MINI-Compact System

Model Name	MX-J730
Model Code	MX-J730/XA

SERVICE MANUAL

MINI-Compact System

MX-J730

Contents

Refer to the service manual in the GSPN (see the rear cover) for more information.

Contents

1. Precaution

Follow these safety instructions while servicing the ESD to prevent damage and to protect against potential hazards such as electrical shock and X-rays.

1.1. Safety Precautions

1) When reinstalling the chassis and its assemblies, be sure to restore all of the protective devices, including the control knobs and the compartment covers.

2) Make sure that there are no cabinet openings through which people (particularly children) can make contact with dangerous internal components.

3) Design Alteration Warning:

   Never alter or add to the mechanical or electrical design of the unit.

   Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard.

   Also, any design changes or additions will void the manufacturer's warranty.

4) Leakage Current Hot Check Figure 1.1 AC Leakage Test:

   WARNING

   Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies.

   With the unit completely reassembled, plug the AC cord directly into a AC outlet. With the unit's power switched from the ON to the OFF position, measure the current between a known ground and all exposed metal parts.

   Known Grounds - Earth

   Known Metal parts - screwheads, metal cabinets, etc.

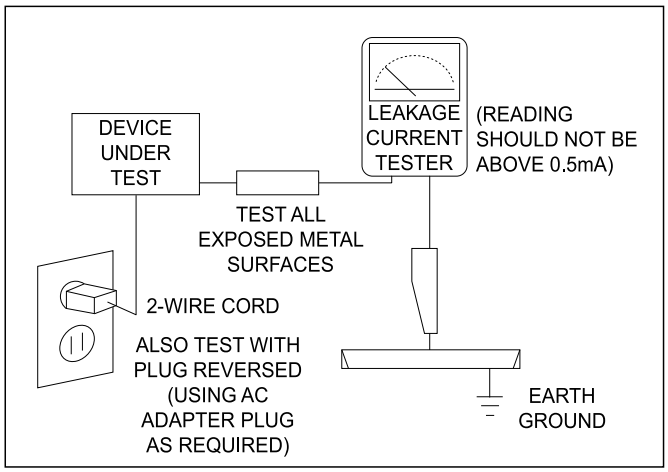


Figure 1.1 AC Leakage Test

5) Insulation Resistance Cold Check:

(1) With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. (2) Set the power switch to ON. (3) Measure the resistance between the shorted AC plug and any exposed metallic parts.

Example: screwheads, metal cabinets, antenna port, etc. If any of the exposed metallic parts has a return path to the chassis, the measured resistance should be between 1 and 5.2 megohms. If there is no return path, the measured resistance should be "infinite." If the resistance is outside these limits, a shock hazard might exist. See Figure 1.2 Insulation Resistance Test

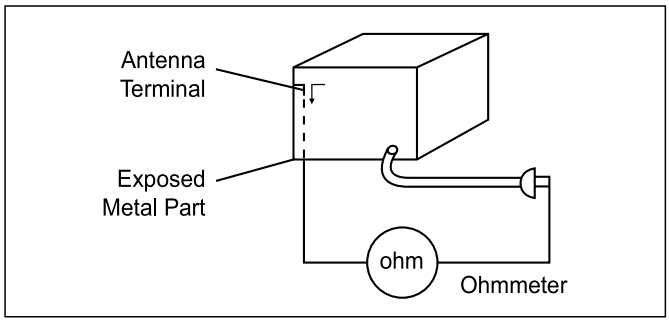


Figure 1.2 Insulation Resistance Test

6) Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.

7) Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring.

Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that no wires or components touch thermally hot parts.

8) Product Safety Notice:

Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.

9) Components that are critical for safety are indicated in the circuit diagram by shading, ⚠ or ⚠. Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1.2. Servicing Precautions

1) Servicing precautions are printed on the cabinet. Follow them.

2) Always unplug the unit's AC power cord from the AC power source before attempting to :
(a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3) Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring may be clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4) After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5) Check the insulation between the blades of the AC plug and accessible conductive parts (examples : metal panels, input terminals and earphone jacks).

6) Insulation Checking Procedure :
Disconnect the power cord from the AC source. Connect an insulation resistance meter (500 V) to the blades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.

7) Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8) Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

CAUTION

First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

1.3. Precautions for Electrostatically Sensitive Devices (ESDs)

Some semiconductor (“solid state”) devices are easily damaged by static electricity.
Such components are called Electrostatically Sensitive Devices (ESDs).
Examples include integrated circuits and some field-effect transistors.
The following techniques will reduce the occurrence of component damage caused by static electricity :

1) Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power–this is an electric shock precaution.)

2) After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

3) Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

4) Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

5) Use only an anti-static solder removal device. Many solder removal devices are not rated as “anti-static” (these can accumulate sufficient electrical charge to damage ESDs).

6) Do not remove a replacement ESD from its protective package until you are ready to install it.
Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

7) Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

8) Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

1.4. Installation Precautions

1) Keep the product away from a heat source such as candle light, mosquito repellent incense, heating equipment, or direct sunlight. Otherwise, this may cause fire.

2) Do not install the product on a place that is shaking, tilted, unstable, or seriously vibrating. The product may drop to get damaged or injure a person. If using the product in a highly vibrating place, it may be broken or cause fire.

3) When moving the product, turn off the power switch and unplug all the connected cables with the product such as the power plug and antenna cable. If the power cord is damaged, this may cause electric shock or fire.

4) Secure room for ventilation. Keep at least 10 cm of distance from the rear wall, and at least 5 cm from either side wall.

5) Installing the product in a special place like below rather than normal environment may cause serious quality concerns due to its special conditions. If this is the case, make sure to contact a local Samsung service center before installing the product. (Special places: a place where a large amount of dust is accumulated; where chemical substances are used or the ambient temperature is too high or low; a place that is full of moisture or water; in transportation vehicles such as a car; or in public places such as the airport or subway station where the product is supposed to operate uninterruptedly for a long time)

6) Keep the packaging plastic wrapper out of children's reach. If children play with it improperly, they may get suffocated.

7) If installing the product on a display cabinet, shelf, desk, etc., keep the product from protruding on its lower side. If the product falls, it may break or cause physical injury. Use only the display cabinet or shelf that fully covers the product.

8) If using lithium batteries, carefully read the following precautions:

NOTE

- Ensure the batteries are inserted in the right direction. Otherwise, they may cause an explosion. Dispose of used batteries according to the manufacturer's instructions.
- Do not expose the battery to fire.
- Do not disassemble, short - cut, or heat the battery.
- Use only the same type and size of batteries for replacement.
- Do not expose the battery to fire or excessive heat.

2. Product Specification

2.1. Product Feature

■ Power

- 2.0 CH : 600W Total RMS
- IR Amp

■ Specialized Function in 2015

- CD Ripping (Able to ripping while listening)
- GIGA Mode
- Demo / Demo Music Play
- Football Mode
- Non-Stop Music Relay
- CD / USB Program
- Auto Change

■ Connectivity

- USB Host (Twin USB)
- TV Sound Connect
- Bluetooth
- BT Power On

■ Disc

- Type : 1 Tray (12 cm CD)
- Compatible : CD DA / CD-R / RW, WMA, MP3, ISO9660

2.2. Specifications

■ Basic Specification

General	**Weight**	2.45 Kg
	Dimensions	200 (W) x 308.5 (H) x 230 (D) mm
	Operating Temperature Range	+5 °C ~ +35 °C
	Operating Humidity Range	10 % to 75 %
FM Tuner	**Signal/Noise ratio**	55 dB
	Usable sensitivity	12 dB
	Total harmonic distortion	0.6 %
CD Disc	**CD : 12 cm (Compact Disc)**	Reading Speed : 4.8 ~ 5.6 m/sec.
		Maximum Play Time : 74 min.
Amplifier		MX-J650 : 440 Watts (10% THD)
	Front speaker output	220 W/CH (4 Ω/100 Hz)
		MX-J730 : 600 Watts (MAX)
		300 W/CH (4 Ω/100 Hz)
	Front speaker output	250 W/CH (4 Ω/100 Hz)
	Frequency range	20 Hz ~ 20 KHz
	S/N Ratio	80 dB
	Channel separation	65 dB
	Input sensitivity	(AUX) 2V

NOTE

- Samsung Electronics Co., Ltd reserves the right to change the specifications without notice.
- Weight and dimensions are approximate.
- Design and specifications are subject to change without prior notice.
- For the power supply and Power Consumption, refer to the label attached to the product.

2.3. Specifications Analysis

Model Name	MX-J730	MX-J650	MX-H730
Photo			
Total Power (RMS 10%)	500 W	440 W	550 W
SPK CHANNEL	2.0 ch	2.0 ch	2.0 ch
FRONT DISPLAY	VFD	VFD	VFD
3D Beat Lighting	X	X	X
GIGA SOUND	O	O	O
SPK LED LIGHTING	X	X	X
DJ BEAT	X	X	X
BEAT WAVING	X	X	X
TV Sound	O	O	X
COMPATIBLE DISC	CD DA / CD-R / CD-RW	CD DA / CD-R / CD-RW	CD DA / CD-R / CD-RW
COMPATIBLE FILE	WMA / MP3	WMA / MP3	WMA / MP3
USB HOST 1.0	2	2	1
CD RIPPING	O	O	O
BLUETOOTH	O	O	O
AUDIO IN (RCA)	O	O	O
MIC IN	X	X	O
HEADPHONE OUT	X	X	X
VIDEO OUT	X	X	X
FM / AM	O / O	O / O	O/O
SPK IMPEDANCE	Front 4 ohm	Front : 4 ohm	Front : 4 ohm
STBY POWER CONSUMPTION	0.45 W ↓	0.45 W ↓	0.45 W ↓
MAIN SIZE (mm)	200 (W) X 308.5 (H) X 230 (D)	200 (W) X 308.5 (H) X 230 (D)	203 (W) X 306 (H) X 256.5 (D)
SPK SIZE (mm)	232 (W) X 331 (H) X 294 (D)	223 (W) X 325 (H) X 280 (D)	230 (W) X 359 (H) X 299.7 (D)
Package Weight (Kg)	14	12.2	11.71

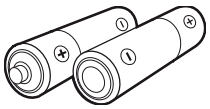
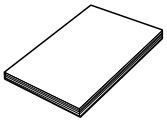
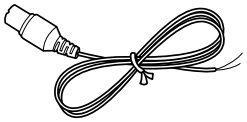
TIP

O : Feature Included

X : Not Included

2.4. Accessories

2.4.1. Supplied Accessories

Accessories	Item	Item code
	Batteries (AAA)	4301-000116
	Remote Control	AH59-02694B
	User's Manual	AH68-02791D
	FM Antenna	AH42-00021A

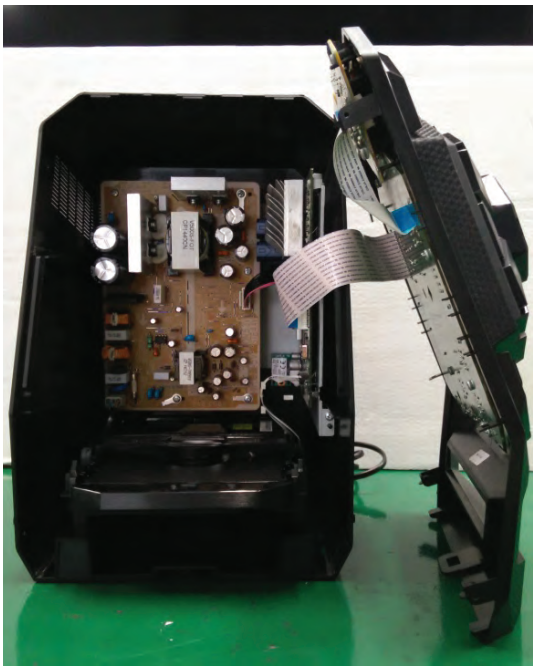
3. Disassembly and Reassembly

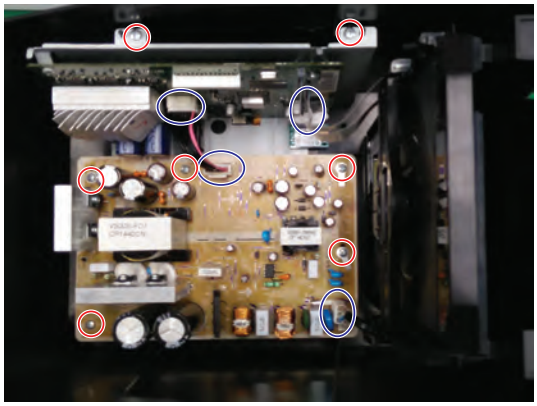
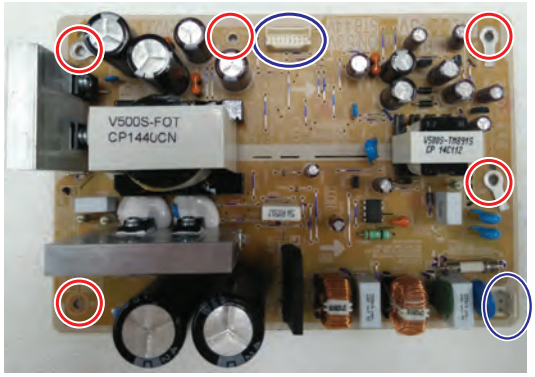
3.1. Main Disassembly and Reassembly

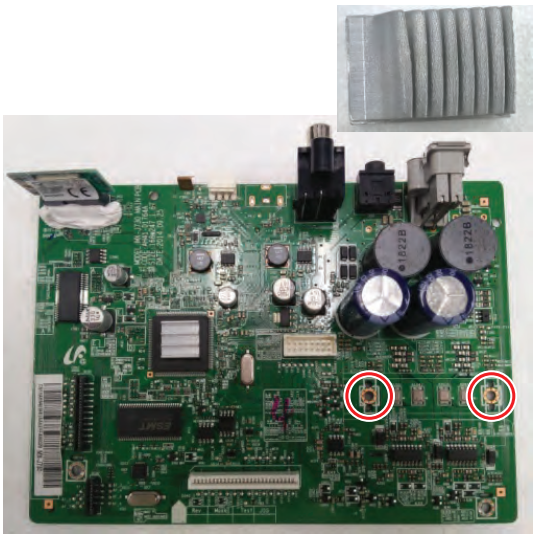
CAUTION

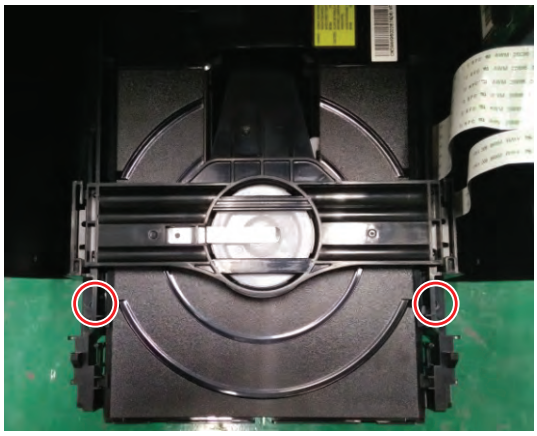
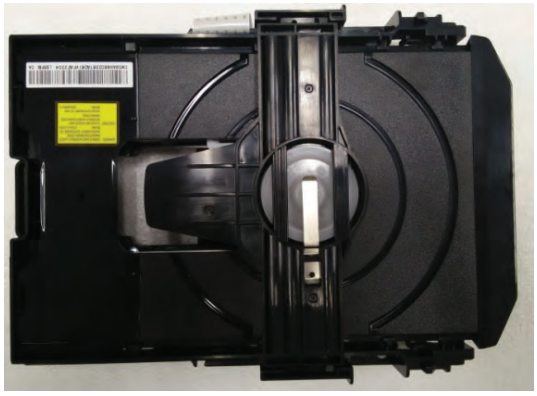
- **Be careful to follow the disassembly sequence described in the manual. Otherwise, the product may be damaged.**
- **Be sure to carefully read and understand the safety instructions before performing any work as the IC chips on the PCB are vulnerable to static electricity.**
- **In order to assemble reverse the order of disassembly.**

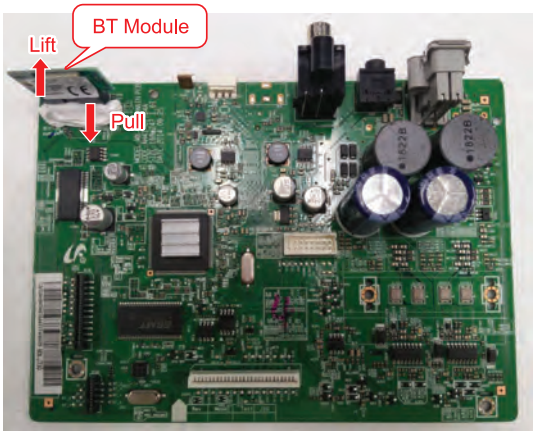
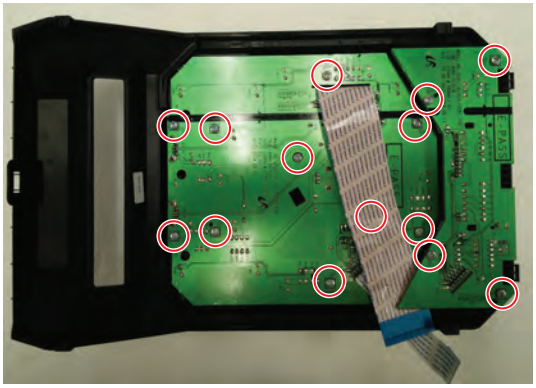
Description	Description Photo
1. Unfasten 4 screws on the 2 side Cover. : BH,+,B,M3,L10,ZPC(BLK) **CAUTION** **Be careful not to make any scratches as you remove them.**	

Description	Description Photo
2. Separate the Front Panel.	 

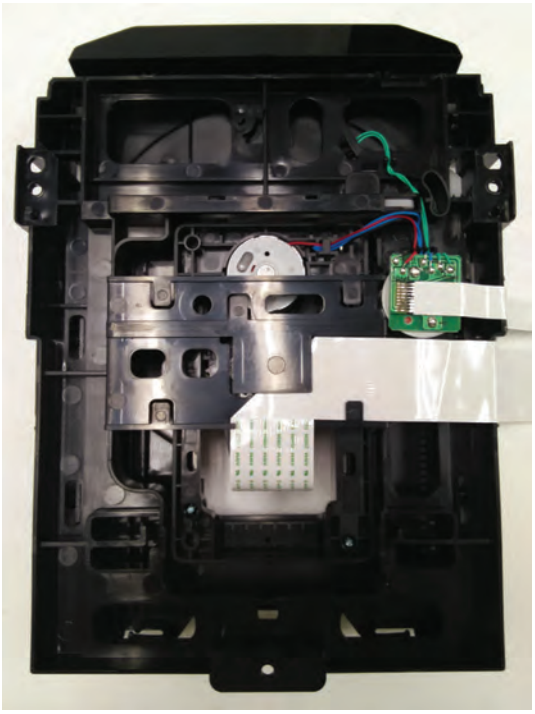
Description	Description Photo
3. Unfasten 2 screws, and then separate the Rear PCB from Rear Panel. : BH,+,B,M3,L10,ZPC(BLK)	
4. Unfasten 5 screws in SMPS and detach AC-CORD & 13P shield wire. : BH,+,-,B,M3,L10,ZPC(WHT)	 

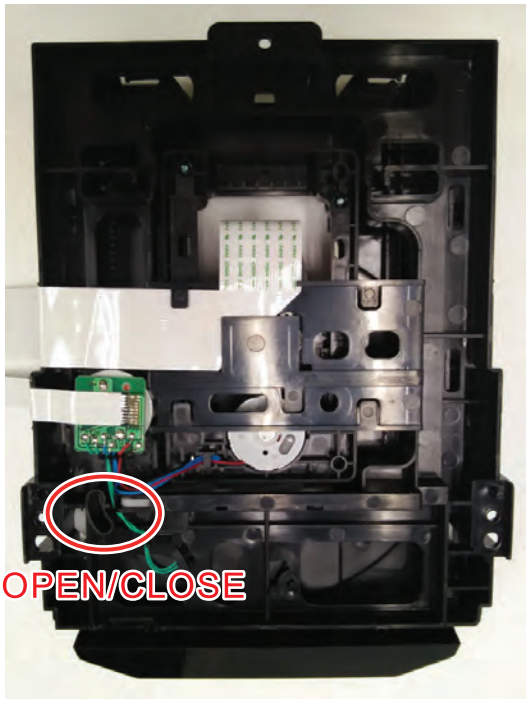
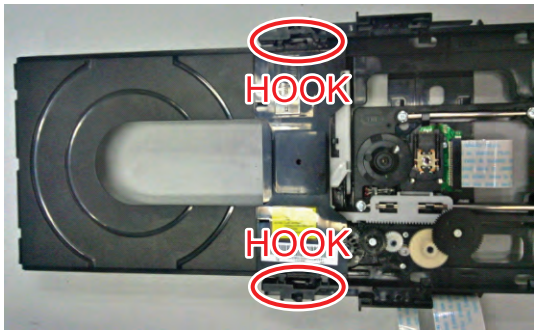
Description	Description Photo
5. Unfasten 4 kitting screws and detach DECK wire. : BH,+,-,B,M3,L10,ZPC(WHT)	 

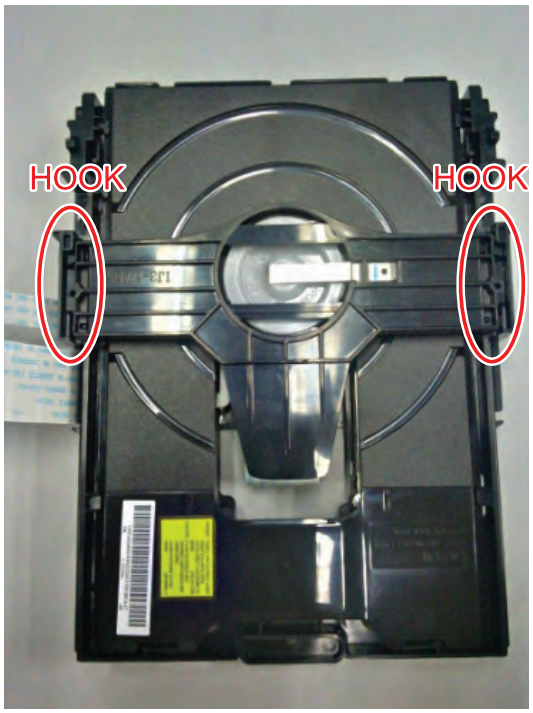
Description	Description Photo
6. Unfasten 2 screws from inside, separate DECK from mecha. : BH,+,B,M3,L10,ZPC(BLK)	 

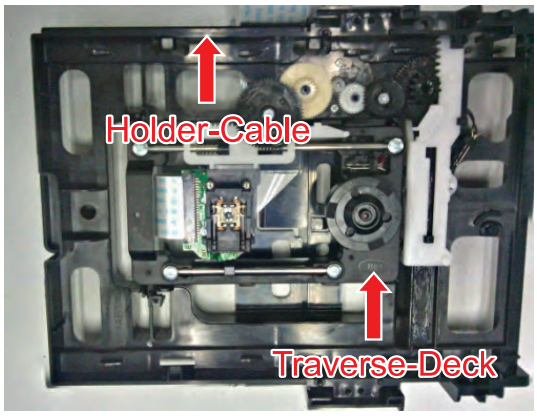
Description	Description Photo
7. Pull the Jack. Lift BT Module.	  
8. Unfasten 14 screws, and then separate the Front PCB from Front Panel. : BH,+,-,B,M3,L10,ZPC(WHT)	

3.2. DECK Disassembly and Reassembly

Description	Description Photo
1. Separate Tray - Disc from DECK.	 

Description	Description Photo
	
	
	

Description	Description Photo
2. Lift up Holder-Cable, separate Traverse-DECK.	 

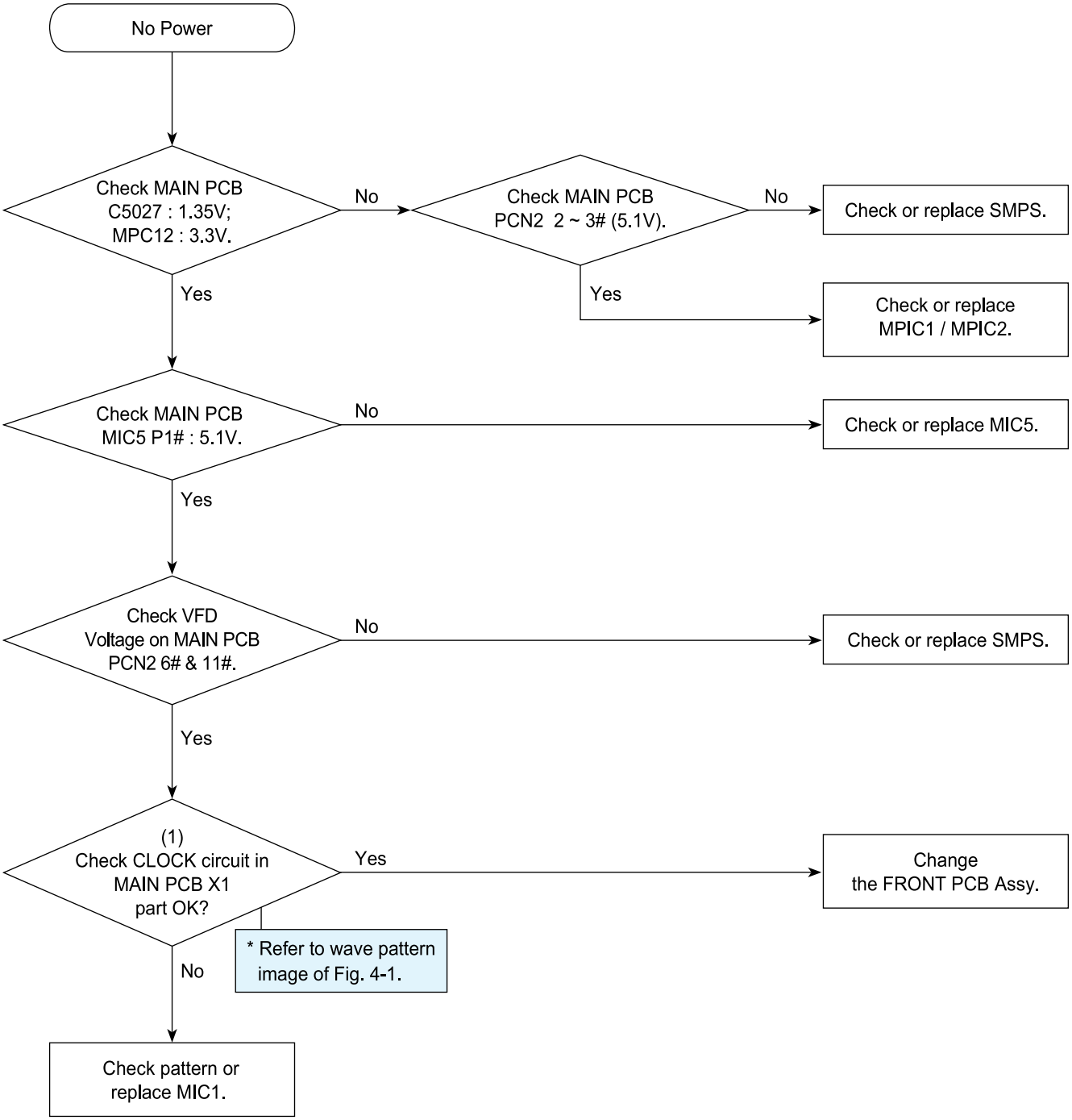
Description	Description Photo
3. Disassemble complete.	  

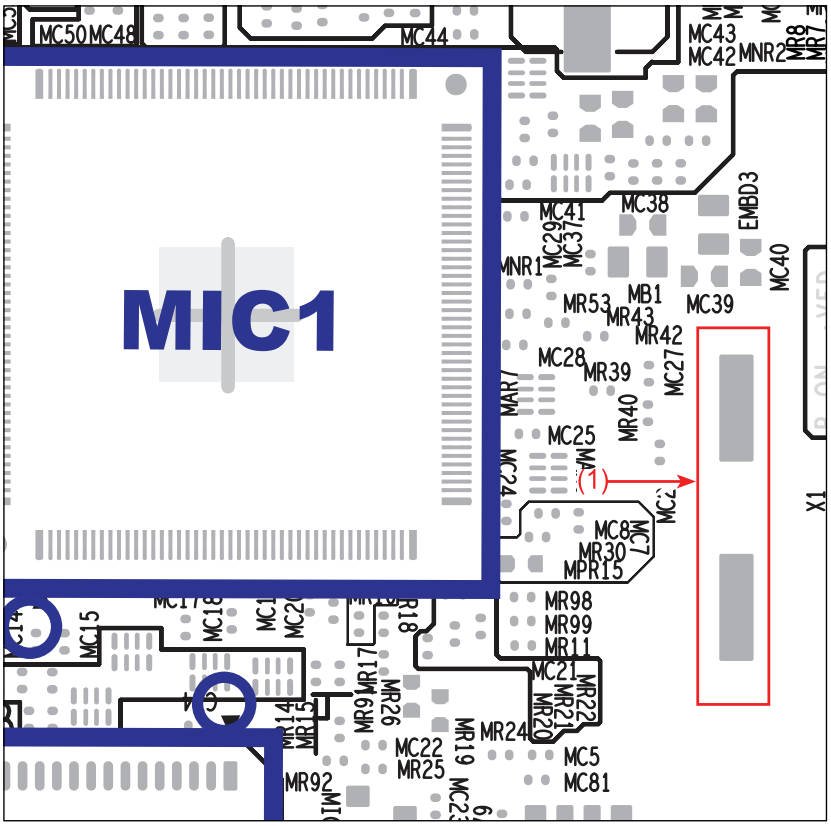
4. Troubleshooting

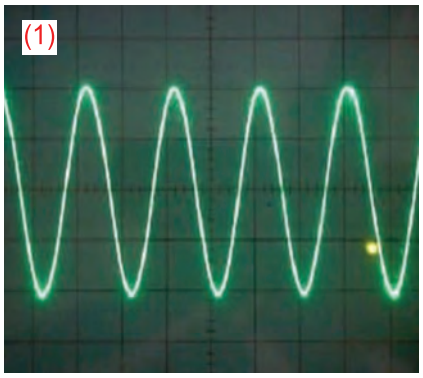
4.1. Checkpoints by Error Mode

Oscilloscope Setting Values	Normal Voltage	27 MHz	32.768 KHz
Voltage/DIV	1 Vol/DIV	1 Vol/DIV	1 Vol/DIV
TIME/DIV	1 uS/DIV	10 ns/DIV	0.1 uS/DIV

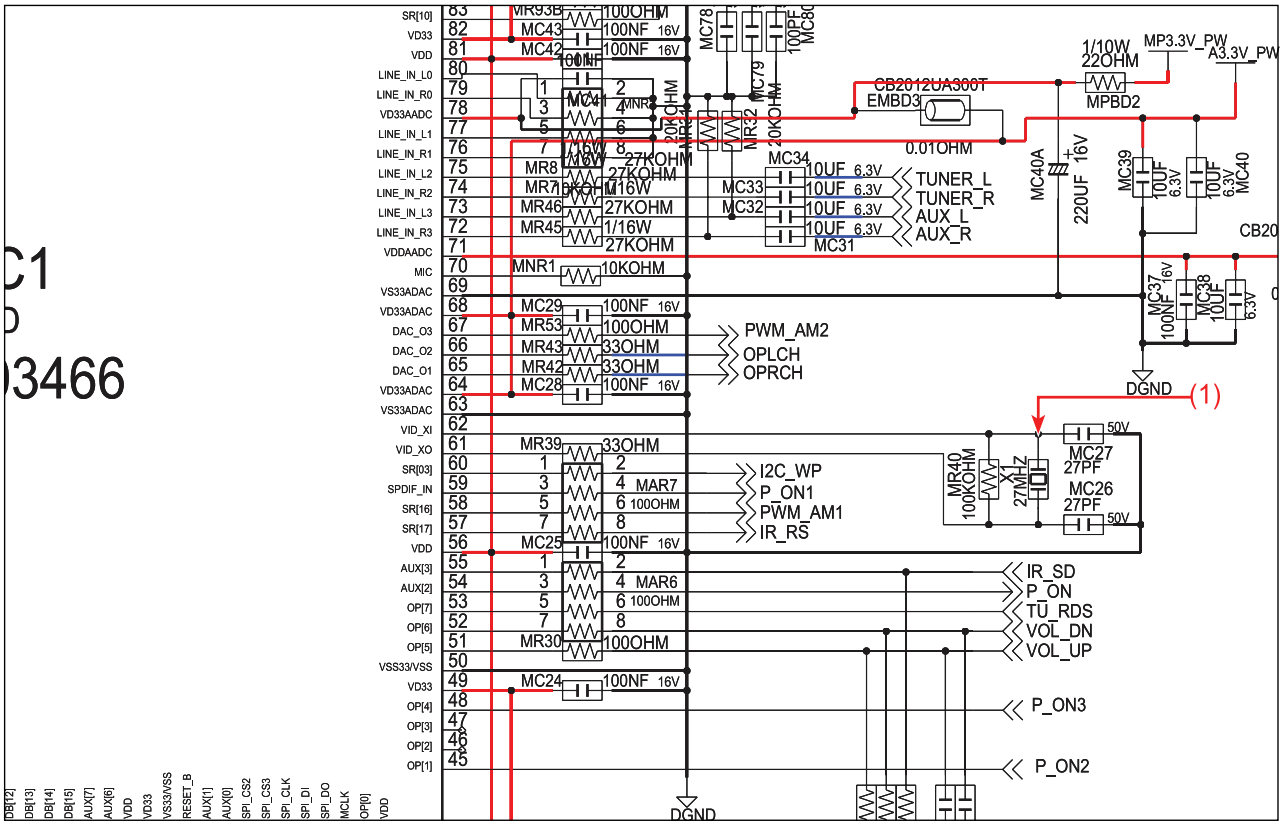
4.1.1. No Power







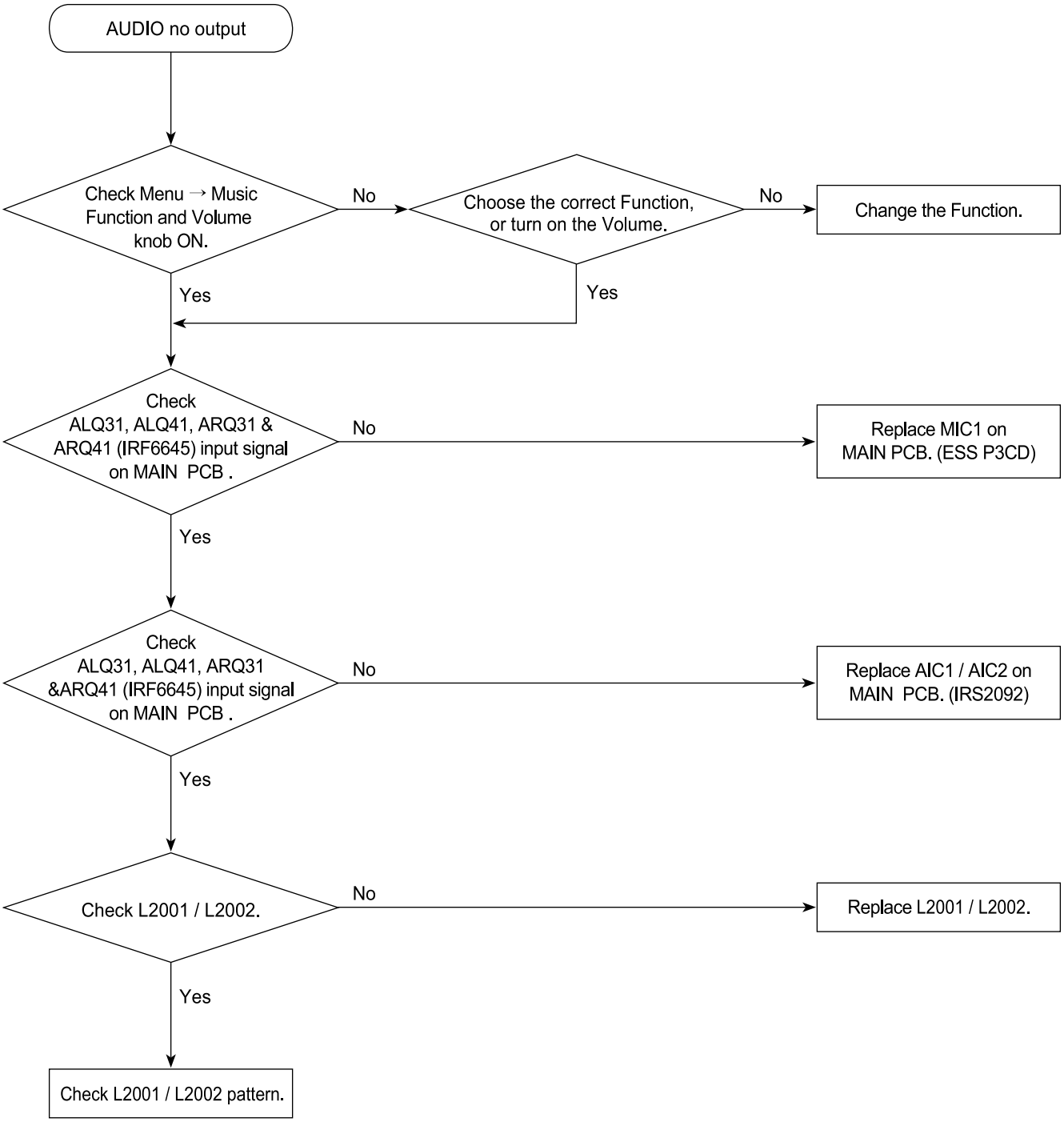
* 5.4. MAIN PCB Top



* 6.8. MAIN-4

<Fig. 4-1>

4.1.2. No Output



4.2. Measures to be taken when the Protection Circuit operates

4.2.1. Operation of Power Block Protection Circuit

■ Cases of the SMPS Protection.

1) If there is over current at the AMP IC. (Speaker Wire Short)

2) If temperature of the AMP IC is over 150 ℃.

3) There is no power supply for amp.

■ Protection Circuit operates when power problem occurs in the SMPS.

	Location	Pin No.	Protection		Remark
			Open	Short	
MX-J730 SMPS PCB	CN851	+5.3 V (5#)	X	X	
		+PVDD (+33 V) (15 ~ 16#)	X	X	
		5 V (9#)	X	X	
		P-ON (+5.3 V (1#)	X	X	

4.2.2. Check AMP in Power Protection

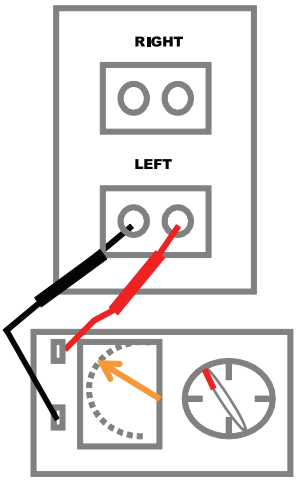
If you think, there are problems at the AMP Part, you can check the PCB without disassembling the set.

CAUTION

Do not connect the power cord during the test!

Measurement Resistance using Tester	
R CH	2 kΩ
L CH	2 kΩ
If Measured Resistance is very different from above numbers, There is a Problem. → AMP Part Problem	

2CH SPEAKER OUT



4.3. MICOM, MPEG Initialization & Update

■ MPEG Reset

1) During “No Disc” Displayed, push the stop Button 5 seconds. After displayed “INITIALIZE” set will power off automatically.

■ MPEG Update

1) Prepare Rom file at USB Memory. Update file name : MX-J730WWB-XXXX rom
2) Update file name
3) Insert USB Memory, and play. ‘UPDATE’ will be displayed. Set will be power off → on → open.

■ MPEG Version Check

1) Power On.
2) CD mode select – OPEN status
3) Push the ▶▶| button for 5 seconds, check the MICOM version.
4) Push the ▶▶| button for 5 seconds, check the MPEG version.

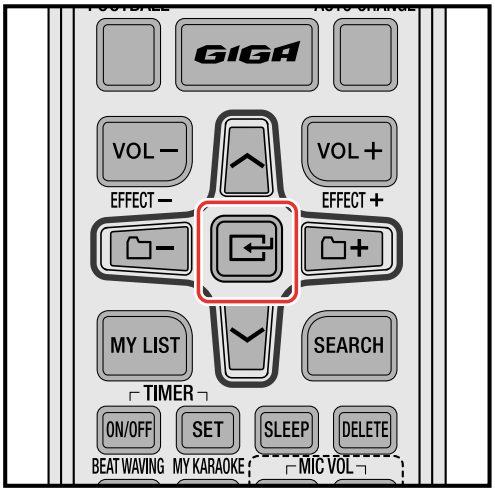
4.4. Buyer-Region Code Setting Method

4.4.1. The inserting method of Region Code after replacing the Main PBA

NOTE

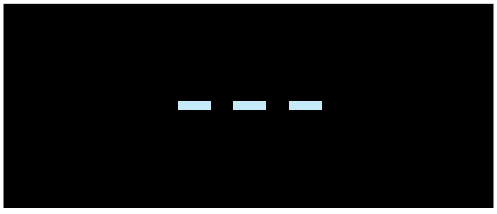
- When replacing the Main PBA and System Micom should be inserted the region code.
- The set is not working properly if you don't insert the region code.
- The region code is inserted by the remote control.

1) Change to “AUX” function, and then push the ‘ENTER’ button about 10 second.



2) When displayed “TEST”, input 46 to set the buyer.

3) When displayed “– – –”, input the buyer code, refer to the follow Option Table.



4) It will show the buyer that you set up. Then the buyer setting is succeed.

Table 4.1 MX-J730 Option Table

Region Code	Buyer
00	Latin American
01	Brazil
02	Africa, Indonesia, Asia, Hongkong
03	USA, Canada
04	Iran (HC)
05	Europe
06	Philippines
07	KOR
08	KOR

Table 4.2 MX-J650 Option Table

Region Code	Buyer
20	Latin American
21	Brazil
22	Africa, Indonesia, Asia, Hongkong
23	USA, Canada
24	Iran (HC)
25	Europe
26	Philippines
27	KOR
27	KOR

5. PCB Diagram

5.1. Wiring Diagram

Deck

Pin	Signal	Function
1	SP+	SPINDLE MOTOR+
2	SP-	SPINDLE MOTOR+
3	SL-	SLED_MOTOR-
4	SL+	SLED_MOTOR+
5	INSW	OPEN SWITCH
6	OUTSW	CLOSE SWITCH
7	GND	MOTOR GND
8	D+	NOT CONNECT
9	D-	NOT CONNECT

Pin	Signal	Function
1	CD_VR	CD circuit Adjust
2	CD_MPD	APC input signal
3	CD_LD	CD Laser control
4	LD_GND	GND
5	SW	CD/DVD OPTION
6	F-	Focus driver differential signal -
7	T-	Track driver differential signal -
8	T+	Track driver differential signal +
9	F+	Focus driver differential signal +
10	B	PD IC output signal
11	C	PD IC output signal
12	D	PD IC output signal
13	A	PD IC output signal
14	NC	NOT CONNECT
15	NC	NOT CONNECT
16	VCC	RF POWER 5V
17	VREF	Voltage reference
18	GND	Digital GROND
19	DVD_VR	DVD VR
20	PD_GND	DGND
21	DVD_LD	DVD Laser control
22	RF	RF signal
23	NC	NOT CONNECT

SMPS

Pin	Signal	Function
1	VFD+	VFD Power Supply(+)
2	P-ON	MICOM Control SMPS Signal
3	VFD-	VFD Power Supply(-)
4	DGND	GND
5	VH	VFD Driver IC Power Supply
6	A5.3V	AMP/MPEG Power Supply
7	DGND	GND
8	DGND	GND
9	VPS	AMP/MPEG Power Supply
10	A-5V	GVDD
11	-PVDD	AMP GVDD Power(-)
12	-PVDD	AMP GVDD Power(-)
13	AGND	AMP GND
14	AGND	AMP GND
15	+PVDD	AMP GVDD Power(+)
16	+PVDD	AMP GVDD Power(+)

Main

RFCN2

Function	Signal	Pin
SPINDLE MOTOR+	SP+	1
SPINDLE MOTOR+	SP-	2
SLED_MOTOR-	SL-	3
SLED_MOTOR+	SL+	4
OPEN SWITCH	INSW	5
CLOSE SWITCH	OUTSW	6
MOTOR GND	GND	7
NOT CONNECT	NC	8
NOT CONNECT	NC	9

[illegible]

Function	Signal	Pin
CD circuit Adjust	CD_VR	1
APC input signal	CD_MPD	2
CD Laser control	CD_LD	3
GND	LD_GND	4
CD/DVD OPTION	SW	5
Focus driver differential signal -	F-	6
Track driver differential signal -	T-	7
Track driver differential signal +	T+	8
Focus driver differential signal +	F+	9
PD IC output signal	B	10
PD IC output signal	C	11
PD IC output signal	D	12
PD IC output signal	A	13
NOT CONNECT	NC	14
NOT CONNECT	NC	15
RF POWER 5V	VCC	16
Voltage reference	VREF	17
Digital GROND	GND	18
DVD VR	DVD_VR	19
DGND	PD_GND	20
DVD Laser control	DVD_LD	21
RF signal	RF	22
NOT CONNECT	NC	23

PCN2

Function	Signal	Pin
VFD Power Supply(+)	VFD+	1
MICOM Control SMPS Signal	P-ON	2
VFD Power Supply(-)	VFD-	3
GND	DGND	4
VFD Driver IC Power Supply	VH	5
AMP/MPEG Power Supply	A5.3V	6
GND	DGND	7
GND	DGND	8
AMP/MPEG Power Supply	VPS	9
GVDD	A-5V	10
AMP GVDD Power(-)	-PVDD	11
AMP GVDD Power(-)	-PVDD	12
AMP GND	AGND	13
AMP GND	AGND	14
AMP GVDD Power(+)	+PVDD	15
AMP GVDD Power(+)	+PVDD	16

UCN1

Pin	Signal	Function
1	VH	VFD Driver IC Power Supply
2	VFD-	VFD Power Supply(-)
3	VFD+	VFD Power Supply(+)
4	DGND	GND
5	VFD_CE	VFD Enable
6	VFD_CLK	VFD Working Clock Signal
7	VFD_DO	VFD Data
8	JOG-	Volume Down
9	JOG+	Volume Up
10	KEY_AD2	Key Signal 2
11	KEY_AD1	Key Signal 1
12	DGND	GND
13	REMOCON	REMOCON Eye Signal
14	5.1V	Abov/Driver IC Power Supply
15	USB1_5.2V	USB Power Supply
16	5.1V	Abov/Driver IC Power Supply
17	USB1_DN	USB Differential Signal
18	USB1_DN	USB Differential Signal
19	USB1_DP	USB Differential Signal
20	USB1_DP	USB Differential Signal
21	USB2_5.2V	USB Power Supply
22	DGND	GND
23	USB2_DN	USB Differential Signal
24	USB2_DN	USB Differential Signal
25	USB2_DP	USB Differential Signal
26	USB2_DP	USB Differential Signal
27	DGND	GND

Front JACK

Function	Signal	Pin
VFD Driver IC Power Supply	VH	1
VFD Power Supply(-)	VFD-	2
VFD Power Supply(+)	VFD+	3
GND	DGND	4
VFD Enable	VFD_CE	5
VFD Working Clock Signal	VFD_CLK	6
VFD Data	VFD_DO	7
Volume Down	JOG-	8
Volume Up	JOG+	9
Key Signal 2	KEY_AD2	10
Key Signal 1	KEY_AD1	11
GND	DGND	12
REMOCON Eye Signal	REMOCON	13
Abov/Driver IC Power Supply	5.1V	14
USB Power Supply	USB1_5.2V	15
Abov/Driver IC Power Supply	5.1V	16
USB Differential Signal	USB1_DN	17
USB Differential Signal	USB1_DN	18
USB Differential Signal	USB1_DP	19
USB Differential Signal	USB1_DP	20
USB Power Supply	USB2_5.2V	21
GND	DGND	22
USB Differential Signal	USB2_DN	23
USB Differential Signal	USB2_DN	24
USB Differential Signal	USB2_DP	25
USB Differential Signal	USB2_DP	26
GND	DGND	27

BTCN1

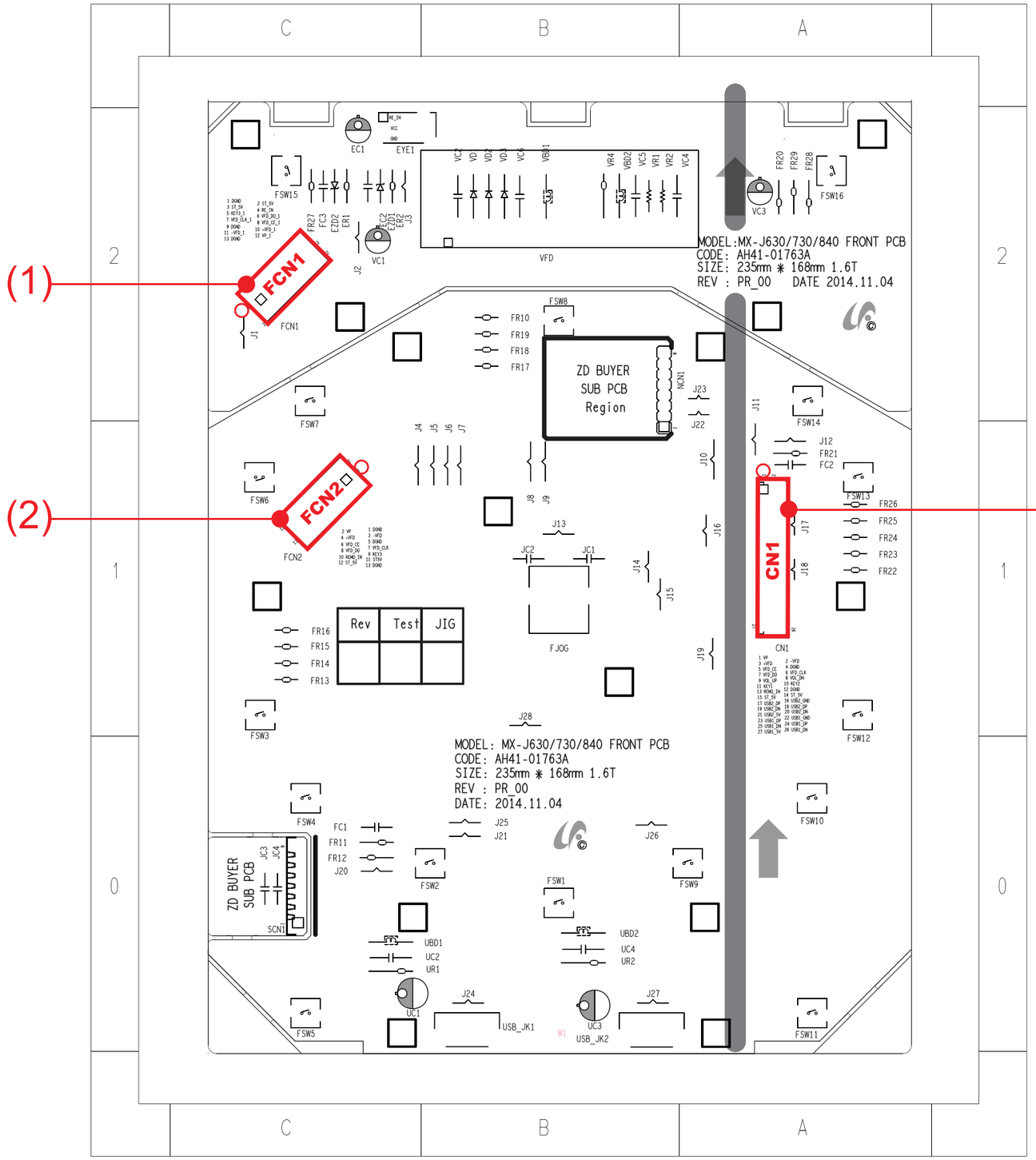
Pin	Signal	Function
1	BT_RST	BT Reset Signal
2	MP3.3V_PW	BT Power Supply
3	BT_RXT	BT Communicate Signal (Receive)
4	BT_TXD	BT Communicate Signal (Send)
5	GND	GND
6	I2C_SCL	I2C_SCL
7	I2C_SDA	I2C_SDA
8	GND	GND
9	NC	NOT CONNECT
10	NC	NOT CONNECT

BT ASSY

BT

Function	Signal	Pin
BT Reset Signal	BT_RST	1
BT Power Supply	MP3.3V_PW	2
BT Communicate Signal (Receive)	BT_RXT	3
BT Communicate Signal (Send)	BT_TXD	4
GND	GND	5
I2C_SCL	I2C_SCL	6
I2C_SDA	I2C_SDA	7
GND	GND	8
NOT CONNECT	NC	9
NOT CONNECT	NC	10

5.2. FRONT PCB Top



5.2.1. Pin Connection

1) FCN1

Connect to VFD

Pin No.	Signal
1	DGND
2	VP
3	-VFD
4	+VFD
5	DGND
6	VFD_CE
7	VFD_CLK
8	VFD_DO
9	KEY3
10	RE_IN
11	ST_5V
12	ST_5V
13	DGND'

2) FCN2

Connect to VFD

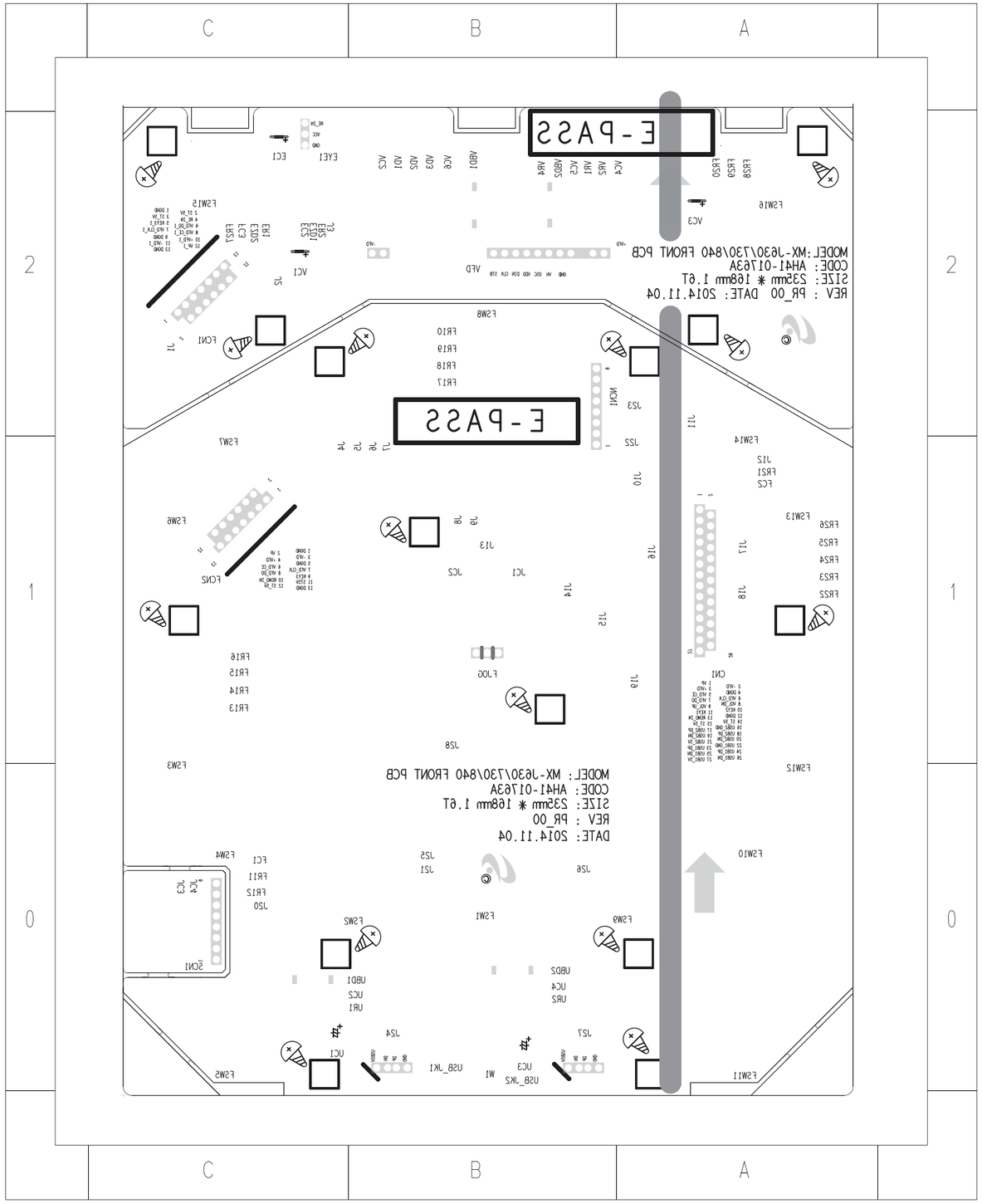
Pin No.	Signal
1	DGND
2	VP
3	-VFD
4	+VFD
5	DGND
6	VFD_CE
7	VFD_CLK
8	VFD_DO
9	KEY3
10	RE_IN
11	ST_5V
12	ST_5V
13	DGND'

3) CN1

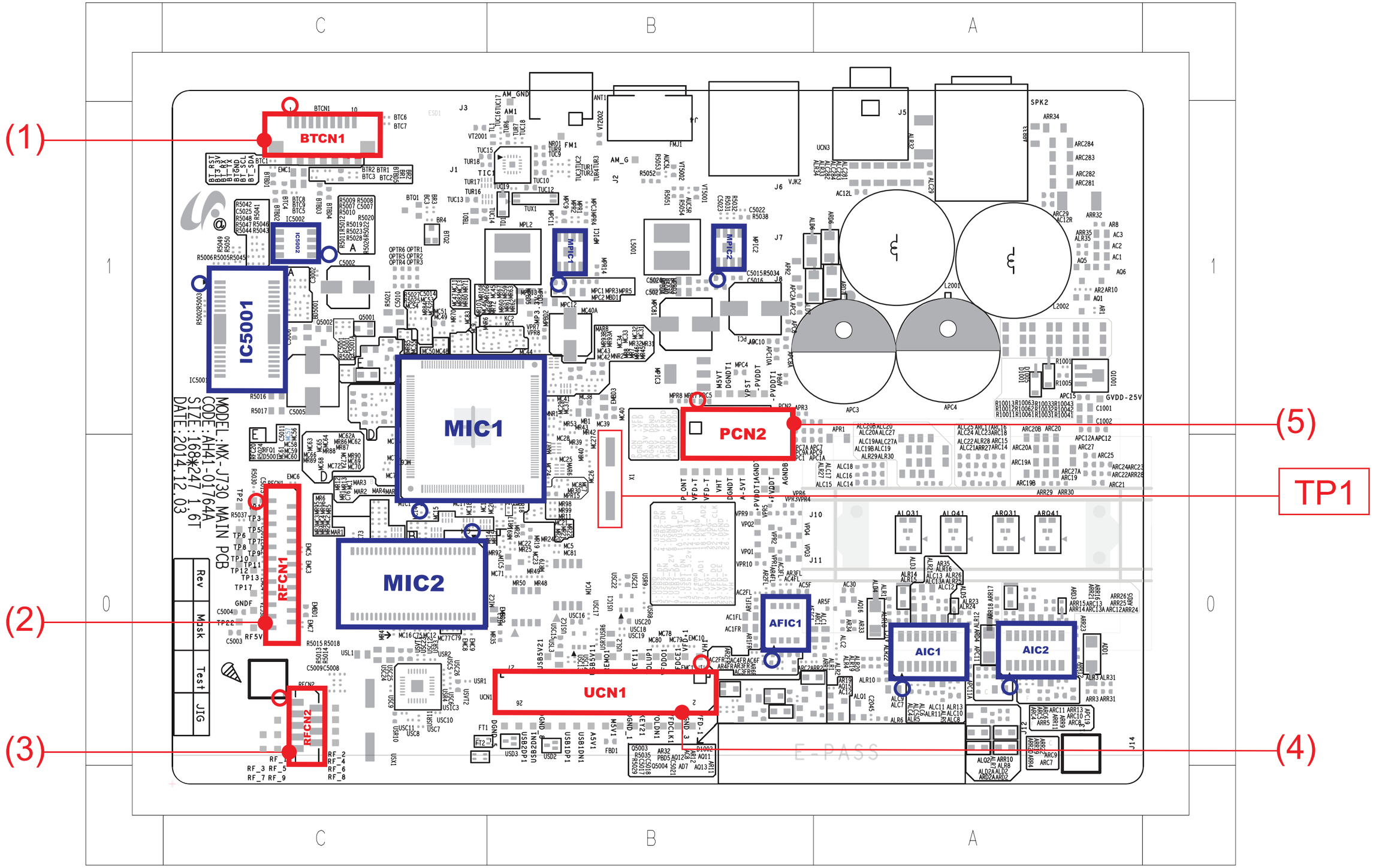
Connect to Main

Pin No.	Signal
1	-VP
2	VFD-
3	VFD+
4	DGND
5	VFD_CE
6	VFD_CLK
7	VFD_DO
8	JOG-
9	JOG+
10	DGND
11	KEY_AD2
12	KEY_AD1
13	DGND
14	REMOTE
15	ST_5.1V
16	USB1_5V
17	USB1_DN
18	USB1_DN
19	USB1_DP
20	USB1_DP
21	USB2_5V
22	GND
23	USB2_DN
24	USB2_DN
25	USB2_DP
26	USB2_DP
27	DGND

5.3. FRONT PCB Bottom



5.4. MAIN PCB Top



5.4.1. Pin Connection

1) BTCN1

BT control

Pin No.	Signal
1	BT_RST
2	MP3.3V_PW
3	BT_RXT
4	BT_TXD
5	GND
6	I2C_SCL
7	I2C_SDA
8	GND
9	NC
10	NC

2) RFCN1

Deck Control (Focus / Data)

Pin No.	Signal
1	CD_VR
2	CD_MPD
3	CD_LD
4	LD_GND
5	SW
6	F-
7	T-
8	T+
9	F+
10	B
11	C
12	D
13	A
14	NC
15	NC
16	VCC
17	VREF
18	GND
19	DVD_VR
20	PD_GND
21	DVD_LD
22	RF
23	NC

3) RFCN2

Deck Open / Close Control

Pin No.	Signal
1	SP+
2	SP-
3	SL-
4	SL+
5	INSW
6	OUTSW
7	GND
8	NC
9	NC

4) UCN1

FRONT Panel Control

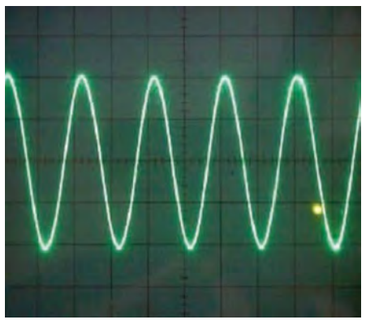
Pin No.	Signal
1	VH
2	VFD-
3	VFD+
4	DGND
5	VFD_CE
6	VFD_CLK
7	VFD_DO
8	JOG-
9	JOG+
10	KEY_AD2
11	KEY_AD1
12	DGND
13	REMOCON
14	5.1V
15	USB1_5.2V
16	5.1V
17	USB1_DN
18	USB1_DN
19	USB1_DP
20	USB1_DP
21	USB2_5.2V
22	DGND
23	USB2_DN
24	USB2_DN
25	USB2_DP
26	USB2_DP
27	DGND

5) PCN2

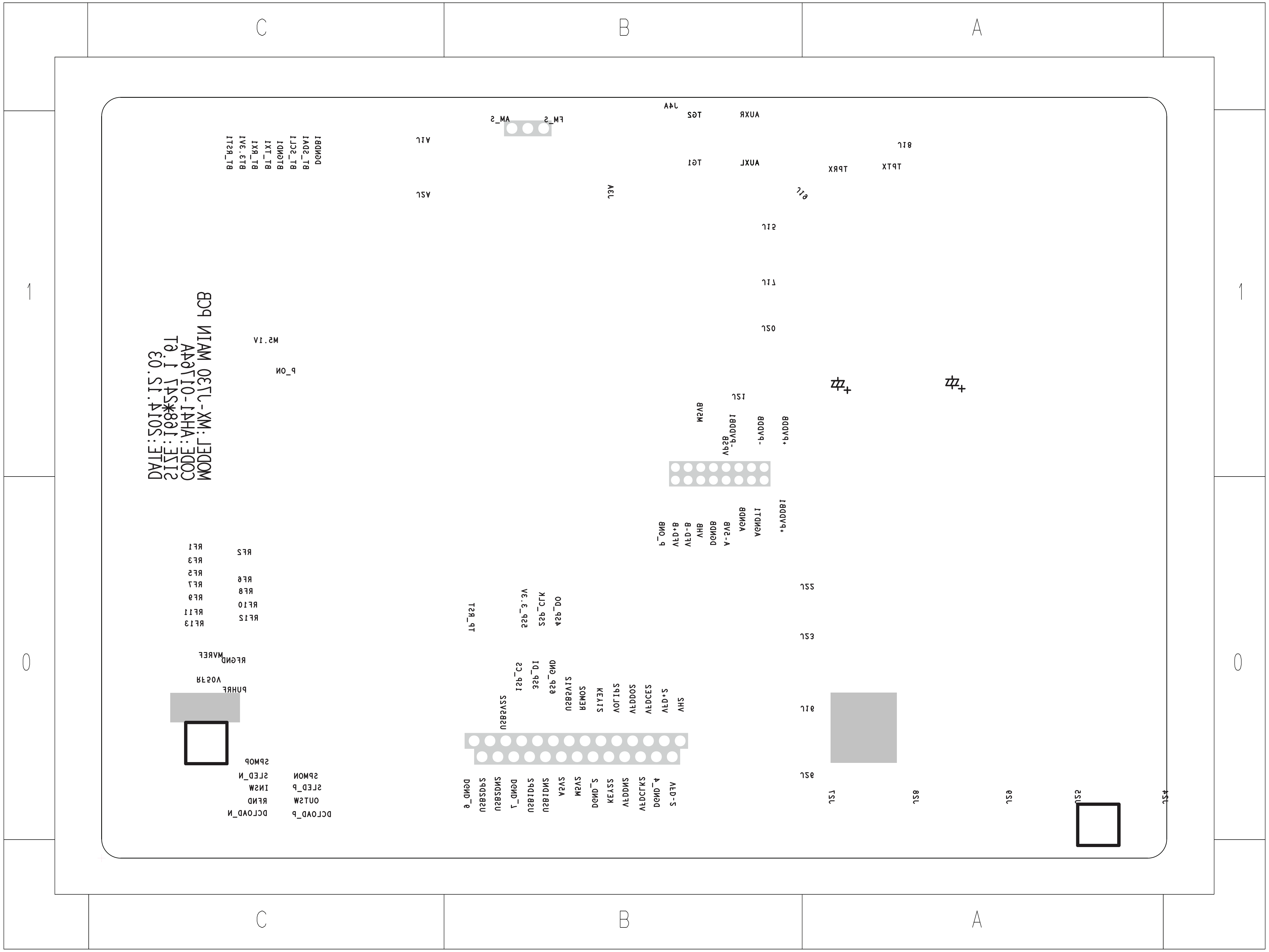
VFD / CD Voltage Supply

Pin No.	Signal
1	VFD+
2	P-ON
3	VFD-
4	DGND
5	VH
6	A5.3V
7	DGND
8	DGND
9	VPS
10	A-5V
11	-PVDD
12	-PVDD
13	AGND
14	AGND
15	+PVDD
16	+PVDD

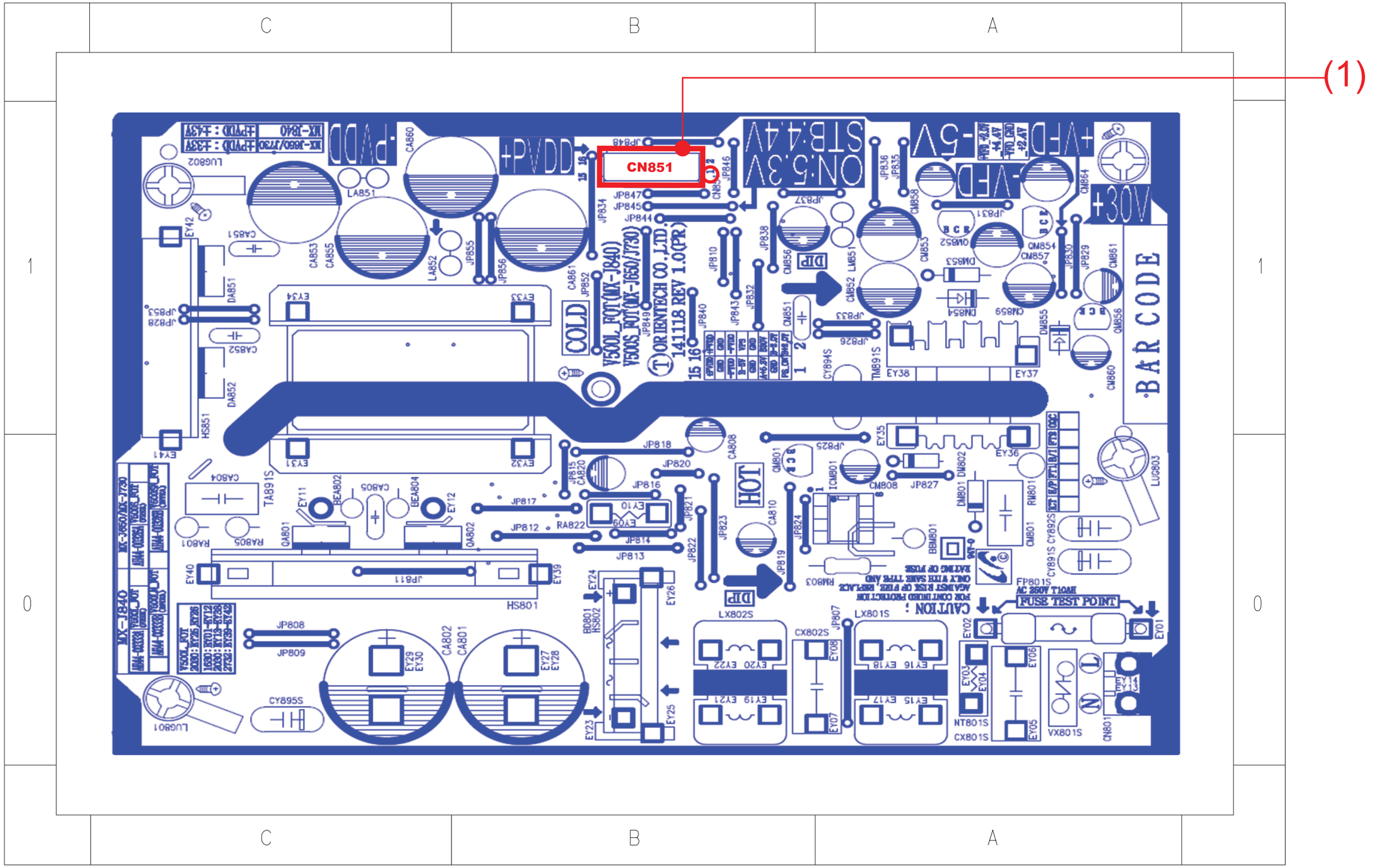
5.4.2. Test Point Wave Form

TP1


5.5. MAIN PCB Bottom



5.6. SMPS PCB Top



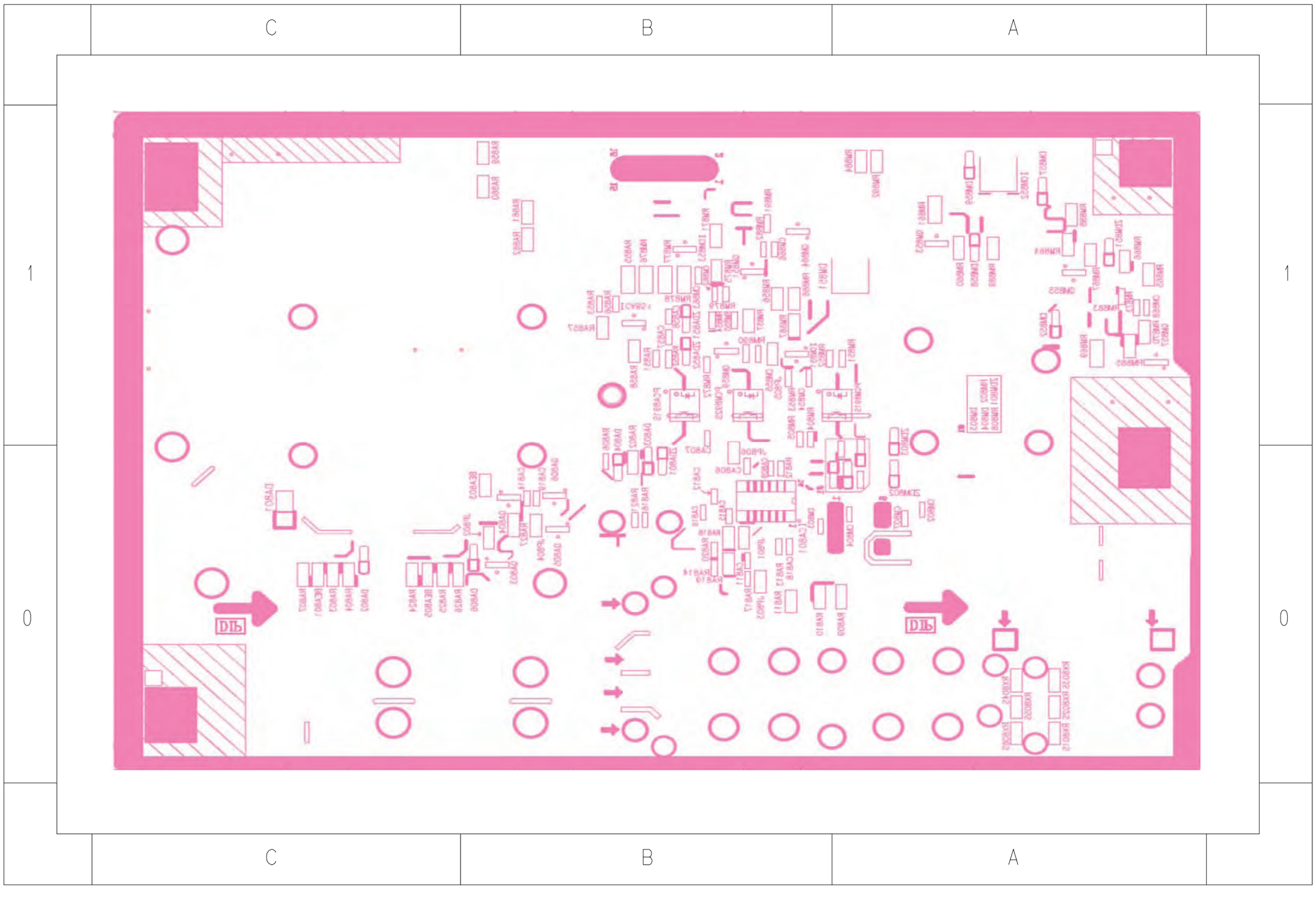
5.6.1. Pin Connection

1) CN851

VFD / CD / AMP Voltage Supply

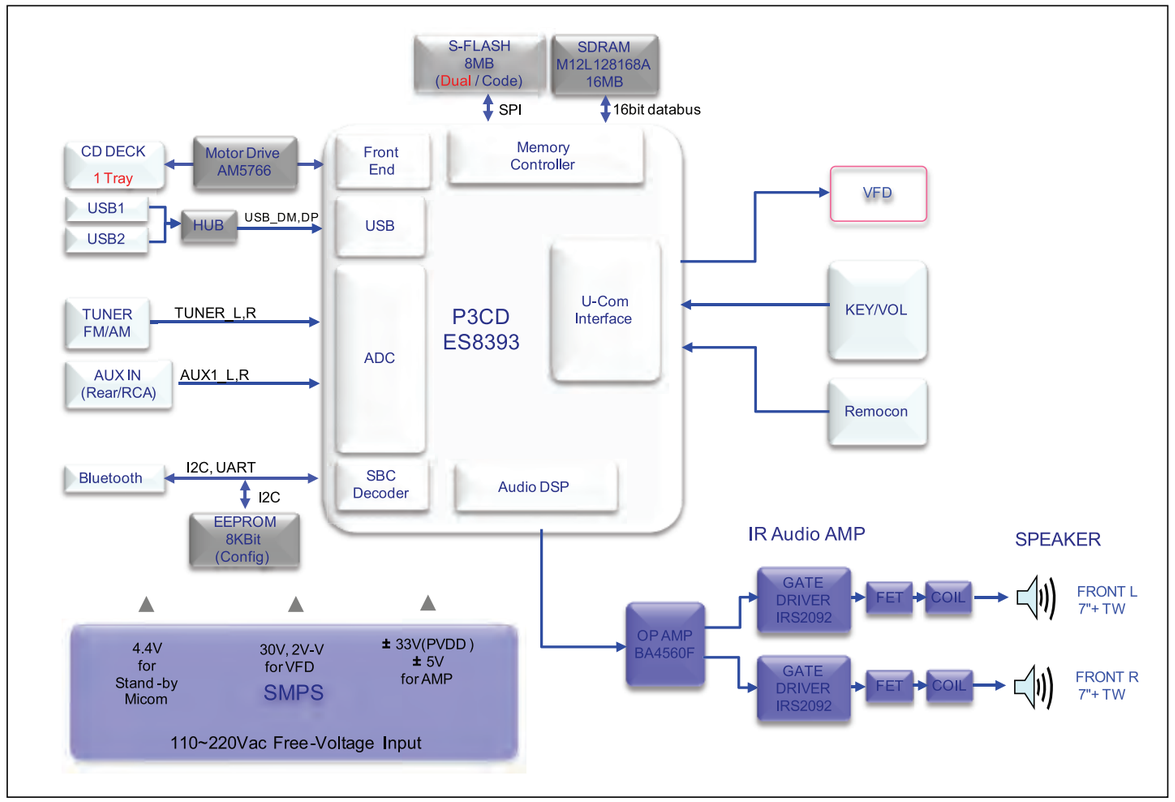
Pin No.	Signal
1	VFD+
2	P-ON
3	VFD-
4	DGND
5	VH
6	A5.3V
7	DGND
8	DGND
9	VPS
10	A-5V
11	-PVDD
12	-PVDD
13	AGND
14	AGND
15	+PVDD
16	+PVDD

5.7. SMPS PCB Bottom



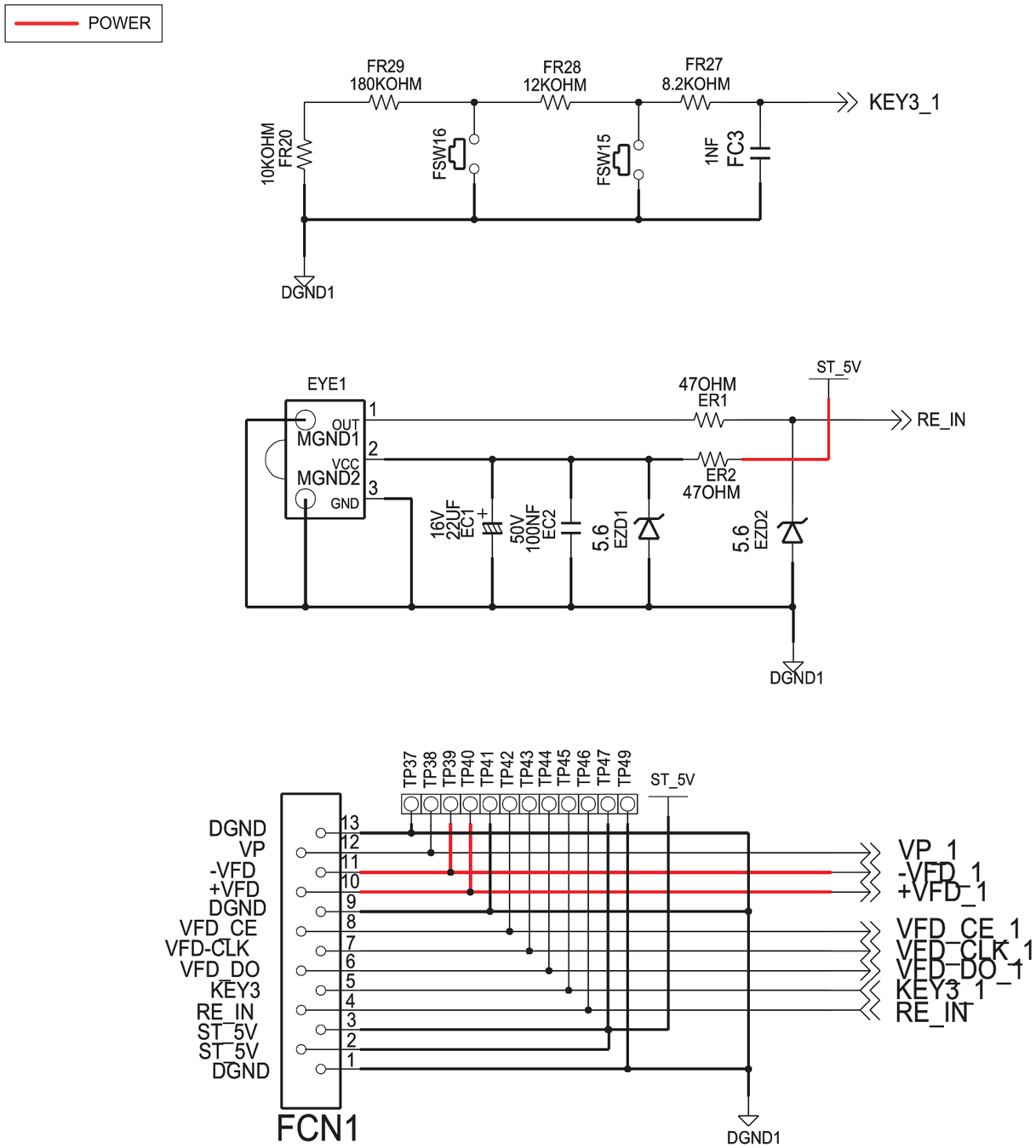
6. Schematic Diagram

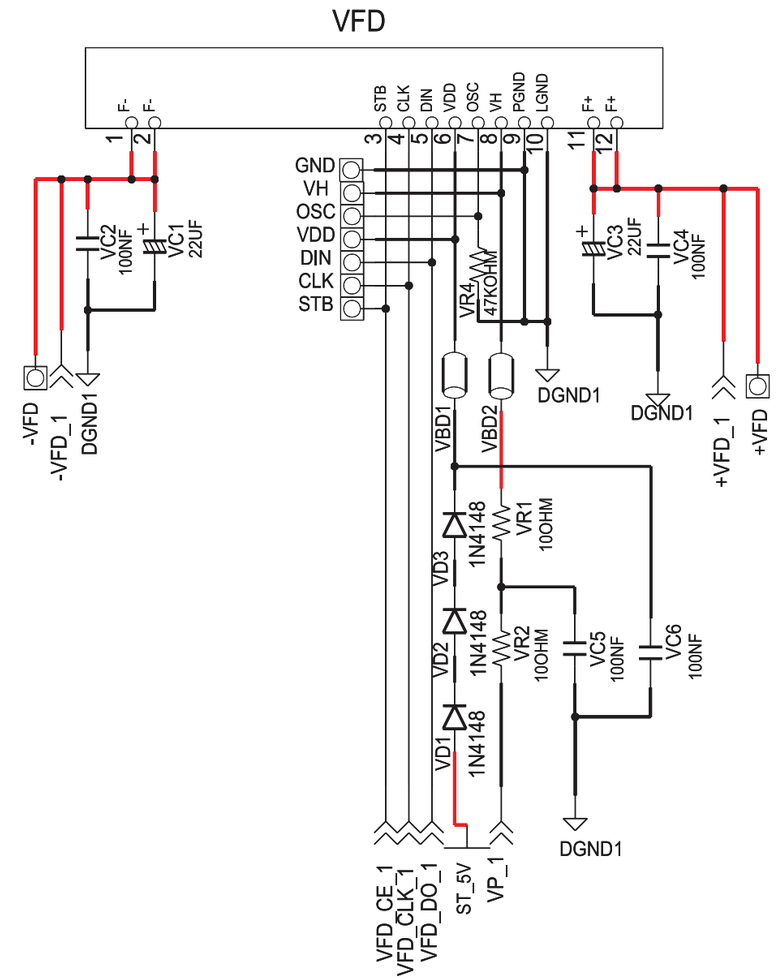
6.1. Overall Block Diagram



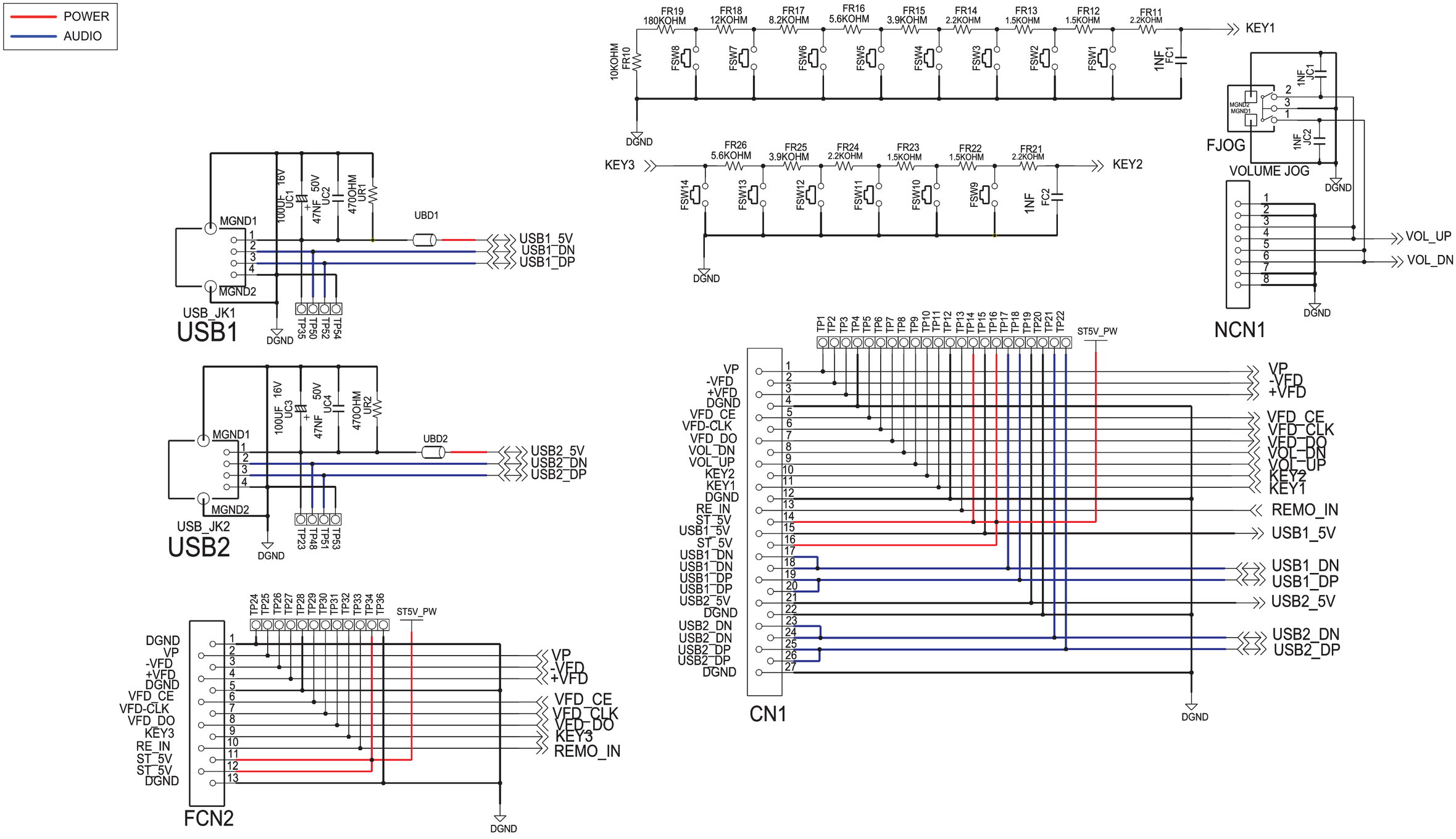
- SDRAM IC : M12L128168A
- MPEG IC : ES8393ASA
- IR AMP IC: IRF6645
- The Main MPEG control each IC in this PCB.
- Audio signal comes from CD DECK, USB, TUNER, AUX, Bluetooth and so on, decoded by MPEG IC and then transfer to AMP IC.
- The signal is sent to the Crystal amplificatory circuit through MPEG IC. This Crystal amplificatory circuit is Low Pass Filtered. Sound will be hear by Connecting the Speaker system.

6.2. FRONT-1

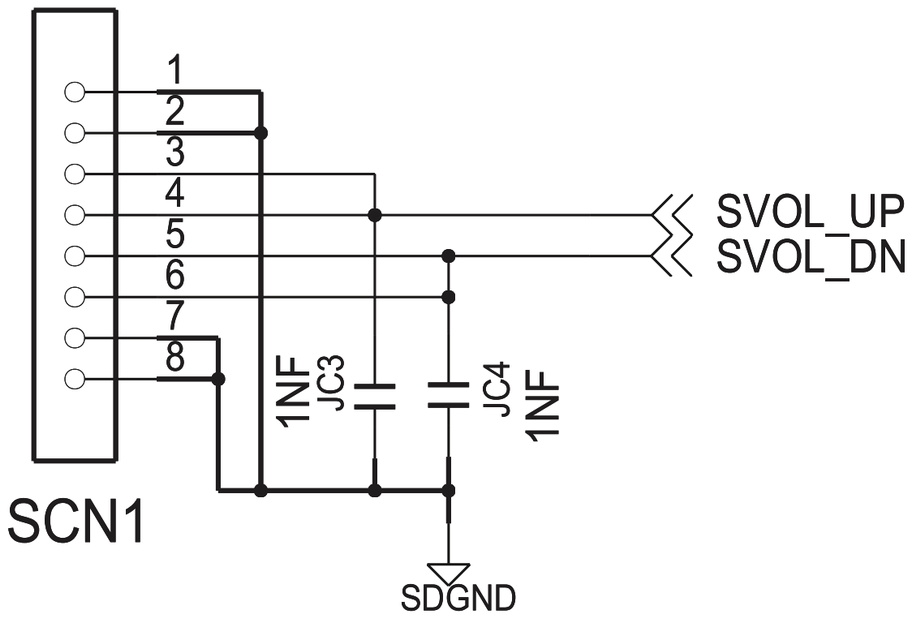




6.3. FRONT-2

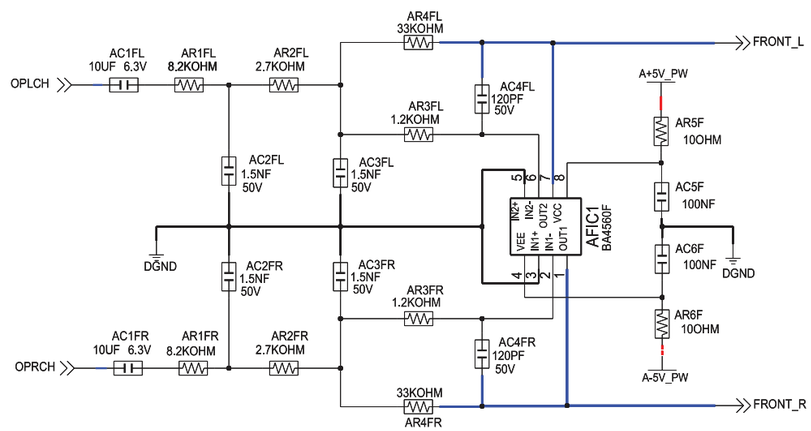


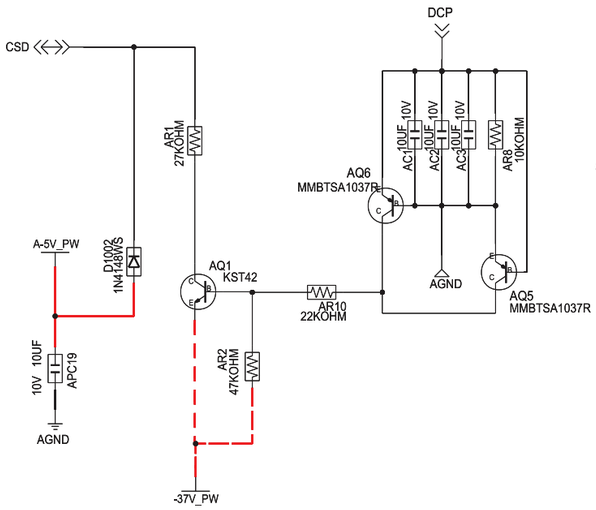
6.4. FRONT-3

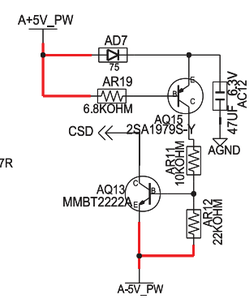


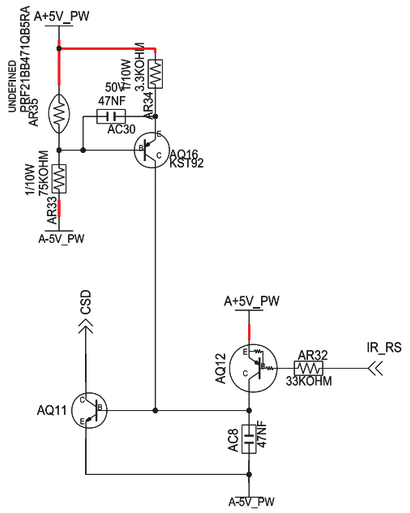
6.5. MAIN-1

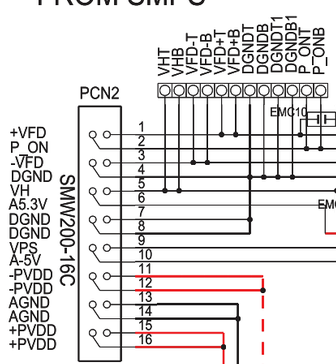
POWER
AUDIO

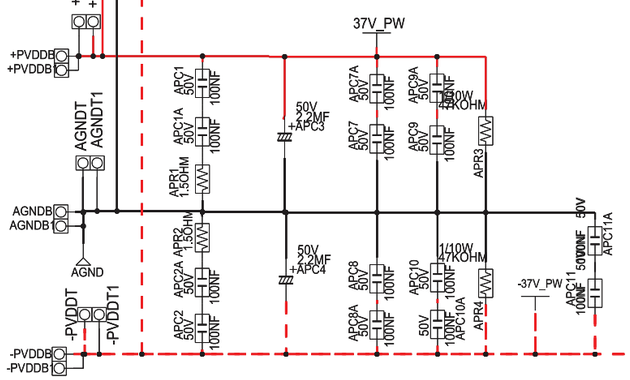


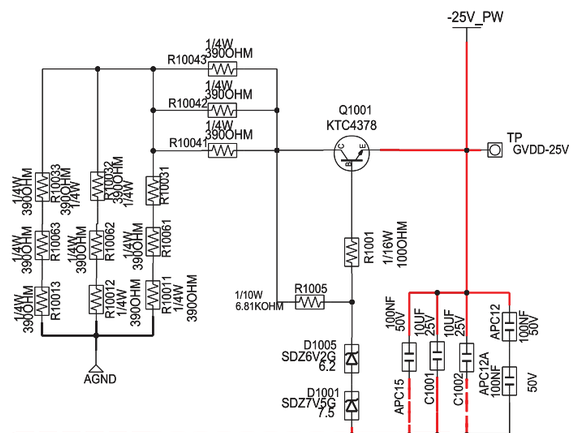


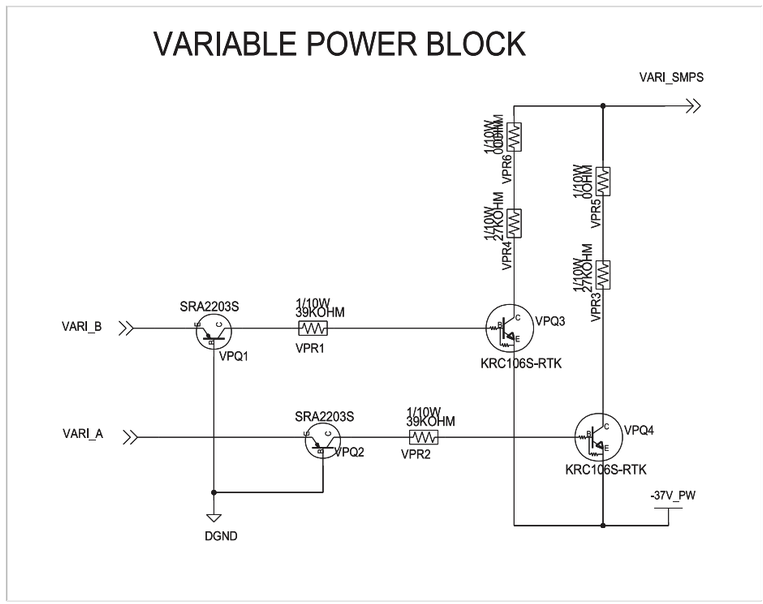




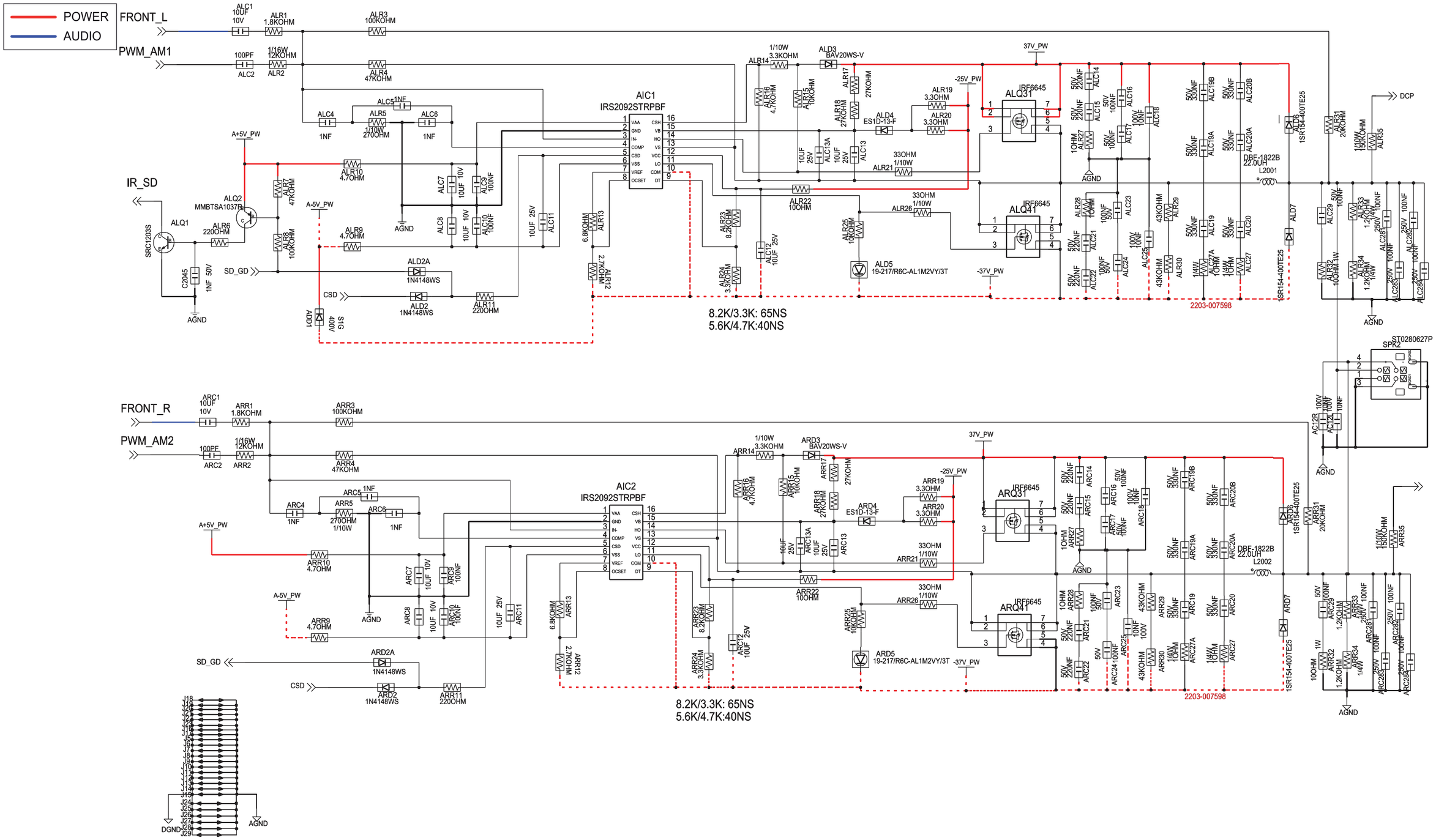




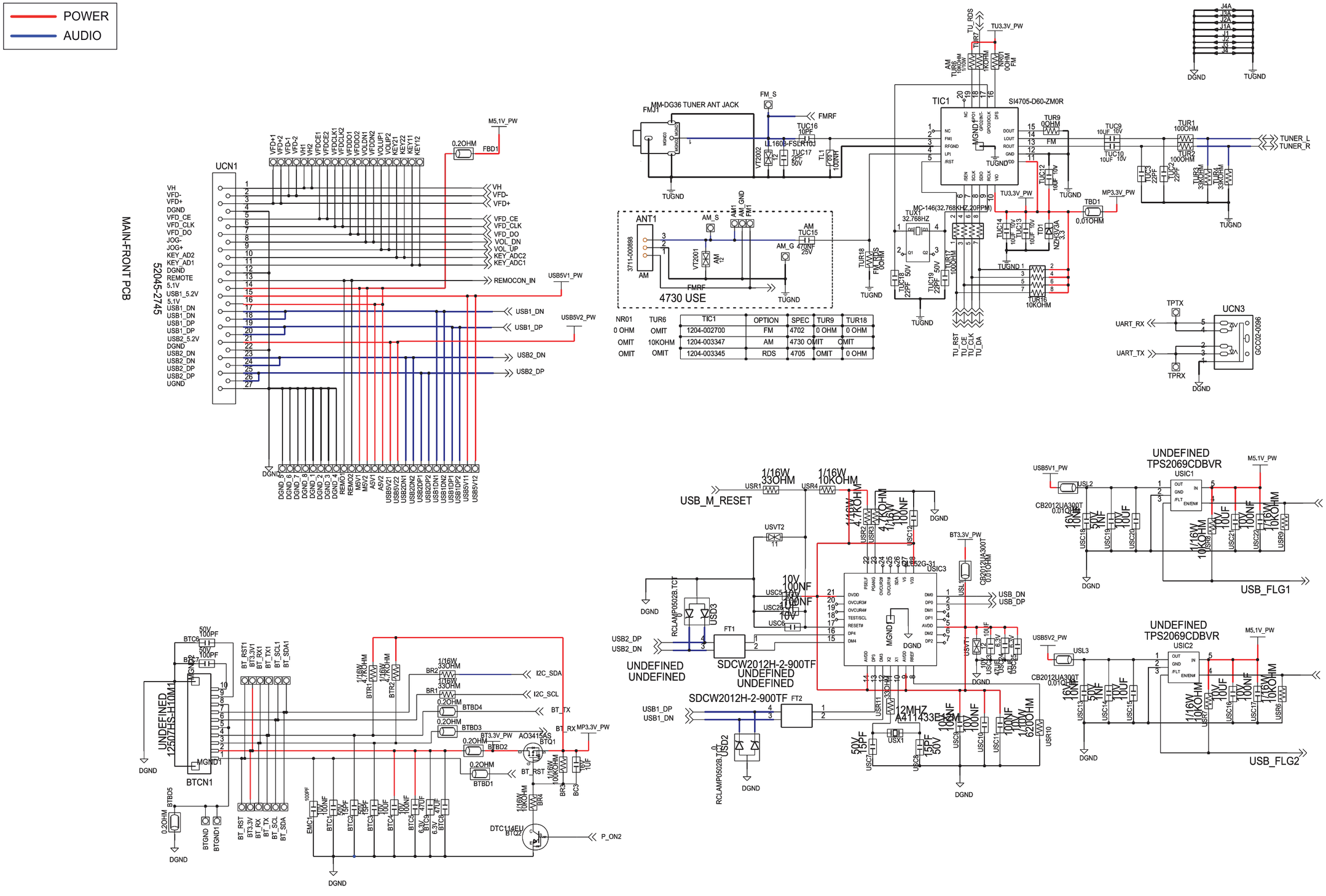




6.6. MAIN-2



6.7. MAIN-3

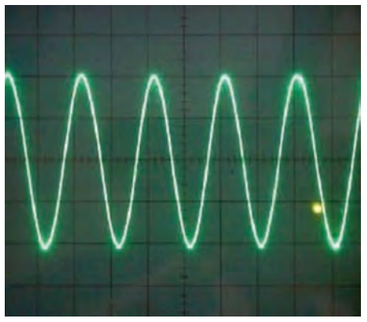


6.8. MAIN-4

POWER
AUDIO

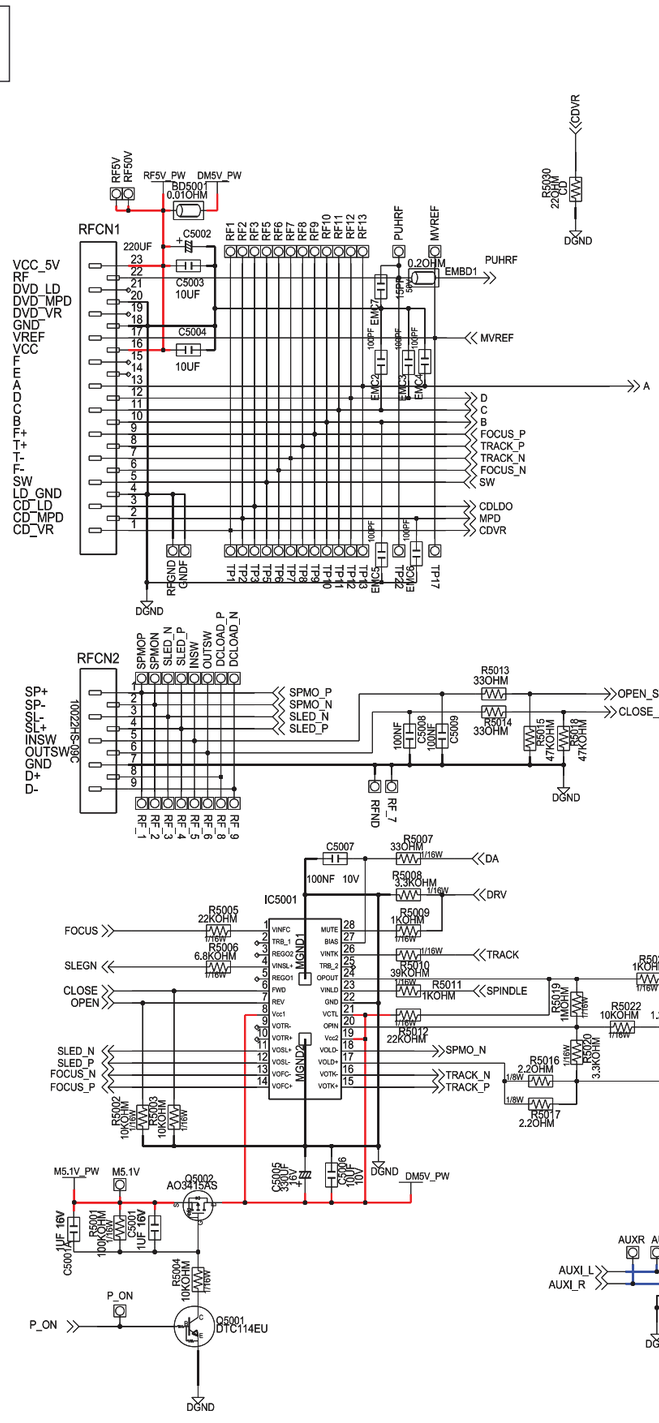
MIC1
P3CD
1204-003466

6.8.1. Test Point Wave Form

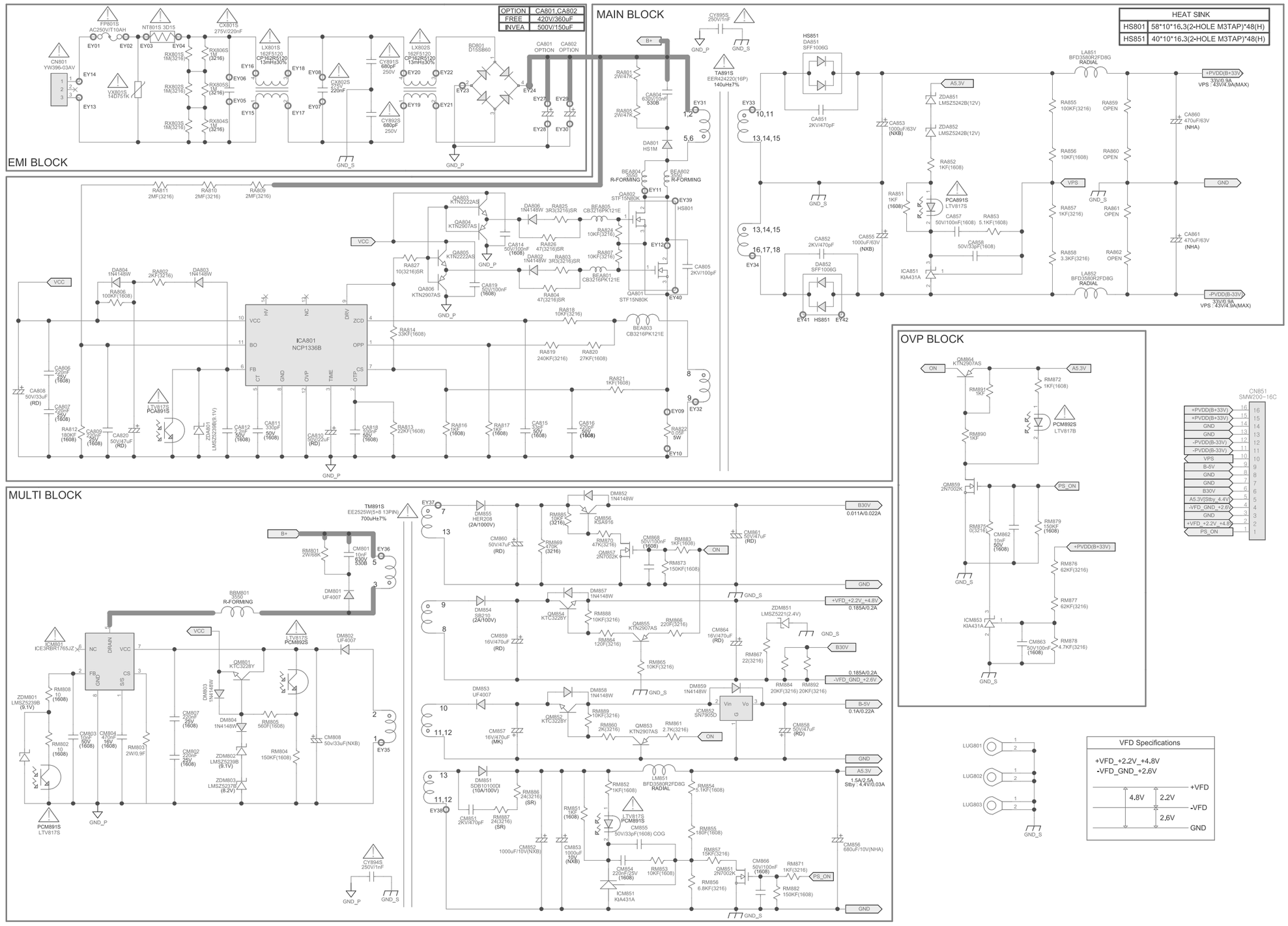
TP1


6.9. MAIN-5

POWER
AUDIO



6.10. SMPS



GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, MENA, CIS, Africa	https://gspn1.samsungcsportal.com
E.Asia, W.Asia, China, Japan	https://gspn2.samsungcsportal.com
N.America, S.America	https://gspn3.samsungcsportal.com