

## Table of Contents

Cautionary Notes .....	2	Circuit Board (Main Board) .....	26
Specifications .....	3	Circuit Diagram (Main Board: 1/5) .....	28
Location of Controls (Top) .....	6	Circuit Diagram (Main Board: 2/5) .....	30
Location of Controls (Rear) .....	7	Circuit Diagram (Main Board: 3/5) .....	32
Exploded View .....	8	Circuit Diagram (Main Board: 4/5) .....	34
Exploded View Parts List .....	9	Circuit Diagram (Main Board: 5/5) .....	36
Disassembly Procedure .....	9	Circuit Board (JackAmp Board) .....	38
Plain View .....	10	Circuit Diagram (JackAmp Board: 1/4) .....	40
Exploded View (Fig.A) .....	12	Circuit Diagram (JackAmp Board: 2/4) .....	42
Exploded View (Fig.A) Parts List .....	13	Circuit Diagram (JackAmp Board: 3/4) .....	44
Plain View (Fig.A) .....	14	Circuit Diagram (JackAmp Board: 4/4) .....	46
Keyboard Parts List (MSK-2) .....	15	Circuit Board (Panel L/R, Bender Board) .....	48
Wiring Diagram/Block Diagram .....	16	Circuit Diagram (Panel L Board: 1/4) .....	50
Parts List .....	18	Circuit Diagram (Panel L Board: 2/4) .....	52
Verifying the Version .....	20	Circuit Diagram (Panel L Board: 3/4) .....	54
Data Backup and Restore Operations .....	20	Circuit Diagram (Panel L Board: 4/4) .....	56
Performing a Factory Reset .....	20	Circuit Diagram (Panel R Board: 1/3) .....	58
Updating the System .....	20	Circuit Diagram (Panel R Board: 2/3) .....	60
Test Mode .....	21	Circuit Diagram (Panel R Board: 3/3) .....	62
		Circuit Diagram (Bender Board) .....	64



### Revise Information

Jan. 13, 2016 p. 22

Changed the color of LEDs.

**Copyright © 2015 Roland Corporation**

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

---

## 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. 20) 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

## Roland E-A7: Arranger Keyboard

### Keyboard

61 keys (with velocity)

### Sound Generator

#### Maximum Polyphony

128 voices (varies according to the sound generator load)

### Parts

4 keyboard parts (UP1, UP2, UP3, LWR) + 16 song parts

### Tones

Preset Tone: Over 1,500 Tones

Preset Drum Kit: Over 100 Drum Kits

\* GM2 compatible sounds are included.

User Tone: 256 Tones

User Drum Kit: 128 Drum Kits

### Favorite

50 favorite tones can be registered.

### Melody Intelligent

Yes

### Styles

#### Styles

Preset Style: Over 600 Styles

User Style: Unlimited number

(storage on internal memory and USB flash drive)

#### Style Controls

Intro x 4, Main x 4, Fill x 4, Break, Ending x 4

### One Touch Memories

4 programmable registrations per style

### Style Makeup Tools

Instrument-oriented editing

### Style Composer

Yes

### Songs

#### Realtime player

SMF (Format 0/1), KAR, MP3, WAV, MP3+CDG

#### Tempo Change

20–250 BPM for SMF (and Style)

75–125% for MP3 and WAV files

#### Part Mute

Track Mute: SMF (and Style)

Center Cancel: MP3 and WAV

#### Song Chord Extractor

Automatic chord detection for SMF files

#### Lyrics Display

SMF, KAR, MP3

#### SMF Makeup Tools

Instrument-oriented editing

#### SMF Mark & Jump

Yes (4 storable locations)

#### Song (Audio) Recording

Format: 16-bit linear, 44.1 kHz, WAV

#### Demo Song

Yes

### Effects

Reverb: 8 types (selectable via Makeup Tools)

Chorus: 8 types (selectable via Makeup Tools)

MFX: 84 types for keyboard parts (selectable via Keyboard Part MFX), A & B for Style and SMF section (selectable via Makeup Tools)

Master EQ: 6 Presets + 1 User memory

Master Compressor: 6 Presets + 1 User memory

Input Effect: Reverb 6 types, Delay 2 types

### User Programs

#### User Programs

Preset (Music Assistant + Preloaded data): Over 500 User Programs

User: Up to 100 User Programs are included per User Program Set

#### User Program Sets

Unlimited number (storage on internal memory and USB flash drive)

## Sampling/Sample Import

### Format

16-bit linear, 44.1 kHz, WAV

### Wave Expansion Memory for Sampling/Sample Import

128 MB

### Number of Samples

512

### Multisample Function

Yes

- \* *Samples and multisamples can be exported to USB Flash Memory as User Tone or User Drum Kit.*
- \* *Samples and multisamples can be used as wave data for the sound engine.*

## Scale Tunings

### Memory Buttons

3 user scale Memories and Equal temperament

### User Scale Buttons

Instant quarter-tone tuning of each note of a scale (C–B)  
Adjustable tuning range (-64+63 cent) for each button  
Tunings can also be saved to User Program memories.

## Pads

6 pads for triggering phrases and tones and Stop Pad

- \* *Phrases are tempo-synchronized with Styles or SMF, and support for chord detection.*

## Style/Song Finder

Yes

## Other

### Controllers

Assignable Lever  
Assignable Switch x 7  
Assignable Control Pedal  
Part Level Slider x 6  
Multifunction Pads

### Display

Dual Graphic LCD (160 x 160 dots x 2, with backlit)

## Connectors

PHONES jack: Stereo 1/4-inch phone type  
OUTPUT jacks (L/MONO, R): 1/4-inch phone type  
EXT IN jack: Stereo miniature phone type  
INPUT jacks (L/MONO or MIC, R): 1/4-inch phone type  
PEDAL jacks (HOLD, EXPRESSION, CONTROL)  
MIDI connectors (IN, OUT)  
USB MEMORY port  
USB COMPUTER port (USB MIDI)  
DC IN jack

## Speakers

2 x 10 cm

## Rated Power Output

2 x 12 W

## Power Supply

AC adaptor

## Current Draw

1,500 mA

## Dimensions

(excluding Music Rest)

1,045 (W) x 318 (D) x 136 (H) mm  
41-3/16 (W) x 12-9/16 (D) x 5-3/8 (H) inches

## Weight

(excluding AC adaptor and music rest)

7.9 kg  
17 lbs 7 oz

## Accessories

Owner's Manual

Multilanguage (#5100046372)  
English (#5100046372)  
Chinese (#5100046375)

Music Rest (#5100044527)

AC adaptor (#04236112)

Power cord (for AC adaptor) (#5100012293, #5100000692, #5100000564, #5100039367, #5100018086, #05017301, #5100029122)

- \* *The fuse of the Jackamp Board may blow depending on some combinations of the AC adaptor and the Jackamp Board. For details, refer to the Service Information.*

**Options (sold separately)**

Keyboard Stand (\*1): KS-18Z

Pedal Switch: DP series, FS-5U

Expression Pedal: EV-5

USB Flash Memory (\*2)

*\*1 When using the KS-18Z, ensure that the height of the unit is one meter or lower.*

*\*2 Use USB Flash Memory (supports USB 2.0 Hi-Speed Flash Memory) sold by Roland. We cannot guarantee operation if other products are used.*

*\* 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.*

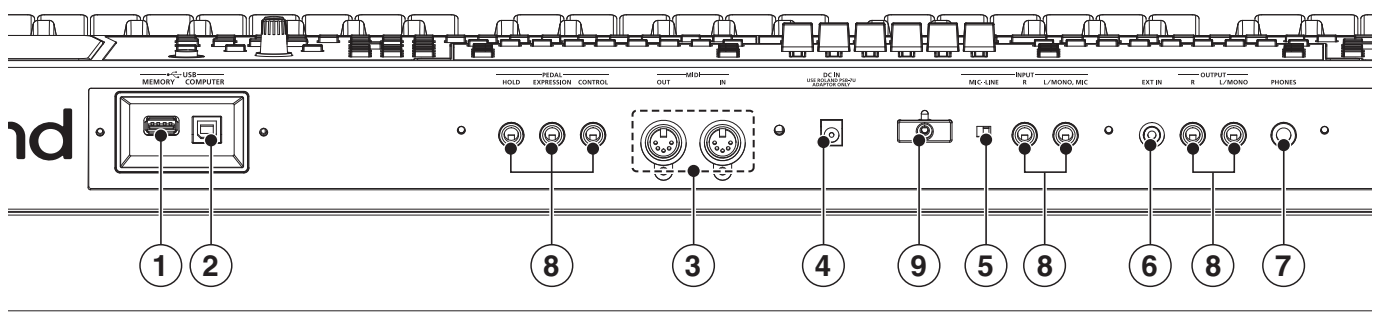
# Location of Controls (Top)



No.	Part Code	Part Name	Description	Q'ty
1	5100035158	ZS R-KNOB	SF BLK/LCG	2
	5100004183	POTENTIOMETER(231-08052-02-00)	RK12L12C0A04 50KBX2 25MM	2
2	5100044401	ZS R-KNOB	SF BLK ENC	1
	5100044027	ENCODER	E1214A3AV1FE0500	1
3	5100037191	J S-KNOB	M BLK/LCG	6
	5100037657	SLIDE POTENTIOMETER	C3080G1AV1B103BA00B3	6
4	5100046340	RUBBER SW 19P		1
5	5100046342	RUBBER SW 14P		2
6	5100046347	RUBBER SW 5P-B		4
7	5100046348	RUBBER SW 4P-A		4
8	5100046345	RUBBER SW 9P		2
9	5100046343	RUBBER SW 12P		1
10	5100046351	RUBBER SW 2P		2
11	5100046346	RUBBER SW 5P-A		1
12	5100046352	RUBBER SW POWER		1
13	5100046350	RUBBER SW 4P-C		1
14	5100046349	RUBBER SW 4P-B		1
15	5100046341	RUBBER SW 15P		1
16	5100046344	RUBBER SW 11P		1
17	5100035567	BENDER	PB-H0302-RD	1
18	5100045914	LCD	CMF2P2569-E	2
	5100044402	LCD CUSHION		8
19	5100044398	PANEL SHEET L		1
20	5100044399	PANEL SHEET C		1
21	5100044400	PANEL SHEET R		1

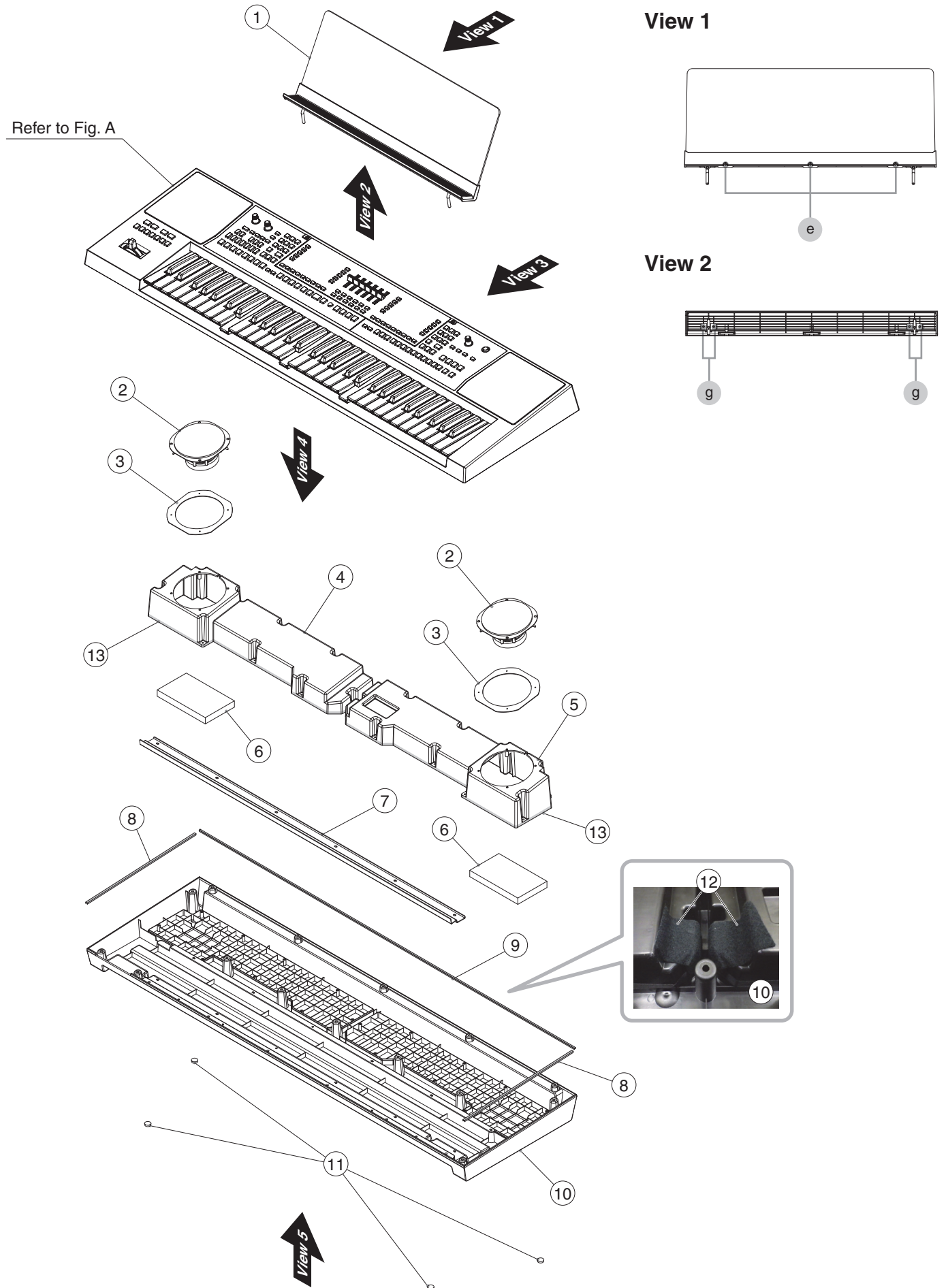


## Location of Controls (Rear)



No.	Part Code	Part Name	Description	Q'ty
1	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N	1
2	5100010665	USB CONNECTOR B TYPE FEMALE	2549A-04G2T(610-02001-04-00)	1
3	13429825	MIDI CONNECTOR	YKF51-5054V	1
4	02900312	DC JACK	HEC0470-01-640	1
5	00230489	SLIDE SWITCH	SSSF122400	1
6	04452956	3.5MM JACK	YKB21-5401N	1
7	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	1
8	13449275	6.5MM JACK	YKB21-5074	7
9	5100027106	CORD HOOK	40516-014	1

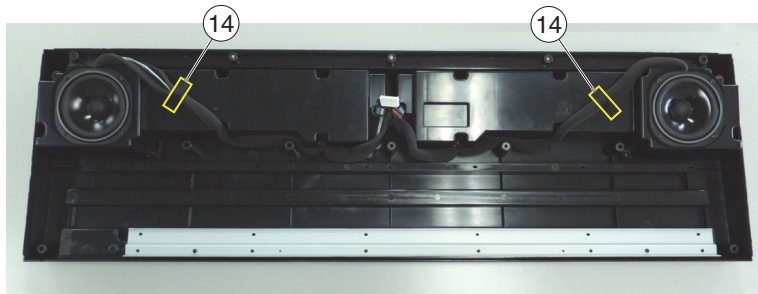
# Exploded View





## Exploded View Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100044527	MUSIC REST ASSY		1
2	5100028323	WOOFER	412-05033-02-01	2
3	04128390	SPEAKER CUSHION	(762-05033-01-02)	2
4	5100044393	SPEAKER BOX L		1
5	5100044394	SPEAKER BOX R		1
6	04129989	SPEAKER INNER CUSHION B		2
7	03894945	REINFORCE BAR	750-04038-02-00	1
8	5100048015	BOTTOM CASE CUSHION	290X10	2
9	5100048014	BOTTOM CASE CUSHION	1000X10	1
10	04017645	BOTTOM CASE	710-05033-03-02	1
11	12359137	RUBBER FOOT	SJ-5012 BLK	4
12	5100047445	FERRITE CORE CUSHION		2
13	40122612	ACETATE TAPE	NITTO #5 BLACK W10MM 30M 20P	-
14	40122812	ACETATE TAPE	NITTO #5 BLACK W15MM 30M	-



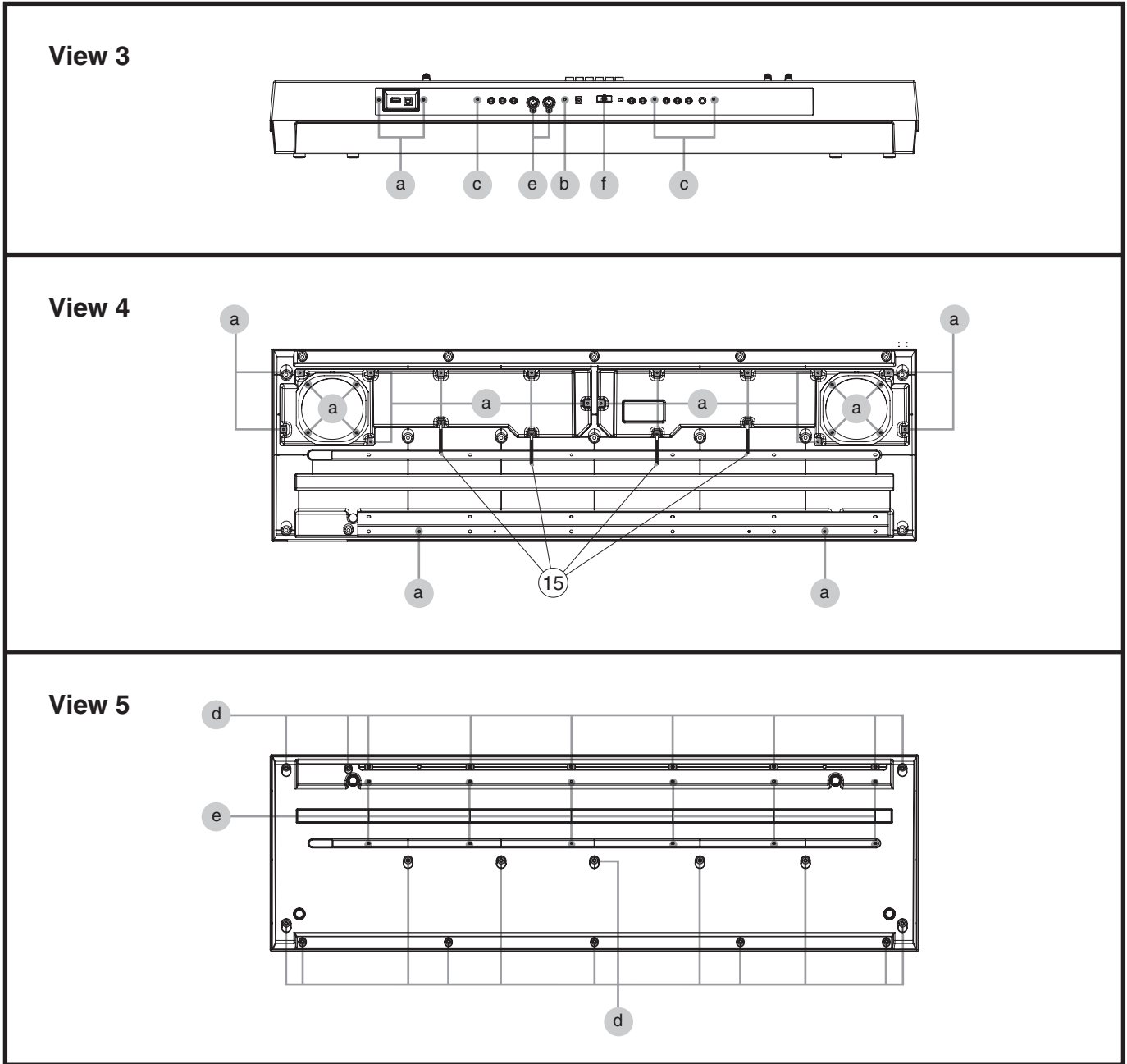
### View 1, 2

No.	Part Code	Part Name	Description	Q'ty
e	40011334	SCREW 3X12	BINDING TAPTITE P FE BZC	3
g	40011301	SCREW 3X6	BINDING TAPTITE P FE BZC	4

## Disassembly Procedure

1. Remove all screws securing the Bottom Case from underneath. (**Plain View** (p. 10), **d** and **e** in **View 5**)
2. Lift the Bottom Case, disconnect the connector connected the Jack Board to the speaker.
3. Detach the Bottom Case.

# Plain View



### View 3

No.	Part Code	Part Name	Description	Q'ty
a	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	2
b	40454856	SCREW M4X10	BINDING MACHINE NI	1
c	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	3
e	40011334	SCREW 3X12	BINDING TAPTITE P FE BZC	2
f	5100034002	SCREW M3X12	PAN MACHINE W/SMW+PW BZC	1

### View 4

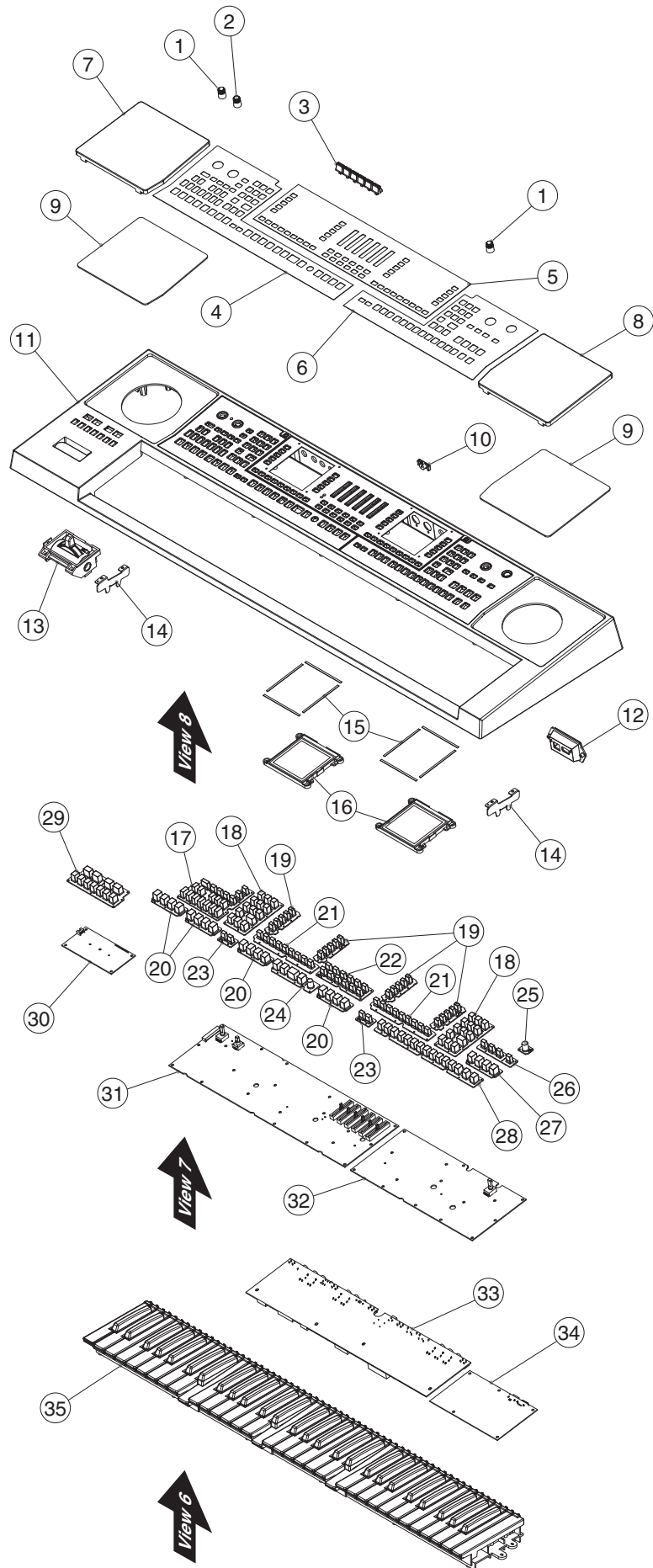
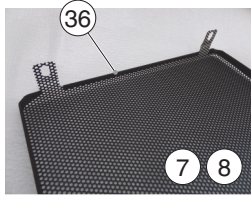
No.	Part Code	Part Name	Description	Q'ty
15	40120967	COATING CLIP	CS-3	4
a	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	28

### View 5

No.	Part Code	Part Name	Description	Q'ty
d	40012490	SCREW 4X10	BINDING TAPTITE P BZC	21
e	40011334	SCREW 3X12	BINDING TAPTITE P FE BZC	12

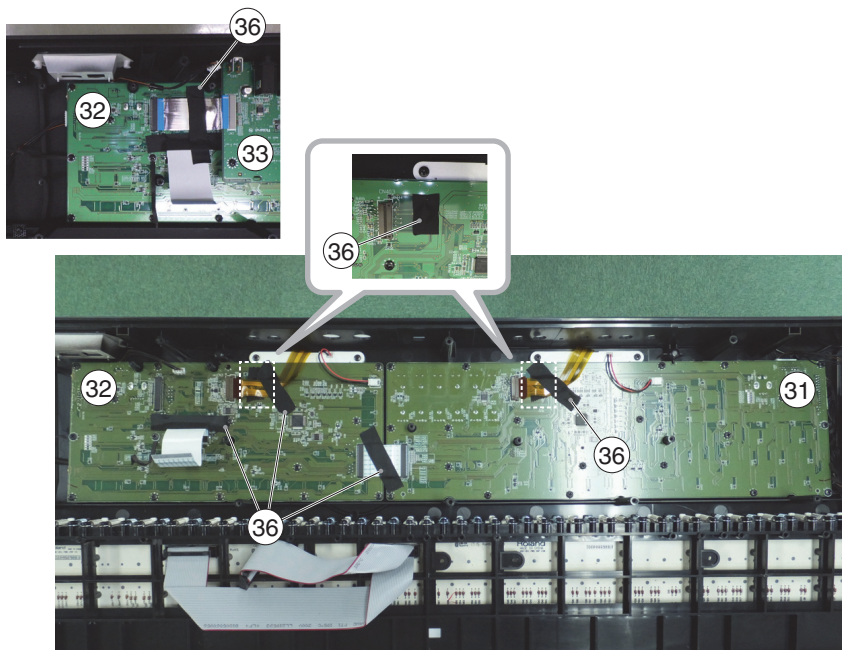


# Exploded View (Fig.A)

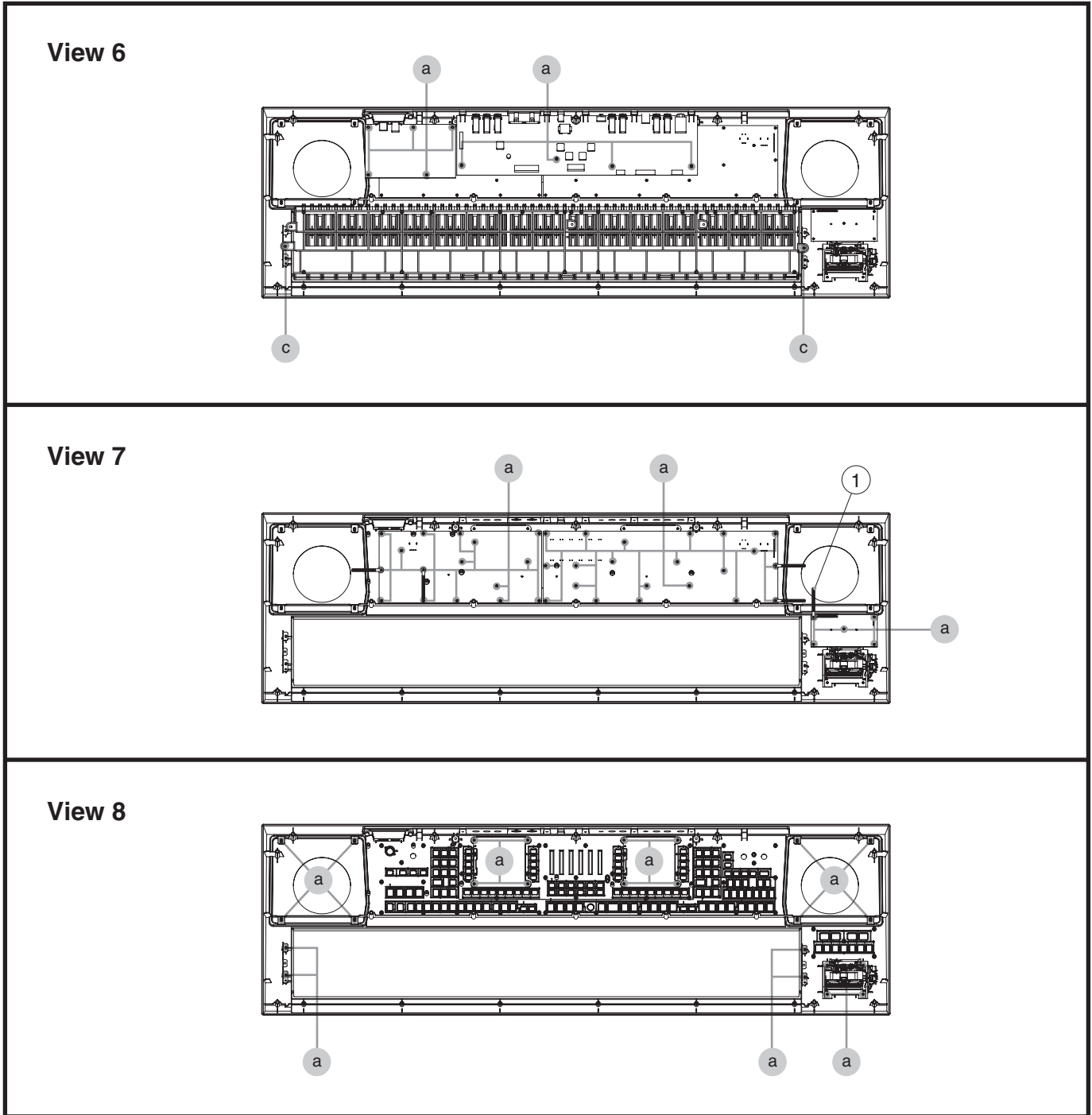


## Exploded View (Fig.A) Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100035158	ZS R-KNOB	SF BLK/LCG	2
2	5100044401	ZS R-KNOB	SF BLK ENC	1
3	5100037191	J S-KNOB	M BLK/LCG	6
4	5100044398	PANEL SHEET L		1
5	5100044399	PANEL SHEET C		1
6	5100044400	PANEL SHEET R		1
7	5100044395	SPEAKER COVER L		1
8	5100044396	SPEAKER COVER R		1
9	5100044397	GRILLE CLOTH		2
10	5100027106	CORD HOOK	40516-014	1
11	5100044392	TOP CASE		1
12	5100046357	USB ESCUTCHEON		1
13	5100035567	BENDER	PB-H0302-RD	1
14	05014167	SIDE HOLDER		2
15	5100044402	LCD CUSHION		8
16	5100045914	LCD	CMF2P2569-E	2
17	5100046340	RUBBER SW 19P		1
18	5100046342	RUBBER SW 14P		2
19	5100046347	RUBBER SW 5P-B		4
20	5100046348	RUBBER SW 4P-A		4
21	5100046345	RUBBER SW 9P		2
22	5100046343	RUBBER SW 12P		1
23	5100046351	RUBBER SW 2P		2
24	5100046346	RUBBER SW 5P-A		1
25	5100046352	RUBBER SW POWER		1
26	5100046350	RUBBER SW 4P-C		1
27	5100046349	RUBBER SW 4P-B		1
28	5100046341	RUBBER SW 15P		1
29	5100046344	RUBBER SW 11P		1
	5100044046	PANEL SHEET ASSY		1
		* This unit includes the following parts.		
30	*****	BENDER BOARD		1
31	*****	PANEL L BOARD		1
32	*****	PANEL R BOARD		1
33	5100044044	JACKAMP BOARD ASSY		1
34	5100044041	MAIN BOARD ASSY		1
35	04344189	KEYBOARD ASSY MSK-261	W/O CABLE	1
36	40122812	ACETATE TAPE	NITTO #5 BLACK W15MM 30M	-



# Plain View (Fig.A)



## View 6

No.	Part Code	Part Name	Description	Q'ty
a	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	9
c	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	2

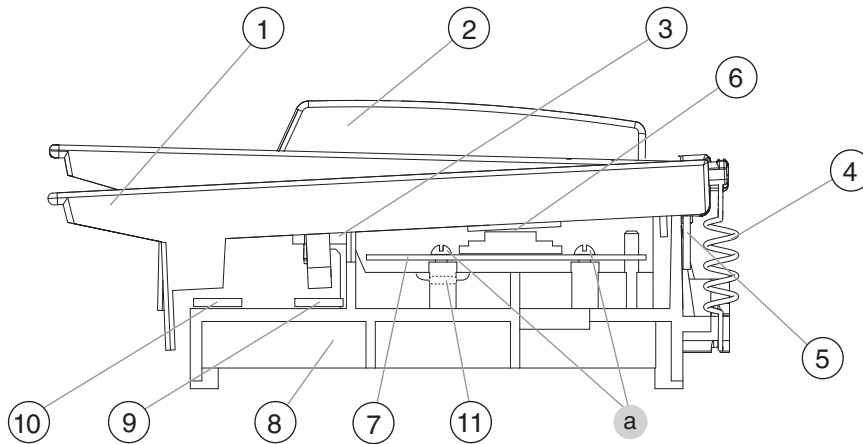
## View 7

No.	Part Code	Part Name	Description	Q'ty
1	40120967	COATING CLIP	CS-3	5
a	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	42

## View 8

No.	Part Code	Part Name	Description	Q'ty
a	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	24

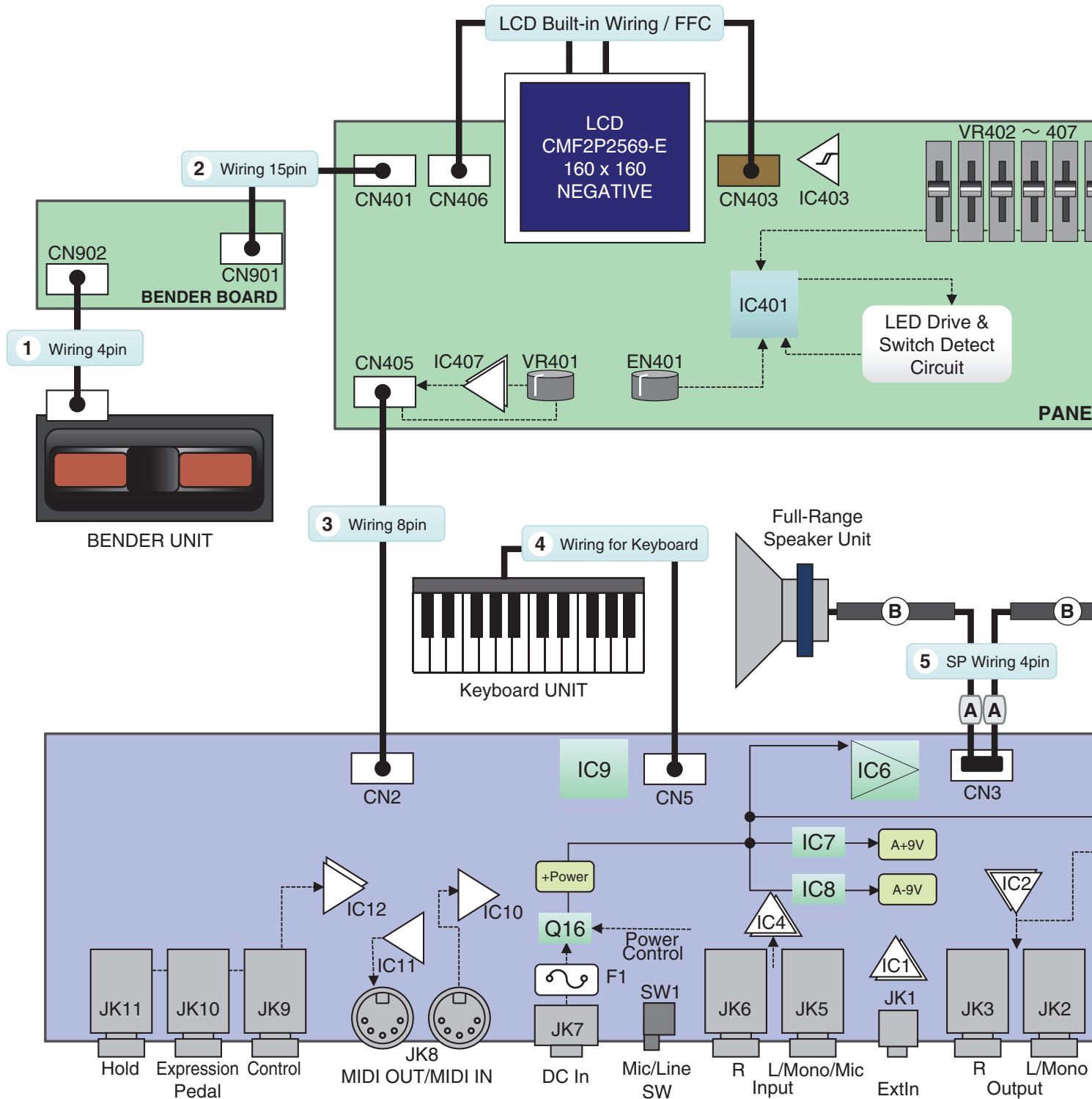
# Keyboard Parts List (MSK-2)



No.	Part Code	Part Name	Description	Q'ty
	04344189	KEYBOARD ASSY	MSK-261KEY (W/O CABLE)	
1	03786378	NATURAL KEY C	FOR MSK-2	5
	03786389	NATURAL KEY D	FOR MSK-2	5
	03786390	NATURAL KEY E	FOR MSK-2	5
	03786401	NATURAL KEY F	FOR MSK-2	5
	03786412	NATURAL KEY G	FOR MSK-2	5
	03786423	NATURAL KEY A	FOR MSK-2	5
	03786434	NATURAL KEY B	FOR MSK-2	5
	03786445	NATURAL KEY C'	FOR MSK-2	1
2	03786456	SHARP KEY	FOR MSK-2	25
3	03786312	KEY FELT	MSK-2 HOOK T2.0MM L828XW5.5	1
4	03456967	COILED SPRING	MSK-1 NATURAL KEY	36
	03456978	COILED SPRING	MSK-1 SHARP KEY	25
5	03786301	KEY FELT	MSK-2 BACK T4.0MM L840XW6.0	1
6	04230834	RUBBER SWITCH 12P	FOR MSK-1/MSK-2	4
	04230845	RUBBER SWITCH 13P	FOR MSK-1/MSK-2	1
7	03786345	PWB KEYBOARD LO ASSY	FOR MSK-2	1
	03786356	PWB KEYBOARD HI ASSY	FOR MSK-2	1
8	*****	CHASSIS KEYBOARD	FOR MSK-2	1
9	03786334	KEY FELT	MSK-2 BOTTOM M T2.0MM L840XW10	1
10	03786323	KEY FELT	MSK-2 BOTTOM L T2.0MM L840XW15	1
11	5100029522	SWITCHING DIODE	1SS133 T-77	122
a	40011189	SCREW 3X8	PAN TAPTITE-P FE ZC	34

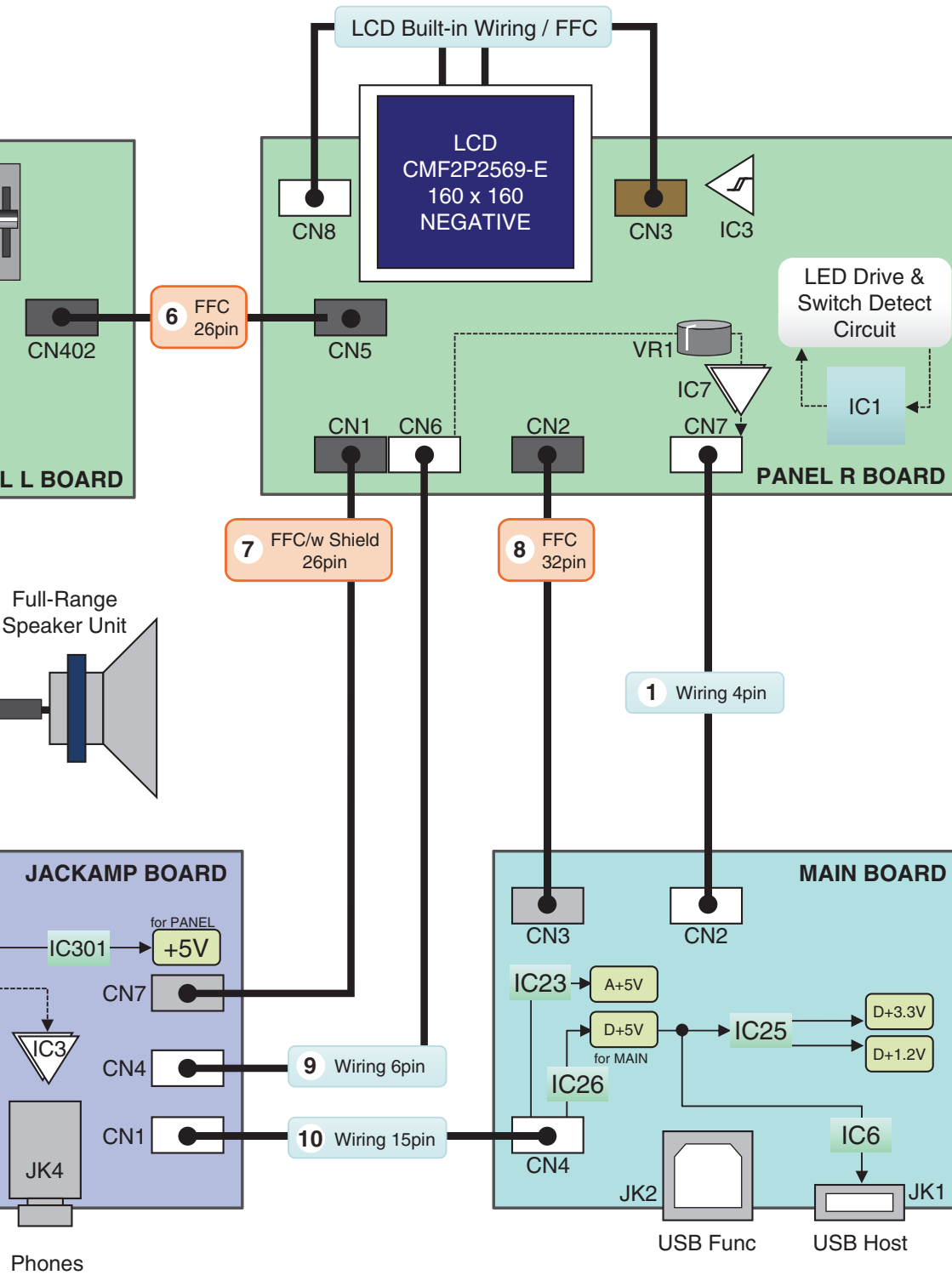
\* The cable (#5100046765) is not included in this unit (#04344189).

# Wiring Diagram/Block Diagram



No.	Part Code	Part Name	Description	Q'ty
A	5100030384	FERRITE CORE	GTR-20-10-10	2
B	5100046514	SPEAKER WIRE SPONGE		2
1	5100046764	WIRING	1061#28 4X80-PHR-PHR-F	2
2	5100046757	WIRING	1061#28 15X200-PHR-PHR-F	1
3	5100046763	WIRING	W2 (8X250-PHR)	1
4	5100046765	CA ASSY	26WAY 240+150MM W/3 HEADER	1
5	5100046766	WIRING	W1	1
6	5100046760	FLAT CABLE	SML2CD-26X70-BDX8(BL)-P1.0-S4	1
7	5100046762	FLAT CABLE	SML2SC-26(2)X70-BDX8(BL)-P1.0	1
8	5100046761	FLAT CABLE	SML2CD-32X70-BDX8(BL)-P1.0-S4	1
9	5100046759	WIRING	1061#28 6X500-PHR-PHR-F	1
10	5100046758	WIRING	1061#28 15X350-PHR-PHR-F	1





# Parts List

**Safety Precautions:**

The parts marked  $\Delta$  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.

- Supply is prohibited due to copyright restrictions.
- It is carried in electronic data on the Roland web site.
- The part is made to order (at current market price).
- It can be replaced with an article on the market. (battery or etc.)
- It is a package or an accessory irrelevant to the function maintenance of the main body.
- A number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Reissuance is restricted.
- It is supplied as an assembled part (under a different part code).

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

**CASING**

#	5100044392	TOP CASE		1
#	5100044395	SPEAKER COVER L		1
#	5100044396	SPEAKER COVER R		1
	04017645	BOTTOM CASE	710-05033-03-02	1

**CHASSIS**

#	5100044393	SPEAKER BOX L		1
#	5100044394	SPEAKER BOX R		1
	05014167	SIDE HOLDER		2
	03894945	REINFORCE BAR	750-04038-02-00	1

**KNOB, BUTTON**

#	5100035158	ZS R-KNOB	SF BLK/LCG	2
#	5100044401	ZS R-KNOB	SF BLK ENC	1
	5100037191	J S-KNOB	M BLK/LCG	6
#	5100046351	RUBBER SW 2P		2
#	5100046348	RUBBER SW 4P-A		4
#	5100046349	RUBBER SW 4P-B		1
#	5100046350	RUBBER SW 4P-C		1
#	5100046346	RUBBER SW 5P-A		1
#	5100046347	RUBBER SW 5P-B		4
#	5100046345	RUBBER SW 9P		2
#	5100046344	RUBBER SW 11P		1
#	5100046343	RUBBER SW 12P		1
#	5100046342	RUBBER SW 14P		2
#	5100046341	RUBBER SW 15P		1
#	5100046340	RUBBER SW 19P		1
#	5100046352	RUBBER SW POWER		1

**SWITCH**

	00230489	SLIDE SWITCH	SSSF122400	1
--	----------	--------------	------------	---

**JACK, EXT TERMINAL**

	04452956	3.5MM JACK	YKB21-5401N	1
	13449275	6.5MM JACK	YKB21-5074	7
	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	1
	02900312	DC JACK	HEC0470-01-640	1
	13429825	MIDI CONNECTOR	YKF51-5054V	1
	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N	1
	5100010665	USB CONNECTOR B TYPE FEMALE	2549A-04G2T(610-02001-04-00)	1

**DISPLAY UNIT**

#	5100045914	LCD	CMF2P2569-E	2
---	------------	-----	-------------	---

**SPEAKER, BUZZER**

	5100028323	WOOFER	412-05033-02-01	2
--	------------	--------	-----------------	---

**KEYBOARD ASSY**

	04344189	KEYBOARD ASSY MSK-261	W/O CABLE	1
--	----------	-----------------------	-----------	---

**PWB ASSY**

#	5100044041	MAIN BOARD ASSY		1
#	5100044044	JACKAMP BOARD ASSY		1
#	5100044046	PANEL SHEET ASSY		1
		* This unit includes the following parts.		
	*****	PANEL L BOARD		1
	*****	PANEL R BOARD		1
	*****	BENDER BOARD		1

<b>POTENTIOMETER</b>				
	5100004183	POTENTIOMETER(231-08052-02-00	RK12L12C0A04 50KBX2 25MM	2
	5100037657	SLIDE POTENTIOMETER	C3080G1AV1B103BA00B3	6
<b>ENCODER</b>				
#	5100044027	ENCODER	E1214A3AV1FE0500	1
<b>WIRING, CABLE</b>				
#	5100046765	CA ASSY	26WAY 240+150MM W/3 HEADER	1
#	5100046760	FLAT CABLE	SML2CD-26X70-BDX8(BL)-P1.0-S4	1
#	5100046761	FLAT CABLE	SML2CD-32X70-BDX8(BL)-P1.0-S4	1
#	5100046762	FLAT CABLE	SML2SC-26(2)X70-BDX8(BL)-P1.0	1
#	5100046764	WIRING	1061#28 4X80-PHR-PHR-F	2
#	5100046759	WIRING	1061#28 6X500-PHR-PHR-F	1
#	5100046757	WIRING	1061#28 15X200-PHR-PHR-F	1
#	5100046758	WIRING	1061#28 15X350-PHR-PHR-F	1
#	5100046766	WIRING	W1	1
#	5100046763	WIRING	W2 (8X250-PHR)	1
<b>SCREWS</b>				
	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	5
	5100034002	SCREW M3X12	PAN MACHINE W./SMW+PW BZC	1
	40454856	SCREW M4X10	BINDING MACHINE NI	1
	40011301	SCREW 3X6	BINDING TAPTITE P FE BZC	4
	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	105
	40011334	SCREW 3X12	BINDING TAPTITE P FE BZC	17
	40012490	SCREW 4X10	BINDING TAPTITE P BZC	21
<b>MISCELLANEOUS</b>				
	5100035567	BENDER	PB-H0302-RD	1
#	5100044398	PANEL SHEET L		1
#	5100044399	PANEL SHEET C		1
#	5100044400	PANEL SHEET R		1
#	5100046357	USB ESCUTCHEON		1
	12359137	RUBBER FOOT	SJ-5012 BLK	4
	5100027106	CORD HOOK	40516-014	1
	5100030384	FERRITE CORE	GTR-20-10-10	2
	5100032738	TERMINAL	PCB-12(M4)	1
	5100003695	TERMINAL	PCB-12	4
#	5100048015	BOTTOM CASE CUSHION	290X10	2
#	5100048014	BOTTOM CASE CUSHION	1000X10	1
#	5100047445	FERRITE CORE CUSHION		2
#	5100044402	LCD CUSHION		8
	04128390	SPEAKER CUSHION	(762-05033-01-02)	2
	04129989	SPEAKER INNER CUSHION B		2
#	5100046514	SPEAKER WIRE SPONGE		2
#	5100044397	GRILLE CLOTH		2
	40120967	COATING CLIP	CS-3	9
	40016534	INSULOK TIE 204M/M	T-18L	5
	40122612	ACETATE TAPE	NITTO #5 BLACK W10MM 30M 20P	-
	40122812	ACETATE TAPE	NITTO #5 BLACK W15MM 30M	-
<b>ACCESSORIES (Standard)</b>				
#	5100044527	MUSIC REST ASSY		1
#	5100046372	OWNER'S MANUAL	MULTILANGUAGE	1
#	5100046371	OWNER'S MANUAL	ENGLISH	1
#	5100046375	OWNER'S MANUAL	CHINESE	1
	04236112	AC ADAPTOR	PSB-7U(S)DC WITHOUT AC CORD	1
	5100012293	AC CORD SET	117VBL 1.0M FOR PSB	1
	5100000692	AC CORD SET	117V U 1.0M	for 117VBL, 117VU/CS
	5100000564	AC CORD (CCC) 220V CN	452-04038-02-01	for 220VCN
	5100039367	AC CORD	SP021A+IS037 220VK 2.5M 2P	for 220VK
	5100018086	AC CORD SET	230VE 1.0M FOR EPS	for 230VE
	05017301	AC CORD SET	230V 1.0M FOR EU	for 230VEU, 230VASIA
	5100029122	AC CORD SET	240V 1.0M FOR PSB	for 240VA

\* The fuse of the Jackamp Board may blow depending on some combinations of the AC adaptor and the Jackamp Board. For details, refer to the Service Information.

## Verifying the Version

1. Press **Menu** (at the right edge of the panel).  
The **Menu** screen appears on the right LCD.
2. Press **P2** (under the right screen).
3. Press **Utility** (at the left of the screen).
4. Press **Version** (at the left of the screen).  
The version and the build numbers are displayed.
5. Press EXIT (at the bottom right of the screen) several times to return to the initial screen.

## Data Backup and Restore Operations

### Items Required

- Computer
- USB memory device (recommended: M-UF2G)

### Formatting a USB Memory Device

1. Connect a USB memory device to the **USB MEMORY** connector.
2. Press **Menu** (at the right edge of the panel).  
The **Menu** screen appears on the right LCD.
3. Press **P2** (under the right screen).
4. Press **Utility** (at the left of the screen).
5. Press **Usb Memory Format** (at the left of the screen).  
The **Confirm** window appears.
6. To execute formatting, press **Yes** (under the screen). To cancel, press **No** (under the screen).  
Pressing **Yes** begins formatting.  
When the operation is completed, the display automatically returns to the initial screen.


### Backup Operation

1. Refer to **Formatting a USB Memory Device** (p. 20) and format the USB memory device.
2. Connect the USB memory device just described to the **USB MEMORY** connector.
3. Press **Menu** (at the right edge of the panel).  
The **Menu** screen appears on the right LCD.
4. Press **P2** (under the right screen).
5. Press **Utility** (at the left of the screen).
6. Press **Backup** (at the left of the screen).  
The **Confirm** window appears.
7. To execute the backup operation, press **Yes** (under the screen). To cancel, press **No** (under the screen).  
Pressing **Yes** begins the backup operation.  
When the operation is completed, the display automatically returns to the initial screen.


### Restore Operation

1. Connect the USB memory device containing the backed-up data to the **USB MEMORY** connector.
2. Press **Menu** (at the right edge of the panel).  
The **Menu** screen appears on the right LCD.
3. Press **P2** (under the right screen).
4. Press **Utility** (at the left of the screen).
5. Press **Restore** (at the left of the screen).

The **Confirm** window appears.

6. To execute the restore operation, press **Yes** (under the screen). To cancel, press **No** (under the screen).  
Pressing **Yes** begins the restore operation.  
When **Completed** is displayed, the restore operation has finished.
7. Detach the USB memory device and reset the power.  
  
\* Press and hold down  to turn off the power, and release your finger when **Power Off ...** is displayed.

## Performing a Factory Reset

1. Press **Menu** (at the right edge of the panel).  
The **Menu** screen appears on the right LCD.
2. Press **P2** (under the right screen).
3. Press **Utility** (at the left of the screen).
4. Press **FactoryReset** (at the left of the screen).  
The **Confirm** window appears.
5. To execute the factory reset, press **Yes** (under the screen). To cancel, press **No** (under the screen).  
Pressing **Yes** begins a factory reset.  
When **Completed** appears, the factory reset has finished.
6. Reset the power.  
  
\* Press and hold down  to turn off the power, and release your finger when **Power Off ...** is displayed.

## Updating the System

### Items Required

- Computer
- USB memory device (recommended: M-UF2G)
- Update program (obtained via Service Net)

### Procedure

1. Format a USB memory device using the FAT32 file system.
2. Decompress the compressed update program, and copy all generated files to the root directory of the USB memory device just described.
3. While the power to the unit is switched off, insert the USB memory device just described into the **USB MEMORY** connector.
4. Hold down **Tap** (under the slide knob in the center area of the panel) and turn on the power.  
The update starts automatically.  
  
\* Never switch off the power or detach the USB memory device while the update is in progress. Doing so may cause malfunction.

When the message **SUCCESS** appears, the update has finished.

5. Detach the USB memory device and reset the power.
6. Follow the procedure in **Performing a Factory Reset** (p. 20) to execute a factory reset.

## Test Mode

---

### Items Required

- Computer (running Windows 7)
- USB memory device (recommended: M-UF2G)
- USB cable
- MIDI cable
- Oscilloscope
- Noise meter
- Tester
- Headphones
- UA-1G (or other UA series device)

- EV-5

\* *Adjust the minimum volume knob to 0.*

- KY006\_01\_EXT.WAV
- KY006\_02\_LINE.WAV
- KY006\_03\_MIC.WAV

Obtain via Service Net, and copy it on the computer just described.

### Connections

1. Connect the computer to the **USB COMPUTER** connector.
2. Connect a USB memory device to the **USB MEMORY** connector.

### Entering the Test Mode

Hold down **User Program -**, **User Program 2** and **Input On** and turn on the power.

\* ***User Program -** and **User Program 2** are under the right screen, and **Input On** is at the bottom left of the **Mic Line In Volume** knob.*

\* *Continue to hold down the three buttons above until all LEDs light up and the version is displayed on the right screen.*

### Quitting the Test Mode

Turn off the power.

### Skipping Test Items

**Tone Exit + Value +** (at the bottom right of the right screen):

This forces execution to advance to the next test item.

**Tone Exit + Value -** (at the bottom right of the right screen):

This forces execution to return to the previous test item.

**Tone Exit + Tone Numeric:**

Execute the current test item again.

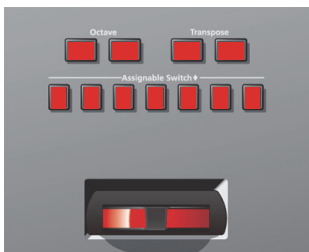
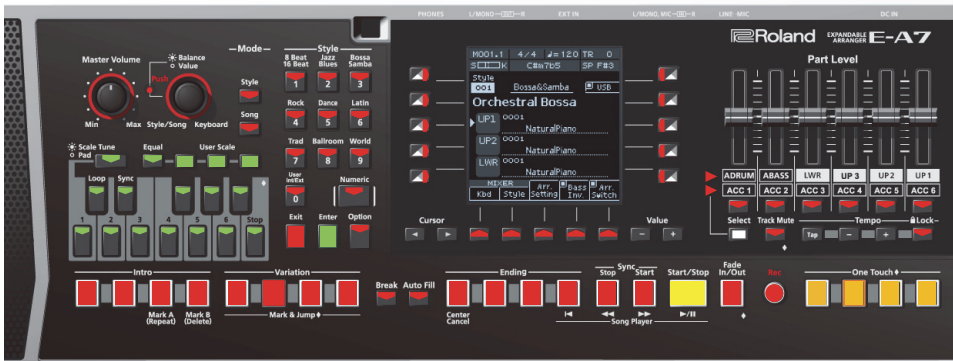
### Test Items

1. **VERSION CHECK** (p. 22)
2. **DEVICE** (p. 22)
3. **MIDI IN/OUT** (p. 23)
4. **ENCODER** (p. 23)
5. **SW/LED** (p. 23)
6. **SW** (p. 23)
7. **LCD** (p. 23)
8. **A/D** (p. 23)
9. **PHONES** (p. 23)
10. **OUTPUT** (p. 23)
11. **MIX IN** (p. 24)
12. **LINE IN** (p. 24)
13. **MIC IN** (p. 24)
14. **SPEAKER TEST** (p. 24)
15. **WAVE CHECK SUM** (p. 24)
16. **MUTE** (p. 24)
17. **KEYBOARD** (p. 24)
18. **NOISE** (p. 24)
19. **FACTORY RESET** (p. 25)
20. **ERP CHECK** (p. 25)

## 1. VERSION CHECK

This verifies the version of the program.

1. Verify the version of the program displayed on the screen.
  2. Verify that each LED lights up as shown in the figure below.
- \* Buttons lighted up orange as shown in the figures below (19 locations) light up red from Z0G1590. Refer to the Service Information No.104607 in detail.



3. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 2. DEVICE

Various devices are checked automatically.

- 01: NOR Flash
- 02: SDRAM1
- 03: SDRAM2
- 04: ERAM
- 05: WAVE ROM 1
- 06: WAVE ROM 2
- 07: WAVE RAM 1
- 08: WAVE RAM 2
- 09: USB MEMORY
- 10: USB MIDI
- 11: KSCPU
- 12: PANEL L SubCPU
- 13: PANEL R SubCPU

The test result (**OK** or **NG** (not OK)) is displayed next to the corresponding device. Until **OK** are displayed for all devices, it takes about 1 minute.

1. If all devices are **OK**, detach the USB memory device and the USB cable. Execution automatically advances to the next test item.

Even if **OK** are displayed for **WAVE ROM 1** and **WAVE ROM 2**, the test is not completed. In reality, testing starts here and continues in the background while the other tests are executed. For the test results, check **15. WAVE CHECK SUM** (p. 24).

### 3. MIDI IN/OUT

This verifies the operations of the MIDI IN and OUT connectors.

1. Using the MIDI cable, connect the **MIDI IN** and **MIDI OUT** connectors. The message **Connected** is displayed.
2. Detach the MIDI cable. Execution automatically advances to the next test item.

### 4. ENCODER

This verifies the operation of the encoder.

1. Turn the **Value** knob (left side on the panel) clockwise. The value on the screen increases from **0** to **24**, and then **Inc: OK** is displayed.
2. Turn the **Value** knob (left side on the panel) counterclockwise. The value on the screen decreases from **24** to **0**, and then **Dec: OK** is displayed.
3. Press the **Value** knob. Execution advances to the next test item.

### 5. SW/LED

This verifies the operations of LED-equipped switches.

Press each button whose LED lights up in sequence and verify that the value displayed on the screen increases.

- \* When the LED next to the **Value** knob lights up, press the **Value** knob. When the LED at the left of the **ADRUM** and **ACC 1** light up, press **Select**.
- \* Press **Start/Stop** twice. Verify that pressing it once changes its color from green to red, and pressing it once more makes it go dark.

When all buttons have been pressed, execution automatically advances to the next test item.

### 6. SW

This verifies the operations of switches that have no LED.

1. Press the following buttons in sequence.
  - \* The name and location of buttons are displayed on the screen.
  - Under the left screen: **Cursor \*\*\***, **Cursor \*\*\***, **Value -?Value +**
  - Under the slide knob: **Tempo Tap**, **Tempo -**, **Tempo +**
  - Under the right screen: **Cursor \*\*\***, **Cursor \*\*\***, **Value -?Value +**

When all buttons have been pressed, execution automatically advances to the next test item.

### 7. LCD

This verifies the display of the screen.

1. Press the buttons under the left screen (F1, F2, F3 and F4 from left) to switch the four display-patterns below and verify that each screen is free of dot drop-out or grime. all dots white, all dots black, grid pattern and grid pattern (inverse)
2. Press F5 and verify that the contrast becomes darker.
3. Press F5 again.
4. Carry out steps **1** through **3** in the same way for the right screen as well.
5. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

### 8. A/D

This verifies the operations of the pitch bend/modulation lever, volumes, pedals and sensing of jacks.

When this test item is enabled, the midpoint calibration of the pitch bender is executed. Do not touch the pitch bend/modulation lever. Enabling this test item while the pitch bend/modulation lever is at an angle causes the message **BEND ADJ ERR!** to appear. In this case, re-enter the test item while the pitch bend/modulation lever is not touched.

1. Adjust the **Master Volume** knob (at the left edge of the panel) to **Min**.
2. Connect the EV-5 to the **PEDAL HOLD** jack.
  - \* When verifying the operations of the **PEDAL EXPRESSION** jack (TRS) and the **PEDAL CONTROL** jack (TRS), change the connection of the EV-5 to each jack.
3. Operate each component displayed on the screen from minimum to maximum, and verify that the value displayed on the screen changes from **0** to **127**.
  - \* For the pitch bender, also verify the midpoint (**64**).
4. Detach the EV-5. **OK** is displayed for **12. PEDAL SENS**. When **OK** has been displayed for all items, execution automatically advances to the next test item.

### 9. PHONES

This verifies the sensing operation and the signal level of PHONES jack.

1. Connect the oscilloscope to the **PHONES** jack.
2. When the **Master Volume** knob (at the left edge of the panel) is at **Max**, verify that signals like the following are output from the **PHONES** jack.
 

PHONES L:	1-kHz sine wave at 14.0±2.0 Vpp
PHONES R:	2-kHz sine wave at 14.0±2.0 Vpp
3. Adjust the **Master Volume** knob (at the left edge of the panel) to **Min** and disconnect the plug from the **PHONES** jack to detach the oscilloscope. Execution automatically advances to the next test item.

### 10. OUTPUT

This verifies the operations of the OUTPUT L/MONO and R jacks.

1. Connect the oscilloscope to the **OUTPUT L/MONO** and **R** jacks.
2. Connect a plug to the **PHONES** jack.
3. Adjust the **Master Volume** knob (at the left edge of the panel) to **Max**.
4. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** jacks.
 

L/MONO:	1-kHz sine wave at 13.0±2.0 Vpp
R:	2-kHz sine wave at 13.0±2.0 Vpp

  - \* When verifying the signal of the **OUTPUT L/MONO** jack, connect a plug also to the **OUTPUT R** jack.
5. Press **Tone Enter** (at the bottom right of the right screen).
6. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** jacks.
 

L/MONO:	20-kHz sine wave at 12.0±2.0 Vpp
R:	20-kHz sine wave at 12.0±2.0 Vpp
7. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 11. MIX IN

This verifies the operation of the EXT IN jack (stereo miniature).

1. Connect the UA-1G connected to the computer to the **EXT IN** jack and play KY006\_01\_EXT.WAV on the computer.  
Or, input signals like the following to the **EXT IN** jack.  
EXT IN (L): 1-kHz sine wave at 2.3 Vpp  
EXT IN (R): 2-kHz sine wave at 2.3 Vpp
2. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** jacks.  
L/MONO: 1-kHz sine wave at 7.0±2.0 Vpp  
R: 2-kHz sine wave at 7.0±2.0 Vpp
3. Detach the cable from the **EXT IN** jack.
4. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 12. LINE IN

This verifies the operations of the INPUT L/MONO, MIC and R jacks.

1. Set the **MIC LINE** switch to **LINE**.
2. Adjust the **Master Volume** knob (at the left edge of the panel) and the **Mic/Line In Volume** knob (at the right edge of the panel) to **Max**.
3. Connect the UA-1G connected to the computer to the **INPUT L/MONO, MIC** and **R** jacks and play KY006\_02\_LINE.WAV on the computer.  
Or, input signals like the following to the **INPUT L/MONO, MIC** and **R** jacks.  
L/MONO, MIC: 1-kHz sine wave at 2.3 Vpp  
R: 2-kHz sine wave at 2.3 Vpp
4. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** jacks.  
L/MONO: 1-kHz sine wave at 4.2±1.0 Vpp  
R: 2-kHz sine wave at 4.2±1.0 Vpp
5. Turn the **Mic/Line In Volume** knob (at the right edge of the panel) and verify that the output level changes.
6. Turn off the input signals to the **INPUT L/MONO, MIC** and **R** jacks and set the **MIC LINE** switch to **MIC**.  
Execution automatically advances to the next test item.

## 13. MIC IN

This verifies the operations of the INPUT L/MONO, MIC jack.

1. Adjust the **Mic/Line In Volume** knob to **Max**.
2. Connect the UA-1G connected to the computer to the **INPUT L/MONO, MIC** and **R** jacks and play KY006\_03\_MIC.WAV on the computer.  
Or, input signals like the following to the **INPUT L/MONO, MIC** and **R** jacks.  
L/MONO, MIC: 1-kHz sine wave at 600 mVpp  
R: 2-kHz sine wave at 600 mVpp
3. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** jacks.  
L/MONO: 1-kHz sine wave at 12.0±2.0 Vpp  
R: 1-kHz sine wave at 12.0±2.0 Vpp
4. Disconnect the plug from the **INPUT L/MONO, MIC** and **R** jacks.
5. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 14. SPEAKER TEST

This verifies the operation of speakers.

\* Adjust the **Master Volume** knob to the center position and disconnect the plug from the **PHONES** jack.

1-kHz sine wave is produced from the left speaker.

1. Press **Tone Enter**.  
1-kHz saw wave is produced from the right speaker.
2. Press **Tone Enter**.  
1-kHz sine wave are produced from the left and right speakers.
3. Press **Tone Enter** to verify that the sound of low range is free of flutter.
4. Press **Tone Enter** to verify that the sound of mid range is free of flutter.
5. Press **Tone Enter** to verify that the sound of high range is free of flutter.
6. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 15. WAVE CHECK SUM

This verifies the test results for the entire area of Wave ROM.

The test was started when **2. DEVICE** (p. 22) was selected.

If **2. DEVICE** was not selected, the test starts at the time that this **15. WAVE CHECK SUM** is selected. Wait for the test to finish.

When **OK** appears, press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 16. MUTE

This verifies the operation of the MUTE.

Demo song is played back.

1. Verify that output from the speaker and headphones are muted only when **Tone Enter** is pressed.
2. Disconnect the headphones.
3. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 17. KEYBOARD

This verifies the operation of the keyboard.

1. Play the keyboard and verify that piano sound is produced.
2. Verify that the volume changes according to the velocity with which the key is played.
3. Press **Tone Enter** to advance to verification of organ sound.
4. Play the keyboard and verify that organ sound is produced.
5. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.

## 18. NOISE

This measures the residual noise level.

1. Adjust the **Master Volume** knob to **Max**.
2. Connect the noise meter to the **OUTPUT L/MONO** and **R** jacks, and verify that residual noises of L and R are both **-78 dBm** or lower (DIN-Audio).
3. Connect the noise meter to the **PHONES** jack (L and R), and verify that residual noises of L and R are both **-70 dBm** or lower (DIN-Audio).
4. Press **Value +** (at the bottom right of the right screen) to advance to the next test item.



## 19. FACTORY RESET

This executes a Factory Reset.

Pressing **Tone Enter** executes the factory reset.

If the operation has finished, execution automatically advances to the next test item.

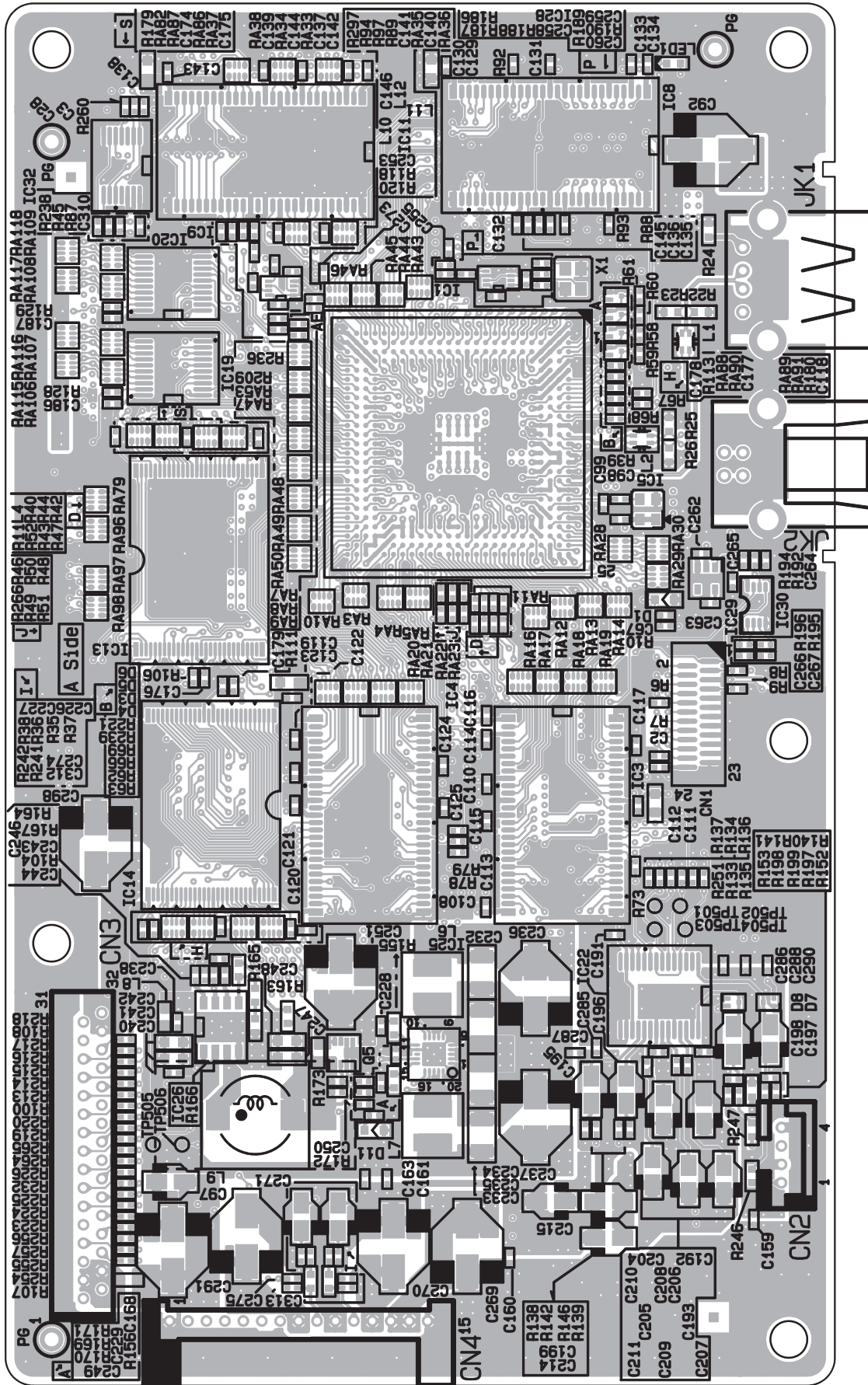
## 20. ERP CHECK

This verifies the operation of the auto off circuit of the power supply.

Press **Tone Enter** to switch off the power.

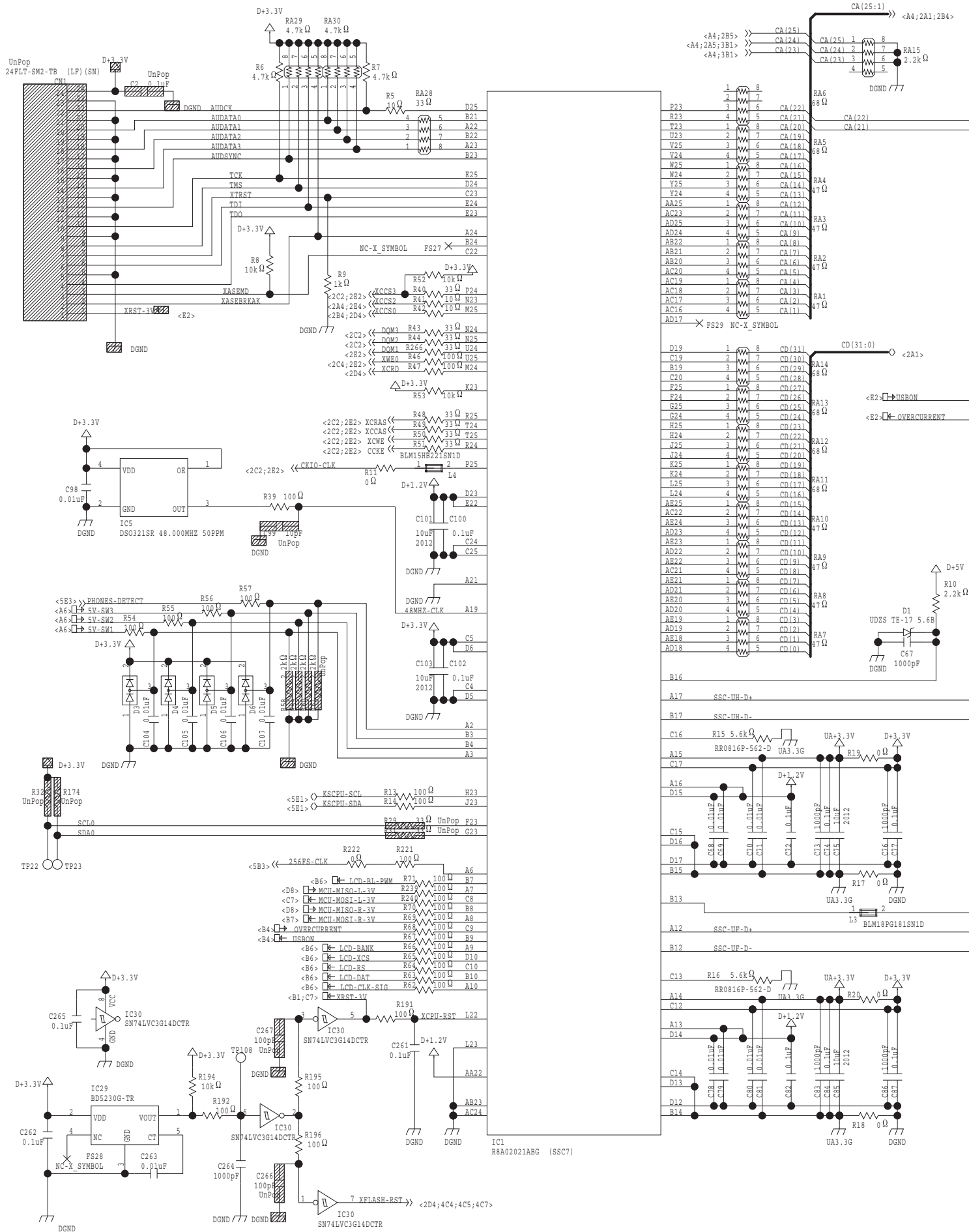
This ends the Test Mode.

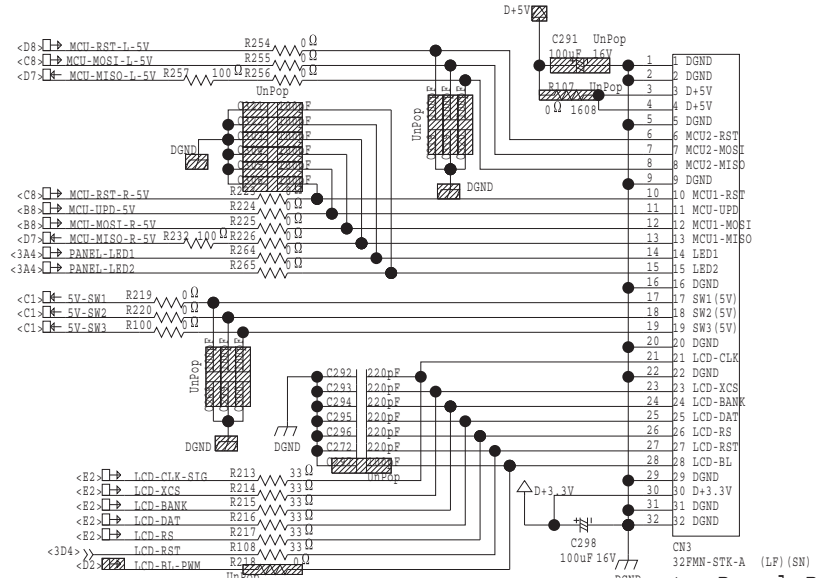
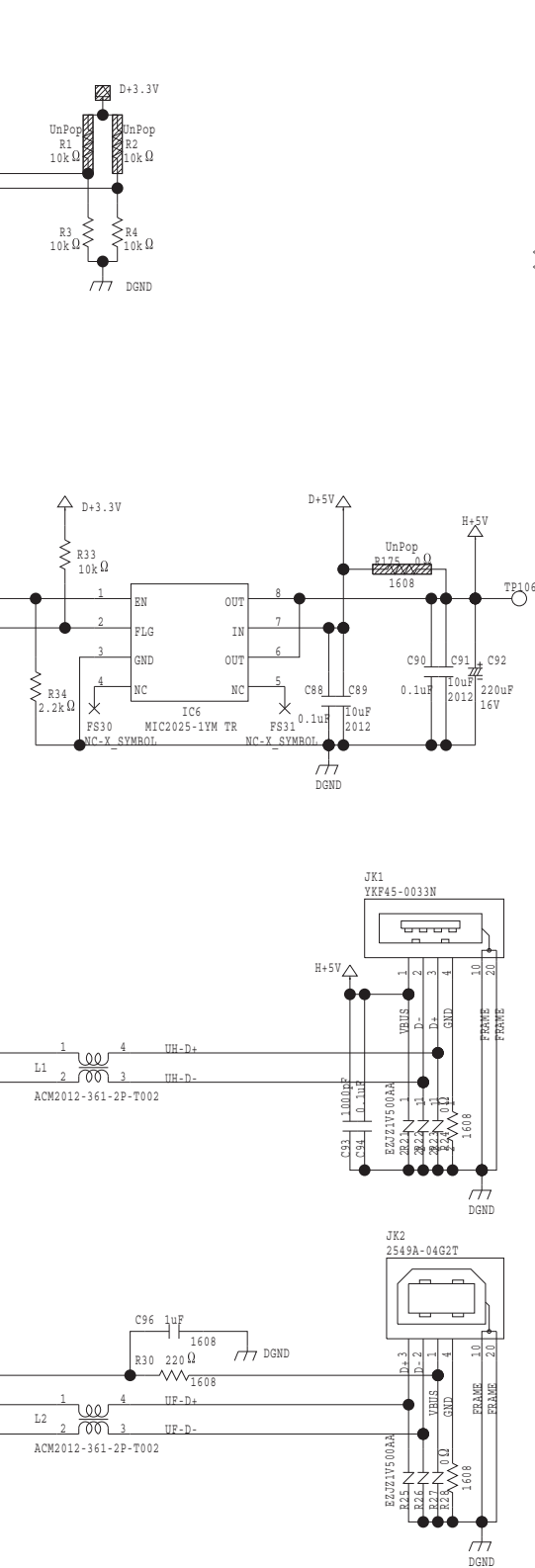
# Circuit Board (Main Board)



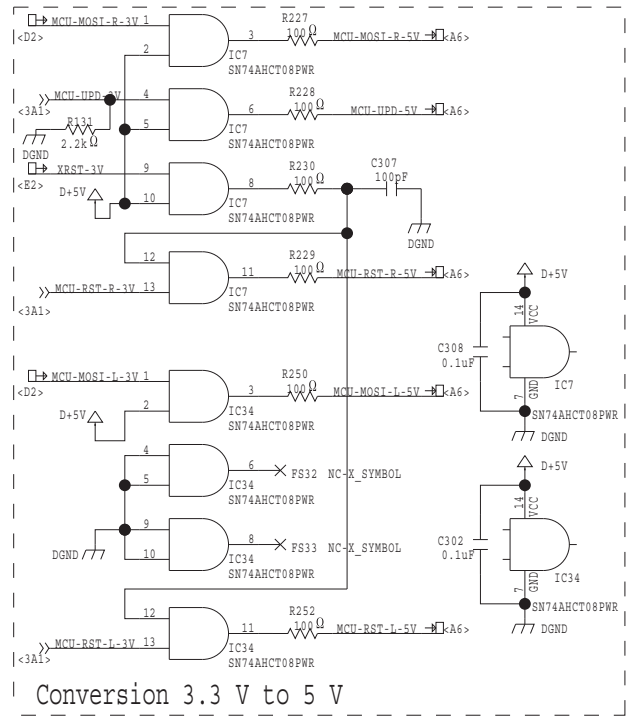


# Circuit Diagram (Main Board: 1/5)

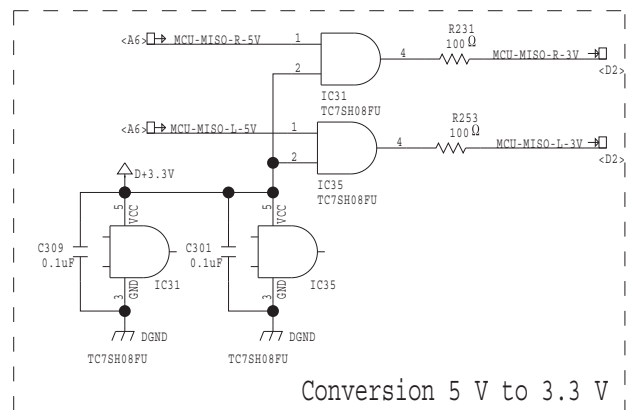




to Panel R Board



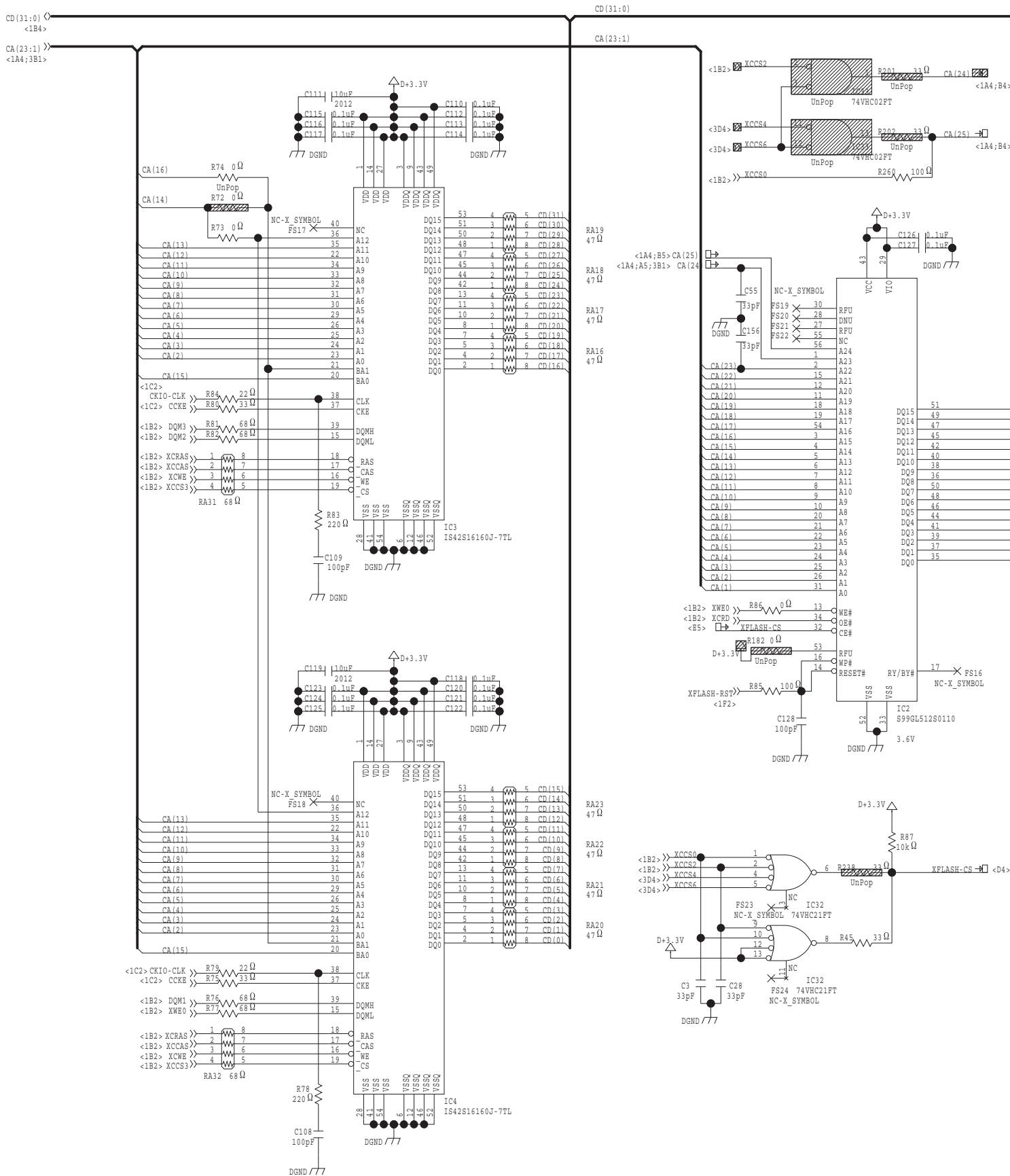
Conversion 3.3 V to 5 V

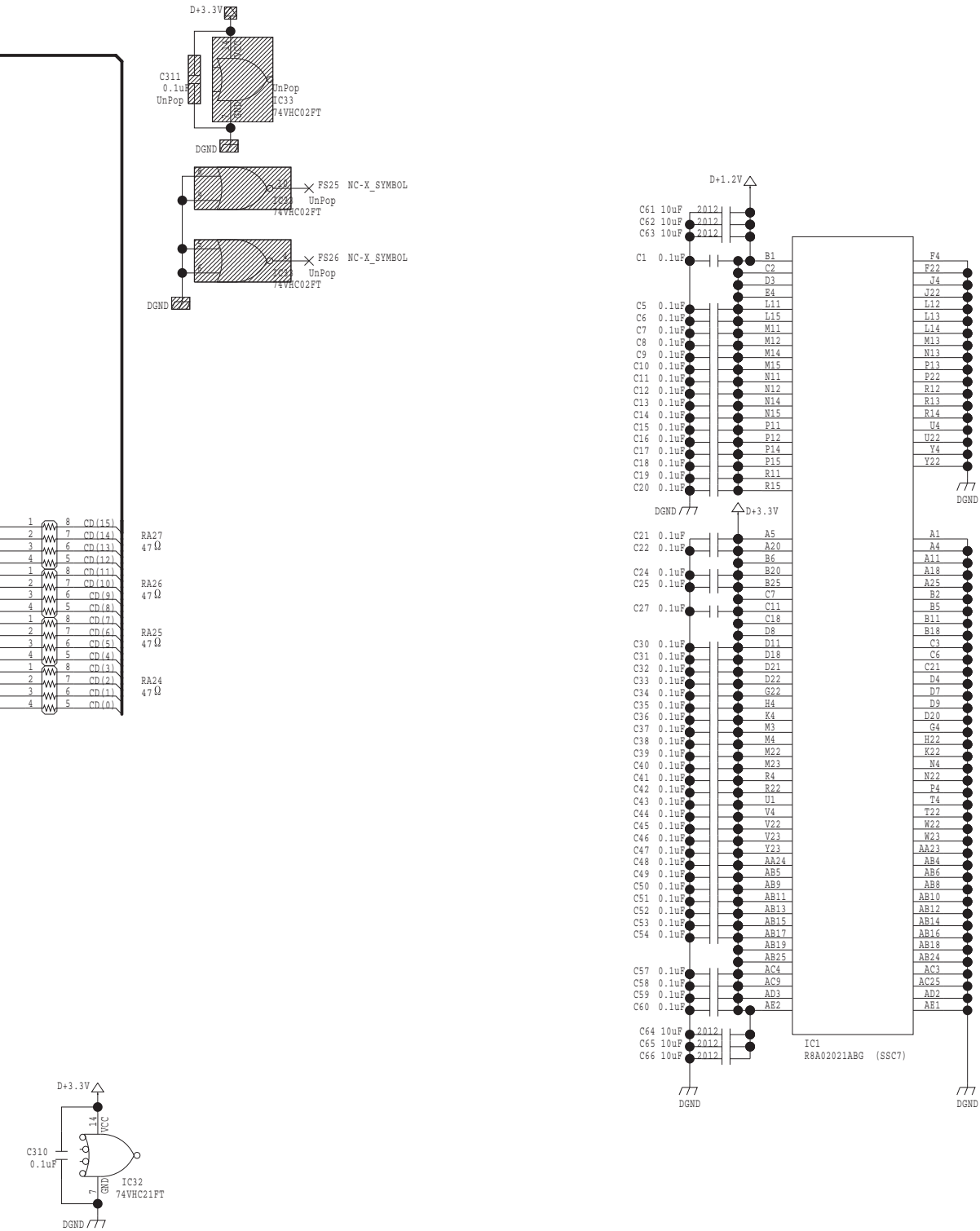


Conversion 5 V to 3.3 V

"UnPop" means "Unpopulated".

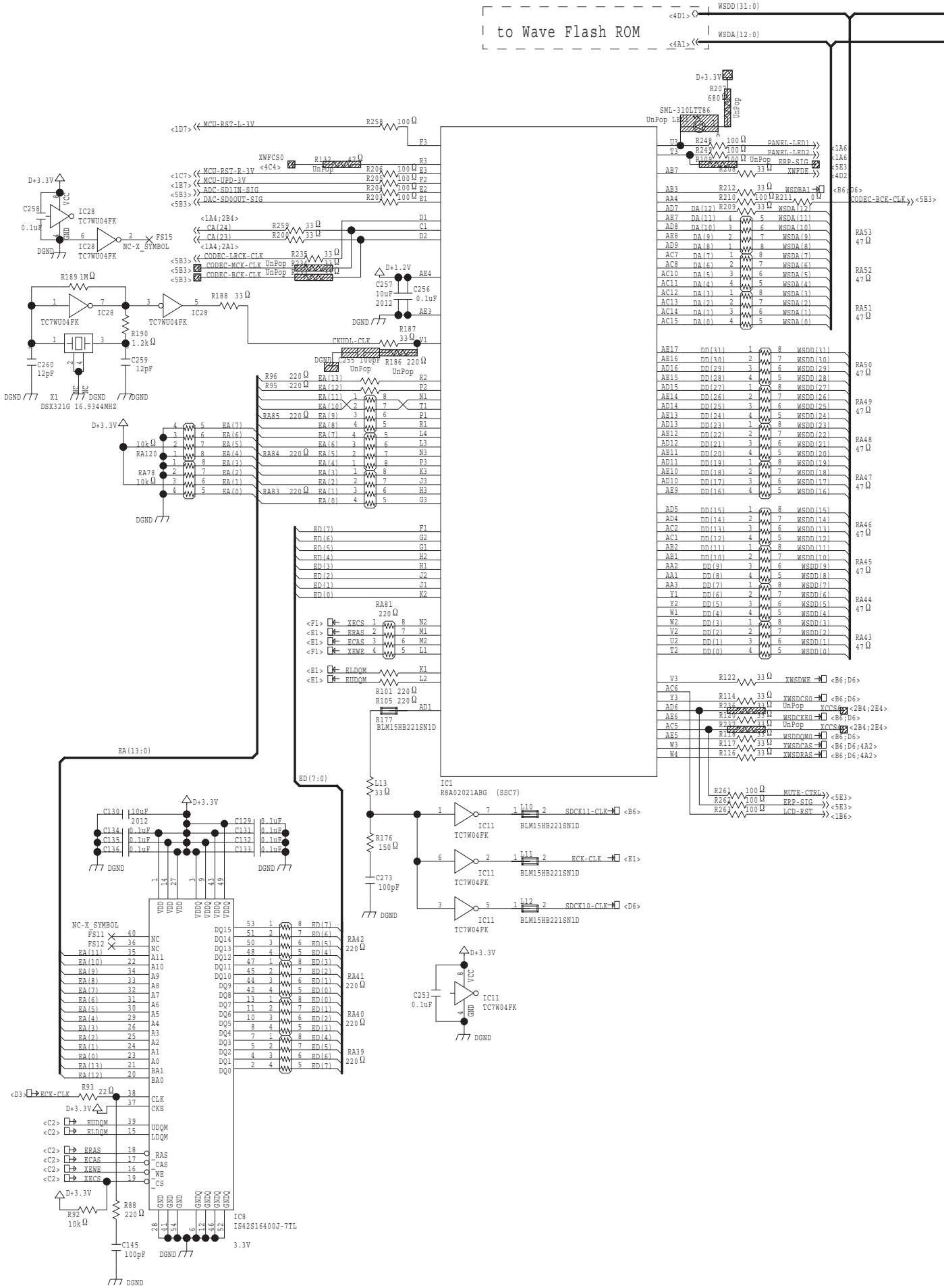
# Circuit Diagram (Main Board: 2/5)





"UnPop" means "Unpopulated".

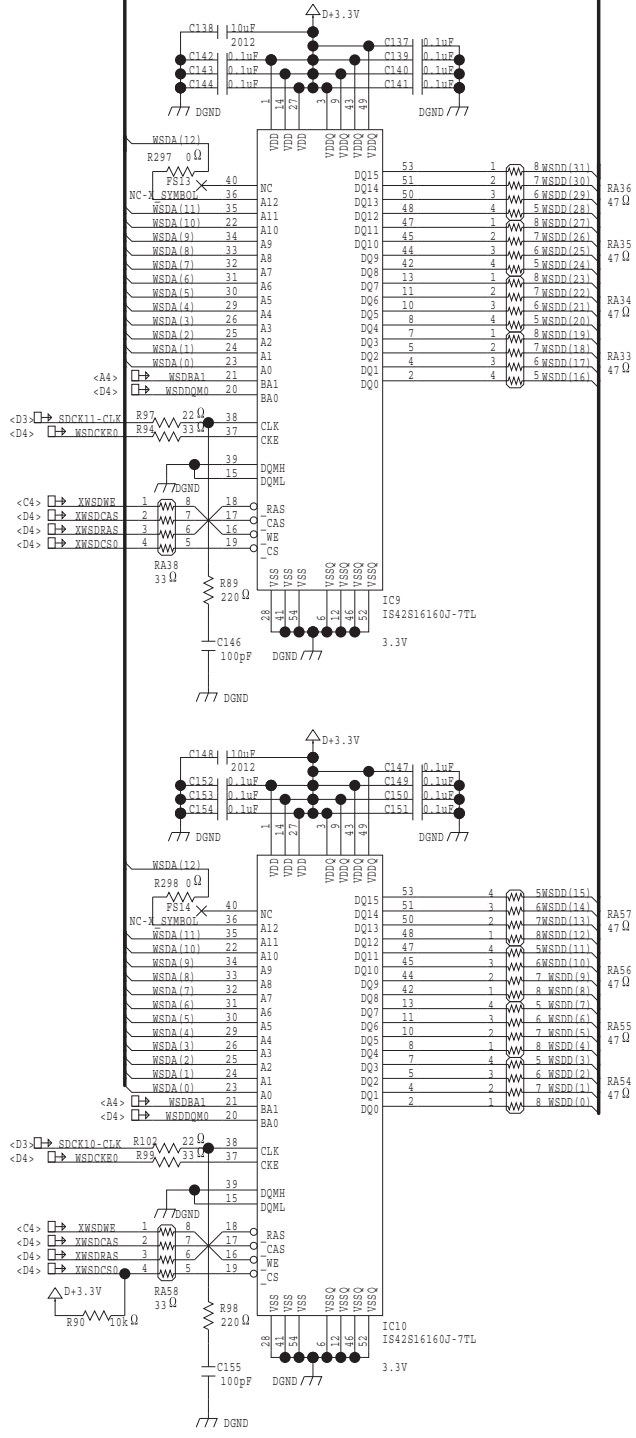
# Circuit Diagram (Main Board: 3/5)





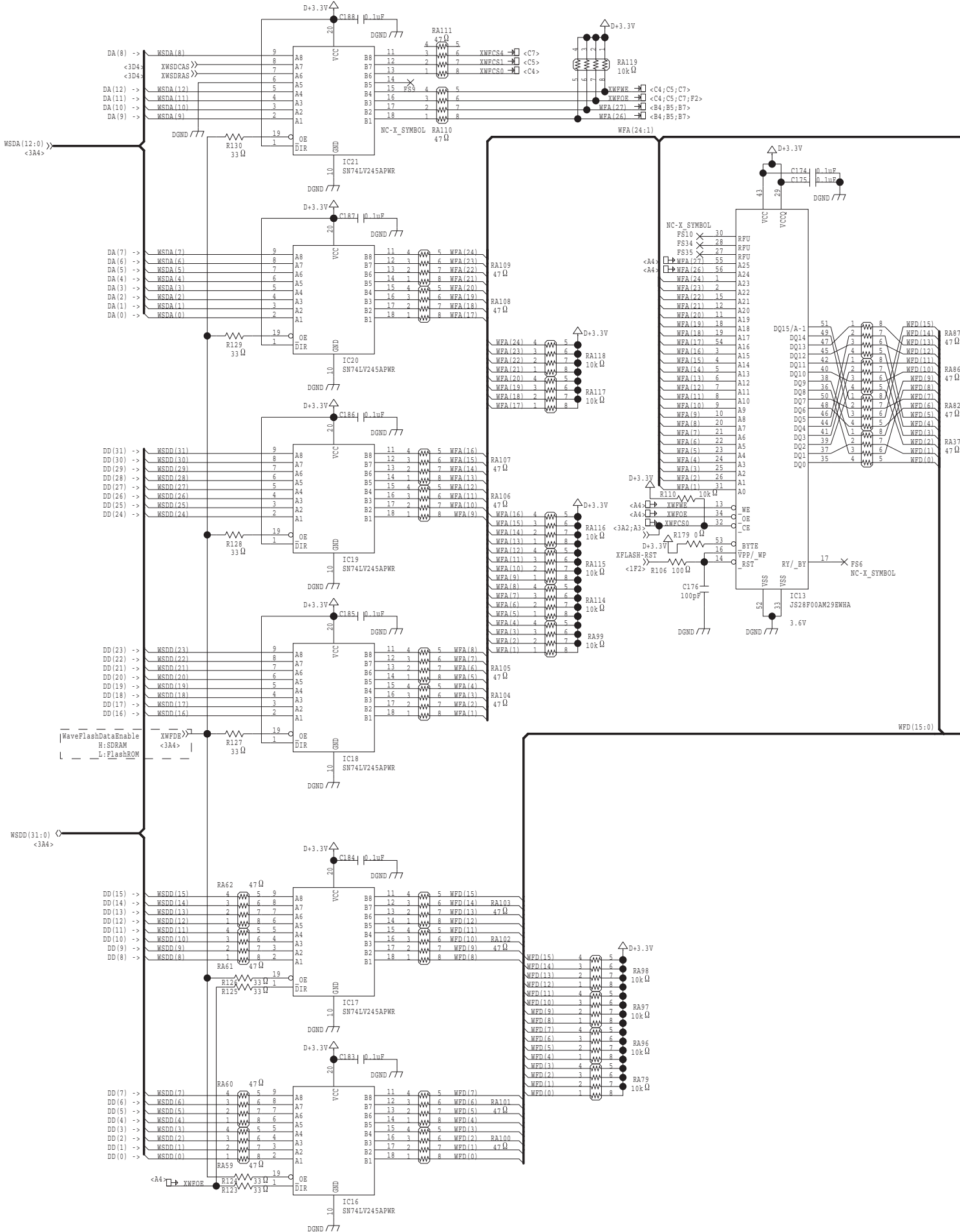
WSDD(31:0)

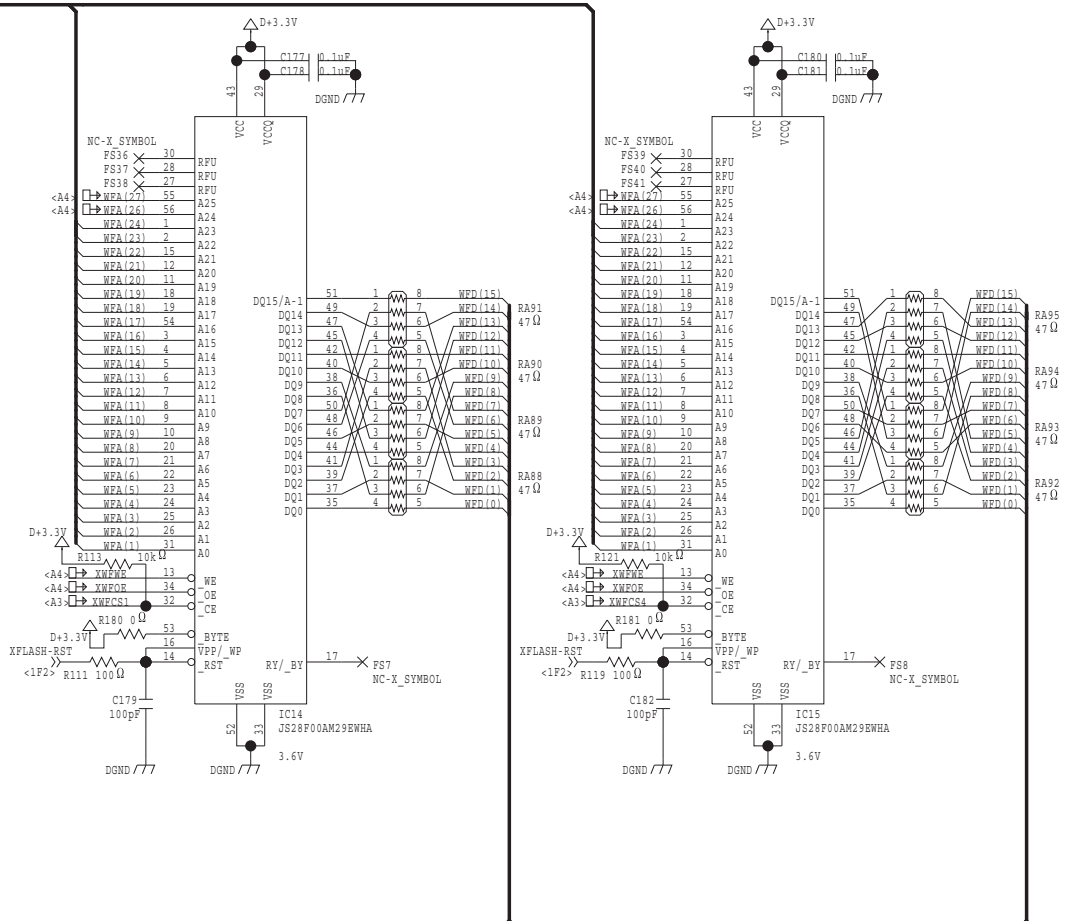
WSDA(12:0)



"UnPop" means "Unpopulated".

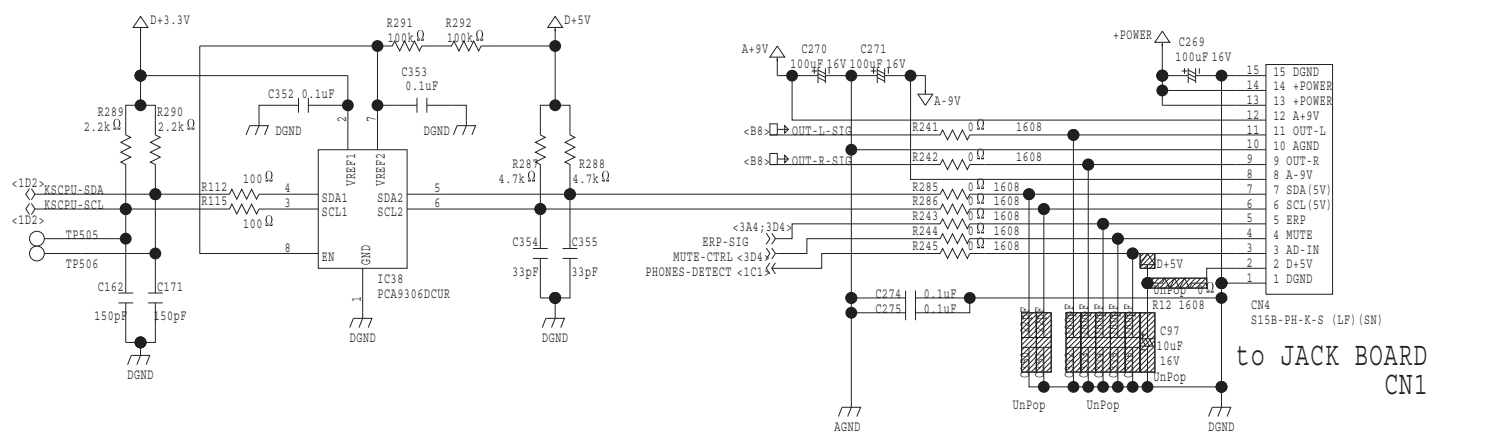
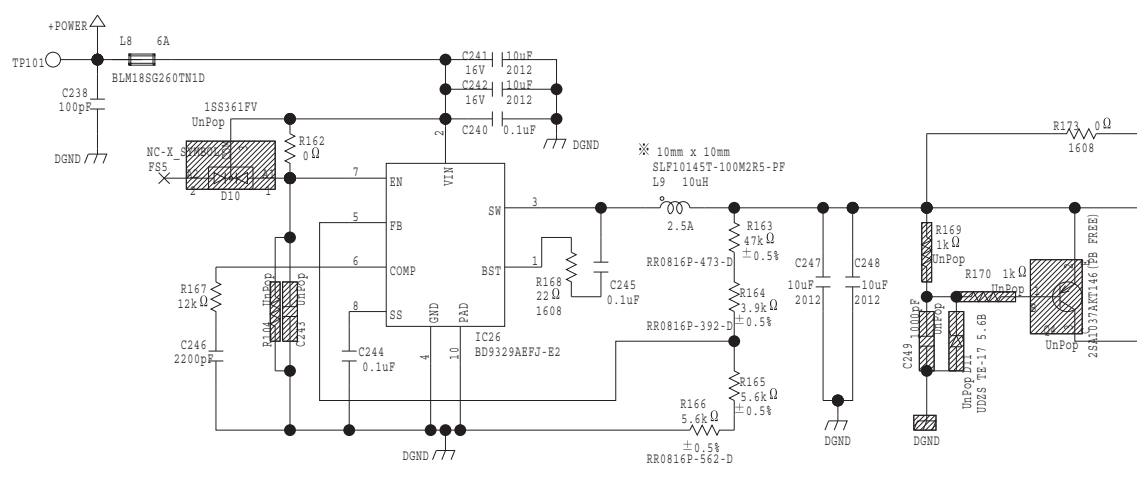
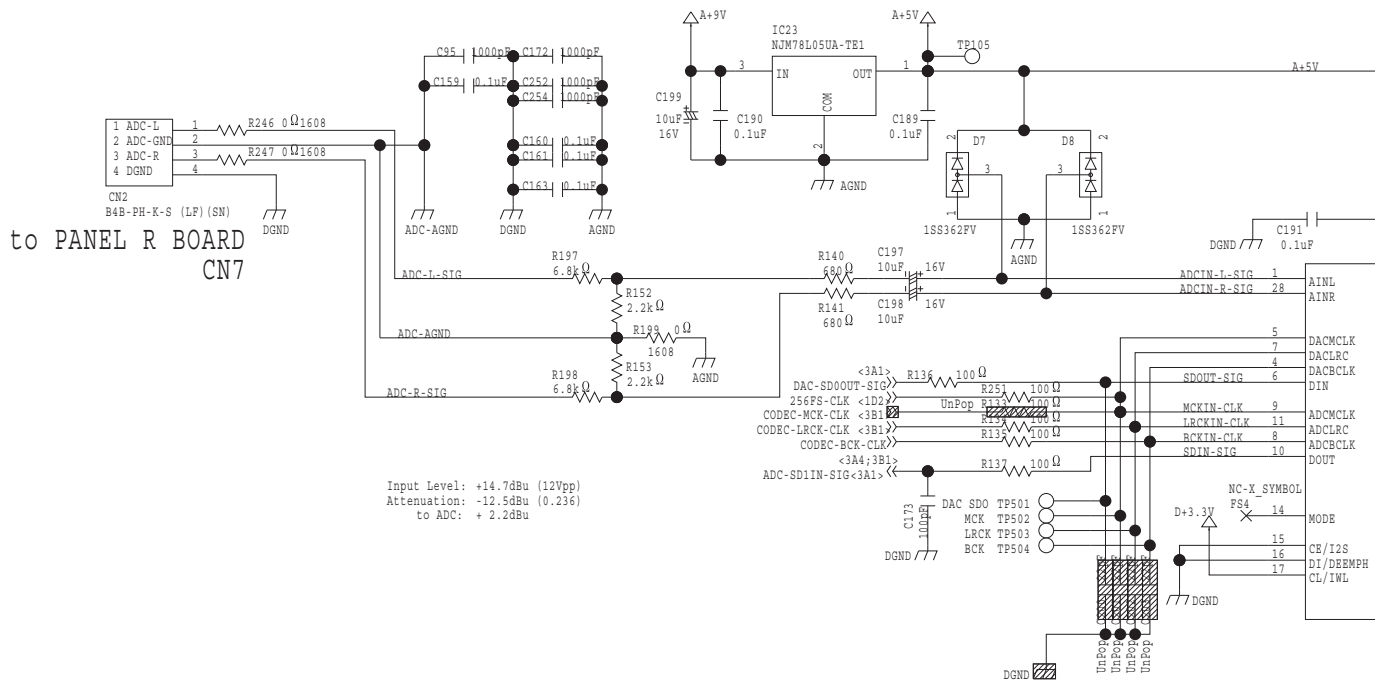
# Circuit Diagram (Main Board: 4/5)

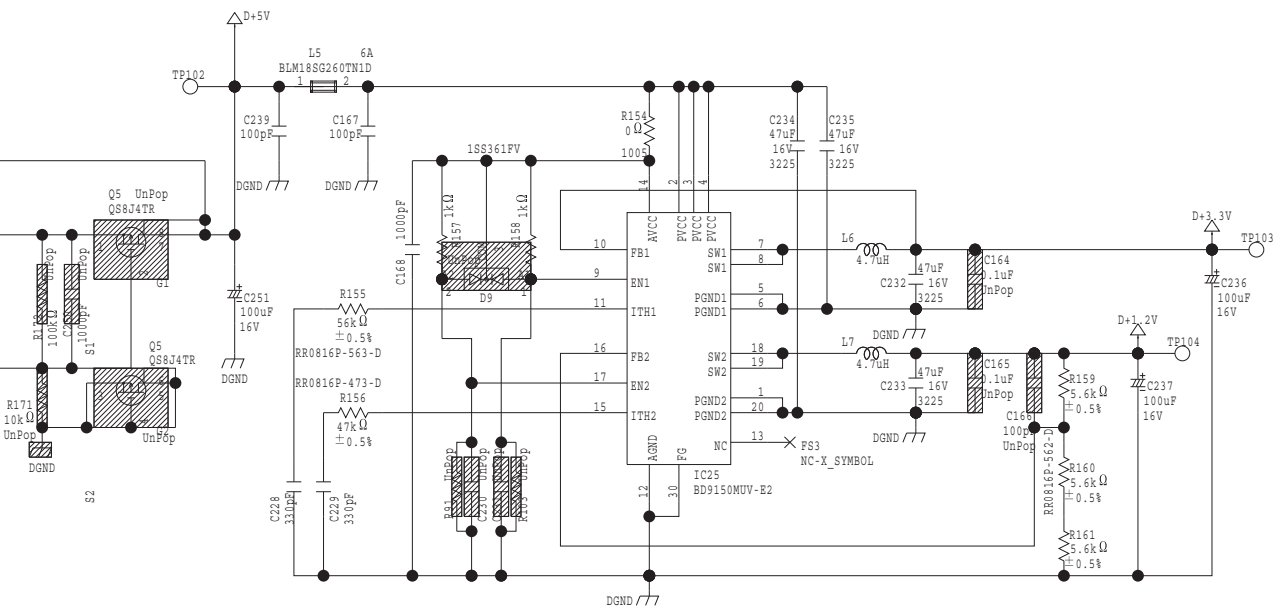
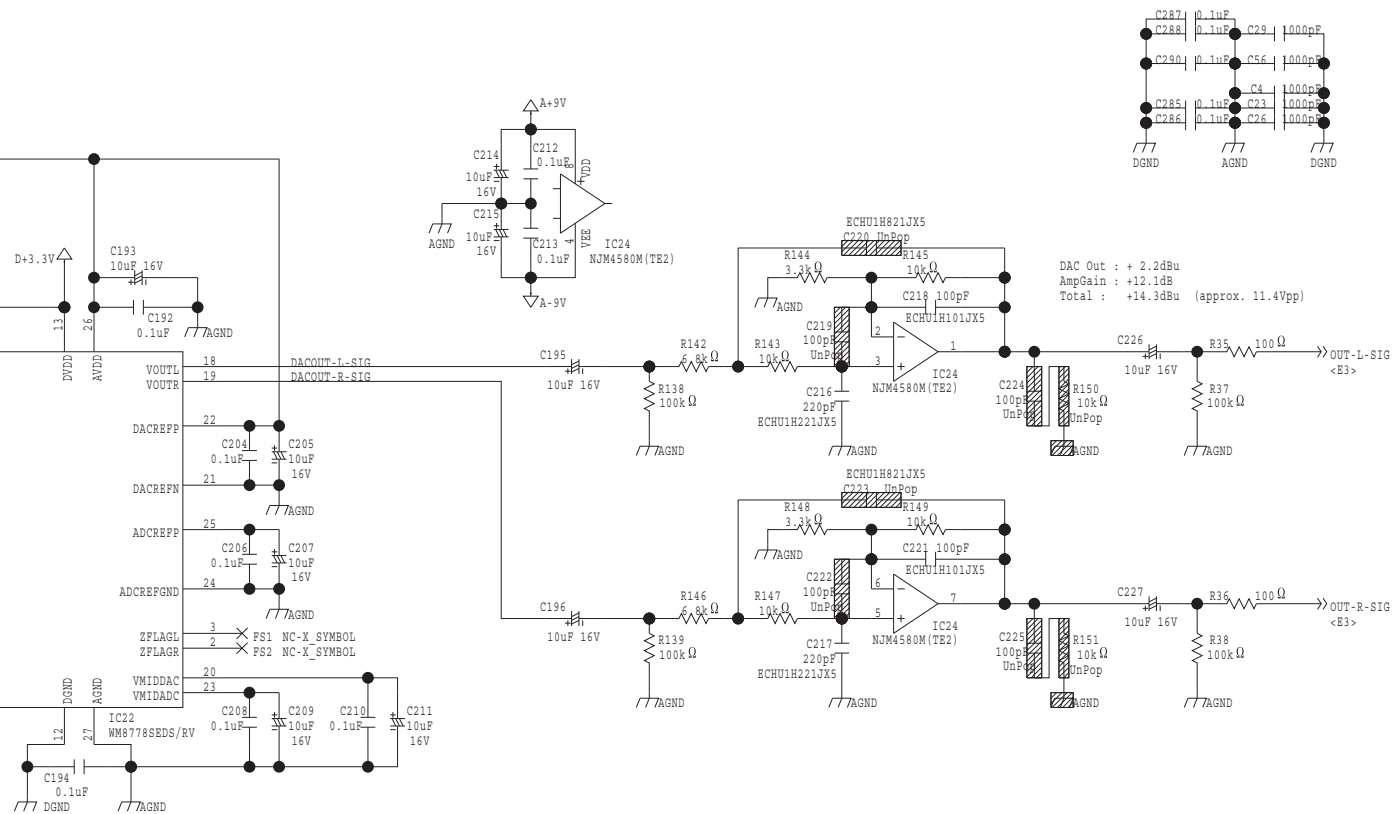




"UnPop" means "Unpopulated".

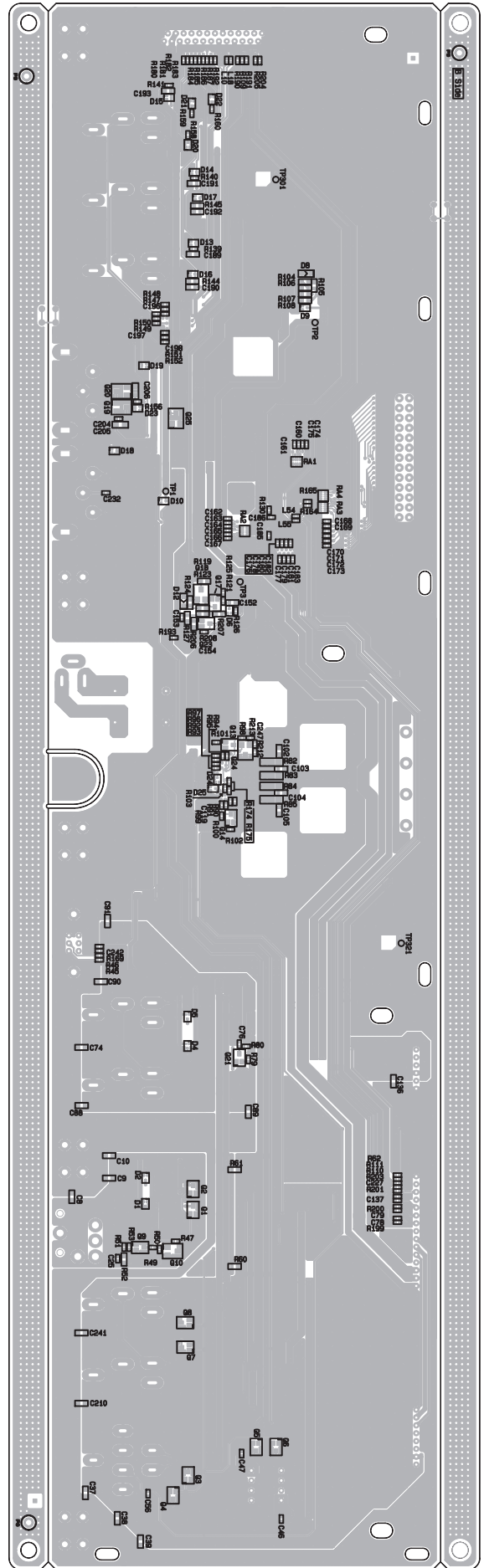
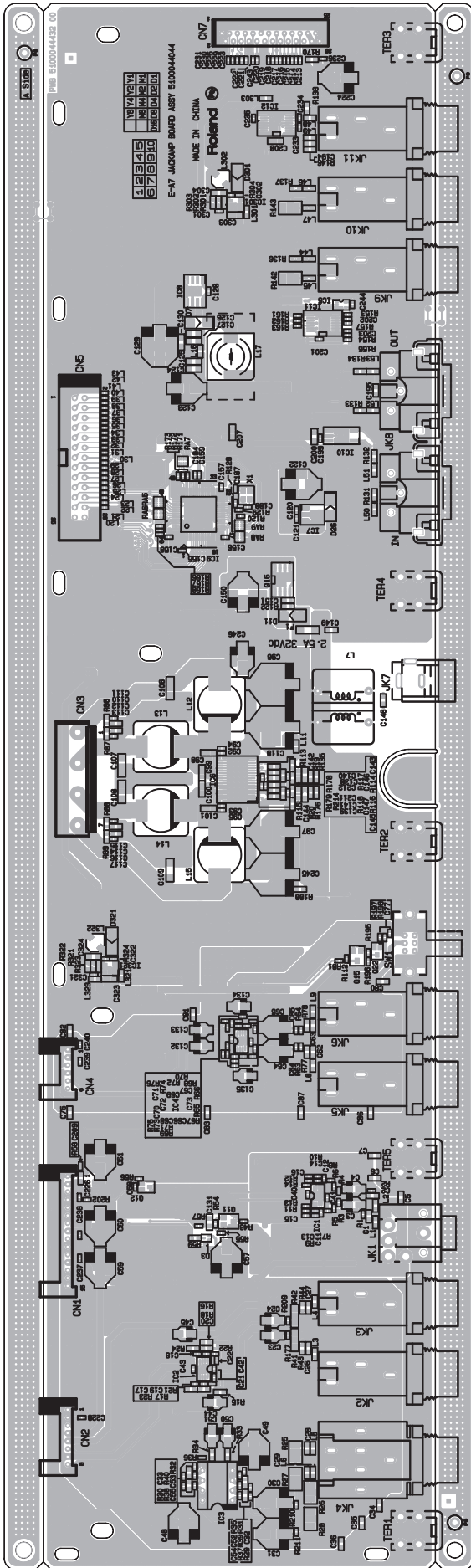
# Circuit Diagram (Main Board: 5/5)





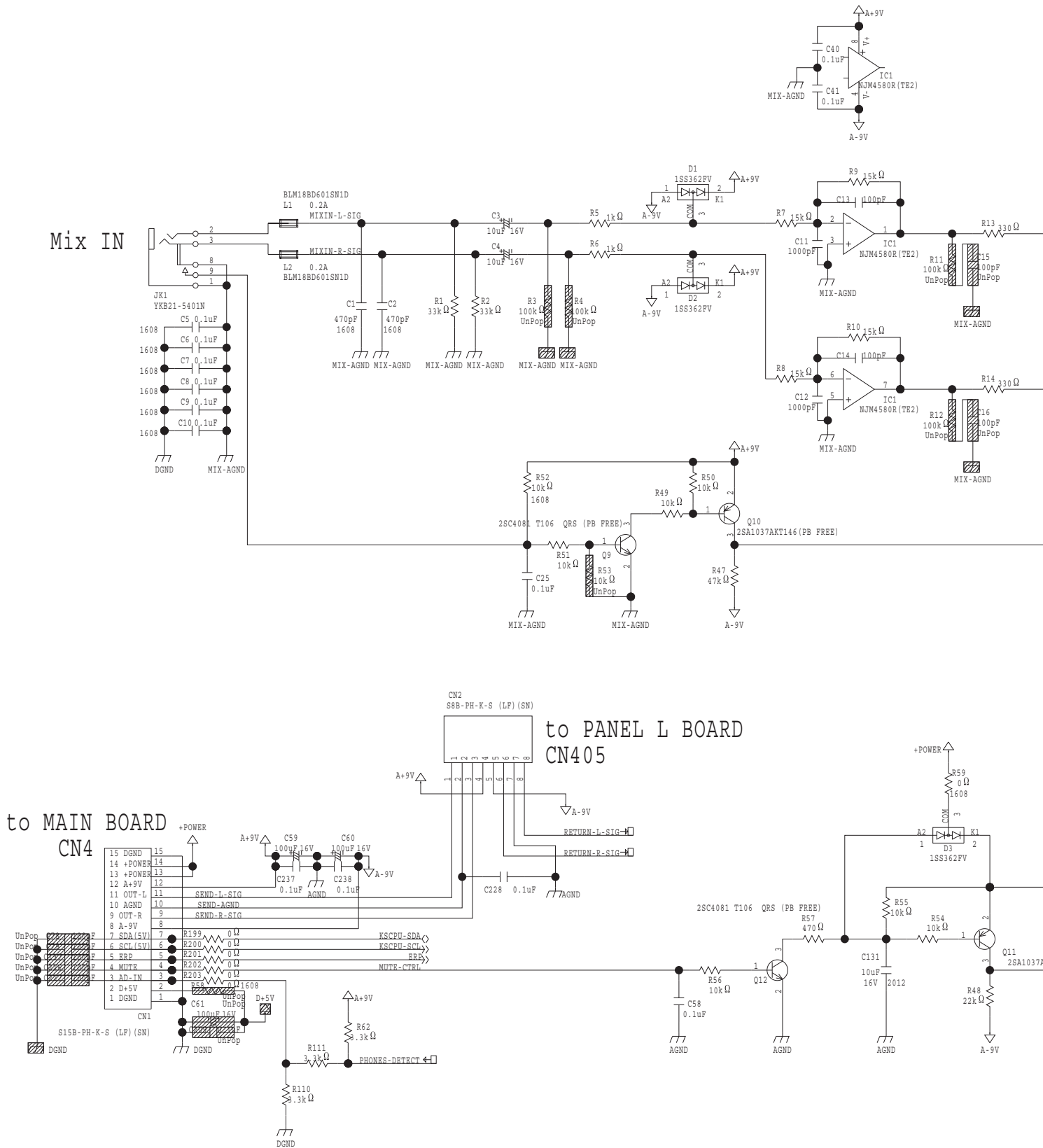
"UnPop" means "Unpopulated".

# Circuit Board (JackAmp Board)

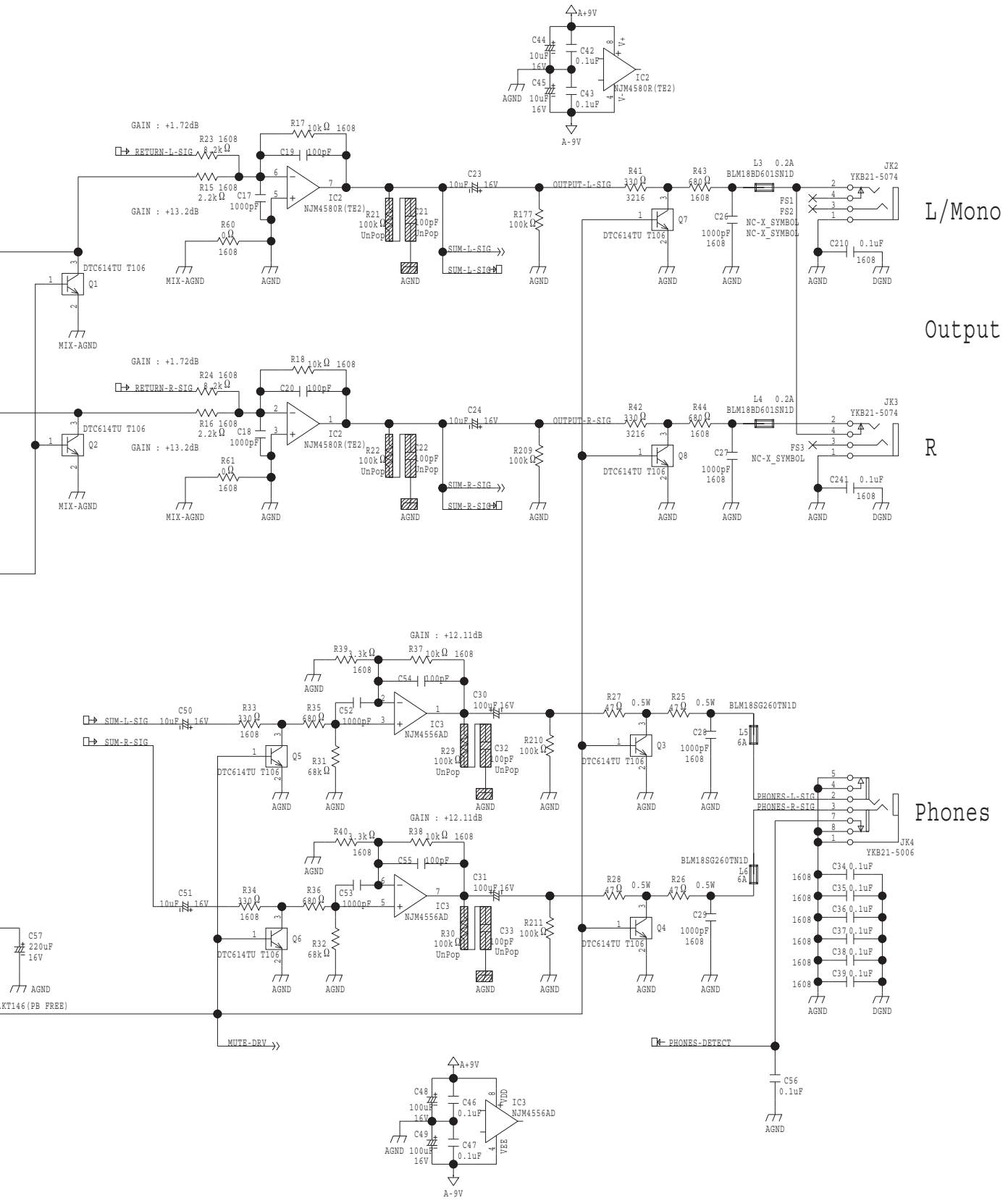




# Circuit Diagram (JackAmp Board: 1/4)

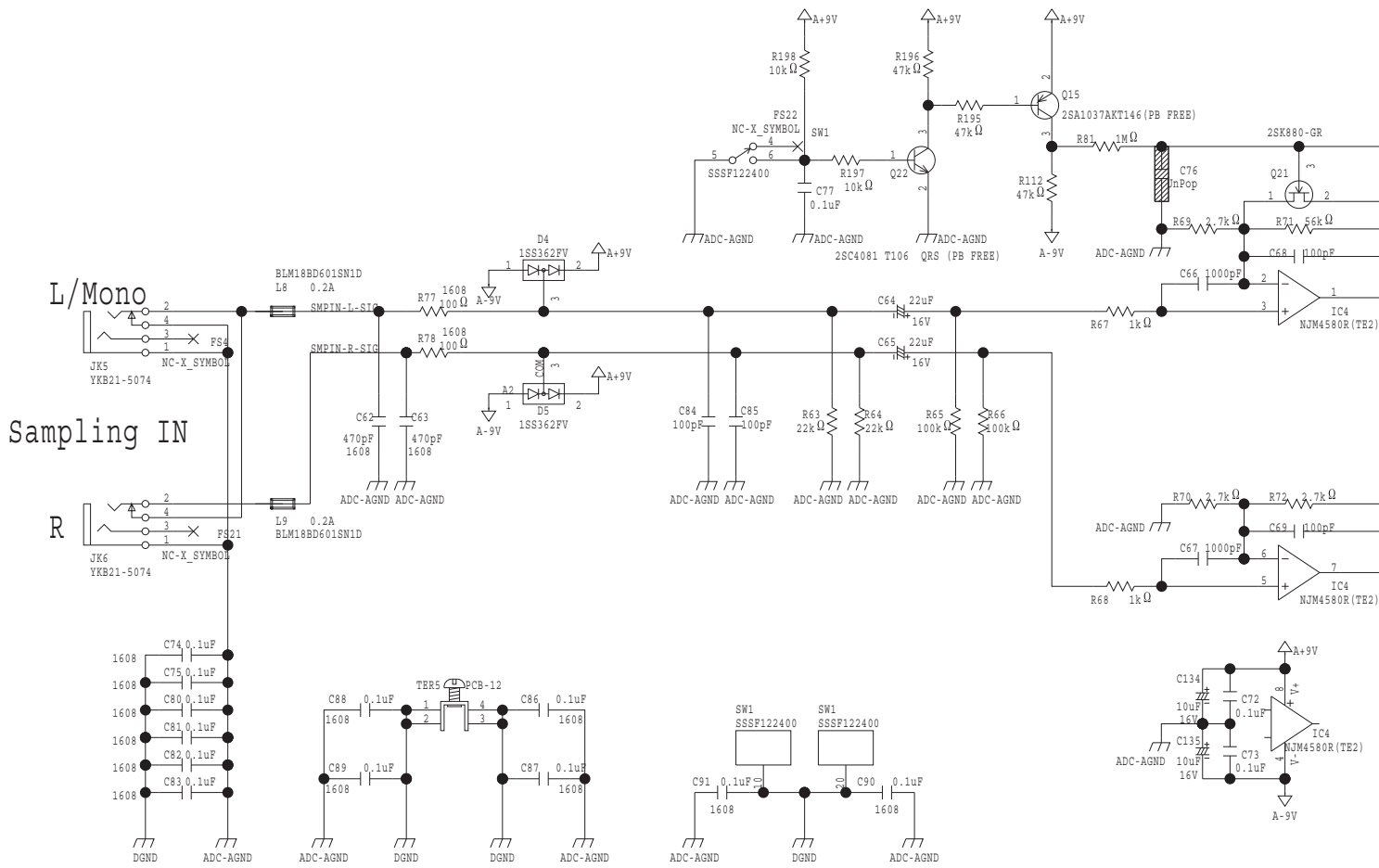


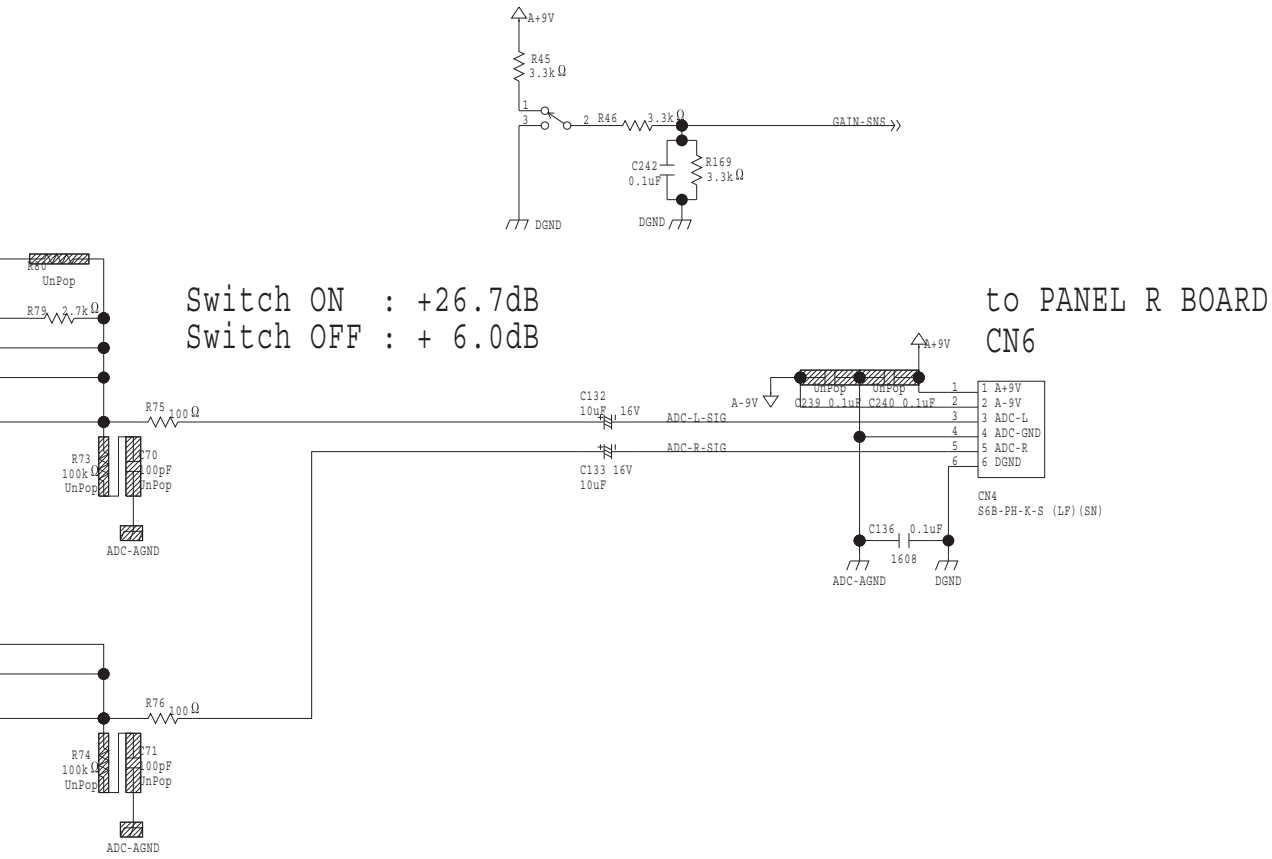




"UnPop" means "Unpopulated".

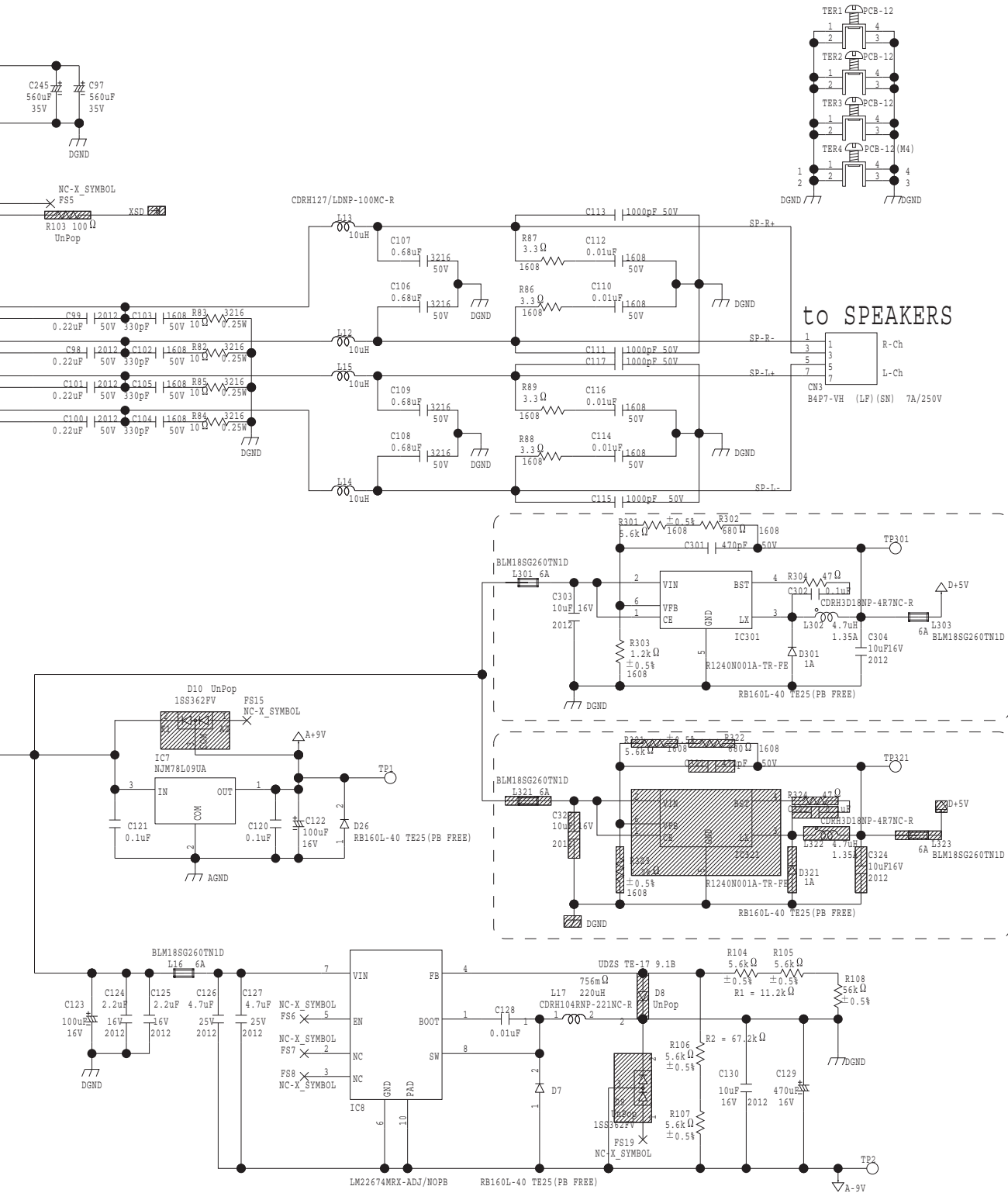
# Circuit Diagram (JackAmp Board: 2/4)





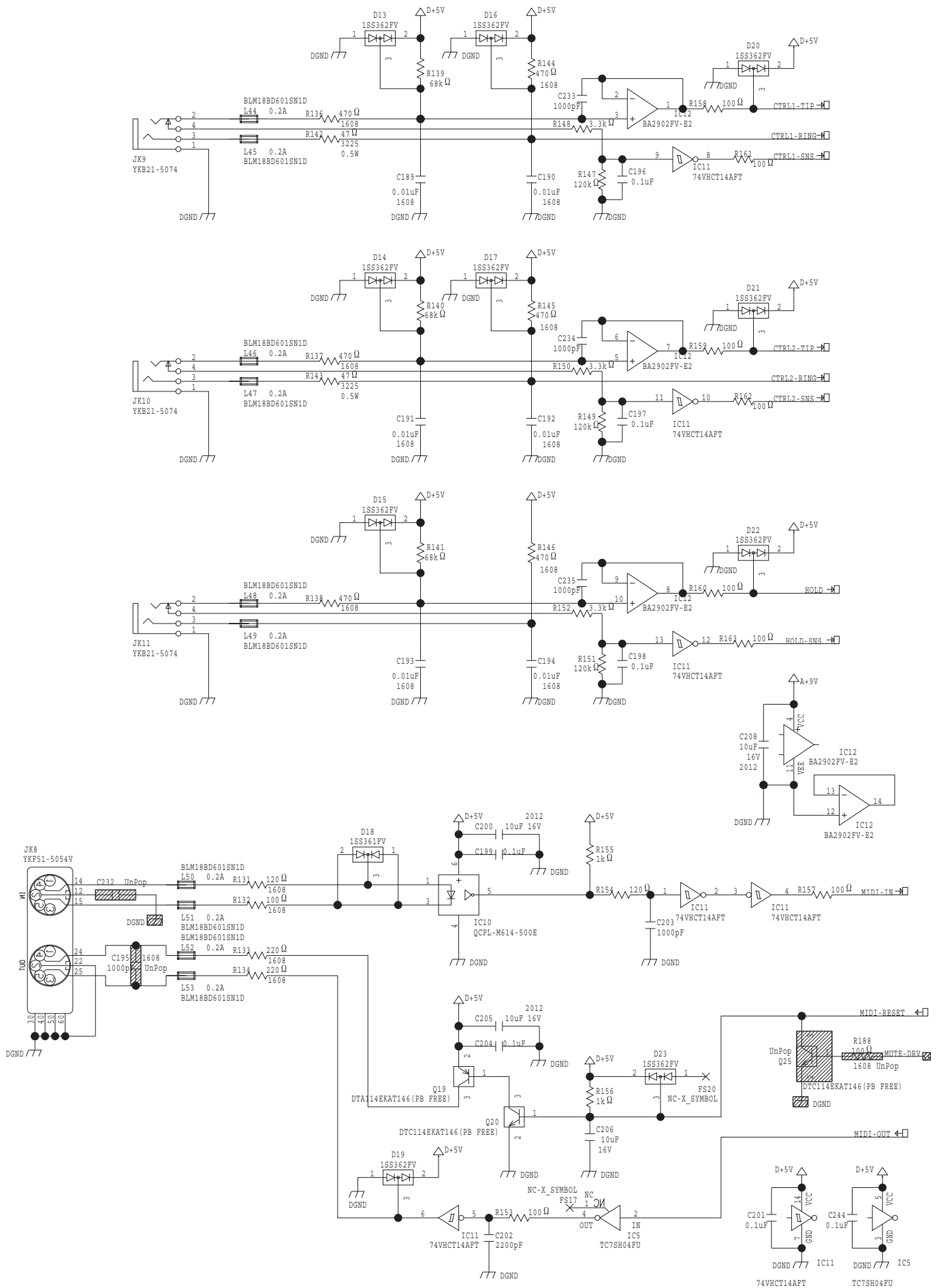
"UnPop" means "Unpopulated".

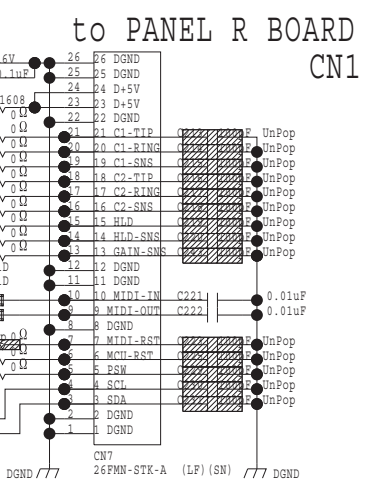
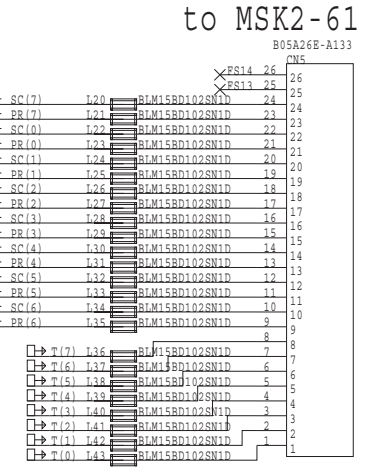
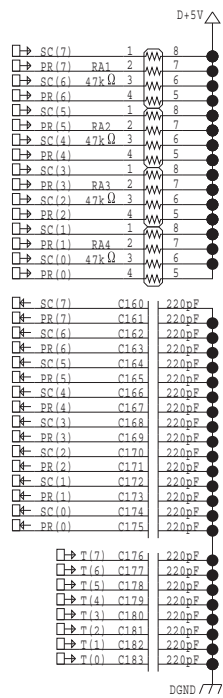
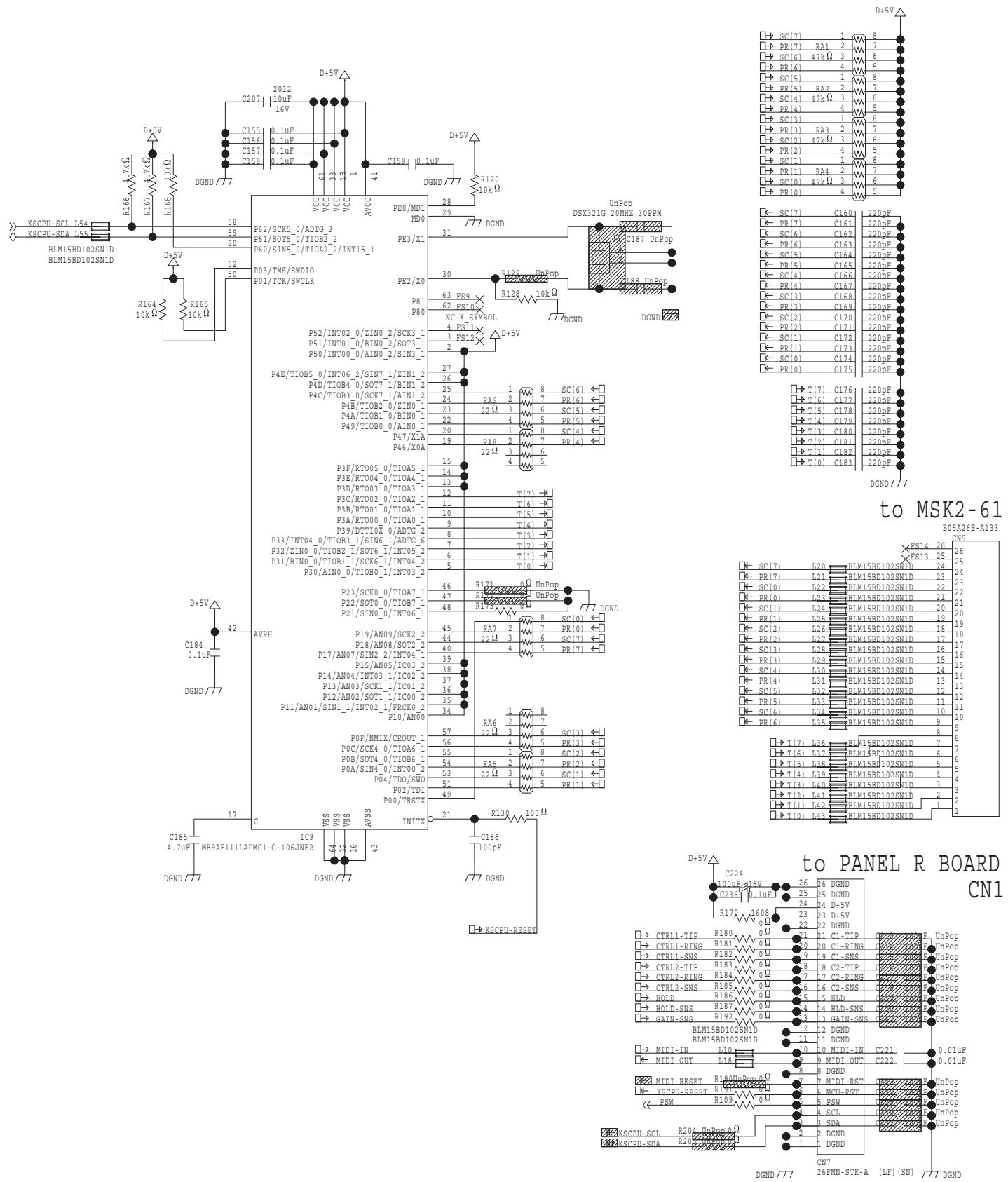




"UnPop" means "Unpopulated".

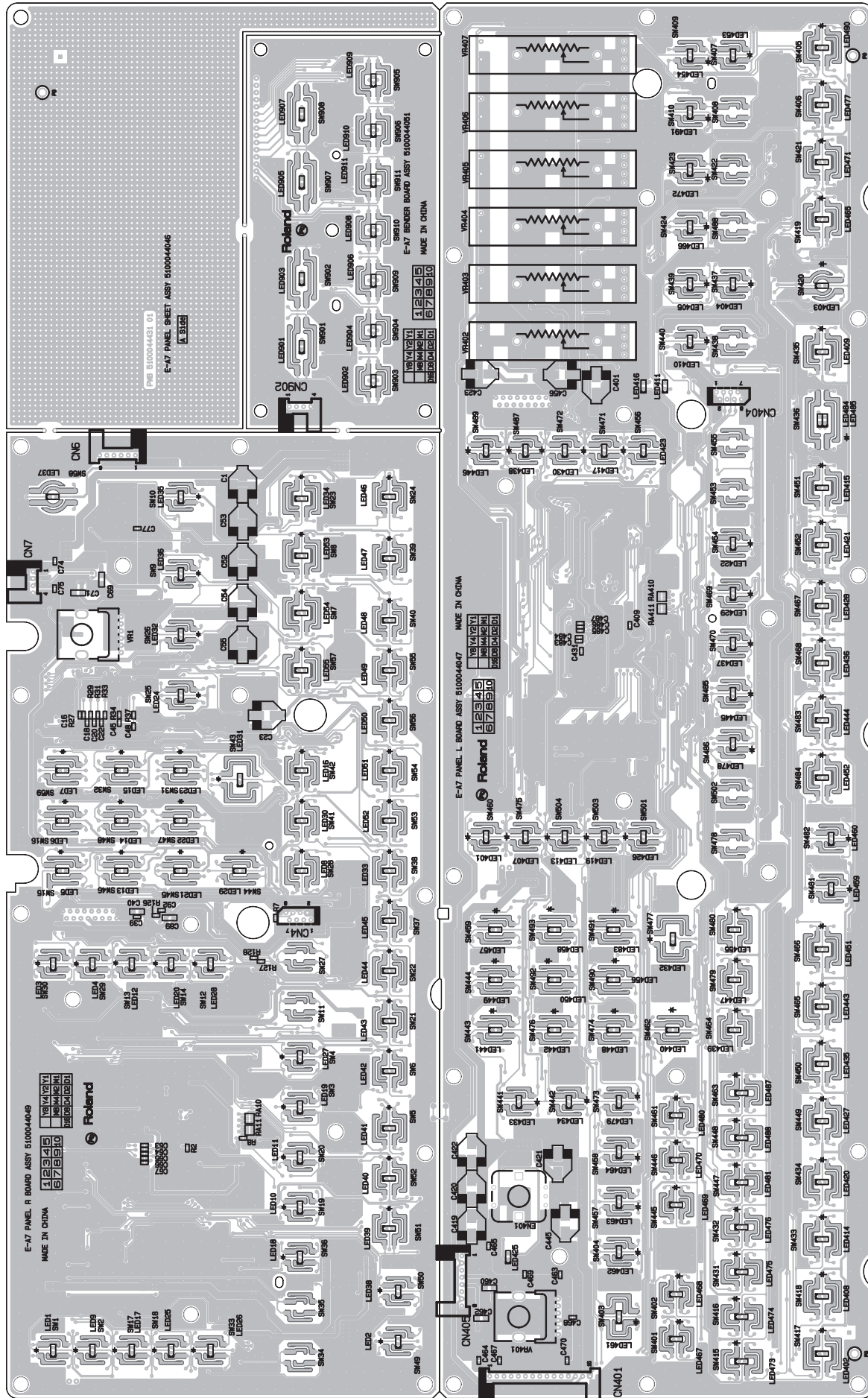
# Circuit Diagram (JackAmp Board: 4/4)



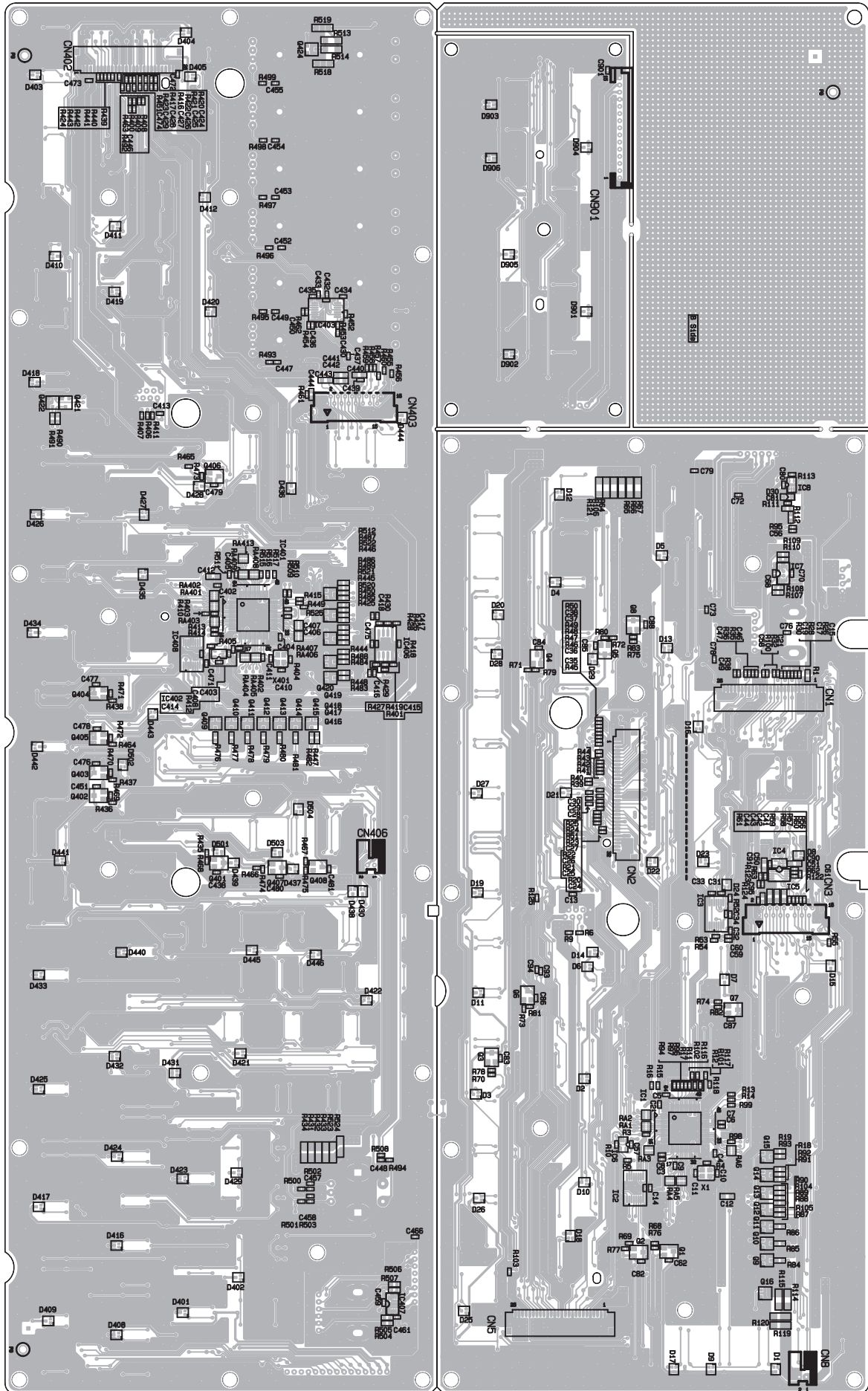


"UnPop" means "Unpopulated".

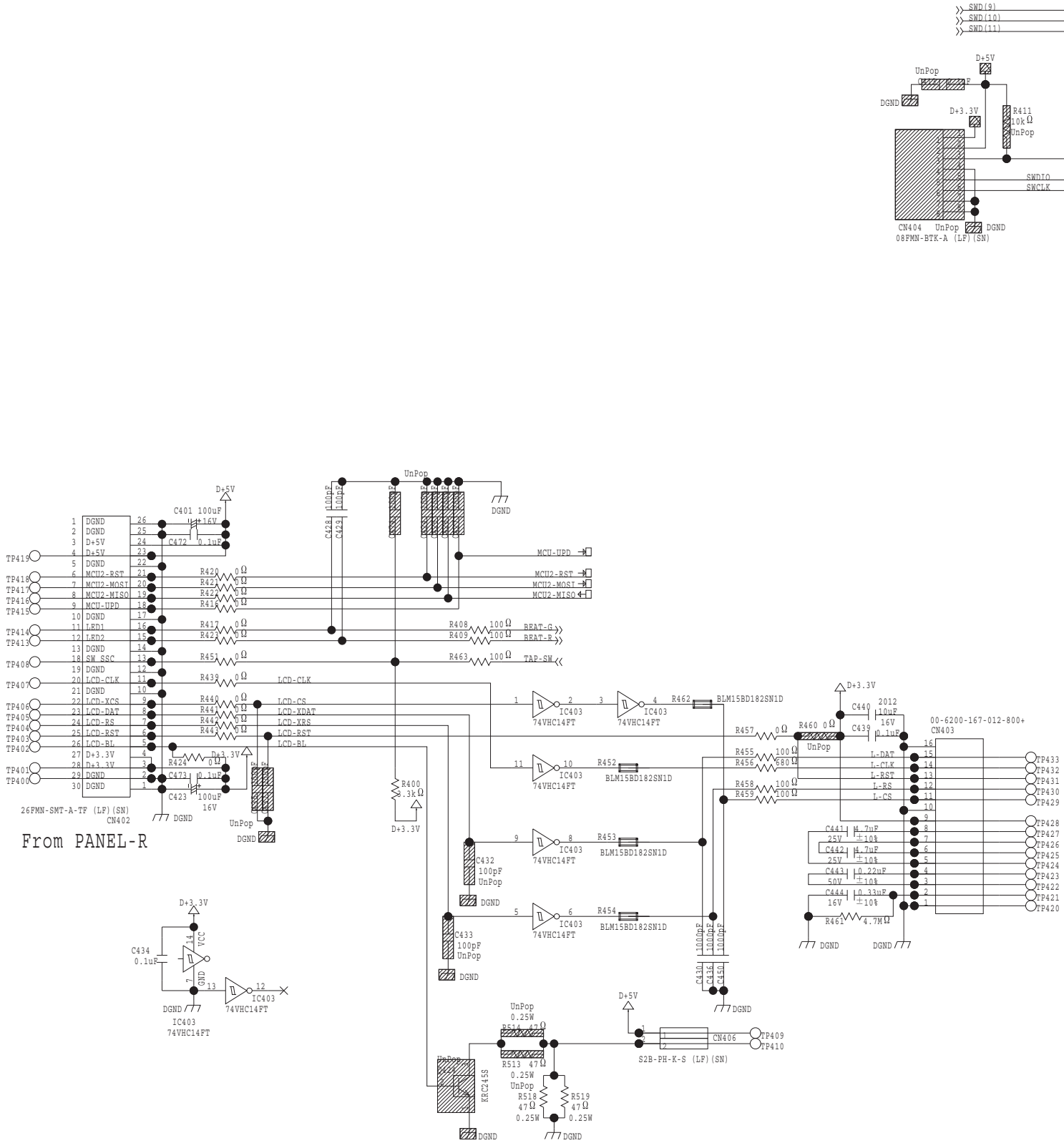
# Circuit Board (Panel L/R, Bender Board)



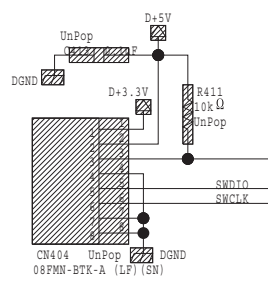




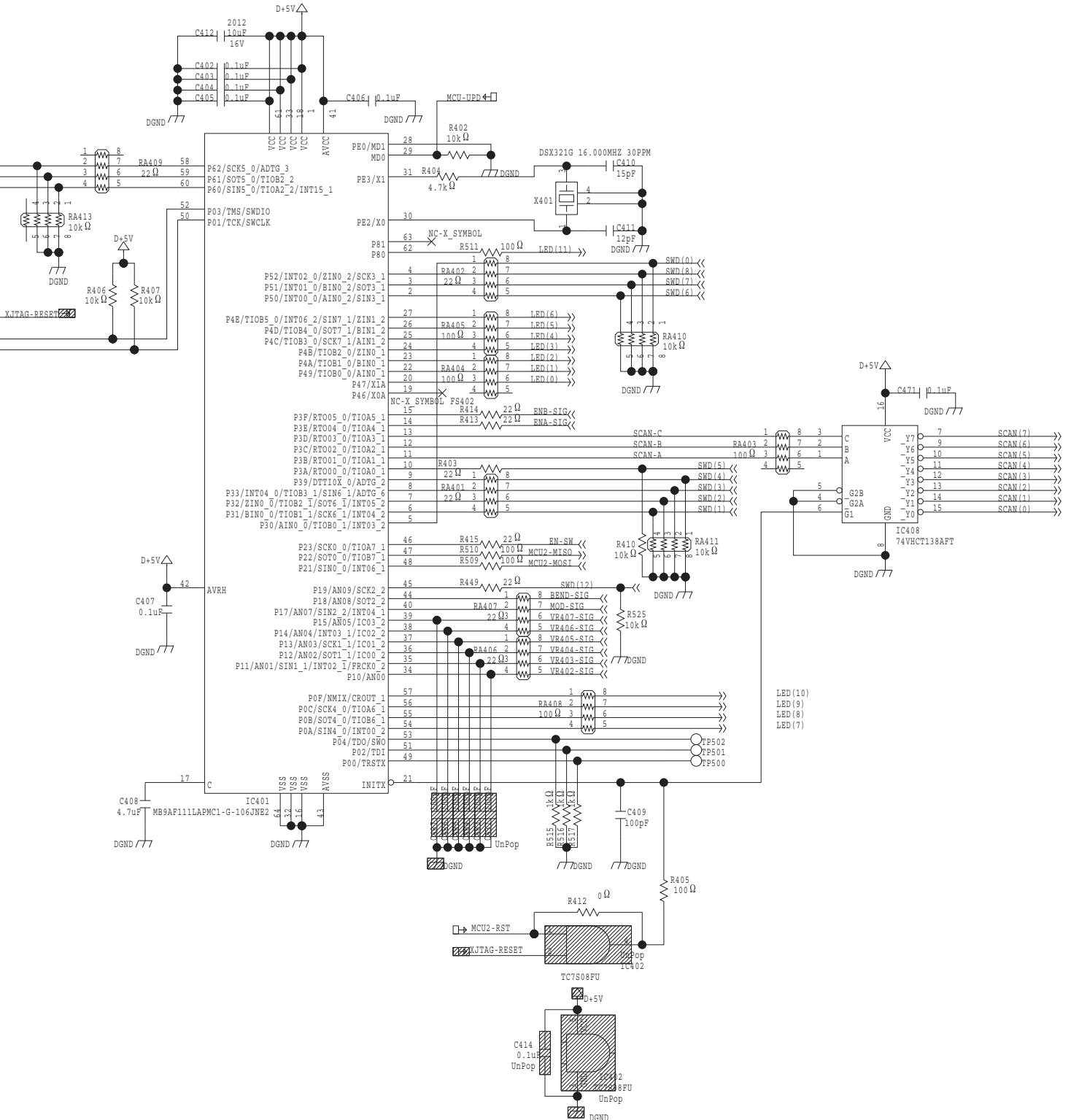
# Circuit Diagram (Panel L Board: 1/4)



>> SWD(9)  
>> SWD(10)  
>> SWD(11)

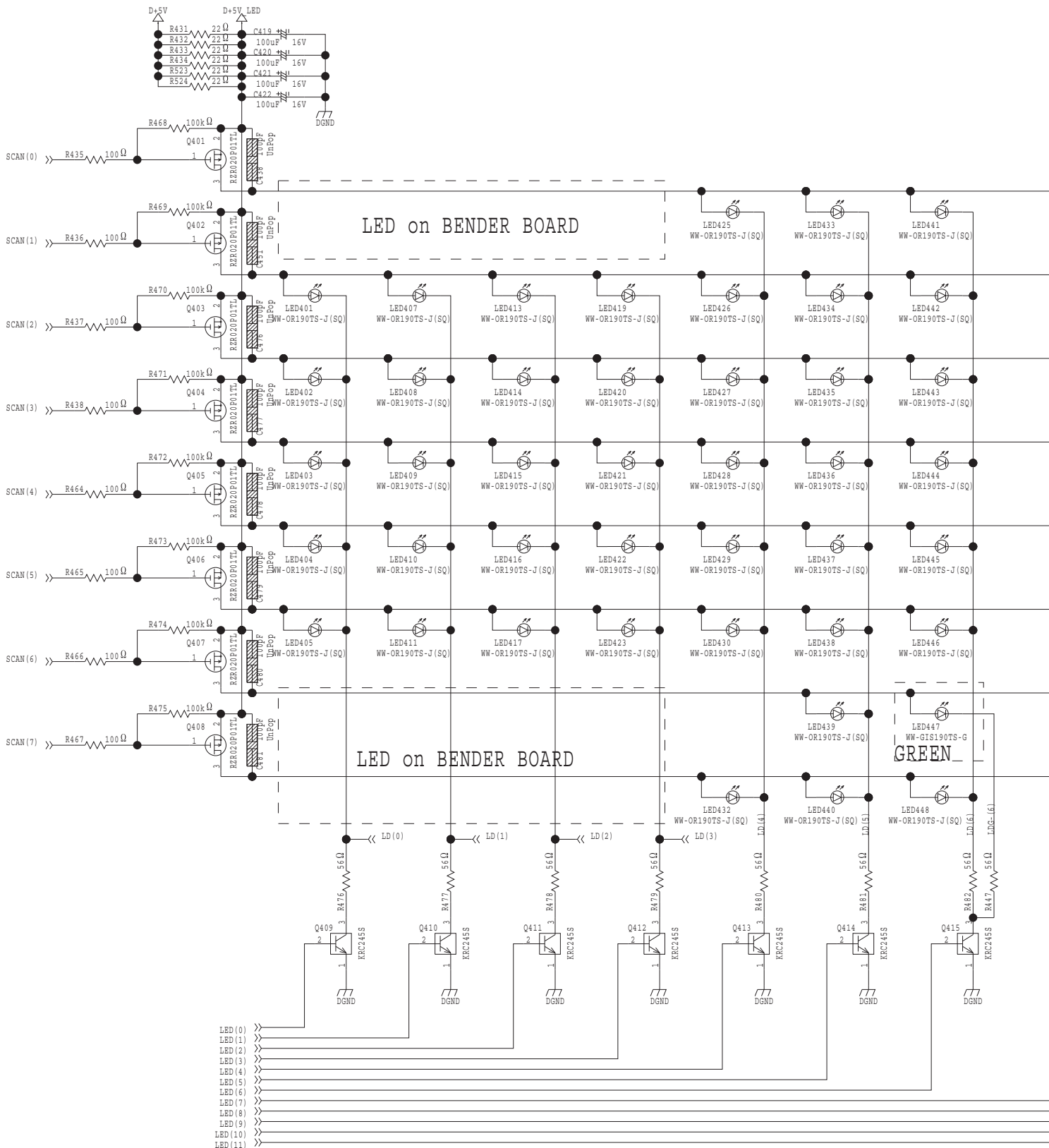


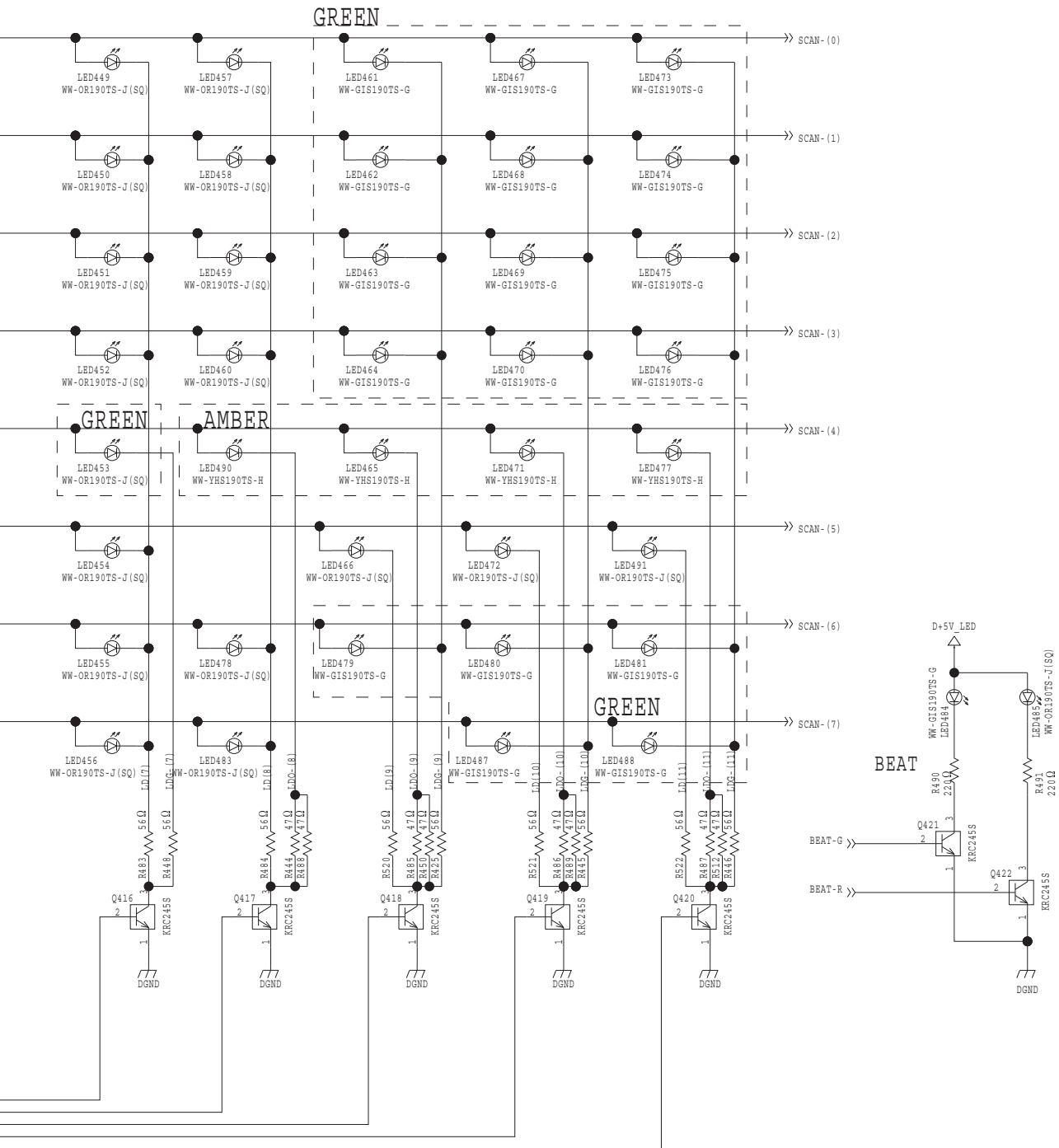
From PANEL-R



"UnPop" means "Unpopulated".

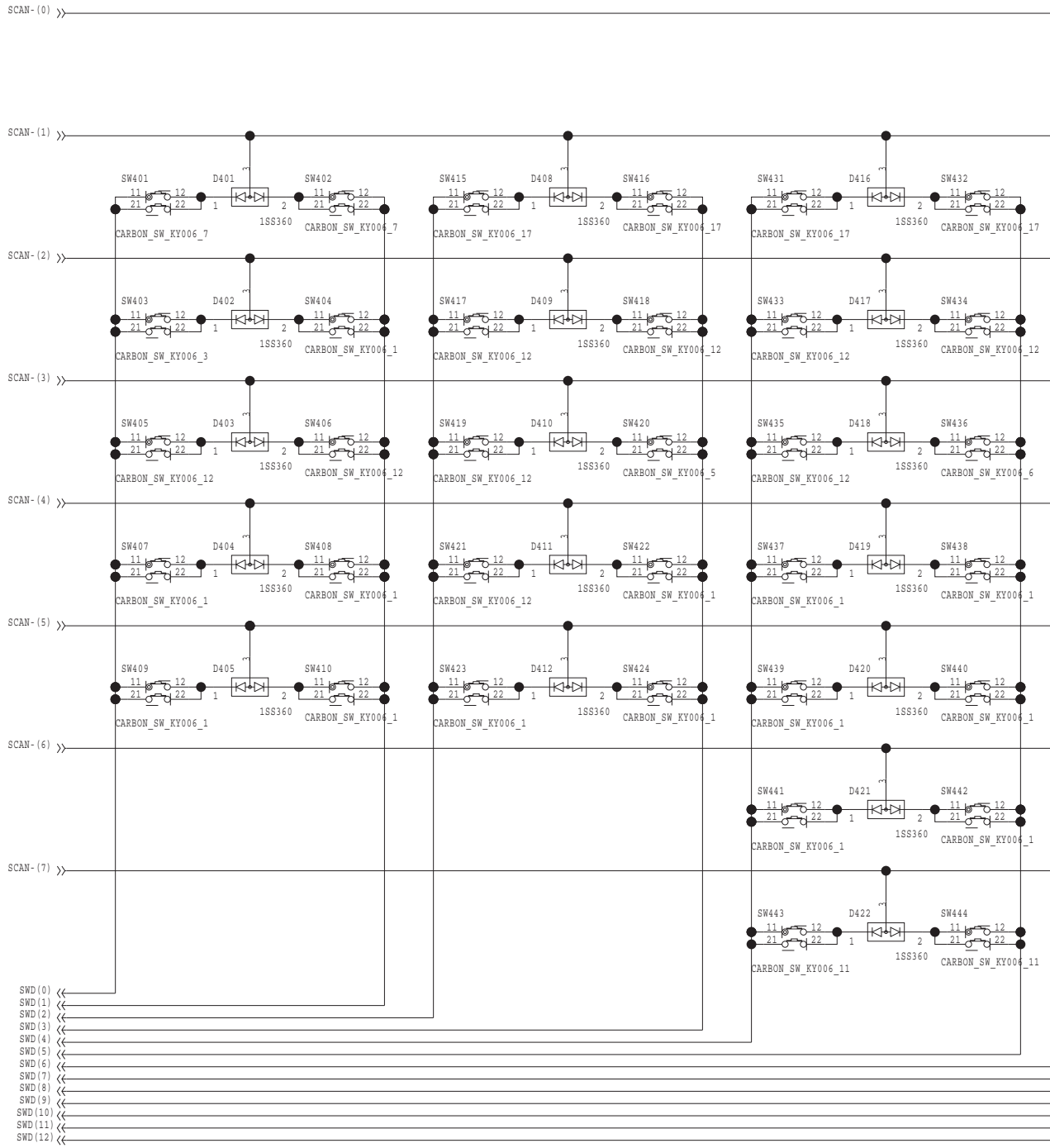
# Circuit Diagram (Panel L Board: 2/4)

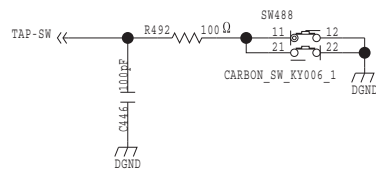
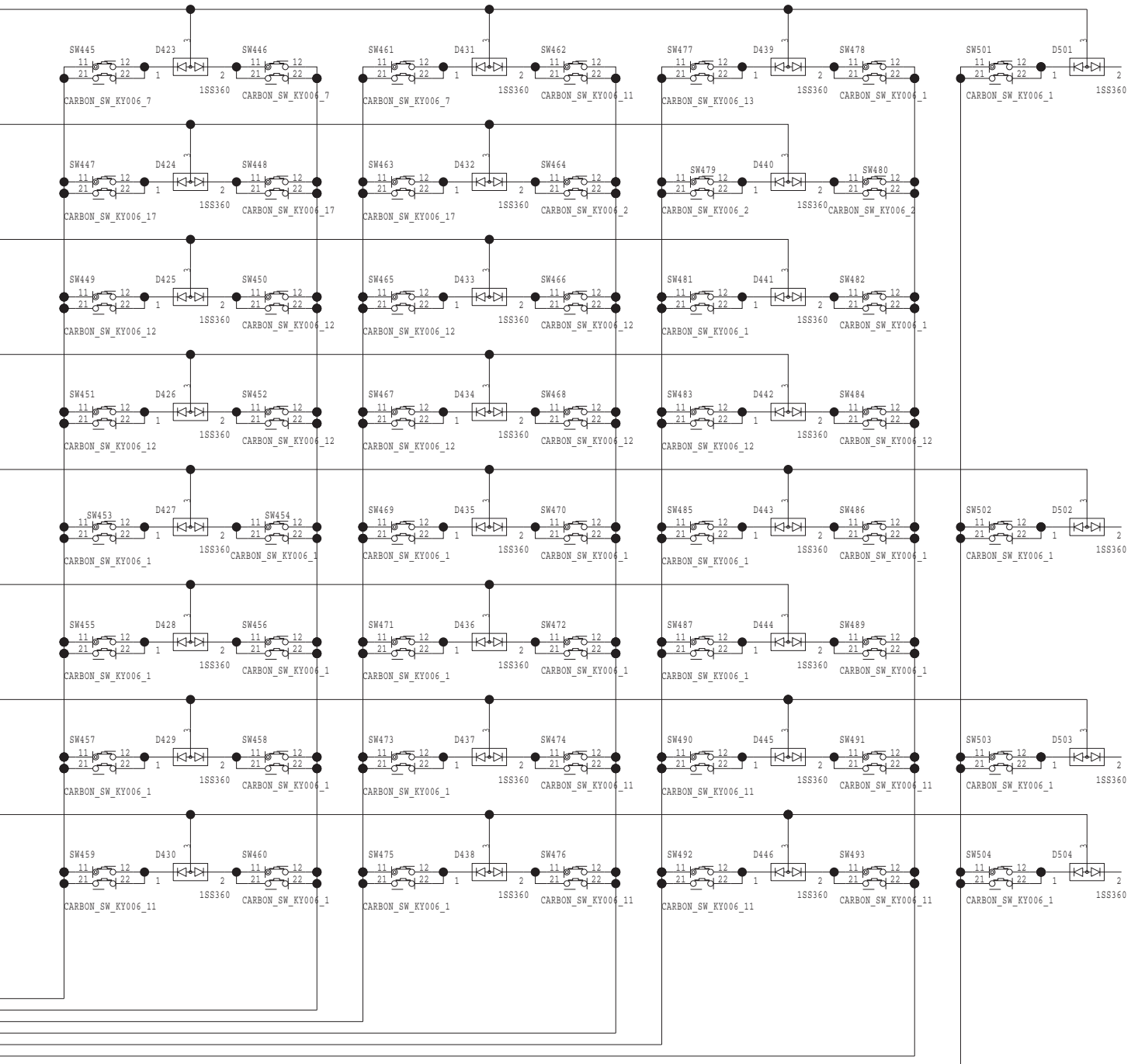




"UnPop" means "Unpopulated".

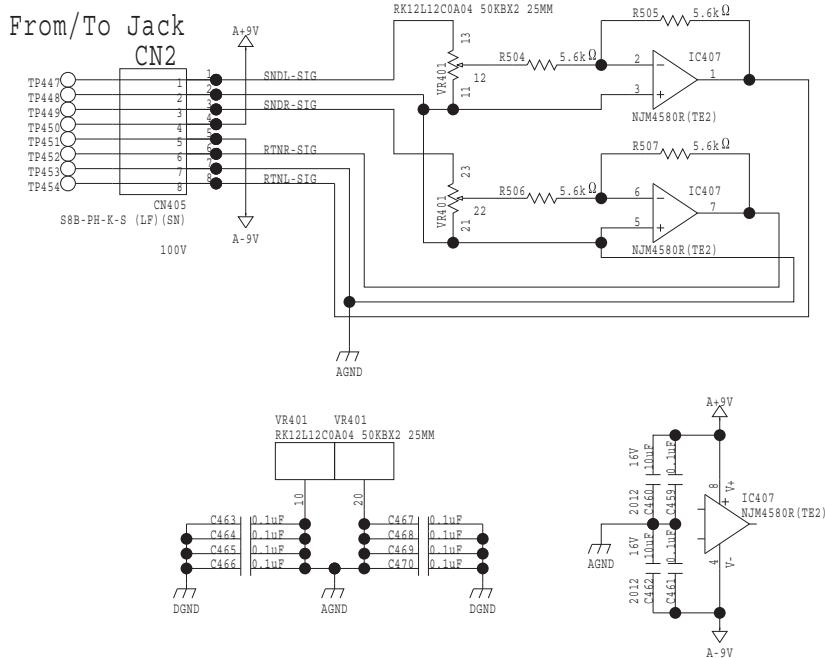
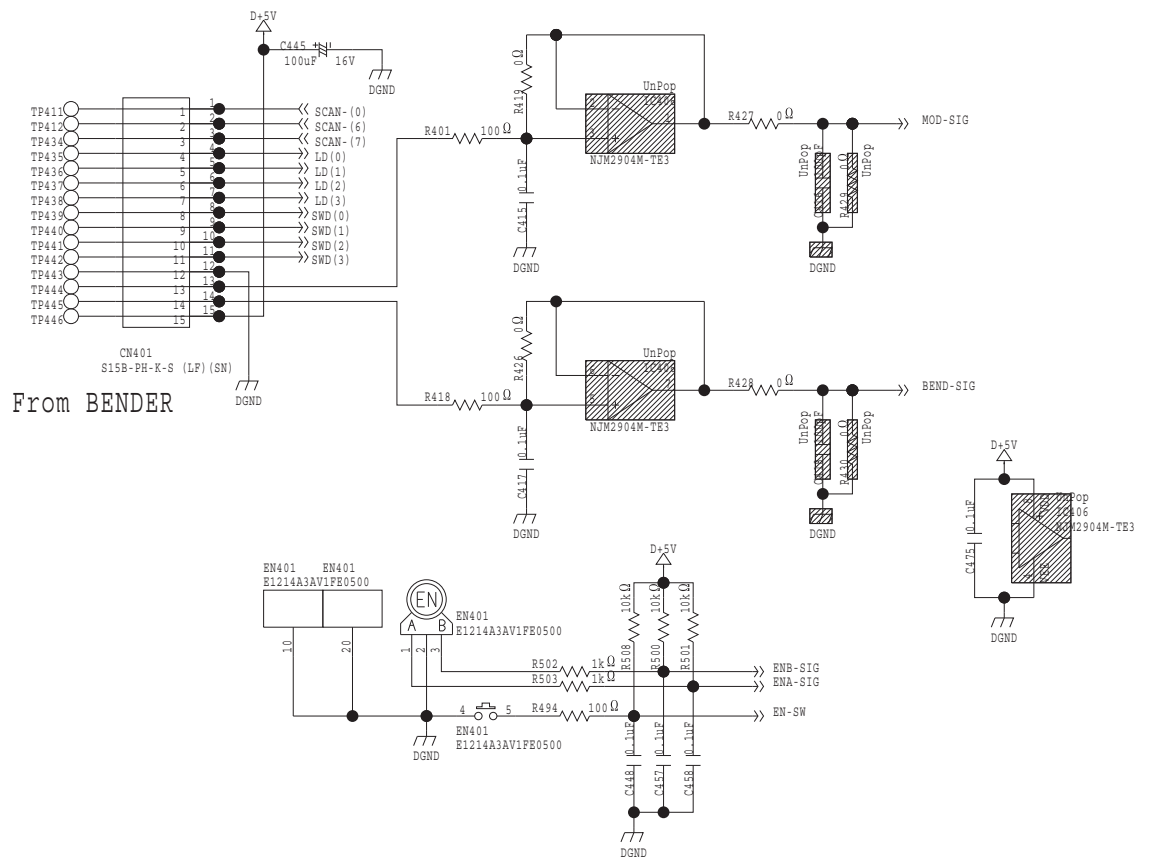
# Circuit Diagram (Panel L Board: 3/4)



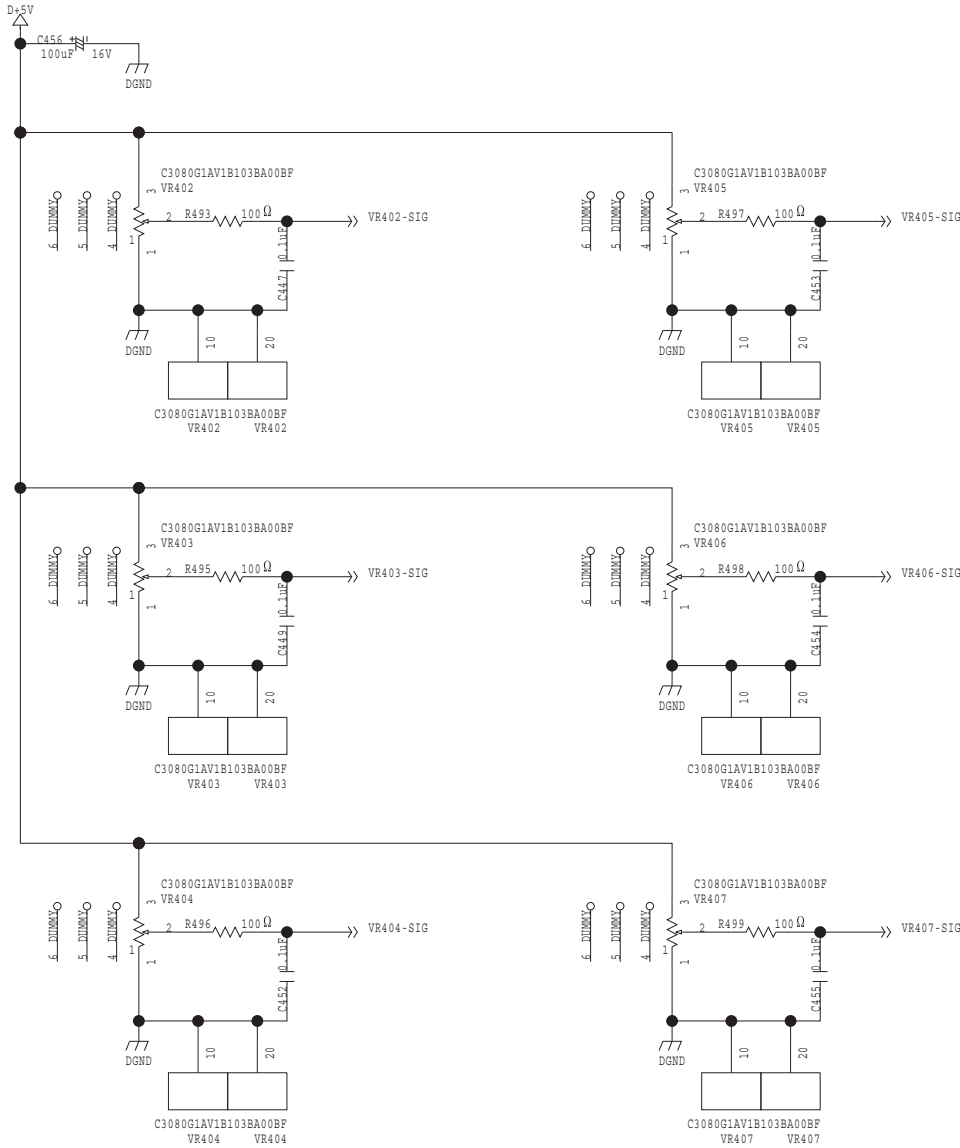


"UnPop" means "Unpopulated".

# Circuit Diagram (Panel L Board: 4/4)

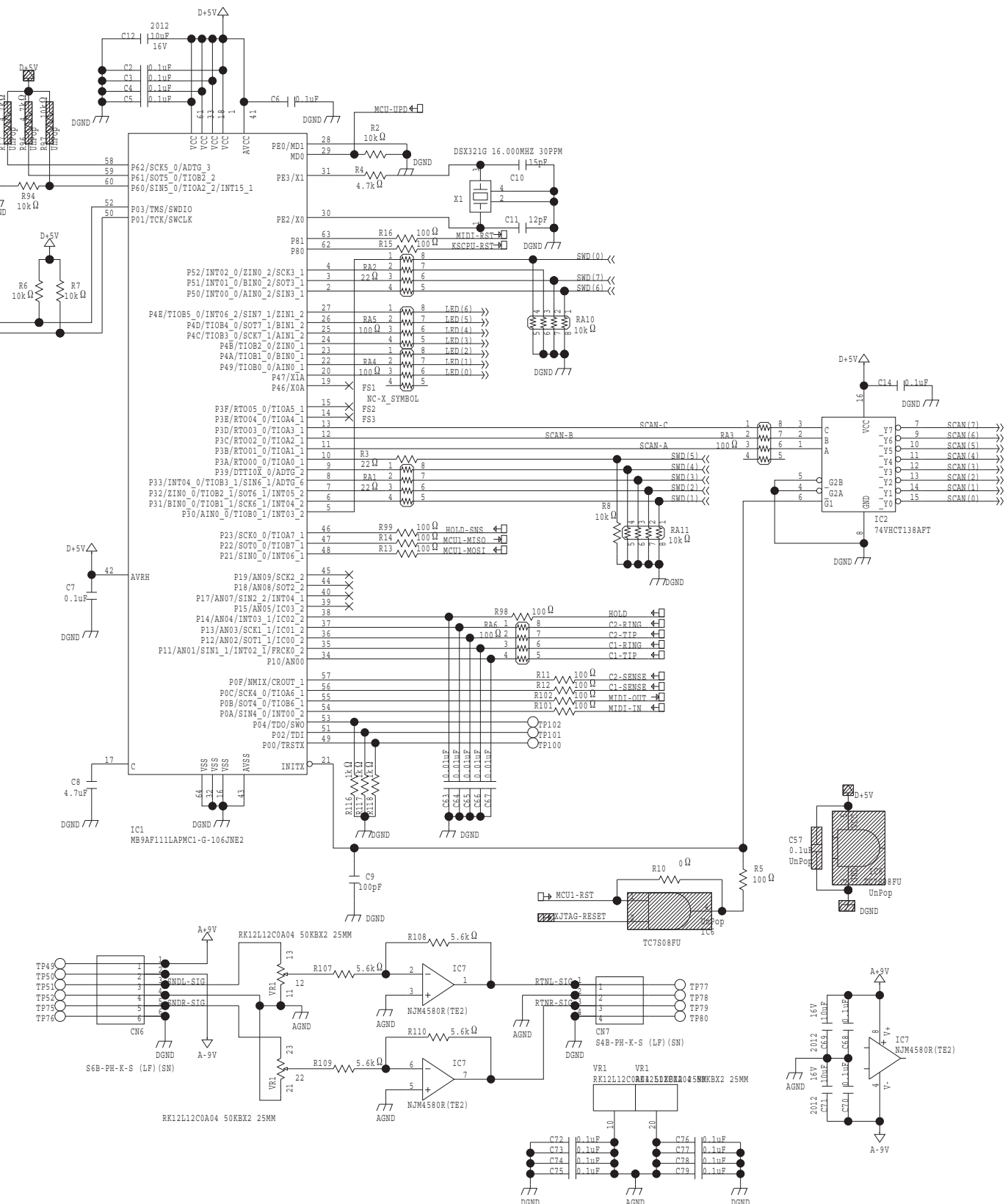






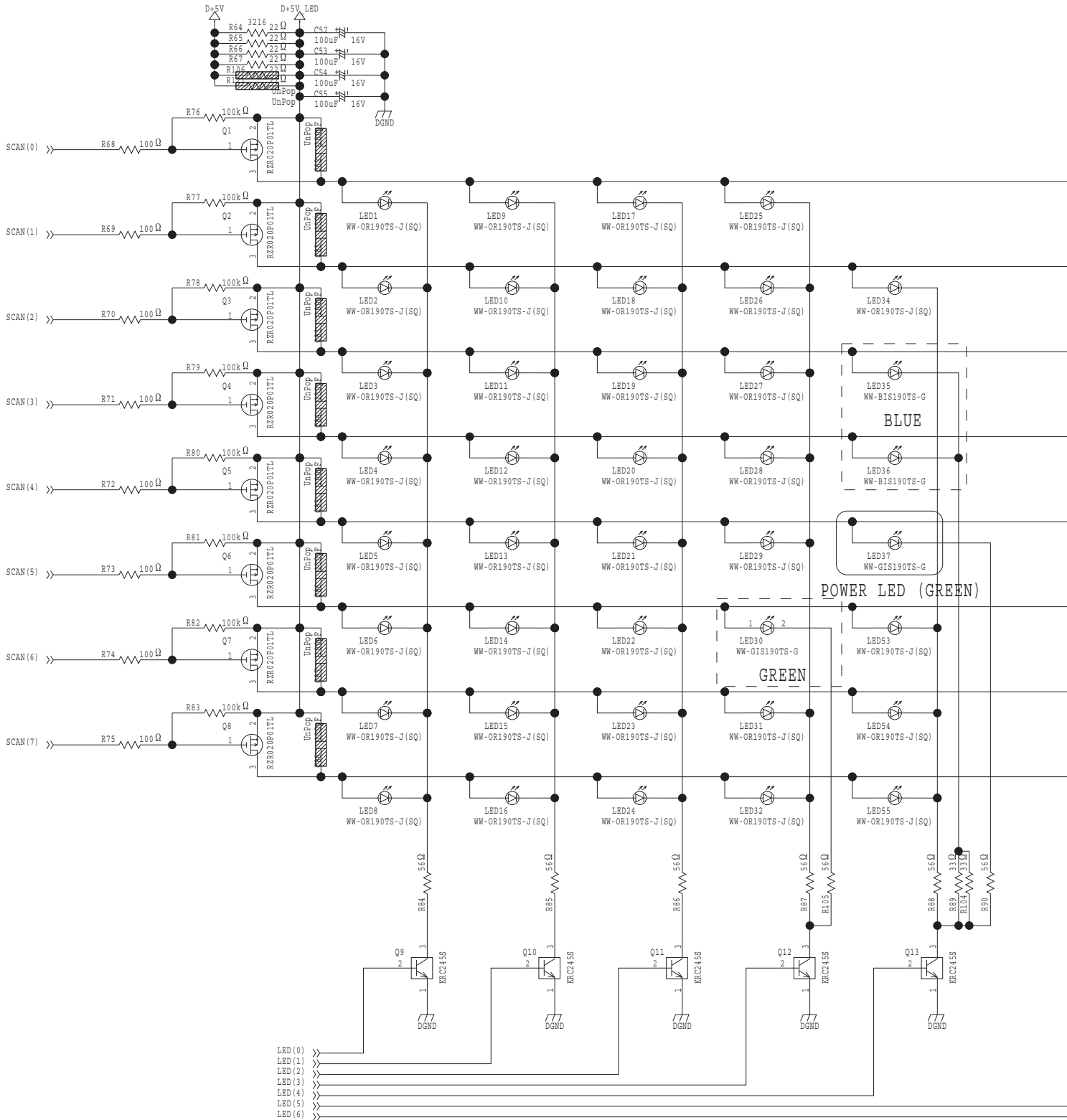
"UnPop" means "Unpopulated".

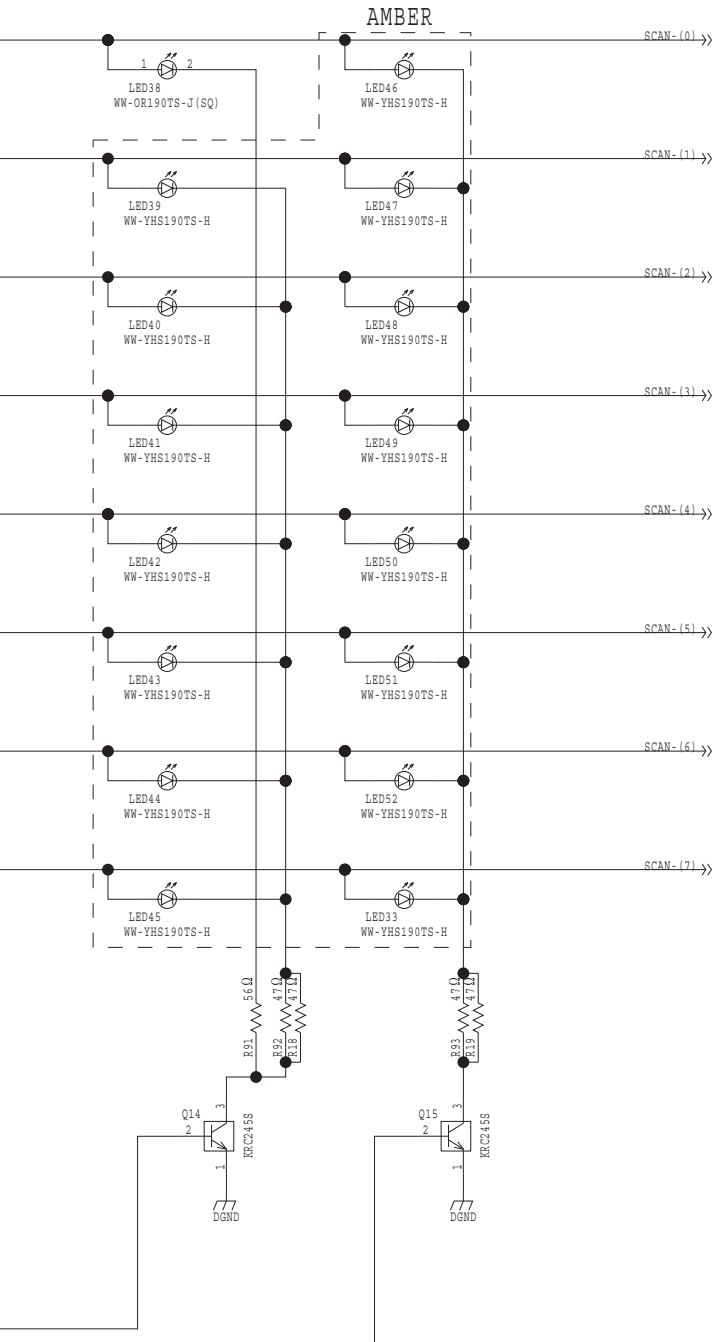




"UnPop" means "Unpopulated".

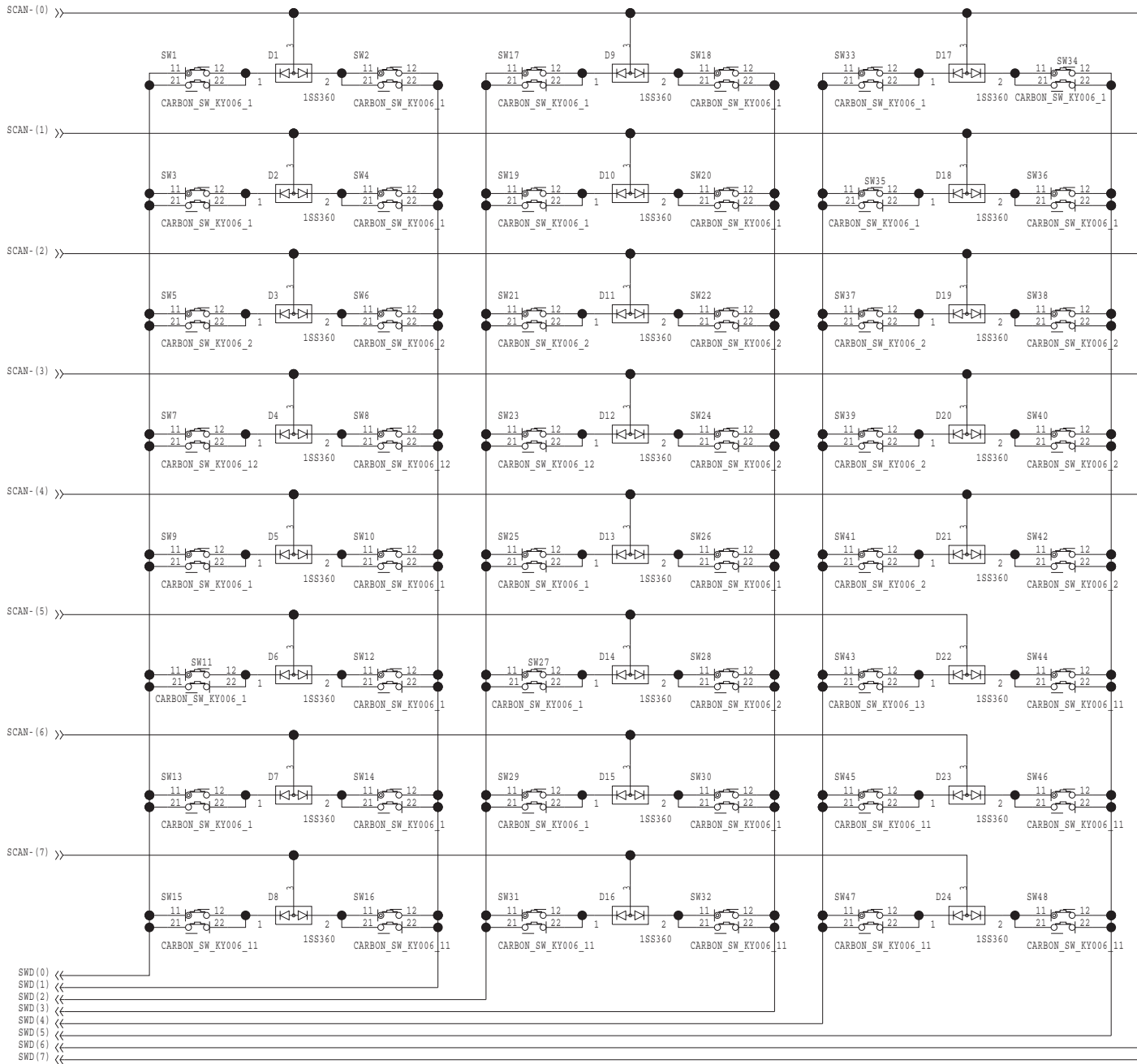
# Circuit Diagram (Panel R Board: 2/3)

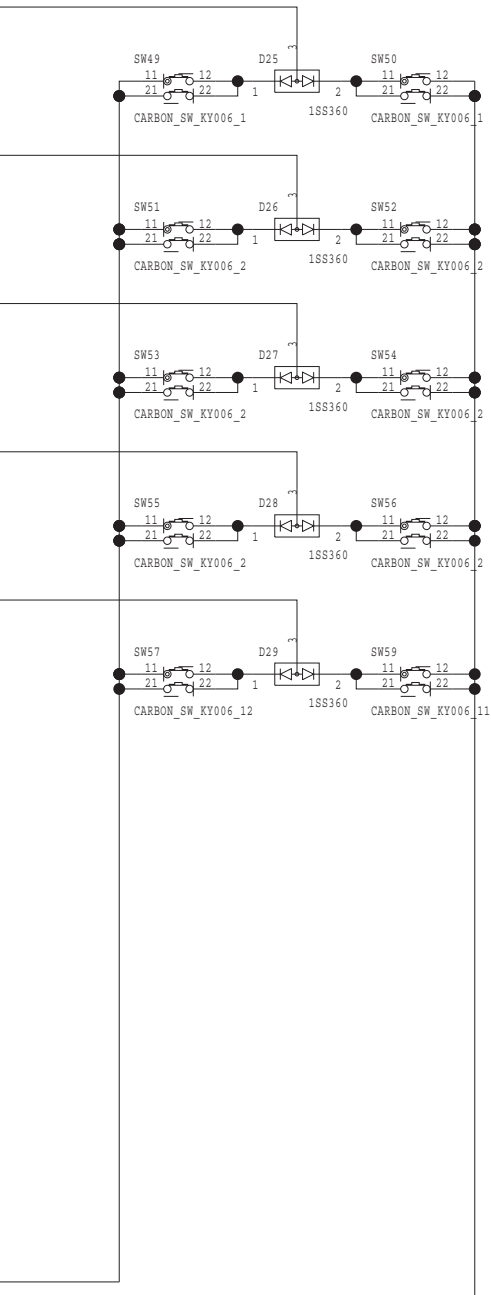




"UnPop" means "Unpopulated".

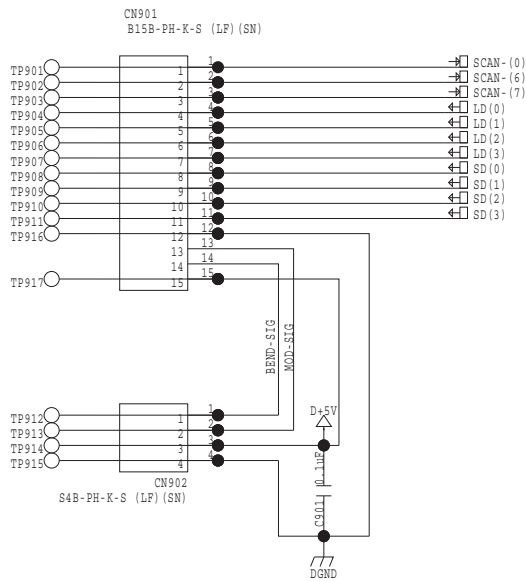
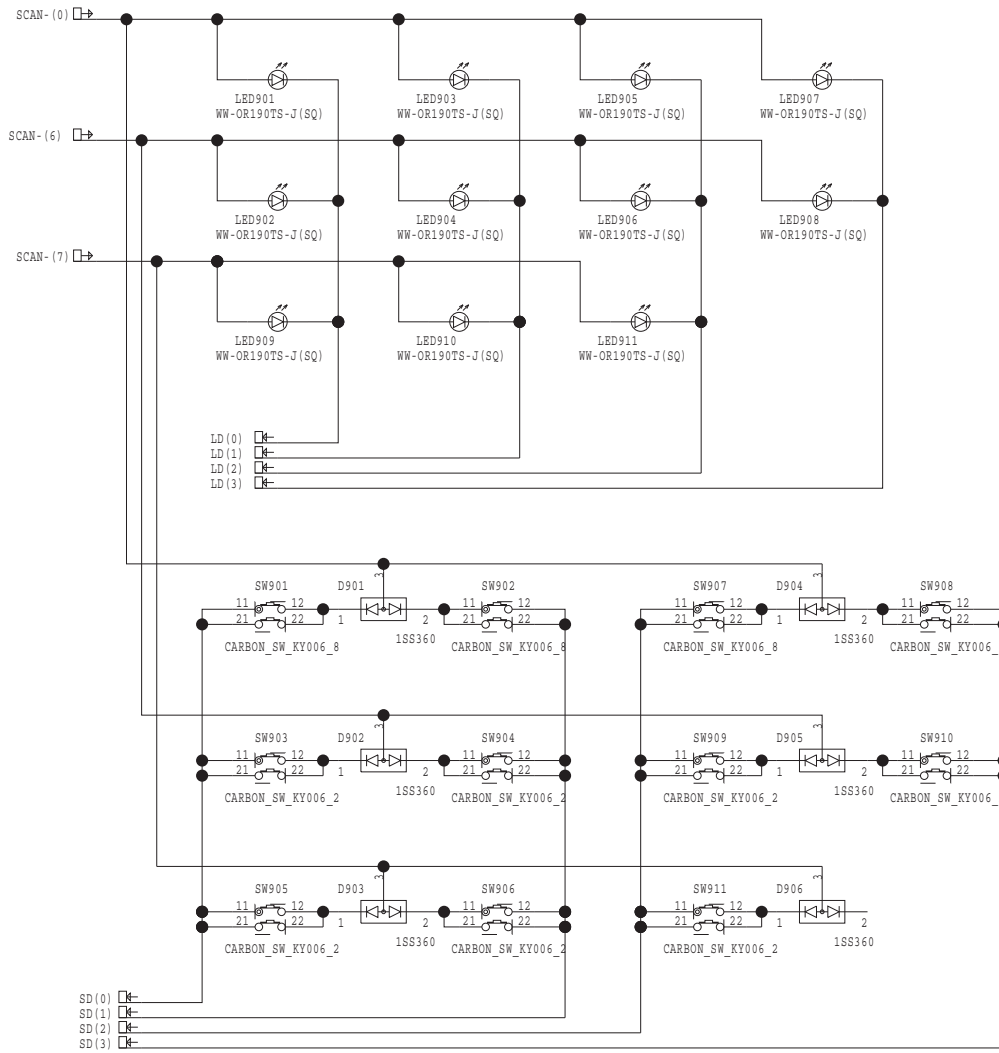
# Circuit Diagram (Panel R Board: 3/3)





"UnPop" means "Unpopulated".

# Circuit Diagram (Bender Board)



"UnPop" means "Unpopulated".