

Service
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Service



Service Manual

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3141 785 30840

1. TECHNICAL SPECIFICATION

General

Dimensions (WxLxH) :	154.5mm*164.48mm*27.61mm (+- 0.3mm)
Weight :	546.6g +- 10g
Power supply :	+5V / 2A
Power consumption :	Play back :4W
Operating temp. range :	0 – 50 Degree
Laser wavelength:	DVD 655nm, CD 790nm
Video system :	NTSC/PAL/AUTO.
Frequency response :	Audio +1dB / -0.5dB
Signal/noise ratio	Audio > 80 dB
Audio distortion + noise	Audio < 0.6 %
Channel separation:	Audio > 85 dB
Dynamic range	Audio > 80 dB

Output
Audio out (analog audio) 1.2 V +/- 0.1V rms

Load impedance: 47K ohm

Video out Output level: 1 V p-p

Load impedance: 75 ohm

Current consumption

DC-IN SUPPLY (5.0V)	
Battery Charging Current	Stand by : 1.7 Amp Operating : 0.85 Amp
BATT. SUPPLY (3.6V)	
Power Off	3.4V
Playback with TFT on	1.45A (Normal volume)
Playback without TFT on	0.9A (Normal volume)
Battery playtime	2.5Hours

Headphone out (headphone output load 2x16 ohm)

Maximum output power :	2.3mW
Frequency response :	+/- 3dB
SNR (A-wght) :	80 dB
THD (1kHz) :	1 %
Left-Right Channel Separation :	55 dB
Left-Right Channel Balance :	2 dB

Supported disc type

DVD video discs:



Video CD:



Audio CD :



Applicable DVD Formats

DVD-Video on DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R and DVD+RW
CD-DA, Video CD (MPEG-1), MP3/WMA/JPEG CD on CD-ROM, CD-R, and CD-RW
8cm/12cm

Applicable CD Formats (Read)

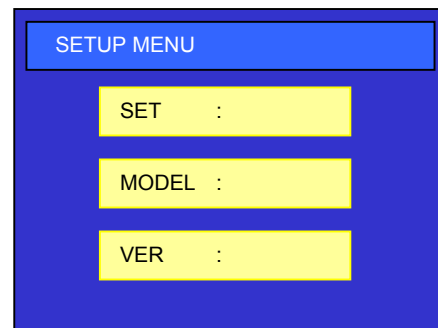
Disc Diameter

Software upgrades

For the best performance of your DVD Portable. Check www.philips.com/support for latest software upgrades available.

To check the software version of your DVD Portable.

1. Press the ►|| key to power on the player
2. Insert a DVD disc into the player
3. Press SETUP key to enter the set up menu
4. Press MENU + MENU + OSD key within 1 sec
5. The display will show the software version on the screen as below:



Procedure on how to upgrade the software of the DVD Portable

1. Download the latest software from the Philips support site
2. Unzipped the files and then burn it onto a CD ROM then playback the CD ROM on the DVD Portable
3. Press the OK key to upgrade the software

Pixel specification

<= 4 (max. 1 bright dots and 3 dark dots)

2. SAFETY INSTRUCTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

ESD



(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärrar är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

2.1 ESD PROTECTION

- レンズには絶対に触れないでください。
- DO NOT TOUCH THE LENS.
- LINSE NICHT BRÜHREN.
- NE PAS TOUCHER LA LENTILLE.

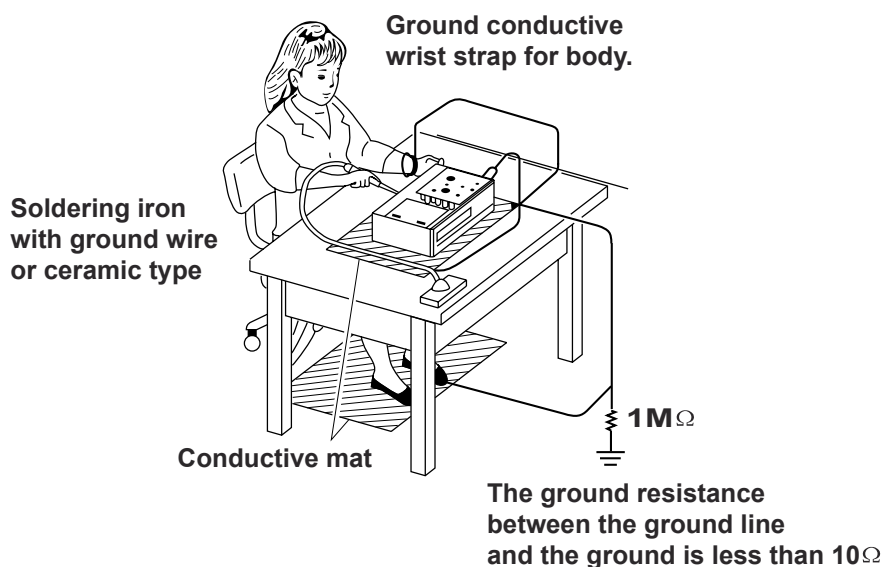
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



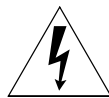
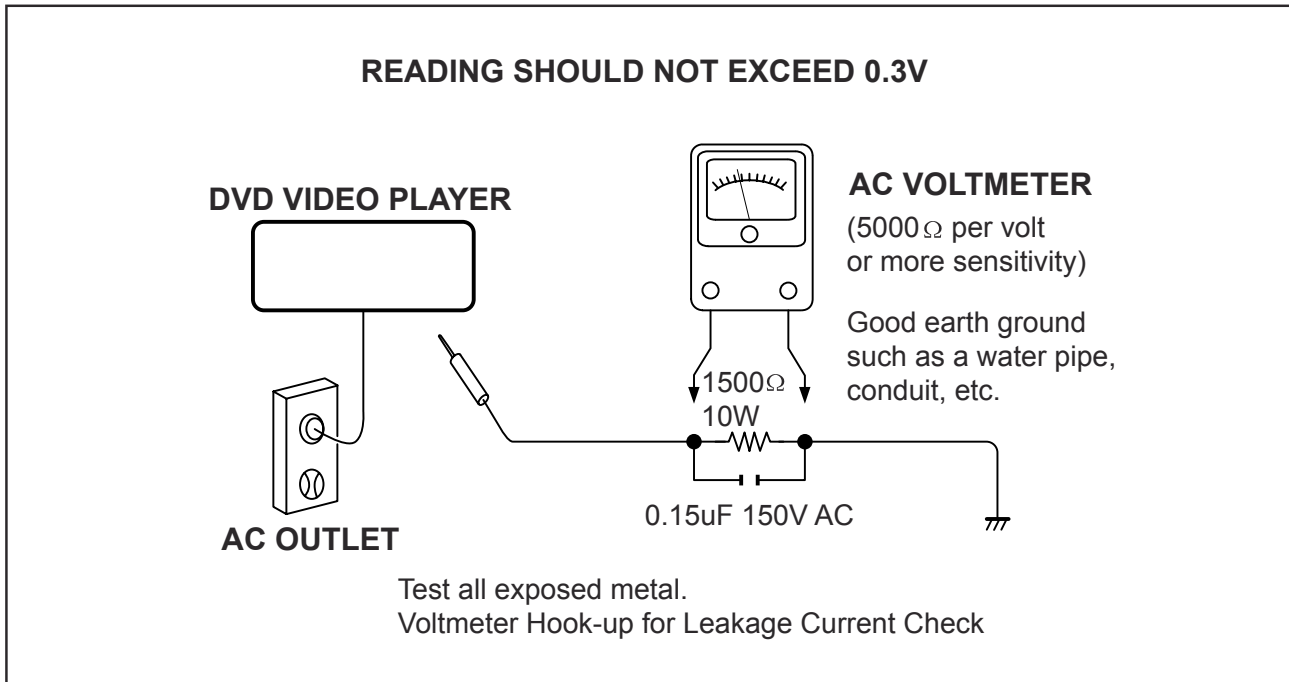
SAFTY NOTICE

SAFTY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000Ω per volt or more sensitivity. Connect a 1500Ω 10W resistor, paralleled by a $0.15\mu\text{F}$ 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

Measure the AC voltage across the 1500Ω resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3V. A reading exceeding 0.3V indicates that a dangerous potential exists, the fault must be located and corrected. Repeat the above test with the DVD VIDEO PLAYER power plug reversed. NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.

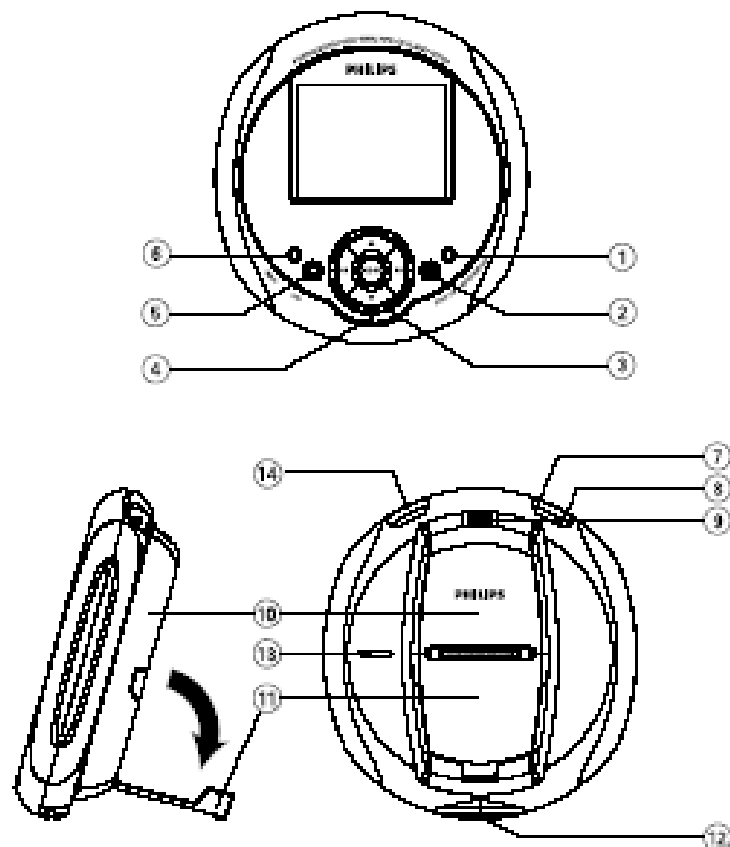


The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

3. INSTRUCTION FOR USE



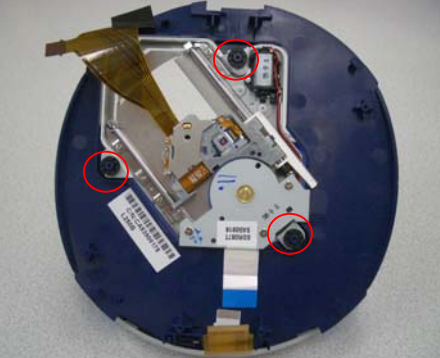
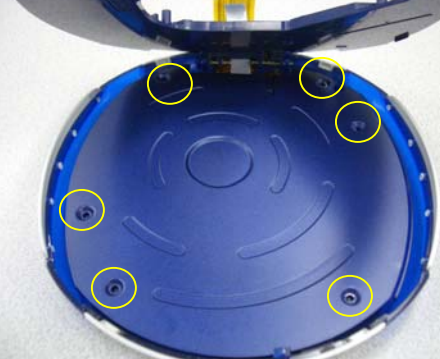

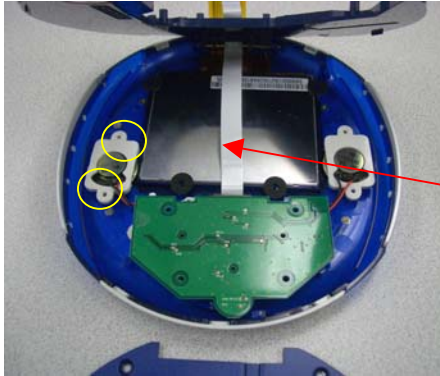



- ① **SETUP / RETURN** ..Enter the SETUP menu. Work as return key in PBC disc.
- ② ■- Press once to Stop playback.
- Press twice to power off the set
- ③ **Navigation keys**
 - ▶⏸ - OK Play / Pause / OK / Power ON
 - ▲ / ▼ Up / Down cursor or Up / Down Volume control during playback
 - ◀◀ / ▶▶ Left / Right cursor or Previous / Next track or Fast search Backward / Forward
- ④ **LED Indicator Light**....During charging, the LED is RED. When the device is fully charged, the LED is GREEN.
- ⑤ **OSD**Enter the On Screen Display playback function settings
- ⑥ **MENU**Display the DVD disc menu
- ⑦ **Headphone jack** ..For headphone listening
- ⑧ **AV OUT** For TV connection
- ⑨ **Battery Release**....Press to take out the battery pack
- ⑩ **Rechargeable Battery Pack**
- ⑪ **Stand**Pull down to pop-up the set for viewing
- ⑫ **OPEN**Open disc compartment to insert or remove disc
- ⑬ **HOLD**Lock or unlock the buttons
- ⑭ **DC IN 5V**Power supply socket

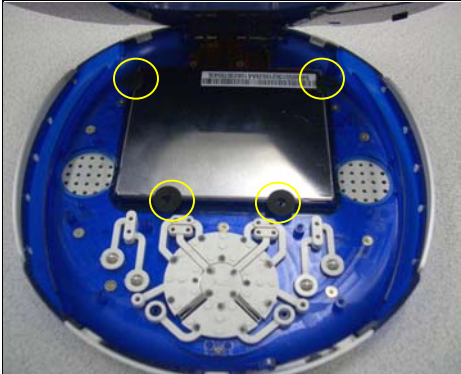


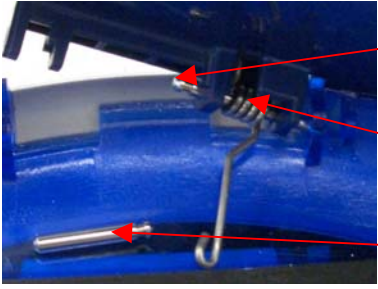
4. MECHANICAL INSTRUCTIONS

Disassembly Procedure on PET320	Screw Philips 12NC
	994000003857 (7pcs) 
	1 Remove the screws on bottom housing cabinet
	2 Use finger or tweezer to separate middle cabinet from the bottom cabinet assy
	3 Generally open up the bottom cabinet
	4 After removal the bottom cabinet, there is the bottom PCBA connected with the bottom cabinet. While another side, there is the driver, LCD and top PCBA connected with the middle and top cabinet.

4. MECHANICAL INSTRUCTIONS

Disassembly Procedure on PET320	Screw Philips 12NC	
	<p>5 Remove the screws on bottom PCBA to separate it from the bottom cabinet</p>	<p>994000003858 (5pcs)</p> 
	<p>6 Lift up the driver generally from the pin area on the middle cabinet</p>	
	<p>7 Remove the screws on metal plate to separate it from the top cabinet</p>	<p>994000003859</p> 
	<p>8 Remove the screws on speaker holder to separate the speaker and top PCBA from the top cabinet</p> <p>994000003863</p>	<p>994000003861 (4pcs)</p> 

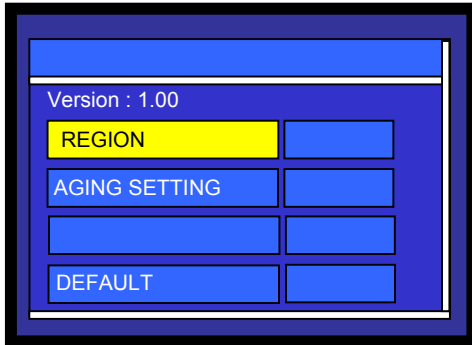
4. MECHANICAL INSTRUCTIONS

Disassembly Procedure on PET320	Screw Philips 12NC
	9 Remove the screws on LCD edge to separate it from the top cabinet 994000003862 (4pcs - included in LCD module) 
	10 The button key could be picked up easily
	994000003865 994000003864 994000003866

5. TROUBLESHOOTING & SERVICE TIPS

5.1 Procedure to change region code

1. Open DVD Door
2. Press and hold the OSD key together with the POWER ON (▶||) key for about 4sec to enter CONFIGURATION SETUP menu
3. Press the UP and DOWN (▲▼) key to enter REGION on menu

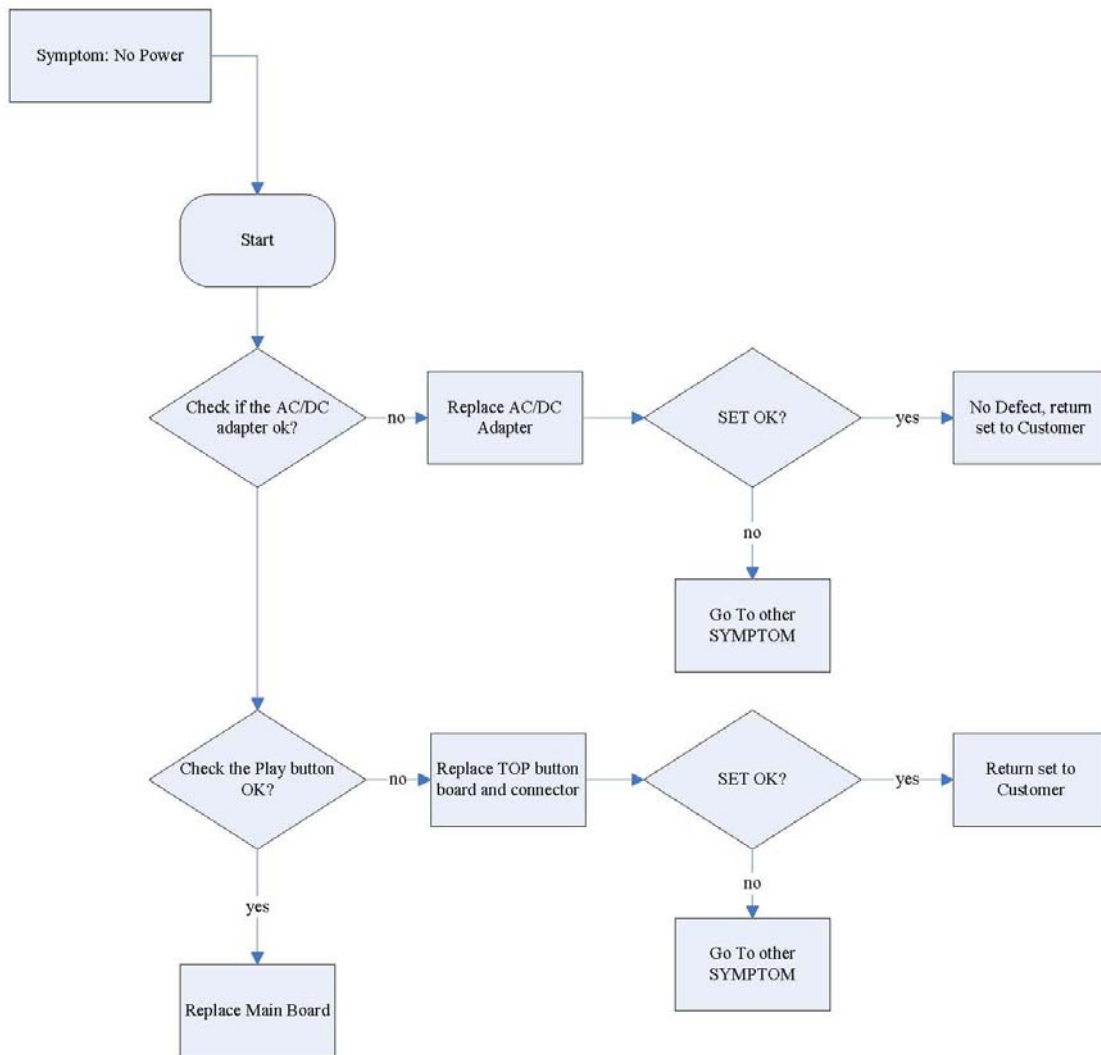


4. Press the NEXT (▶▶|) key to select REGION NO.
5. Press the UP and DOWN (▲▼) key to select number of 1 to 6
6. Press the OK key to save the selection.
Note : Once press OK, data with new REGION NO. will be stored into EEPROM and replace the old one.
7. Switch off and re-switch on the product
8. Verify Region code change done

Region Code	Region
1	USA
2	EUROPE
3	ASIA PACIFIC
4	AUSTRALIA, NEW ZEALAND, LATAM
5	RUSSIA, INDIA
6	CHINA

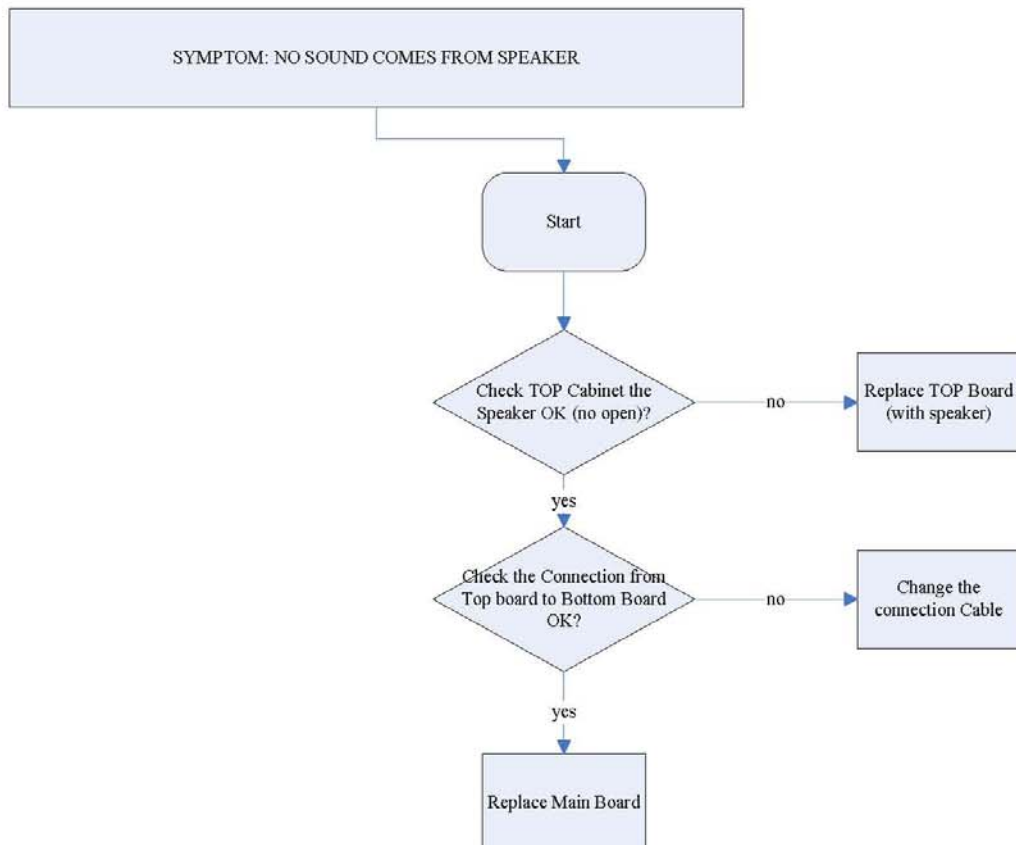
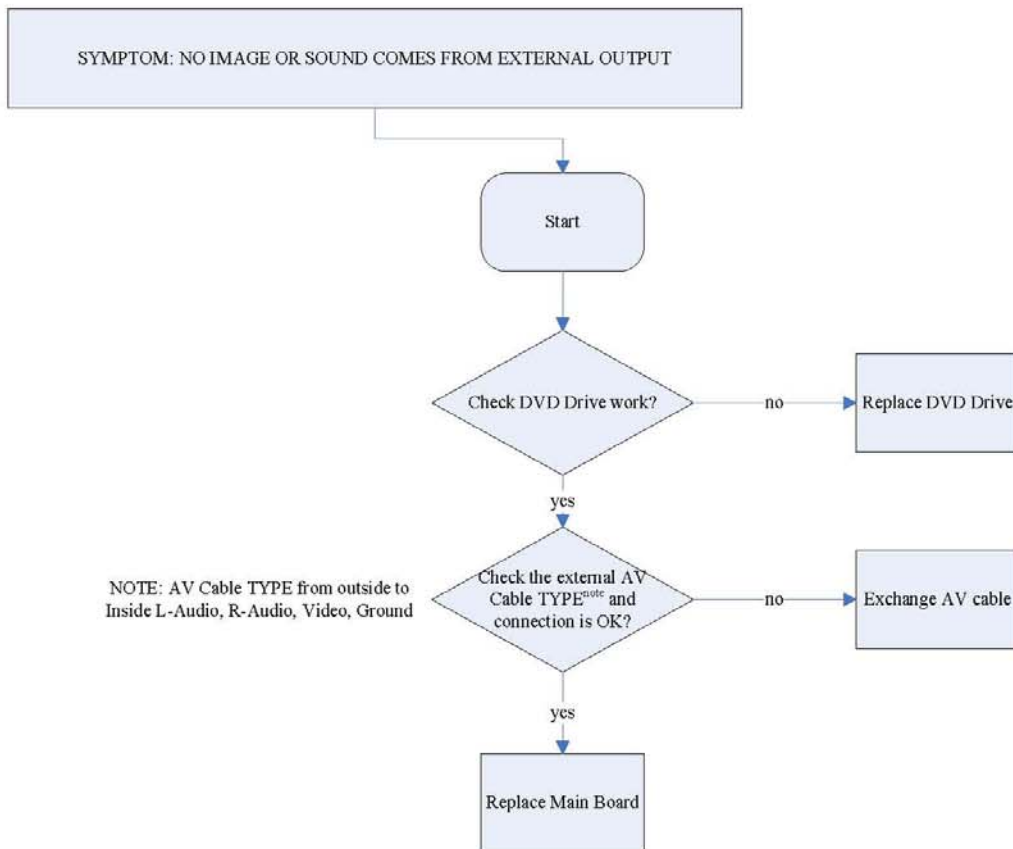
5. TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: NO POWER



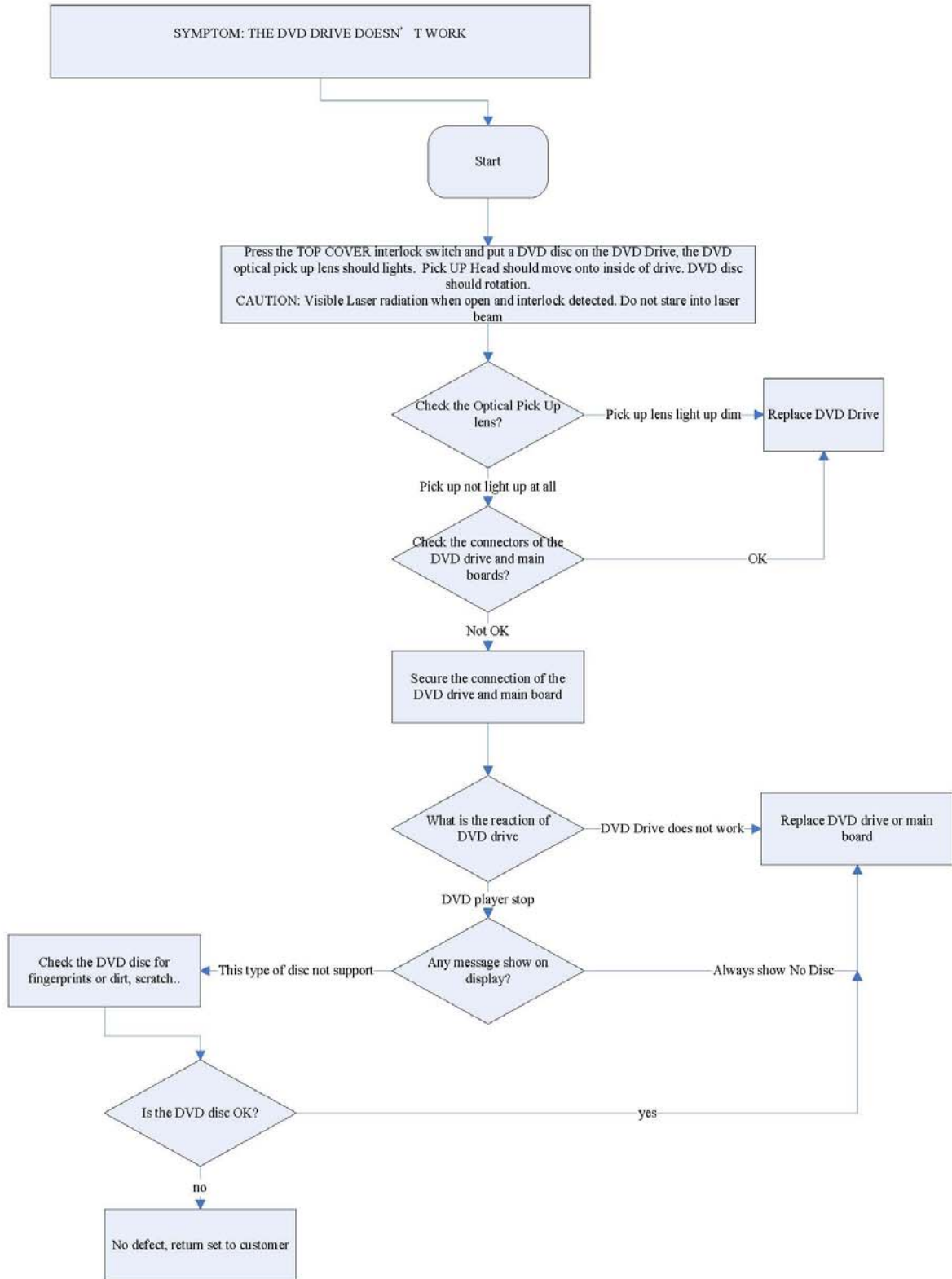
5. TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: NO IMAGE / NO SOUND



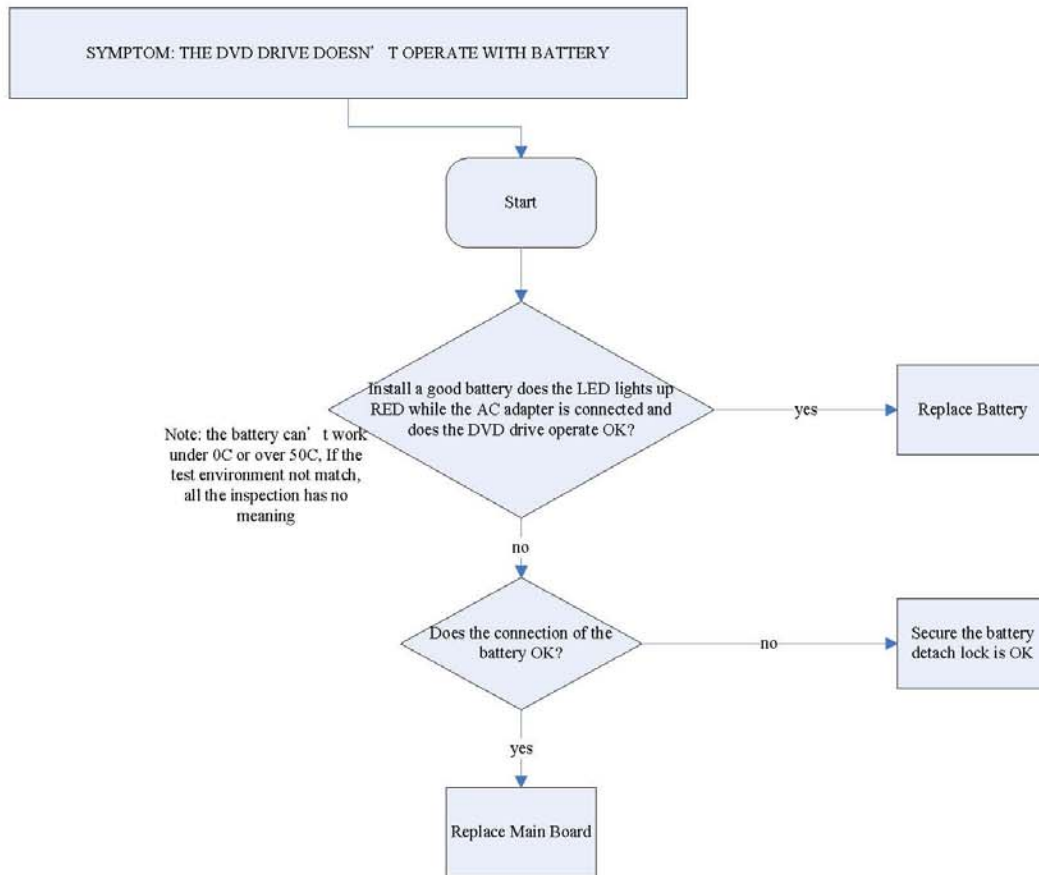
5. TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: THE DVD DRIVE DOES NOT WORK

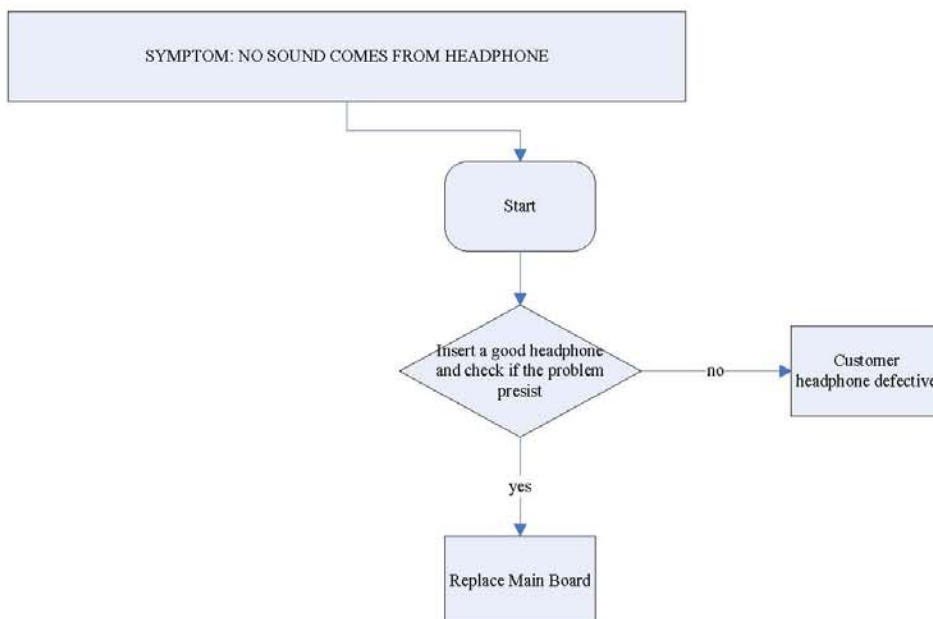


5. TROUBLESHOOTING & SERVICE TIPS

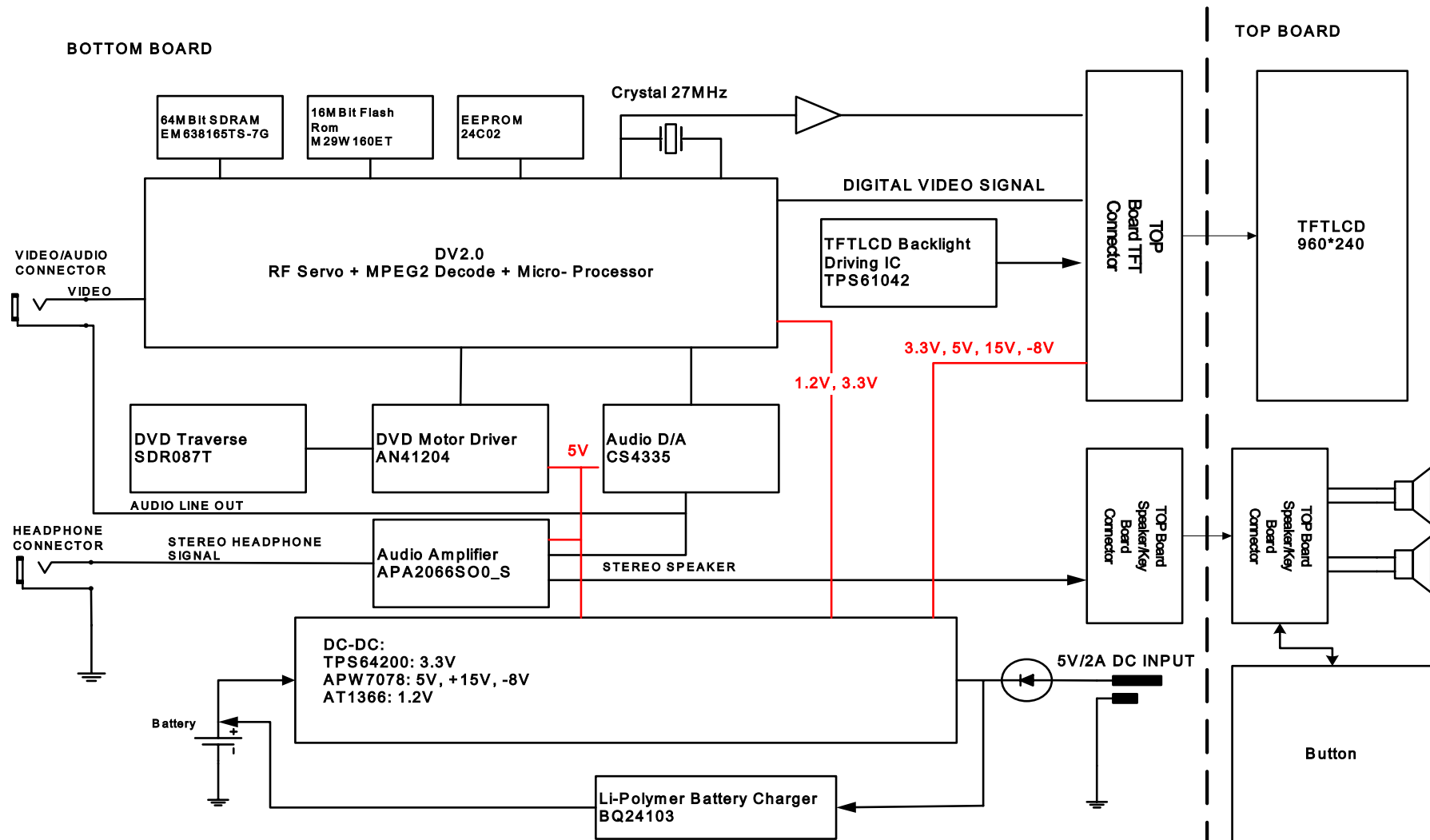
SYMPTOM: THE DVD DRIVE DOES NOT OPERATE WITH BATTERY



SYMPTOM: NO SOUND FROM HEADPHONE

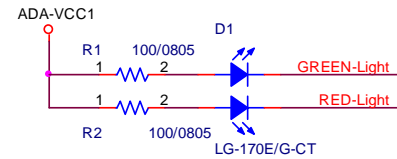
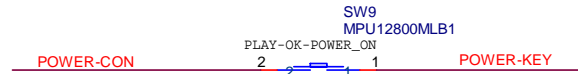
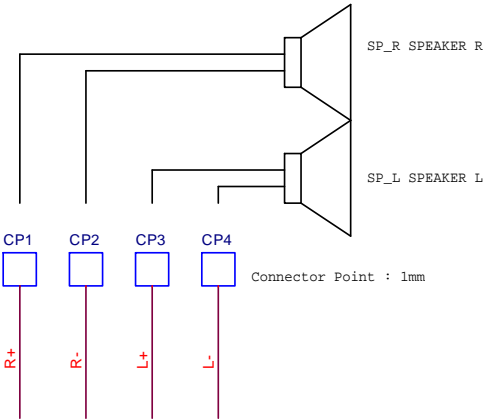
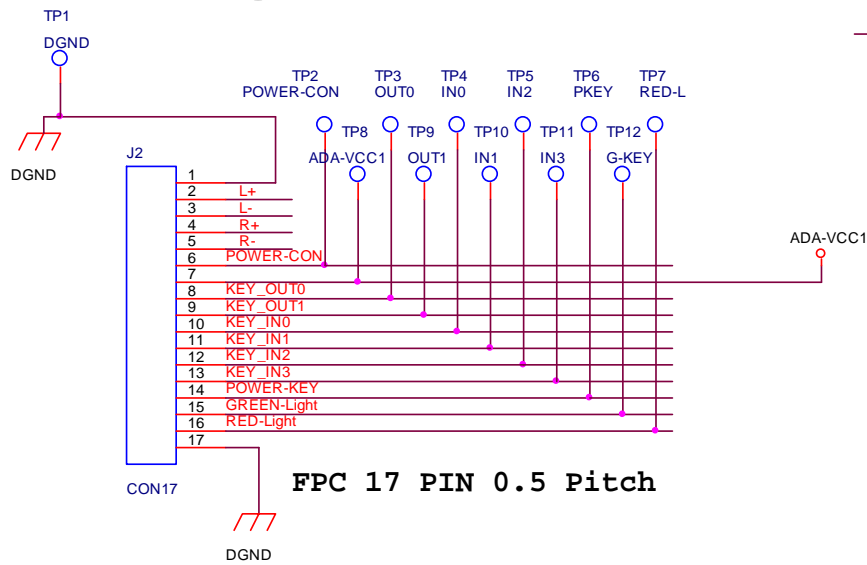
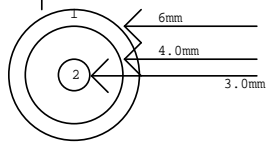
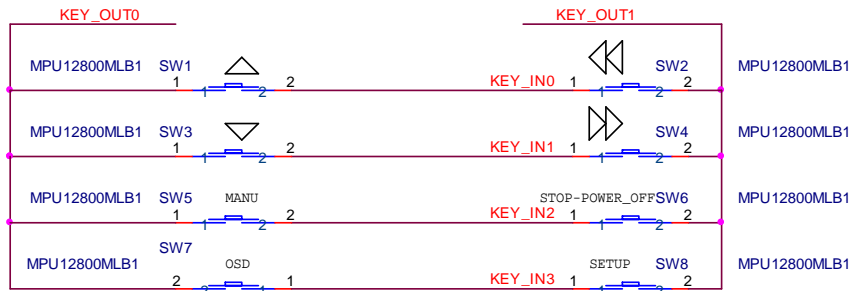


6. OVERALL BLOCK DIAGRAM

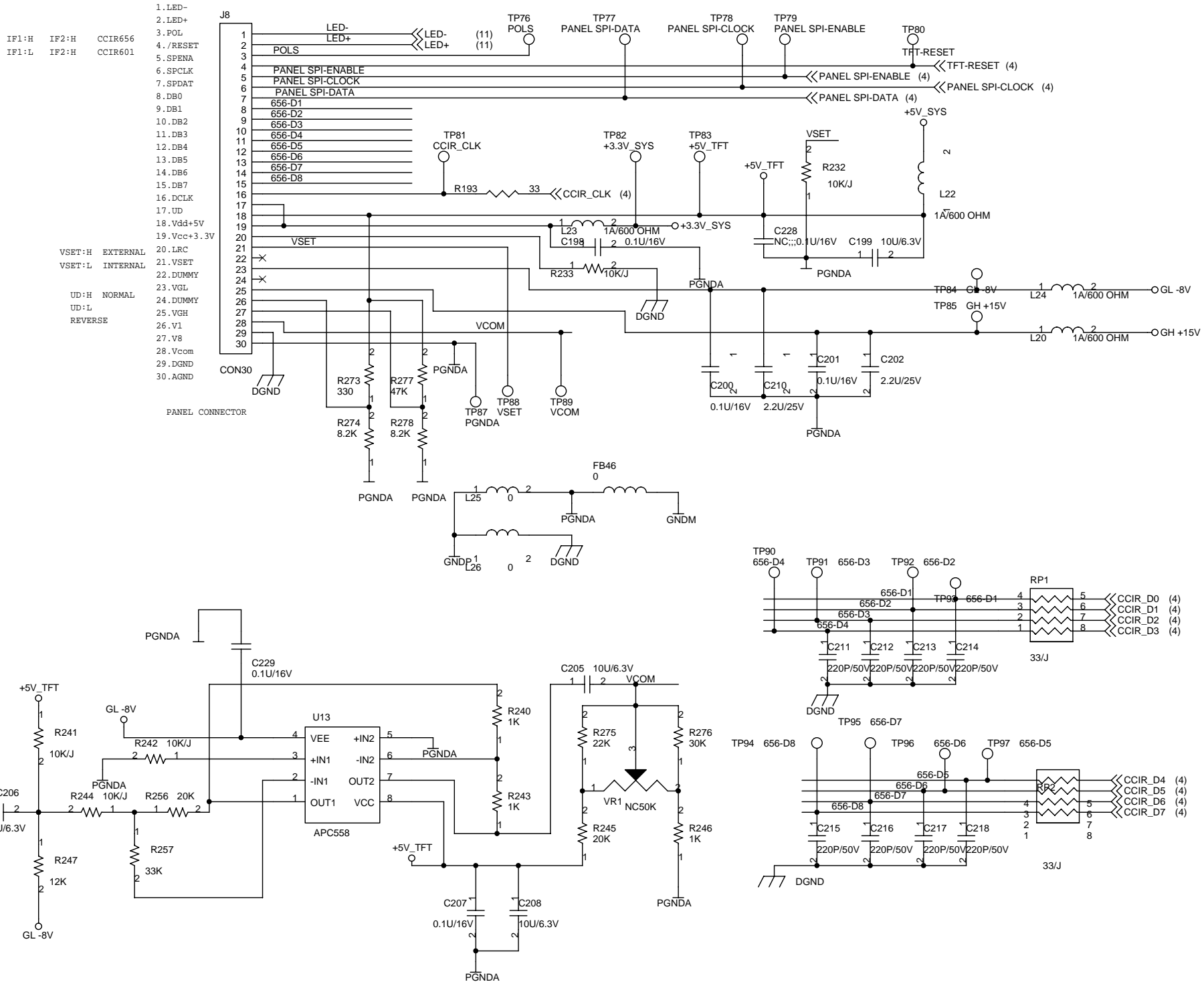


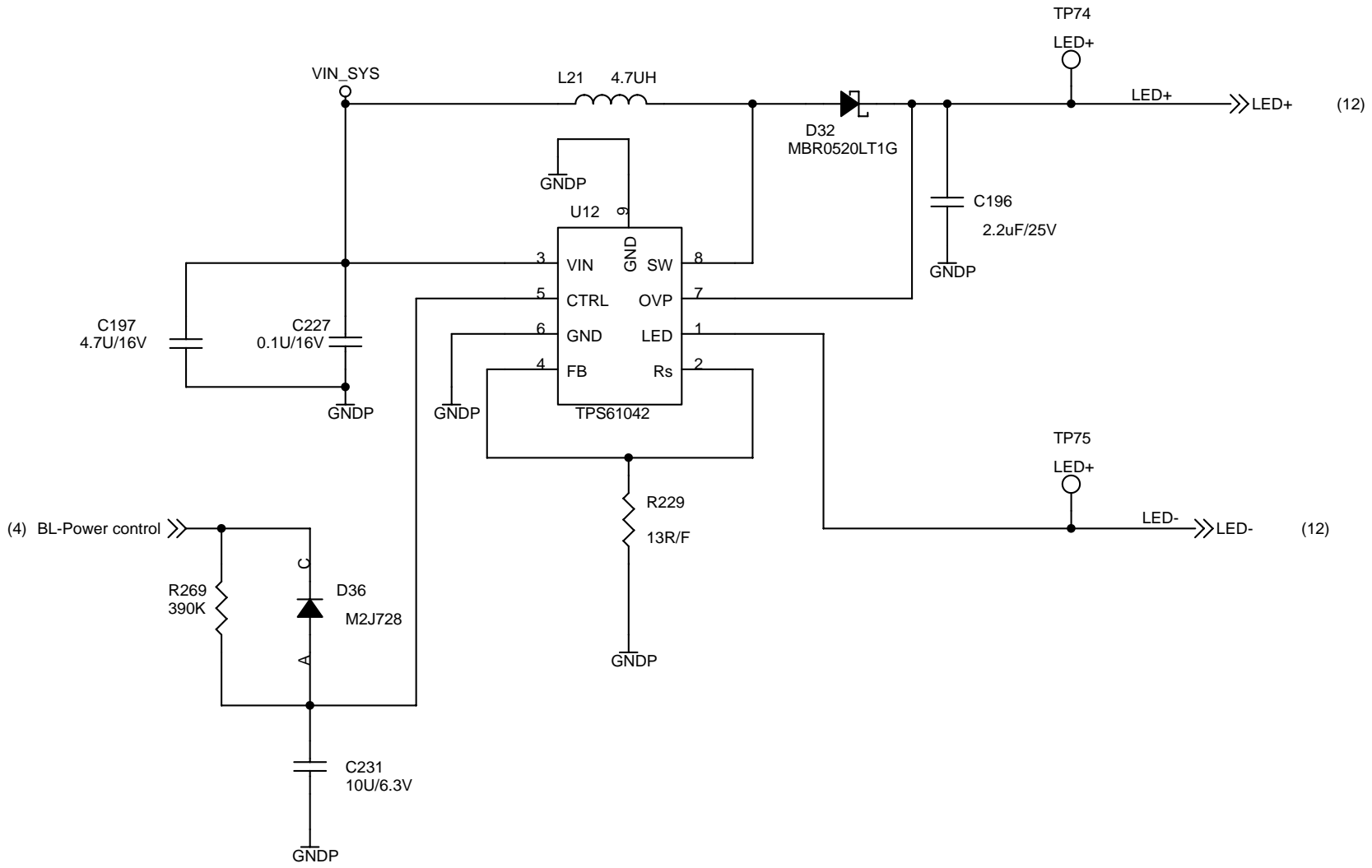
7. ELECTRICAL DIAGRAM

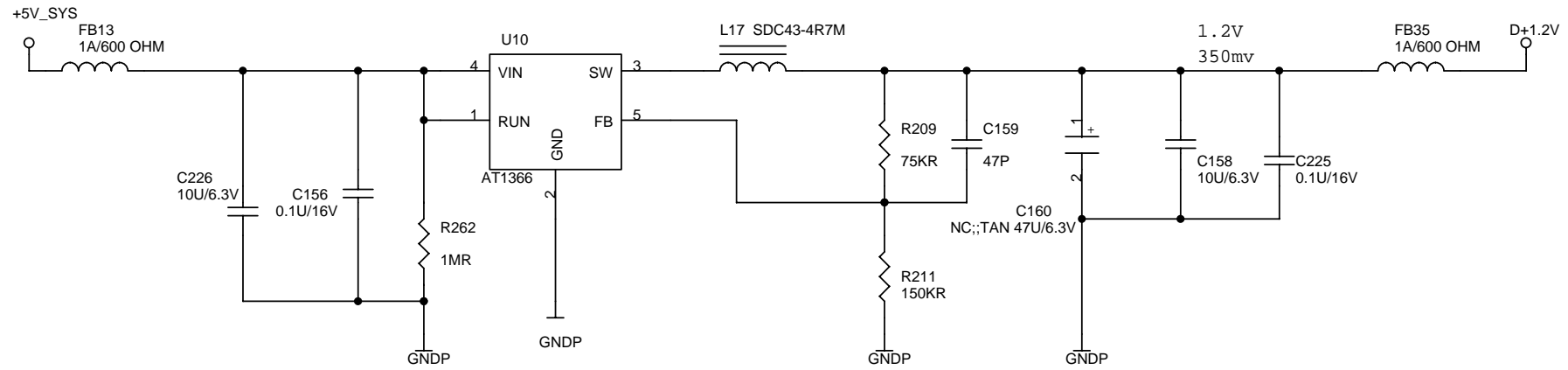
7.1 Electrical Diagram of Top PCBA

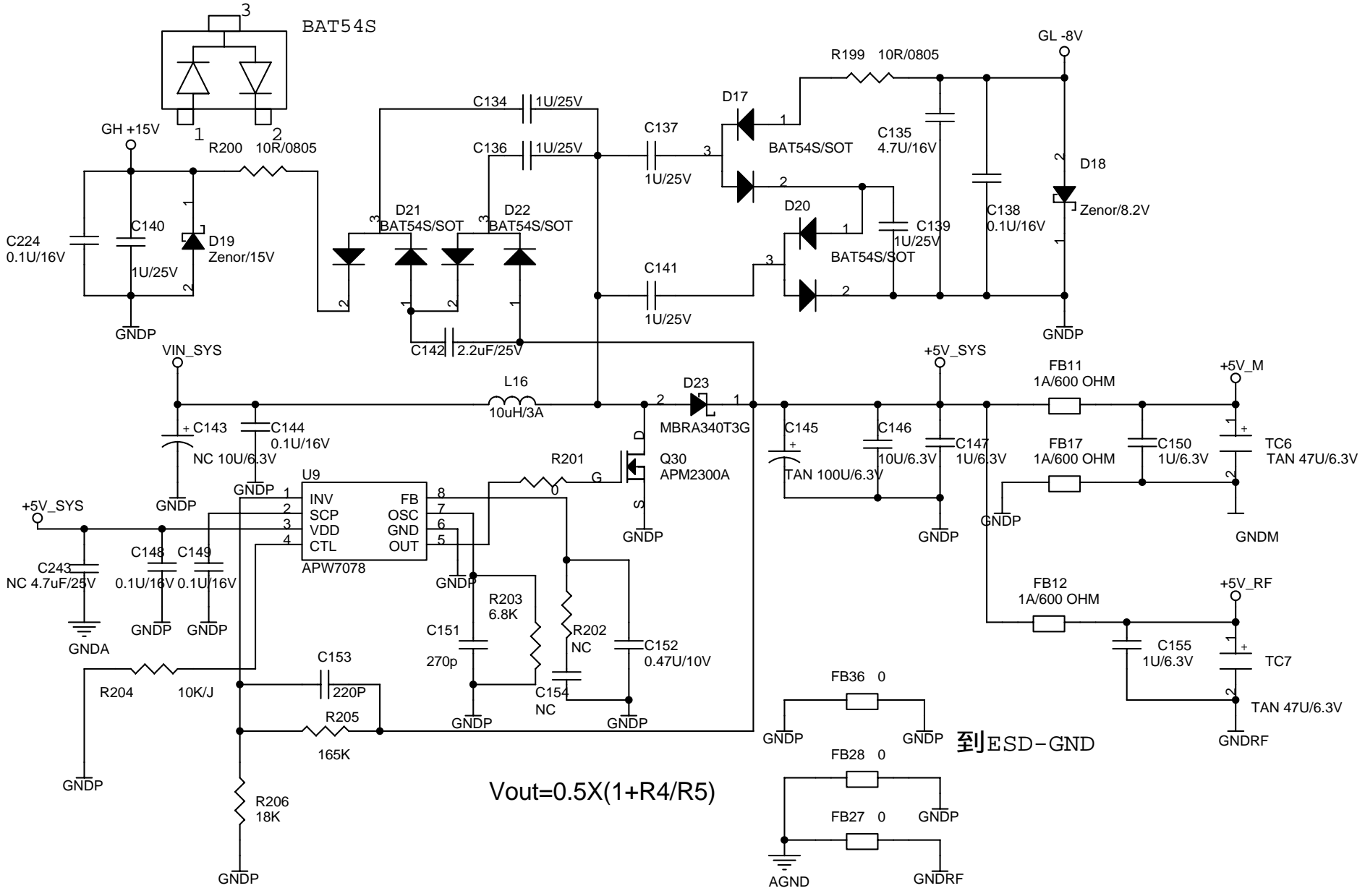


7.2 Electrical Diagram of Bottom PCBA



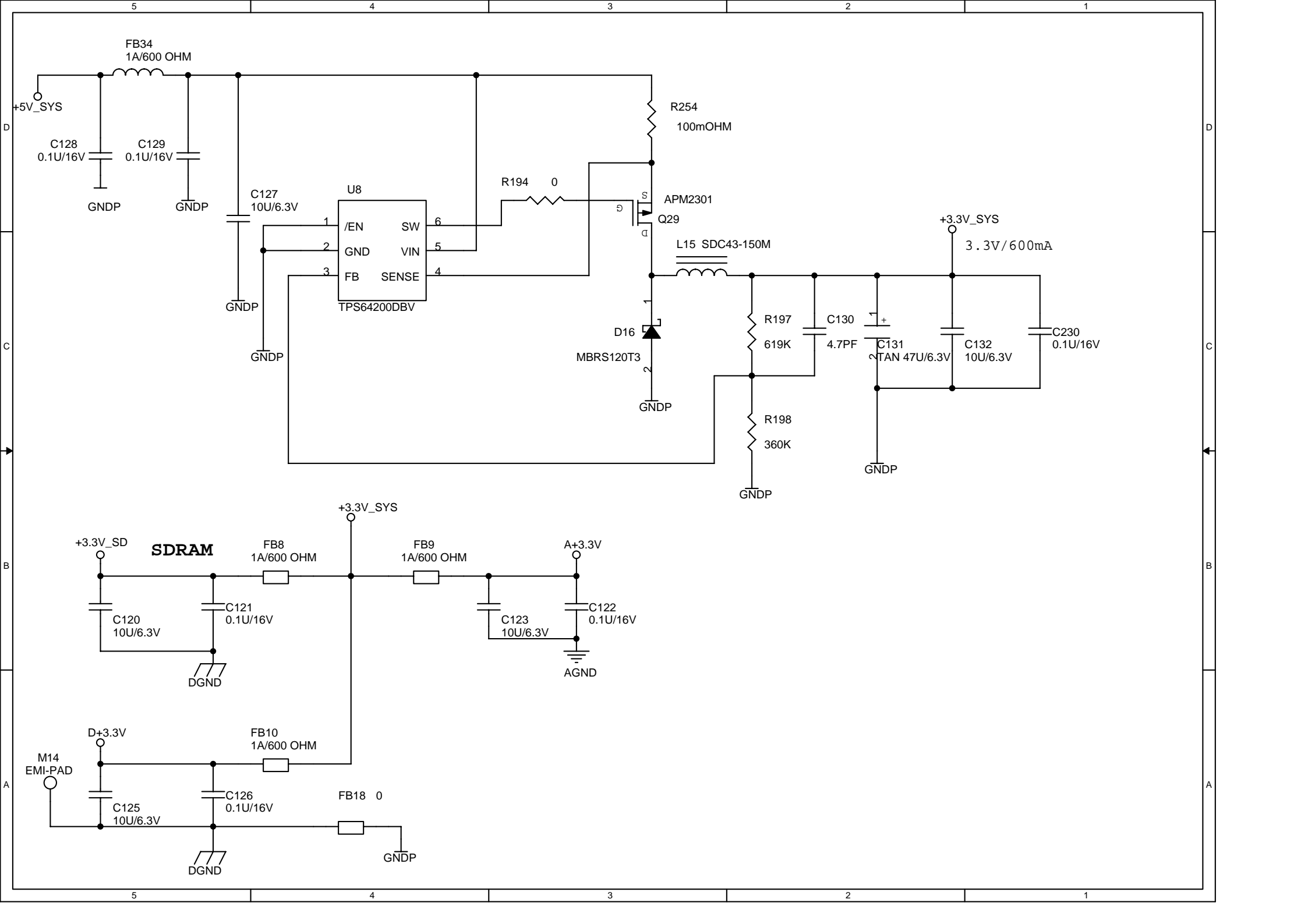


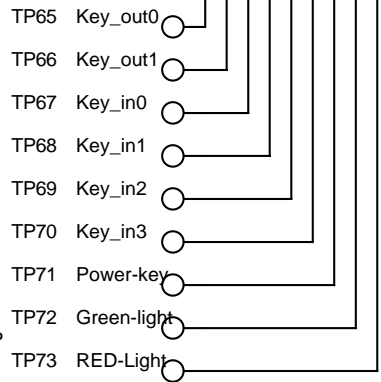
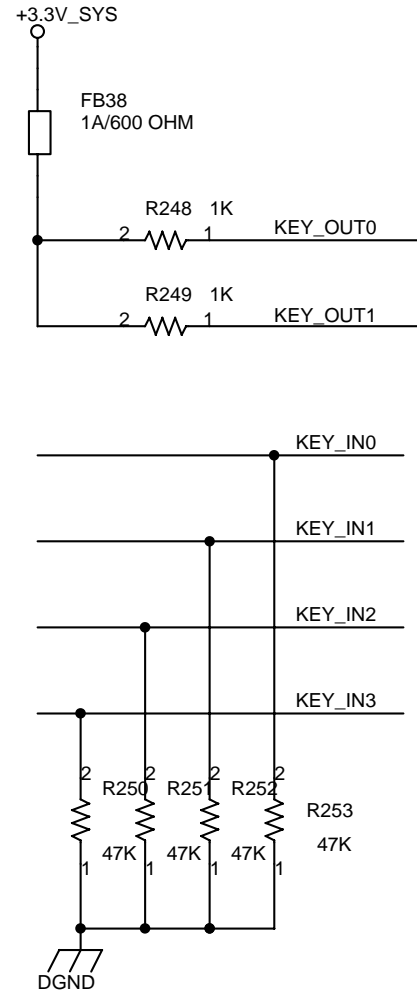
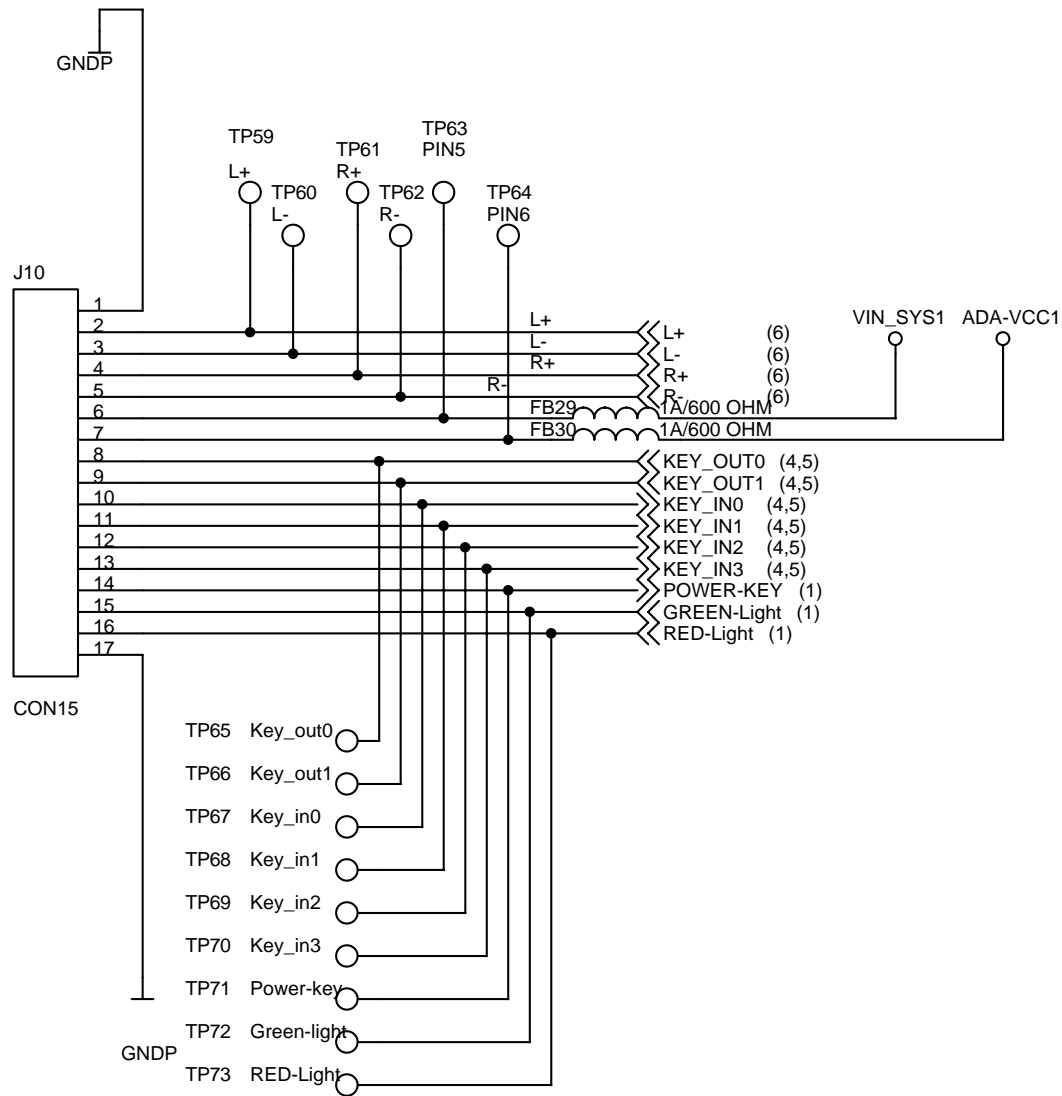


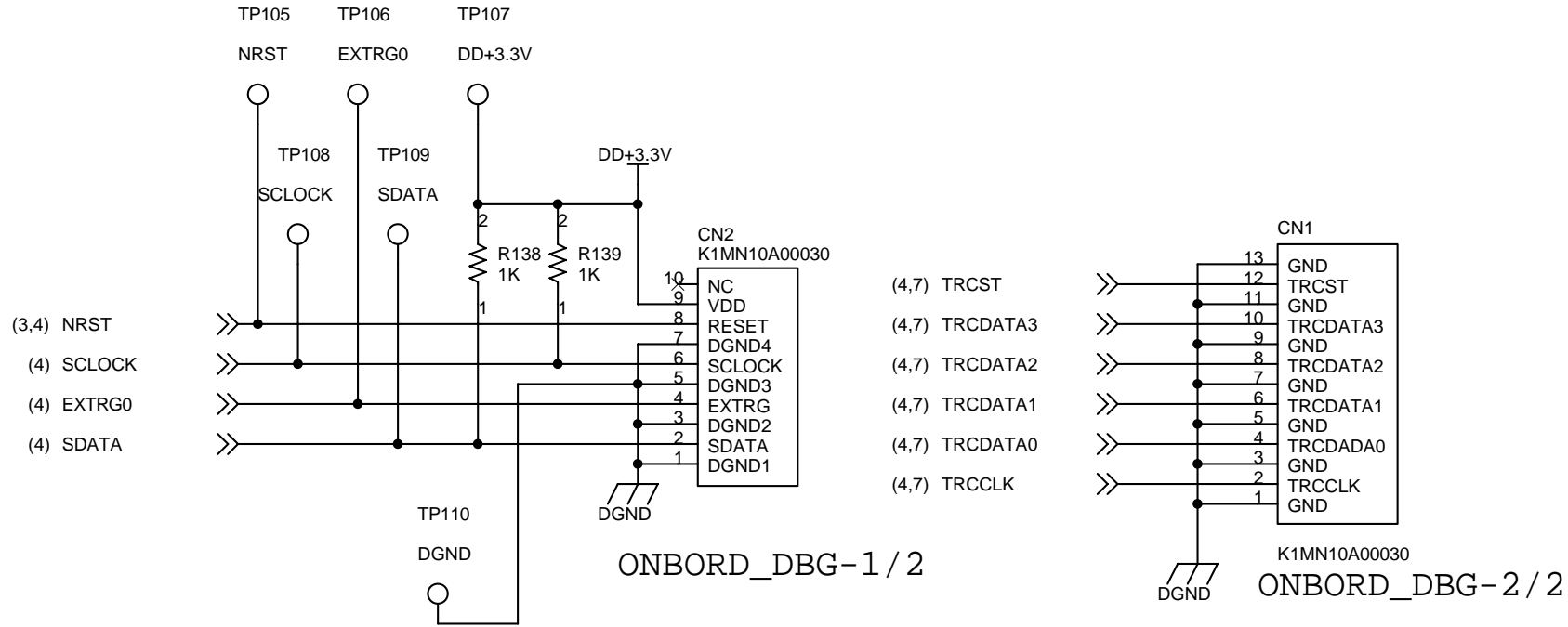
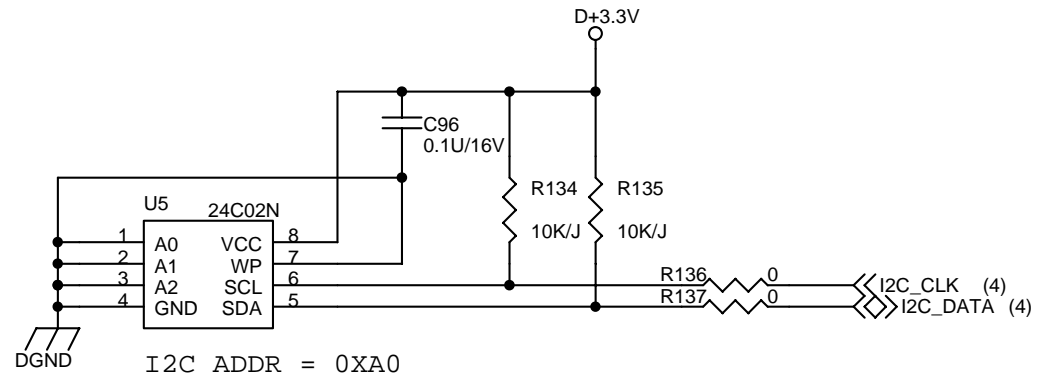


$$V_{out} = 0.5X(1 + R4/R5)$$

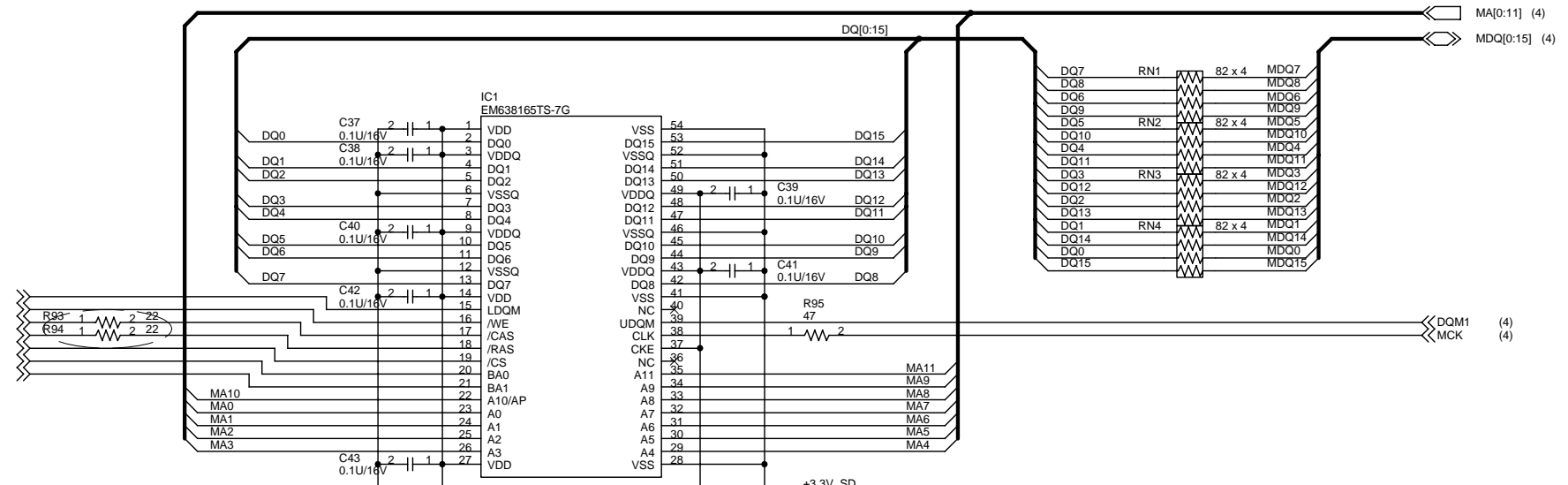
到ESD-GND



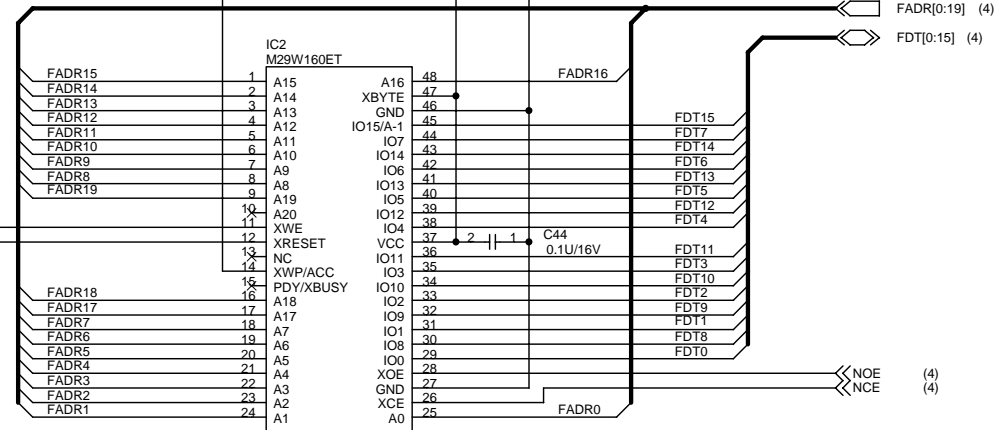




- (4) DQM0
- (4) NWE
- (4) NCAS
- (4) NRCAS
- (4) BA0
- (4) BA1

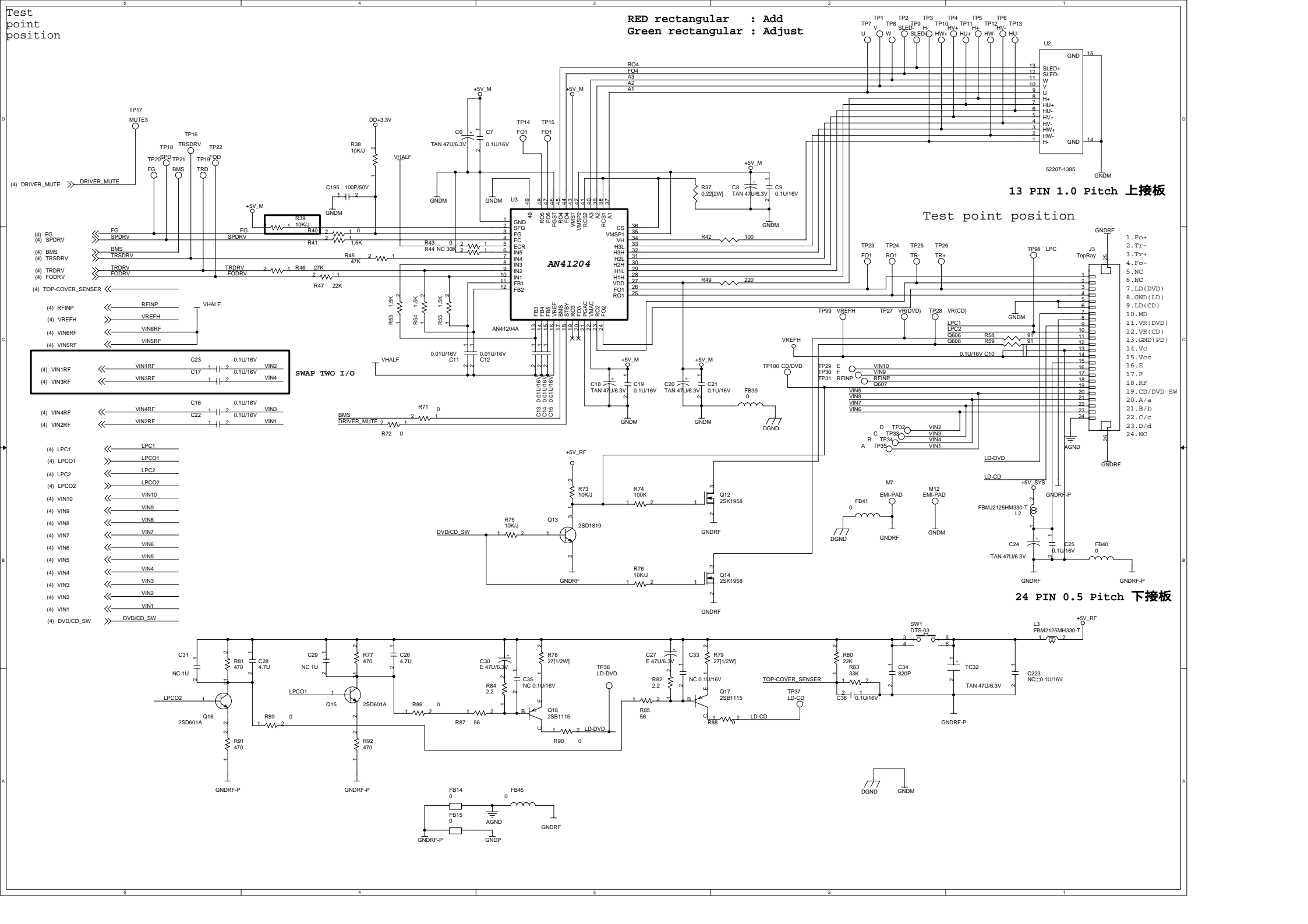


- (4) NWR
- (4,5) NRST



Test point position

RED rectangular : Add
GREEN rectangular : Adjust



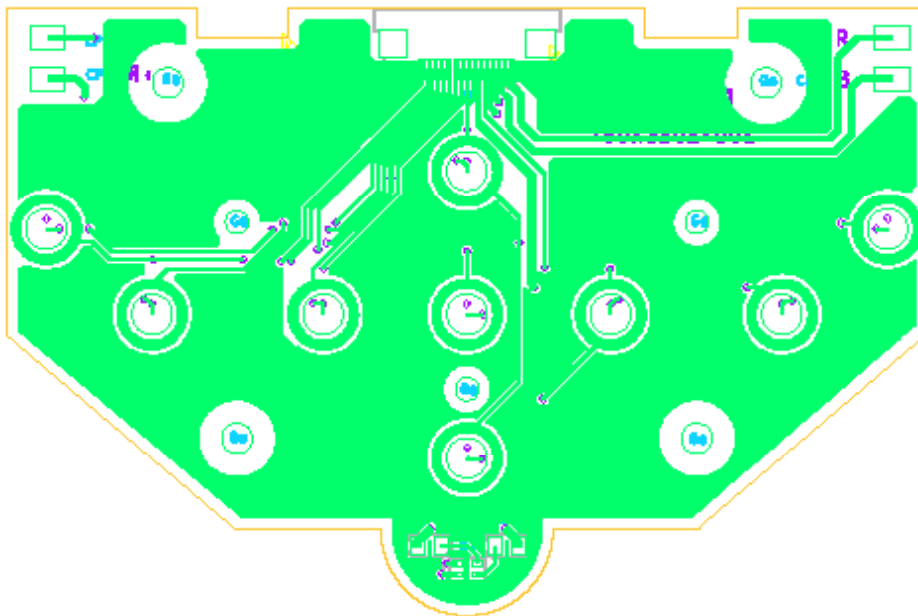
13 PIN 1.0 Pitch 上接板

Test point position

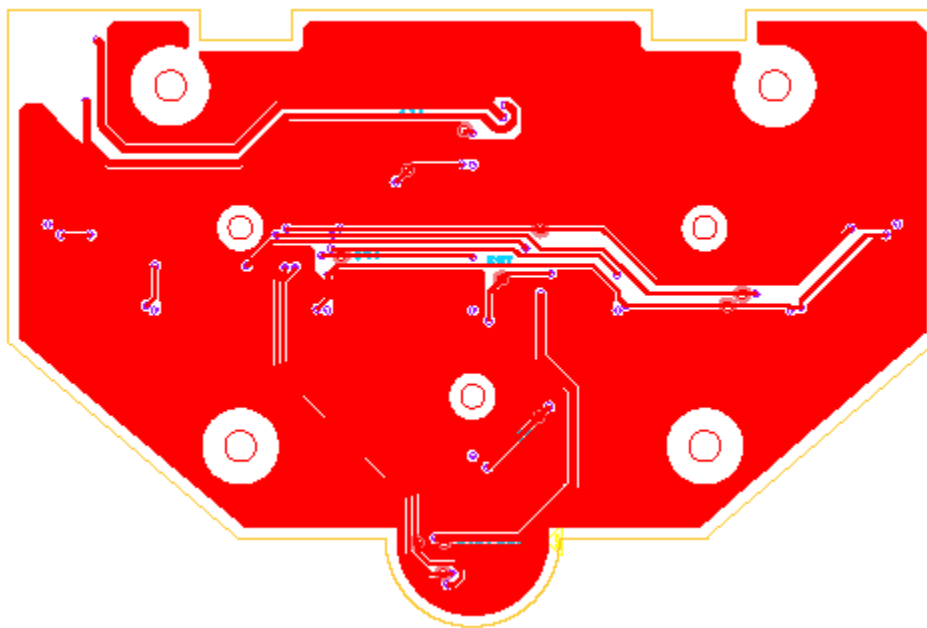
24 PIN 0.5 Pitch 下接板

8. COMPONENT LAYOUT

8.2 Component layout of Top PCBA



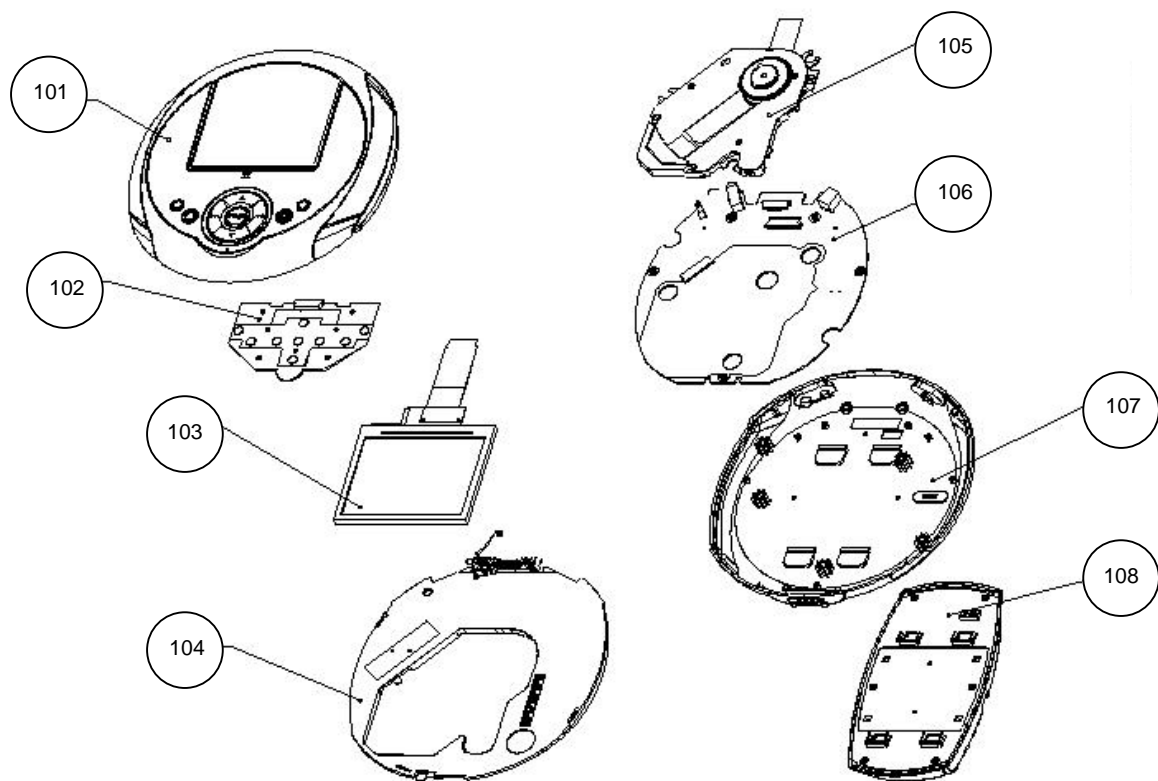
Top Side



Bottom Side

9. EXPLODED VIEW DIAGRAM & SERVICE PART LIST

EXPLODED VIEW DIAGRAM



MECHANICAL PARTS

101	9940 000 03854	Housing Top Case
102	9940 000 03843	Top PCBA
103	9940 000 03844	LCD
104	9940 000 03855	Middle Cabinet
105	9940 000 03841	Driver
106	9940 000 03842	Bottom PCBA
107	9940 000 03856	Housing Bottom Case
108	9940 000 03845	Battery

MISCELLANEOUS

9940 000 03846	AV Cable
9940 000 03847	Adaptor-US (PET320/37)
9940 000 03848	Adaptor-EU (PET320/00)
9940 000 03849	Adaptor-UK (PET320/05)
9940 000 03851	Car Adaptor
9940 000 03852	Ear Phone
9940 000 03853	Pouch

9. EXPLODED VIEW DIAGRAM & SERVICE PART LIST

Philips Service 12NC	Model #	Supplier name	Accessory description
994000003841	PET320	QSI	Driver
994000003842	PET320	QSI	Bottom PCBA
994000003843	PET320	QSI	Top PCBA
994000003844	PET320	QSI	LCD
994000003845	PET320	QSI	Battery
994000003846	PET320	QSI	AV cable
994000003847	PET320/37	QSI	Adaptor-US
994000003848	PET320/00	QSI	Adaptor-EU
994000003849	PET320/05	QSI	Adaptor-UK
994000003851	PET320	QSI	Car Adaptor
994000003852	PET320	QSI	Ear Phone
994000003853	PET320	QSI	Punch
994000003854	PET320	QSI	Housing Top Case
994000003855	PET320	QSI	MIDDLE_CABINT
994000003856	PET320	QSI	Housing Buttom Case
994000003857	PET320	QSI	SCREW 1.7-0.64x5.0
994000003858	PET320	QSI	SCREW 1.7-0.50x3.0
994000003859	PET320	QSI	SCREW 1.7-0.64x3.8
994000003861	PET320	QSI	SCREW 1.7-0.50x4.6
994000003862	PET320	QSI	SCREW 1.7-0.64x3.7
994000003863	PET320	QSI	FFC TOP BOARD_17PIN
994000003864	PET320	QSI	DOOR_HINGE_SPRING
994000003865	PET320	QSI	DOOR_HINGE_PIN_LONG
994000003866	PET320	QSI	DOOR_HINGE_PIN_SHORT

10. REVISION LIST

Version 1.0 (3141 785 30840)

- Initial release PET320/00/05/37