INTEGRA-7
SuperNATURAL SOUND MODULE

SERVICE NOTES
Issued by RJA

Table of Contents

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. 16) 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 INTEGRA-7: SuperNATURAL Sound Module

[Sound Generator Section]

Maximum Polyphony

128 voices (varies according to the sound generator load)

Parts

16 parts

Tones

SuperNATURAL Acoustic
SuperNATURAL Synth
SuperNATURAL Drum Kit
PCM Synth
PCM Drum Kit

* *GM2 compatible sounds are included.*

Expansion Virtual Slots

4 Slots

* *The following titles are loaded from the internal memory into the virtual slots.*

SRX Series (12 titles)

- SRX-01 Dynamic Drum Kits
- SRX-02 Concert Piano
- SRX-03 Studio SRX
- SRX-04 Symphonique Strings
- SRX-05 Supreme Dance
- SRX-06 Complete Orchestra
- SRX-07 Ultimate Keys
- SRX-08 Platinum Trax
- SRX-09 World Collection
- SRX-10 Big Brass Ensemble
- SRX-11 Complete Piano
- SRX-12 Classic EPs

Expansion SuperNATURAL Sounds (6 titles)

- ExSN1 Ethnic
- ExSN2 Wood Winds
- ExSN3 Session
- ExSN4 A.Guitar
- ExSN5 Brass
- ExSN6 SFX

Expansion Hi-Quality PCM Sounds (1 title)

- ExPCM HQ GM2 + HQ PCM Sound Collection

* *The SRX Series and the Expansion SuperNATURAL Sounds use one virtual slot per title.*

* *The Expansion Hi-Quality PCM Sounds use all four virtual slots.*

Effects

Multi-Effects: 16 systems, 67 types
Part EQ: 16 systems
Drum Part COMP+EQ: 6 systems
Motional Surround
Chorus: 3 types
Reverb: 6 types
Master EQ

[Others]

Display

256 x 80 dots graphic LCD (with backlit)

Connectors

PHONES jack (stereo 1/4-inch phone type)
INPUT jacks (L, R) (1/4-inch phone type, Front)
INPUT jacks (L, R) (1/4-inch phone type, Rear)
OUTPUT A (MIX) jacks (L, R) (1/4-inch TRS phone type)
OUTPUT A (MIX) jacks (L, R) (XLR type)
OUTPUT B jacks (L, R) (1/4-inch phone type)
OUTPUT C jacks (L, R) (1/4-inch phone type)
OUTPUT D jacks (L, R) (1/4-inch phone type)
DIGITAL AUDIO OUT jack (COAXIAL)
MIDI connectors (IN, OUT, THRU)
USB COMPUTER port (Audio/MIDI)
USB Memory port
AC IN jack

Power Consumption

18 W

Dimensions

481 (W) x 262 (D) x 89 (H) mm
18-15/16 (W) x 10-3/8 (D) x 3-9/16 (H) inches

Weight

3.9 kg
8 lbs 10 oz

Accessories

Owner's Manual (#5100029226)
DVD-ROM (SONAR LE) (#*******)
Power Cord (#5100012292, #00894378, #00907001, #00894389, #5100013842)

Options (sold separately)

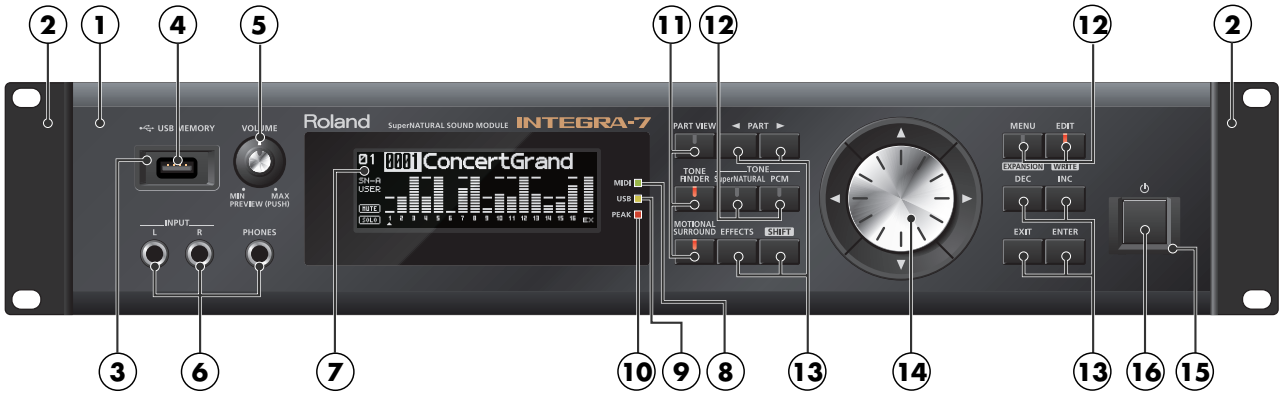
USB Flash Memory

* *Use USB 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.*

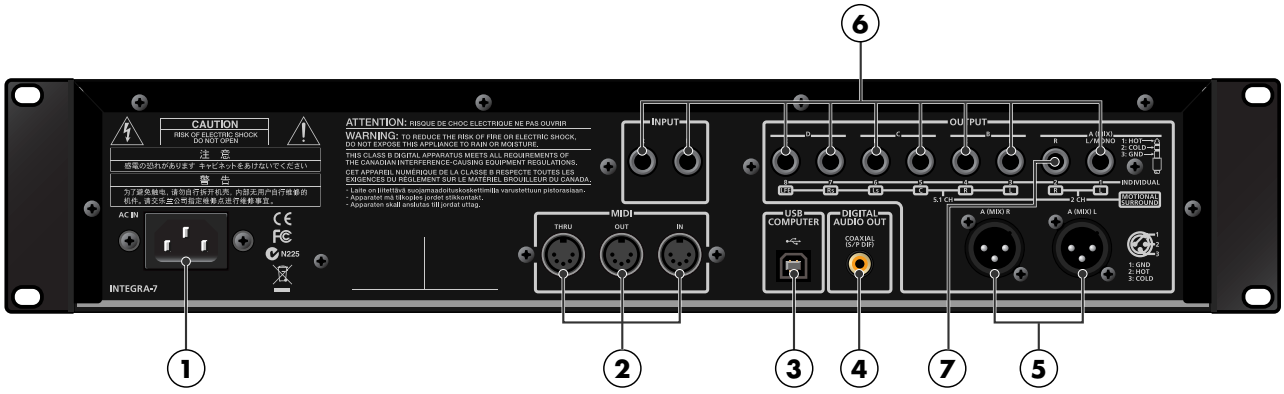
Location of Controls (Front)



Location of Controls (Front) Parts List

No.	Parts Code	Parts Name	Description	Q'ty
1	5100028713	FRONT PANEL		1
2	5100029258	RACK ANGLE		2
3	5100025159	USB ESCUTCHEON		1
4	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N	1
5	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	1
	5100029285	ROTARY POTENTIOMETER	RK0971214	1
6	01782656	JACK 6.5MM	YKB21-5166	3
7	5100021175	LCD	CMF2P0844-E	1
	5100029255	DISPLAY COVER		1
8	04890378	LED	SLR-342MGT32	1
9	04458767	LED	SLI-343YYT32	1
10	01904112	LED	SLR-342VCT32 N.P.Q RANK	1
11	02011412	Y S-KEYTOP	SD1H BLK	3
	02125167	LED	SLI-343DCT32W	3
	01340290	TACT SWITCH	EVQ11A05R	3
12	02011423	Y S-KEYTOP	SD2H BLK	2
	02125167	LED	SLI-343DCT32W	4
	01340290	TACT SWITCH	EVQ11A05R	4
13	02011467	Y S-KEYTOP	SX2H BLK	4
	01340290	TACT SWITCH	EVQ11A05R	8
14	04566445	KEYTOP	ZE CURSOR KEY A	1
	04566456	KEYTOP	ZE CURSOR KEY B	1
	04897912	ZE R-KNOB	LF SLVG/BLK	1
	01905467	ROTARY ENCODER	EVE GC1 F20 24B	1
15	01459789	BUTTON ESCUTCHEON	F B-ESCT MX1H-A BLK	1
16	22495565	F S-BUTTON	MX BLK	1
	5100029168	PUSH SWITCH	SPEC121300	1

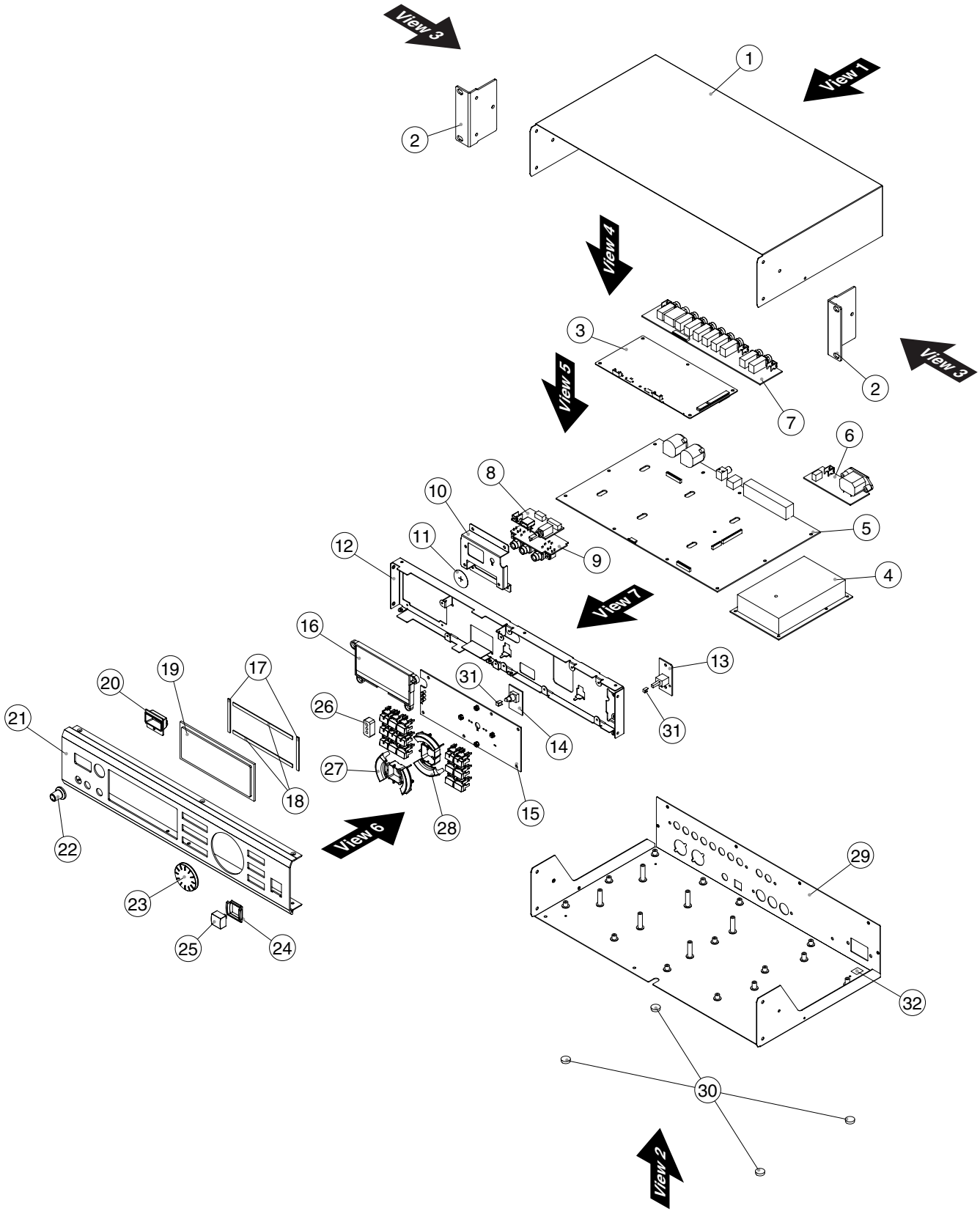
Location of Controls (Rear)



Location of Controls (Rear) Parts List

No.	Parts Code	Parts Name	Description	Q'ty
1	00125023	AC INLET	PWI1818 (INL-7) 10A/250V 3P	1
2	13429273	MIDI CONNECTOR	YKF51-5046 (TRIPRET)	1
3	5100009531	USB CONNECTOR B TYPE FEMALE	YKF45-0044N	1
4	5100019749	RCA CONNECTOR	LPR6521-1301FC	1
5	5100029169	XLR CONNECTOR	CT3-21M-02-EP	2
6	00120434	JACK	YKB21-5262	9
7	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	1

Exploded View

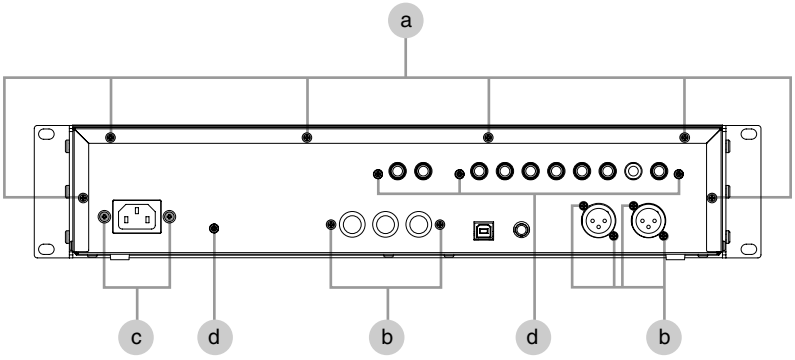


Exploded View Parts List

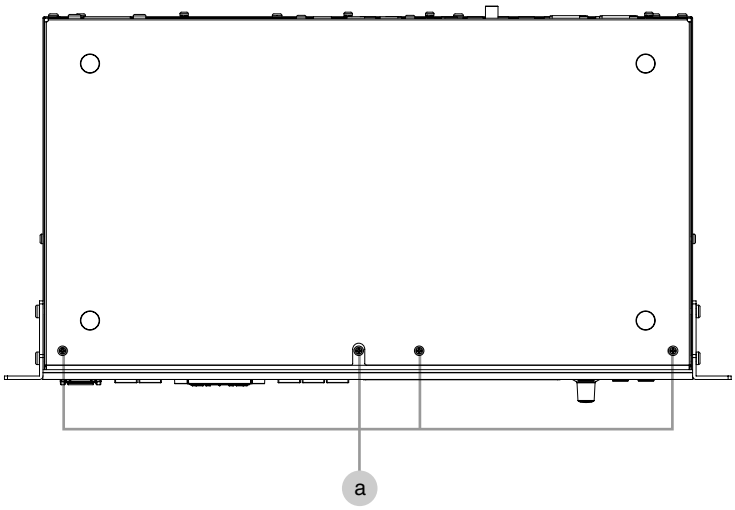
No.	Part Code	Part Name	Description	Q'ty
1	5100029239	TOP COVER		1
2	5100029258	RACK ANGLE		2
3	5100029291	MAIN BOARD ASSY		1
4	5100025676	SWITCHING REGULATOR	PRL904-30 LF	1
	5100029295	SUB SHEET ASSY		
	* *This unit includes the following parts.*			
5	********	SUB BOARD		1
6	********	INLET BOARD		1
7	********	JACK BOARD		1
8	********	VR BOARD		1
9	********	FRONT JACK BOARD		1
13	********	SW BOARD		1
14	********	ENC BOARD		1
15	********	PANEL BOARD		1
10	5100029254	VR BOARD HOLDER		1
11	5100029257	POT DUST COVER		1
12	5100029253	FRONT HOLDER		1
16	5100021175	LCD	CMF2P0844-E	1
17	5100025150	LCD CUSHION S		2
18	5100025149	LCD CUSHION L		2
19	5100029255	DISPLAY COVER		1
20	5100025159	USB ESCUTCHEON		1
21	5100028713	FRONT PANEL		1
22	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	1
23	04897912	ZE R-KNOB	LF SLVG/BLK	1
24	01459789	BUTTON ESCUTCHEON	F B-ESCT MX1H-A BLK	1
25	22495565	F S-BUTTON	MX BLK	1
26	5100029256	LED ISOLATOR		1
27	04566456	KEYTOP	ZE CURSOR KEY B	1
28	04566445	KEYTOP	ZE CURSOR KEY A	1
29	5100029252	BOTTOM CHASSIS		1
30	12359137	RUBBER FOOT	SJ-5012 BLK	4
31	40232134	ACETATE TAPE	NITTO #5 BLACK W5MM 20M	-
32	40013812	CAUTION SEAL	IEC #142	1

Plane View (1)

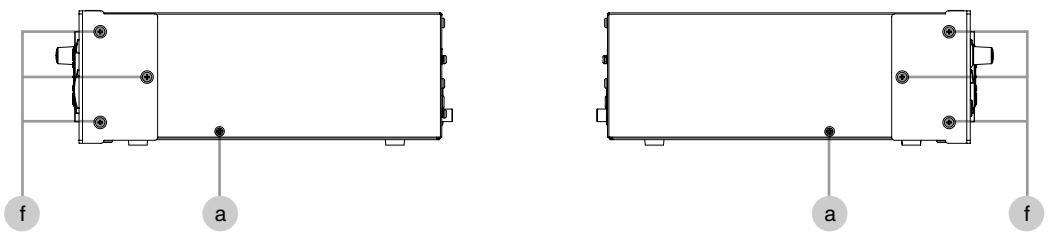
View 1



View 2



View 3



Plane View (1) Parts List

View 1

No.	Part Code	Part Name	Description	Q'ty
a	40011101	SCREW 3X8	BINDING TAPTITE B BZC	6
b	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	6
c	40238501	SCREW 4X8	BINDING TAPTITE P FE BZC	2
d	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	4

View 2

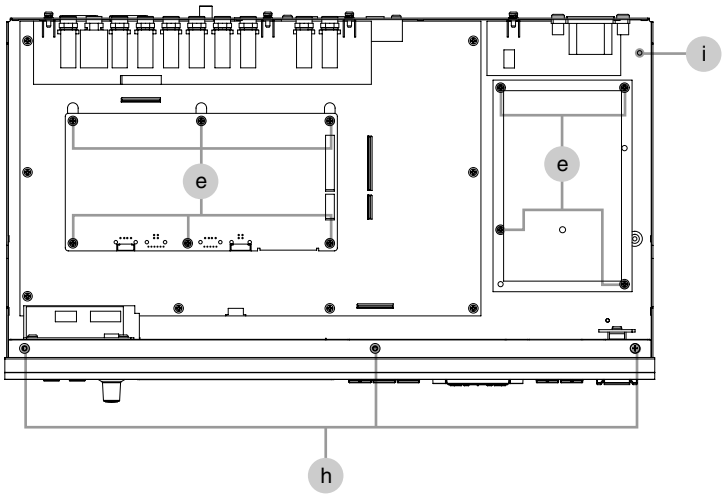
No.	Part Code	Part Name	Description	Q'ty
a	40011101	SCREW 3X8	BINDING TAPTITE B BZC	4

View 3

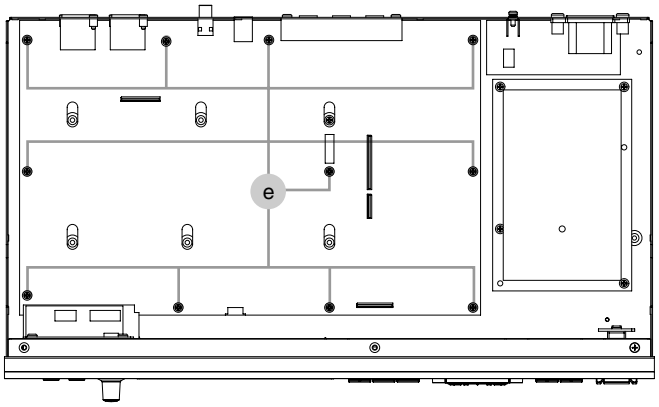
No.	Part Code	Part Name	Description	Q'ty
a	40011101	SCREW 3X8	BINDING TAPTITE B BZC	2
f	40012345	SCREW 4X10	BINDING TAPTITE B BZC	6

Plane View (2)

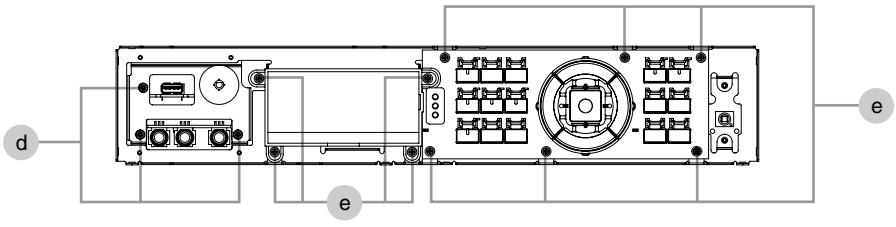
View 4



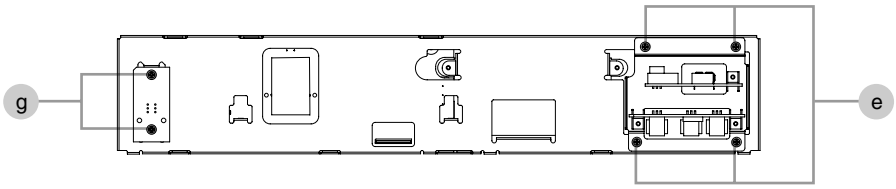
View 5



View 6



View 7



Plane View (2) Parts List

View 4

No.	Part Code	Part Name	Description	Q'ty
e	40011056	SCREW 3X6	BINDING TAPTITE B ZC	10
h	40015967	SCREW 3X6	FLAT TAPTITE S BZC	3
i	40011767	FLANGE HEX NUT M4	FZ ZC	1

View 5

No.	Part Code	Part Name	Description	Q'ty
e	40011056	SCREW 3X6	BINDING TAPTITE B ZC	11

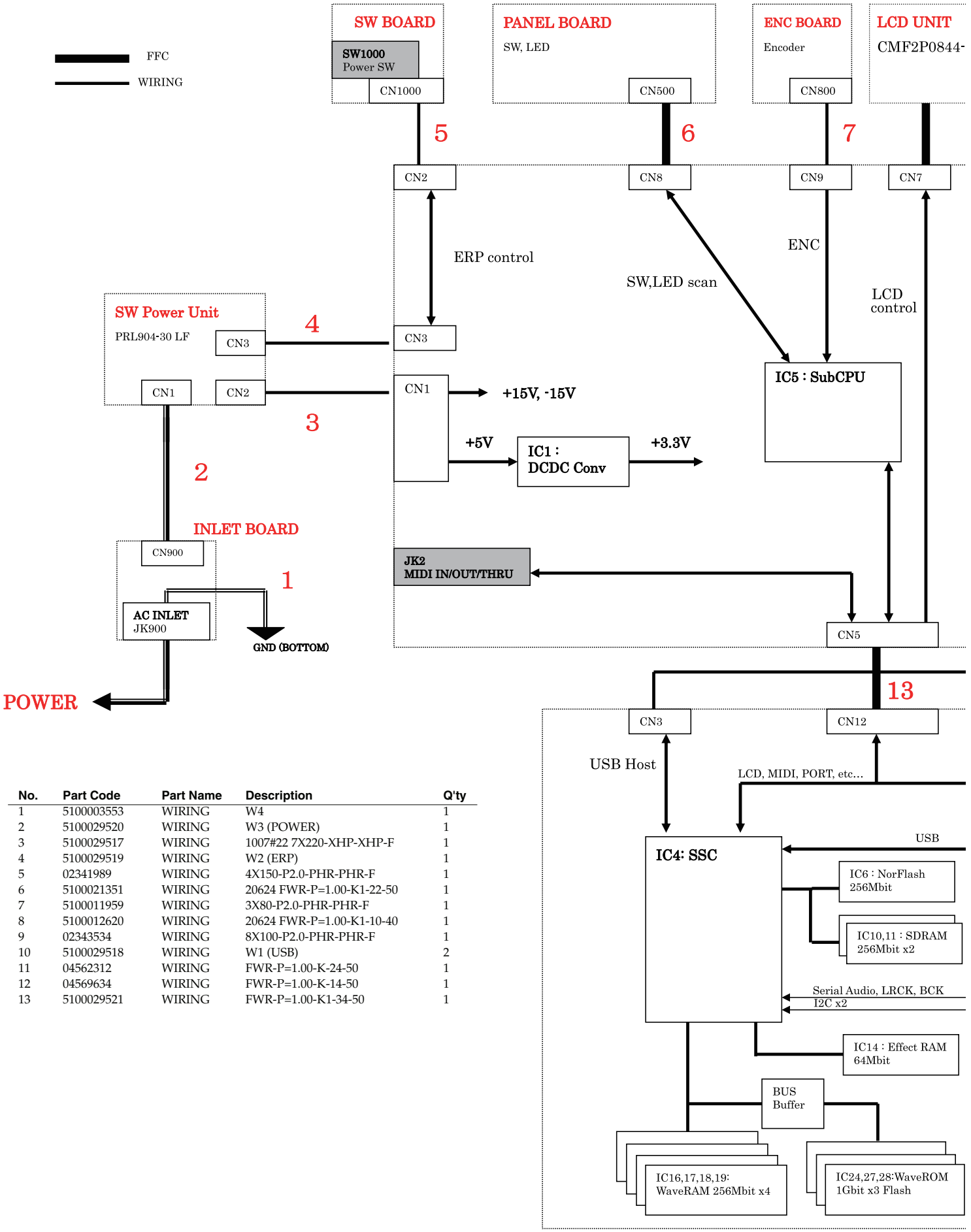
View 6

No.	Part Code	Part Name	Description	Q'ty
d	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	3
e	40011056	SCREW 3X6	BINDING TAPTITE B ZC	10

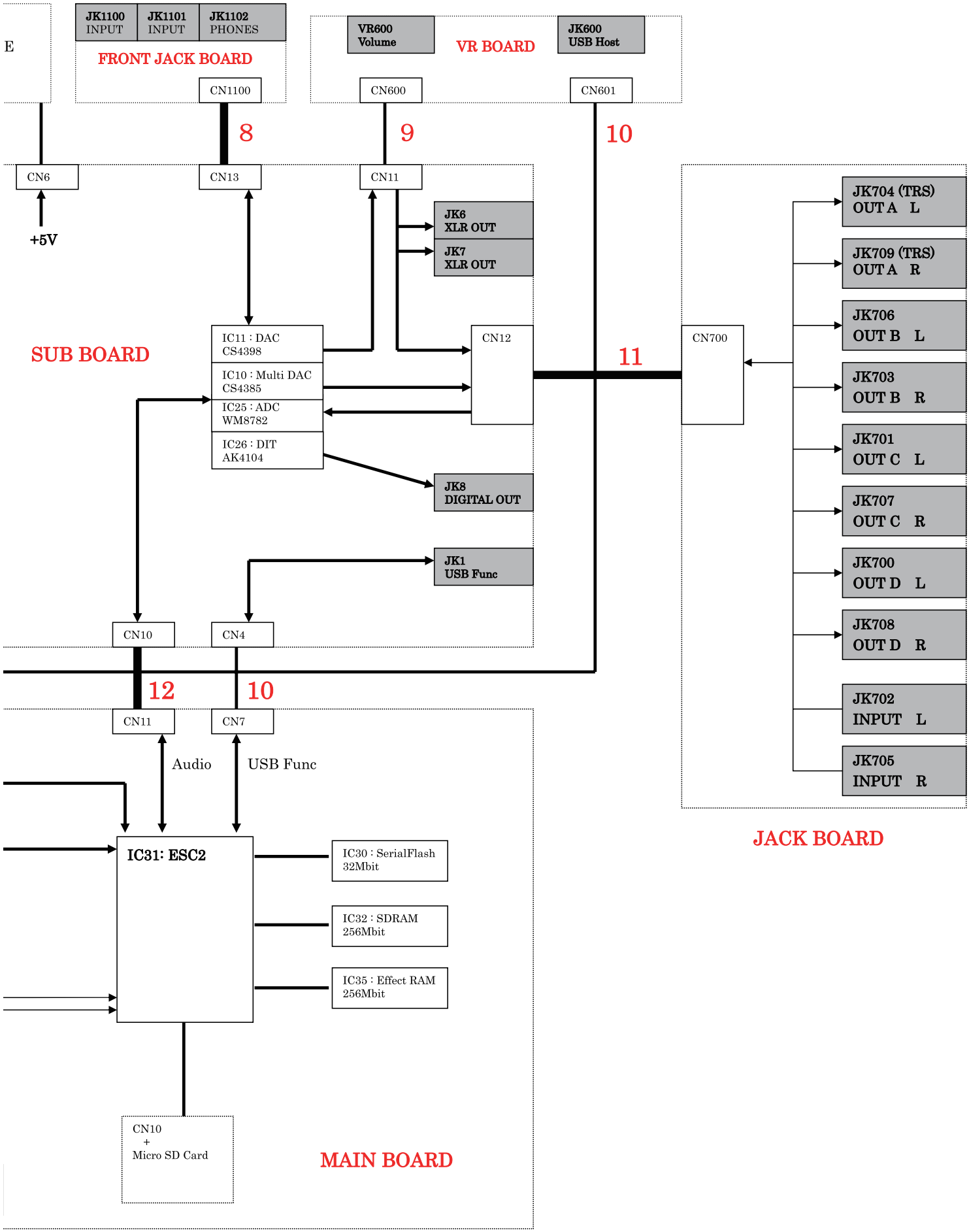
View 7

No.	Part Code	Part Name	Description	Q'ty
e	40011056	SCREW 3X6	BINDING TAPTITE B ZC	4
g	40012867	SCREW M3X8	PAN MACHINE W/SW+PW ZC	2

Wiring Diagram/Block Diagram



No.	Part Code	Part Name	Description	Q'ty
1	5100003553	WIRING	W4	1
2	5100029520	WIRING	W3 (POWER)	1
3	5100029517	WIRING	1007#22 7X220-XHP-XHP-F	1
4	5100029519	WIRING	W2 (ERP)	1
5	02341989	WIRING	4X150-P2.0-PHR-PHR-F	1
6	5100021351	WIRING	20624 FWR-P=1.00-K1-22-50	1
7	5100011959	WIRING	3X80-P2.0-PHR-PHR-F	1
8	5100012620	WIRING	20624 FWR-P=1.00-K1-10-40	1
9	02343534	WIRING	8X100-P2.0-PHR-PHR-F	1
10	5100029518	WIRING	W1 (USB)	2
11	04562312	WIRING	FWR-P=1.00-K-24-50	1
12	04569634	WIRING	FWR-P=1.00-K-14-50	1
13	5100029521	WIRING	FWR-P=1.00-K1-34-50	1


E
JK1100 INPUT
JK1101 INPUT
JK1102 PHONES
FRONT JACK BOARD
CN1100
VR600 Volume
VR BOARD
JK600 USB Host
CN600
CN601
8
9
10
CN6
CN13
CN11
+5V
JK6 XLR OUT
JK7 XLR OUT
SUB BOARD
IC11 : DAC CS4398
IC10 : Multi DAC CS4385
IC25 : ADC WM8782
IC26 : DIT AK4104
CN12
11
CN700
JK704 (TRS) OUT A L
JK709 (TRS) OUT A R
JK706 OUT B L
JK703 OUT B R
JK701 OUT C L
JK707 OUT C R
JK700 OUT D L
JK708 OUT D R
JK702 INPUT L
JK705 INPUT R
JK8 DIGITAL OUT
JK1 USB Func
CN10
CN4
12
10
CN11
CN7
Audio
USB Func
JACK BOARD
IC31: ESC2
IC30 : SerialFlash 32Mbit
IC32 : SDRAM 256Mbit
IC35 : Effect RAM 256Mbit
CN10 + Micro SD Card
MAIN BOARD

Parts List

Safety Precautions:
The parts marked ⚠ 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

#	5100029239	TOP COVER		1
#	5100028713	FRONT PANEL		1
#	5100029258	RACK ANGLE		2
#	5100029252	BOTTOM CHASSIS		1

CHASSIS

#	5100029253	FRONT HOLDER		1
#	5100029254	VR BOARD HOLDER		1

KNOB, BUTTON

	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	1
	04897912	ZE R-KNOB	LF SLVG/BLK	1
	22495565	F S-BUTTON	MX BLK	1
	04566445	KEYTOP	ZE CURSOR KEY A	1
	04566456	KEYTOP	ZE CURSOR KEY B	1
	02011412	Y S-KEYTOP	SD1H BLK	3
	02011423	Y S-KEYTOP	SD2H BLK	2
	02011467	Y S-KEYTOP	SX2H BLK	4

SWITCH

#	5100029168	PUSH SWITCH	SPEC121300	1
	01340290	TACT SWITCH	EVQ11A05R	15

JACK, EXT TERMINAL

	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	1
	00120434	JACK	YKB21-5262	9
	01782656	JACK 6.5MM	YKB21-5166	3
	13429273	MIDI CONNECTOR	YKF51-5046 (TRIPRET)	1
	5100019749	RCA CONNECTOR	LPR6521-1301FC	1
	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N	1
	5100009531	USB CONNECTOR B TYPE FEMALE	YKF45-0044N	1
#	5100029169	XLR CONNECTOR	CT3-21M-02-EP	2

DISPLAY UNIT

	5100021175	LCD	CMF2P0844-E	1

POWER SUPPLY UNIT

⚠	5100025676	SWITCHING REGULATOR	PRL904-30 LF	1

PWB ASSY

#	5100029291	MAIN BOARD ASSY		1
#	5100029295	SUB SHEET ASSY		1
	* *This unit includes the following parts.*			
	********	SUB BOARD		1
	********	PANEL BOARD		1
	********	JACK BOARD		1
	********	FRONT JACK BOARD		1
	********	VR BOARD		1
	********	SW BOARD		1
	********	ENC BOARD		1
	********	INLET BOARD		1

DIODE

	01904112	LED(RED)	SLR-342VCT32 N.P.Q RANK	1
	02125167	LED	SLI-343DCT32W	7
	04458767	LED	SLI-343YYT32	1
	04890378	LED	SLR-342MGT32	1

POTENTIOMETER

		01905467	ROTARY ENCODER	EVE GC1 F20 24B	1
#		5100029285	ROTARY POTENTIOMETER	RK0971214	1

WIRING, CABLE

#		5100029518	WIRING	W1 (USB)	2
#	⚠	5100029519	WIRING	W2 (ERP)	1
#	⚠	5100029520	WIRING	W3 (POWER)	1
	⚠	5100003553	WIRING	W4	1
#	⚠	5100029517	WIRING	1007#22 7X220-XHP-XHP-F	1
		5100012620	WIRING	20624 FWR-P=1.00-K1-10-40	1
		5100021351	WIRING	20624 FWR-P=1.00-K1-22-50	1
		5100011959	WIRING	3X80-P2.0-PHR-PHR-F	1
		02341989	WIRING	4X150-P2.0-PHR-PHR-F	1
		02343534	WIRING	8X100-P2.0-PHR-PHR-F	1
#		5100029521	WIRING	FWR-P=1.00-K1-34-50	1
		04569634	WIRING	FWR-P=1.00-K-14-50	1
		04562312	WIRING	FWR-P=1.00-K-24-50	1

AC INLET, OUTLET

	⚠	00125023	AC INLET	PWI1818 (INL-7) 10A/250V 3P	1

SCREWS

		40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	7
		40012867	SCREW M3X8	PAN MACHINE W/SW+PW ZC	2
		40233012	SCREW 2.6X8	BINDING TAPTITE P BZC	4
		40011056	SCREW 3X6	BINDING TAPTITE B ZC	35
		40015967	SCREW 3X6	FLAT TAPTITE S BZC	3
		40011101	SCREW 3X8	BINDING TAPTITE B BZC	12
		40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	6
		40238501	SCREW 4X8	BINDING TAPTITE P FE BZC	2
		40012345	SCREW 4X10	BINDING TAPTITE B BZC	6
		40011767	FLANGE HEX NUT M4	FE ZC	1

MISCELLANEOUS

#		5100029255	DISPLAY COVER		1
		01459789	BUTTON ESCUTCHEON	F B-ESCT MX1H-A BLK	1
		5100025159	USB ESCUTCHEON		1
		12359137	RUBBER FOOT	SJ-5012 BLK	4
		5100025149	LCD CUSHION L		2
		5100025150	LCD CUSHION S		2
#		5100029256	LED ISOLATOR		1
#		5100029257	POT DUST COVER		1
		12199584	GROUNDING TERMINAL	M1698	7
		01561323	HOOK CLAMP	UAMS-09-0	1
		40017378	COATING CLIP	CS-7	2
		40016512	INSULOK TIE	80M/M T-18S	2
	⚠	40013812	CAUTION SEAL	IEC #142	1
		40232134	ACETATE TAPE	NITTO #5 BLACK W5MM 20M	-
		40785856	ACETATE TAPE	NITTO #156A WHITE W15MM 30M	-

ACCESSORIES (Standard)

#		5100029225	OWNER'S MANUAL	JAPANESE		1
#		5100029226	OWNER'S MANUAL	ENGLISH		1
	⚠	03340956	AC CORD SET PSE	100V YA-101/YP-3NB/YC-13	for 100V	1
	⚠	5100012292	AC CORD SET	117VBL 2.5M 3P DAIKEI 117VBL	for 117VBL	1
	⚠	00894378	AC CORD SET	120V SP301+IS14 SJT18/3	for 117VU, 117VU/CS	1
	⚠	00907001	AC CORD SET	240VE SP-62+IS-14	for 230VE	1
	⚠	00894389	AC CORD SET	230V SP22+IS14 H05VV-F3G1.0	for 230VEU, 220VCNR	1
	⚠	5100013842	AC CORD SET	240VA 2.5M SAA HIRAKAWA	for 240VA	1

Verifying the Version

1. Press **MENU**.
   The **MENU** screen appears.
2. Press **CURSOR** ▶ to select **SYSTEM**, then press **ENTER**.
   The **SYSTEM** screen appears.
3. Press **CURSOR** ▶ several times to move to the **VERSION** tab.
   The version information is displayed on the screen.

Data Backup and Restore Operations

Formatting a USB Memory Device

Use the following procedure to format the USB memory device to use for backing up data.

1. Insert the USB memory device into the unit.
2. Press **MENU**.
   The **MENU** screen appears.
3. Press **CURSOR** ▶ and ▼ to select **UTILITY**, then press **ENTER**.
   The **UTILITY** screen appears.
4. Select **FORMAT USB MEMORY**, then press **ENTER**.
   A confirmation message is displayed.
5. To execute formatting, select **OK** and press **ENTER**. To cancel, select **CANCEL** and press **ENTER**.

Data Backup

1. Format a USB memory device (recommended: M-UF2G) on the unit.
2. Insert the formatted USB memory device into the unit.
3. Press **MENU**.
   The **MENU** screen appears.
4. Press **CURSOR** ▶ and ▼ to select **UTILITY**, then press **ENTER**.
   The **UTILITY** screen appears.
5. Select **BACKUP** and press **ENTER**.
   The **BACK UP NAME** screen appears.
6. Enter the desired name and press **ENTER**.
   A confirmation message is displayed.
7. To execute the backup operation, select **OK** and press **ENTER**. To cancel, select **CANCEL** and press **ENTER**.
   When the message **Backup Completed!** appears and the display returns to the original screen, the backup operation has finished.

* *An error message is displayed if the data cannot be saved correctly for some reason, such as insufficient free space on the USB memory device.*

Data Restore Operation

1. Insert the USB memory device containing the backed-up data into the unit.
2. Press **MENU**.
   The **MENU** screen appears.
3. Press **CURSOR** ▶ and ▼ to select **UTILITY**, then press **ENTER**.
   The **UTILITY** screen appears.
4. Select **RESTORE** and press **ENTER**.
   A file-selection screen is displayed.
5. Select the file to restore and press **ENTER**.
   A confirmation message is displayed.
6. To execute the restore operation, select **OK** and press **ENTER**. To cancel, select **CANCEL** and press **ENTER**.
   When the message **Completed. Please Shut down.** appears, the restore operation has finished.
7. When the operation has finished, restart the unit.

Performing a Factory Reset

Executing a factory reset causes all user data in the unit to be lost. Before performing the operation, refer to **Data Backup and Restore Operations** (p. 16) and back up user data.

1. Turn on the power to the unit.
2. Press **MENU**.
   The **MENU** screen appears.
3. Press **CURSOR** ▶ and ▼ to select **UTILITY**, then press **ENTER**.
   The **UTILITY** screen appears.
4. Select **FACTORY RESET** and press **ENTER**.
   A confirmation message is displayed.
5. To execute the factory reset, select **OK** and press **ENTER**. To cancel, select **CANCEL** and press **ENTER**.
   When the message **Completed. Please Shut down.** appears, the factory reset has finished.

* *The operation takes several seconds to finish.*

6. When the operation has finished, restart the unit.

Updating the System

Items Required

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

Procedure

1. Format the USB memory device (recommended: M-UF2G) on the unit.
2. Copy the update-use file (integra7_up.bin) to the root directory of the USB memory device.
3. Make sure the power to the unit is turned off, and insert the USB memory device.
4. Hold down **SHIFT** and turn on the power to the unit.

* *Continue to hold down **SHIFT** until the message **start update.** appears.*

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

* *The update takes several minutes to finish. Be sure never to turn off the power before the operation finishes.*

5. When the operation has finished, turn off the power to the unit.
6. Detach the USB memory device, then turn on the power to the unit and verify that the version has been updated.

Test Mode

Items Required

- USB memory device (recommended: M-UF2G)
- Computer running Windows (supported operating systems: XP, Vista, and 7)
- MIDI cable
- USB cable
- Audio cable
- Coaxial cable
- Signal generator
- Oscilloscope
- Amp-equipped monitor speakers (equipped with coaxial connectors)
- MIDI keyboard
- MIDI sound module
- Noise meter

Preparations

1. Make sure that the power to the unit is not turned on.
2. Connect the USB memory device to the **USB MEMORY** connector.
3. Adjust **VOLUME** to **MAX**.

Entering the Test Mode

Hold down **PART** ► and **CURSOR** ▼ and turn on the power to the unit.

Quitting the Test Mode

Turn off the power to the unit.

Skipping Test Items

- **SHIFT** + **CURSOR** ► : This performs forced movement to the next test item.
- **SHIFT** + **CURSOR** ◄ : This performs forced movement to the previous test item.
- **SHIFT** + **EXIT**: This forces execution to return to **1. VERSION CHECK**.

* *After one of the operations just described has been performed, the screen remains unchanged for 1 to 2 seconds. Press only once, and not multiple times.*

Test Item

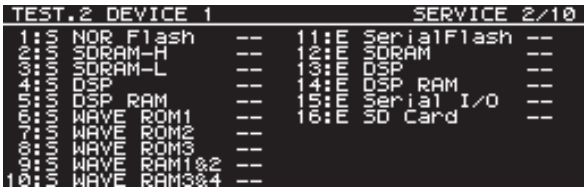
1. VERSION CHECK

This verifies the version of the main program.

Press **CURSOR** ► to advance to the next test item.

2. DEVICE 1

This automatically tests various devices.



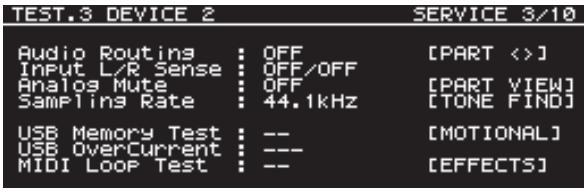
Press **ENTER** to start the test.

If all results are **OK** (acceptable), execution automatically advances to the next test item.

If a problem is found, **NG** (not OK) appears, and at the same time, the location of the problem is displayed. (No automatic advance to the next item occurs.)

3. DEVICE 2

This verifies audio input and output as well as USB and MIDI operation.



Verification of Audio Input and Output (Sampling Rate: 44.1 kHz)

This verifies the signals output from the **PHONES** and **A (MIX) L** and **R** (XLR) connectors.

1. Press **PART** ► .
   The message **Audio Routing : 1/2** is displayed.
2. Connect the oscilloscope to the **PHONES** connector.
3. Verify that signals like the following are output.
   L: 1-kHz sine wave at 17.0 Vpp ±20%
   R: 2-kHz sine wave at 17.0 Vpp ±20%
4. Turn the **VOLUME** control and verify that the signal level changes from **17.0 Vpp** to **0 Vpp**, and then to **17.0 Vpp**.
5. Verify that the waveforms are muted (**0 Vpp**) while **PART VIEW** is depressed.
6. Connect the oscilloscope to the **A (MIX) L** and **R** connectors (each XLR).
7. Verify that signals like the following are output.
   L (HOT): 1-kHz sine wave at 7.7 Vpp ±10%
   L (COLD): 1-kHz sine wave at 7.7 Vpp ±10%
   R (HOT): 2-kHz sine wave at 7.7 Vpp ±10%
   R (COLD): 2-kHz sine wave at 7.7 Vpp ±10%
8. Verify that the waveforms are muted (**0 Vpp**) while **PART VIEW** is depressed.

This verifies the signals output from the **OUTPUT B L** and **R** connectors.

1. Press **PART** ► .
   The message **Audio Routing : 3/4** is displayed.
2. Connect the oscilloscope to the **OUTPUT B L** and **R** connectors.
3. Verify that signals like the following are output.
   L: 1-kHz sine wave at 13.0 Vpp ±10%
   R: 2-kHz sine wave at 13.0 Vpp ±10%
4. Verify that the waveforms are muted (**0 Vpp**) while **PART VIEW** is depressed.

This verifies the signals output from the **OUTPUT C L** and **R** connectors.

1. Press **PART** ► .
   The message **Audio Routing : 5/6** is displayed.
2. Connect the oscilloscope to the **OUTPUT C L** and **R** connectors.
3. Verify that signals like the following are output.
   L: 1-kHz sine wave at 13.0 Vpp ±10%
   R: 2-kHz sine wave at 13.0 Vpp ±10%
4. Verify that the waveforms are muted (**0 Vpp**) while **PART VIEW** is depressed.

This verifies the signals output from the **OUTPUT D L** and **R** connectors.

1. Press **PART** ► .
   The message **Audio Routing : 7/8** is displayed.
2. Connect the oscilloscope to the **OUTPUT D L** and **R** connectors.
3. Verify that signals like the following are output.
   L: 1-kHz sine wave at 13.0 Vpp ±10%
   R: 2-kHz sine wave at 13.0 Vpp ±10%
4. Verify that the waveforms are muted (**0 Vpp**) while **PART VIEW** is depressed.

This verifies the signals output from the **DIGITAL AUDIO OUT** connector.

1. Press **PART** ► .
   The message **Audio Routing : D.OUT** is displayed.
2. Connect the speakers to the **DIGITAL AUDIO OUT** connector.
   A 1-kHz sine wave is output from left and a 2-kHz sine wave is output from right.
3. Verify that no audible noise, sound drop-out, or clipping (distortion) is present.
4. Verify that audio is muted while **PART VIEW** is depressed.

This inputs signals via the **INPUT L** and **R** connectors and verifies the signals output from the **OUTPUT A L** and **R** (TRS) connectors.

1. Press **PART** ► .
   The message **Audio Routing : Direct** is displayed.
2. Connect the signal generator to the **INPUT L** and **R** connectors on the front panel and input signals like the following.
   L: 1-kHz sine wave at 2.0 Vpp
   R: 2-kHz sine wave at 2.0 Vpp
3. Verify that the message **INPUT L/R Sense : ON / ON** is displayed. Also verify that the **PEAK** LED (red) is lighted.
4. Connect the oscilloscope to the **OUTPUT L/MONO** and **R** connectors (each TSR).
5. Verify that signals like the following are output.
   L (HOT): 1-kHz sine wave at 8.4 Vpp ±20%
   L (COLD): 1-kHz sine wave at 8.4 Vpp ±20%
   R (HOT): 2-kHz sine wave at 8.4 Vpp ±20%
   R (COLD): 2-kHz sine wave at 8.4 Vpp ±20%

   * *If the oscilloscope is connected only to L, connect a dummy plug to R.*
6. Disconnect the signal generator, connect it to the **INPUT L** and **R** connectors on the rear panel, and input signals like the following.
   L: 1-kHz sine wave at 1.3 Vpp
   R: 2-kHz sine wave at 1.3 Vpp
7. Verify that the message **INPUT L/R Sense : ON / ON** is displayed. Also verify that the **PEAK** LED (red) is dark.
8. Verify that signals like the following are output from the **OUTPUT L/MONO** and **R** connectors (each TSR).
   L (HOT): 1-kHz sine wave at 5.5 Vpp ±20%
   L (COLD): 1-kHz sine wave at 5.5 Vpp ±20%
   R (HOT): 2-kHz sine wave at 5.5 Vpp ±20%
   R (COLD): 2-kHz sine wave at 5.5 Vpp ±20%

   * *If the oscilloscope is connected only to L, connect a dummy plug to R.*
9. If you are continuing with verification of audio input and output (sampling rate: 96 kHz), temporarily disconnect all audio cables.

Verification of Audio Input and Output (Sampling Rate: 96 kHz)

This inputs signals via the **INPUT L** and **R** connectors and verifies the signals output from the **OUTPUT A L** and **R** (TRS) connectors.

1. Press **TONE FINDER** twice.
   The message **Sampling Rate : 96kHz** is displayed on the screen.
2. Press **PART** ► .
   The message **Audio Routing : Direct** is displayed.
3. Connect the signal generator to the **INPUT L** and **R** connectors on the front panel and input signals like the following.
   L: 1-kHz sine wave at 2.0 Vpp
   R: 2-kHz sine wave at 2.0 Vpp
4. Verify that the message **INPUT L/R Sense : ON / ON** is displayed. Also verify that the **PEAK** LED (red) is lighted.
5. Connect the oscilloscope to the **OUTPUT L/MONO** and **R** connectors (each TSR).
6. Verify that signals like the following are output.
   L (HOT): 1-kHz sine wave at 8.4 Vpp ±20%
   L (COLD): 1-kHz sine wave at 8.4 Vpp ±20%
   R (HOT): 2-kHz sine wave at 8.4 Vpp ±20%
   R (COLD): 2-kHz sine wave at 8.4 Vpp ±20%

   * *If the oscilloscope is connected only to L, connect a dummy plug to R.*

Verification of USB

1. Press **MOTIONAL SURROUND**.
2. Verify that the message **USB Memory Test : OK** is displayed.

   * *No servicing is required for **USB OverCURRENT**.*

Verification of MIDI IN/OUT

1. Using the MIDI cable, connect the **MIDI IN** and **MIDI OUT** jacks.
2. Press **EFFECTS**.
3. Verify that the message **MIDI Loop Test : OK** is displayed.

Verification of MIDI Thru

1. Connect the MIDI keyboard to the **MIDI IN** connector.
2. Connect the MIDI sound module to the **MIDI THRU** connector.
3. Play the MIDI keyboard and verify that the MIDI sound module produces sound.
4. Detach the MIDI keyboard and MIDI sound module.
5. Hold down **SHIFT** and press **CURSOR** ► to advance to the next test item.

4. LCD Screen

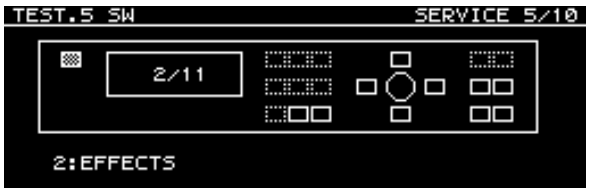
This verifies the display of the LCD screen.

1. Press **INC** to display each screen in succession.
2. Verify that each screen is free of dot drop-out, uneven color, grime, soiling, and scratching.
3. Turn the encoder clockwise and counterclockwise, and verify that the contrast changes.

4. Press **INC** several more times, and verify that the screen luminance (brightness) changes.
5. Press **CURSOR** ► to advance to the next test item.

5. SW

This verifies the operation of switches that have no LEDs.



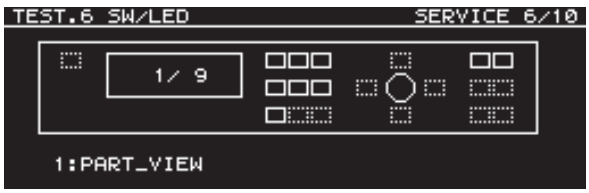
1. Working in sequence, press the buttons indicated on-screen.

* *The button on the left side of the screen indicates the **VOLUME** control **PREVIEW** button.*

When you have finished pressing all buttons, execution automatically advances to the next test item.

6. SW/LED

This verifies the operation of LED-equipped switches.



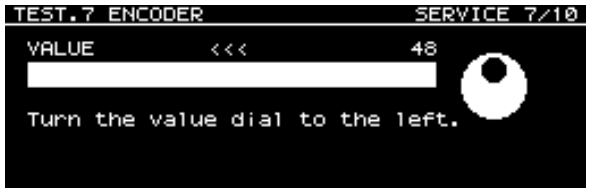
1. Working in sequence, press the buttons indicated on-screen, and verify that the LED for each goes dark.

* *Pressing **PART** ◄ makes the **MIDI** LED (green) go dark, and pressing **PART** ► makes the **USB** LED (yellow) go dark.*

When you have finished pressing all buttons, execution automatically advances to the next test item.

7. ENCODER

This verifies the operation of the encoder.



1. Turn the encoder counterclockwise 2 turns, and verify that **0** is displayed.
2. In the same way, turn the control clockwise 2 turns.
   The value **48** is displayed, and execution automatically advances to the next test item.

8. D/A NOISE

This measures residual noise.

1. Adjust **VOLUME** to **MAX**.
2. Connect the noise meter to **OUTPUT A L/MONO** and **R** (TRS), and verify that the values shown below are obtained.
   L: **-86 dBm** or lower (DIN audio or JIS A)
   R: **-86 dBm** or lower (DIN audio or JIS A)
3. Connect the noise meter to **OUTPUT B L** and **R** (TRS), and verify that the values shown below are obtained.
   L: **-86 dBm** or lower (DIN audio or JIS A)
   R: **-86 dBm** or lower (DIN audio or JIS A)
   Press **CURSOR** ► to advance to the next test item.

9. SHOCK TEST

1. Connect headphones, press the **PREVIEW (PUSH)** button, and verify the sound.
2. Lift the front of the unit 5 centimeters, then let it fall. (Do this 3 times.)
3. Verify that when impact is applied, no sound drop-out or momentary power interruption (restart) occurs.

10. FACTORY RESET & ERP

This verifies the results of the wave ROM check, carries out a factory reset, and verifies ERP operation.

1. Verify that **OK** is displayed for all items from **WaveROM 1** through **3**.
   If **Busy** is displayed, wait until **OK** is displayed. (This can take up to around 2 minutes.)

* *The check of the entire wave ROM region starts after **2. DEVICE 1** (p. 17) has been executed. If **DEVICE 2** has been skipped, the message **Busy** remains displayed without change.*

2. Press **PART VIEW**, and verify that the message **Factory Reset : OK** is displayed.

* *The message **Busy** is displayed for several seconds until **OK** appears.*

3. Press **ENTER**.
The ERP feature is activated and the power to the unit is turned off.

This completes the testing in the Test mode.

4. Press the power switch to return to the "off" state.

Next, carry out testing of the **USB COMPUTER** connector.

11. USB COMPUTER

* *This test is carried out in the normal performance mode.*

1. Make sure the power to the unit is turned off, then use the USB cable to connect the computer running Windows and the unit.

2. Turn on the power to the unit.
On the computer, at **Sound Device**, verify that the INTEGRA-7 is recognized as a **MIDI device**.

* *If the operating system is Windows XP, the product is displayed as* ***USB Audio Device****.*

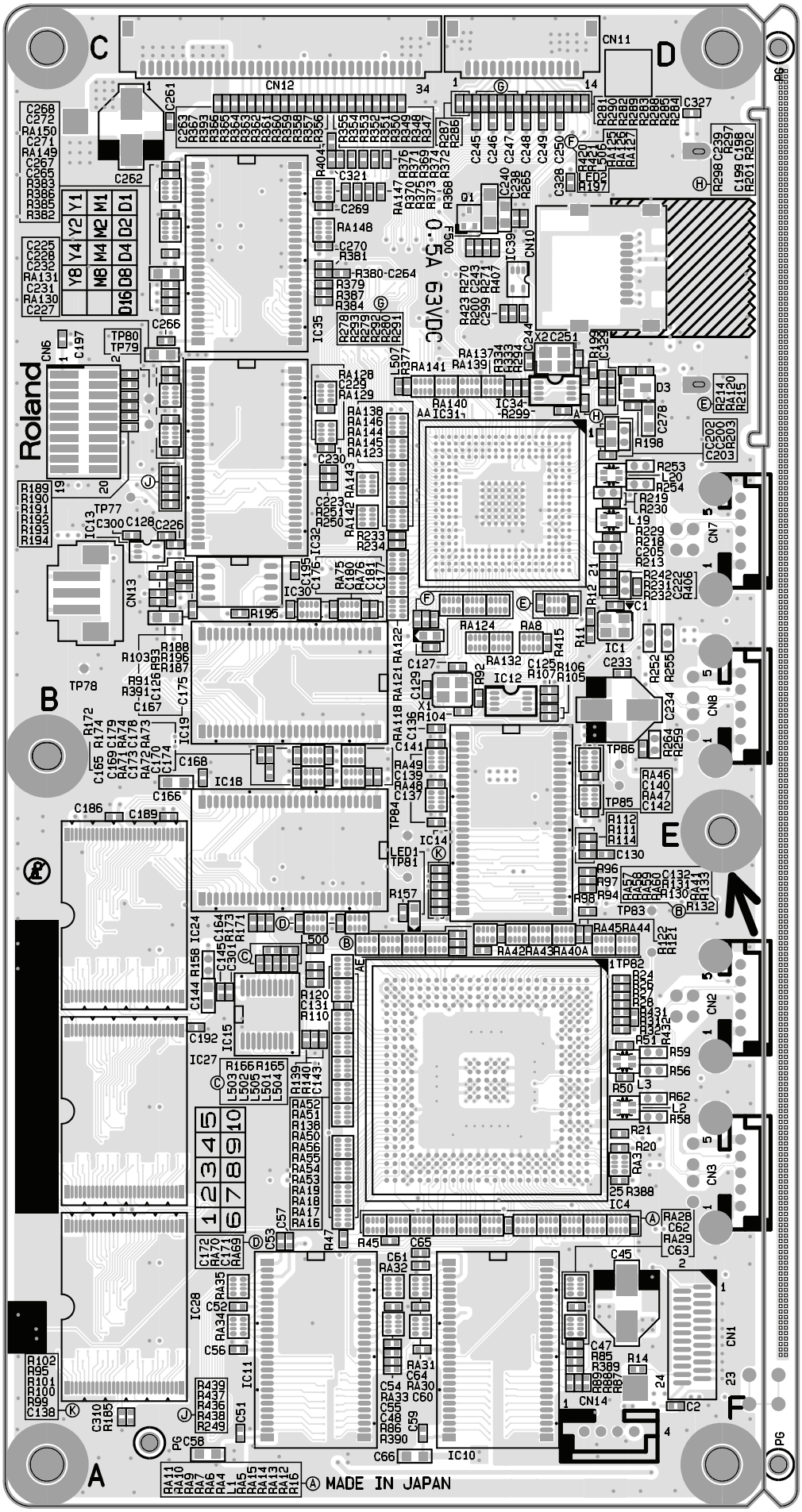
* *Make sure that no instrument other than the INTEGRA-7 is connected to the computer.*

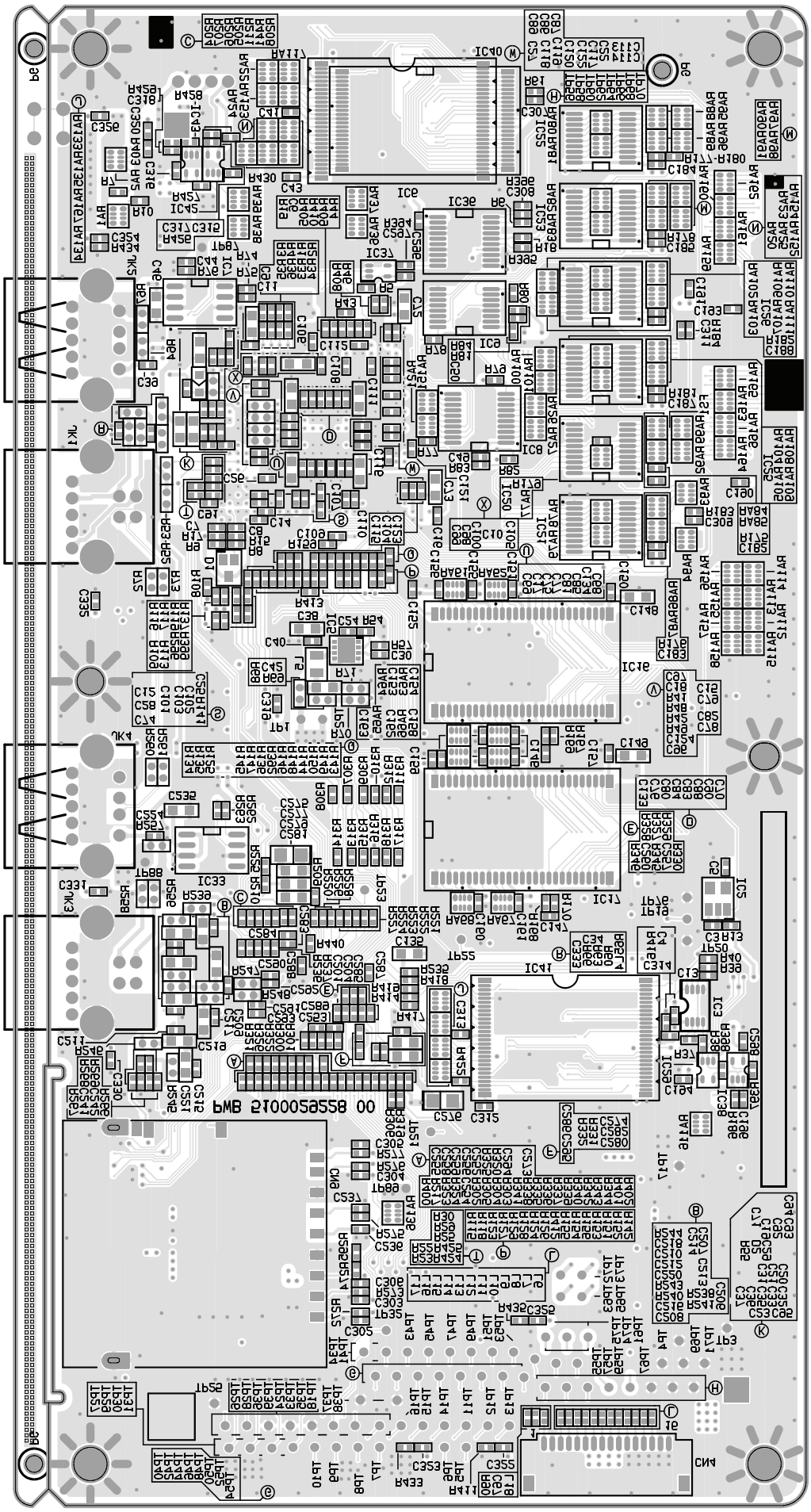
* *The unit is compatible with the Generic Driver, and so installing a dedicated driver is not required.*

3. If no problem is found, turn off the power to the unit.

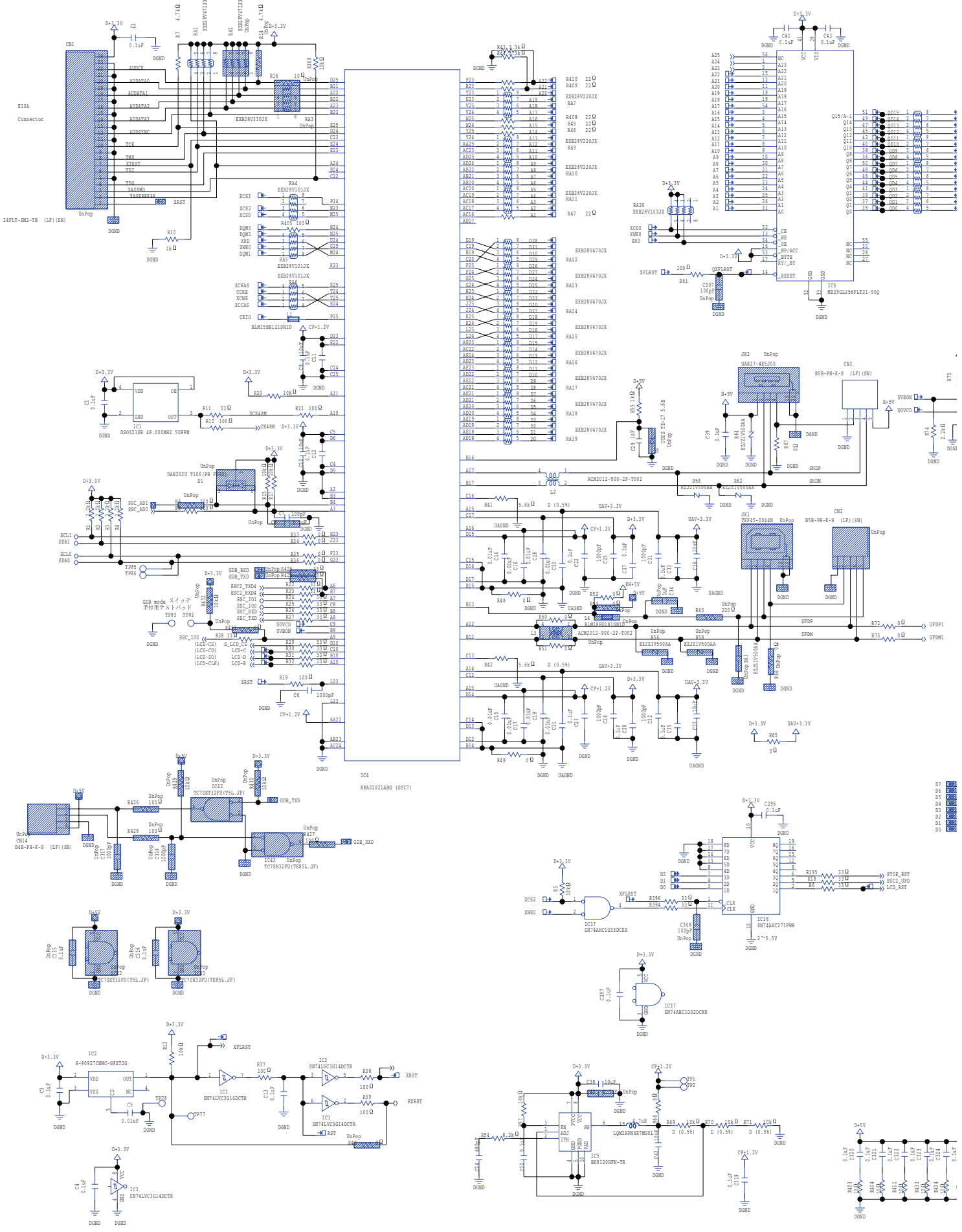
This completes all testing.

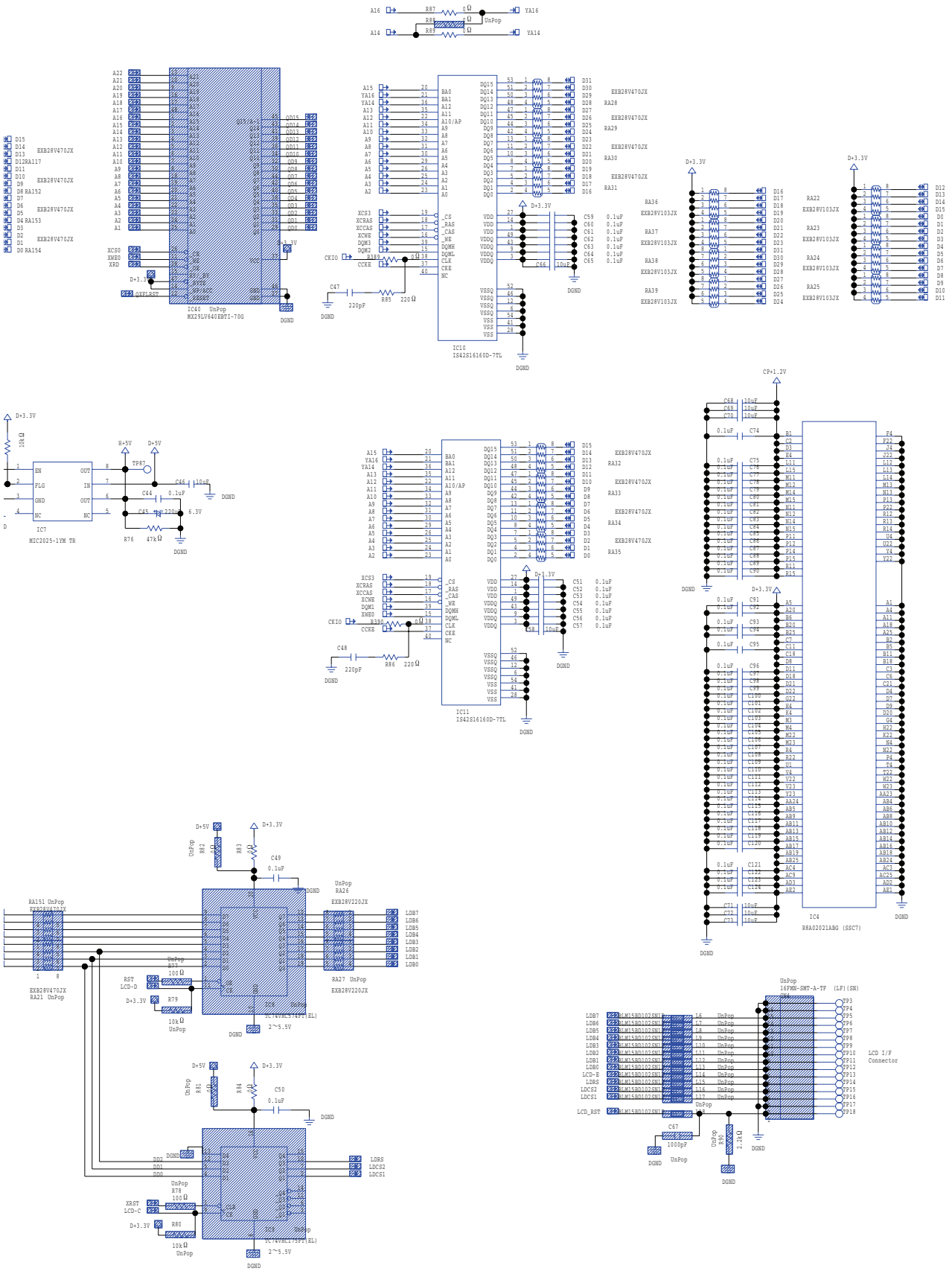
Circuit Board (Main Board)



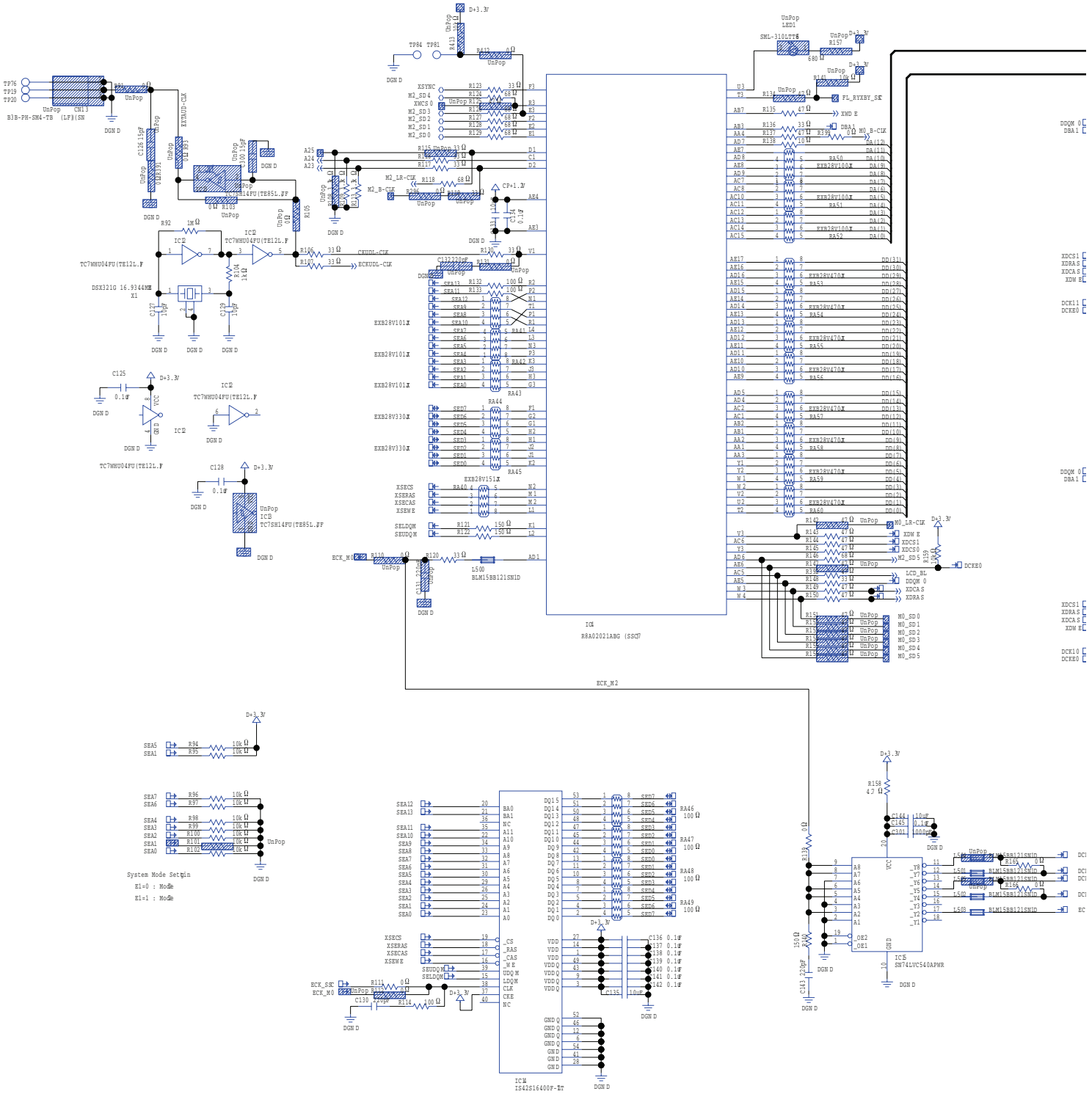


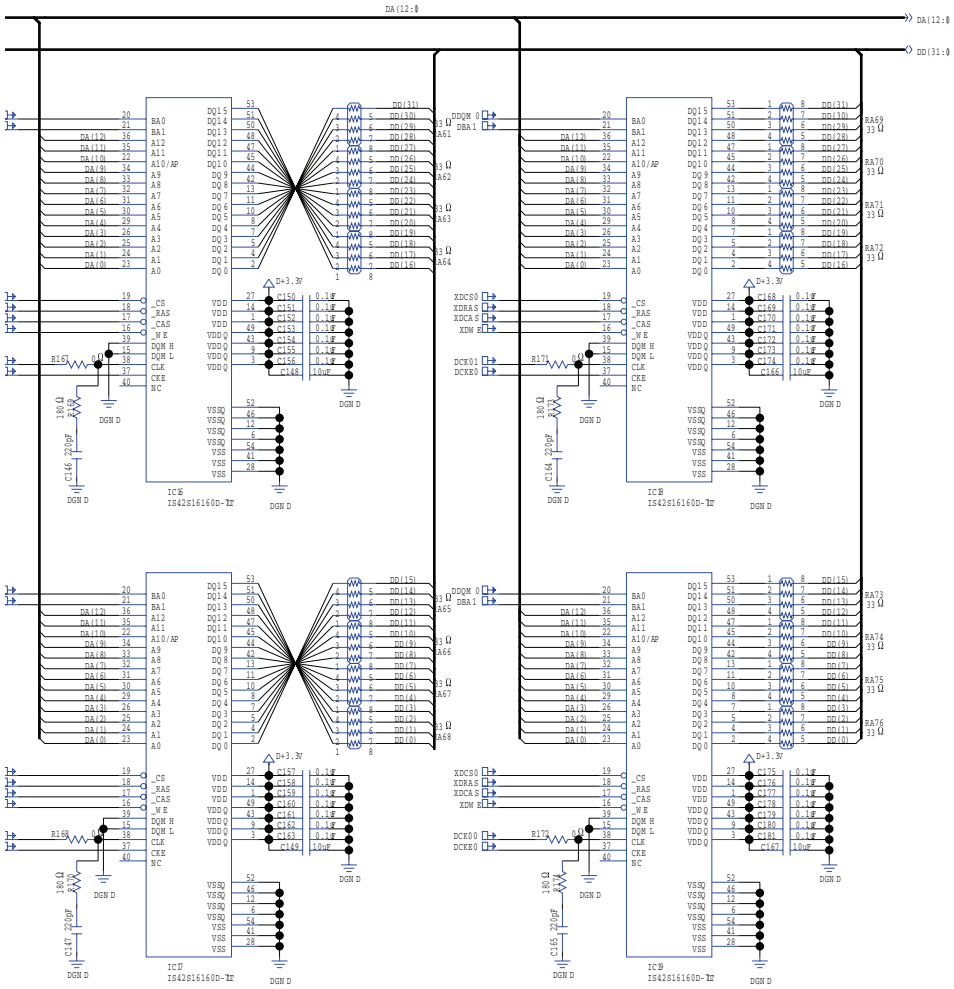
Circuit Diagram (Main Board: 1/5)



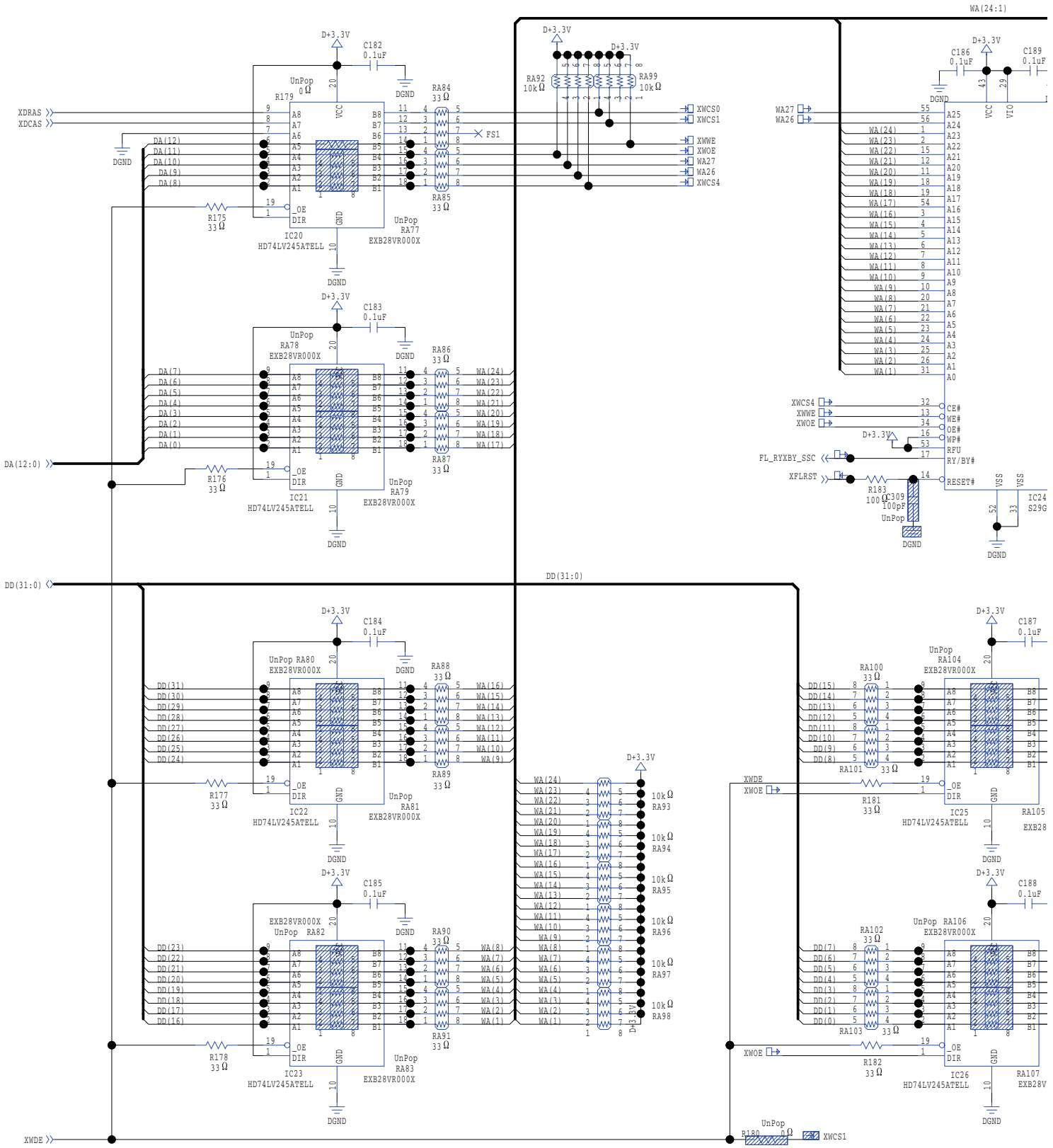


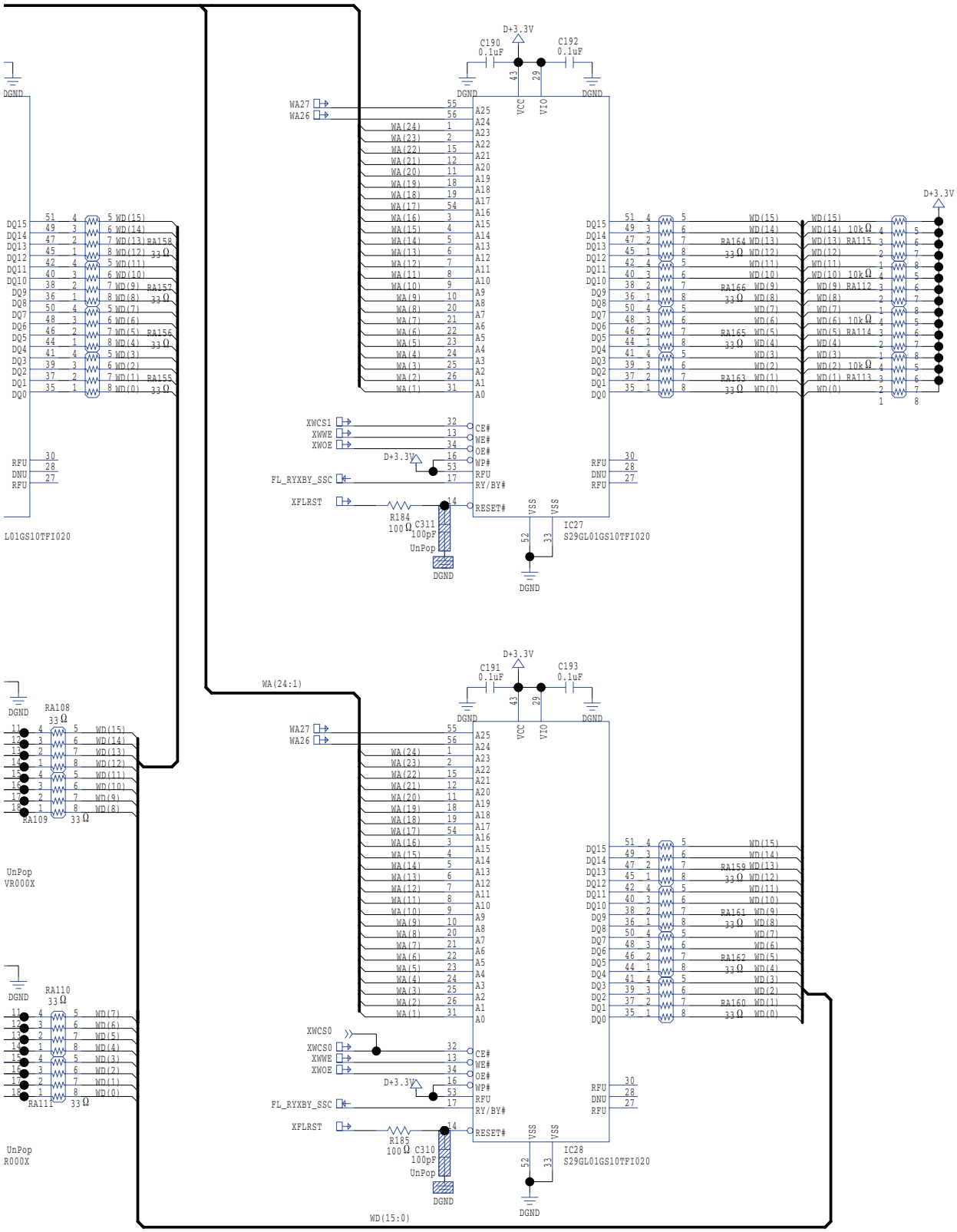
Circuit Diagram (Main Board: 2/5)



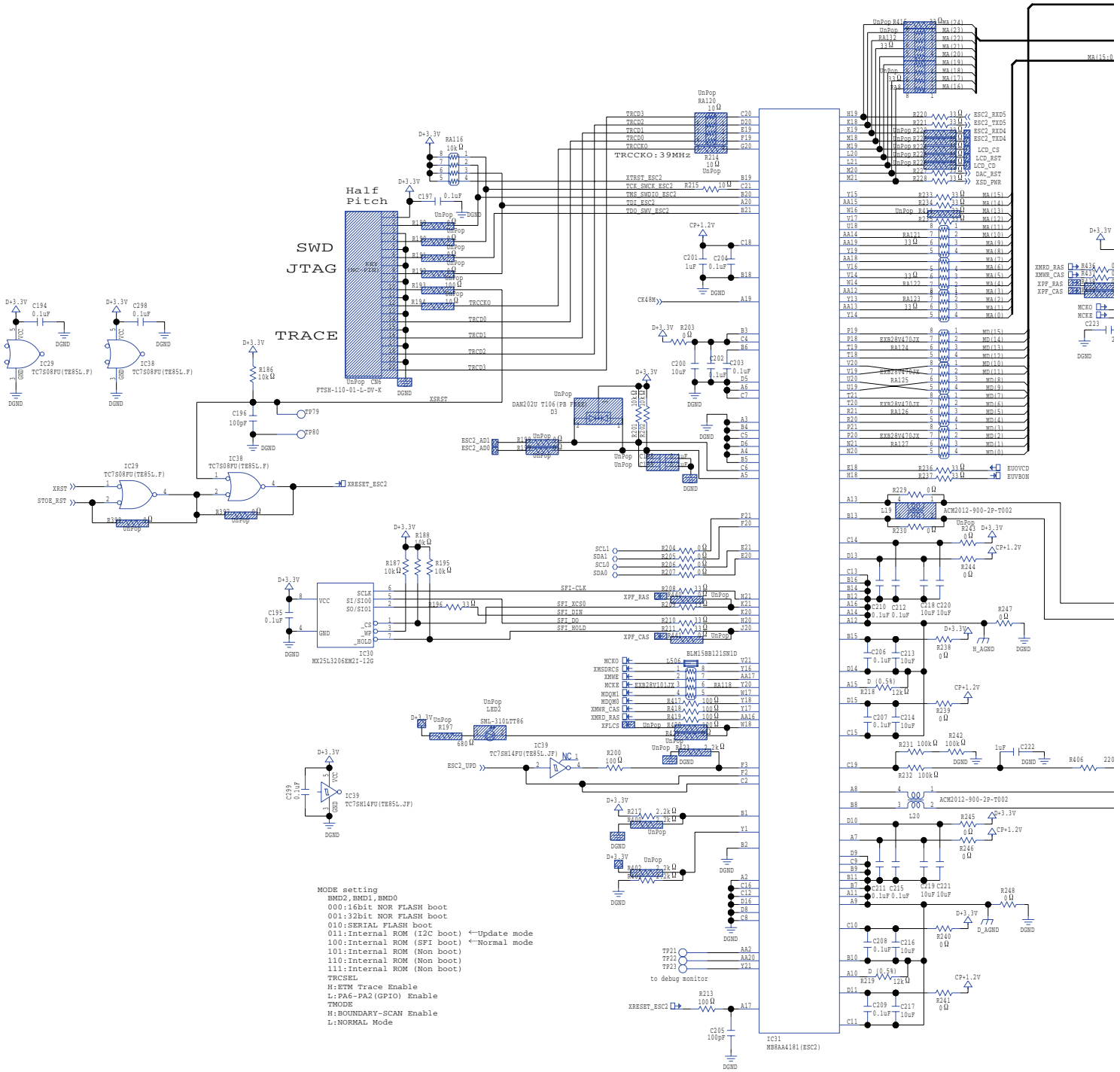

DA(12:0)
DD(31:0)
IC16
IS42S16160D-7TL
IC18
IS42S16160D-7TL
IC17
IS42S16160D-7TL
IC19
IS42S16160D-7TL
DGN D
D+3.3V

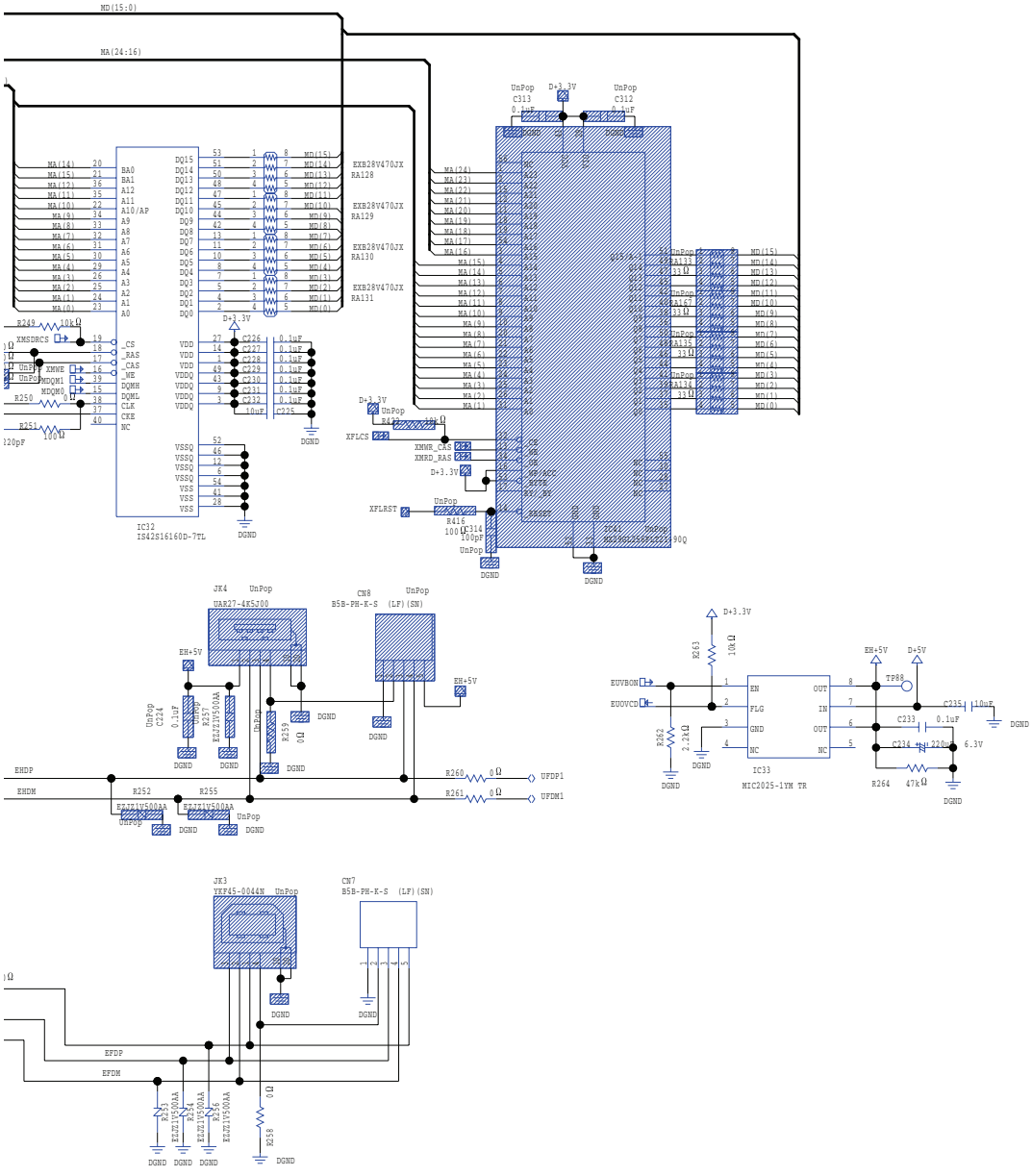
Circuit Diagram (Main Board: 3/5)



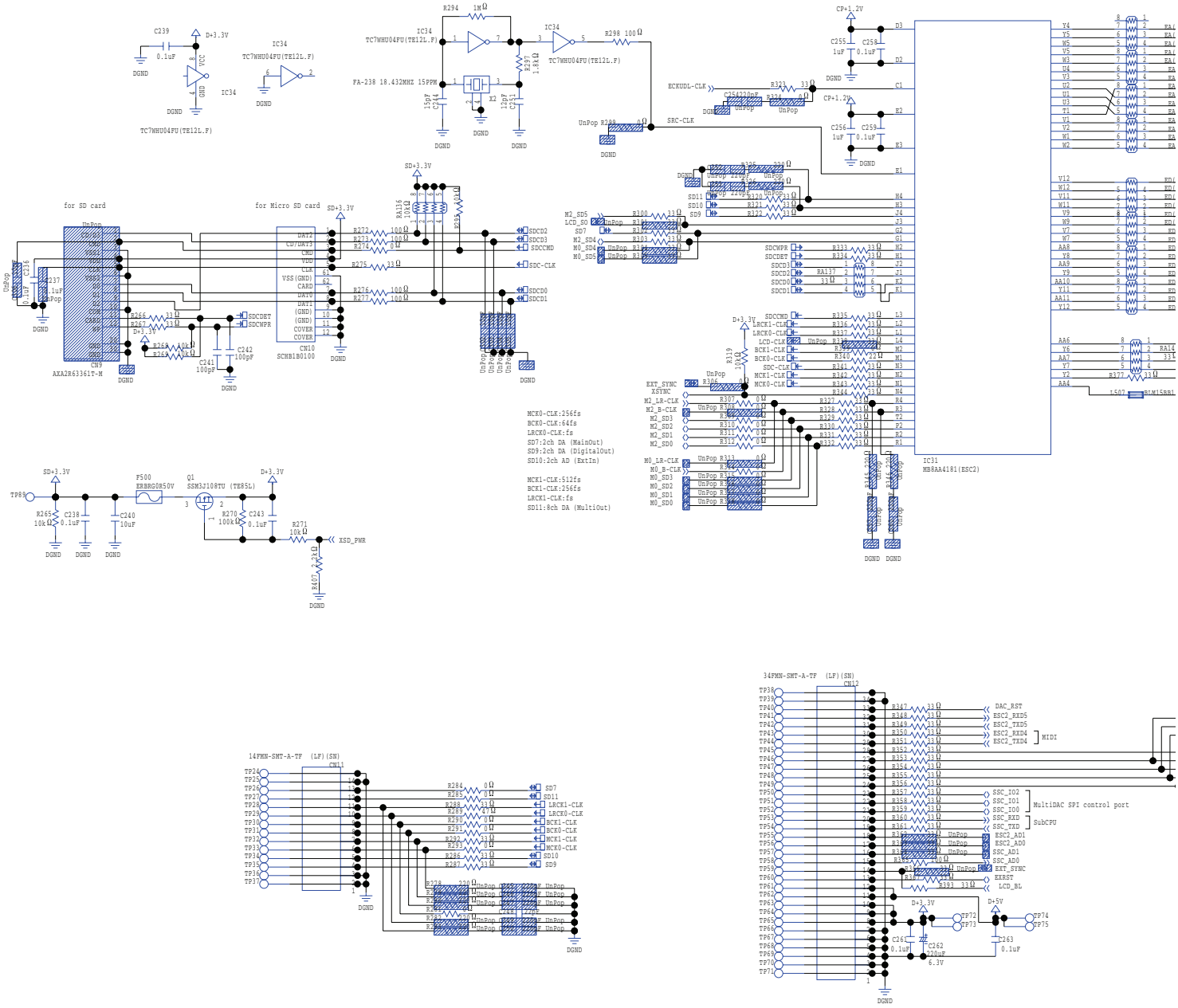

D+3.3V
C190 0.1uF
C192 0.1uF
DGND
VCC
VIO
WA27
WA26
WA(24)
WA(23)
WA(22)
WA(21)
WA(20)
WA(19)
WA(18)
WA(17)
WA(16)
WA(15)
WA(14)
WA(13)
WA(12)
WA(11)
WA(10)
WA(9)
WA(8)
WA(7)
WA(6)
WA(5)
WA(4)
WA(3)
WA(2)
WA(1)
A25
A24
A23
A22
A21
A20
A19
A18
A17
A16
A15
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
XWCS1
XWWE
XWOE
CE#
WE#
OE#
WP#
RFU
RY/BY#
RESET#
VSS
FL_RYXBY_SSC
XFLRST
R184 100Ω
C311 100pF
UnPop
IC27
S29GL01GS10TFI020
L01GS10TFI020
DQ15
DQ14
DQ13
DQ12
DQ11
DQ10
DQ9
DQ8
DQ7
DQ6
DQ5
DQ4
DQ3
DQ2
DQ1
DQ0
WD(15)
WD(14)
WD(13)
WD(12)
WD(11)
WD(10)
WD(9)
WD(8)
WD(7)
WD(6)
WD(5)
WD(4)
WD(3)
WD(2)
WD(1)
WD(0)
RA158
RA157
RA156
RA155
RA164
RA166
RA165
RA163
RA115
RA112
RA114
RA113
33Ω
10kΩ
DNU
C191 0.1uF
C193 0.1uF
WA(24:1)
WD(15:0)
XWCS0
R185 100Ω
C310 100pF
IC28
S29GL01GS10TFI020
RA108
RA109
RA110
RA111
RA159
RA161
RA162
RA160
UnPop
VR000X
R000X

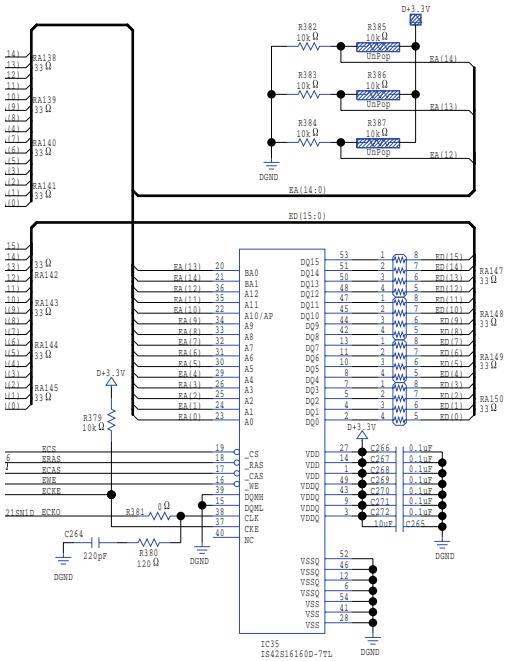
Circuit Diagram (Main Board: 4/5)

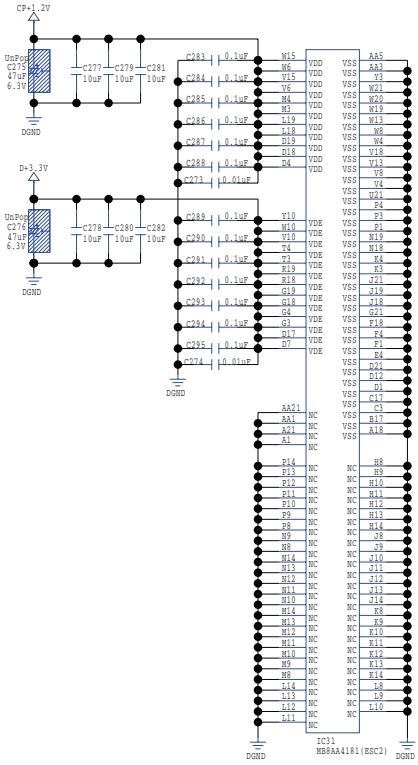



MD(15:0)
MA(24:16)
IC32
IS42S16160D-7TL
IC43
MIC2025-1YM TR
JK4
UAR27-4K5J00
CN8
B5B-PH-K-S (LF)(SN)
JK3
UAR45-0044N
CN7
B5B-PH-K-S (LF)(SN)
EHDP
EHDM
EFDP
EFDM
UFDP1
UFDM1
EUVBON
EUOVCD
DGND
UnPop
EH+5V
D+5V
D+3.3V

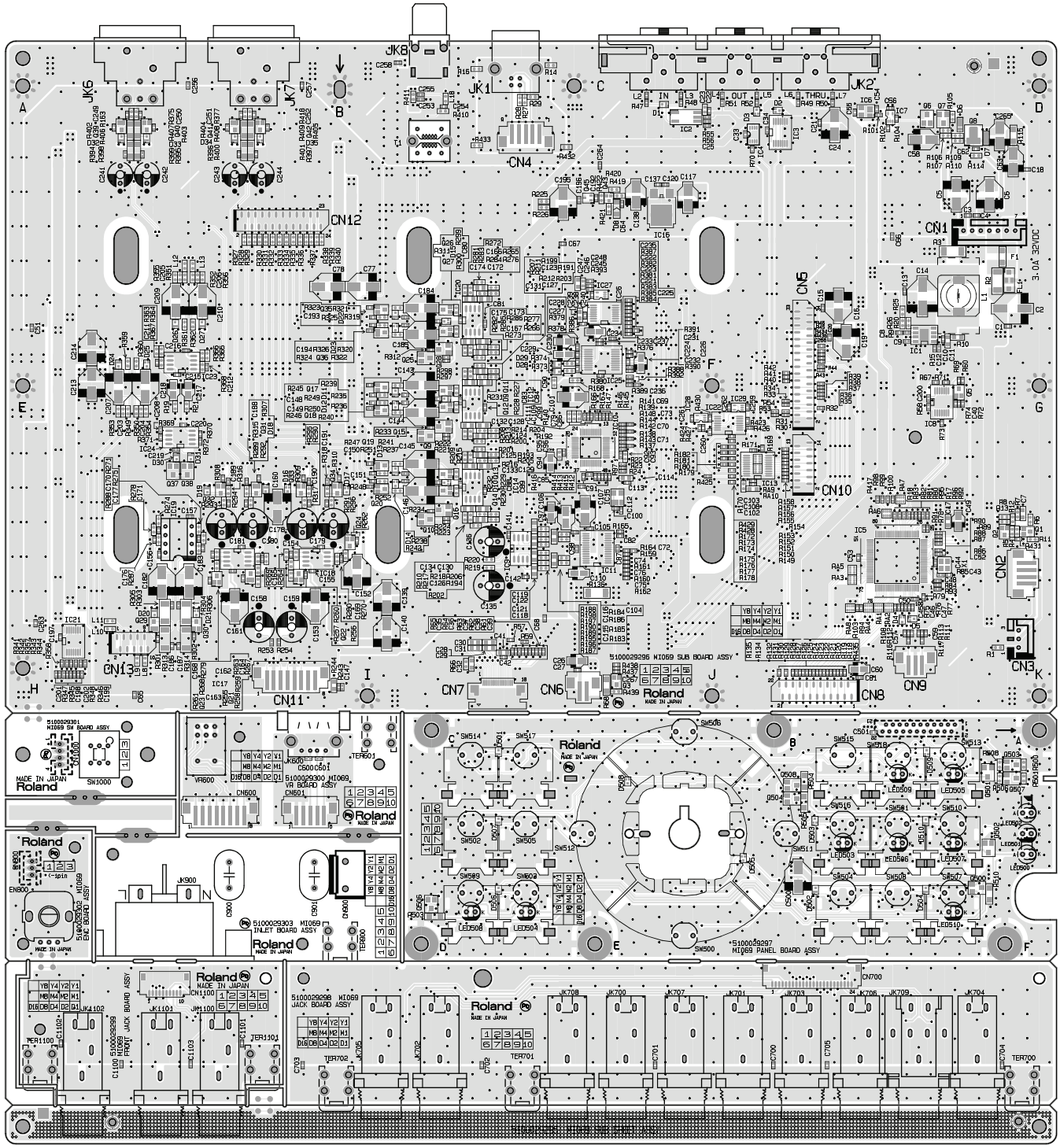
Circuit Diagram (Main Board: 5/5)

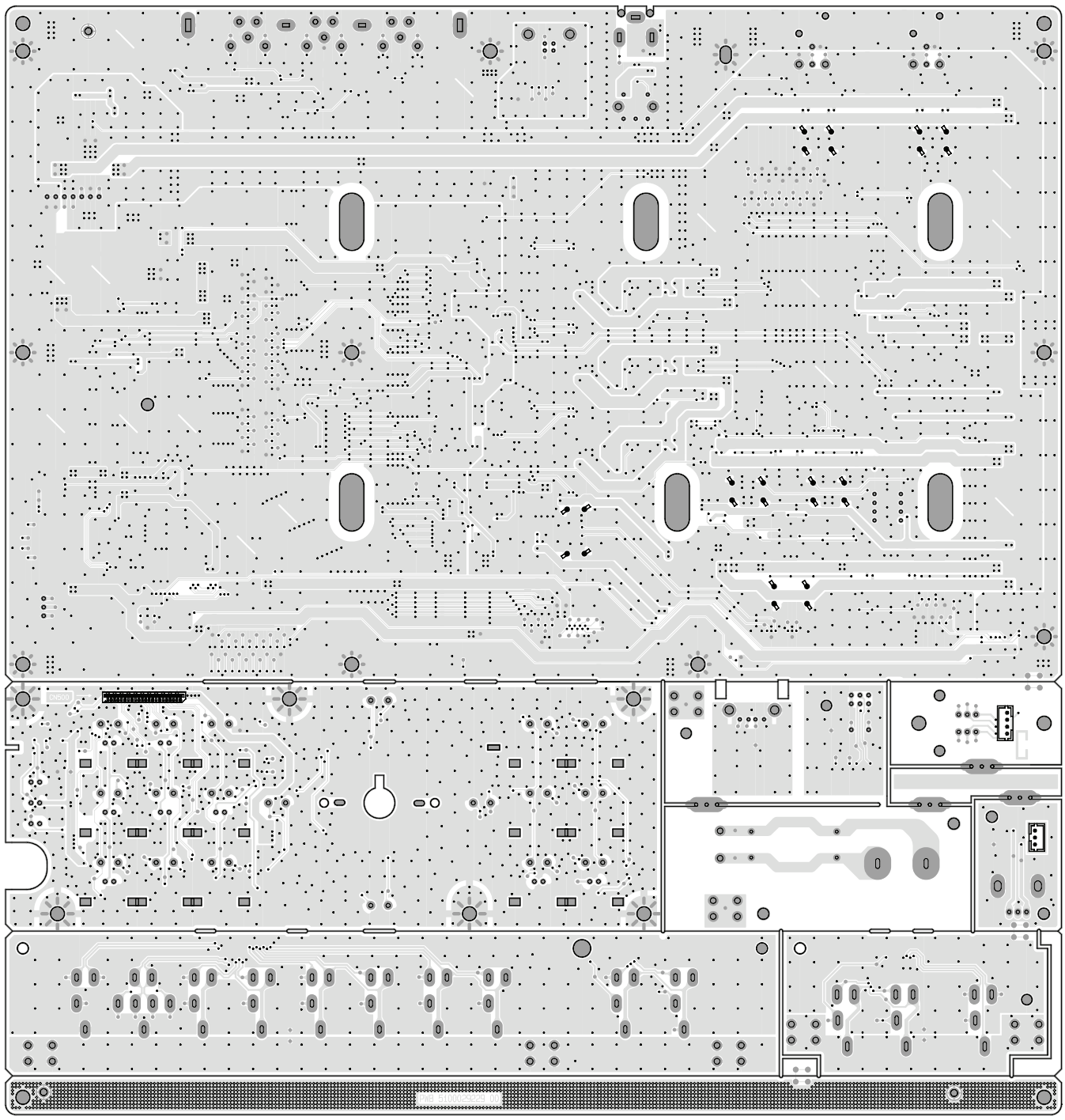



D+3.3V
R382 10kΩ
R385 10kΩ UnPop
R383 10kΩ
R386 10kΩ UnPop
R384 10kΩ
R387 10kΩ UnPop
EA(14)
EA(13)
EA(12)
DGND
EA(14:0)
ED(15:0)
RA138 33Ω
RA139 33Ω
RA140 33Ω
RA141 33Ω
RA142 33Ω
RA143 33Ω
RA144 33Ω
RA145 33Ω
RA147 33Ω
RA148 33Ω
RA149 33Ω
RA150 33Ω
R379 10kΩ
R381 0Ω
R380 120Ω
C264 220pF
ECS
ERAS
ECAS
EWE
ECKE
21SM1D_ECKO
IC35
IS42S16160D-7TL
C266 C267 C268 C269 C270 C271 C272 0.1uF
C265 10uF
R368 R369 R370 R371 R372 R373 R374 R375 R376 0Ω UnPop
LCD_CS
LCD_CD
LCD_SO
LCD-CLK
LCD_RST (LCD-RST)
S_LCD_CS (LCD-CS)
LCD-C (LCD-CD)
LCD-D (LCD-SO)
LCD-E (LCD-CLK)


CP+1.2V
C275 47uF 6.3V UnPop
C277 C279 C281 10uF
C276 47uF 6.3V UnPop
C278 C280 C282 10uF
C283 C284 C285 C286 C287 C288 C289 C290 C291 C292 C293 C294 C295 0.1uF
C273 C274 0.01uF
D+3.3V
DGND
IC31
MB8AA4181(ESC2)

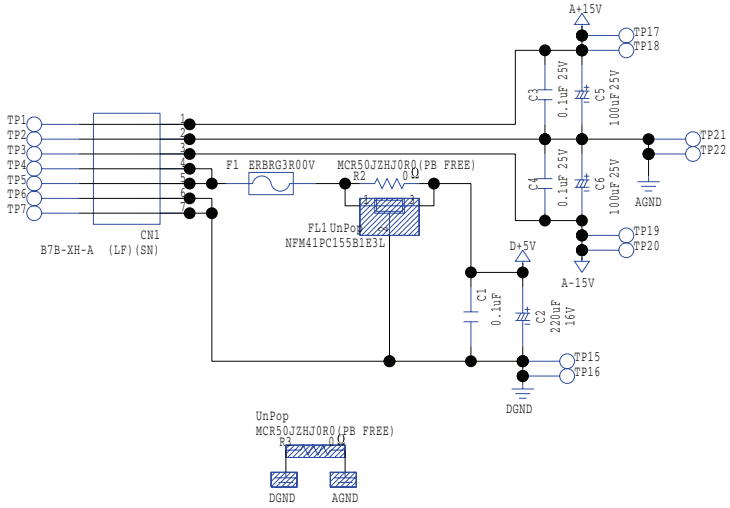
Circuit Board (Sub, Panel, Jack, VR, ENC, Inlet, Front Jack, SW Board)





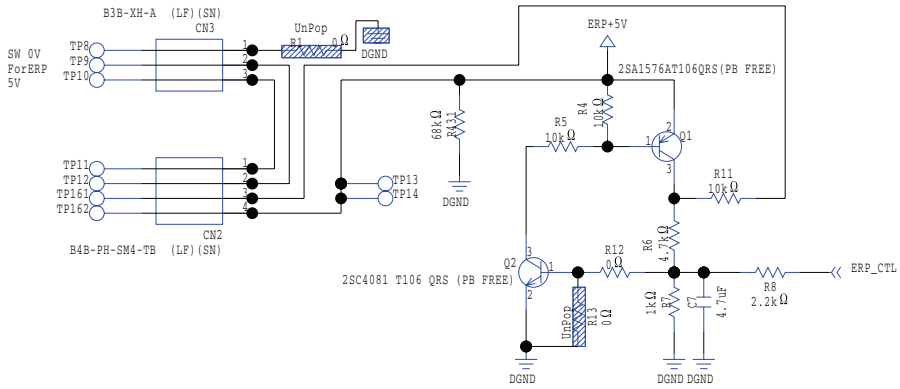
Circuit Board (Sub Board: 1/4)

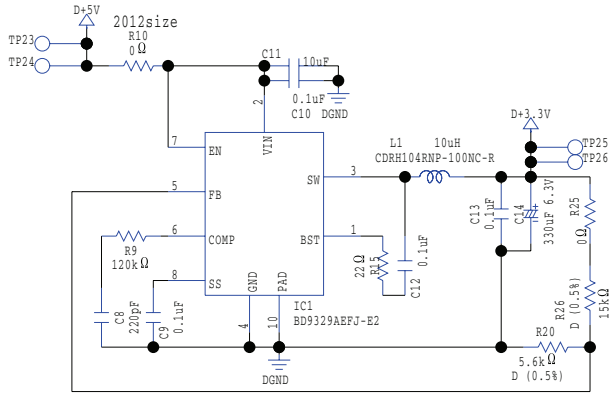
from SWPW



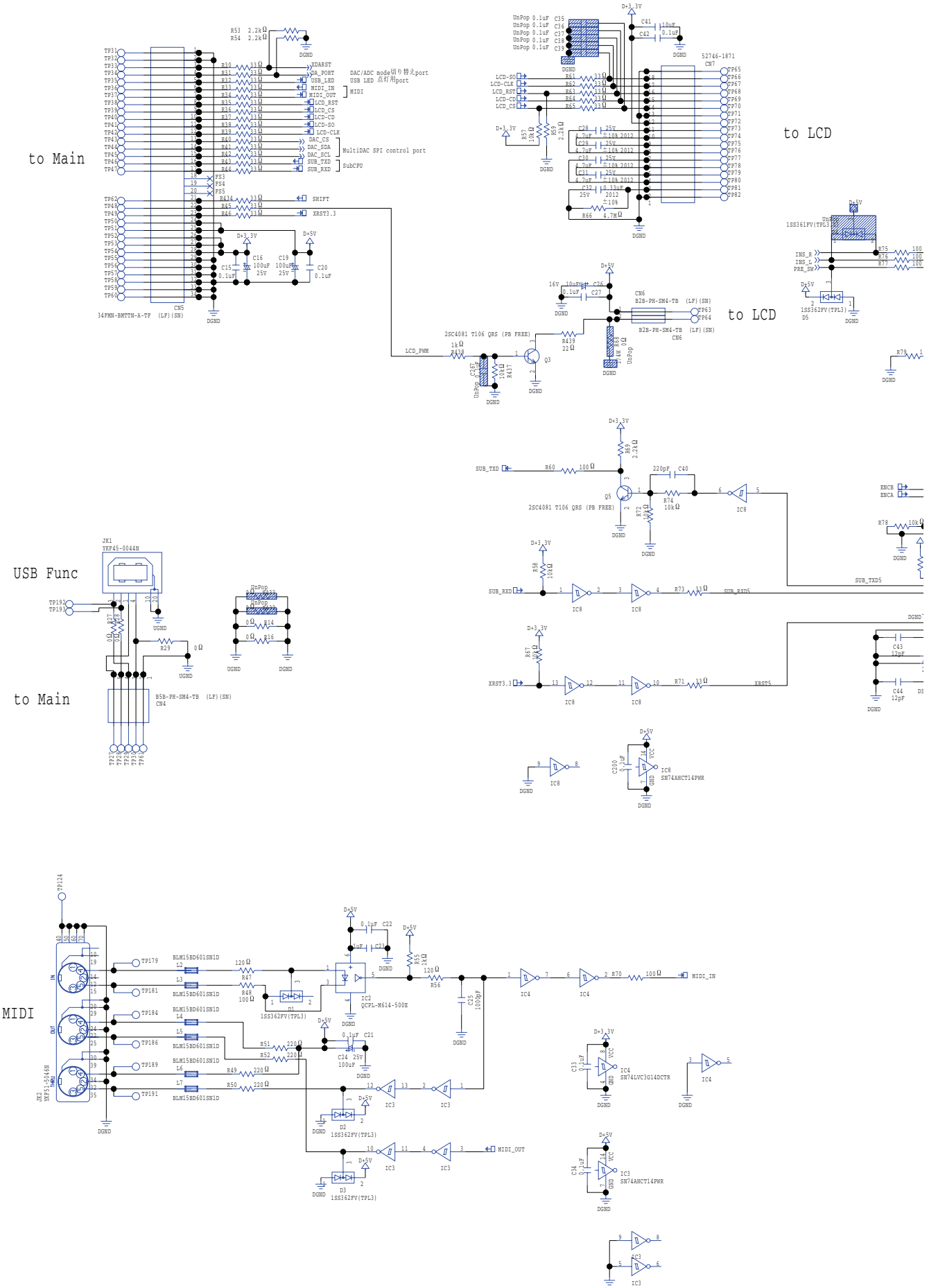
from SWPW

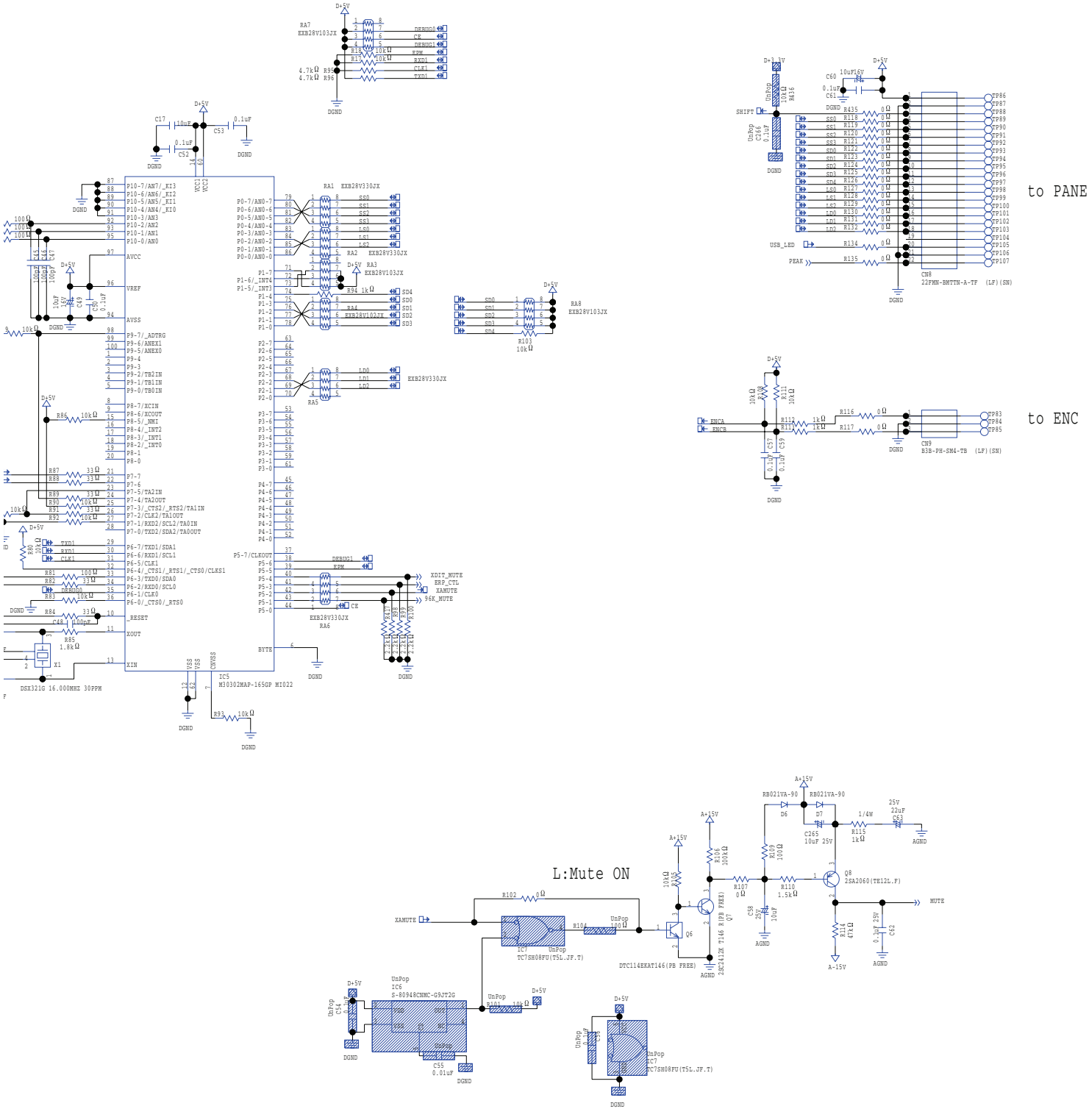
to SW BOARD



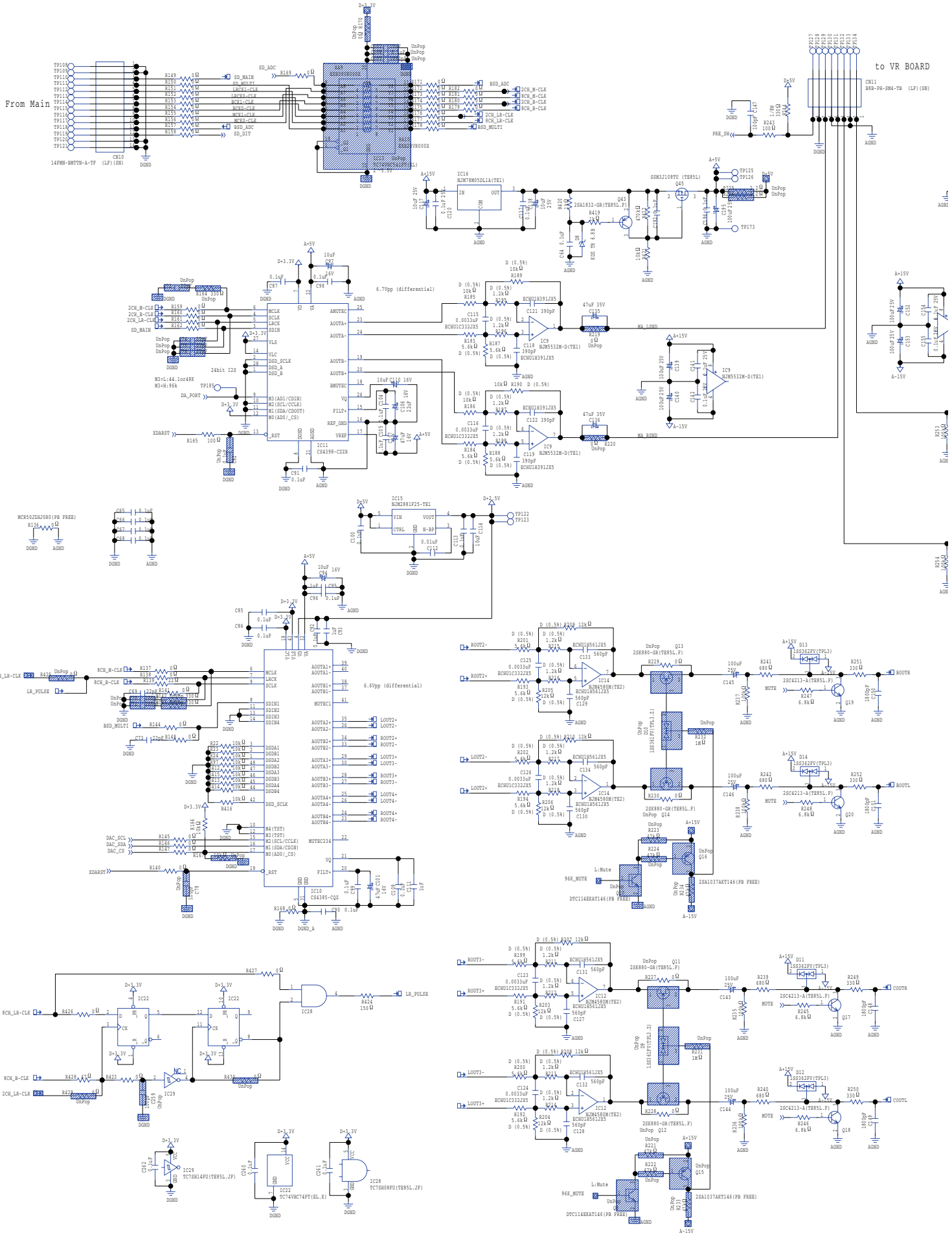

D+5V
2012size
R10
0Ω
TP23
TP24
C11
10uF
0.1uF
C10 DGND
D+3.3V
TP25
TP26
L1 10uH
CDRH104RNP-100NC-R
EN
VIN
SW
FB
COMP
BST
SS
GND
PAD
IC1
BD9329AEFJ-E2
R9
120kΩ
22Ω
R15
C12 0.1uF
C13 0.1uF
C14
330uF 6.3V
R25
0Ω
R26
D (0.5%)
15kΩ
R20
5.6kΩ
D (0.5%)
C8
220pF
C9 0.1uF
DGND

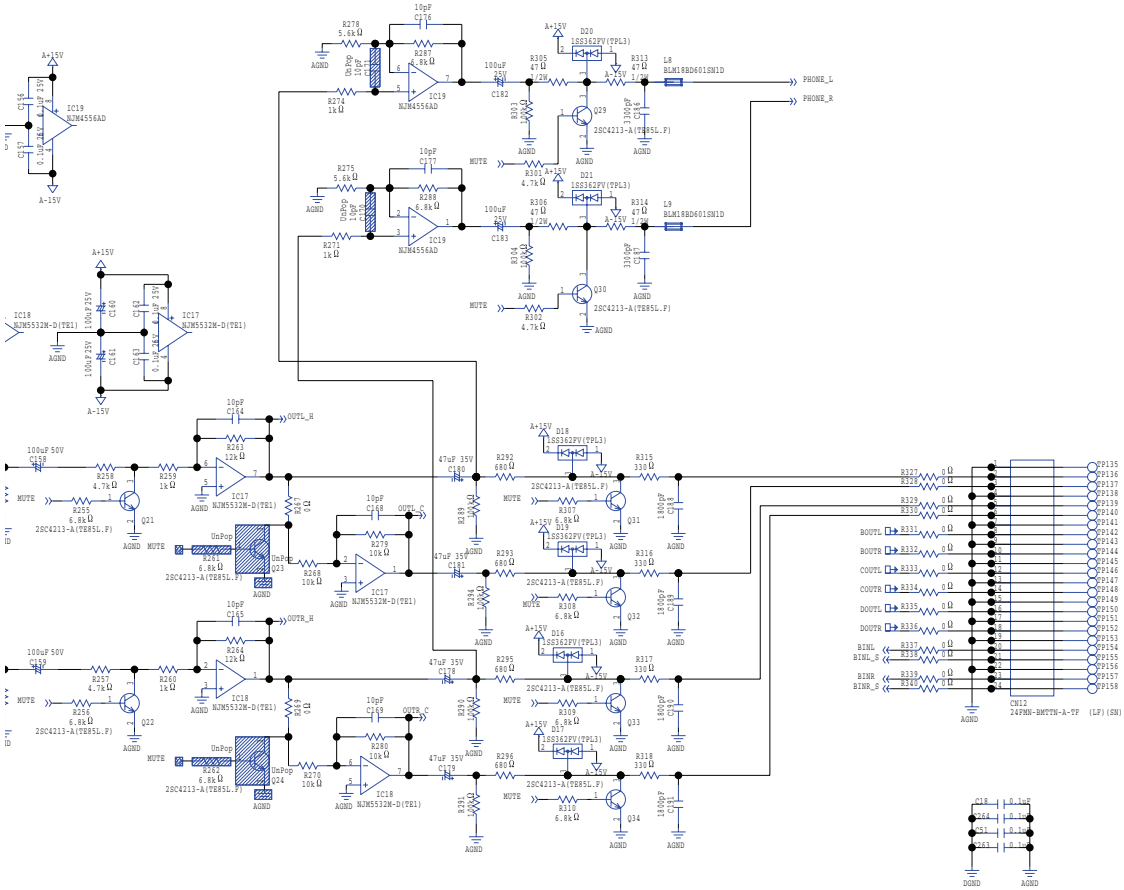
Circuit Board (Sub Board: 2/4)

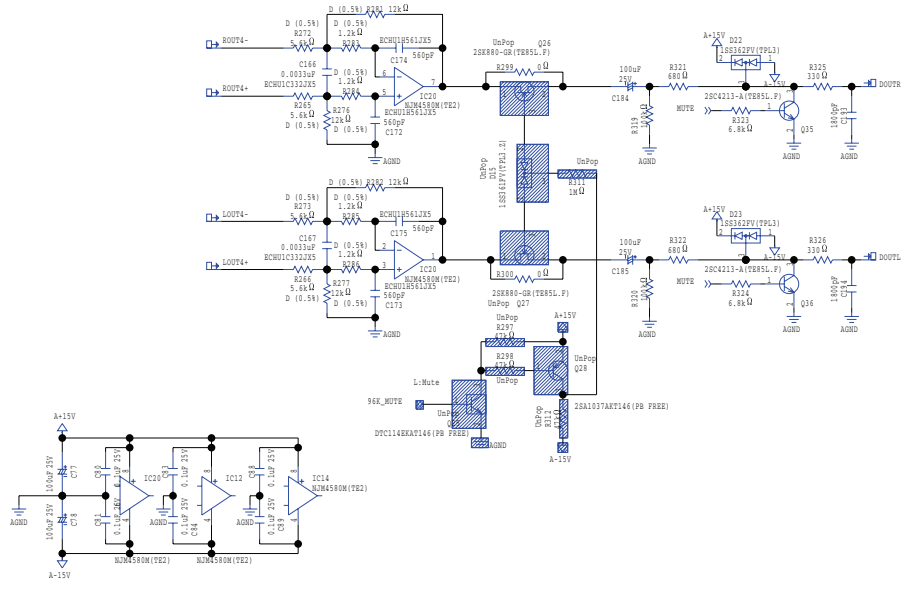



to PANE
to ENC
L:Mute ON

Circuit Board (Sub Board: 3/4)

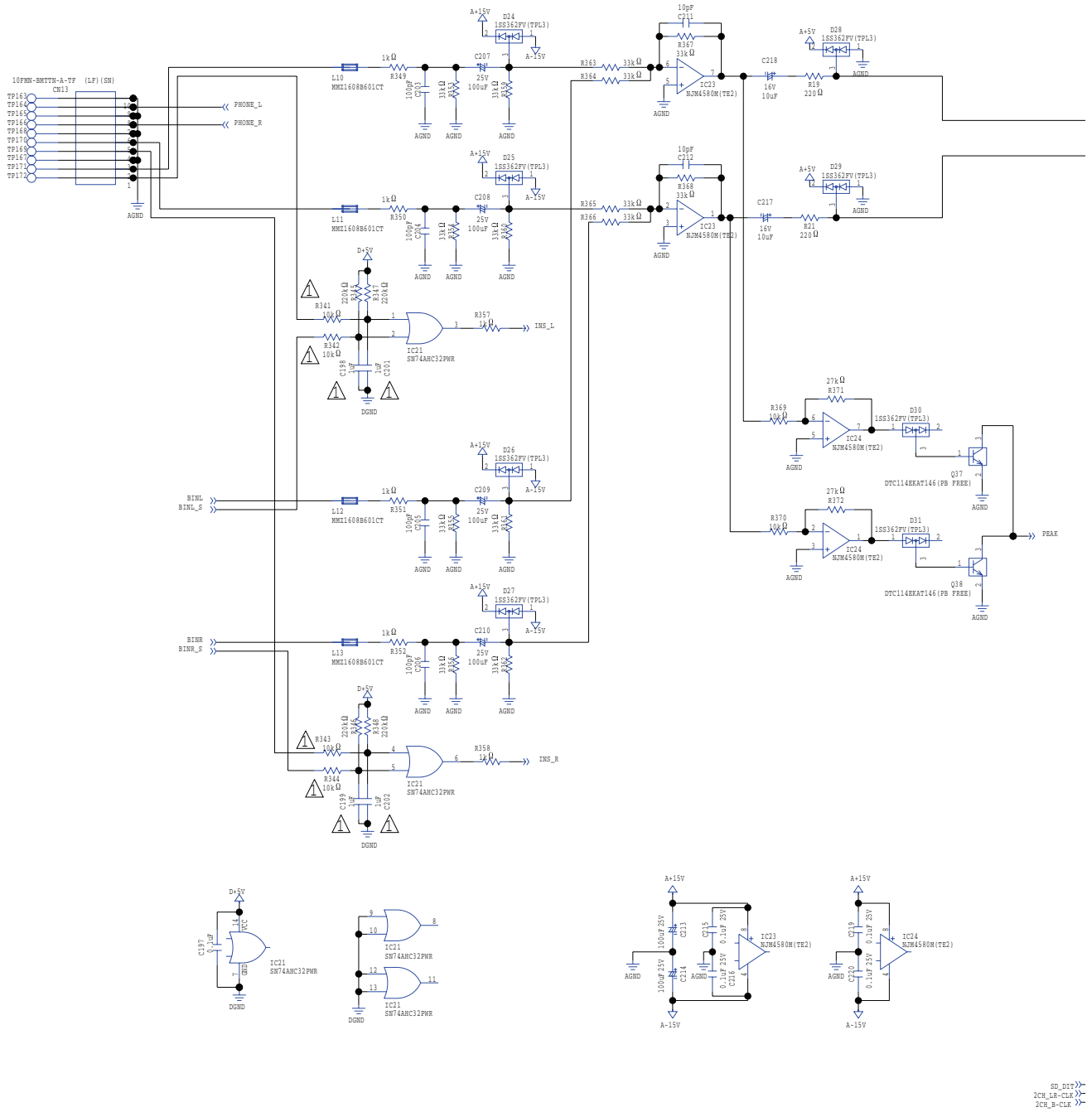


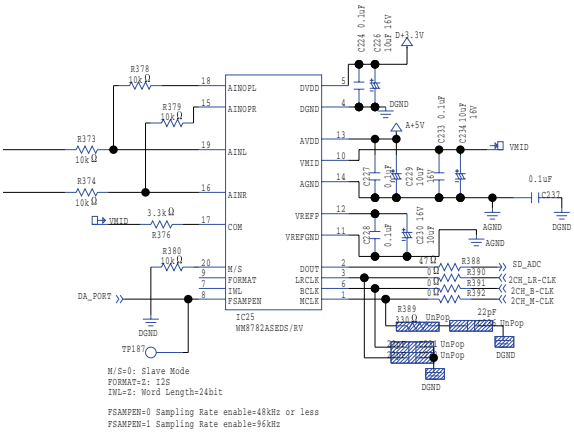

to JACK

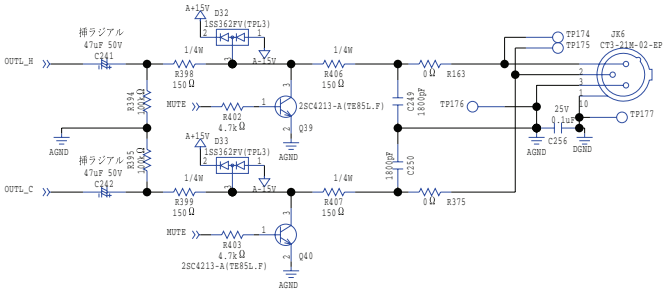


Circuit Board (Sub Board: 4/4)

to FRONT JACK



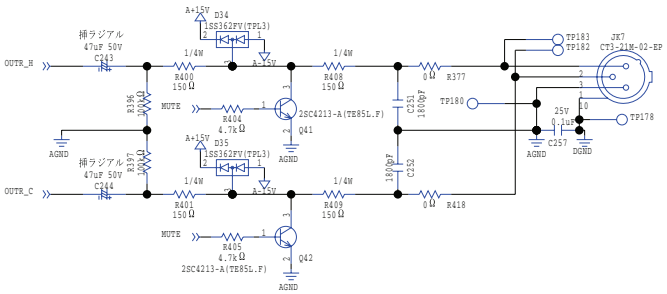


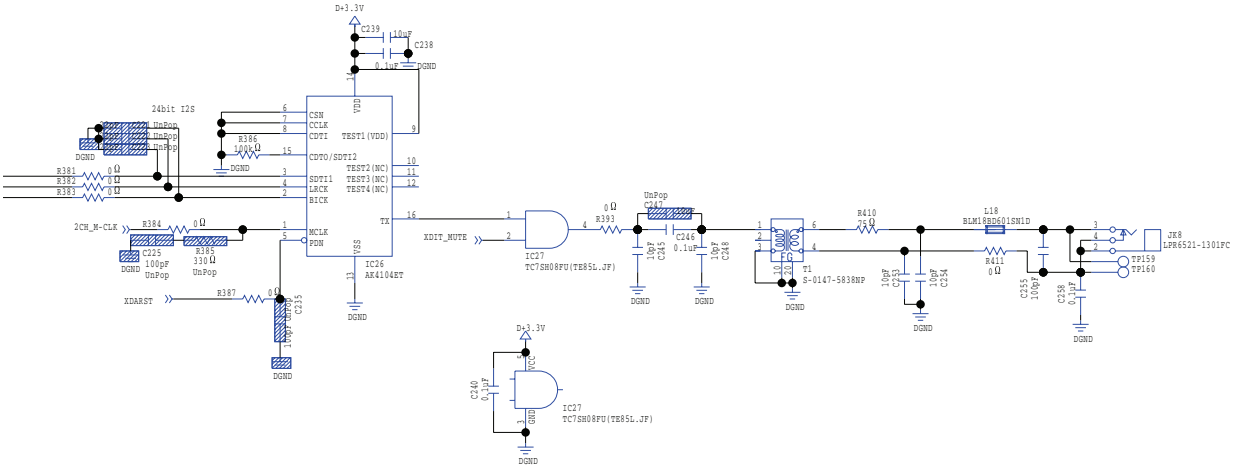


L

MAINOUT(XLR)

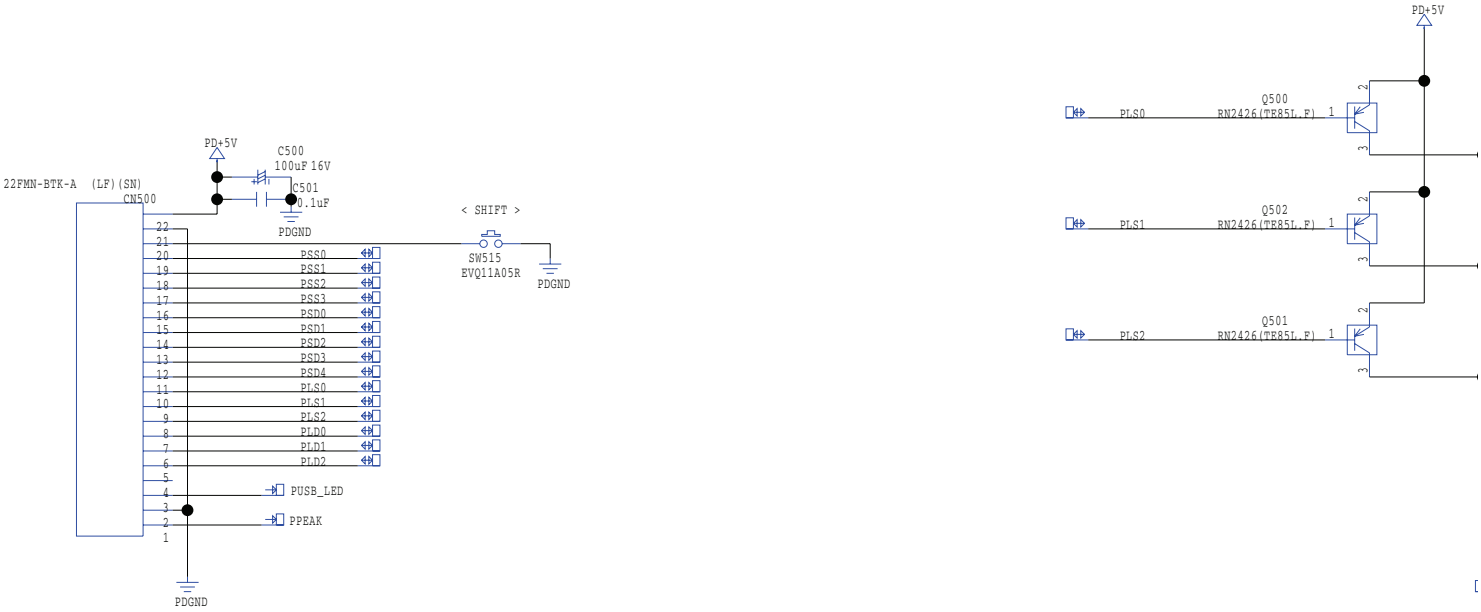
R

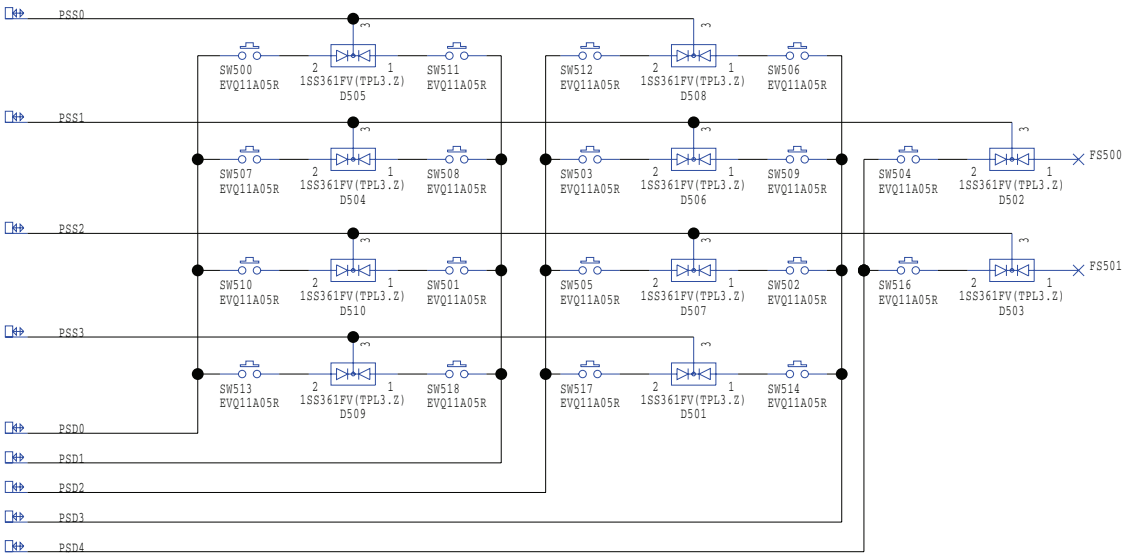


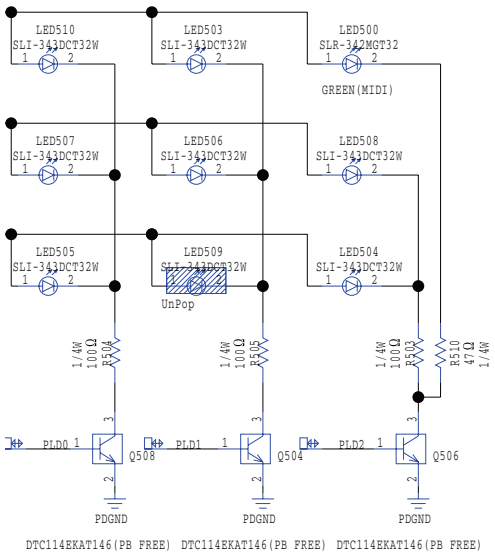


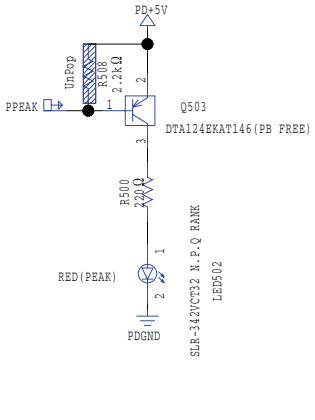
Digital OUT

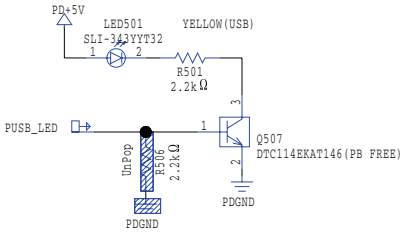
Circuit Board (Panel Board)



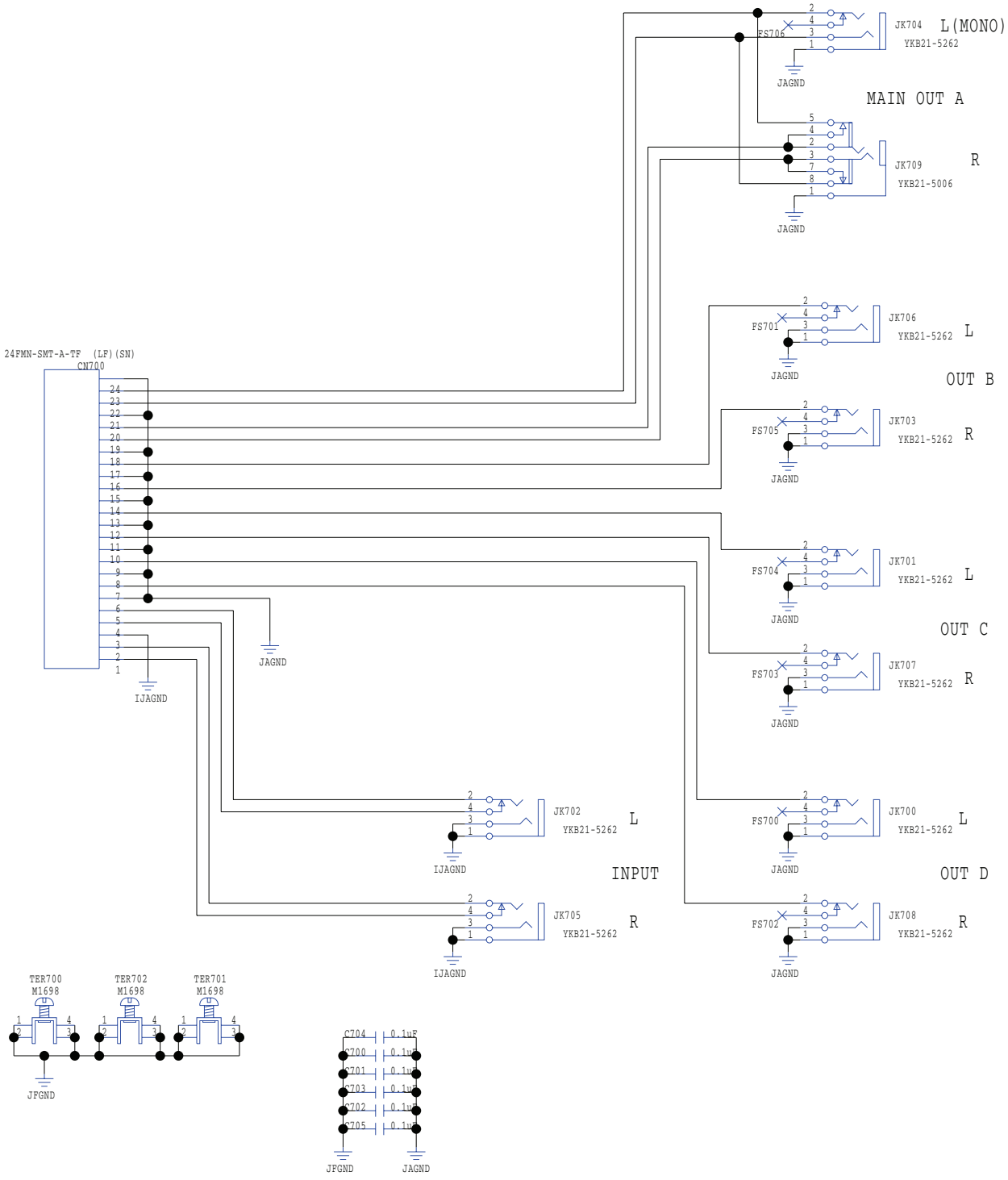



LED510
SLI-343DCT32W
LED503
SLI-343DCT32W
LED500
SLR-342MGT32
GREEN(MIDI)
LED507
SLI-343DCT32W
LED506
SLI-343DCT32W
LED508
SLI-343DCT32W
LED505
SLI-343DCT32W
LED509
SLI-343DCT32W
LED504
SLI-343DCT32W
UnPop
1/4W 100Ω R504
1/4W 100Ω R505
1/4W 100Ω R503
R510 47Ω 1/4W
PLD0
PLD1
PLD2
Q508
Q504
Q506
PDGND
PDGND
PDGND
DTC114EKAT146(PB FREE)
DTC114EKAT146(PB FREE)
DTC114EKAT146(PB FREE)

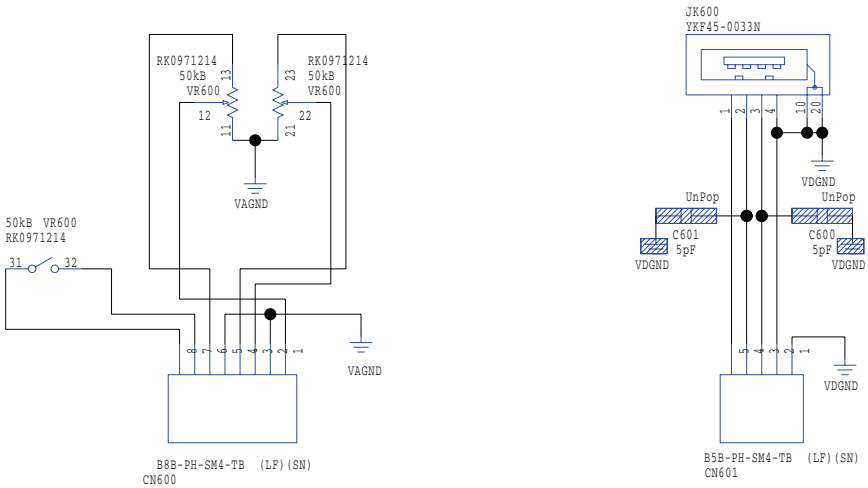

PD+5V
UnPop
R508 2.2kΩ
PPEAK
Q503
DTA124EKAT146(PB FREE)
R500 220Ω
RED(PEAK)
PDGND
SLR-342VCT32 N.P.Q RANK
LED502


PD+5V
LED501
YELLOW(USB)
SLI-343YYT32
R501 2.2kΩ
PUSB_LED
Q507
DTC114EKAT146(PB FREE)
UnPop
R506 2.2kΩ
PDGND
PDGND

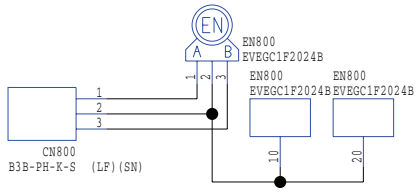
Circuit Board (Jack Board)



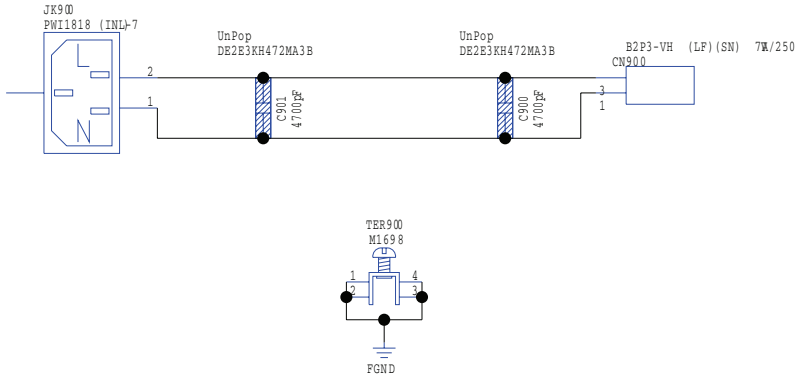
Circuit Board (VR Board)



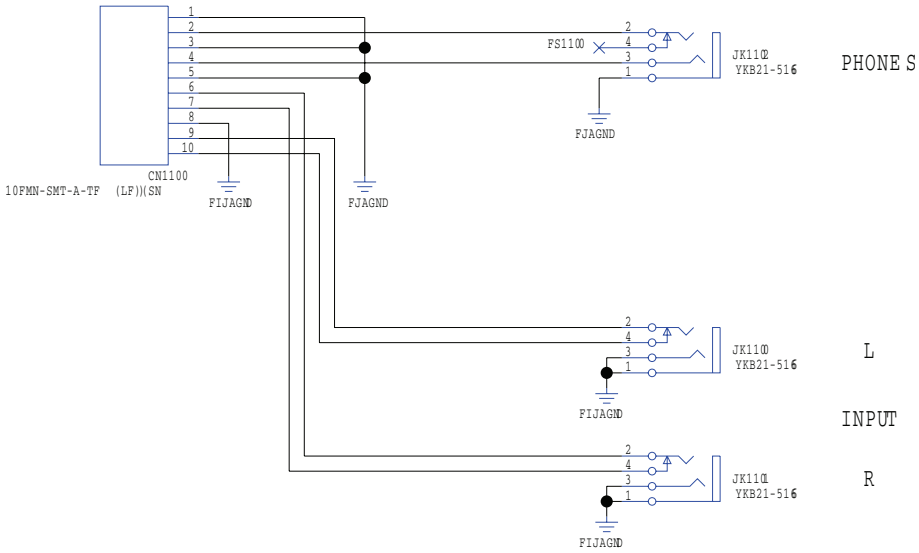
Circuit Board (ENC Board)

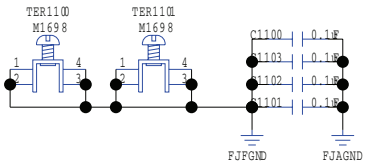


Circuit Board (Inlet Board)



Circuit Board (Front Jack Board)





Circuit Board (SW Board)