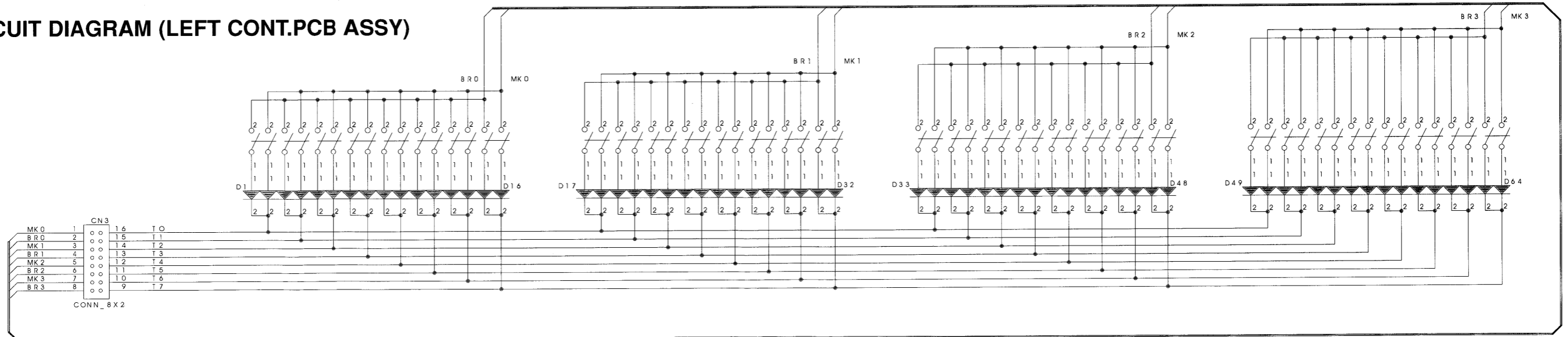


View from component side

CIRCUIT DIAGRAM (RIGHT CONT.PCB ASSY)



CIRCUIT DIAGRAM (LEFT CONT.PCB ASSY)



G-600 TEST MODE ver 1.00

HOW TO IDENTIFY THE G-600 SOFTWARE VERSION

Press the "F1" button while turning on the instrument.
The display shows:

```

                Ver xx.xx
    xx month      xx day      xxxx year
    
```

To leave your display, turn off the instrument.

HOW TO ENTER THE G-600 TEST MODE

Press the "F2" button while turning on the instrument.
The display shows:

```

                G-600 TEST MODE
    Ver. 1.00                                15 Sep 1996
    
```

after a few seconds, the display shows:

Music Style	Tone
1 Switch	1 Rom
2 Bender + pedals	2 Pattern Rom full
3 Led	3 Static Ram 512k
4 Lcd	4 Static Ram
5 Keyboard	5 MIDI
	6 Disk
	7 Pattern Rom fast

This is the Main Menu

HOW TO LEAVE TEST MODE

Turn off the instrument.

SWITCH TEST

Press the Music Style1 button.
The display shows:

```

    Switch Test in progress . . . .
    xxxxx                                ooo
    next switch to be pressed: yyyyy
    
```

xxxxx = Name of the pressed button
ooo = On (if pressed)
Off (if released)
yyyyy = Next switch to be pressed

You can go back to the Main menu, pressing Tone8 and F5 buttons simultaneously only after having pressed every button.

BENDER + PEDAL TEST

Press the Music Style2 button. The display shows:

```

    Bender + Pedal Test
    Bender      aaa                Sustain  bbb
    Modulation  ccc                Pedal    ddd
    Battery     eee
    
```

aaa = From (or near) -127 to (or near) 127
bbb = On if pressed, Off if released.

ccc = From 0 to (or near) 127
ddd = From 0 to (or near) 127
eee = 3.15V

Press the F5 to go back to the Main Menu

LED TEST

Press the Music Style3 button.
The display shows:

```

    Led Test in progress . . . .
    
```

All the LEDS will light in sequence one by one:
At the end all the LEDS will light simultaneously.

Press the F5 button to go back to the Main Menu.

LCD TEST

Press the Music Style4 button.
Whenever you press the Music Style4 button, the display shows:

```

    LIGHT LCD  all the pixels are off
    DARK LCD  all the pixels are lit
    LCD SHOWS NUMBER 8 on each character
    
```

Press the F5 button to go back to the Main Menu

KEYBOARD TEST

Press the Music Style5 button.
The display shows:

```

    KEYboard Scan Test . . . .
    Key = aaa                Vel = bbb
    
```

aaa = Number Pressed or Released button
bbb = Dynamic value from 00 to 127 (00 = Note Off)

Press the F5 button to go back to the Main Menu.

ROM TEST

Press the Tone1 button.
The display shows:

```
IC17 (program Rom) test in progress . . . .
IC17 = aaaaa

IC14 (program Rom) test in progress . . . .
IC14 = bbbbb
```

aaaaa = OK if everything is right, Error in case of error on IC17.
bbbbb = OK if everything is right, Error in case of error on IC14.

Press the F5 button to go back to the Main Menu.

PATTERN ROM TEST

Press the Tone2 button.
The display shows:

```
IC4 (Pattern Rom) test in progress . . . .
IC4 = aaaaa
```

aaaaa = OK if everything is right, Error in case of error on IC4.

Press the F5 button to go back to the Main Menu.

STATIC RAM TEST

Press the Tone3 button.
The display shows:

```
IC13 Static Ram test in progress . . . .
IC13 = aaaaa
```

aaaaa = OK if everything is right, Error in case of error on IC13.

Press the F5 button to go back to the Main Menu.

STATIC RAM TEST

Press the Tone4 button.
The display shows:

```
IC16 Static Ram test in progress . . . .
ic16 = aaaaa
```

aaaaa = OK if everything is right, Error in case of error on IC16.

Press the F5 button to go back to the Main Menu.

MIDI TEST

Press the Tone5 button.
The display shows:

```
MIDI Test in progress . . . .

Connect MIDI out = to => MIDI      In : aaaaa
```

aaaaa = OK if everything is right, Error in case of error.

Press the F5 button to go back to the Main Menu.

DISK TEST

Press the Tone6 button.
The display shows:

```
Disk test

Disk xxxxxxx
yyyyyyyyyy
hd
Track = aaaa      Sector = bbbb
```

xxxxxxx = Reading or Writing

yyyyyyyyyy = OK if everything is right, Error in case of error, Disk protected, Disk Not Formatted, Insert Disk, Write Error, Recalibr.Error.

aaaa = Track number

bbbb = Sector number

Press the F5 to go back to the Main Menu

RECOVERING FACTORY DATA**CAUTION !!!!!**

Save Performance Memory (if any) MIDI Set (if any) and Chord Sequencer/Arranger Loop onto the disk to avoid data loss.

For saving method refer to the Owner Manual (Disk section).

Hold the WRITE button while powering on the instrument, the display will show:

```
Original factory setup has been loaded !!
```

The CMOS S-RAM (IC16) will be initialized in this way:

- Factory Performance Memory (1 to 192) will be loaded.
- Factory MIDI Set (1 to 8) will be loaded.
- Chord Sequencer/Arranger Loop Data will be cleared.
- User Style data will be cleared.
- SEQREC Stlchange parameter will be set ON.

At the end of the initialization procedure the instrument will enter into normal operation mode.

CHANGE INFORMATION

REASON

To avoid the pin n°4 of IC8 from remaining floating, during the reset operation.

MEASURE

CPU BOARD ASSY 7698602000

Add R70 between the pin n°4 of IC8 and GND (see Fig.2)

N° 1 RESISTOR 10Kohm 1/8W 5% R70 (on the Circuit Diagram, Fig.1)

EFFECTIVE

230VE ZJ82300 up	from MAY 1997
240VA ZJ82320 up	from MAY 1997
117V ZJ80927 up	from MAY 1997
230V ZJ70440 -> ZJ70639	from APR 1997
ZJ81310 up	from MAY 1997

SERVICE RESPONSE

Whenever you receive an inquiry from the user, please make this modification.

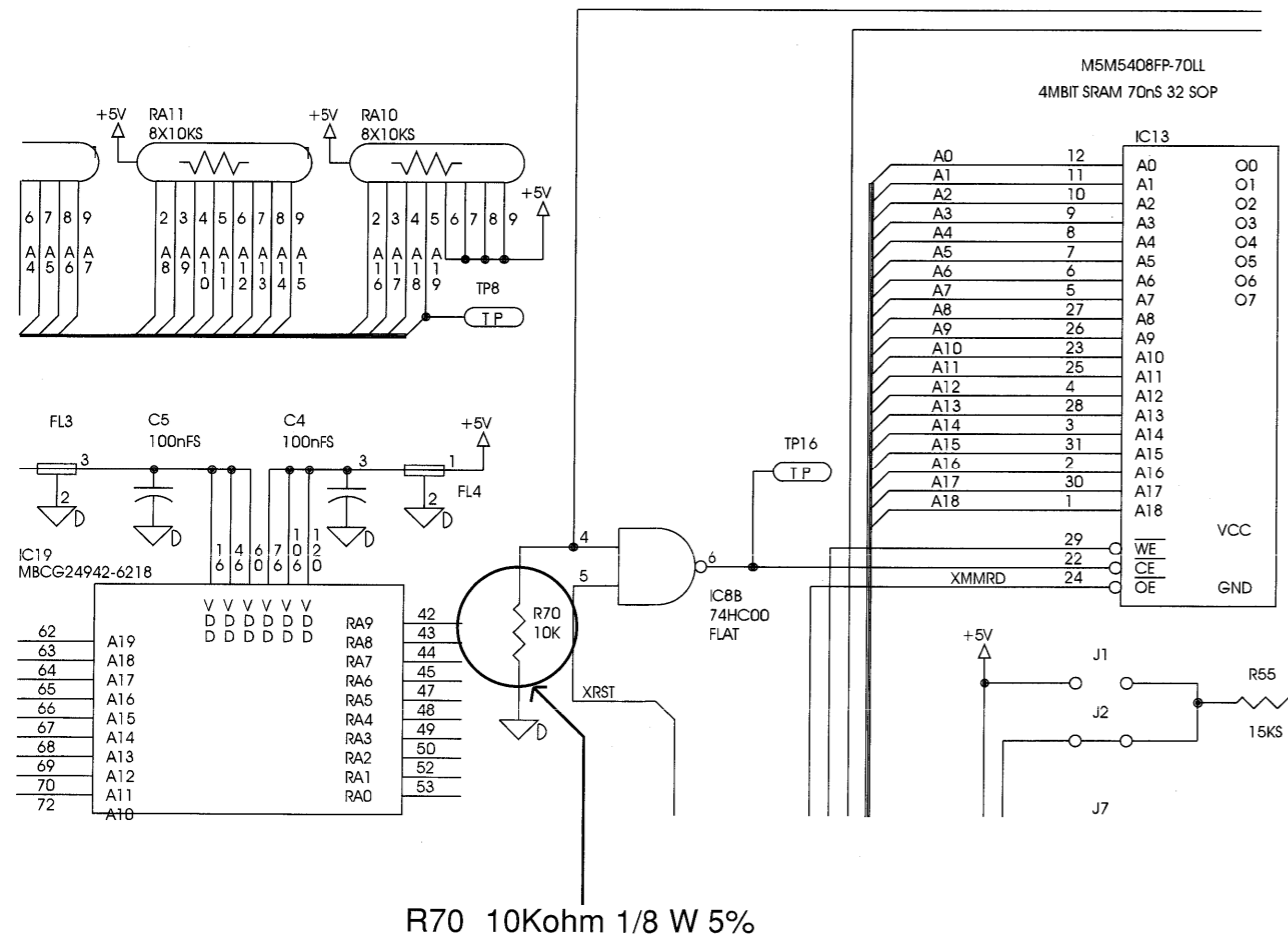


Fig.1

CPU PCB ASSY

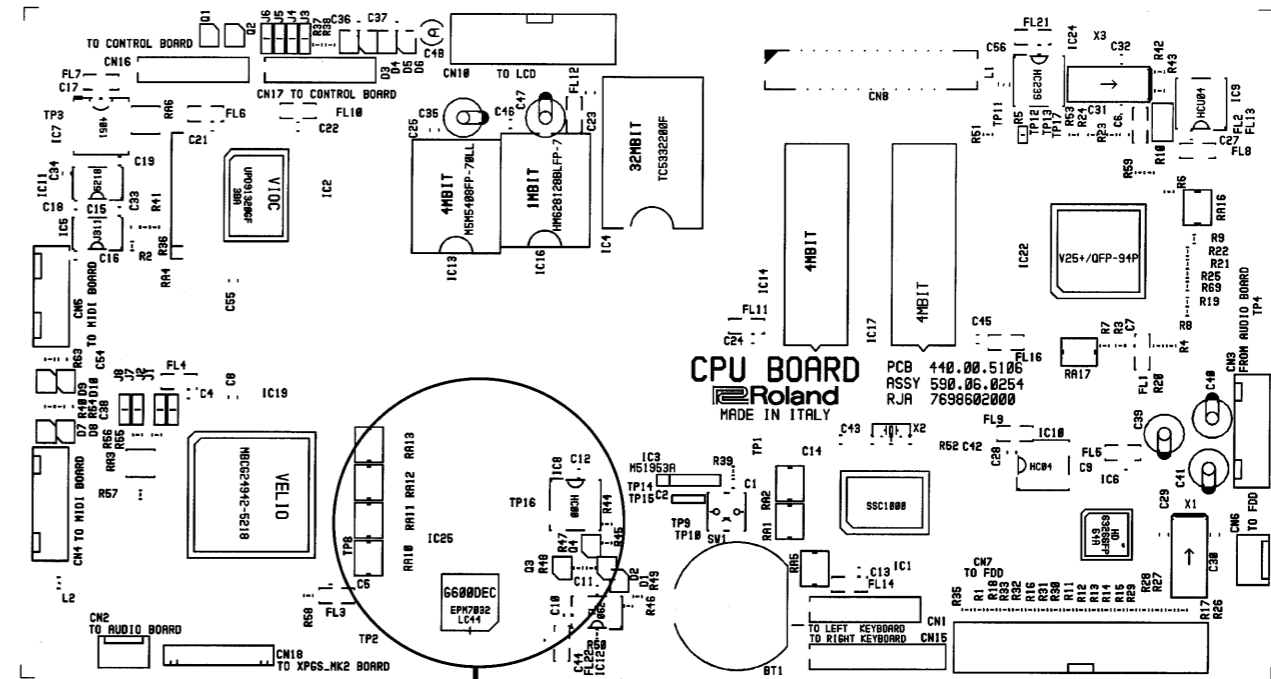
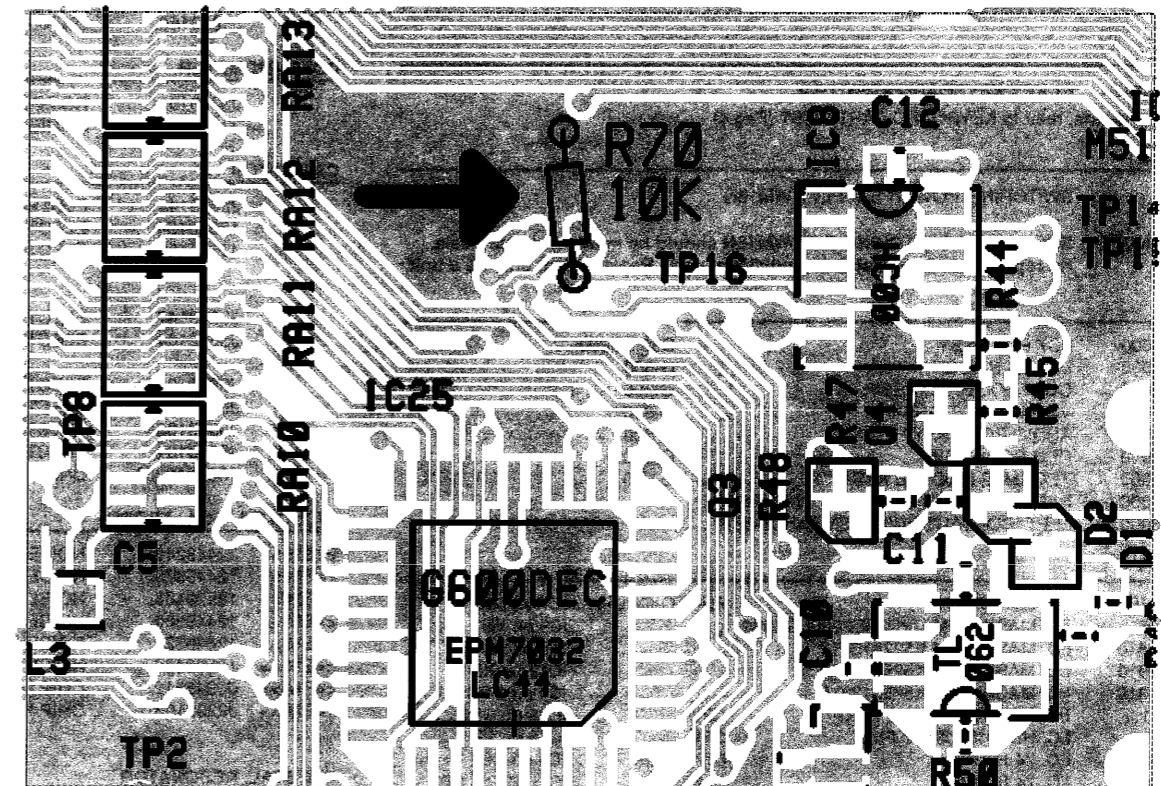


Fig.2



REASON

How to prevent the audio noise due to a ground loop, in some midi connections.

MEASURE

MIDI BOARD ASSY 7698604000

- 1) Cut the track marked with "A".
- 2) Add a jumper wire between the pins marked with "B" - "C".
- 3) Invert the position of C5 = 0.1 (marked with "D") with L6 = SBT0460 (marked with "E") and viceversa.

EFFECTIVE

117V	ZK03450	from JULY 1997
230V	ZJ93000	from JUNE 1997
230VE	ZK04420	from JULY 1997
240VA	ZK04440	from JULY 1997

SERVICE RESPONSE

Whenever you receive an inquiry from the user, please make this modification.

