

GR-55

GUITAR SYNTHESIZER

SERVICE NOTES

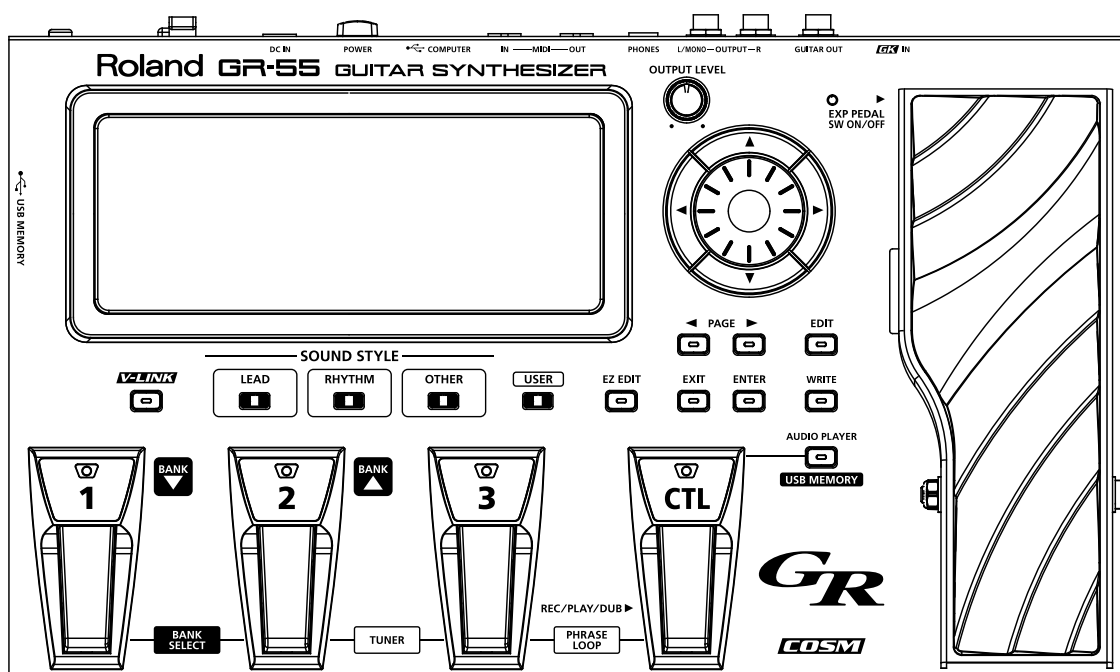
Issued by RJA

Table of Contents

Cautionary Notes	2	Circuit Diagram (Main Board: Power Block; suffix 1)	26
Specifications	3	Circuit Diagram (Main Board: Analog Block; no suffix)	28
Location of Controls	4	Circuit Diagram (Main Board: Analog Block; suffix 1)	30
Location of Controls Parts List	5	Circuit Diagram (Main Board: Digital Block (SSC); no suffix)	32
Exploded View	6	Circuit Diagram (Main Board: Digital Block (SSC); suffix 1)	34
Exploded View Parts List	8	Circuit Diagram (Main Board: Digital Block (WSP))	36
Assembling the USB Box	9	Circuit Diagram (Main Board: CTL Block)	38
Wiring Diagram/Block Diagram	10	Circuit Board (Panel, Enc, EXP, GK Board)	40
Parts List	12	Circuit Diagram (Panel, Enc Board)	42
Verifying the Version	14	Circuit Diagram (EXP Board)	44
Data Backup and Restore Operations	14	Circuit Diagram (GK Board)	44
Performing a Factory Reset	15	Circuit Board (Host Board)	45
Updating the System	15	Circuit Diagram (Host Board)	45
Test Mode	16		
Circuit Board (Main Board; no suffix)	20		
Circuit Board (Main Board; suffix 1)	22		
Circuit Diagram (Main Board: Power Block; no suffix)	24		

Revise Information

Mar 16, 2011	p. 16	Corrected errors.
May 11, 2012	P.18	Added operations.
	P.22, P.26, P.30, P.34	Circuit Boards and Circuit Diagrams.
May 7, 2013	P.12	Changed the category.



Copyright © 2011 Roland Corporation

All rights reserved. No part of this publication may be reproduced in any form without the written permission of Roland Corporation.

Roland

17058718E0

CC-KWS

Cautionary Notes

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

Back Up User Data!

User data may be lost during the course of the procedure. Refer to “**Data Backup and Restore Operations**” (p. 14) 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 ***** will not 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).
- Because it is carried in electronic data on the Roland web site.
- Because it is a package or an accessory irrelevant to the function maintenance of the main body.
- Because it can be replaced with an article on the market. (battery or etc.)

Circuit Diagram

In the circuit diagram, “NIU” is an abbreviation for “Not in Use,” and “UnPop” is an abbreviation for “Unpopulated.” They both mean non-mounted components. The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.

Specifications

GR-55: Guitar Synthesizer

Sound Generator

PCM: 2 tones
Modeling: 1 tone

Tones

PCM: 910 types
Modeling: 23 types (guitar mode)
17 types (bass mode)

Effects

MPX (Multi-Effects): 20 types
AMP (Preamp): 42 types
MOD (Modulation): 14 types
DELAY: 7 types
REVERB: 5 types
CHORUS: 4 types
EQ: 1 type

Patch Memory

Guitar mode
Preset: 270 + User: 297
Bass mode
Preset: 90 + User: 297

AD Conversion

24-bit (GK Pickup)
24-bit + AF method (Normal Pickup)
* *AF method (Adaptive Focus method)*
This is a proprietary method from Roland & BOSS that vastly improves the signal-to-noise (S/N) ratio of the A/D and D/A converters.

DA Conversion

24-bit

Sampling Frequency

44.1 kHz

Nominal Output Level

OUTPUT jacks: -10 dBu
GUITAR OUT jack: -10 dBu

Output Impedance

OUTPUT jacks: 2 k Ω
GUITAR OUT jack: 2 k Ω

USB Memory Audio Player

File Format: WAV, AIFF

Display

Graphic LCD 240 x 64 dots

Connectors

GK IN connector (13 pins DIN type)
GUITAR OUT jack (1/4 inch phone type)
OUTPUT L/MONO, R jacks (1/4 inch phone type)
PHONES jack (Stereo 1/4 inch phone type)
MIDI connectors (IN, OUT) (5-pin DIN type)
USB COMPUTER connector (supports USB 2.0 Hi-Speed USB MIDI and USB Audio)
USB MEMORY connector (supports USB 2.0 Hi-Speed Flash Memory)
DC IN jack

Power Supply

DC 9 V

Current Draw

700 mA

Dimensions

405 (W) x 244 (D) x 78 (H) mm
16 (W) x 9-5/8 (D) x 3-1/8 (H) inches
Maximum height:
405 (W) x 244 (D) x 106 (H) mm
16 (W) x 9-5/8 (D) x 4-3/16 (H) inches

Weight

3.3 kg / 7 lbs 5 oz (excluding AC adaptor)

Accessories

AC adaptor (#04236101)
AC cord (#02562456, #5100012293, #01903356, #5100018086, #03785590)
Owner's manual (#5100018788)
Divided pickup (GK-3) (only for GK included model) (#*****)
GK cable (5 m) (only for GK included model) (#*****)

Options

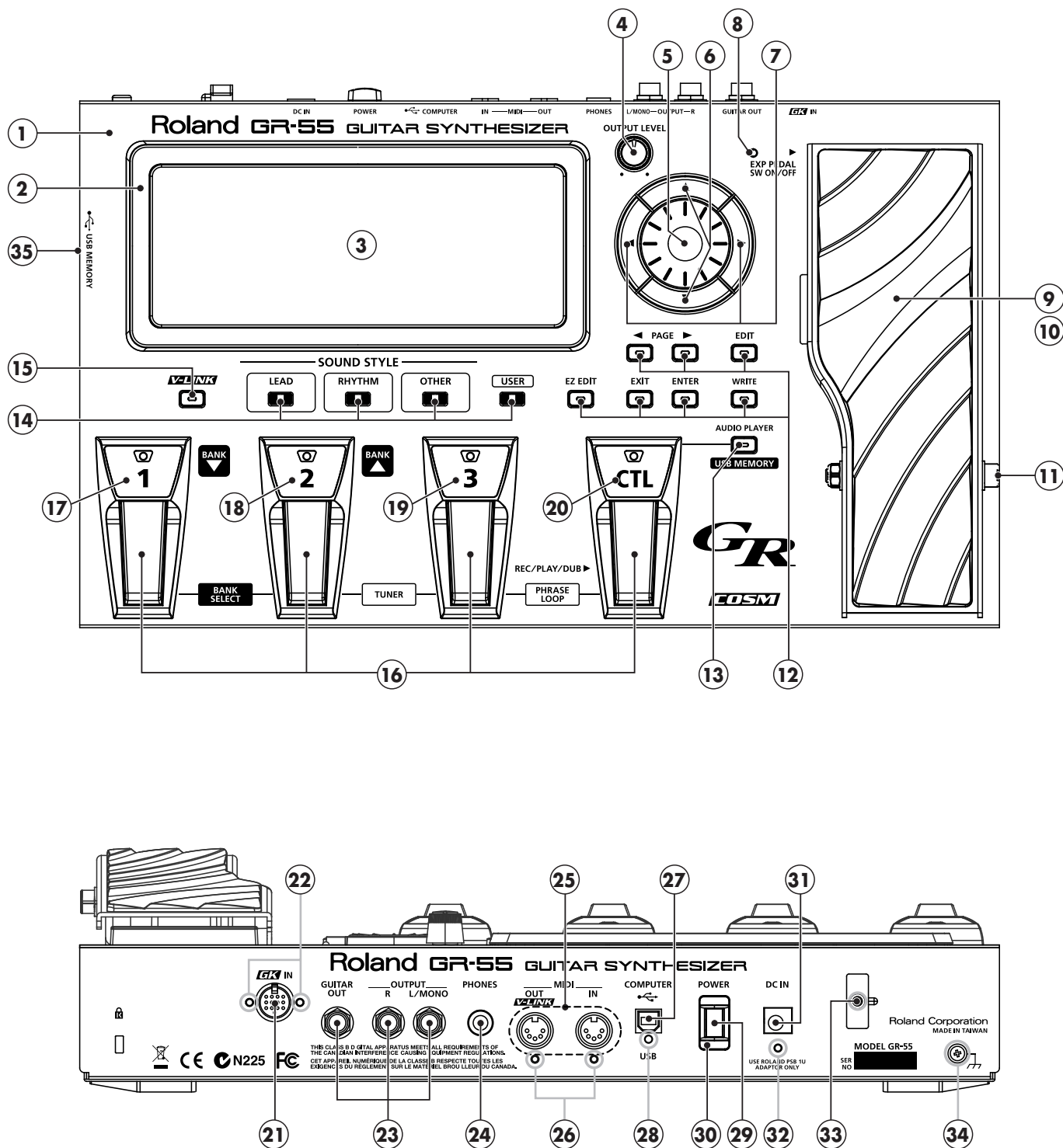
Divided pickup: GK-3 (for guitar), GK-3B (for bass guitar)
GK cable: GKC-5 (5 m), GKC-10 (10 m)
MIDI foot controller: FC-300
Unit selector: US-20

* $0\text{ dBu} = 0.775\text{ V}_{\text{rms}}$

* *Printed matters will not be supplied after the end of the production. Then, download the electronic file from the Roland web site.*

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

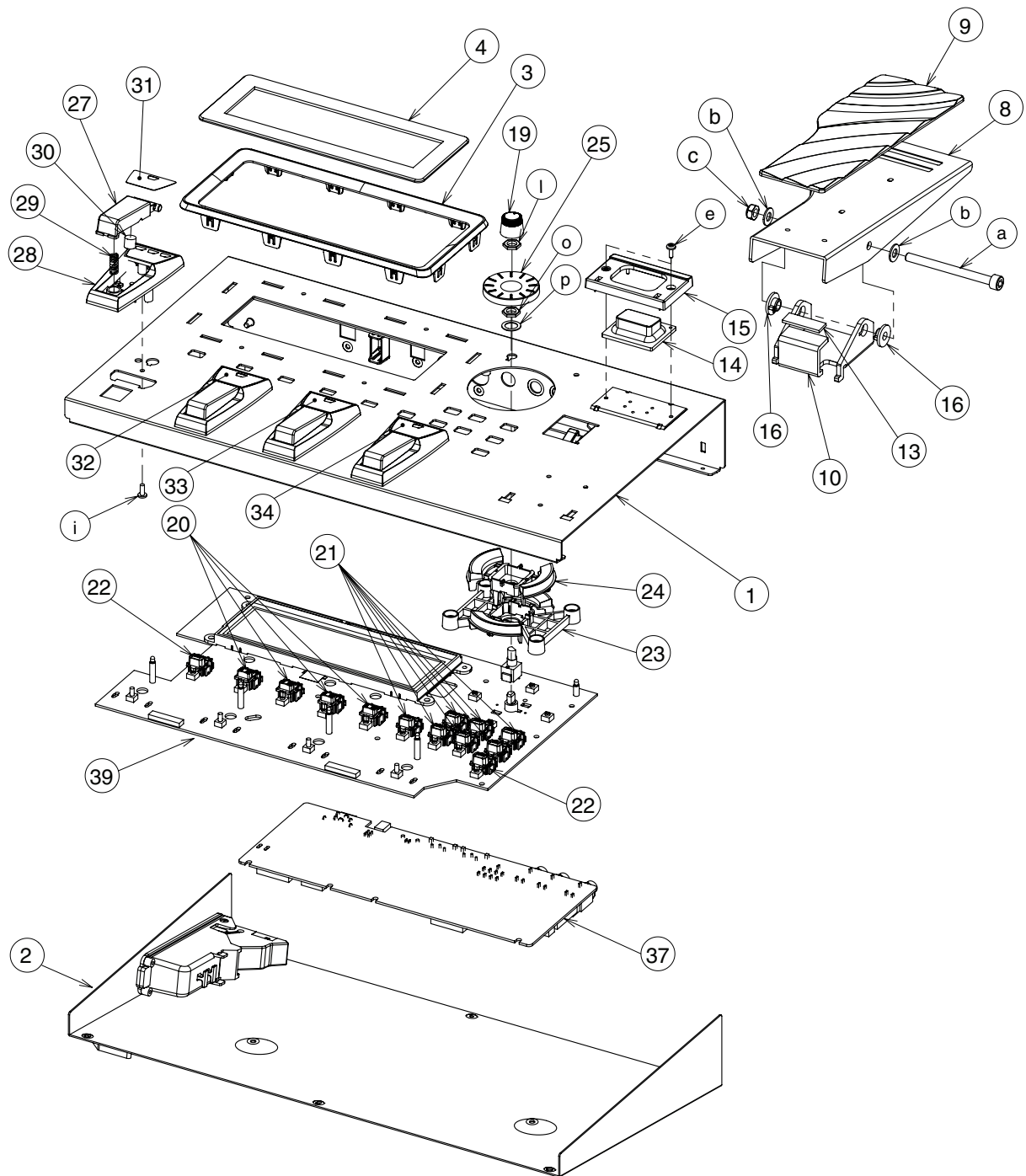
Location of Controls

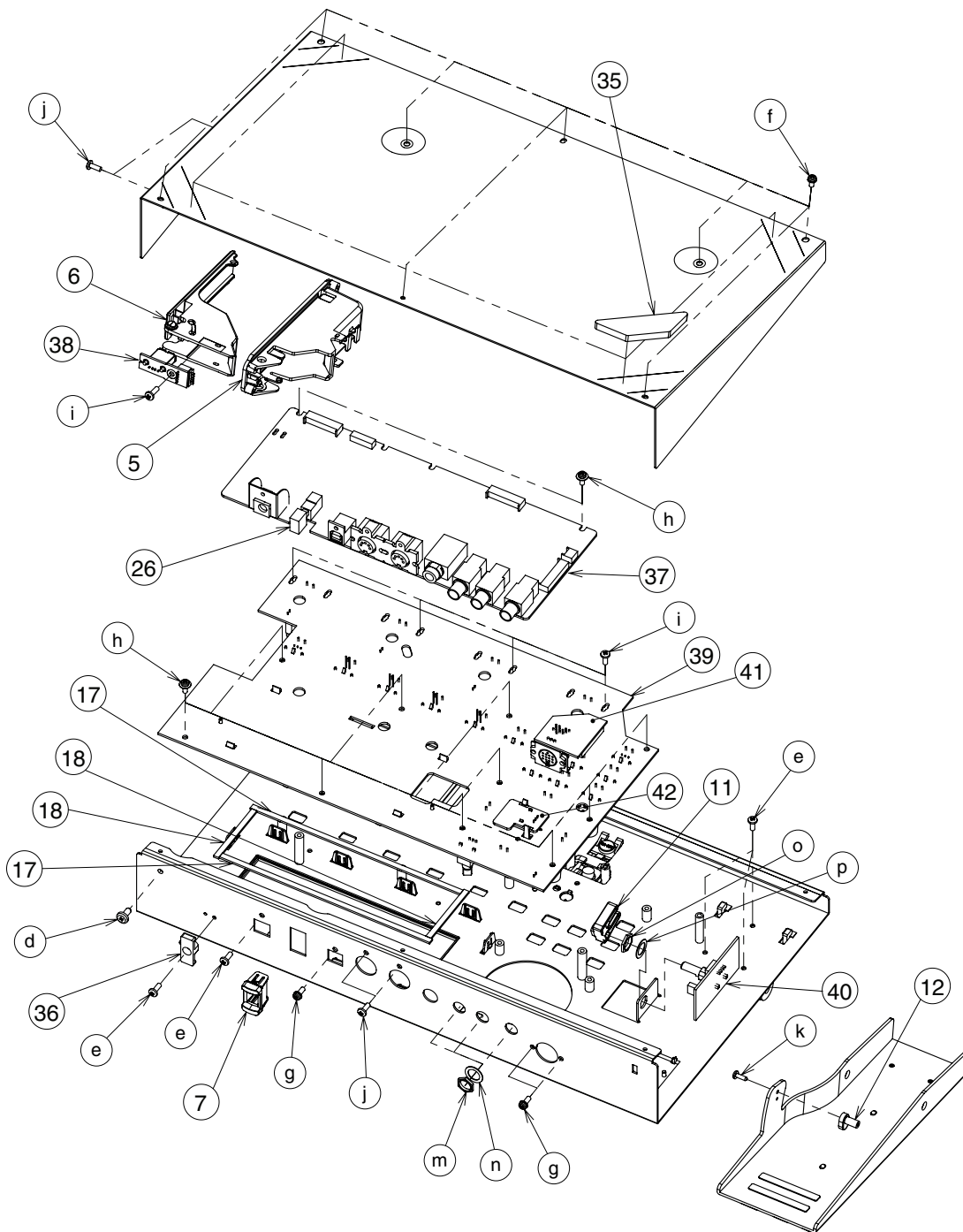


Location of Controls Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100016592	TOP COVER		1
2	5100016594	ESCUTCHEON		1
3	5100016595	DISPLAY COVER		1
4	5100007869	R-KNOB INDEX	G2477526R1	1
	5100001448	POTENTIOMETER (F3279802R0)	RD901F-40-125F-B50K-00D	1
5	5100016342	ENCODER KNOB	(#G2477524R0)	1
	01905467	ROTARY ENCODER	EVE GC1 F20 24B	1
6	5100016340	CURSOR KEY A	(#G2477528R0)	1
	01780101	TACT SWITCH	SKQKABD010	2
7	5100016341	CURSOR KEY B	(#G2477527R0)	1
	01780101	TACT SWITCH	SKQKABD010	2
8	03349978	LED (RED)	L-34HDSL-FPB	1
	G2199514R0	LED SPACER	7MM	1
9	5100019136	VR PEDAL		1
10	5100016596	PEDAL PLATE		1
11	04560589	WASHER	M6 T1 (H5039122)	2
	04560590	U-NUT M6	BZC	1
	5100002092	SCREW M6X70 (H5029867R0)	HEX BOLT HALF THEREAD BZC	1
12	03344945	KEYTOP S	(G2477513R0)	7
	01780101	TACT SWITCH	SKQKABD010	7
13	5100016347	S-KEYTOP	SD1H BLK (#G2477510R0)	1
	01780101	TACT SWITCH	SKQKABD010	1
	F5229819R0	LED (RED)	L-7104SURC-E	1
	H2369430R0	LED SPACER	LEDS-1.5_KY	1
14	5100018778	S-KEYTOP	SD5H CLR (#G2497019R0)	0.8
	01780101	TACT SWITCH	SKQKABD010	4
	F5229819R0	LED (RED)	L-7104SURC-E	4
	H2369430R0	LED SPACER	LEDS-1.5_KY	4
15	5100016347	S-KEYTOP	SD1H BLK (#G2477510R0)	1
	01780101	TACT SWITCH	SKQKABD010	1
	5100015704	LED	L-7104QBC-H	1
	H2369430R0	LED SPACER	LEDS-1.5_KY	1
16	5100001928	SW PEDAL	(G2187916R0)	4
	5100002400	SW PEDAL ESCUTCHEON	(#G2497024R0)	4
	04560712	SUPPORT SPRING	(G2177103R0)	4
	5100011841	SW PEDAL FOOT	H=7.2 (G2357140R0)	4
	03344723	TACT SWITCH	SKQKAKD010	4
17	5100016603	PEDAL LABEL 1		1
18	5100016604	PEDAL LABEL 2		1
19	5100016597	PEDAL LABEL 3		1
20	5100016598	PEDAL LABEL CTL		1
21	00564556	DIN	TCS5093-10-4152	1
22	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	2
23	5100001342	6.5MM JACK	HTJ-064-12IMP (13449155R1)	3
24	F3449714R0	6.5MM JACK	HTJ-064-05A	1
25	13429825	MIDI CONNECTOR	YKF51-5054V	1
26	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	2
27	5100017587	USB CONNECTOR	UBR23-4K5100	1
28	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	1
29	12499175	BUTTON	JSPUE0011A	1
30	5100018071	POWER SW ESCUTCHEON		1
31	F3439875R0	ADAPTOR JACK	KM02018ABM1P	1
32	40019123	SCREW 3X8	BINDING TAPTITE S BZC	1
33	22365714	CORD HOOK		1
	40019123	SCREW 3X8	BINDING TAPTITE S BZC	1
34	40679656	SCREW 4X8	BINDING TAPTITE S NI	1
35	5100018068	USB BOX CASE		1
	5100018069	USB BOX COVER		1
	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	2
	5100006802	USB CONNECTOR	UAS21-4K5J00	1

Exploded View





Exploded View Parts List

Parts

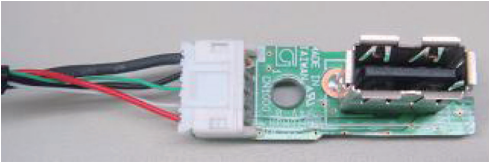
No.	Part Code	Part Name	Description	Q'ty
1	5100016592	TOP COVER		1
2	5100016593	BOTTOM COVER		1
3	5100016594	ESCUTCHEON		1
4	5100016595	DISPLAY COVER		1
5	5100018068	USB BOX CASE		1
6	5100018069	USB BOX COVER		1
7	5100018071	POWER SW ESCUTCHEON		1
8	5100019136	VR PEDAL		1
9	5100016596	PEDAL PLATE		1
10	5100002396	VR PEDAL HOLDER	(G2147916R0)	1
11	03561356	SHAFT STAY	STAY	1
12	5100016343	PIN STAY	(#G1889117R0)	1
13	04560601	CUSHION R	(#G2357111)	1
14	5100016344	RUBBER SW	(#G2637107R0)	1
15	5100016345	RUBBER SW ESCUTCHEON	(#G2567121R0)	1
16	04560634	BOLT HOLDER	(G2147874)	2
17	5100016599	DISPLAY CUSHION A		2
18	5100016600	DISPLAY CUSHION B		2
19	5100007869	R-KNOB INDEX	G2477526R1	1
20	5100018778	S-KEYTOP	SD5H CLR (#G2497019R0)	0.8
21	03344945	KEYTOP S	(G2477513R0)	7
22	5100016347	S-KEYTOP	SD1H BLK (#G2477510R0)	2
23	5100016340	CURSOR KEY A	(#G2477528R0)	1
24	5100016341	CURSOR KEY B	(#G2477527R0)	1
25	5100016342	ENCODER KNOB	(#G2477524R0)	1
26	12499175	BUTTON	JSPUE0011A	1
27	5100001928	SW PEDAL	(G2187916R0)	4
28	5100002400	SW PEDAL ESCUTCHEON	(#G2497024R0)	4
29	04560712	SUPPORT SPRING	(G2177103R0)	4
30	5100011841	SW PEDAL FOOT	H=7.2 (G2357140R0)	4
31	5100016603	PEDAL LABEL 1		1
32	5100016604	PEDAL LABEL 2		1
33	5100016597	PEDAL LABEL 3		1
34	5100016598	PEDAL LABEL CTL		1
35	03344923	FOOT H=5 (G2357120)		4
36	22365714	CORD HOOK		1
37	5100015523	MAIN BOARD ASSY		1
38	5100018208	HOST BOARD ASSY		1
	5100015524	PANEL SHEET ASSY		1
	* This unit includes the following parts.			
39	*****	PANEL BOARD		1
40	*****	EXP BOARD		1
41	*****	GK BOARD		1
42	*****	ENC BOARD		1

Screws

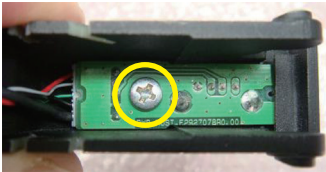
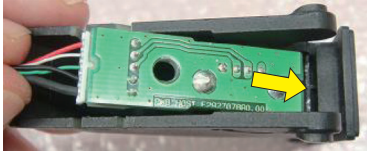
No.	Part Code	Part Name	Description	Q'ty
a	5100002092	SCREW M6X70 (H5029867R0)	HEX BOLT HALF THEREAD BZC	1
b	04560589	WASHER	M6 T1 (H5039122)	2
c	04560590	U-NUT M6	BZC	1
d	40679656	SCREW 4X8	BINDING TAPTITE S NI	1
e	40019123	SCREW 3X8	BINDING TAPTITE S BZC	7
f	40342956	SCREW M3X6	PAN MACHINE W /SW+PW(S) BZC	8
g	40237101	SCREW M3X8	PAN MACHINE W /SW+SMALL PW BZC	3
h	40012867	SCREW M3X8	PAN MACHINE W /SW+PW ZC	14
i	40011278	SCREW 3X8	BINDING TAPTITE P FE ZC	8
j	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	6
k	40233012	SCREW 2.6X8	BINDING TAPTITE P BZC	1
l	40128923	HEX NUT M7		1
m	5100003918	JACK NUT M9X12X2	NI RTC(H5039510R0)	3
n	5100003926	PLAIN WASHER 9X13.5X0.5T	NI(H5039158R0)	3
o	H5069001R0	NUT	M9	1
p	H5039126R0	M9 WASHER		1

Assembling the USB Box

1. Connect Wiring W4 (#5100017066) to the Host Board Assy (#5100018208).



2. Assemble the Host Board Assy to the USB Box Cover (#5100018069), and secure in place using Screw 3 x 8 Binding Taptite P FE ZC (#40011278).



3. Secure Wiring W4 in place using a cable tie, and fit it securely into the USB Box Cover.



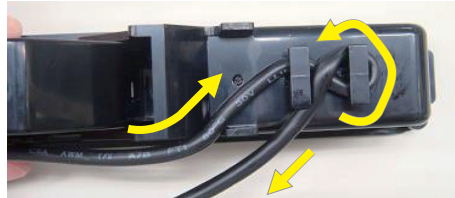
4. Fit the USB Box Cover into the USB Box Case (#5100018068). After pressing in downward, press in at an angle, then fit the protrusion on the USB Box Cover into the hole in the USB Box Case.



5. Secure Wiring W4 to the tab on the USB Box Case.

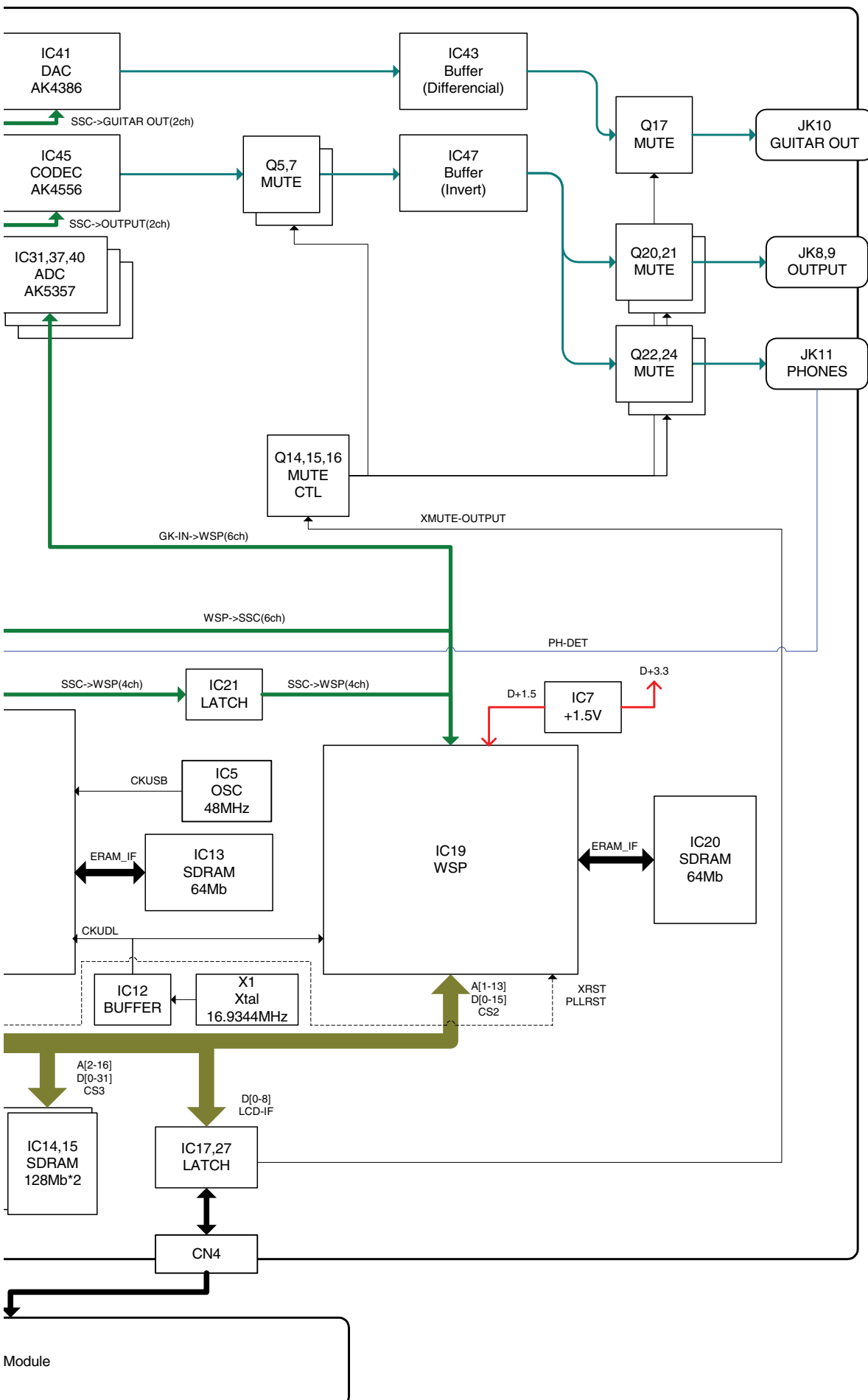


6. Engage Wiring W4 on the hooks on the USB Box Case and adjust the shape.



7. After winding, check to ensure that Wiring W4 will not come loose from the tab.





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

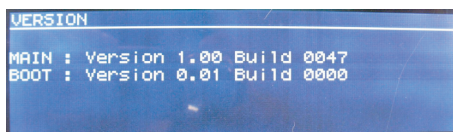
Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

CASING				
#	5100016592	TOP COVER		1
#	5100016593	BOTTOM COVER		1
#	5100018069	USB BOX COVER		1
CHASSIS				
	5100019136	VR PEDAL		1
	03561356	SHAFT STAY	STAY	1
	5100002396	VR PEDAL HOLDER	(G2147916R0)	1
	04560634	BOLT HOLDER	(G2147874)	2
#	5100016343	PIN STAY	(#G1889117R0)	1
#	5100018068	USB BOX CASE		1
KNOB, BUTTON				
#	5100016340	CURSOR KEY A	(#G2477528R0)	1
#	5100016341	CURSOR KEY B	(#G2477527R0)	1
#	5100018778	S-KEYTOP	SD5H CLR (#G2497019R0)	0.8
#	5100016347	S-KEYTOP	SD1H BLK (#G2477510R0)	2
	03344945	KEYTOP S	(G2477513R0)	7
#	5100016344	RUBBER SW	(#G2637107R0)	1
	12499175	BUTTON	JSPUE0011A	1
#	5100016342	ENCODER KNOB	(#G2477524R0)	1
	5100007869	R-KNOB INDEX	G2477526R1	1
SWITCH				
	01899989	PUSH SWITCH	SPUP19-2N-LB2	1
	01780101	TACT SWITCH	SKQKABD010	17
	03344723	TACT SWITCH	SKQKAKD010	4
	5100016344	RUBBER SW	(#G2637107R0)	1
JACK, EXT TERMINAL				
	13429825	MIDI CONNECTOR	YKF51-5054V	1
#	5100006802	USB CONNECTOR	UAS21-4K5J00	1
#	5100017587	USB CONNECTOR	UBR23-4K5100	1
	00564556	DIN	TCS5093-10-4152	1
	F3439875R0	ADAPTOR JACK	KM02018ABM1P	1
	5100001342	6.5MM JACK	HTJ-064-12IMP (13449155R1)	3
	F3449714R0	6.5MM JACK	HTJ-064-05A	1
DISPLAY UNIT				
#	5100018460	LCD	PE24064WRT-005-I-Q	1
PWB ASSY				
#	5100015523	MAIN BOARD ASSY		1
#	5100018208	HOST BOARD ASSY		1
#	5100015524	PANEL SHEET ASSY		1
	* This unit includes the following parts.			
	*****	PANEL BOARD		1
	*****	EXP BOARD		1
	*****	GK BOARD		1
	*****	ENC BOARD		1
DIODE				
	F5229819R0	LED (RED)	L-7104SURC-E	5
#	5100015704	LED	L-7104QBC-H	1
	03349978	LED (RED)	L-34HDSL-FPB	5

POTENTIOMETER					
	01016167	11M/M ROTARY POTENTIOMETER	RK11K1140AFG 10KX1		1
	5100001448	POTENTIOMETER (F3279802R0)	RD901F-40-125F-B50K-00D		1
	01905467	ROTARY ENCODER	EVE GC1 F20 24B		1
WIRING, CABLE					
#	5100017063	WIRING	W1		2
#	5100017065	WIRING	W3		1
#	5100017066	WIRING	W4		1
	5100002340	WIRING	3P		1
SCREWS					
	40342956	SCREW M3X6	PAN MACHINE W/SW+PW(S) BZC		8
	40012867	SCREW M3X8	PAN MACHINE W/SW+PW ZC		14
	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC		3
	5100002092	SCREW M6X70 (H5029867R0)	HEX BOLT HALF THEREAD BZC		1
	40233012	SCREW 2.6X8	BINDING TAPTITE P BZC		1
	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC		6
	40011278	SCREW 3X8	BINDING TAPTITE P FE ZC		8
	40019123	SCREW 3X8	BINDING TAPTITE S BZC		7
	40679656	SCREW 4X8	BINDING TAPTITE S NI		1
	40128923	HEX NUT M7			1
	H5069001R0	NUT	M9		1
	5100003918	JACK NUT M9X12X2	NI RTC(H5039510R0)		3
	04560590	U-NUT M6	BZC		1
	04560589	WASHER	M6 T1 (H5039122)		2
	5100003926	PLAIN WASHER 9X13.5X0.5T	NI(H5039158R0)		3
	H5039126R0	M9 WASHER			1
MISCELLANEOUS					
	5100001928	SW PEDAL	(G2187916R0)		4
	5100011841	SW PEDAL FOOT	H=7.2 (G2357140R0)		4
#	5100016596	PEDAL PLATE			1
#	5100016595	DISPLAY COVER			1
#	5100016594	ESCUTCHEON			1
#	5100018071	POWER SW ESCUTCHEON			1
#	5100016345	RUBBER SW ESCUTCHEON	(#G2567121R0)		1
	5100002400	SW PEDAL ESCUTCHEON	(#G2497024R0)		4
	04560601	CUSHION R	(#G2357111)		1
#	5100016599	DISPLAY CUSHION A			2
#	5100016600	DISPLAY CUSHION B			2
	03344923	FOOT H=5 (G2357120)			4
#	H2369430R0	LED SPACER	LED-1.5_KY		6
#	04893056	LED SPACER	LED-15_KY		4
	G2199514R0	LED SPACER	7MM		1
#	5100016603	PEDAL LABEL 1			1
#	5100016604	PEDAL LABEL 2			1
#	5100016597	PEDAL LABEL 3			1
#	5100016598	PEDAL LABEL CTL			1
	04560712	SUPPORT SPRING	(G2177103R0)		4
	05015034	USB CONNECTOR CAP	USBC-1(G2247805R0)		1
	22365714	CORD HOOK			1
ACCESSORIES (Standard)					
△	04236101	AC ADAPTOR WITHOUT AC CORD	PSB-1U(S) UNIVERSAL		1
△	01903334	AC CORD SET PSE	100V 1.0M FOR PSB	for 100V	1
△	02562456	AC CORD SET	120V 1.0M (NON POLAR)	for 117VU, 117VU/CS	1
△	5100012293	AC CORD SET	117VBL 1.0M FOR PSB	for 117VBL	1
△	01903356	AC CORD SET	230V 1.0M FOR PSB	for 230VEU, 220VCNR	1
△	5100018086	AC CORD SET	230VE 1.0M FOR EPS	for 230VE	1
△	03785590	AC CORD SET	SC-078-NA05 240VA	for 240VA	1
#	5100018787	OWNER'S MANUAL	JAPANESE		1
#	5100018788	OWNER'S MANUAL	ENGLISH		1

Verifying the Version

1. Hold down [PAGE ◀] and [PAGE ▶] and switch on the power.
The version information is displayed.



2. Switch off the power.

Data Backup and Restore Operations

Using the method described below, you can back up all parameters, including patch data. Note, however, that pedal sensitivity settings (calibration) cannot be backed up. For information on adjusting the sensitivity of the pedals, refer to **Adjusting the Pedal Sensitivity (CALIB)** (Owner's Manual, p. 73).

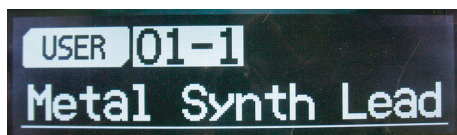
Item Required

- USB memory device (2 MB or larger)

* Before you start, use a computer to format the device using the **FAT32** file system.

Backup Procedure

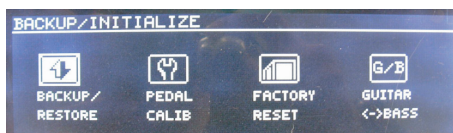
1. Switch on the power to the unit.
The initial screen appears.



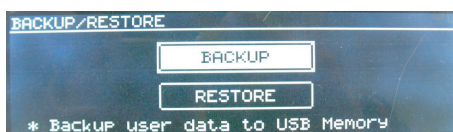
2. Insert the USB memory device into the **USB MEMORY** connector on the side panel.
3. Press [EDIT], then press [PAGE ▶] 3 times.
The **SYSTEM** setting screen appears.



4. Turn the encoder to select **BACKUP/INIT**, then press [ENTER].
The **BACKUP/INITIALIZE** screen appears.



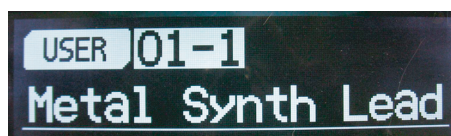
5. Select **BACKUP/RESTORE**, then press [ENTER].
The **BACKUP/RESTORE** screen appears.



6. Select **BACKUP**, then press [ENTER].
7. At the confirmation screen, select **OK**, then press [ENTER].
The backup is executed.
8. Detach the USB memory device.

Restore-operation Procedure

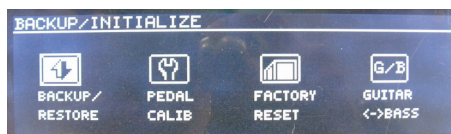
1. Switch on the power to the unit.
The initial screen appears.



2. Insert the USB memory device containing the backed-up user data into the **USB MEMORY** connector on the side panel.
3. Press [EDIT], then press [PAGE ▶] 3 times.
The **SYSTEM** setting screen appears.



4. Turn the encoder to select **BACKUP/INIT**, then press [ENTER].
The **BACKUP/INITIALIZE** screen appears.



5. Select **BACKUP/RESTORE**, then press [ENTER].
The **BACKUP/RESTORE** screen appears.



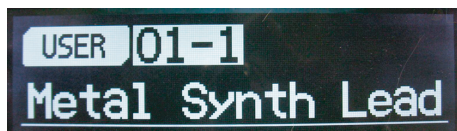
6. Select **RESTORE**, then press [ENTER].
7. At the confirmation screen, select **OK**, then press [ENTER].
The restore operation is executed.
8. Detach the USB memory device.

Performing a Factory Reset

* Executing a factory reset causes all user settings except user patches and pedal-sensitivity settings (calibration) to be reset to their factory defaults.

A factory reset can be executed either when the unit has been started normally or in the Test Mode. This section describes how to carry out the operation when the unit has been started normally.

1. Switch on the power to the unit.
The initial screen appears.



2. Press [EDIT], then press [PAGE ►] 3 times.
The **SYSTEM** setting screen appears.



3. Turn the encoder to select **BACKUP/INIT**, then press [ENTER].
The **BACKUP/INITIALIZE** screen appears.



4. Select **FACTORY RESET**, then press [ENTER].
The **FACTORY RESET** screen appears.



5. Select **OK**, then press [ENTER].
A factory reset is executed.

Updating the System

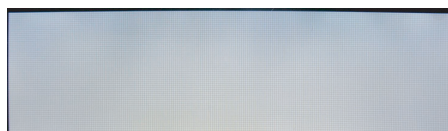
Items Required

- Update-use files (obtained via Service Net)
- USB memory device (2 MB or larger)

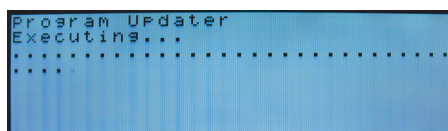
* Before you start, use a computer to format the device using the **FAT32** file system.

Procedure

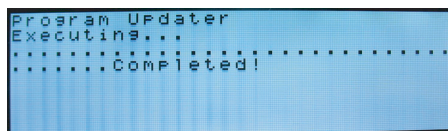
1. Copy the update-use file (**gr55.bin**) to the root directory of the USB memory device.
2. Insert the USB memory device just described into the **USB MEMORY** connector on the side panel.
3. Hold down [V-LINK] and [USER] and switch on the power.
The initial screen appears, and then the LCD screen lights up completely.



After a short interval, the update is executed.



When the message **Completed!** is displayed, the update is finished.



4. Detach the USB memory device and switch off the power.

Test Mode

Items Required

- GK-3-equipped guitar
- Headphones
- Signal generator
- Oscilloscope
- Noise meter
- Computer (USB driver not required)
- USB memory device (any capacity)

* Before you start, use a computer to format the device using the **FAT32** file system.

- USB cable
- MIDI cable

Preparations

Before carrying out the first test item (**1. DEVICE CHECK**), make the connections described below.

1. Connect the USB memory device to the **USB MEMORY** connector.
2. Using the USB cable, connect the **COMPUTER** connector and the USB connector on the computer.
* A request for a USB driver appears at this time, but it can be ignored. In the Test Mode, no USB driver is required.
3. Using the MIDI cable, connect the **MIDI IN** and **MIDI OUT** jacks.

Entering the Test Mode

1. Hold down [USER], [EZ EDIT], and ~~[WRITE]~~ [EDIT] at the same time and switch on the power.
* Continue to hold down the buttons until **GR-55** appears on the screen.

After a short interval, the unit enters the Test Mode, and a display like the one shown below appears.



2. Press CURSOR [▶].
Execution advances to the first test item (**1. DEVICE CHECK**).

Quitting the Test Mode

Switch off the power.

How to Move Between Test Items

Holding down [EXIT] and pressing CURSOR [▶] advances execution to the next test item.

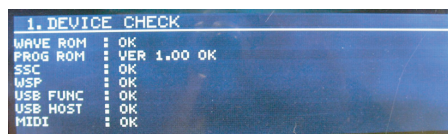
Holding down [EXIT] and pressing CURSOR [◀] returns execution to the previous test item.

Test Items

1. **DEVICE CHECK** (p. 16)
2. **LCD/ENCODER CHECK** (p. 16)
3. **SW/LED CHECK** (p. 17)
4. **VR CHECK** (p. 17)
5. **EXP PEDAL CALIBRATION** (p. 17)
6. **EXP PEDAL SW CHECK** (p. 17)
7. **GK CONTROL CHECK** (p. 17)
8. **AUDIO CHECK (LINE/GUITAR OUT)** (p. 18)
9. **AUDIO CHECK (GK IN)** (p. 18)
10. **AUDIO CHECK (NORMAL IN)** (p. 18)
11. **AUDIO CHECK (Anx NOISE)** (p. 18)
12. **AUDIO CHECK (SELF TEST)** (p. 18)
13. **FACTORY RESET** (p. 18)
14. **FACTORY CHECK** (p. 18)
15. **POWER OFF** (p. 19)

1. DEVICE CHECK

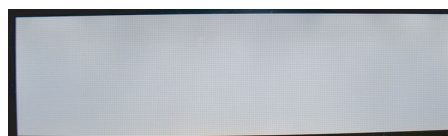
ROM, RAM, MIDI, and USB operation is checked automatically.



1. Verify the system version information to the right of **PROG ROM**.
2. Verify that **OK** is displayed for all other items, then press [EXIT] + CURSOR [▶] to advance to the next test item.

2. LCD/ENCODER CHECK

This checks the illumination of the LCD screen and the operation of the encoder.



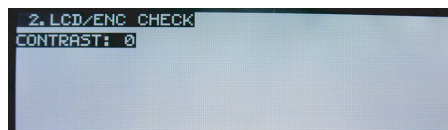
1. Verify that the LCD screen is completely illuminated, then press CURSOR [▶].

The screen shown below appears.

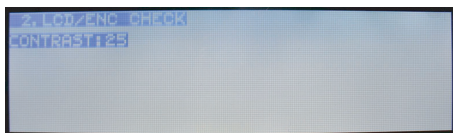


2. Verify that the LCD screen is completely dark, then press CURSOR [▶].

The screen shown below appears.



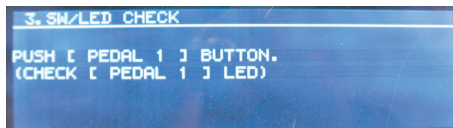
- Turn the encoder and verify that the contrast changes.



- Press [EXIT] + CURSOR [▶] to advance to the next test item.

3. SW/LED CHECK

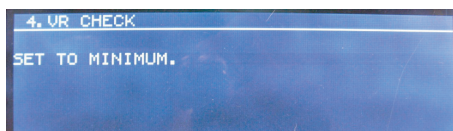
This checks switch operation and LED illumination.



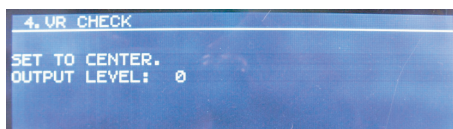
- Press each button displayed on the LCD screen, and verify that the button's LED lights up.
When testing of all switches and LEDs has been completed, advance to the next test item.

4. VR CHECK

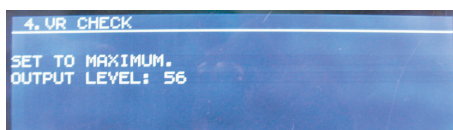
This checks the output level.



- Adjust the **OUTPUT LEVEL** control to minimum.
A screen like the one shown below is displayed.



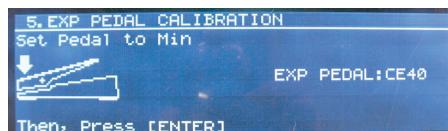
- Turn the **OUTPUT LEVEL** control clockwise.
When the control has been adjusted to a setting past a location near the center, the display changes.



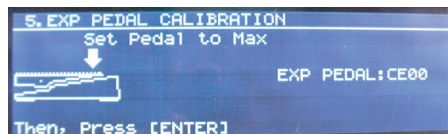
- Turn the control to maximum, then advance to the next test item.

5. EXP PEDAL CALIBRATION

This sets the operation range of the expression pedal.



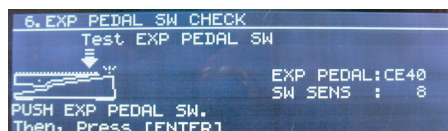
- Depress the heel of **EXP PEDAL** all the way, then press [ENTER].
A screen like the one shown below is displayed.



- Depress the toe of **EXP PEDAL** all the way, then press [ENTER].
Execution automatically advances to the next test item.

6. EXP PEDAL SW CHECK

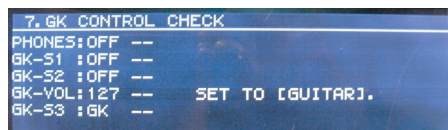
This checks expression-pedal switch operation.



- Forcefully depress the toe of the **EXP PEDAL**, and verify that **EXP PEDAL SW** is switched on or off.
Execution automatically advances to the next test item.

7. GK CONTROL CHECK

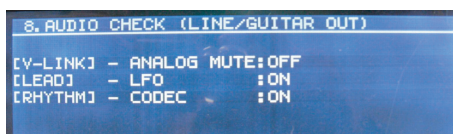
This checks the operation of the **PHONES** and **GK IN** connectors.



- At the **PHONES** connector, insert and detach the plug, and verify that **OK** is displayed.
- Connect the GK-3 to the **GK IN** connector, operate the switches and the volume control on the GK-3, and verify that **OK** is displayed for each.
If all items are OK, execution automatically advances to the next test item.

8. AUDIO CHECK (LINE/GUITAR OUT)

This checks the D/A path.



1. Connect the oscilloscope or noise meter to the **OUTPUT L/MONO** and **R** jacks.
2. Verify that signals like the ones shown below are output.
OUTPUT L/R: **3.3 Vp-p±300 mV (+7 dBm±1 dB)**
3. Press [V-LINK], and verify that output is muted.
OUTPUT L/R: **-80 dB** or lower
4. Connect the oscilloscope or noise meter to the **PHONES** jack.
5. Verify that signals like the ones shown below are output.
OUTPUT L/R: **3.3 Vp-p±300 mV (+7 dBm±1 dB)**
6. Connect the oscilloscope or noise meter to the **GUITAR OUT** jack.
7. Verify that signals like the one shown below are output.
GUITAR OUT: **3.6 Vp-p±300 mV (+8 dBm±1 dB)**
8. Press [V-LINK], and verify that output is muted.
GUITAR OUT: **-45 dB** or lower
9. Press [EXIT] + CURSOR [►] to advance to the next test item.

9. AUDIO CHECK (GK IN)

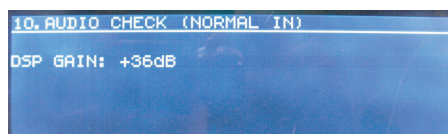
This checks the A/D path (GK IN: six-string input).



1. Connect the GK-3-equipped guitar to the **GK IN** connector.
2. Set the switch on the GK-3 to **GK**.
3. Verify that the input signals from the respective strings are output from **OUTPUT L/MONO** and **R**.
4. Operate the encoder to change the **SW1** display on the LCD screen to **SW2**, **SW3**, and **SW4**, and verify that the input guitar sound simultaneously becomes louder.
** Note that **SW3** and **SW4** are about the same level.*
5. Press [EXIT] + CURSOR [►] to advance to the next test item.

10. AUDIO CHECK (NORMAL IN)

This checks the A/D path (GK IN: NORMAL IN).



1. Connect the signal generator to the GUITAR input connector on the GK-3, **set the switch on the GK-3 to GUITAR**, and input a signal like the one shown below.
200-Hz rectangular wave at -40 dBm
2. Verify that signals like the one shown below are output from **OUTPUT L/MONO** and **R**.
200-Hz rectangular wave at -4 dBm±1 dBm
3. Detach the plug connected to the GUITAR input connector, and verify that residual noise is at a value like the one shown below.
-62 dBm or lower (DIN audio), or **-66 dBm** or lower (JIS A)
4. Press [EXIT] + CURSOR [►] to advance to the next test item.

11. AUDIO CHECK (Anx NOISE)

** This test item is used only for development purposes. It is not used for servicing.*

Press [EXIT] + CURSOR [►] to advance to the next test item.

12. AUDIO CHECK (SELF TEST)

** This test item is used only for development purposes. It is not used for servicing.*

Press [EXIT] + CURSOR [►] to advance to the next test item.

13. FACTORY RESET

This performs a factory reset.



1. Press [WRITE] to execute a factory reset.
When the factory reset has finished, execution automatically advances to the following test item.

14. FACTORY CHECK

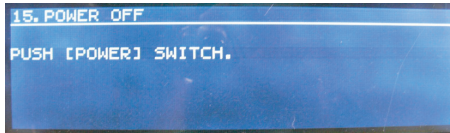
** This test item is used only for development purposes. It is not used for servicing.*



Press [EXIT] + CURSOR [►] to advance to the next test item.

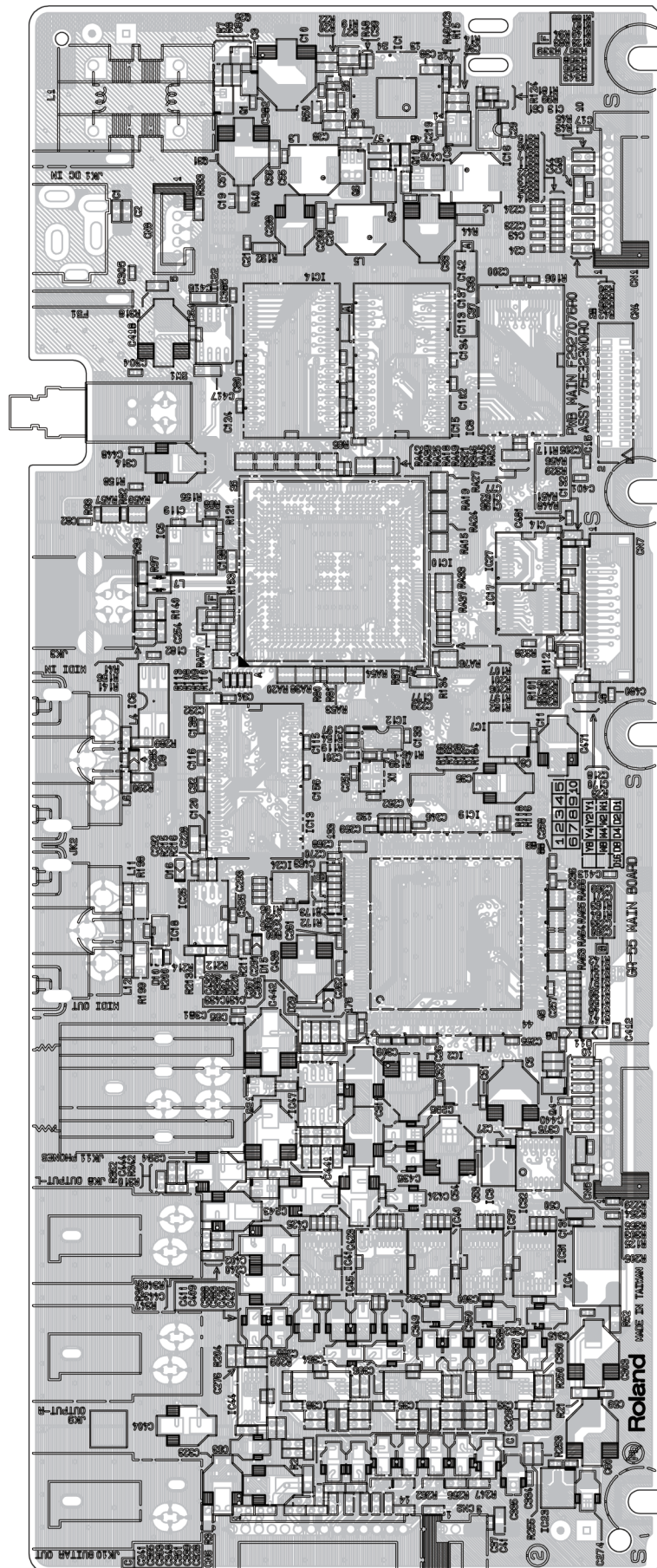
15. POWER OFF

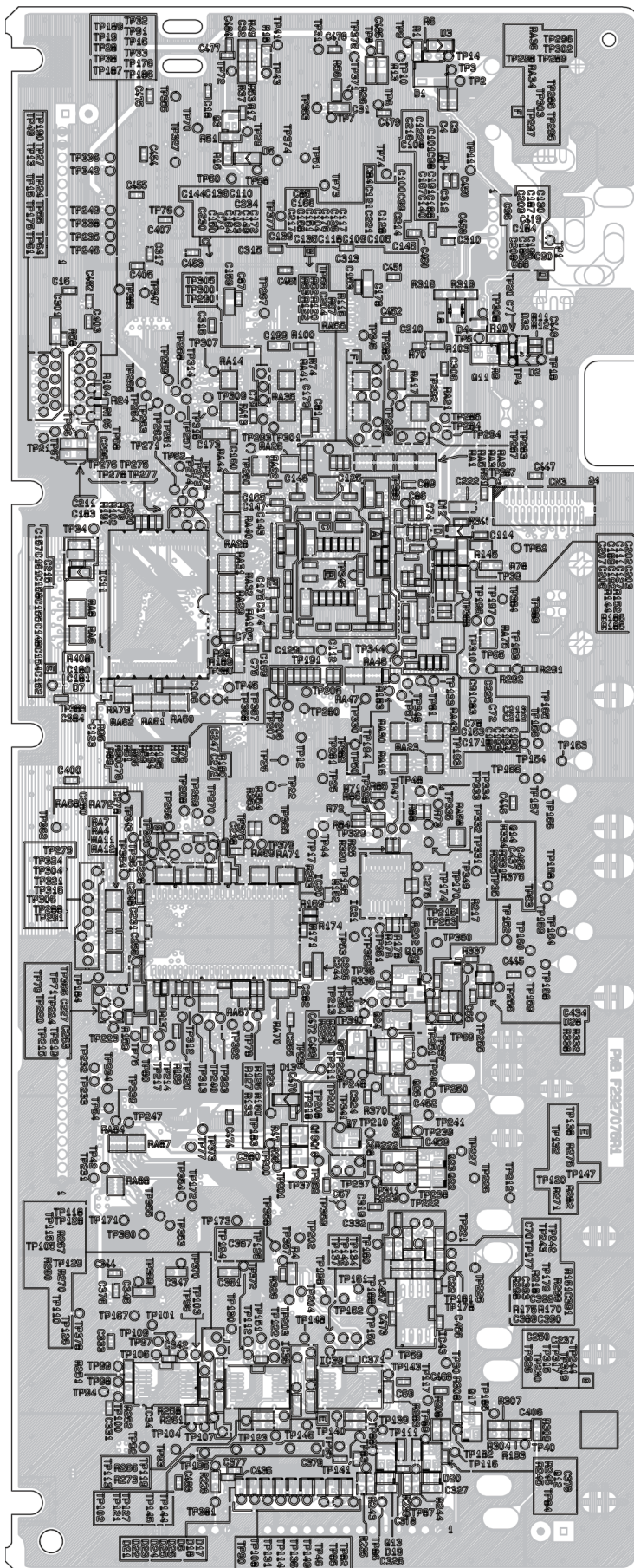
This verifies the operation of the power switch.



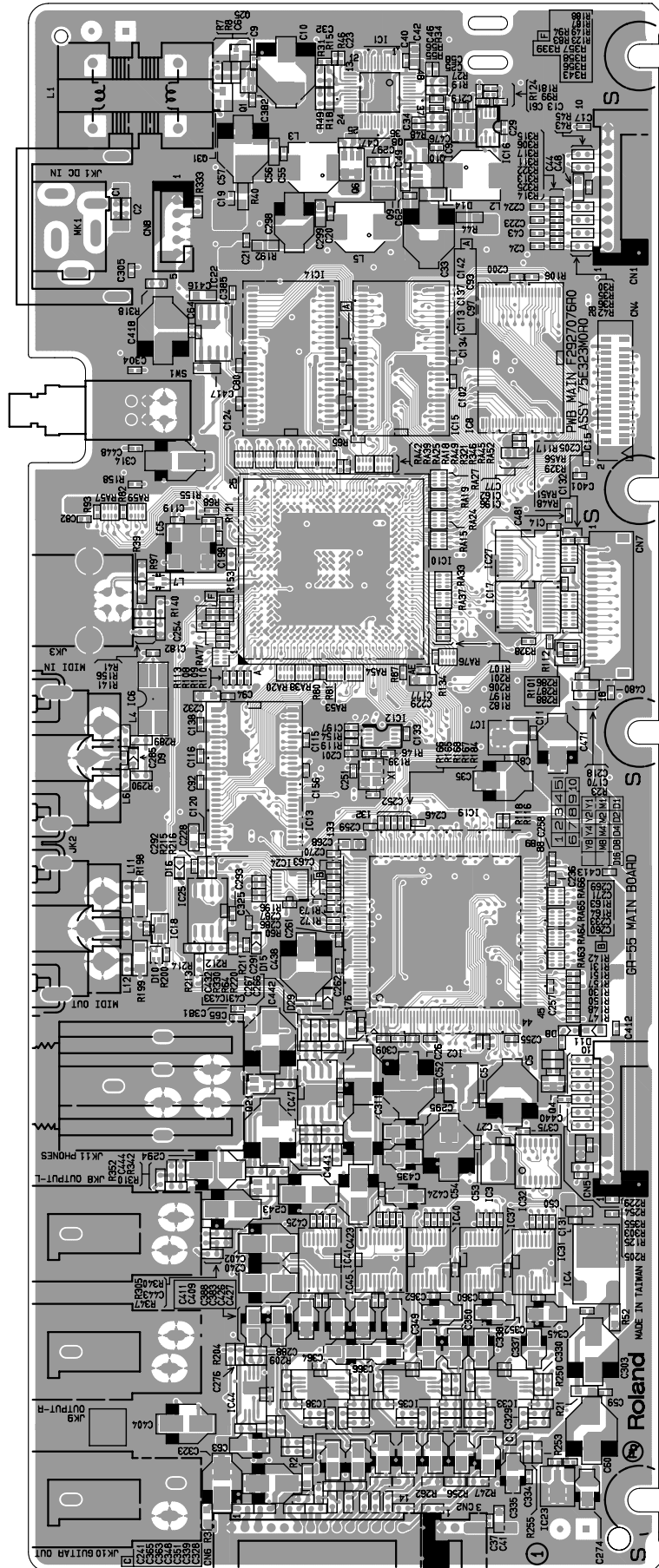
Press the **POWER** switch to switch off the power.

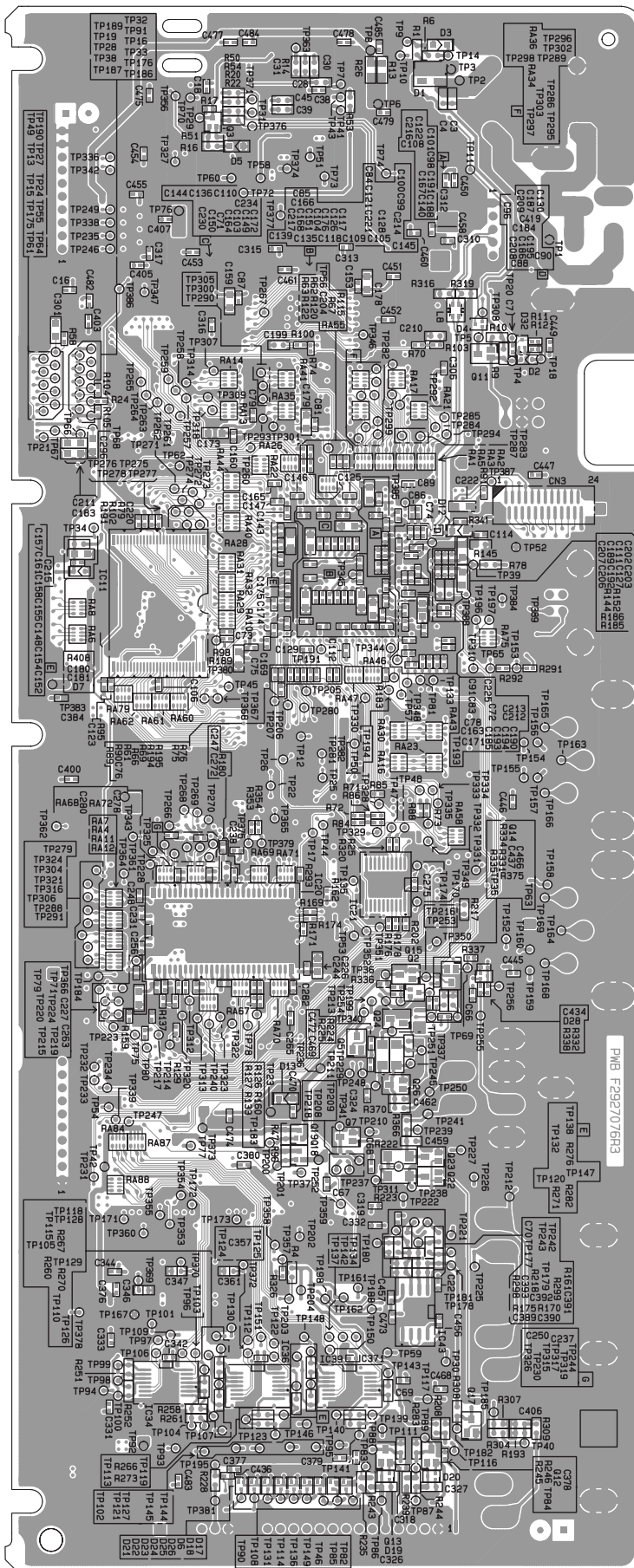
Circuit Board (Main Board; **no suffix**)





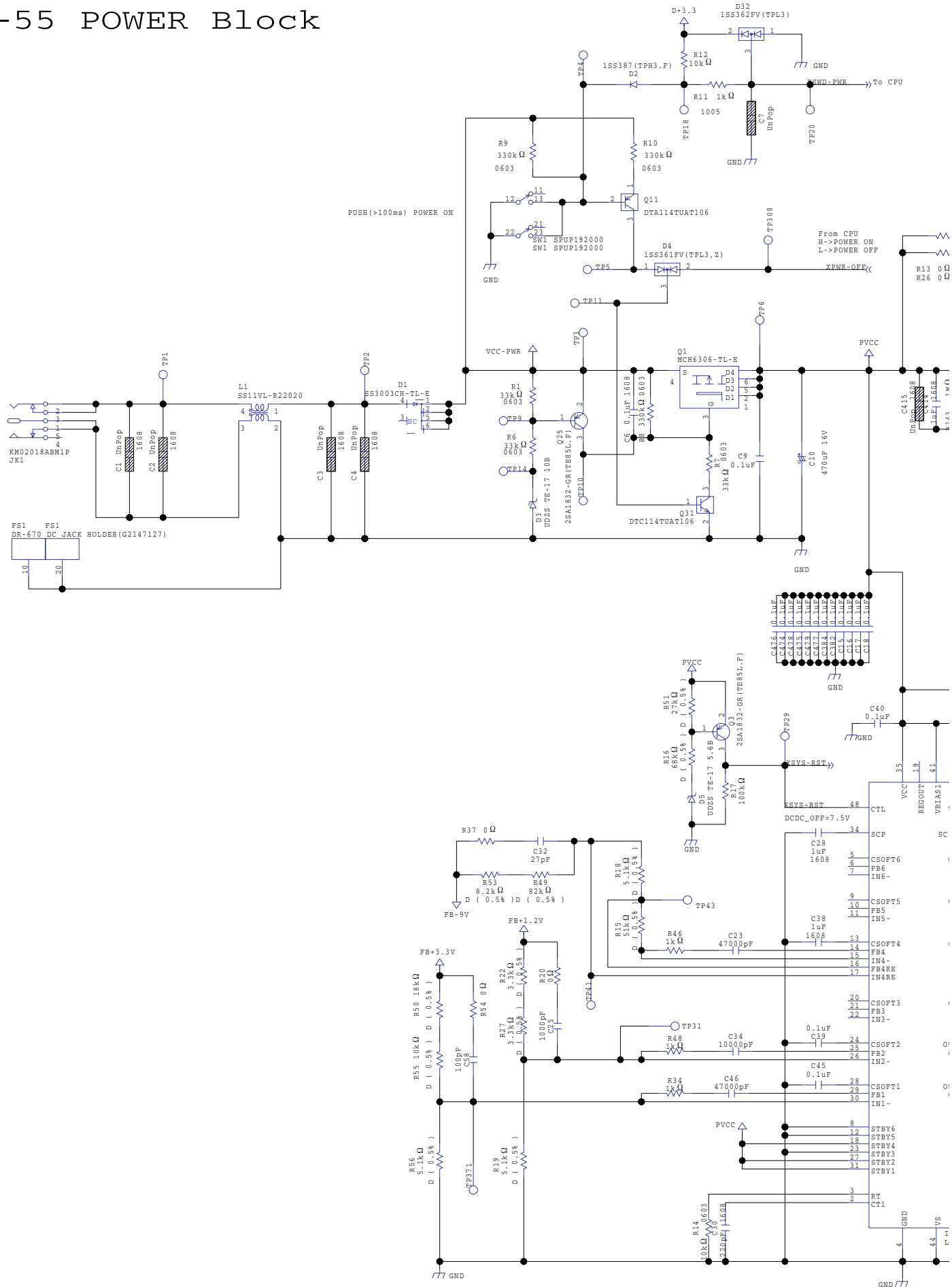
Circuit Board (Main Board; suffix 1)

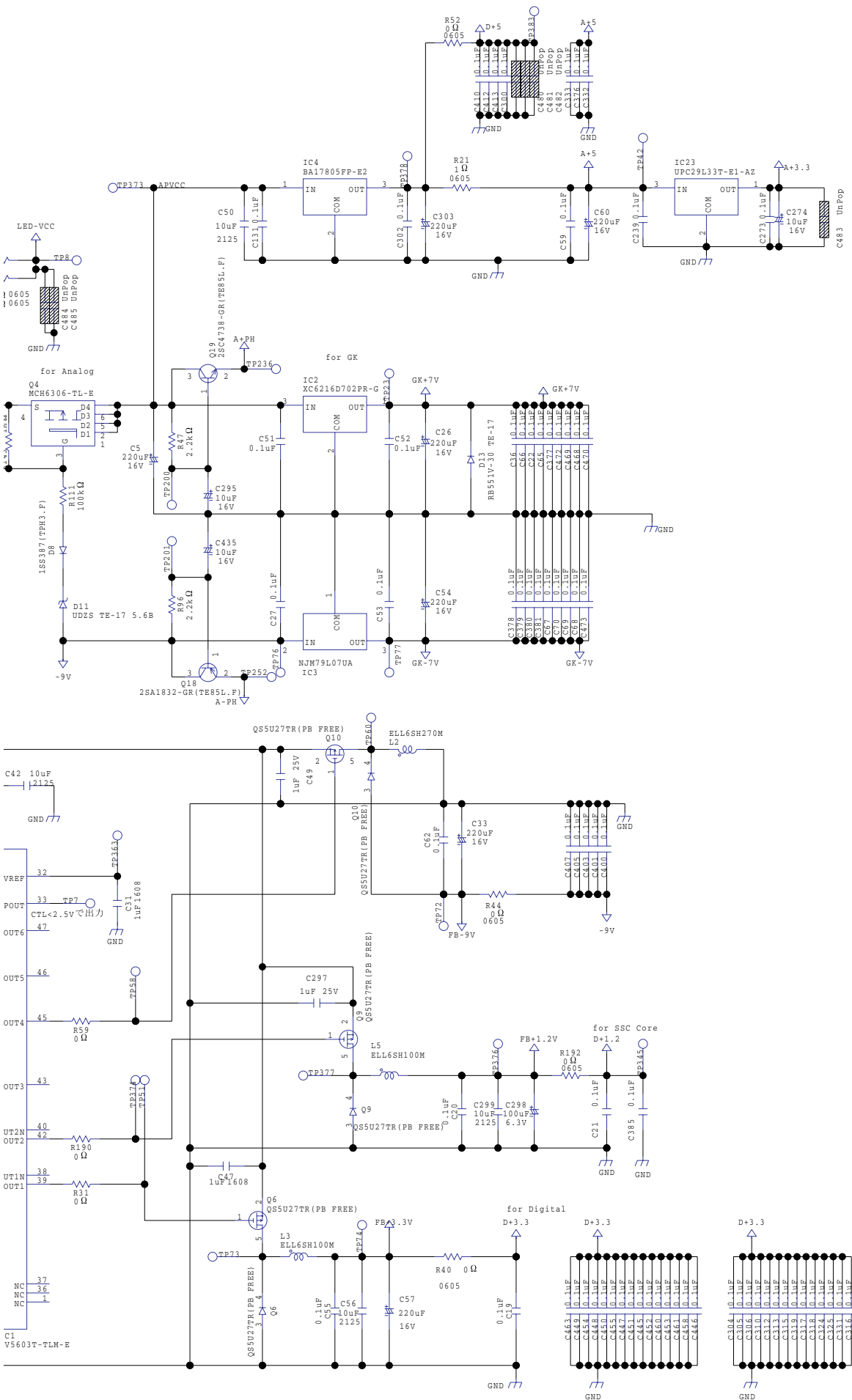




Circuit Diagram (Main Board: Power Block; **no suffix**)

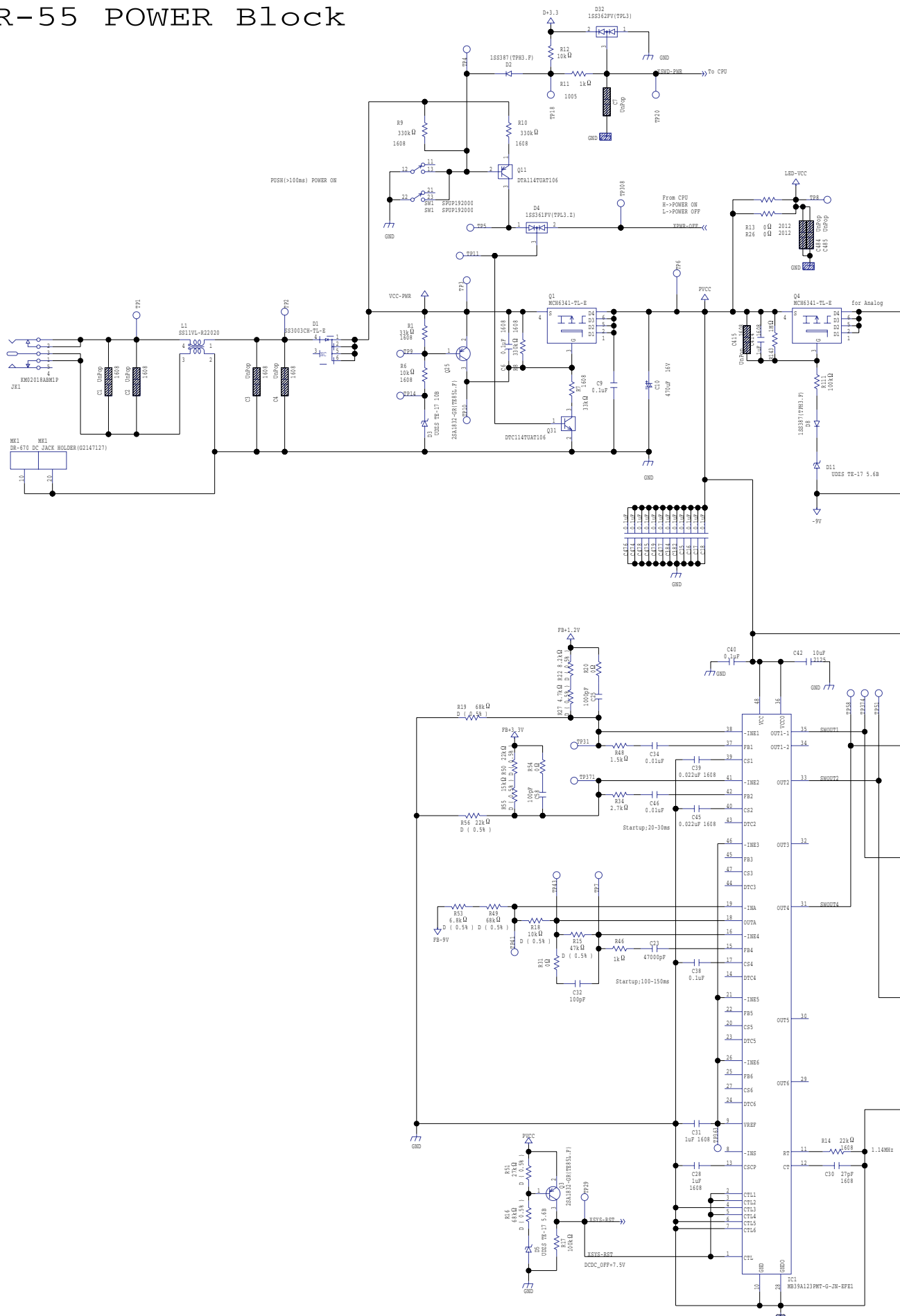
GR-55 POWER Block

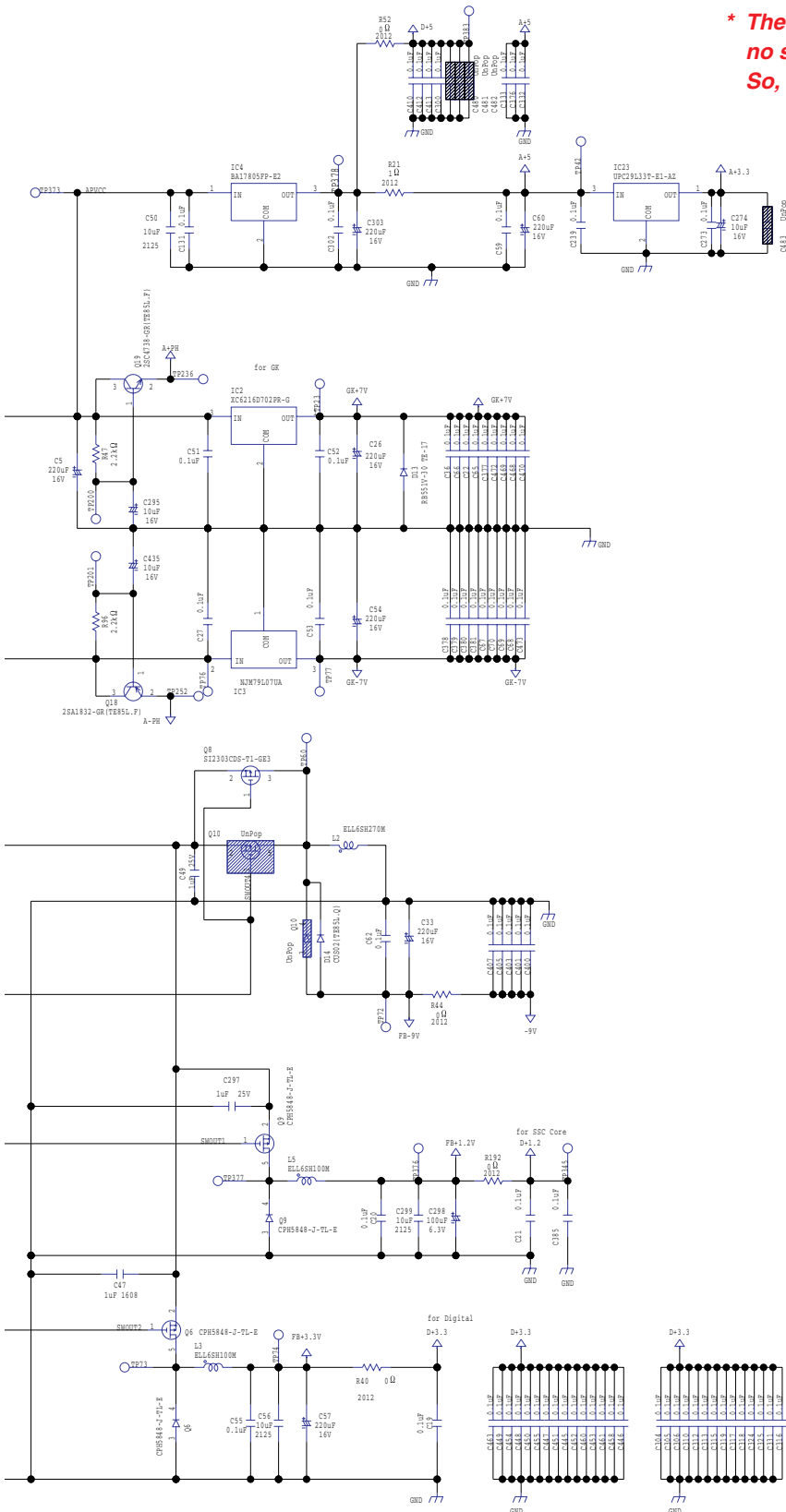




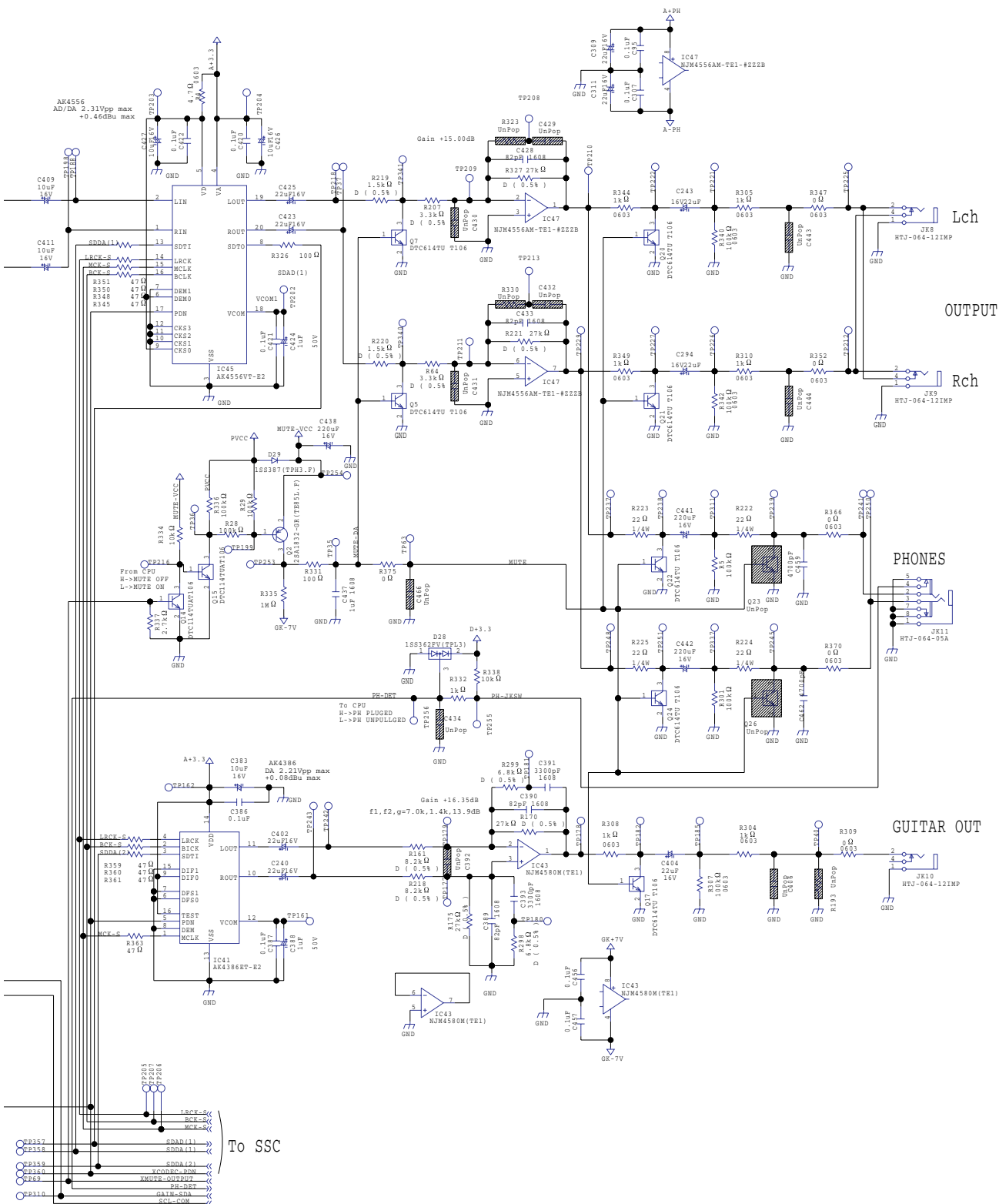
Circuit Diagram (Main Board: Power Block; suffix 1)

GR-55 POWER Block

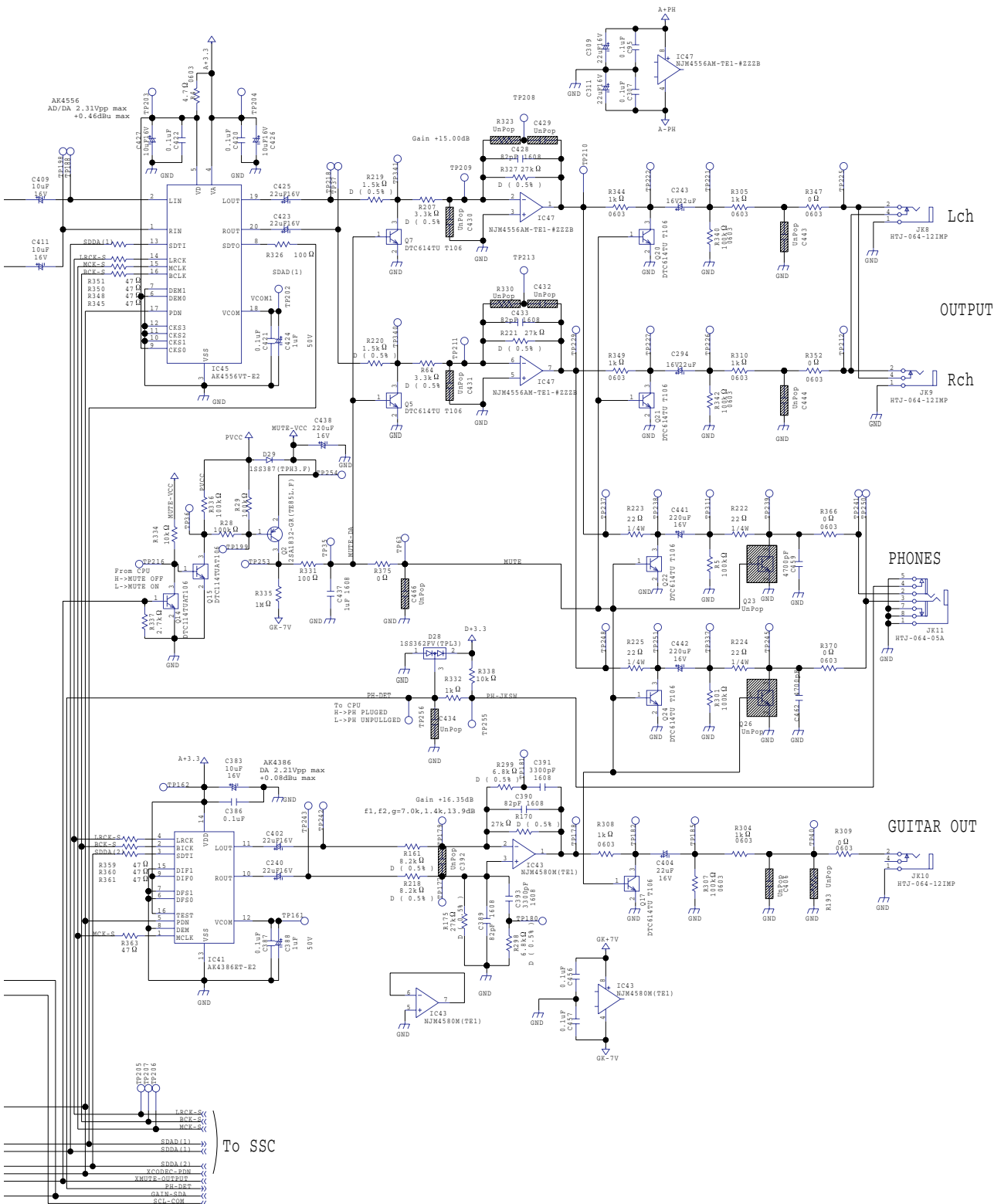




* The circuit of suffix 1 is different from the circuit with no suffix, but the operation and function are the same. So, the circuit board can be replaced.

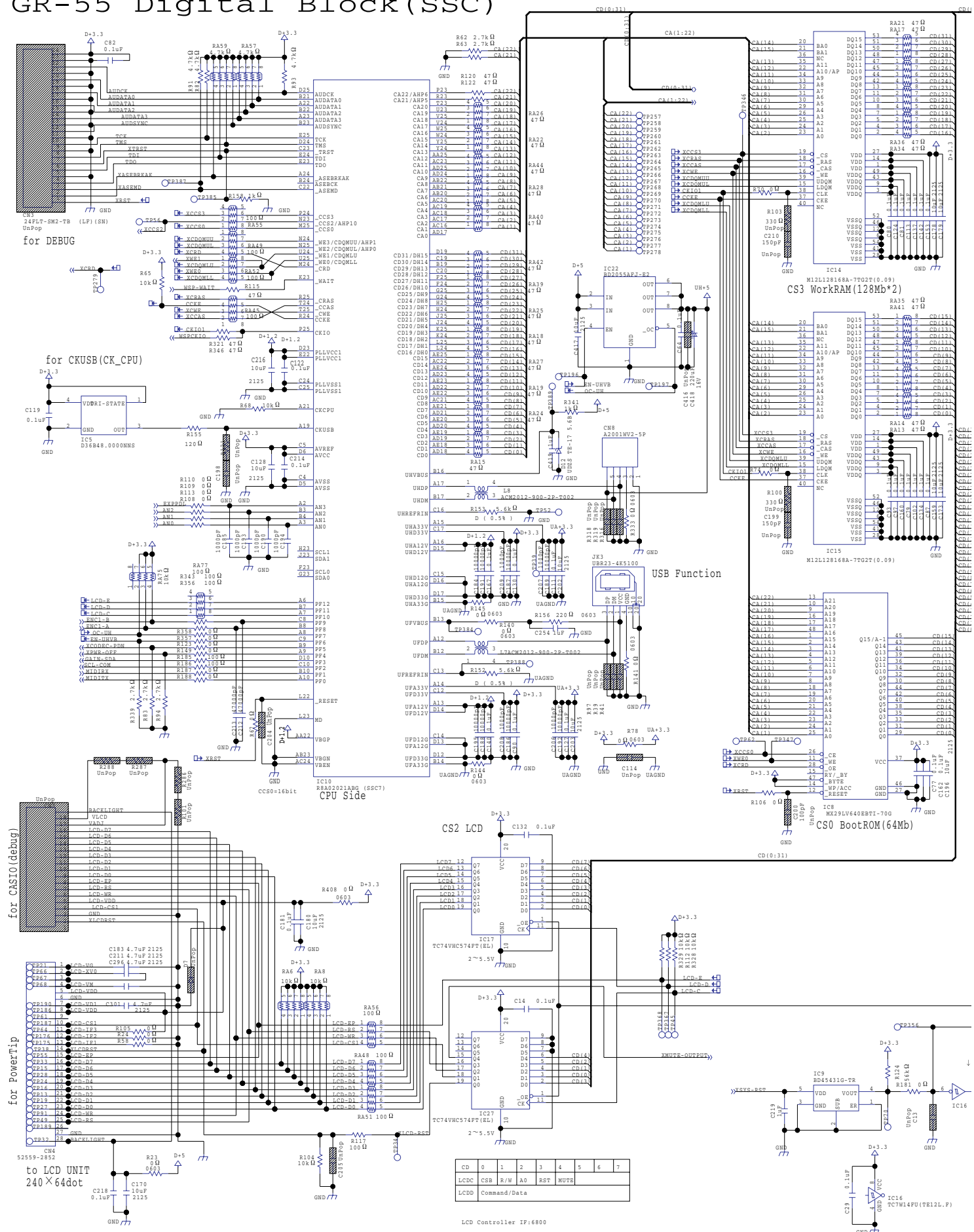


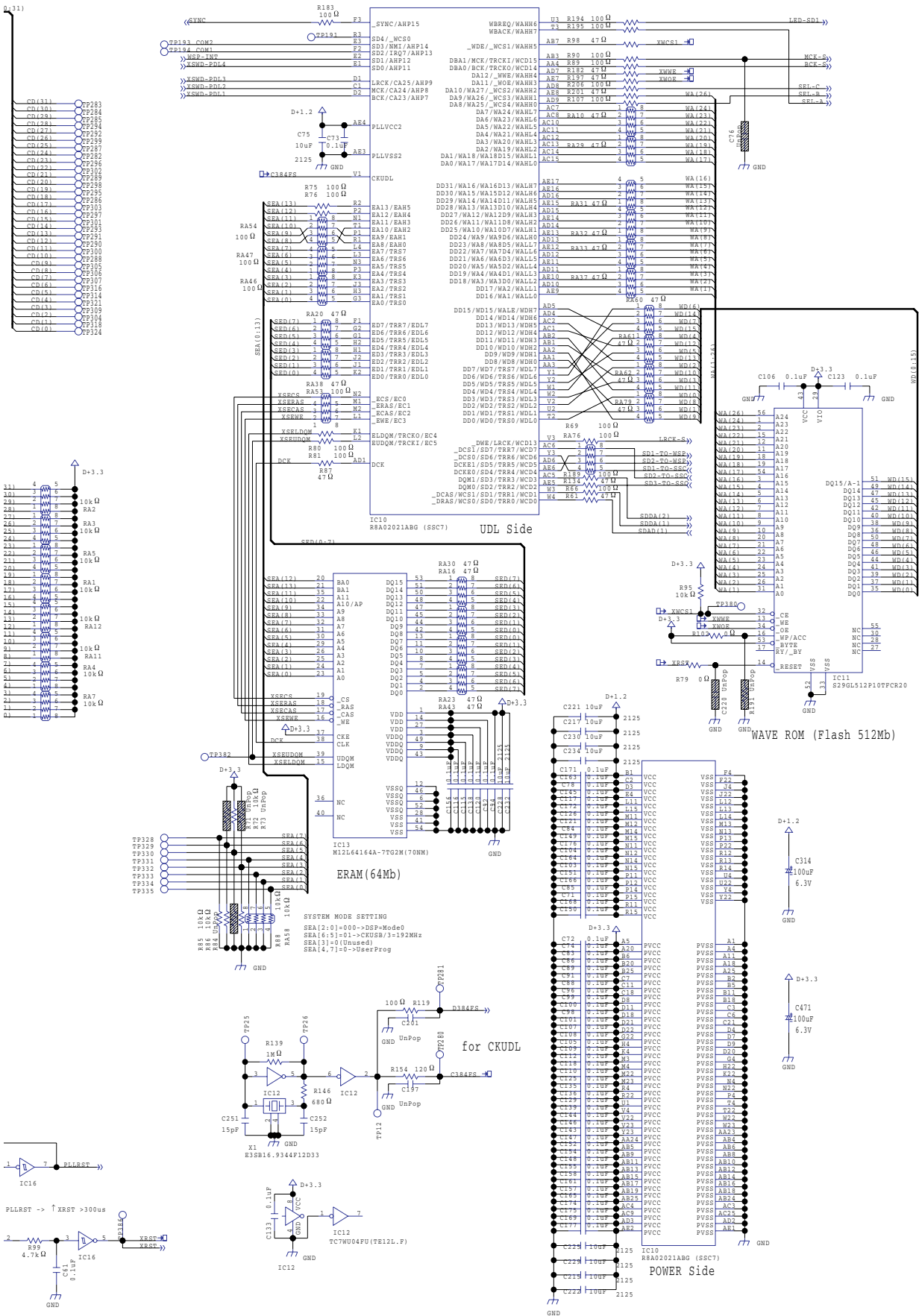
* The circuit of suffix 1 is different from the circuit with no suffix, but the operation and function are the same. So, the circuit board can be replaced.



Circuit Diagram (Main Board: Digital Block (SSC); no suffix)

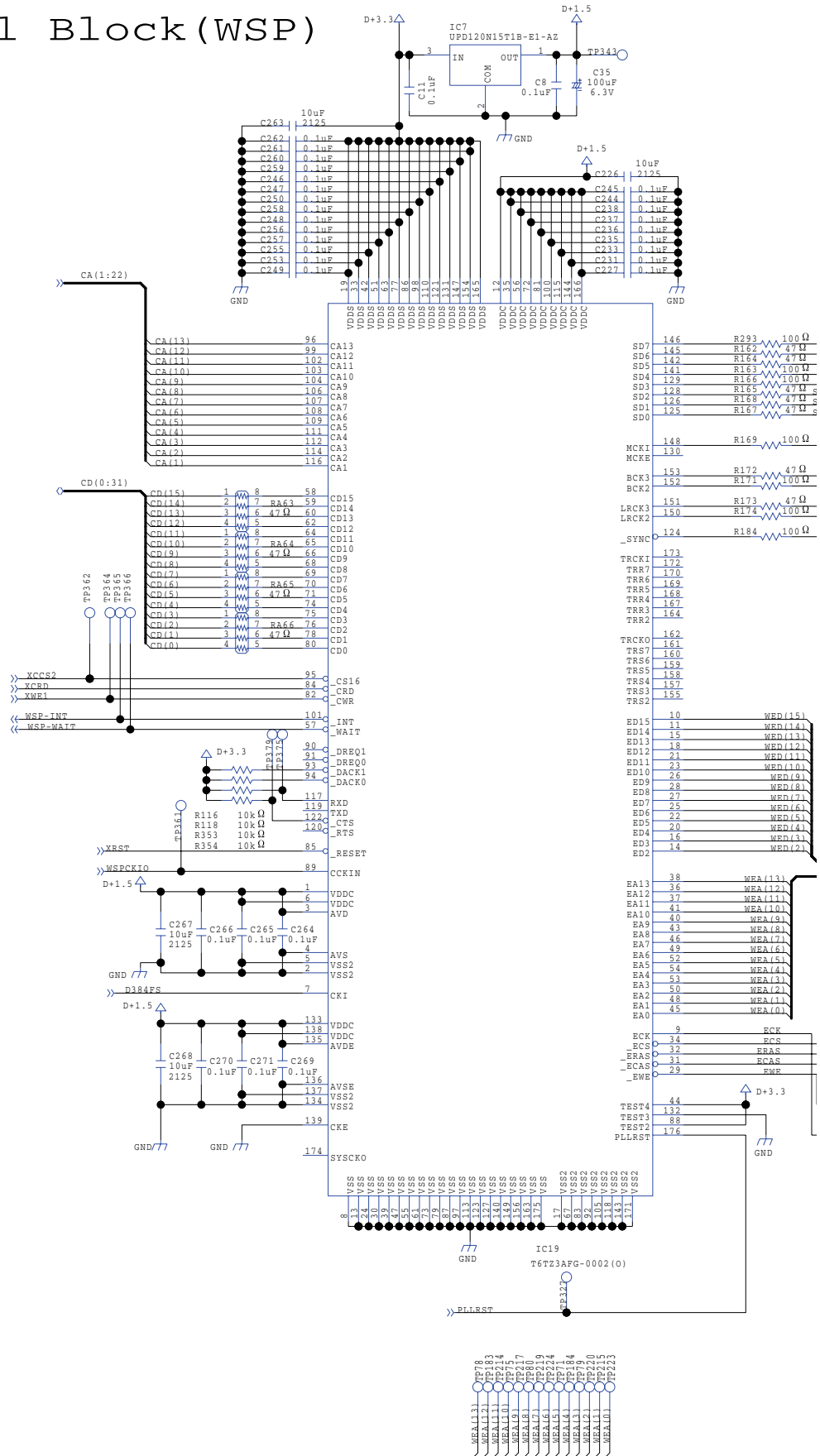
GR-55 Digital Block(SSC)



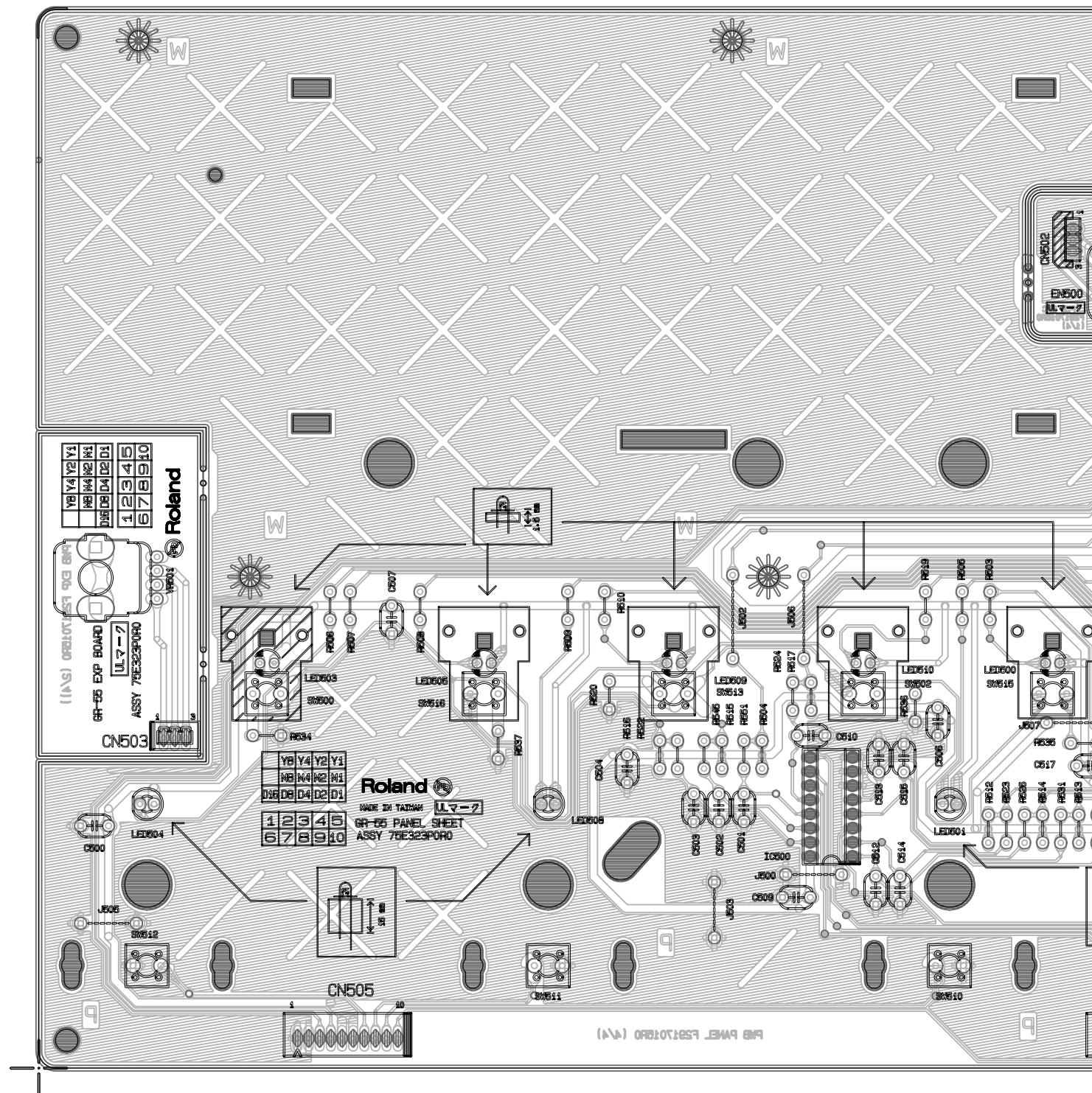


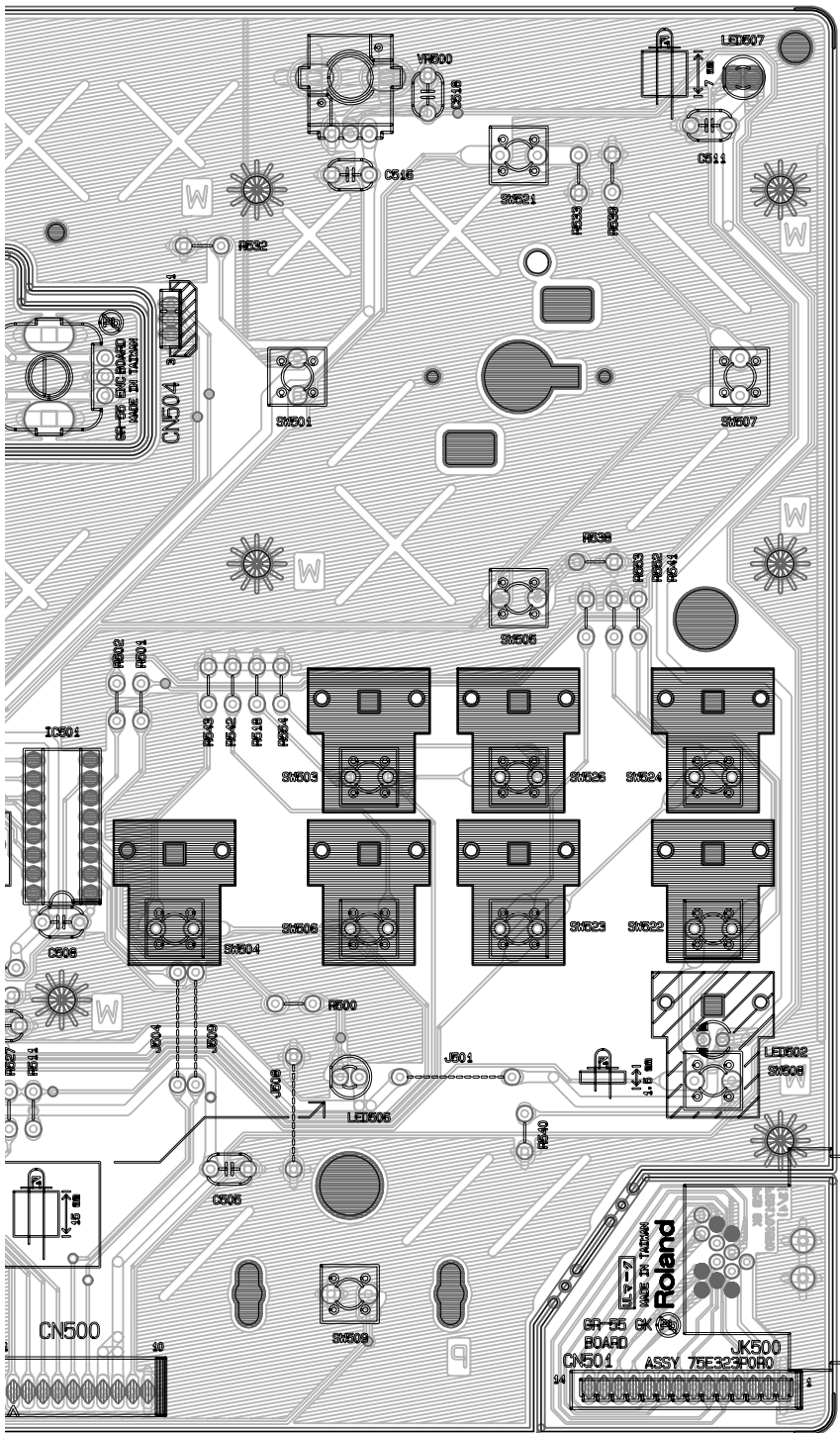
Circuit Diagram (Main Board: Digital Block (WSP))

GR-55 Digital Block (WSP)



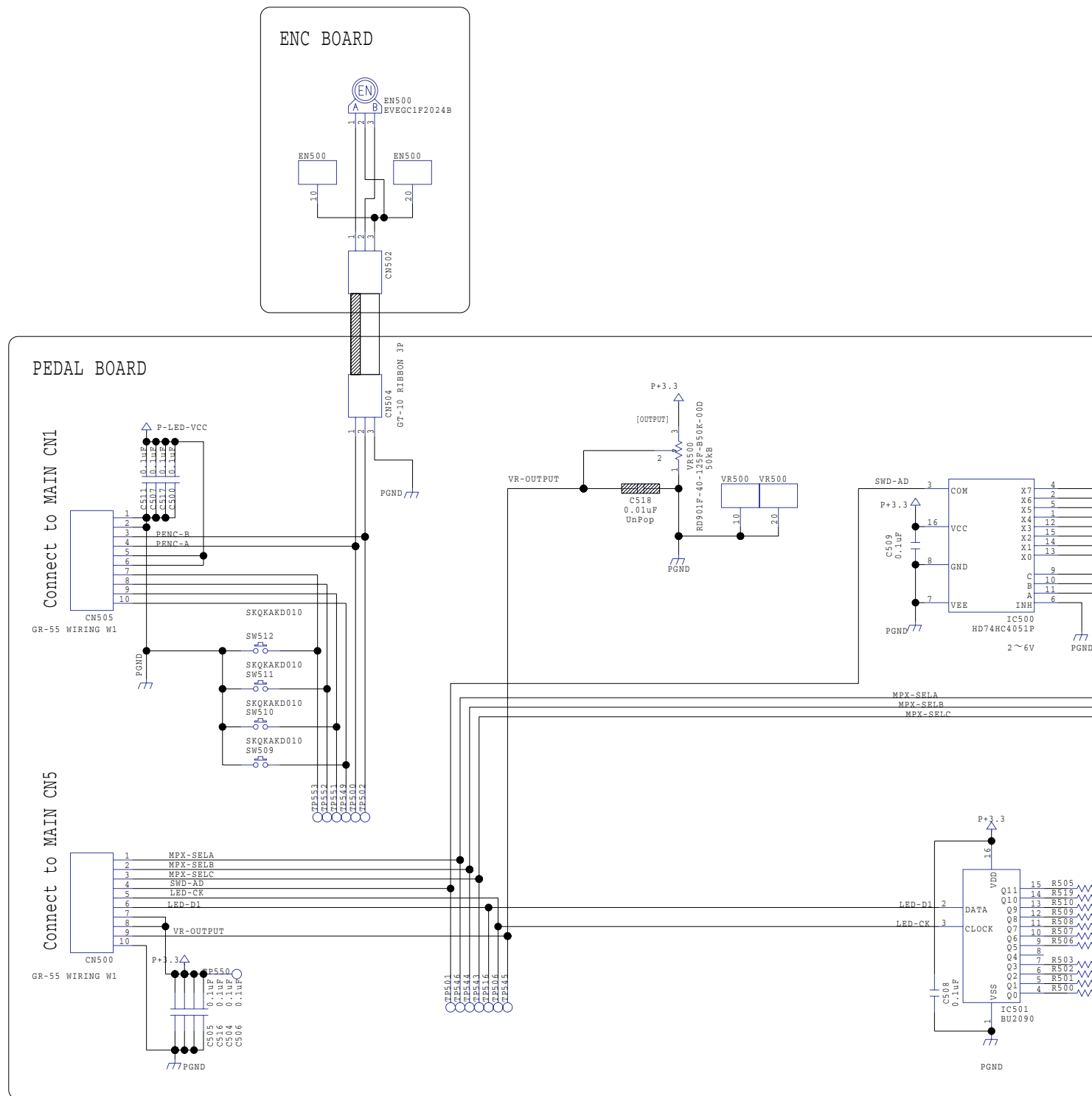
Circuit Board (Panel, Enc, EXP, GK Board)

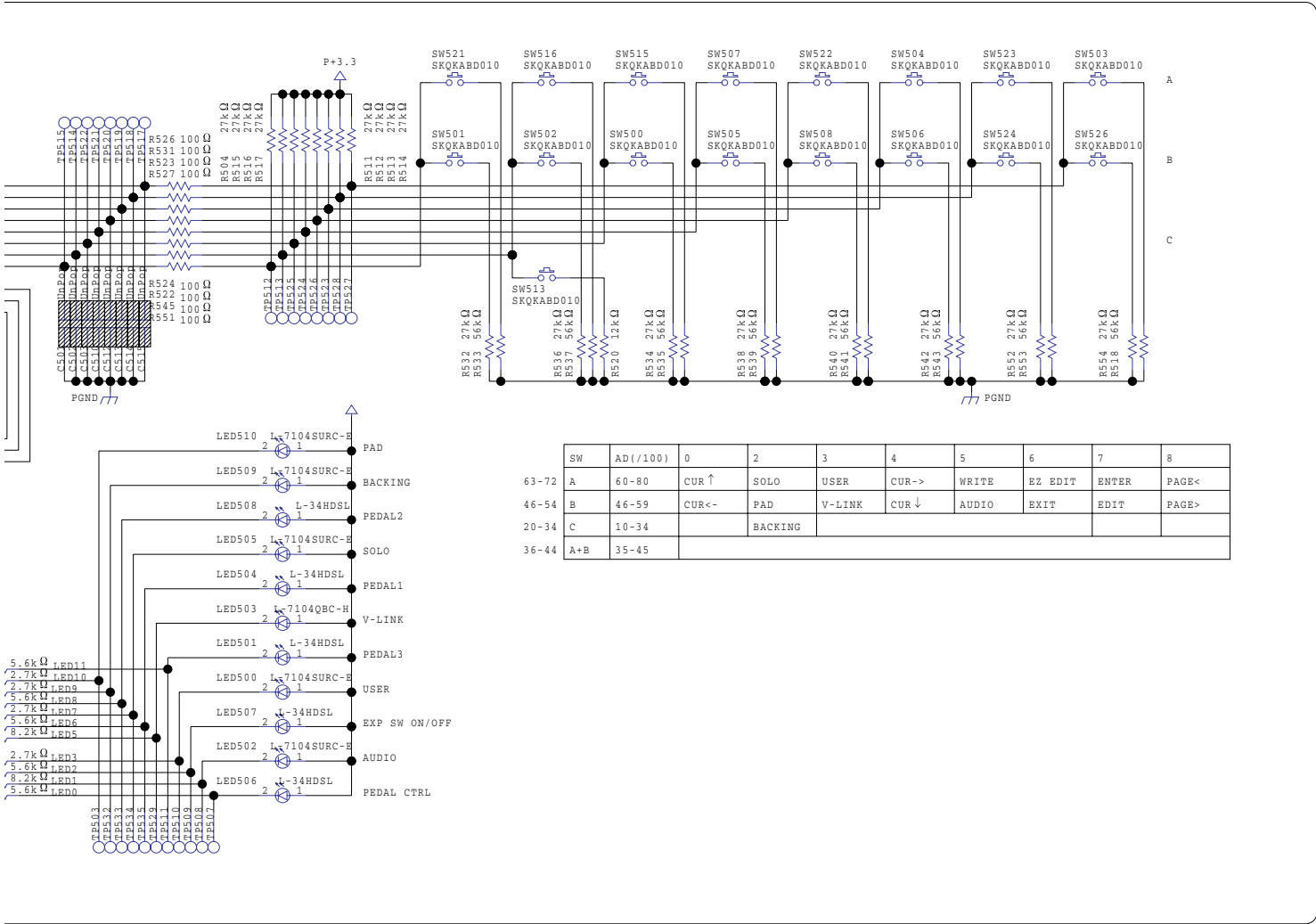




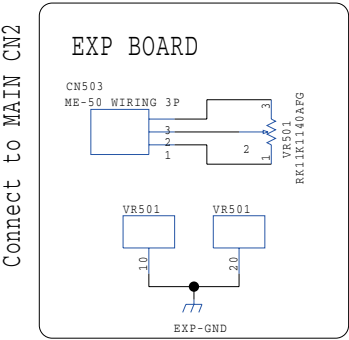
Circuit Diagram (Panel, Enc Board)

GR-55 PANEL SHEET

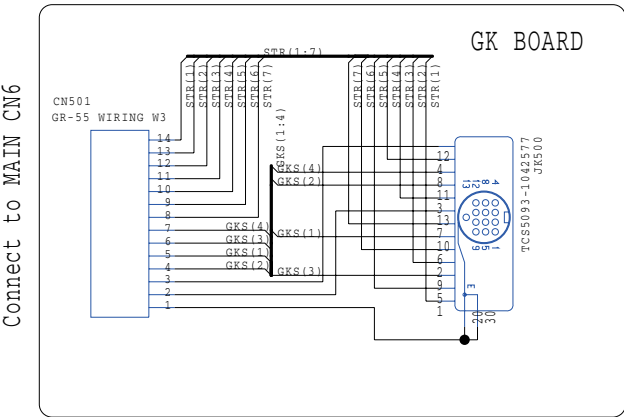




Circuit Diagram (EXP Board)



Circuit Diagram (GK Board)

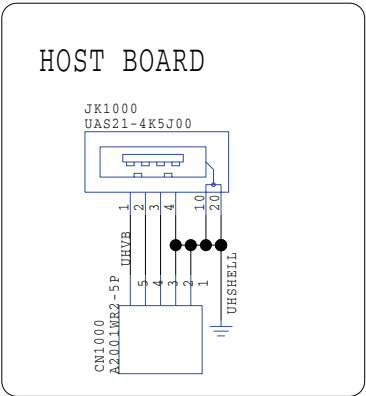


Circuit Board (Host Board)



Circuit Diagram (Host Board)

GR-55 HOST BOARD



To MAIN BOARD CN8