

SH-201

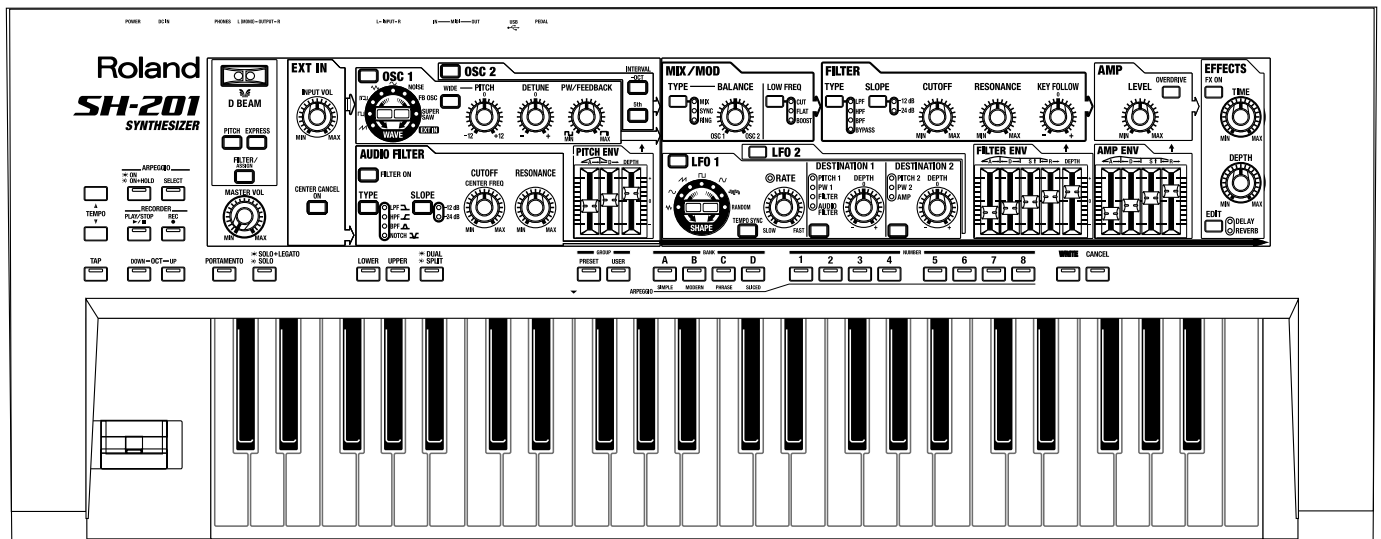
SYNTHESIZER

SERVICE NOTES

Issued by RJA

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Cautionary Notes

Before beginning the procedure, please read through this document.

The matters described may differ according to the model.

Backup User Data!

User data may be lost during the course of the procedure. Refer to "Users Data Save and Load" in the Service Notes and save the data. After completing the procedure, restore the backed-up data to the product.

Part Replacement

When replacing components near the power-supply circuit or a heat-generating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

Parts List

A component whose part code is ***** cannot be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).

Circuit Diagram

In the circuit diagram, 'NIU' is an abbreviation for 'NOT IN USE.' The circuit board and circuit-board diagram show silkscreened indications, but no components are mounted.

Specifications

SH-201: Synthesizer

Keyboard

49 keys (velocity sensitive)

Maximum Polyphony

10 voices

Sound Generator Organization

Analog Modeling Sound Engine (One MIDI part)

2 Tones per Patch (Upper and Lower)

2 Oscillators with MIX/MOD + 1 Filter + 1 Amp + 2 LFOs + 3 Envelopers

Patch Memory

Preset: 32

User: 32

OSC Section

Oscillator Waveform: SAW, SQUARE, PULSE/PWM, TRIANGLE, SINE, NOISE, FB OSC, Super SAW, EXT IN

Knobs: Pitch, Detune, PulseWidth/Feedback

Envelope: Attack, Decay

MIX/MOD Section

Oscillator Sync, Ring Modulation, Low Boost/Low Cut

Knob: Balance (OSC1/OSC2)

FILTER Section

Filter Type: LPF, BPF, HPF (-12 dB/-24 dB)

Knobs: Cutoff, Resonance, Key follow

Envelope: Attack, Decay, Sustain, Release

AMP section

Knob: Level

Insertion Effect: Overdrive

Envelope: Attack, Decay, Sustain, Release

LFO Section

LFO Shape: TRIANGLE, SINE, SAW, SQUARE, TRAPEZOID, SAMPLE AND HOLD, RANDOM

Knobs: Rate, Destination 1 Depth, Destination 2 Depth

Tempo Sync ON/OFF

Effects

Reverb, Modulation Delay

Controllers

Pitch Bend/Modulation lever

D Beam Controller

Arpeggiator

Pattern templates: 32

Tempo: 5-300

Full programmable with PC editor software

Recorder

Easy Sequencer

Number of Track: 1

Tempo: 5-300

Jacks/Connectors

OUTPUT Jacks (L/MONO, R) (1/4 inch phone type)

Headphones Jack (Stereo 1/4 inch phone type)

INPUT Jacks (L, R) (RCA phono type)

MIDI Connectors (IN, OUT)

USB Connector (AUDIO/MIDI)

PEDAL Jack

DC IN Jack

Power Supply

AC Adaptor (DC 9 V)

Current Draw

600 mA

Dimensions

884 (W) x 354 (D) x 107 (H) mm

34-13/16 (W) x 13-15/16 (D) x 4-1/4 (H) inches

Weight

5.2 kg / 11 lbs 8 oz (excluding AC Adaptor)

Accessories

CD-ROM (USB Driver, Editor, Librarian) (#04451501)

Owner's Manual English (#04129778 for SH-201)

Owner's Manual Chinese (#04342712 for SH-201C)

Booklet (#04342778 for SH-201C)

AC Adaptor

For 117V U	#03017356	PSB-1U (without AC Cord)
	#02562456	AC CORD SET 120V 1.0M (NON POLAR)
For 117V C/S	#03017356	PSB-1U (without AC Cord)
	#02562456	AC CORD SET 120V 1.0M (NON POLAR)
For 230V EU	#03017356	PSB-1U (without AC Cord)
	#01903356	AC CORD SET 230V 1.0M FOR PSB
For 230V E	#03017356	PSB-1U (without AC Cord)
	#01903356	AC CORD SET 230V 1.0M FOR PSB
For 240V A	#00905234	EURO CONVERTER PLUG
	#03017356	PSB-1U (without AC Cord)
	#03785590	AC CORD SET SC-078-NA05 240VA

Options

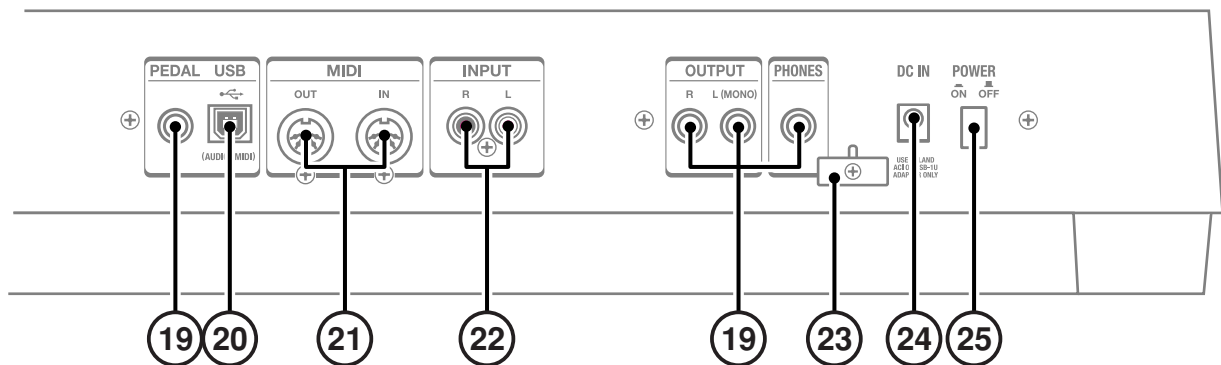
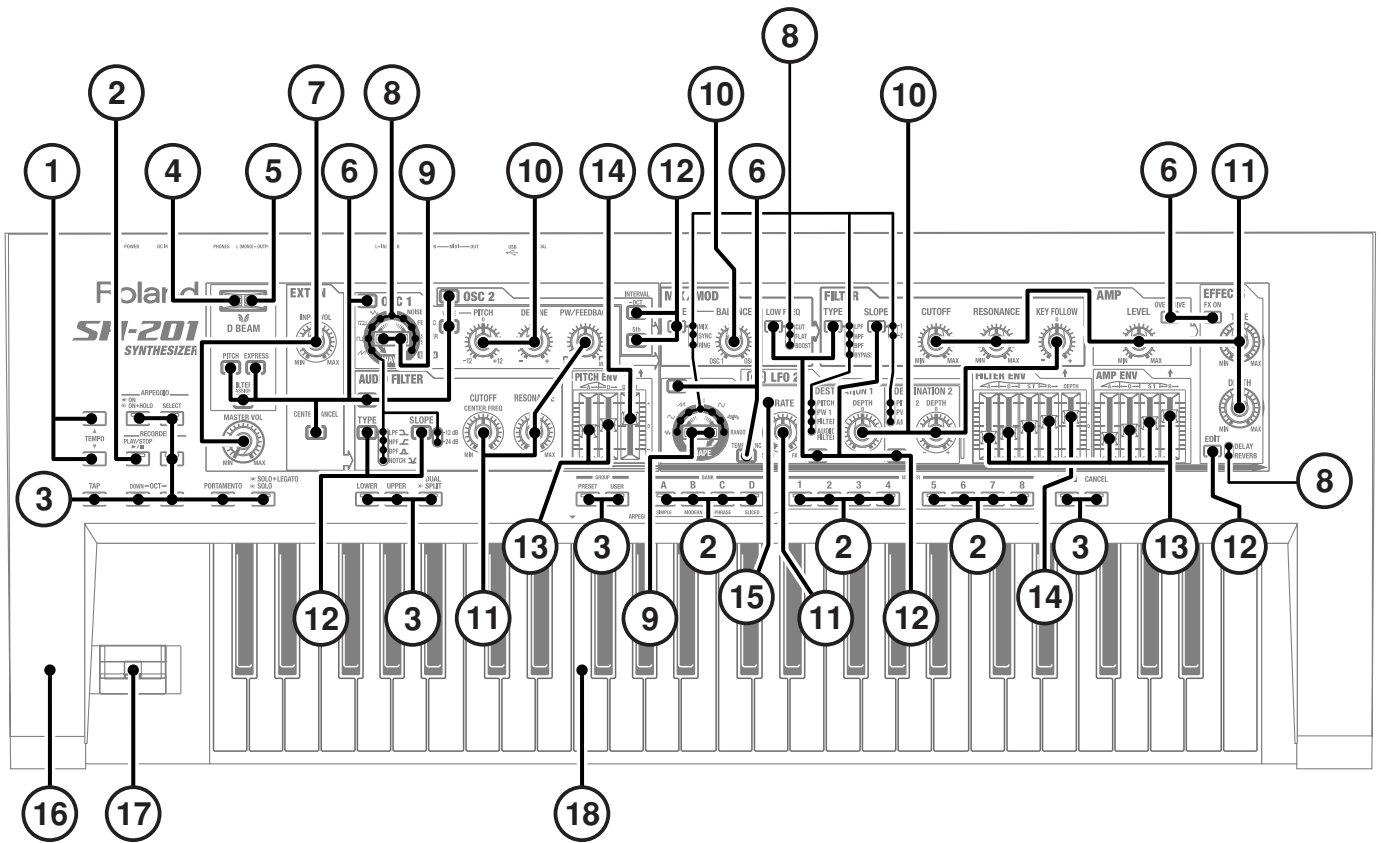
Pedal Switch: DP series

Foot Switch: BOSS FS-5U

Expression Pedal: EV-5

* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

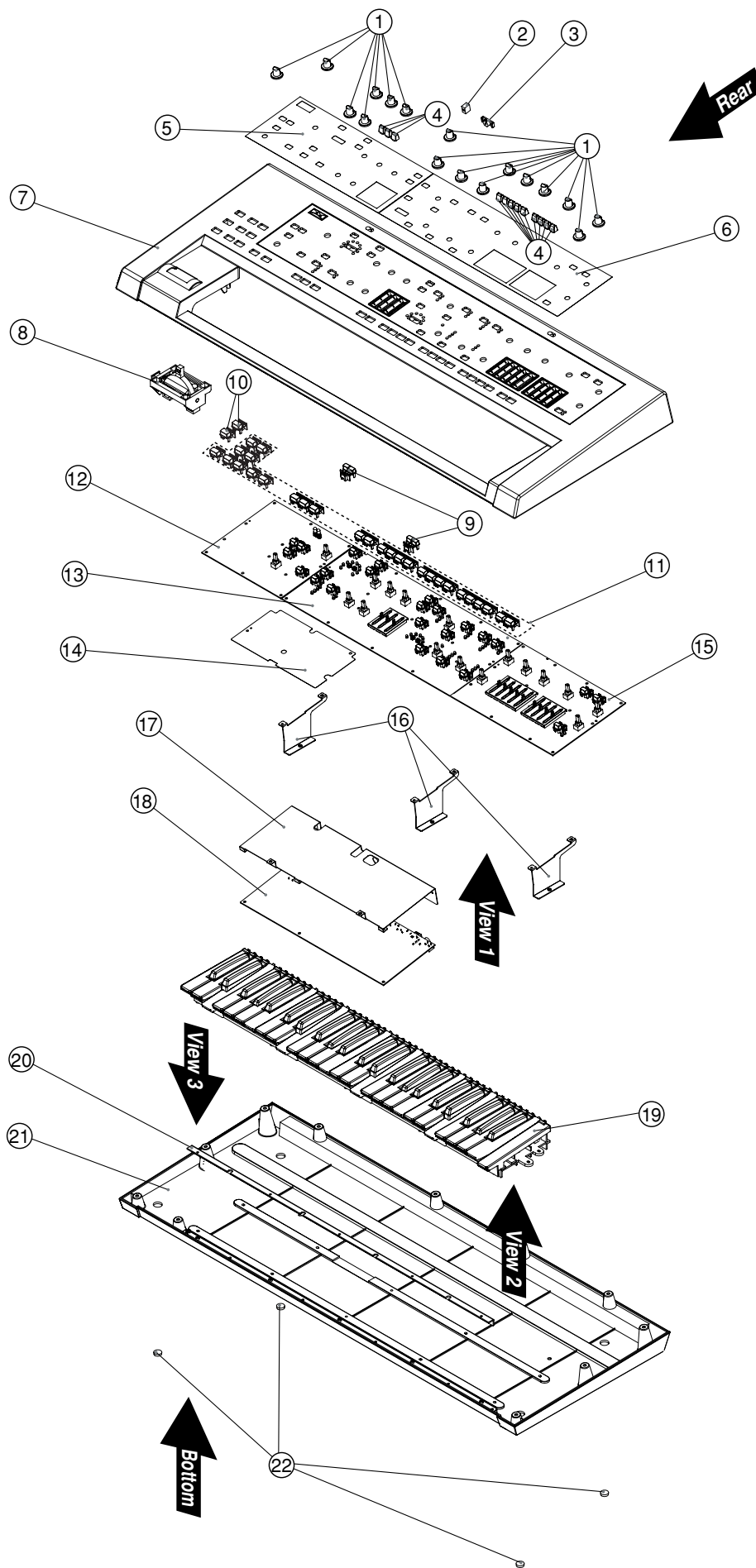
Location of Controls



Location of Controls Parts List

No.	Part Code	Part Name	Description	Q'ty
1	04129901	S-KEYTOP SX BLACK		2
	02891789	TACT SWITCH	SKRGADD010 H=5.0	2
	01780101	TACT SWITCH	SKQKABD010	2
2	04129912	S-KEYTOP SD BLACK		13
	01239867	LED (RED/GREEN) CLR	SML72423C TP15	13
	02891789	TACT SWITCH	SKRGADD010 H=5.0	13
	01780101	TACT SWITCH	SKQKABD010	13
3	04129912	S-KEYTOP SD BLACK		15
	01904112	LED (RED)	SLR-342VCT32 N.P.Q RANK	15
	02891789	TACT SWITCH	SKRGADD010 H=5.0	15
	01780101	TACT SWITCH	SKQKABD010	15
4	01900612	DIODE	TPS611 (F)	1
5	03126134	LED (INFRARED)	TLN233 (F)	1
6	03671756	D S-KEYTOP	SX2H-B GRS BY MOONPO	13
	01904112	LED (RED)	SLR-342VCT32 N.P.Q RANK	13
	02891789	TACT SWITCH	SKRGADD010 H=5.0	13
	01780101	TACT SWITCH	SKQKABD010	13
7	04129923	R-KNOB SF SILVER		2
	02455234	12M/M ROTARY POTENTIOMETER	EVJY15F02B14	2
8	01904112	LED (RED)	SLR-342VCT32 N.P.Q RANK	43
9	04127489	S-KEYTOP SX2H		2
	02891789	TACT SWITCH	SKRGADD010 H=5.0	4
	01780101	TACT SWITCH	SKQKABD010	4
10	04129923	R-KNOB SF SILVER		6
	04230134	12M/M ROTARY POTENTIOMETER	EVJY15F02B14	6
11	04129923	R-KNOB SF SILVER		9
	02455223	9M/M ROTARY POTENTIOMETER	EVUF2KFK4B14	9
12	03671756	D S-KEYTOP	SX2H-B GRS BY MOONPO	11
	02891789	TACT SWITCH	SKRGADD010 H=5.0	11
	01780101	TACT SWITCH	SKQKABD010	11
13	04233323	S-KNOB SILVER		10
	03234167	30M/M SLIDE POTENTIOMETER	RS301111 G67894540	10
14	04233323	S-KNOB SILVER		2
	04121023	POTENTIOMETER	SLIDE POT. RS301113C00C	2
15	03893601	LED	SLR343BCT3F	1
16	04125490	TOP CASE		1
17	03234723	BENDER	PB-H0204	1
18	04344801	MSK-2 49KEYBOARD ASSY	WITHOUT CABLE	1
19	00569278	6.5MM JACK	LGR4609-7100F	4
20	02781189	USB CONNECTOR B TYPE FEMALE	YKF45-0021	1
21	02568867	MIDI JACK	DIN HDC-052A-12	1
22	04230234	RCA PIN JACK	HSP-252V3P-06	1
23	22365714	CORD HOOK		1
24	13449711	AC ADAPTOR JACK	HEC0470-01-630	1
25	12499175	BUTTON	JSPUE0011A	1
	01676512	PUSH SWITCH	SDKLA10200	1

Exploded View (1)

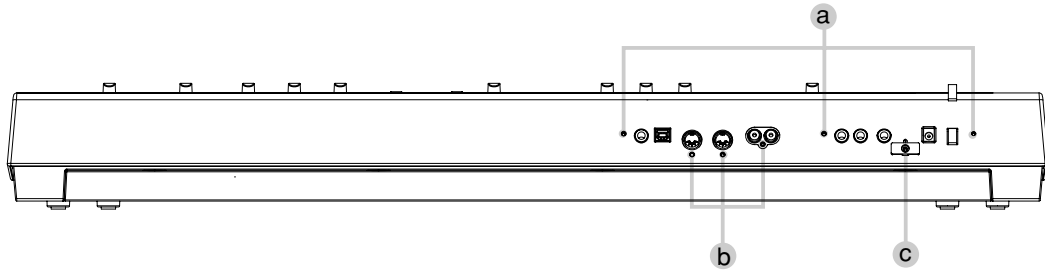


Exploded View (1) Parts List

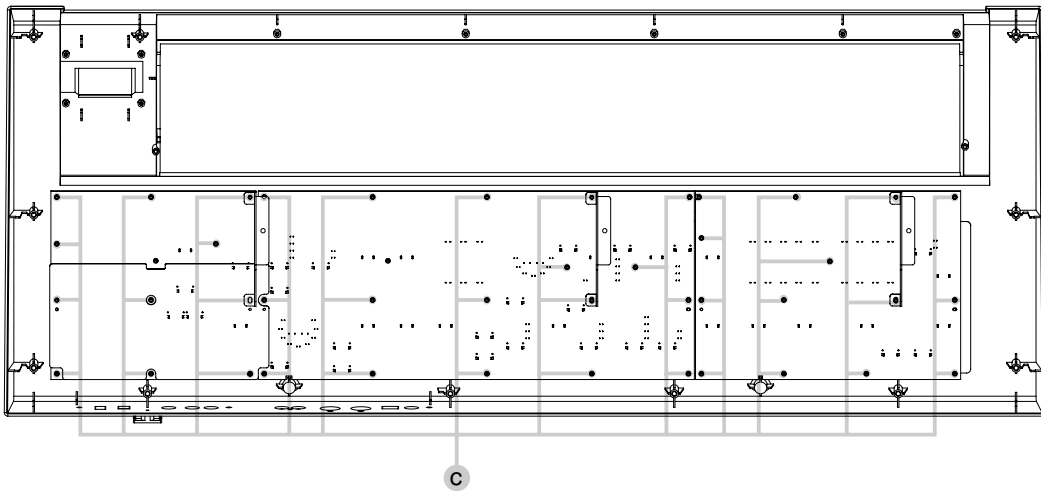
No.	Part Code	Part Name	Description	Q'ty
1	04129923	R-KNOB SF SILVER		17
2	12499175	BUTTON	JSPUE0011A	1
3	22365714	CORD HOOK		1
4	04233323	S-KNOB SILVER		12
5	04127490	PANEL SHEET L		1
6	04127534	PANEL SHEET R		1
7	04125490	TOP CASE		1
8	03234723	PB-H0204 BENDER (MADE BY MOONPO)		1
9	04127489	S-KEYTOP SX2H		2
10	04129901	S-KEYTOP SX BLACK		2
11	04129912	S-KEYTOP SD BLACK		28
12	04129856	PANEL-L BOARD ASSY	for SH-201	1
	04453323	PANEL-L BOARD ASSY	for SH-201C	1
13	04129845	PANEL-C BOARD ASSY	for SH-201	1
	04453312	PANEL-C BOARD ASSY	for SH-201C	1
14	04235389	INSULATING SHEET FOR PANEL-L		1
15	04129867	PANEL-R BOARD ASSY	for SH-201	1
	04453334	PANEL-R BOARD ASSY	for SH-201C	1
16	04127545	STAY		3
17	04127556	PWB HOLDER MAIN		1
18	04129834	MAIN BOARD ASSY		1
19	04344801	MSK-2 49KEYBOARD ASSY	WITHOUT CABLE	1
20	03458512	REINFORCE BAR		1
21	04125501	BOTTOM CASE		1
22	12359137	RUBBER FOOT	SJ-5012 BLK	4

Exploded View (2)

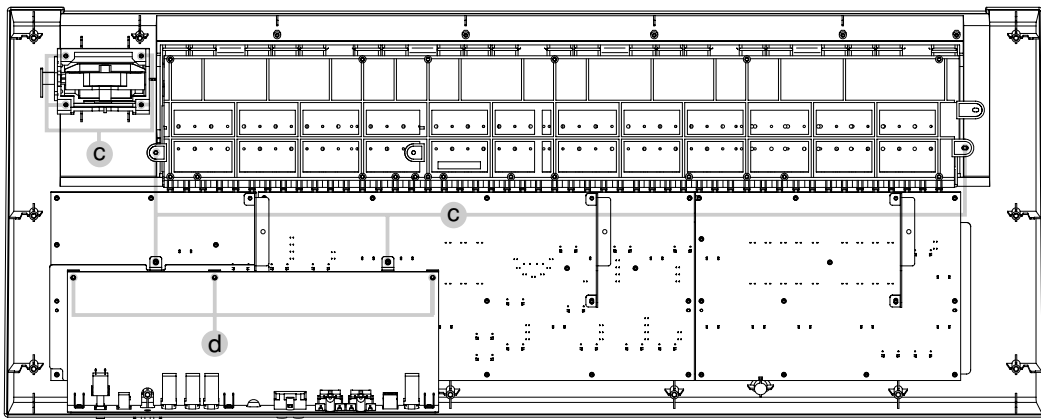
Rear



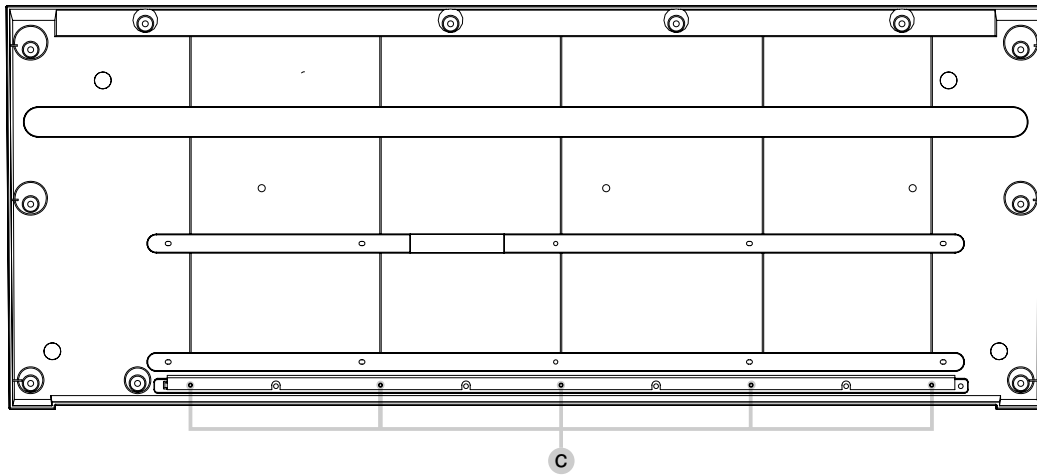
View 1



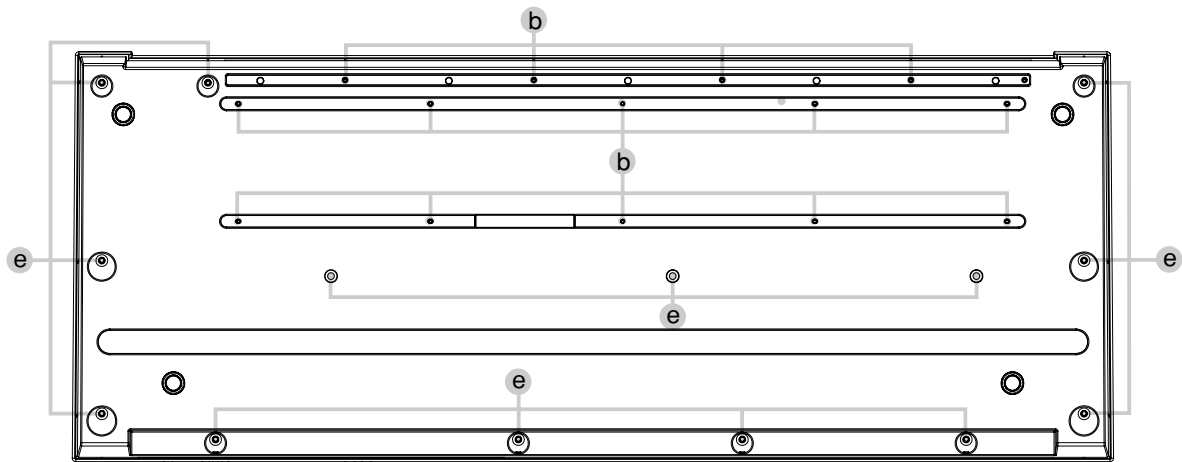
View 2



View 3



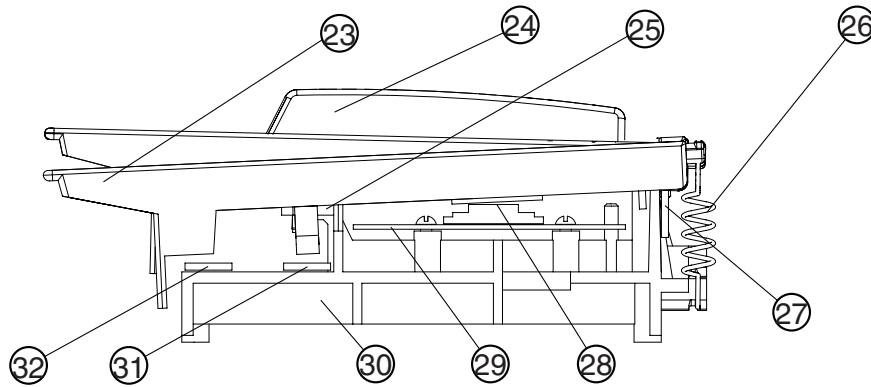
Bottom



Exploded View (2) Parts List

No.	Part Code	Part Name	Description	Q'ty
a	40011501	SCREW M3X8	PAN MACHINE W/SW BZC	3
b	40011334	SCREW 3X12	BINDING TAPTITE-P BZC	17
c	40011312	SCREW 3X8	BINDING TAPTITE P BZC	56
d	40011056	SCREW 3X6	BINDING TAPTITE B ZC	3
e	40011123	SCREW 4X8	BINDING TAPTITE B BZC	14

Vertical Section of Keyboard



Keyboard Parts List

No.	Part Code	Part Name	Description	Q'ty
23	03786378	NATURAL KEY C	for MSK-2	4
	03786389	NATURAL KEY D	for MSK-2	4
	03786390	NATURAL KEY E	for MSK-2	4
	03786401	NATURAL KEY F	for MSK-2	4
	03786412	NATURAL KEY G	for MSK-2	4
	03786423	NATURAL KEY A	for MSK-2	4
	03786434	NATURAL KEY B	for MSK-2	4
	03786445	NATURAL KEY C'	for MSK-2	1
24	03786456	SHARP KEY	for MSK-2	20
25	03786312	KEY FELT	MSK-2 HOOK T2.5MM L870XW5.5	1
26	03456967	COILED SPRING	for NATURAL KEY	29
	03456978	COILED SPRING	for SHARP KEY	20
27	03786301	KEY FELT	MSK-2 BACK T3.0MM L840XW6.0	1
28	03456856	RUBBER SW KEYBOARD 12P	for MSK-2	3
	03456867	RUBBER SW KEYBOARD 13P	for MSK-2	1
29	*****	PWB KEYBOARD ASSY	A 49key type. (ex. PCR-M50)	1
30	*****	CHASSIS KEYBOARD	recommend the KEYBOARD ASSY exchange	--
31	03786334	KEY FELT	MSK-2 BOTTOM M T2.5MM L840XW10	1
32	03786323	KEY FELT	MSK-2 BOTTOM L T2.5MM L840XW15	1

Parts List

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

Due to one or more of the following reasons, parts with parts code ***** cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

NOTE: The parts marked # are new. (initial parts) The description "Q'TY" means a necessary number of the parts per one product.

CASING

#	04125501	BOTTOM CASE	1
#	04127490	PANEL SHEET L	1
#	04127534	PANEL SHEET R	1
#	04125490	TOP CASE	1

CHASSIS

#	04127556	PWB HOLDER MAIN	1
#	03458512	REINFORCE BAR	1
#	04127545	STAY	3

KNOB, BUTTON

	03671756	D S-KEY TOP	SX2H-B GRS BY MOONPO	12
	* The repair key tops are provided as a set of two (two buttons). The SH-201 has twenty-four buttons, so twelve sets of repair key tops will contain twenty-four (enough for one SH-201 synthesizer).			
	12499175	BUTTON	JSPUE0011A	1
#	04129923	R-KNOB SF SILVER		17
#	04129912	S-KEYTOP SD BLACK		28
#	04129901	S-KEYTOP SX BLACK		2
#	04127489	S-KEYTOP SX2H		2
#	04233323	S-KNOB SILVER		12

SWITCH

	02891789	TACT SWITCH	SKRGADD010 H=5.0	SW1, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, SW19, SW20, SW21, SW22, SW24, SW25, SW26, SW28, SW29, SW30, SW31, SW32, SW33, SW34, SW35, SW36, SW37 on PANEL-C BOARD, SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15 on PANEL-L BOARD, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW12 on PANEL-R BOARD	58
	* This part is for SH-201.				
	01780101	TACT SWITCH	SKQKABD010	SW1, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, SW19, SW20, SW21, SW22, SW24, SW25, SW26, SW28, SW29, SW30, SW31, SW32, SW33, SW34, SW35, SW36, SW37 on PANEL-C BOARD, SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15 on PANEL-L BOARD, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW12 on PANEL-R BOARD	58
	* This part is for SH-201C, and is a dustproof type of #02891789.				
	01676512	PUSH SWITCH	SDKLA10200	SW2 on MAIN BOARD	1

JACK, EXT TERMINAL					
	02781189	USB CONNECTOR B TYPE FE-MALE	YKF45-0021	JK3 on MAIN BOARD	1
	00569278	6.5MM JACK	LGR4609-7100F	JK2, JK4, JK5, JK6 on MAIN BOARD	4
#	04230234	RCA PIN JACK	HSP-252V3P-06	JK7 on MAIN BOARD	1
	13449711	AC ADAPTOR JACK	HEC0470-01-630	JK10 on MAIN BOARD	1
	02568867	MIDI JACK	DIN HDC-052A-12	JK1 on MAIN BOARD	1
BENDER UNIT					
	03234723	PB-H0204	BENDER		1
KEYBOARD ASSY					
#	04344801	MSK-2 49KEYBOARD ASSY	WITHOUT CABLE		1
#	04344834	FLAT CABLE	26WAY 170MM W/2 (FOR MSK-2)		1
	* Order this when you need the flat cable for keyboard.				
PWB ASSY					
#	04129834	MAIN BOARD ASSY			1
	This unit includes the following part.				
	12199584	GROUNDING TERMINAL M1698		TER1, TER2, TER3 on MAIN BOARD	3
#	04129845	PANEL-C BOARD ASSY		for SH-201	1
	This unit includes the following parts.				
	04236545	HOLDER	VOL HOLDER C		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		9
	The number of #03671756 required is seventeen, but since the repair parts come in sets of two, the quantity is nine.				
#	04453312	PANEL-C BOARD ASSY		for SH-201C	1
	This unit includes the following parts.				
	04236545	HOLDER	VOL HOLDER C		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		9
	The number of #03671756 required is seventeen, but since the repair parts come in sets of two, the quantity is nine.				
#	04129856	PANEL-L BOARD ASSY		for SH-201	1
	This unit includes the following parts.				
	12169368	LED SPACER	LDS-40B		1
	02230578	LED SPACER	LDS-50R		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		2
	The number of #03671756 required is four, but since the repair parts come in sets of two, the quantity is two.				
#	04453323	PANEL-L BOARD ASSY		for SH-201C	1
	This unit includes the following parts.				
	12169368	LED SPACER	LDS-40B		1
	02230578	LED SPACER	LDS-50R		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		2
	The number of #03671756 required is four, but since the repair parts come in sets of two, the quantity is two.				
#	04129867	PANEL-R BOARD ASSY		for SH-201	1
	This unit includes the following parts.				
	04236523	HOLDER	VOL HOLDER A		1
	04236534	HOLDER	VOL HOLDER B		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		2
	The number of #03671756 required is three, but since the repair parts come in sets of two, the quantity is two.				
#	04453334	PANEL-R BOARD ASSY		for SH-201C	1
	This unit includes the following parts.				
	04236523	HOLDER	VOL HOLDER A		1
	04236534	HOLDER	VOL HOLDER B		1
	03671756	SX2H-B GRS BY MOONPO (Divide)	D S-KEYTOP		2
	The number of #03671756 required is three, but since the repair parts come in sets of two, the quantity is two.				
DIODE					
	01239867	LED (RED/GREEN) CLR	SML72423C TP15		13
	01900612	DIODE	TPS611 (F)		1
	01904112	LED (RED)	SLR-342VCT32 N.P.Q RANK		71
	03126134	LED (INFRARED)	TLN233 (F)		1
	03893601	LED	SLR343BCT3F		1

POTENTIOMETER					
	02455223	EVUF2KFK4B14	9M/M ROTARY POTENTIOMETER	VR2, VR6, VR7, VR8 on PANEL-C BOARD, VR5, VR8, VR9, VR10, VR12 on PANEL-R BOARD	9
	03234167	30M/M SLIDE POTENTIOMETER	RS301111C01L	VR1, VR3 on PANEL-C BOARD, VR1, VR2, VR3, VR4, VR11, VR13, VR14, VR16 on PANEL-R BOARD	10
	02455234	12M/M ROTARY POTENTIOMETER	EVJY15F02B14	VR1, VR2 on PANEL-L BOARD	2
#	04230134	9M/M ROTARY POTENTIOMETER w/CC	EVUFEKFK4B14	VR4, VR5, VR9, VR11 on PANEL-C BOARD, VR6, VR7 on PANEL-R BOARD	6
#	04121023	30M/M SLIDE POTENTIOMETER w/CC	RS301113C00C	VR15 on PANEL-R BOARD, VR10 on PANEL-C BOARD	2
WIRING, CABLE					
#	04344834	FLAT CABLE	26WAY 170MM W/2 (FOR MSK-2)		1
#	04232123	BAN CARD	BNCD-P=1.00-K-34-70		1
#	04232112	BAN CARD	BNCD-P=1.00-K-32-160		1
#	04232101	BAN CARD	BNCD-P=1.00-K-28-280		1
#	04232090	BAN CARD	BNCD-P=1.00-K-14-60		1
	03892945	WIRING	4X180-P2.0-PHR-PHR-F		1
#	04232134	WIRING	10X120-P2.0-PHR-PHR-F		1
SCREWS					
	40011501	SCREW M3X8	PAN MACHINE W/SW BZC		3
	40011334	SCREW 3X12	BINDING TAPTITE-P FE BZC		17
	40011312	SCREW 3X8	BINDING TAPTITE P BZC		56
	40011056	SCREW 3X6	BINDING TAPTITE B ZC		3
	40011123	SCREW 4X8	BINDING TAPTITE B BZC		14
PACKING					
#	04129934	PACKING CASE	FOR COUNTRIES EXCEPT CHINA		1
#	04342723	SH-201C PACKING CASE	FOR CHINA ONLY		1
#	04129967	ACCESSORY BOX			1
#	04239067	PAD CENTER			1
#	04129945	PAD L			1
#	04129956	PAD R			1
MISCELLANEOUS					
#	04236545	HOLDER	VOL HOLDER C		1
#	04236534	HOLDER	VOL HOLDER B		1
#	04236523	HOLDER	VOL HOLDER A		1
	40016534	INSULOK TIE 204M/M	T-18L		1
	12359137	RUBBER FOOT	SJ-5012 BLK		4
	40122812	ACETATE TAPE	NITTO NO.5 BLK W15MM 30M		50
	12199584	GROUNDING TERMINAL	M1698	TER1, TER2, TER3 on MAIN BOARD	3
	02230578	LED SPACER	LDS-50R		1
	12169368	LED SPACER	LDS-40B		1
	22365714	CORD HOOK			1
#	04235389	INSULATING SHEET FOR PANEL-L			1
ACCESSORIES (Standard)					
	△	03785590	AC CORD SET	SC-078-NA05 240VA	1
	△	03017356	AC ADAPTOR WITHOUT AC CORD	PSB-1U(R) UNIVERSAL	1
		40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY	1
#		04129767	OWNER'S MANUAL	JAPANESE	1
#		04129778	OWNER'S MANUAL	ENGLISH	1
		04342712	OWNER'S MANUAL	CHINESE	1
		04342778	BOOKLET CN	FOR CHINA	1
	△	00905234	EURO CONVERTER PLUG	ECP01-5A FOR 230V E	1
	△	01903356	AC CORD SET	230V 1.0M FOR PSB	1
	△	02562456	AC CORD SET	120V 1.0M (NON POLAR)	1
	△	01903334	AC CORD SET PSE	100V 1.0M FOR PSB-1U	1
		04451501	CD-ROM VER.1.10		1

Checking the Version Number

- Hold down the [TAP] button at the lower left of SH-201, and turn on the power.
Lighting and turning off of each button of [PRESET], [USER], BANK [A]-[D] and NUMBER [1]-[8] indicate the version.
PRESET/USER indicates the integral place, BANK indicate the first decimal place and NUMBER indicates the second decimal place.

(Example)Ver. 1.03

[PRESET] in PRESET/USER lights [1.**]
All LEDs in BANK [A]-[D] light [*.*]
Only [3] in NUMBER lights [*.*3]

* For examples of version indication, refer to **0. Test Mode Top Page** (p. 17), too.

Users Data Save and Load

Use the "SH-201 Librarian" software in PC to save and load user's data. Refer to the documents attached the software about detail informations except the following.

Required Items

- PC installed SH-201 Editor/Librarian (Windows/Mac)
- USB driver for SH-201
- USB cable

* SH-201 Editor/Librarian and USB driver for SH-201 are in the attached CD-ROM (#04451501).

Procedure of Save/Load

- Start up the "SH-201 Librarian" software program on PC.
On Windows, choose Start -> All Programs -> SH-201 Editor -> SH-201 Library.
On Mac, choose Applications (Roland) -> SH-201 Librarian.
- In condition that PC is connected to the SH-201 with a USB cable, open "Setting for MIDI Device" in the "Setting" menu and select SH-201 for INPUT and OUTPUT.
- Activate the "Main" window of Librarian, click [READ] on the screen. (<- **Never click the wrong button.**)
32 patches of USER will be backed up.
- Press Ctrl + N (or Command + N on Mac) to open the new "Untitled" window.
* It's impossible to save contents of "Main" window to files directly.
- After activating the "Main" window, press Ctrl + A (or Command + A on Mac) to select all patches in the Main window.
- Press Ctrl + C (or Command + C on Mac), copy all patches.
- Activate the "Untitled" window and click the line of "End of ..." to select it.
- Press Ctrl + V (or Command + V on Mac) to paste all patches to the "Untitled" window.
- Click "Save" in the "File" menu.
The file of "****.shl" are backup files which have been saved.



To write the data back into the SH-201 synthesizer, open the backup file by double-clicking it, paste the data into the Main window using the opposite procedure as when saving it, and click [WRITE] to write the data back into the SH-201.

Method of Factory Reset

- While holding down the [PRESET] and [USER] button, turn on the power.
[WRITE] and [CANCEL] will blink.
- When you press [WRITE], factory reset will be executed. If you want to cancel the factory reset, press [CANCEL].

Method of System Update

If the System Updater is released, update the system program through USB from PC.

Composition of System Update Files

When you uncompress the supplied update file, SMF data with names similar to the example shown below will appear. The last file number is p00032, but the number of files will be less than thirty-two (in the example below there are thirteen files).

p00001.mid
p00002.mid
p00003.mid
:
p00012.mid
p00032.mid

Required Items

- PC in which "UpdSMF" is installed (Refer to the Service Information #102333 for UpdSMF.)
- USB driver for SH-201
- USB cable

Procedure of Update



Before executing the procedure of updating, follow the **Users Data Save and Load** (p. 14) to save patch data.



Never turn off the power of SH-201 while executing update. SH-201 system may not boot up correctly.

1. Make sure the power of SH-201 is off, and then connect PC to the SH-201 with a USB cable.
2. While holding down the [OVERDRIVE] and [FX ON] buttons at the upper right on the SH-201 top panel, turn on the power.
3. Confirm the LED of the [TAP] button lights.
4. Double-click the icon of "UpdSMF.exe."
5. Select Roland SH-201 in "MIDI Out Device."
6. Set the name of the uncompressed SMF folder at "SMF Path." You can also search the folder by the [Path] button at the right side.
7. Click the [ScansMF] button.
8. Click the [Send] button.
Registered SMFs are played back and sent in order. When the SH-201 receives the SMF, the [OCT DOWN] button will blink.
After eight or nine minutes, transmitting of SMF is finished and then update procedure will begin.
After a while, all of the LEDs of BANK [A]–[D] and NUMBER [1]–[8] will blink in green.
9. After confirming the blinking in green, turn off the power.
** If the LED of BANK [A]–[D] and NUMBER [1]–[8] blink in red, updating is a failure. Execute the update procedure from the first step again.*
10. Refer to **Checking the Version Number** (p. 14), and check the version has been updated.
11. Refer to **Users Data Save and Load** (p. 14), load the User Patch which has been saved in PC.

Initialize

You can't initialize the entire system of SH-201 without executing Factory Reset.

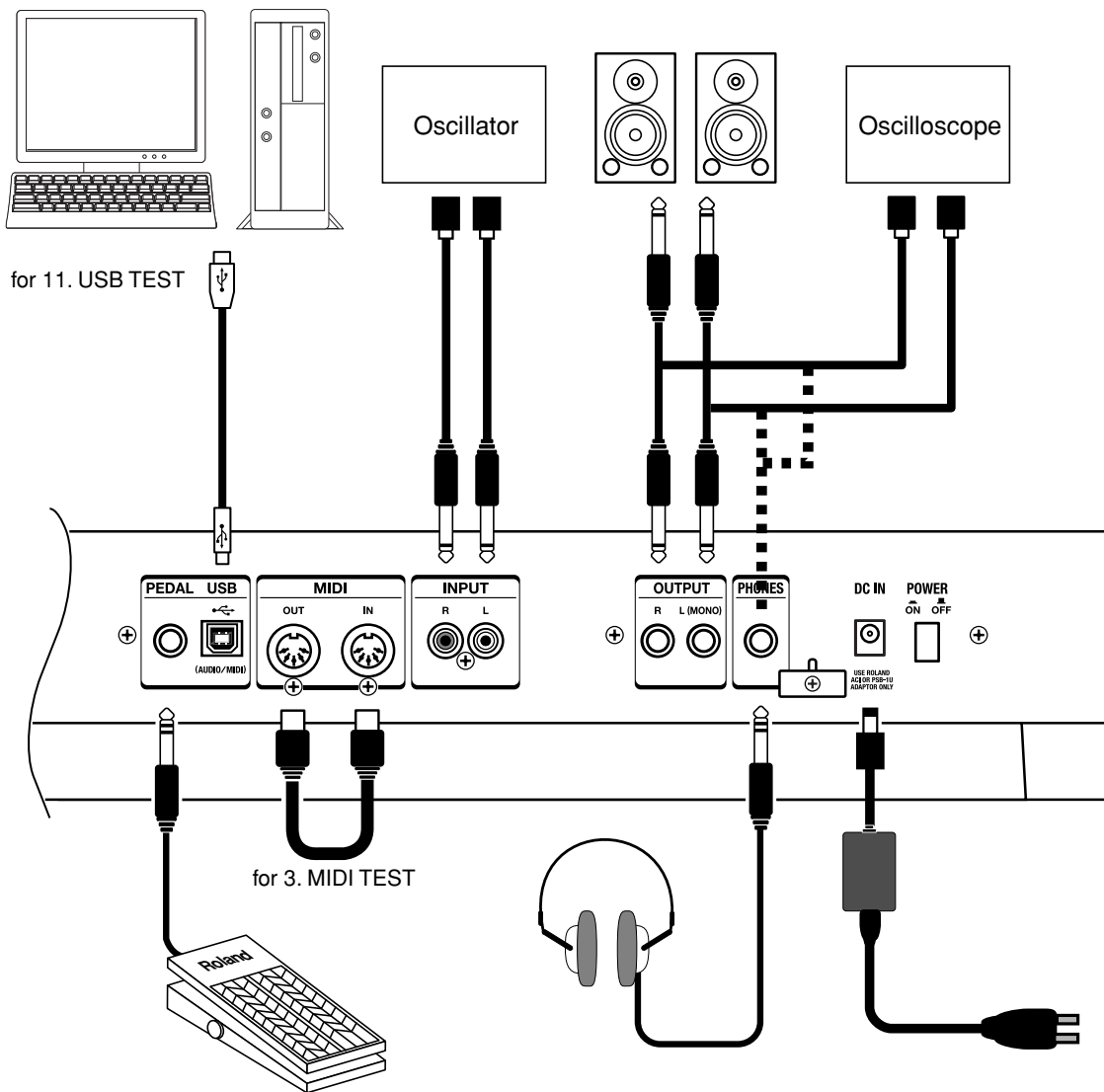
Test Mode



After executing the Test Mode, patch data in SH-201 will be lost and SH-201 will return to the condition when shipping. If there are important data in the SH-201, save them to PC using the backup function for User Data. (Refer to **Users Data Save and Load** (p. 14).)

Required Items

- Headphones
- Noise Meter
- PC (with a USB connector, OS: Windows Me/2000/XP, installed the USB driver for SH-201)
- USB Cable x 1
- MIDI Cable x 1
- Audio Cable x 2
- Monitor Speaker
- Expression Pedal (EV-5)
- oscilloscope
- Oscillator



Preparation of Test

1. Confirm the power of SH-201 and PC are both off.
2. Connect headphones to PHONES.
3. Connect the monitor speakers to OUTPUT L/R.
4. Connect the oscillator to INPUT L/R.
5. Connect the EV-5 to PEDAL.
6. Adjust MASTER VOLUME and EXT IN INPUT VOLUME to MIN.

If you want to execute **11. USB TEST** (p. 22), you better boot up your PC beforehand.

Entering Test Mode

Hold down the three switches ([AMP OVERDRIVE], [EFFECTS FX ON], [EFFECTS EDIT]) at the right corner of the top panel, turn on the power. After all LEDs are blinking, release the buttons.

Exiting Test Mode

Turn off the power of the SH-201.

Test Items

Execute the following fourteen items.

0. Test Mode Top Page
1. Mute TEST
2. Memory TEST
3. MIDI TEST
4. SOUND TEST (PHONES, OUTPUT, ANALOG INPUT)
5. A/D TEST1 (Bender & Modulation)
6. A/D TEST2 (Knob, Slider, Expression Pedal)
7. D-Beam Adjustment
8. D-Beam TEST
9. Switch/LED TEST
10. KEYBOARD TEST (8-tone check/2-tone check/Touch Sense check)
11. USB TEST
12. Noise TEST
13. Factory Reset

Skipping Test Items

[TAP] + [OCT DOWN] Moves to the previous test item by force.
 [TAP] + [OCT UP] Moves to the next test item by force.

Details for Test Items

0. Test Mode Top Page

When entering the Test Mode, the program version will be displayed.
 [PRESET] and [USER] LEDs indicate the integral place of version.
 LEDs of BANK [A]–[D] indicate the first decimal place of version.
 LEDs of NUMBER [1]–[89] indicate the second decimal place of version.

(Example) Version 0.31



[PRESET] LED and [USER] LED go dark.
 BANK [B] LED lights.
 NUMBER [3] LED lights.

(Example) Version 1.000



[PRESET] LED lights.
 All of BANK [A]–[D] LEDs go dark.
 All of NUMBER [1]–[8] LEDs go dark.

(Example) Version 2.34



[USER] LED lights.
 BANK [C] LED lights.
 NUMBER [4] LED lights.

Press [PLAY/STOP] to advance to the next item.

1. Mute TEST

Tests the working of Mute.



When the [ARPEGGIO] LED blinks, raise the MASTER VOLUME slowly and confirm the arpeggio sound.

Press [ARPEGGIO] and confirm the sound is muted and the [ARPEGGIO] LED is unlit while the [ARPEGGIO] button is held down.

Press [PLAY/STOP] to advance to the next item.

2. Memory TEST

Executes memory device test.



Following LEDs light:

- BANK [A] LED (Red):Flash ROM
- BANK [B] LED (Red):SDRAM
- BANK [C] LED (Red):EEPROM
- BANK [D] LED (Red):DSP

Test of each memory device is executed in order.

If the test result is OK, the corresponding LED lights in green and advances to the next device test.

If the test result is NG, the corresponding LED lights in red and the test stop there.

Even if so, the test program can be advanced to the next test when pressing [TAP] + [PLAY/STOP].

When all tests are completed, the test program is advanced to the next item.

3. MIDI TEST

Executes MIDI test.



The OSC 2 LED blinks.

When connecting the MIDI IN connector and MIDI OUT connector with a MIDI cable, the OSC 2 LED lights, and the test program advances to the next item automatically.

4. SOUND TEST (PHONES, OUTPUT, ANALOG INPUT)

Adjust MASTER VOLUME and EXT IN INPUT VOLUME to MAX position.

PHONES TEST

The OSC1 LED and all LEDs of WAVE select except for the OSC WAVE SINE LED light.



Sine waves are outputted from PHONES L and R channels.

Confirm the wave of **110 Hz**, **12.0 Vp-p** is outputted from L channel and **220 Hz**, **12.0 Vp-p** in outputted from R channel.

Press [PLAY/STOP] to advance to the next item.

OUTPUT TEST

The OSC2 LED and all LEDs of WAVE select except for the OSC WAVE SINE LED light.



Sine waves are outputted from OUTPUT L and R channels.

Confirm the wave of **220 Hz**, **5.0 Vp-p** is outputted from L channel and **440 Hz**, **5.0 Vp-p** in outputted from R channel.

Press [PLAY/STOP] to advance to the next item.

ANALOG INPUT TEST

All LEDs of the WAVE select except for the OSC WAVE SINE LED blink.



Generate sine waves of **1 kHz, 2.0 Vp-p** and **20 kHz, 2.0 Vp-p** and input them to INPUT.

Confirm **6 Vp-p** is outputted when the 1 kHz wave is inputted, and **3.8 Vp-p** is outputted when the 20 kHz wave is inputted.

* The same waveform are outputted on L and R channels.

Press [PLAY/STOP] to advance to the next item.

5. A/D TEST1 (Bender & Modulation)

Executes Bender and Modulation test.

* When you enter this test, adjustment for the center point of the bender will be performed automatically. If an error occurs during this adjustment, all of the LEDs for OCT DOWN, OCT UP, PORTAMENTO, and SOLO/POLY will blink, and you will not proceed to the Bender or Modulation settings.

Bender

When the OCT DOWN LED blinks, move the Bender all the way to the left.

When the minimum value is detected correctly, click sound rings and the OCT DOWN LED lights.



When the OCT UP LED blinks, move the Bender all the way to the right.

When the maximum value is detected correctly, click sound rings and the OCT UP LED lights.



When the bender is returned back to the center position, the test program advances to the Modulation test.

Modulation

When the PORTAMENTO LED blinks, move Modulation all the way away from yourself.

When the maximum value is detected correctly, click sound rings and the PORTAMENTO LED lights.



When the SOLO/POLY LED blinks, return Modulation to its original position.

When the minimum value is detected correctly, click sound rings and the SOLO/POLY LED lights.

If there is no problem on both Bender and Modulation tests, the test program advances the next items.

6. A/D TEST2 (Knob, Slider, Expression Pedal)

Executes the Knob, Slider and Expression Pedal tests.

Each LED corresponding to Knob, Slider and Expression Pedal light. (Refer to the following table.)

Knob	LED
OSC PITCH	OSC 1
OSC DETUNE	OSC 2
OSC PW/FEEDBACK	OSC WIDE
MIX/MOD BALANCE	MIX/MOD TYPE MIX
FILTER CUTOFF	FILTER TYPE LPF
FILTER RESONANCE	FILTER TYPE HPF
FILTER KEYFOLLOW	FILTER TYPE BPF
AMP LEVEL	AMP OVERDRIVE
EFFECTS TIME	EFFECTS FX ON
EFFECTS DEPTH	EFFECTS EDIT DELAY
AUDIO FILTER CUTOFF	AUDIO FILTER SLOPE -12dB
AUDIO FILTER RESONANCE	AUDIO FILTER SLOPE -24dB
LFO RATE	LFO RATE
LFO DESTINATION 1 DEPTH	LFO DESTINATION 1 PITCH 1
LFO DESTINATION 2 DEPTH	LFO DESTINATION 2 PITCH 2

Slider	LED
PITCH ENV A	GROUP PRESET
PITCH ENV D	GROUP USER
PITCH ENV DEPTH	BANK A
FILTER ENV A	NUMBER 1
FILTER ENV D	NUMBER 2
FILTER ENV S	NUMBER 3
FILTER ENV R	NUMBER 4
FILTER ENV DEPTH	NUMBER 5
AMP ENV A	NUMBER 7
AMP ENV D	NUMBER 8
AMP ENV S	WRITE
AMP ENV R	CANCEL

Expression Pedal	LED
EXPRESSION PEDAL	D BEAM EXPRESS

Knob

Turn the knob all the way to the left; a click will sound when the correct minimum value is produced.

Turn the knob all the way to the right; a click will sound when the correct maximum value is produced.

A sweep sound will be heard between Min and Max.

Turn the knob to the center; when the correct center value is produced, a click will sound and the corresponding LED will go dark.

Slider (without a center click)

Pull the slider all the way down; a click will sound when the correct minimum value is produced

Push the slider all the way up; a click will sound when the correct maximum value is produced.

A sweep sound will be heard between Min and Max.

Pull the slider all the way down; when the correct minimum value is produced, a click will sound and the corresponding LED will go dark.

Slider (with a center click)

Pull the slider all the way down; a click will sound when the correct minimum value is produced.

Push the slider all the way up; a click will sound when the correct maximum value is produced.

A sweep sound will be heard between Min and Max.

Set the slider to the click (detent); when the correct center value is produced, a click will sound and the corresponding LED will go dark.

Expression Pedal

Move the Expression Pedal (EV-5) between its minimum and maximum levels.

When the correct minimum value and maximum value are produced at the lower and upper limits, a click will sound and the corresponding LED will go dark.

All tests are completed, the test program advances to the next item automatically.

7. D-Beam Adjustment

Executes the adjustment of the D BEAM controller.

When the D BEAM PITCH LED blinks, place your hand at a distance of approximately 5 cm and press [PLAY/STOP].

When the adjustment is completed, the D BEAM PITCH LED lights.



* If the result is NG, you won't proceed to the HIGH setting.

When the D BEAM EXPRESS LED blinks, place your hand at a distance of approximately 40 cm and press [PLAY/STOP].

When the adjustment is completed, the D BEAM EXPRESS LED lights.



If D BEAM PITCH and D BEAM EXPRESS are both OK, the test program advances to the next item automatically.

* If the result is NG, you won't automatically proceed to the next item.

8. D-Beam TEST

Tests the D BEAM controller.

The D BEAM FILTER/ASSGIN LED lights.



Place your hand over the D BEAM, and verify that the value increases or decreases according to the movement of your hand.

The current A/D value is shown by the WAVE selection LEDs. (All will be dark for the minimum value, and all will be lit for the maximum value.)

Press [PLAY/STOP] to advance to the next item.

9. Switch/LED TEST

This tests the operation of each switch and LED.

When the AUDIO FILTER BPF LED lights, press the corresponding TEMPO UP switch (see the table on the next page). The AUDIO FILTER BPF LED will go dark.

Next, when the AUDIO FILTER NOTCH LED lights, press the corresponding TEMPO DOWN switch. The AUDIO FILTER NOTCH LED will go dark.

Subsequently, the LEDs will light successively; press the corresponding switch in the order indicated.

When all switches and LEDs have been tested, you will automatically proceed to the next item.

NOTE

In cases where there is both a red LED and a green LED, the order will be Red (lit) -> Green (bright) -> Green (dim) -> unlit.



NOTE

A click will sound when you press a switch, but if multiple switches are pressed, there will be no click sound nor will the LED go dark.

* Refer to the following table about the correspondence of LEDs and switches.

LED	Switch	LED	Switch
AUDIO FILTER BPF	TEMPO UP	LFO2	LFO2
AUDIO FILTER NOTCH	TEMPO DOWN	LFO1	LFO1
ARPEGGIO ON	ARPEGGIO ON	LFO SHAPE TRIANGLE	LFO SHAPE DOWN
ARPEGGIO SELECT	ARPEGGIO SELECT	LFO SHAPE SINE	LFO SHAPE DOWN
RECORDER PLAY/STOP	RECORDER PLAY/STOP	LFO SHAPE SAW	LFO SHAPE DOWN
RECORDER REC	RECORDER REC	LFO SHAPE SQUARE	LFO SHAPE DOWN
TAP	TAP	LFO SHAPE TRAP	LFO SHAPE UP
OCTAVE DOWN	OCTAVE DOWN	LFO SHAPE S&H	LFO SHAPE UP
OCTAVE UP	OCTAVE UP	LFO SHAPE RANDOM	LFO SHAPE UP
PORTAMENTO	PORTAMENTO	LFO SYNC	LFO SYNC
SOLO/POLY	SOLO/POLY	LFO RATE	LFO SYNC
LOWER	LOWER	LFO DEST1 PITCH1	LFO DEST1
UPPER	UPPER	LFO DEST1 PW1	LFO DEST1
DUAL/SPLIT	DUAL/SPLIT	LFO DEST1 FILTER	LFO DEST1
PRESET	PRESET	LFO DEST1 AUDIO FILTER	LFO DEST1
USER	USER	LFO DEST2 PITCH2	LFO DEST2
BANK A	BANK A	LFO DEST2 PW2	LFO DEST2
BANK B	BANK B	LFO DEST2 AMP	LFO DEST2
BANK C	BANK C	AMP OVERDRIVE	AMP OVERDRIVE
BANK D	BANK D		
NUMBER 1	NUMBER 1	EFFECTS FX ON	EFFECTS FX ON
NUMBER 2	NUMBER 2	EFFECTS EDIT DELAY	EFFECTS EDIT
NUMBER 3	NUMBER 3	EFFECTS EDIT REVERB	EFFECTS EDIT
NUMBER 4	NUMBER 4		
NUMBER 5	NUMBER 5		
NUMBER 6	NUMBER 6		
NUMBER 7	NUMBER 7		
NUMBER 8	NUMBER 8		
WRITE	WRITE		
CANCEL	CANCEL		
D BEAM PITCH	D BEAM PITCH		
D BEAM EXPRESS	D BEAM EXPRESS		
D BEAM FILTER/ASSIGN	D BEAM FILTER/ASSIGN		
CENTER CANCEL	CENTER CANCEL		
OSC1	OSC1		
OSC2	OSC2		
OSC WIDE	OSC WIDE		
OSC WAVE SAW	OSC WAVE DOWN		
OSC WAVE SQUARE	OSC WAVE DOWN		
OSC WAVE SQUARE PWM	OSC WAVE DOWN		
OSC WAVE TRIANGLE	OSC WAVE DOWN		
OSC WAVE SINE	OSC WAVE DOWN		
OSC WAVE NOISE	OSC WAVE UP		
OSC WAVE FB OSC	OSC WAVE UP		
OSC WAVE SUPER SAW	OSC WAVE UP		
OSC WAVE EXT IN	OSC WAVE UP		
AUDIO FILTER ON	AUDIO FILTER ON		
AUDIO FILTER TYPE LPF	AUDIO FILTER TYPE		
AUDIO FILTER TYPE HPF	AUDIO FILTER TYPE		
AUDIO FILTER SLOPE 12DB	AUDIO FILTER SLOPE		
AUDIO FILTER SLOPE 24DB	AUDIO FILTER SLOPE		
MIX/MOD TYPE SYNC	OSC INTERVAL -OCT		
MIX/MOD TYPE RING	OSC INTERVAL 5TH		
MIX/MOD TYPE MIX	MIX/MOD TYPE		
MIX/MOD CUT	MIX/MOD LOW FREQ		
MIX/MOD FLAT	MIX/MOD LOW FREQ		
MIX/MOD BOOST	MIX/MOD LOW FREQ		
FILTER TYPE LPF	FILTER TYPE		
FILTER TYPE HPF	FILTER TYPE		
FILTER TYPE BPF	FILTER TYPE		
FILTER TYPE BYPASS	FILTER TYPE		
FILTER SLOPE 12DB	FILTER SLOPE		
FILTER SLOPE 24DB	FILTER SLOPE		

10. KEYBOARD TEST (8-tone check/2-tone check/Touch Sense check)

8-tone check & Touch sense check

The LOWER LED lights.



Play a key, and verify that a decaying sound with dynamics (loud/soft variation) is heard.

Press [PLAY/STOP] to advance to 2-tone check.

2-tone check

The UPPER LED lights.



Play a key, and verify that a sustained sound without dynamics is heard.

Press [PLAY/STOP] to advance to the next item.

11. USB TEST

Tests the working of USB.

* Boot up the PC in which the USB driver for SH-201 installed beforehand.

When the OSC WIDE LED blinks, connect the SH-201 and the PC in which the USB driver for SH-201 installed with a USB cable, and confirm the OSC WIDE LED lights.



Play back an optional WAV file in PC, and confirm the wave sounds from OUTPUT and PHONES.

* If you use Windows XP, you can find some sample WAV files in **C:\WINDOWS\Media**.

Press [PLAY/STOP] to advance to the next item.

12. Noise TEST

Measures residual noise using a noise meter.

When the WAVE NOISE LED lights, adjust MASTER VOLUME and EXT IN INPUT VOLUME to the MAX position.



Set the input filter of noise meter to DIN Audio.

Confirm the residual noise is equal to **-72 dB or less**.

Press [PLAY/STOP] to advance to the next item.

13. Factory Reset

The red LEDs of BANK [A]–[D] and NUMBER [1]–[8] blink.



Press [PLAY/STOP], then its LED changes to light and Factory Reset is executed.

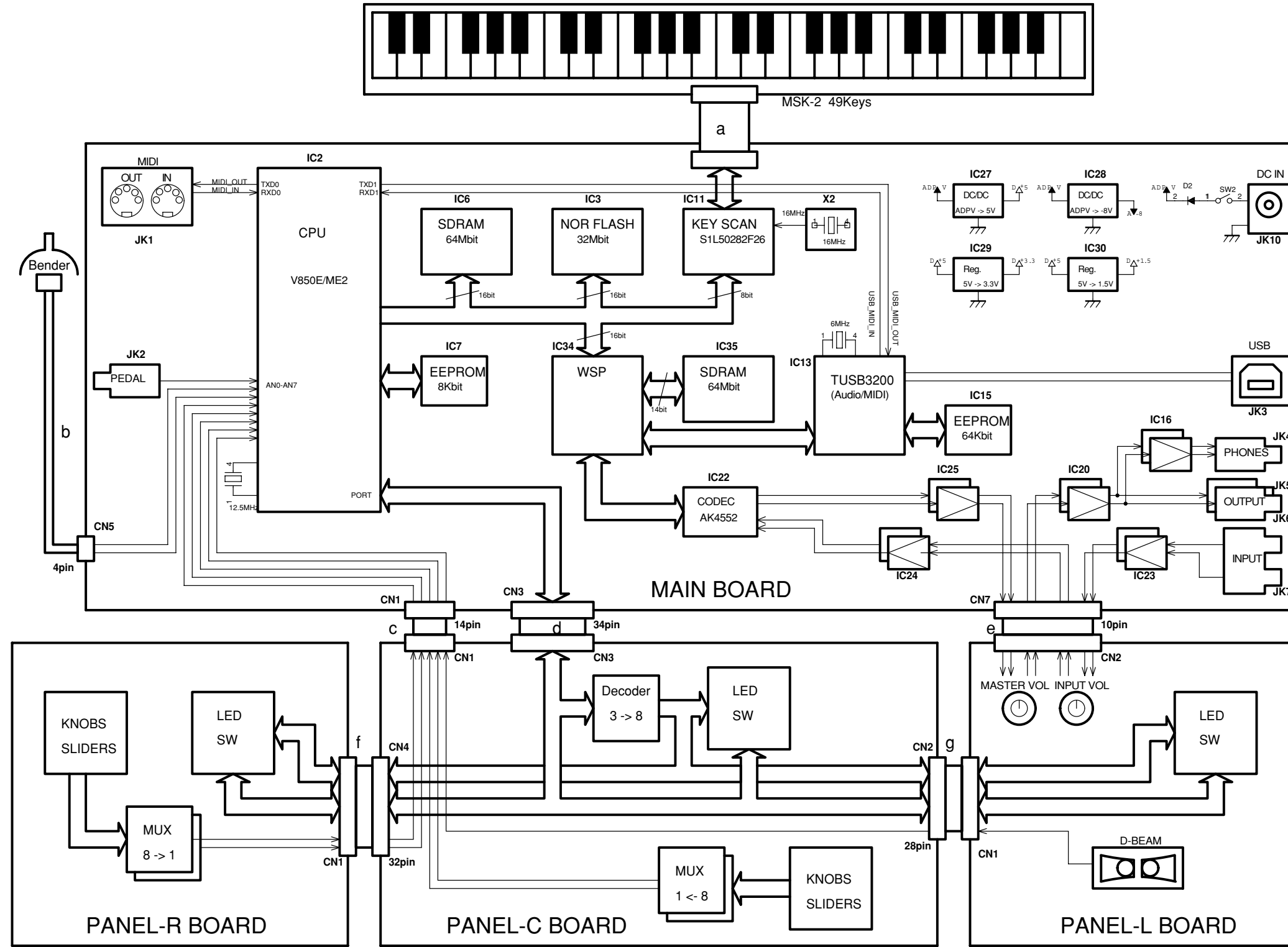
When you press [CANCEL], the test procedure return back to Test Mode Top Page.

When green LEDs of BANK [A]–[D] and NUMBER [1]–[8] blink, Factory Reset is completed.



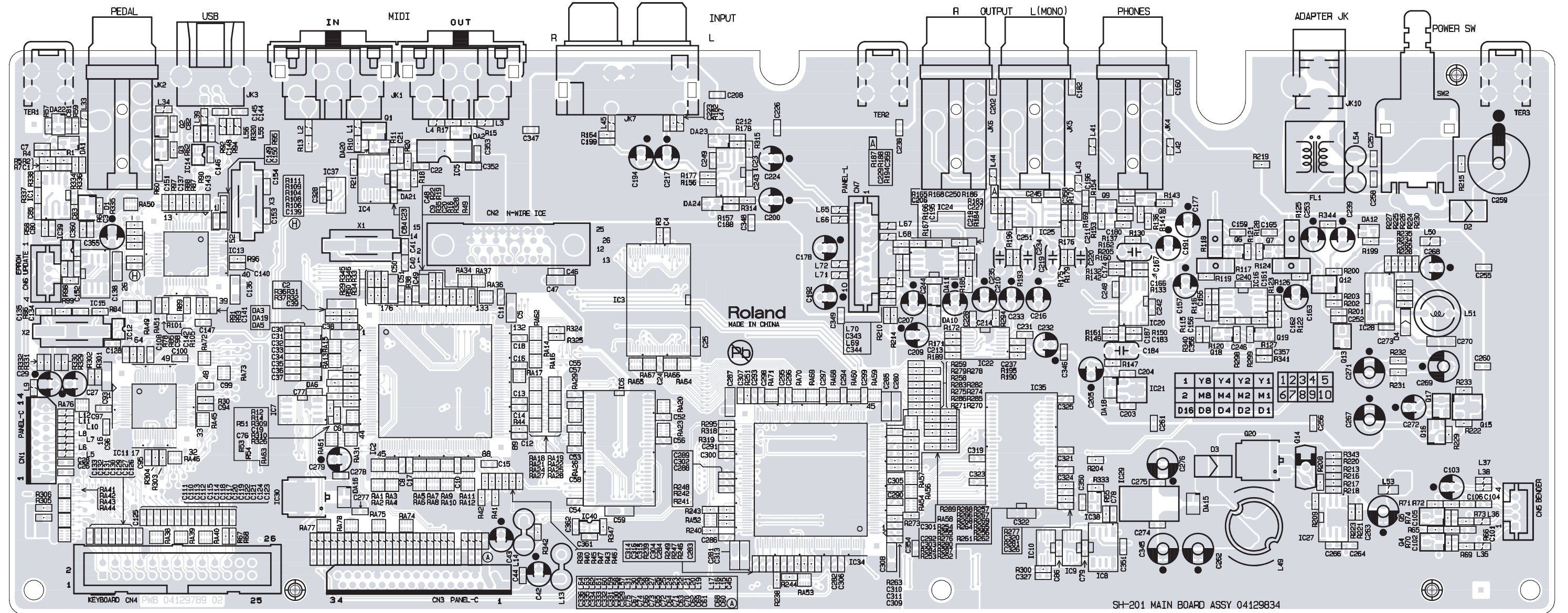
Turn off the power of the SH-201.

Block Diagram

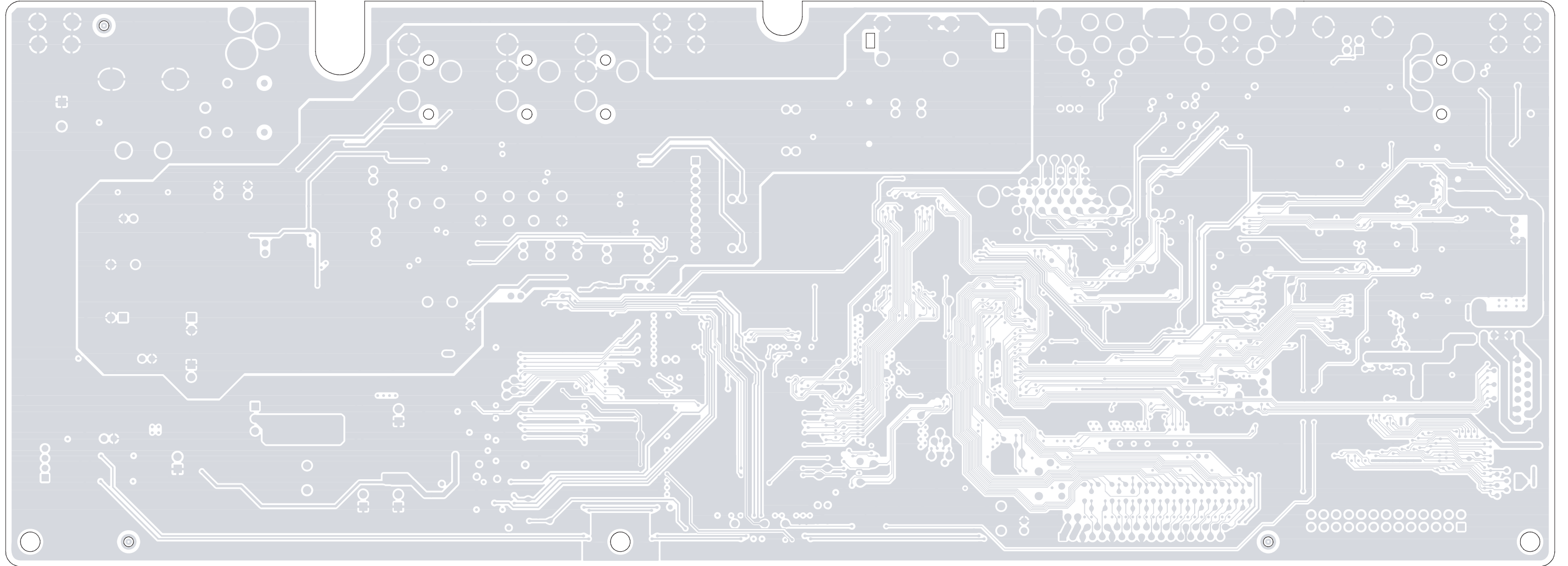


No.	Part Code	Part Name	Description	Q'ty
a	04344834	FLAT CABE	26WAY 170MM W/2 (FOR MSK-2)	1
b	03892945	WIRING 4X180-P2.0-PHR-PHR-F		1
c	04232090	BNCD-P=1.00-K-14-60 (MOONPO)		1
d	04232123	BAN CARD	BNCD-P=1.00-K-34-70	1
e	04232134	WIRING	10X120-P2.0-PHR-PHR-F	1
f	04232112	BNCD-P=1.00-K-32-160 (MOONPO)		1
g	04232101	BAN CARD	BNCD-P=1.00-K-28-280 (MOONPO)	1

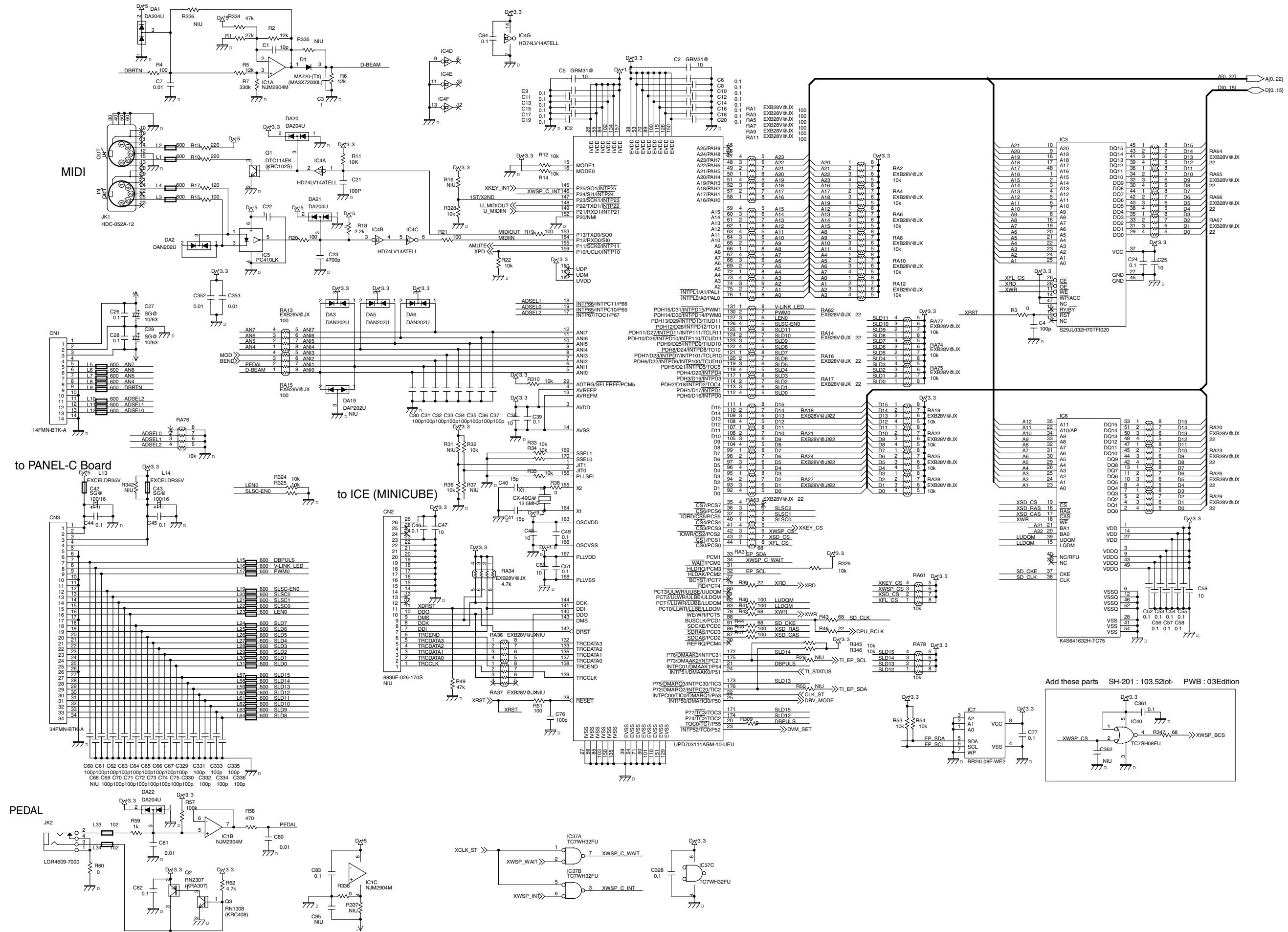
Circuit Board (MAIN Board: 1)



Circuit Board (MAIN Board: 2)



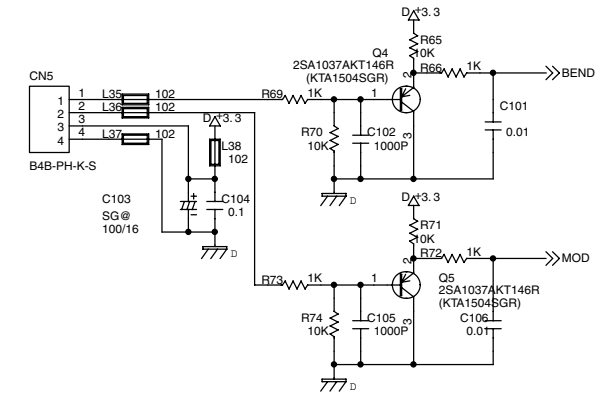
Circuit Diagram (MAIN Board: 1)



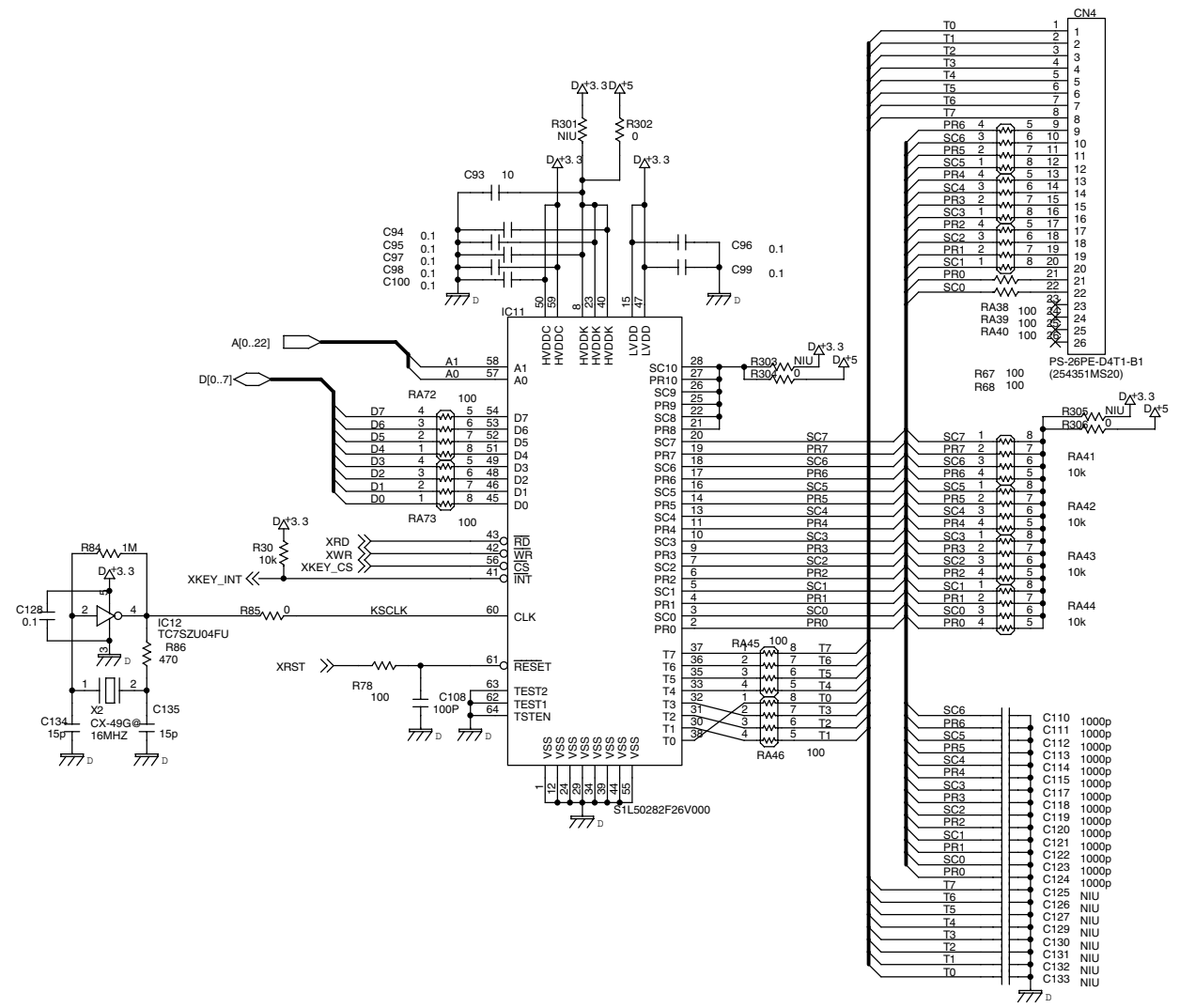
Add these parts SH-201 : 103.52lot- PWB : 03Edition

Circuit Diagram (MAIN Board: 3)

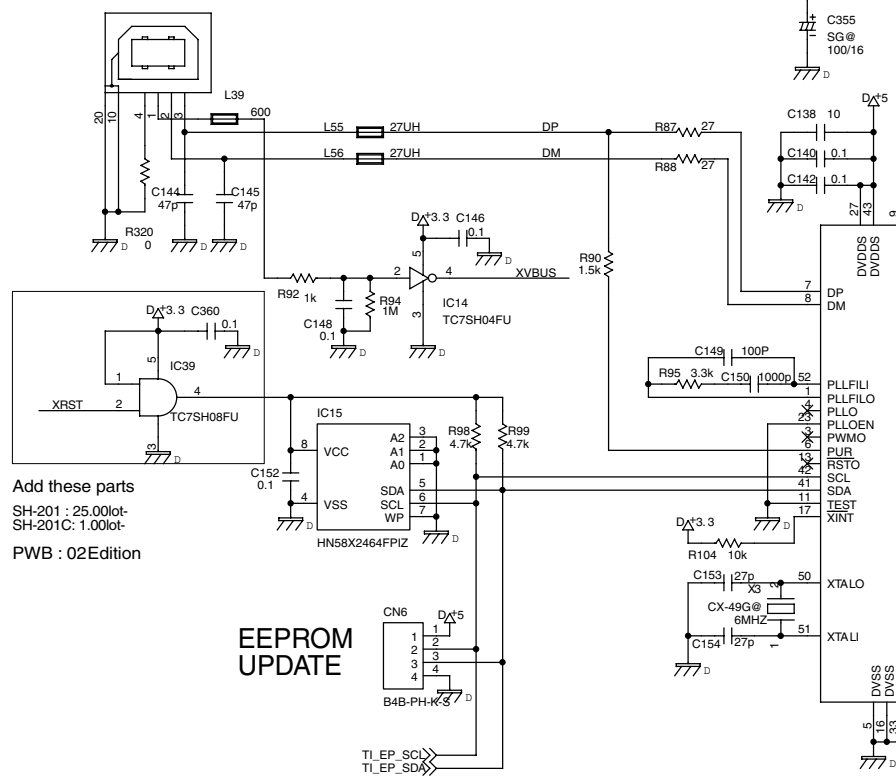
BENDER



TO KEYBOARD UNIT (49Keys)

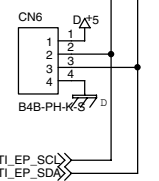


JK3
YKF45-0021
(2523A-04G2T-M01 1)

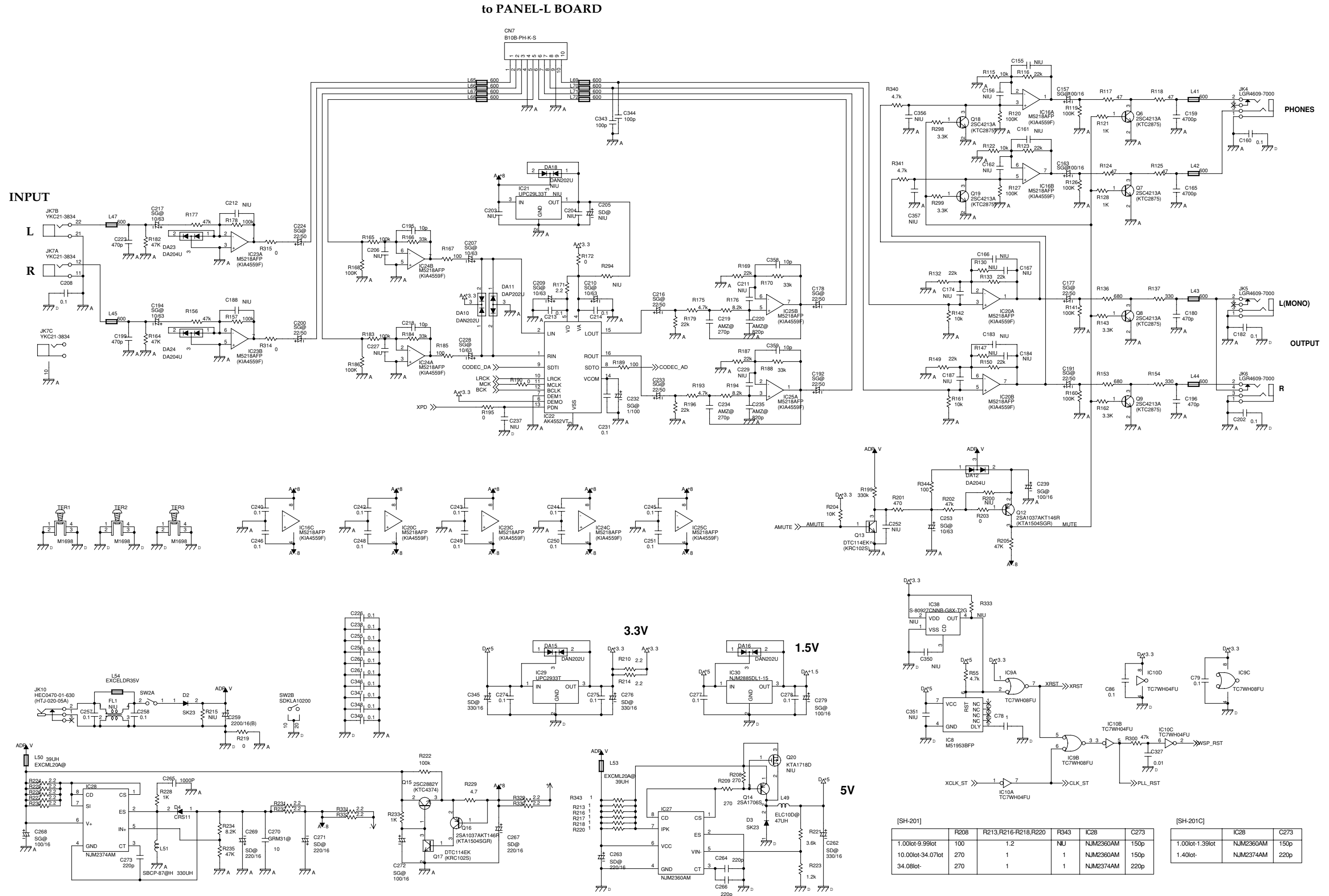


Add these parts
SH-201 : 25.00lot
SH-201C: 1.00lot
PWB : 02Edition

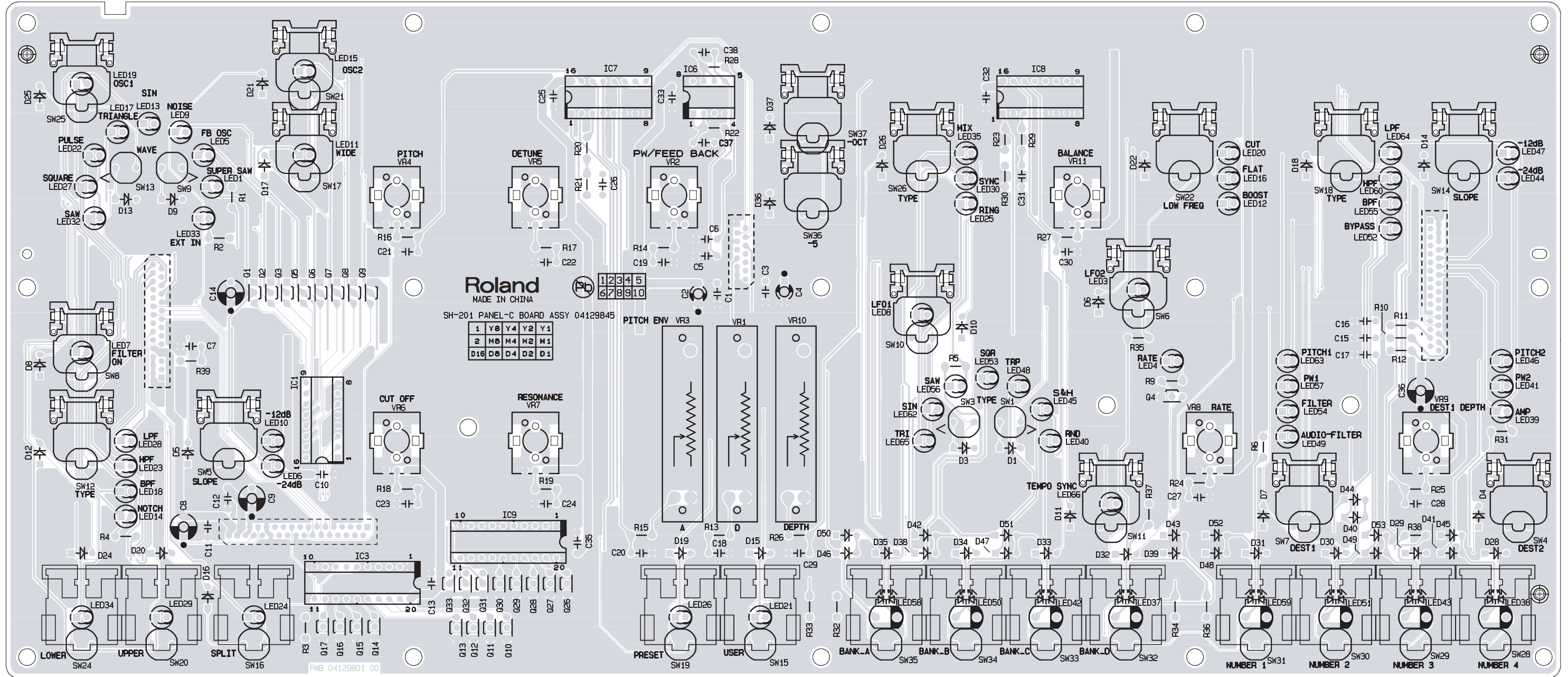
EEPROM UPDATE



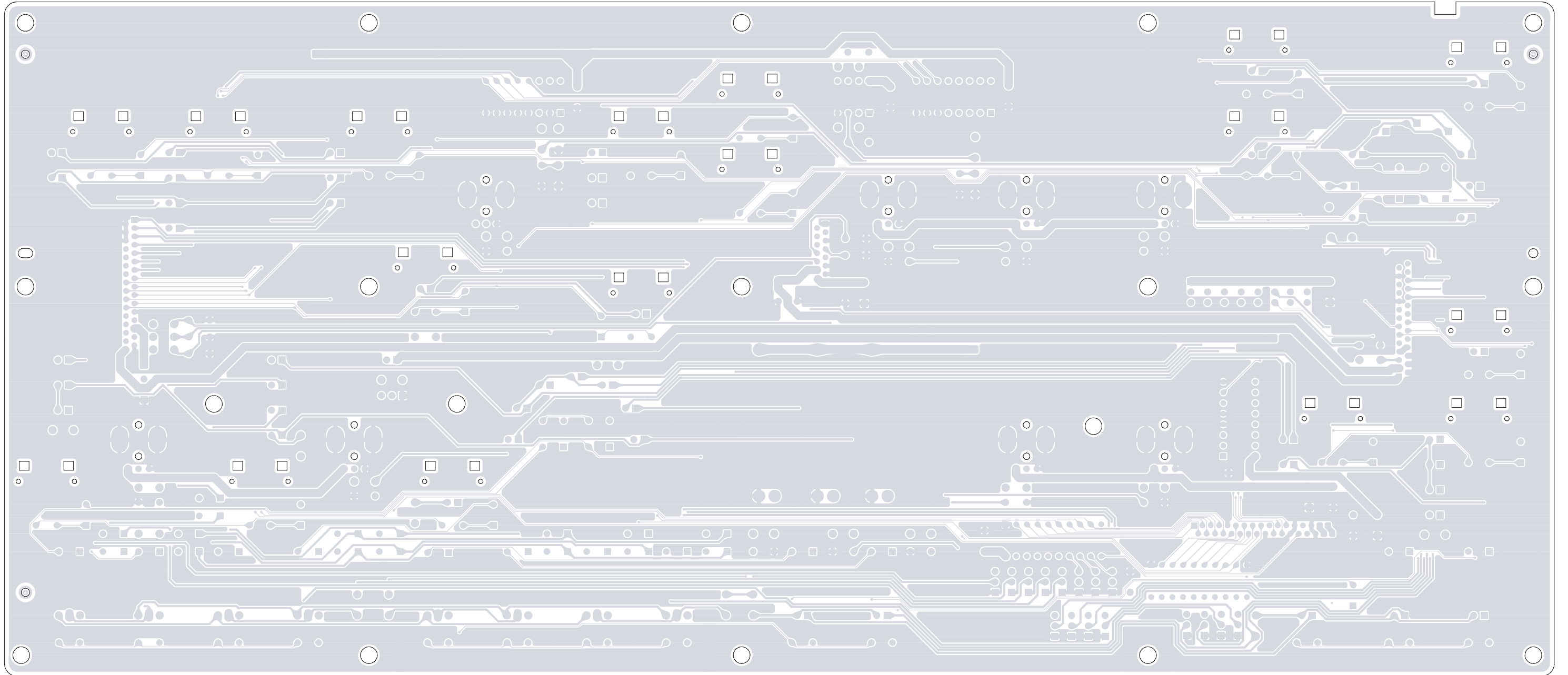
Circuit Diagram (MAIN Board: 4)



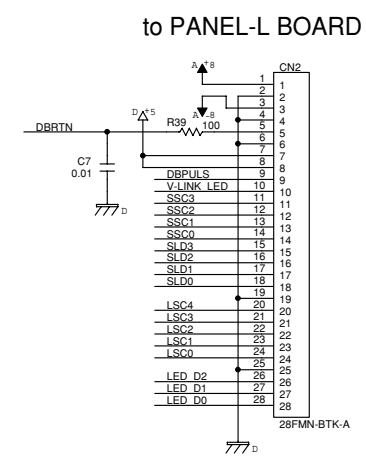
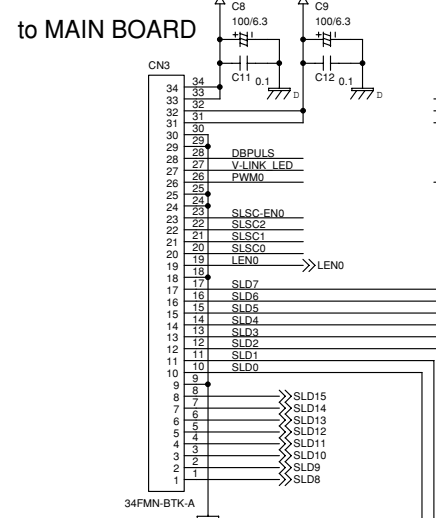
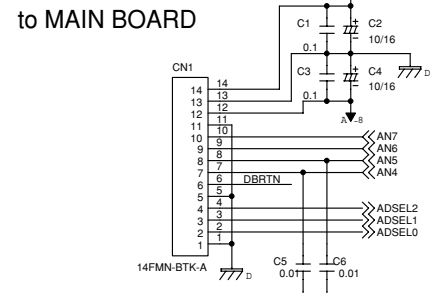
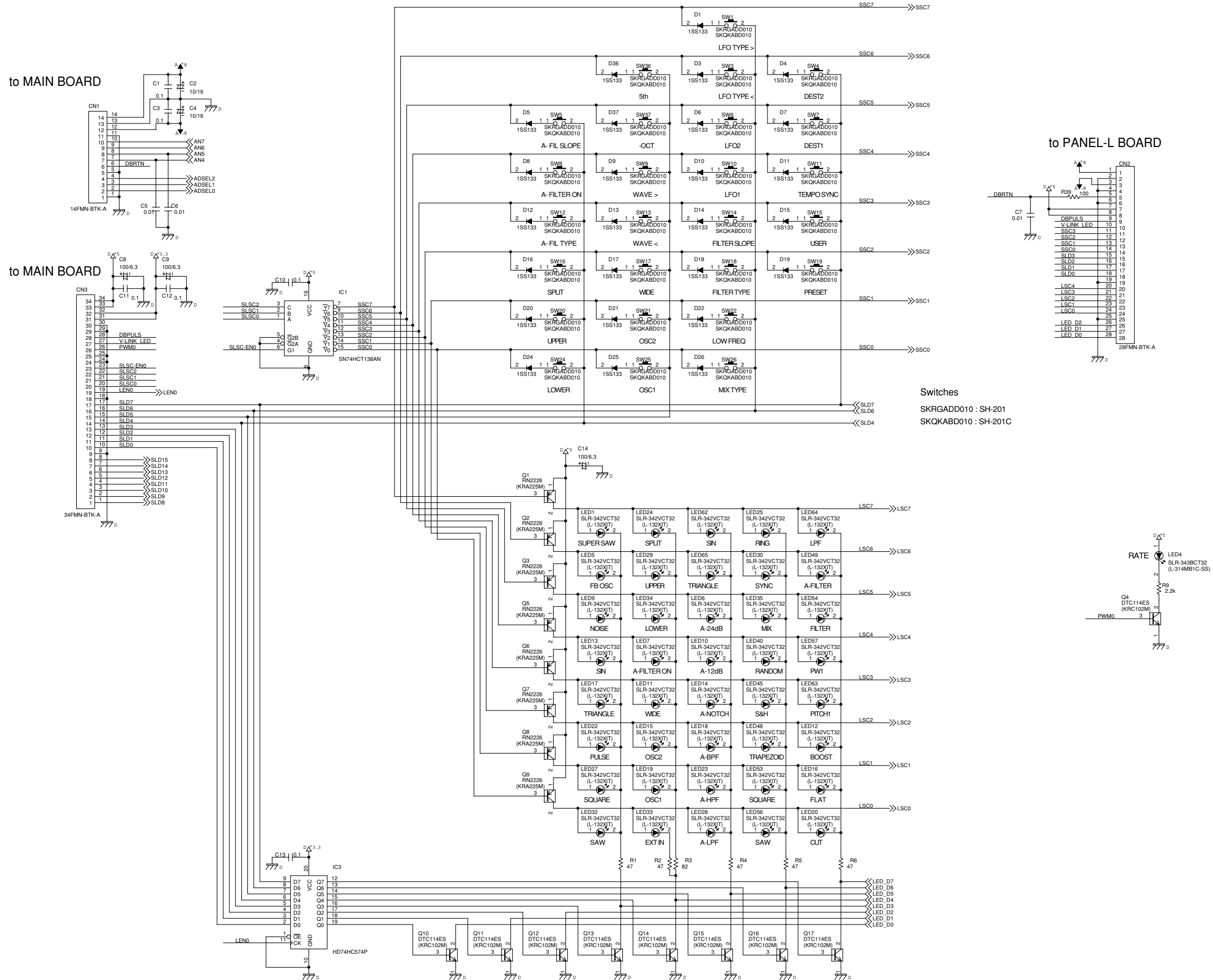
Circuit Board (PANEL-C Board: 1)



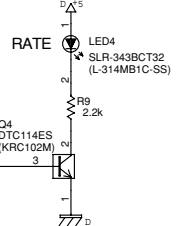
Circuit Board (PANEL-C Board: 2)



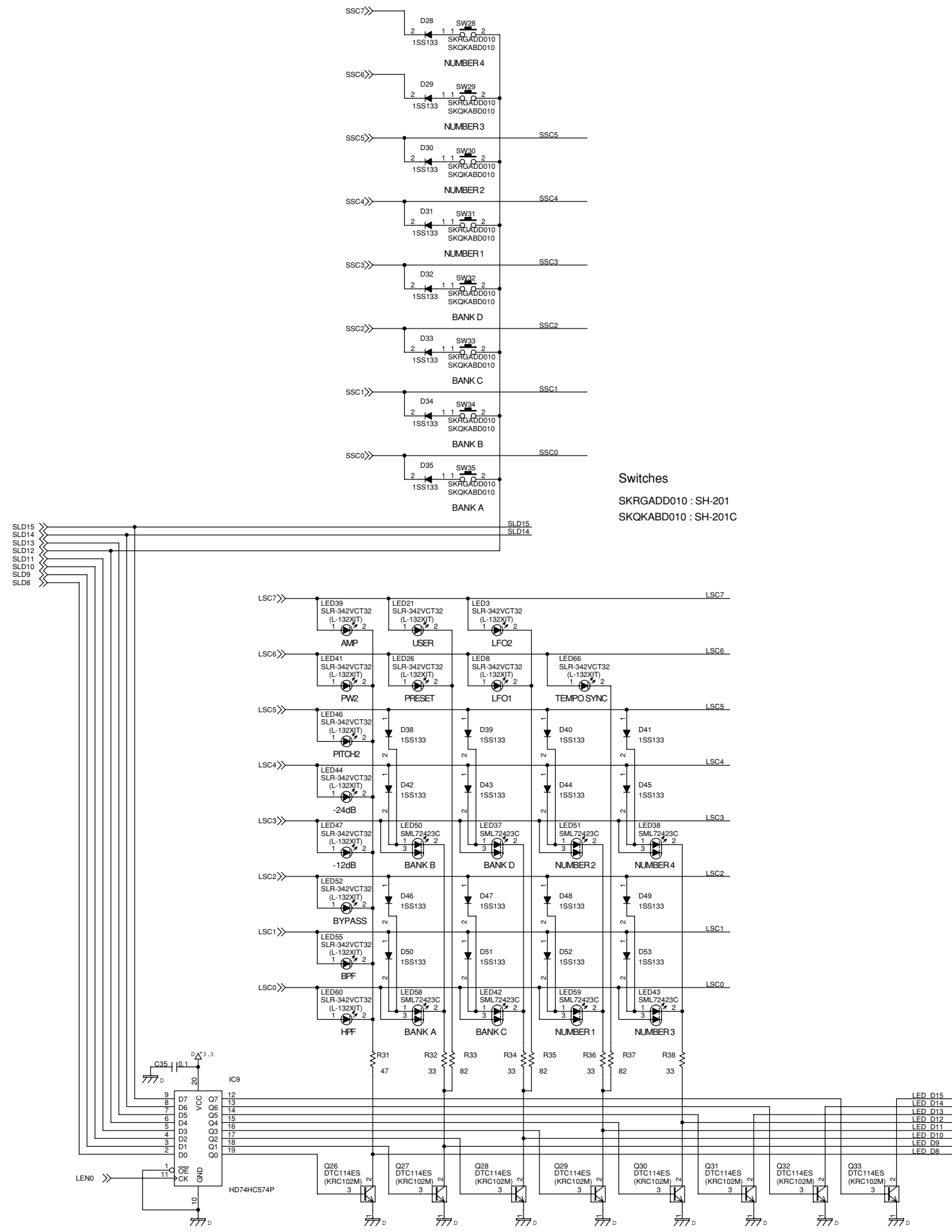
Circuit Diagram (PANEL-C Board: 1)



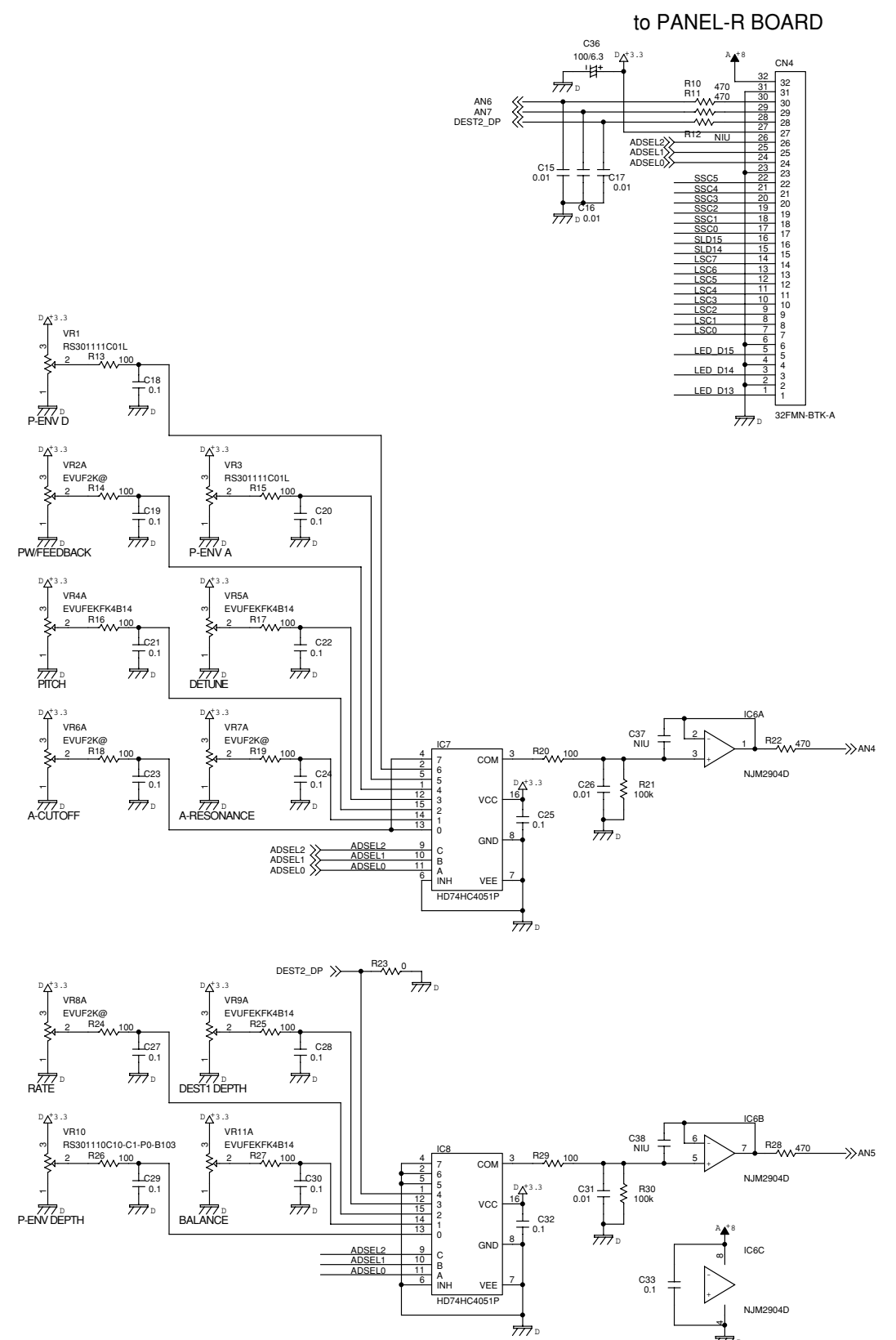
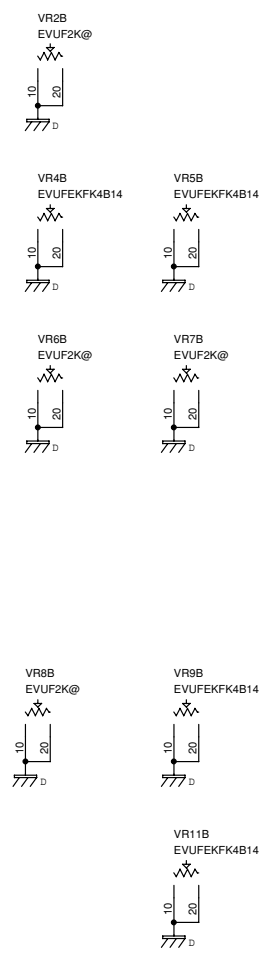
Switches
SKRGADD010 : SH-201
SKQKABD010 : SH-201C



Circuit Diagram (PANEL-C Board: 2)

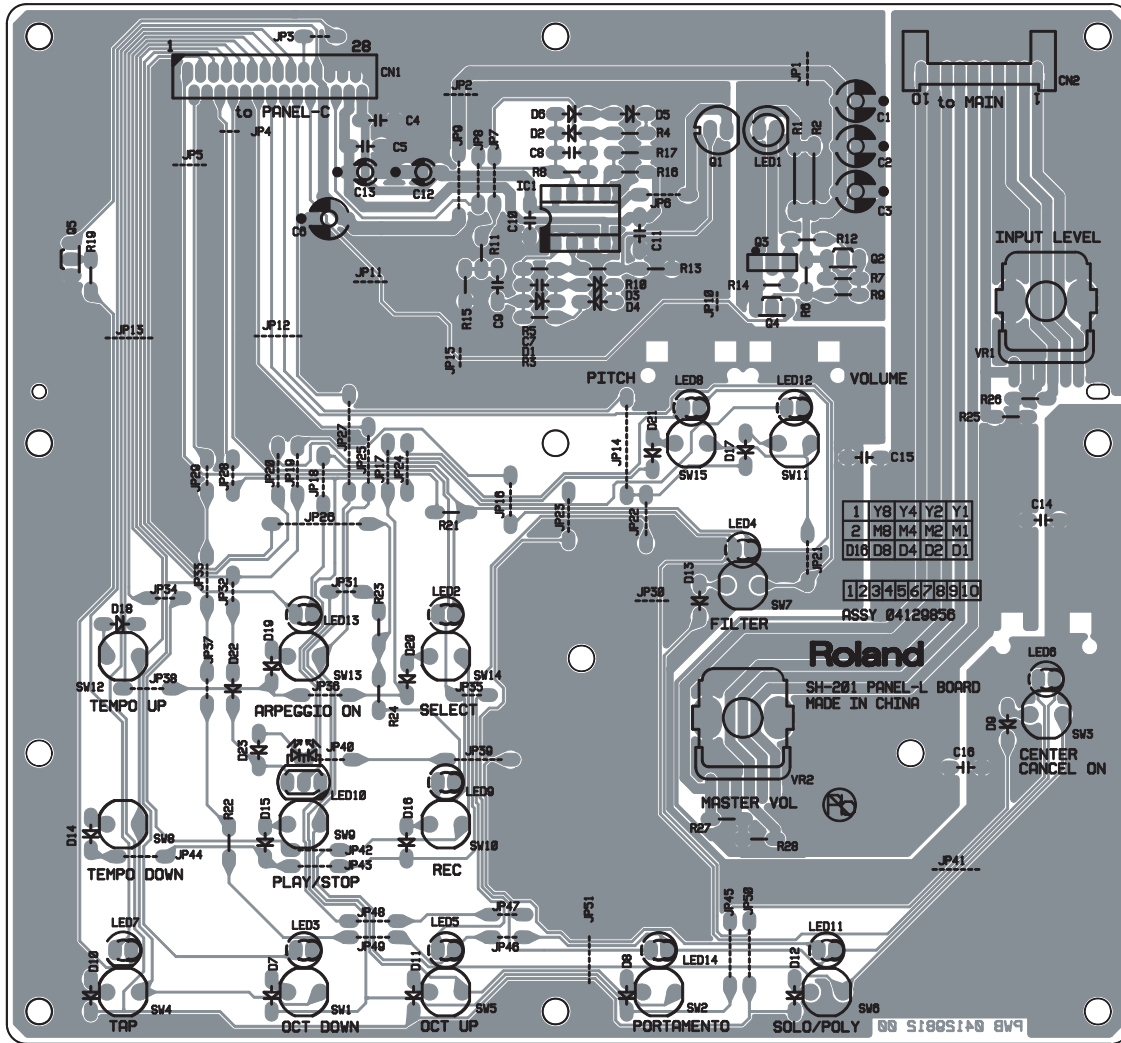


Switches
SKRGADD010 : SH-201
SKQKABD010 : SH-201C



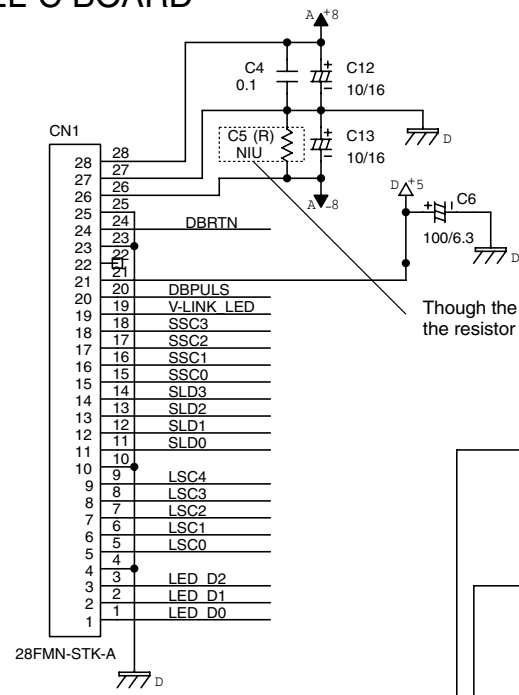
to PANEL-R BOARD

Circuit Board (PANEL-L Board)



Circuit Diagram (PANEL-L Board)

to PANEL-C BOARD



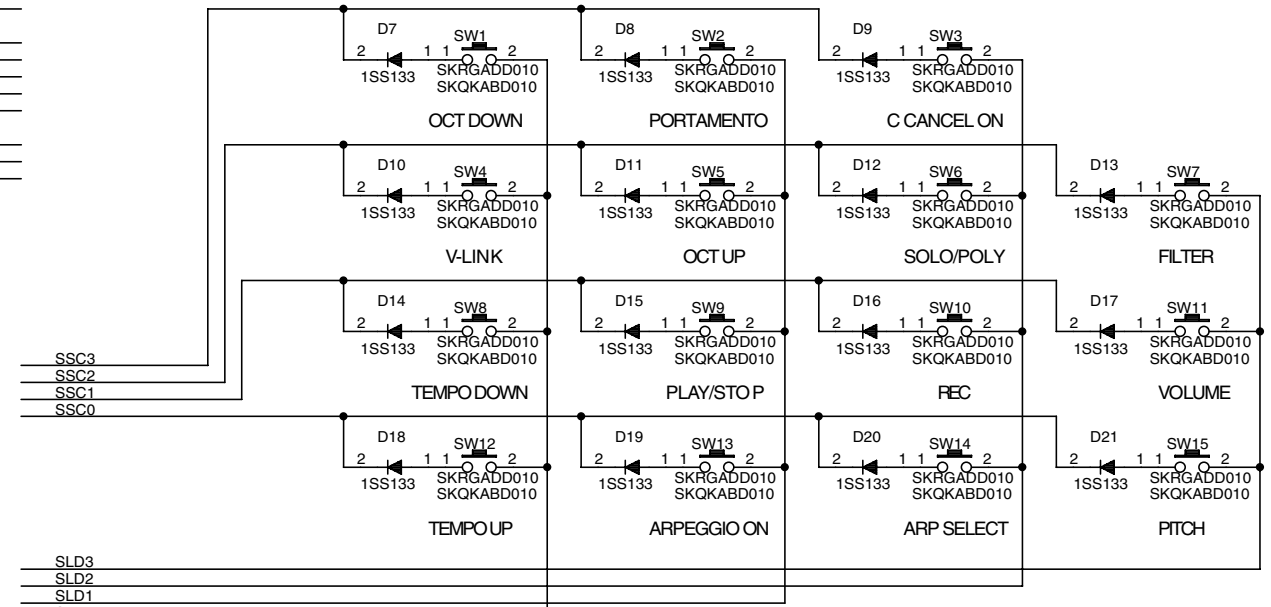
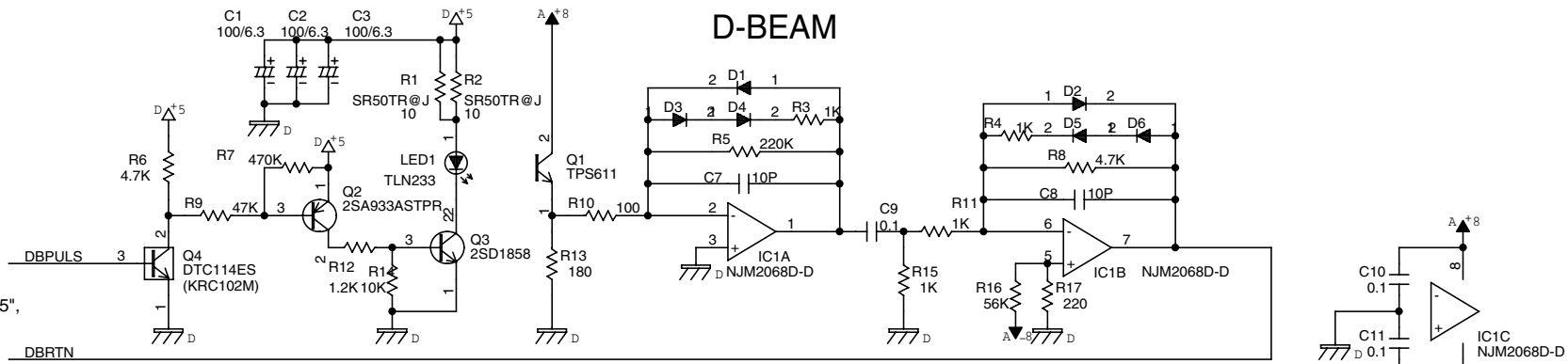
[SH-201]

1.00lot-9.99lot	C5
10.00lot-34.07lot	680
34.08lot-	NIJ

[SH-201C]

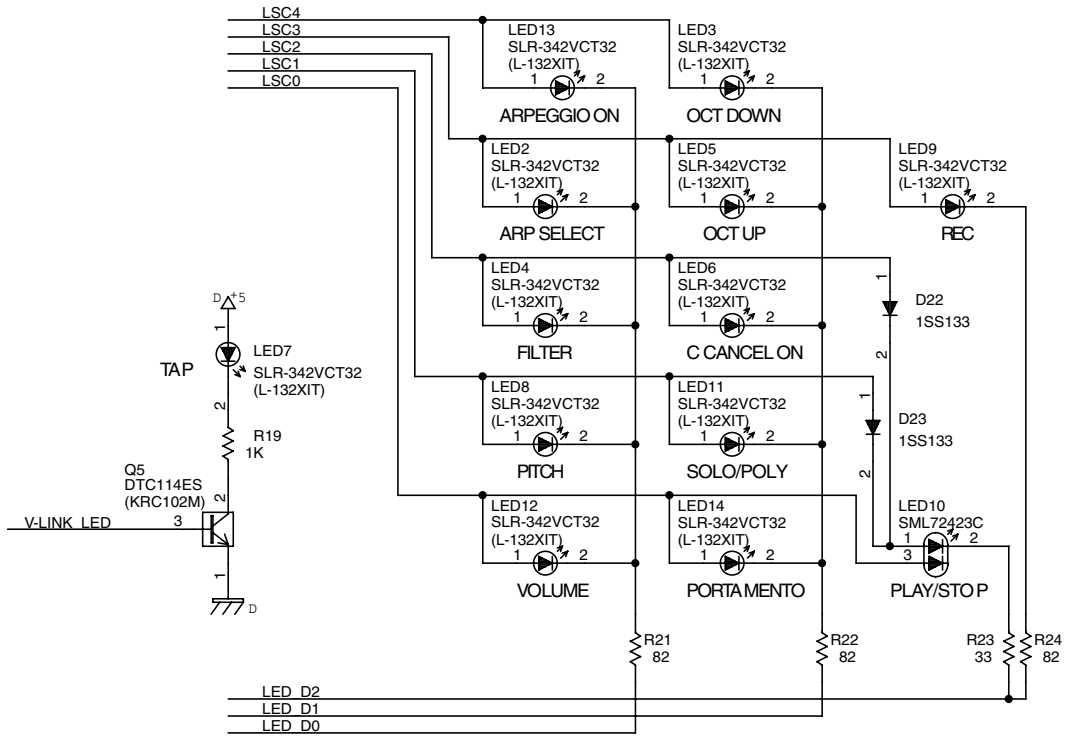
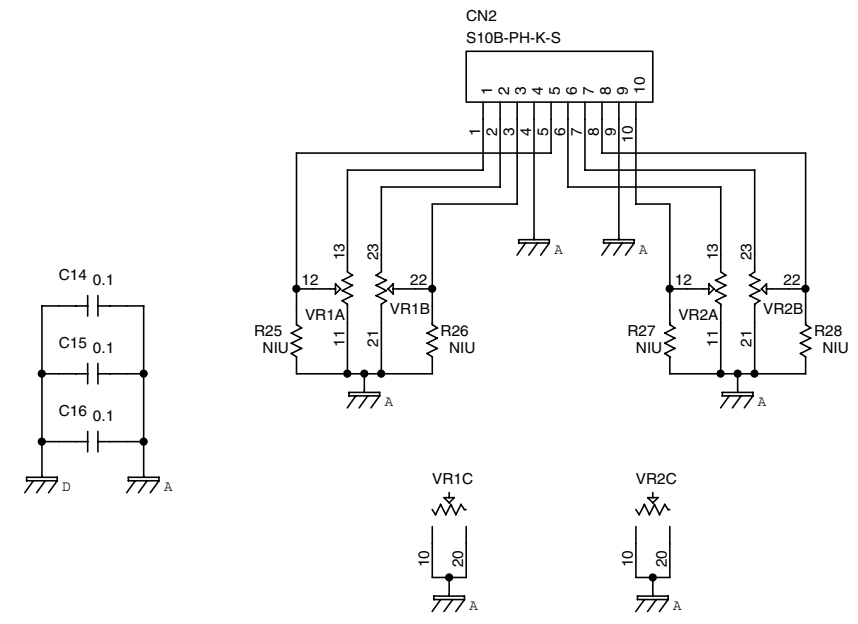
1.00lot-1.39lot	C5
1.40lot-	NIJ

Though the reference number of this part is "C5", the resistor is mounted by the lot.

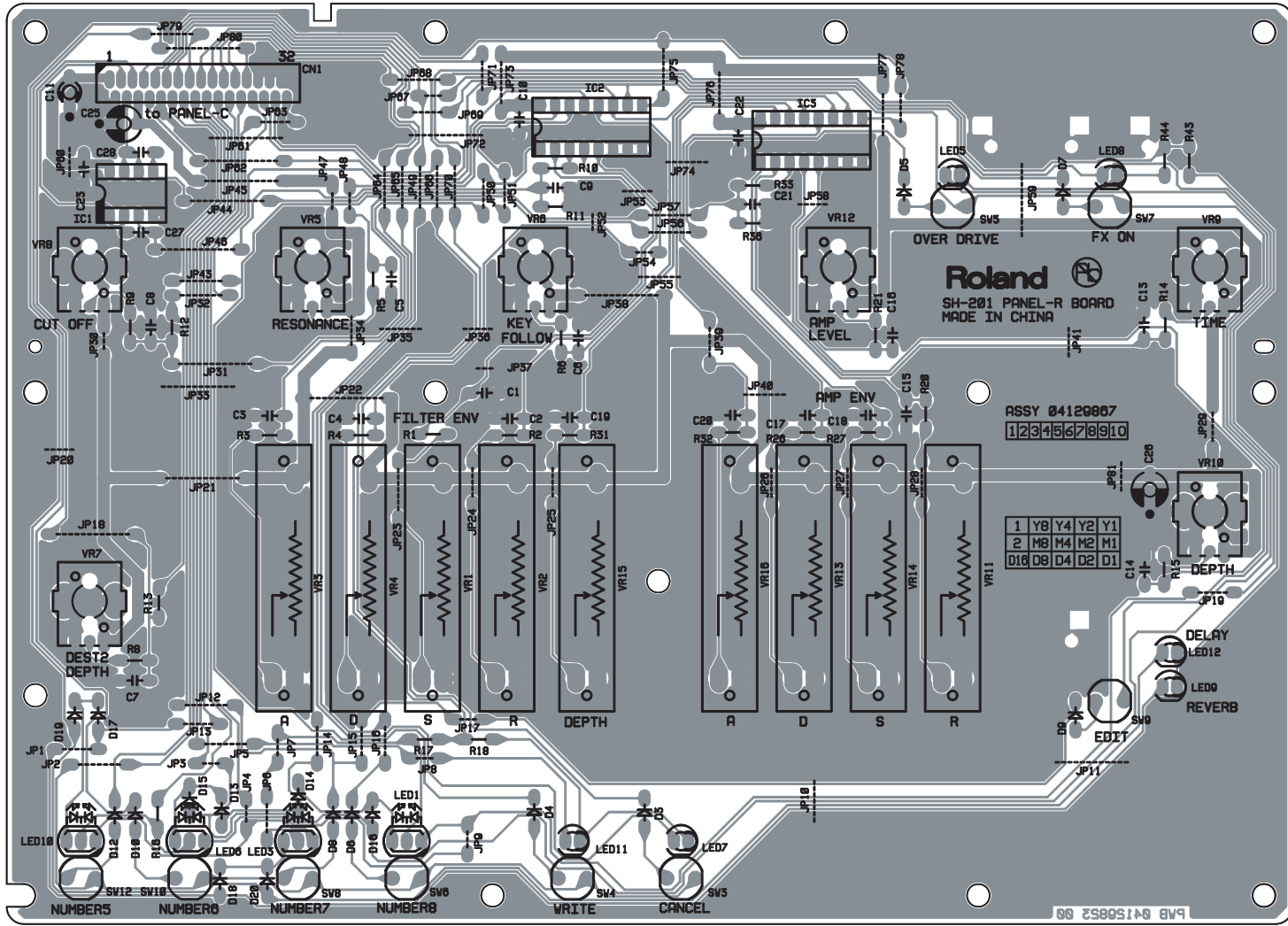


Switches
SKRGADD010 : SH-201
SKQKABD010 : SH-201C

to MAIN BOARD

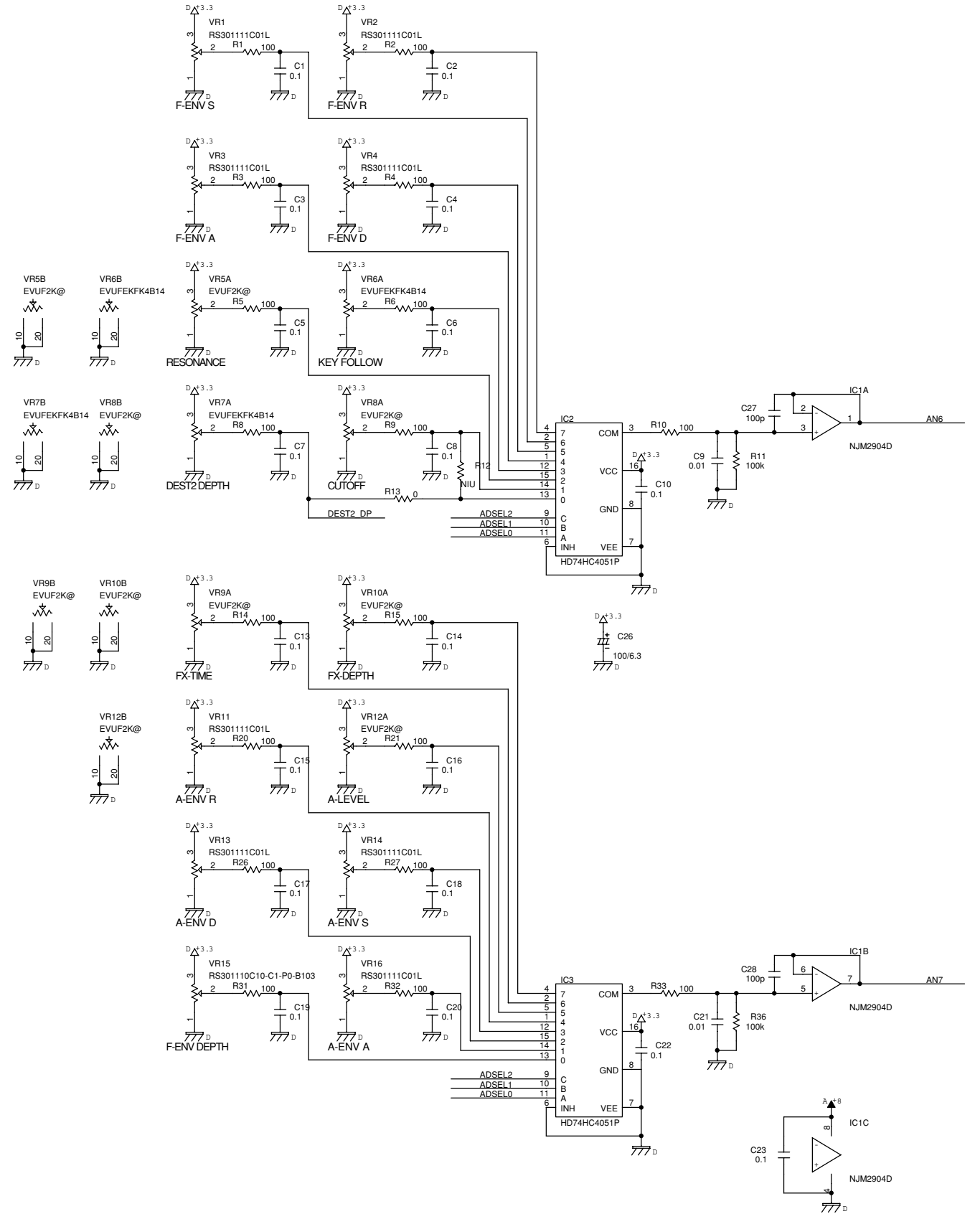
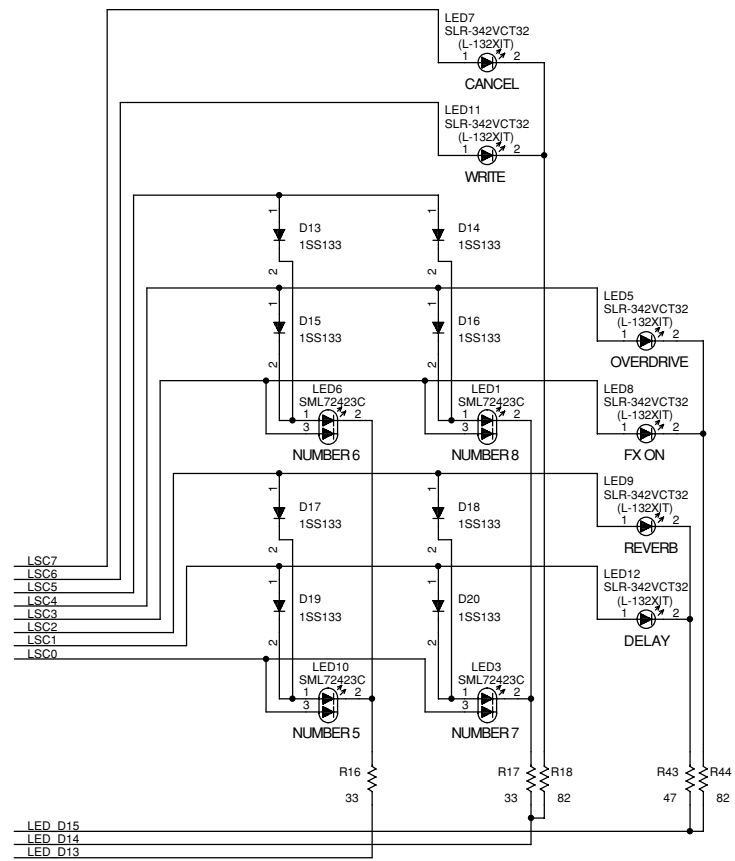
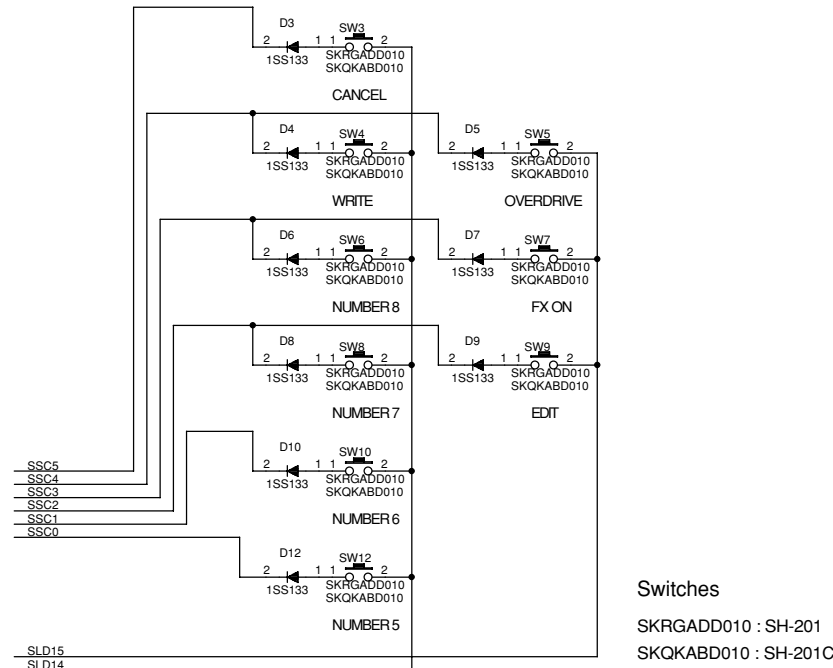
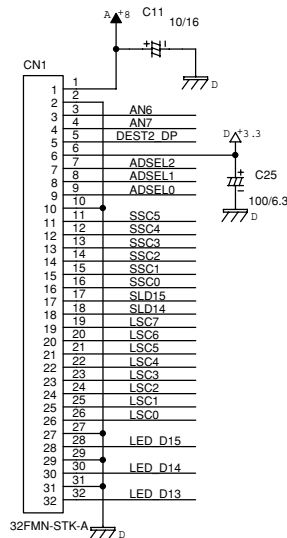


Circuit Board (PANEL-R Board)



Circuit Diagram (PANEL-R Board)

to PANEL-C BOARD



Error Messages

SH-201 doesn't show Error Messages.

MEMO