

Service Service Service



Service Manual

TABLE OF CONTENTS

	Chapter
Technical Specification & Service Tips.....	1
Safety Instructions.....	2
Instruction for Use.....	3
Mechanical Instructions.....	4
Troubleshooting	5
Overall Block Diagram.....	6
Overall Wiring Diagram.....	7
Electrical Diagram.....	8
Component Layout.....	9
Service Part List.....	10
Revision List.....	11

©Copyright 2005 Philips Consumer Electronics B.V. Eindhoven, The Netherlands
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronics, mechanical, photocopying, or otherwise without the prior permission of Philips

3141 785 32411

1.0 TECHNICAL SPECIFICATION

General

Dimensions (W x H x D): 204 x 168 x 33 mm
Weight: 1.0kg
Power supply: DC 9V 1.8A
Power consumption: 20W
Operating temp. & RH: 0 - 50 degC / 30 – 90% RH
Laser wavelength: 650nm
Video system: NTSC / PAL / AUTO

Output voltage 1kHz: 1.5V typical
THD 20-20kHz (%): 0.03% typical
Dynamic range: >=80dB
Signal/Noise ratio: >=85dB
Frequency response 0.2-20kHz: +/-1dB
Channel Separation 1kHz: >=75dB
Channel Balance 1kHz: 1dB

Playback disc type: DVD, Picture-CD, SVCD, Video CD, MP3-CD, CD-R/CD-RW, WMA-CD, DVD-R, DVD-RW, DVD+R, DVD+RW

Video Playback Format: DVD / VCD / JPEG

Audio Playback Format: CD/MP3, MP3-DVD, WMA

Disc Diameter 12cm

Pixel specification

Zero bright-dot & max. 3 dark-dots

Current consumption

DC-IN SUPPLY (9V)	
Battery Charging Current	1.2A typical
BATT. SUPPLY (7.2V)	
Power Off	0A
Playback with TFT on	<1.2A typical
Playback without TFT on	<600mA
Battery time (playback)	>4.0 hour

Headphone out (headphone output load 2x16 ohm)

Maximum output power: >10mW
Frequency response: 20Hz – 20kHz
SNR (A-wght): 80dB typical
THD (0.2-20kHz): <1%
Left-Right Channel Separation: 32dB
Left-Right Channel Balance: 1dB

Supported disc type

Video Playback
Formats:



Audio Playback
Formats:



1.0 TECHNICAL SPECIFICATION

Factory Service Mode (FSM)

Procedure to check the software version of your portable DVD Player

1. Press [SETUP] to enter the setup Menu
2. Press [RETURN] and then press "1" -> "2" -> "3" by remote control
3. The display will show the software version as the date of which the software was built on the bottom of the screen.

Procedure to upgrade the software of your portable DVD Portable

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

1. Download the latest software from the Philips support site
2. Unzip the files and then burn it into a CD-ROM to make a disc for upgrade
3. Power on the Portable DVD Player with AC/DC adaptor
4. Play CD-ROM for firmware upgrade

Warning: Do not unplug the AC adaptor during firmware upgrade to prevent flash corrupt of the set!!

5. Once upgrade is completed, the player is reset automatically
6. Open the DVD door to remove the disc

Procedure to change region code of your portable DVD player

1. Power on player and open the DVD door
2. Press [SETUP] by remote control.
3. In Set Up Menu, select <Audio> and press [OK]
4. Press [2], [1], [2], [2], [2], [5], [<], [V]
5. Display will show the Region Code
6. Press Number Key button by remote control to select the region code
7. Refer below table for your region code setting

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

Region code "0" can be used for all regions!

8. Press [SETUP] to save and exit your setting
9. Power off and power on again to verify if region code change is done

Remarks:

1. ***Password is CONFIDENTIAL***
2. ***Region code is printed on product type plate. Due to DVD legislation region codes different to assigned region may not be released***

2.0 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.

ESD



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 hetzelfde potentiaal.

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 enfiler 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.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridatta 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 utilisées 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."



GB Warning !

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

S Varning !

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

SF Varoitus !

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

DK Advarse !

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.

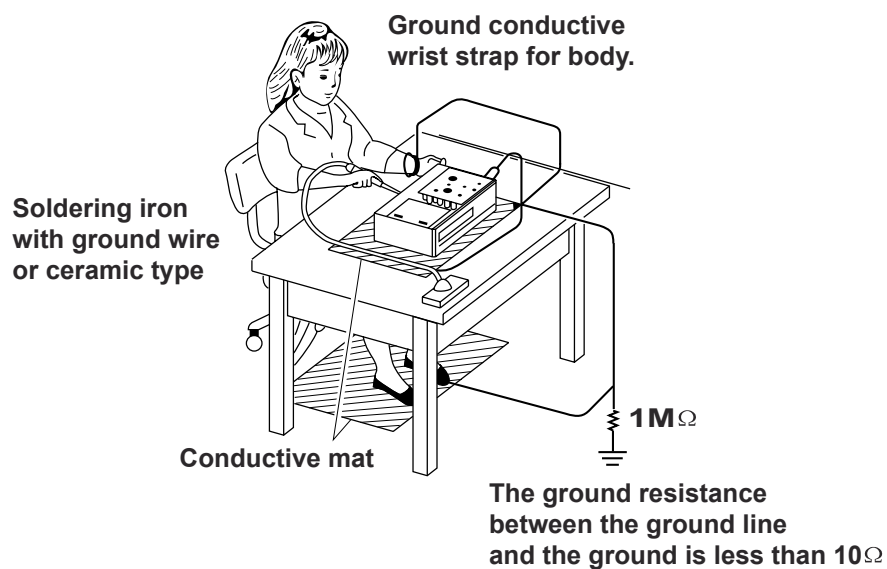
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of laser may be received.

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.



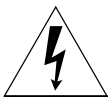
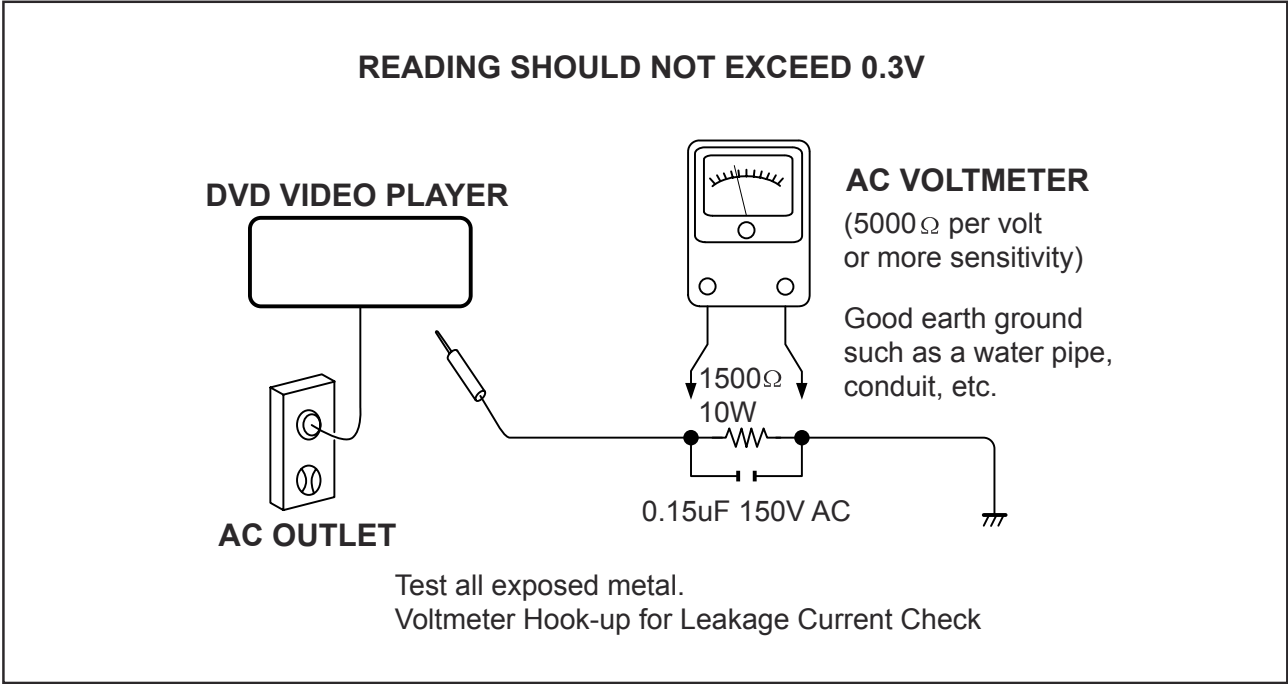
SAFTY NOTICE

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 0.15uF 150V AC capacitor between a knomn 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.

2.2 SAFETY INSTRUCTIONS

Battery Handling Guideline

Since the battery is packed in soft package, to ensure its better performance, it's very important to carefully handle the battery

2.2.1 Soft Aluminium foil

The soft aluminum packing foil is very easily damaged by sharp edge parts such as Ni-tabs, pins and needles.

- Don't strike battery with any sharp edge parts
- Trim your nail or wear glove before taking battery
- Clean worktable to make sure no any sharp particle



2.2.2 Sealed edge

Sealing edge is very flimsy

- Don't bend or fold sealing edge



2.2.3 Folding edge

The folding edge is form in battery process and passed all hermetic test.

- Don't open or deform folding edge



2.2.4 Tabs

The battery tabs are not so stubborn especially for aluminum tab.

- Don't bend tab



2.2.5 Mechanical shock

- Don't Fall, hit, bend battery body



2.2.6 Short

Short terminals of battery is strictly prohibited, it may damage battery.

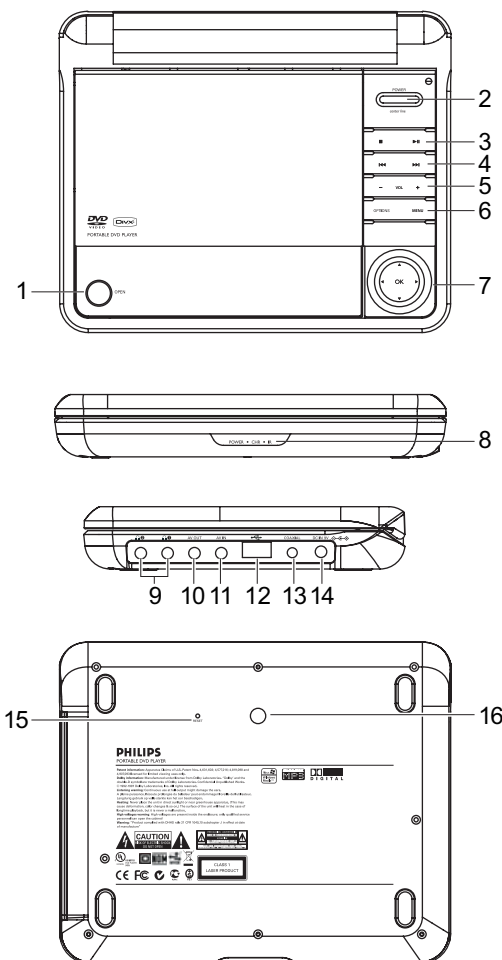
3.0 INSTRUCTIONS FOR USE

- | | |
|--|---|
| <p>① OPEN
Opens disc door to insert or remove disc
Confirms selection</p> <p>② POWER
Switches the player on / off</p> <p>③ ■
Press once to stop playback and store the stop position.
Press twice to stop playback completely.
▶
Start / pause / resume playback</p> <p>④ ◀◀ / ▶▶
Search backward (◀◀) or search forward (▶▶).</p> <p>⑤ - VOL +
Volume control.</p> <p>⑥ OPTION
Access additional functions.
MENU
Display MUNE page.</p> <p>⑦ ▲, ▼, ◀, ▶
Up / down / left / right cursor
OK
Confirm selection</p> | <p>⑧ POWER/IR/CHR
Power /remote sensor /charging indicator.</p> <p>⑨ PHONES 1 & 2
Headphones jack</p> <p>⑩ A/V OUT
Audio/video output jack</p> <p>⑪ A/V IN
Audio/video input jack</p> <p>⑫ USB
USB connector</p> <p>⑬ COAXIAL
Digital Audio output jack</p> <p>⑭ DC IN 9V
Power supply socket</p> <p>⑮ RESET
Reset the player when it is hanged up.</p> <p>⑯ Car mounting screw hole</p> |
|--|---|

CAUTION

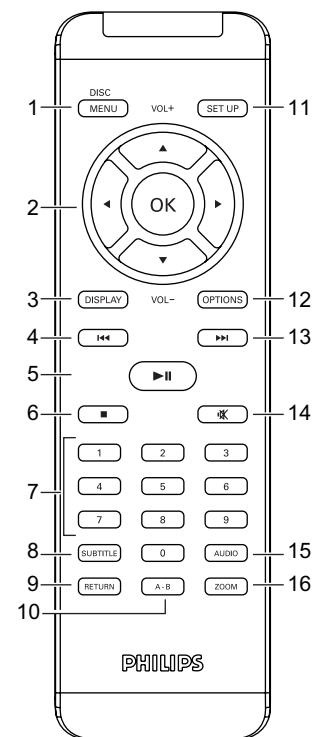
Use of controls or adjustments or performance of procedures other than herein may result in hazardous radiation exposure or other unsafe operation.

DVD PLAYER LAYOUT



REMOTE CONTROL

- | | |
|--|--|
| <p>① MENU
Display MENU page.</p> <p>② ▲, ▼, ◀, ▶
Up / down / left / right navigation key.</p> <p>OK
Confirm selection.</p> <p>VOL +/-
Volume control.</p> <p>③ DISPLAY
Adjust the display value of the system.</p> <p>④ ⏮
Skip to previous chapter, track or title.</p> <p>⑤ ▶⏮
Start / pause / resume playback</p> <p>⑥ ■
Access additional functions.</p> <p>⑦ 0 - 9
Numeric keypad.</p> | <p>⑧ SUBTITLE
Subtitle language selector.</p> <p>⑨ RETURN
For VCD menu page.</p> <p>⑩ A - B
To repeat or loop a sequence in a title.</p> <p>⑪ SETUP
Enter SETUP menu.</p> <p>⑫ OPTION
Access additional functions.</p> <p>⑬ ⏭
Skip to next chapter, track or title.</p> <p>⑭ 🔊
Mute player volume</p> <p>⑮ AUDIO
Audio language selector.</p> <p>⑯ ZOOM
Enlarge video image.</p> |
|--|--|



4.0 MECHANICAL INSTRUCTIONS

1. Back View as Fig.1

Remove screws to remove base



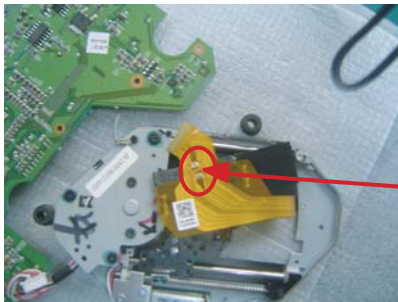
Fig.1

5. Remove speaker grill and display frame adorn and display frame latex cushion as Fig.5



Fig.5

2. Soldered short pattern for laser diode as Fig.2



soldered

Fig.2

6. Remove screws to remove top cover as Fig.6.



Fig.6

3. Broken connection of LCD

Remove screws to remove Function PCB board as Fig.3

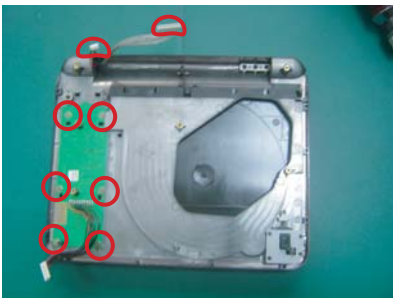


Fig.3

7. Remove screws to remove IF board shield as Fig.7.



Fig.7

4. Broken connection of Loading and every PCB board Remove Loading and main PCB and Lithium battery as Fig.4

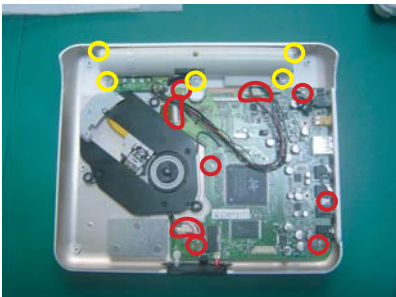


Fig.4

8. Broken connection of IF board and power board and TFT LCD Remove screws to remove IF board and power board and TFT LCD shield and TFT LCD board as Fig.8.

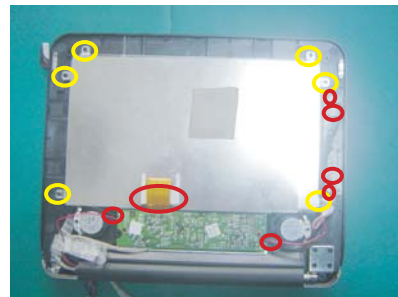
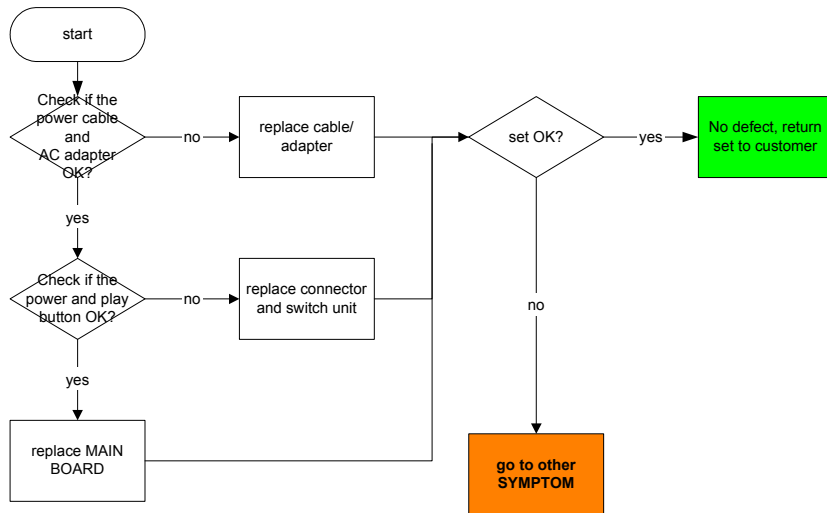


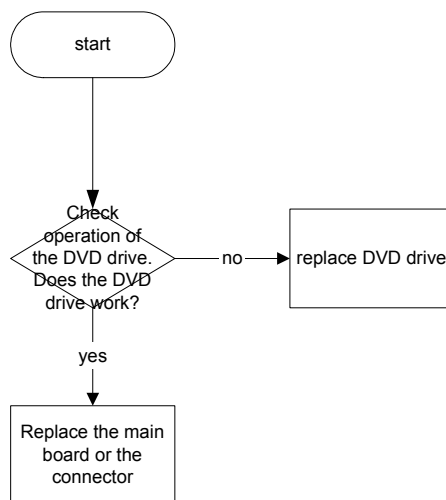
Fig.8

5.0 TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: NO POWER, NO GREEN LED

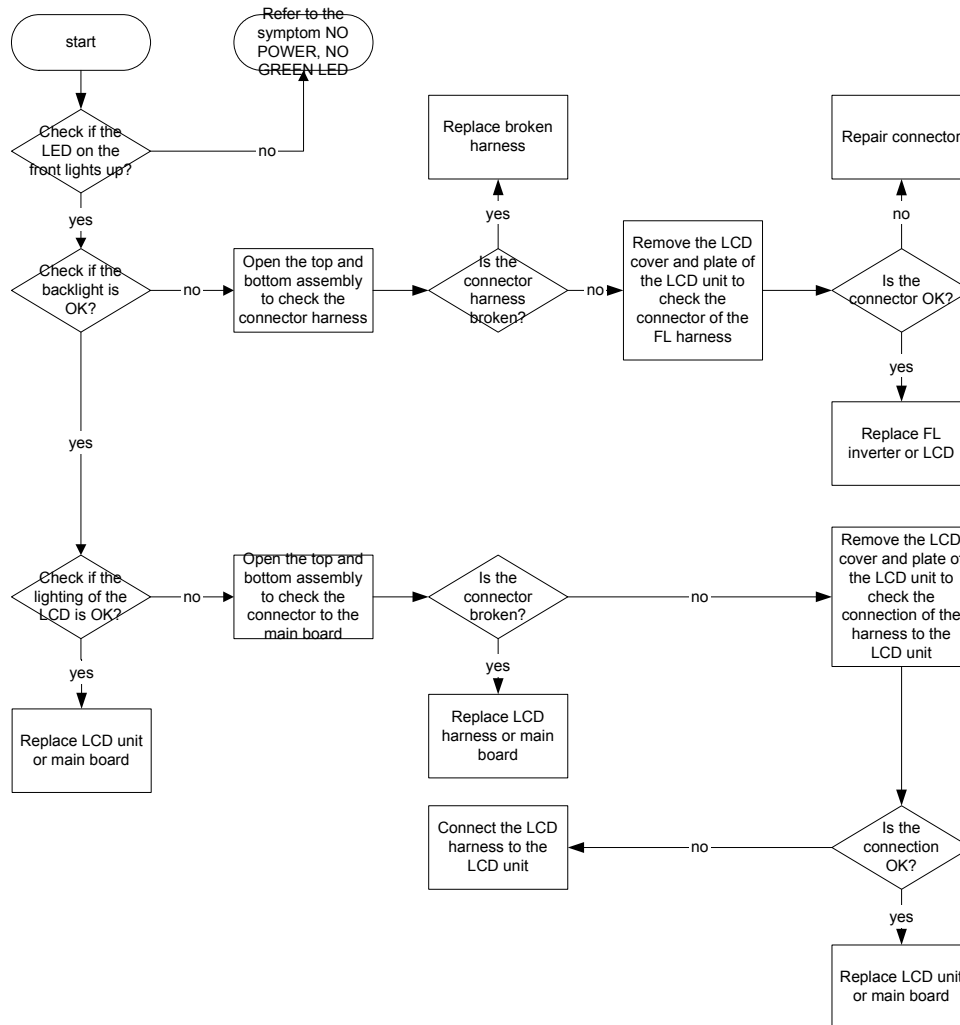


SYMPTOM: NO IMAGE OR SOUND COMES OUT FROM THE EXTERNAL OUTPUT

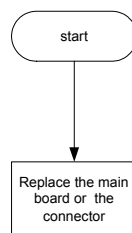


5.0 TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: THE INITIAL SCREEN IS NOT DISPLAYED ON THE LCD

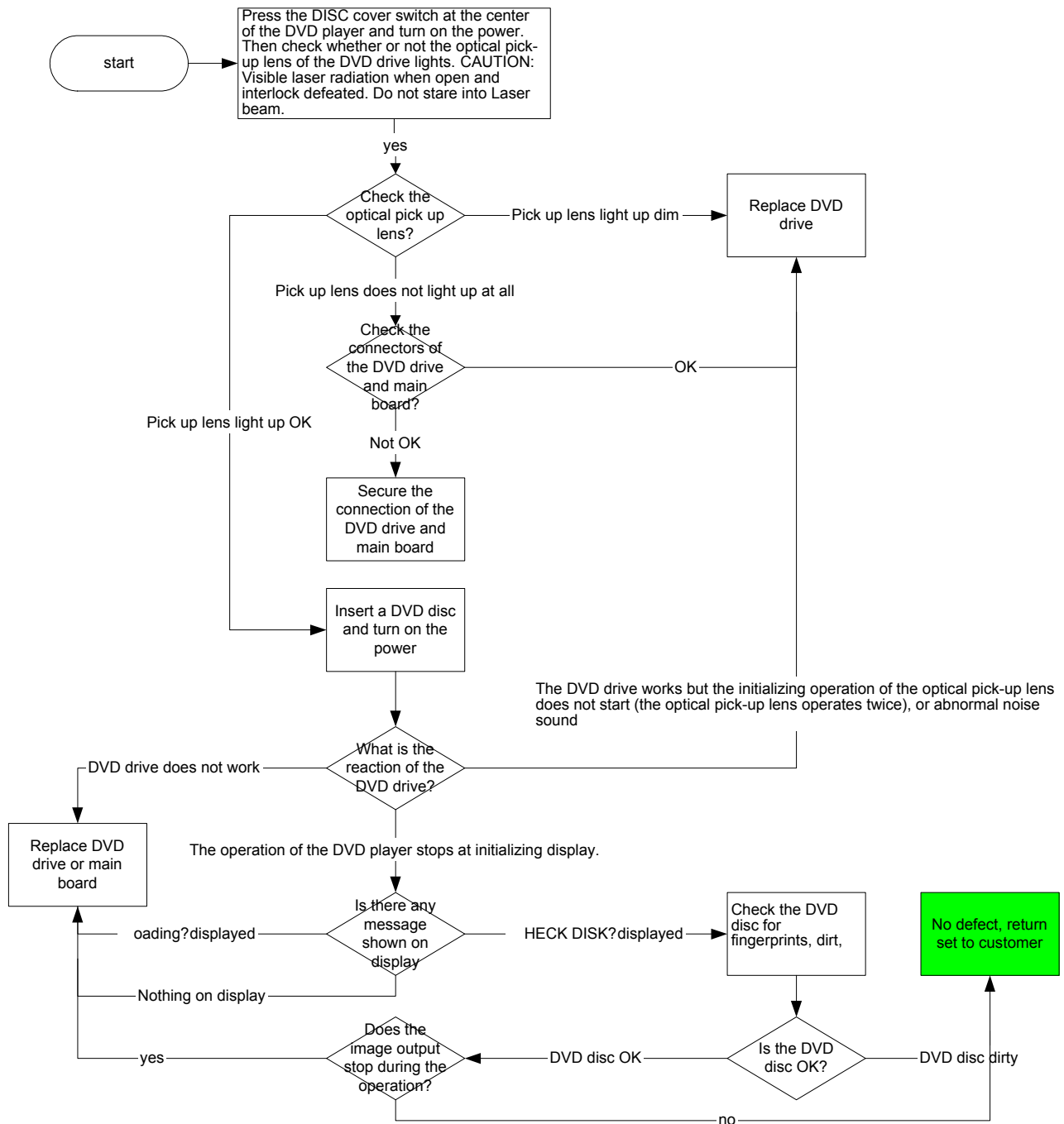


SYMPTOM: NO IMAGE OR SOUND COMES OUT FROM THE EXTERNAL INPUT



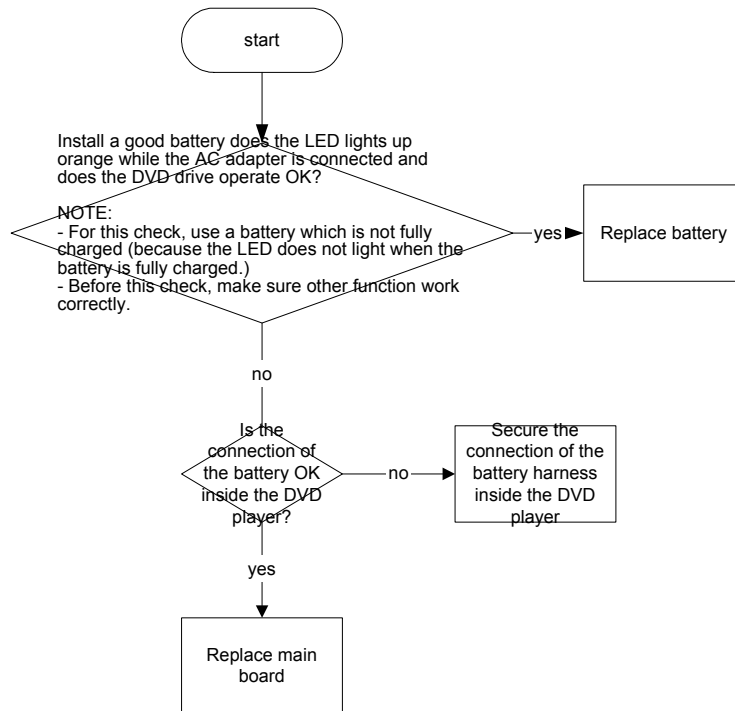
5.0 TROUBLESHOOTING & SERVICE TIPS

SYMPTOM: THE DVD DRIVE DOES NOT WORK

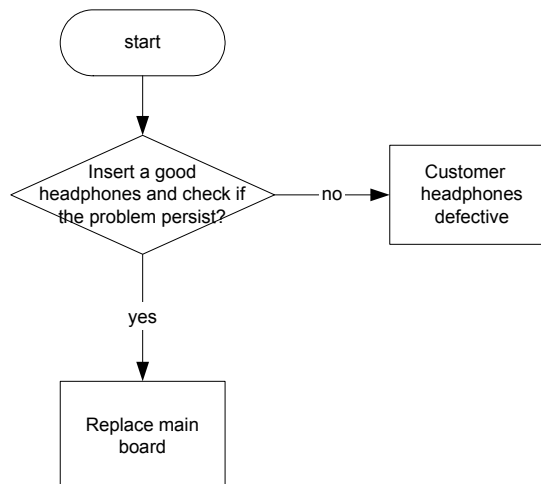


5.0 TROUBLESHOOTING & SERVICE TIPS

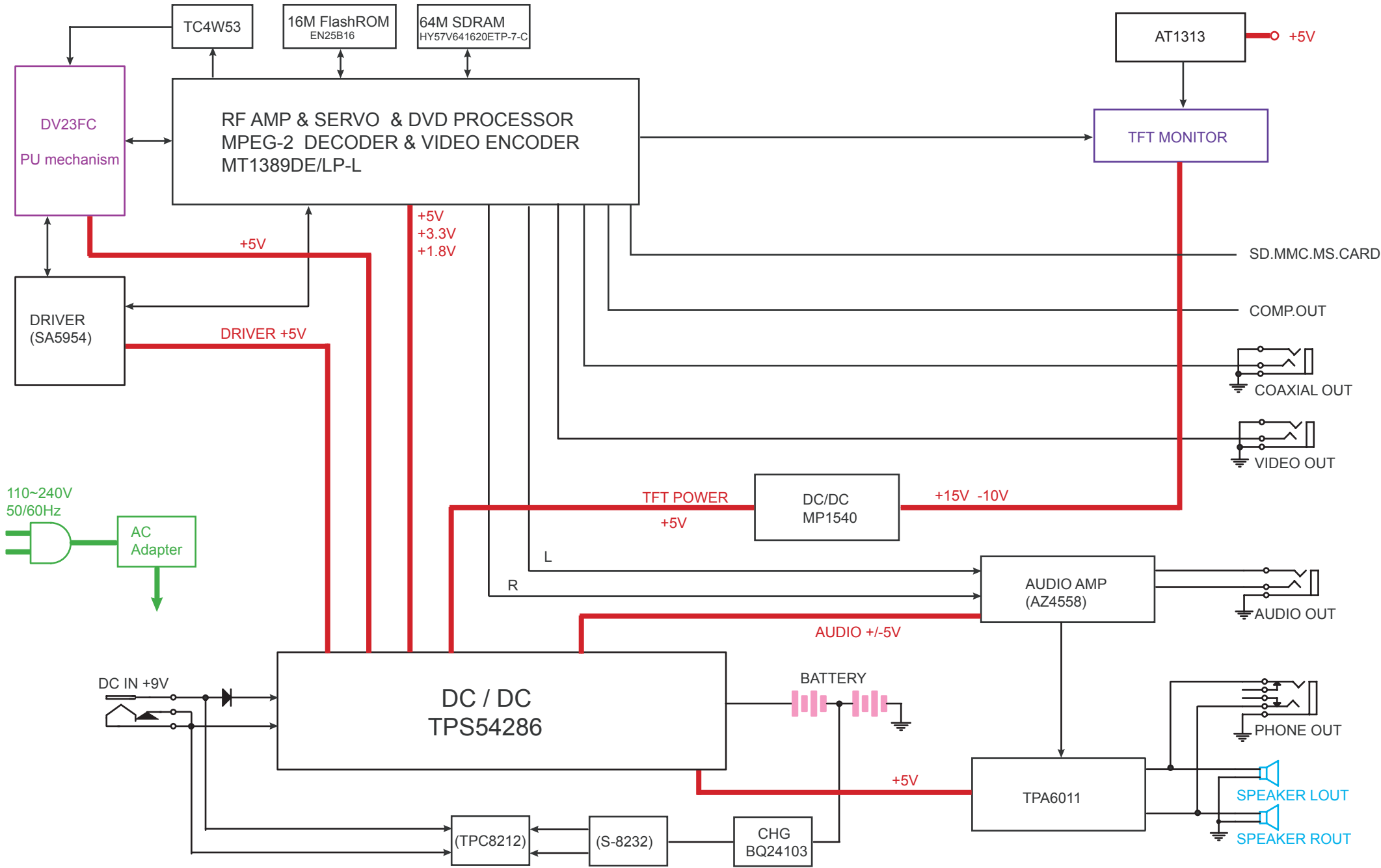
SYMPTOM: THE DVD DRIVE DOES NOT OPERATE WITH BATTERY



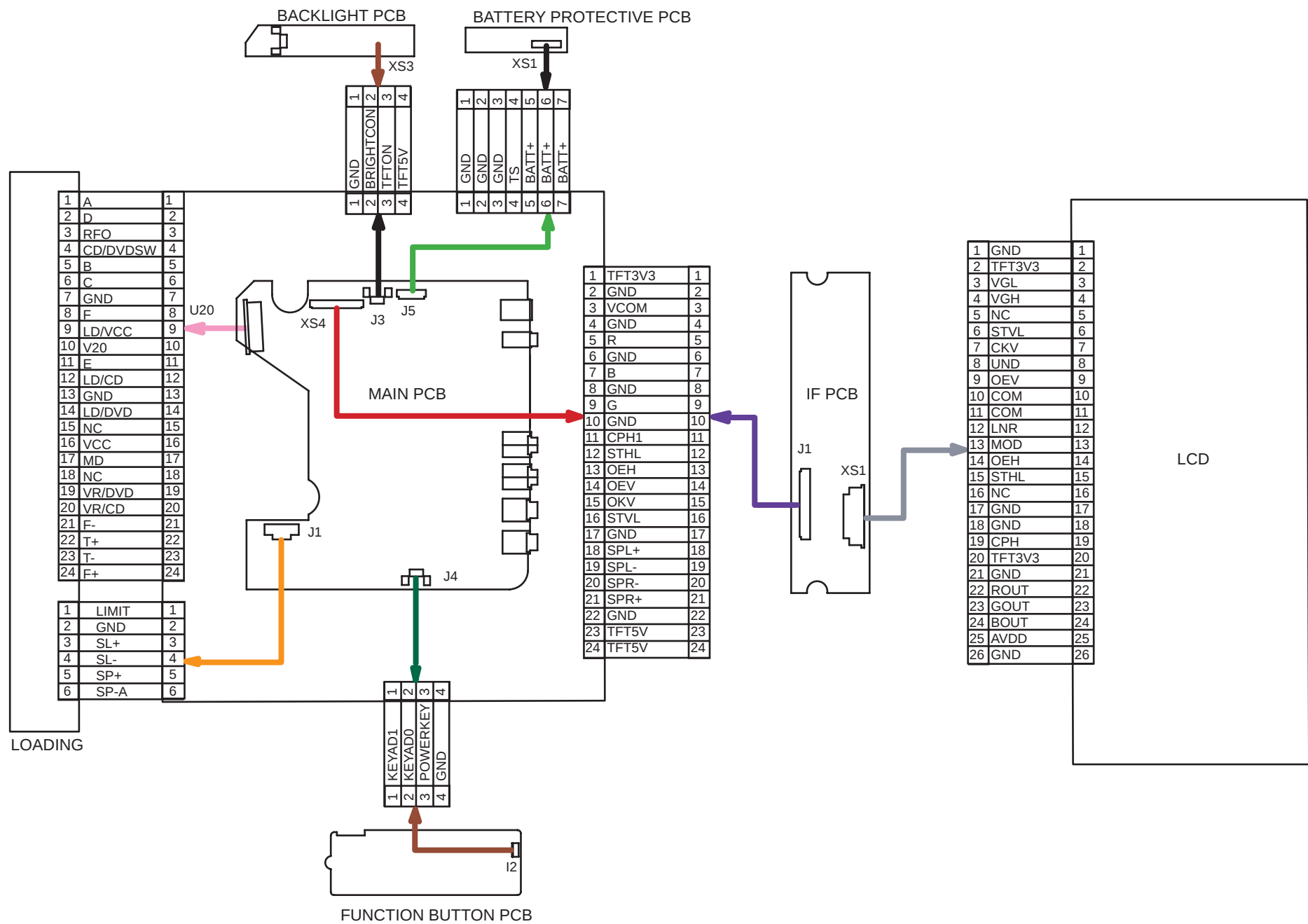
SYMPTOM: NO SOUND COMES FROM THE HEADPHONES



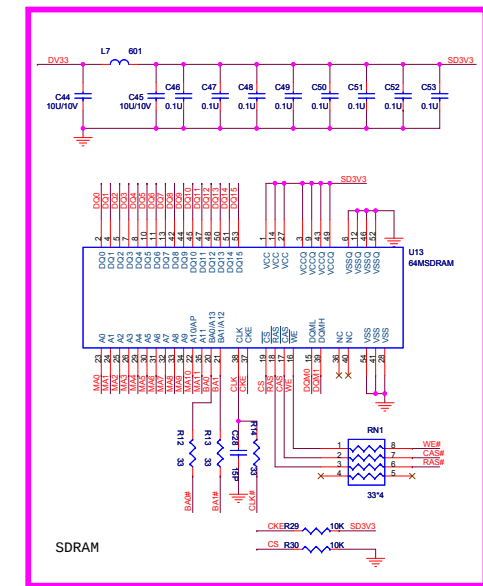
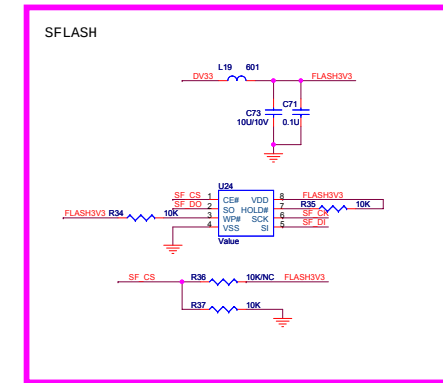
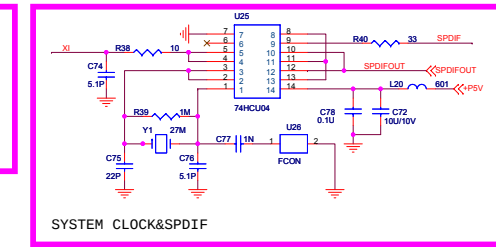
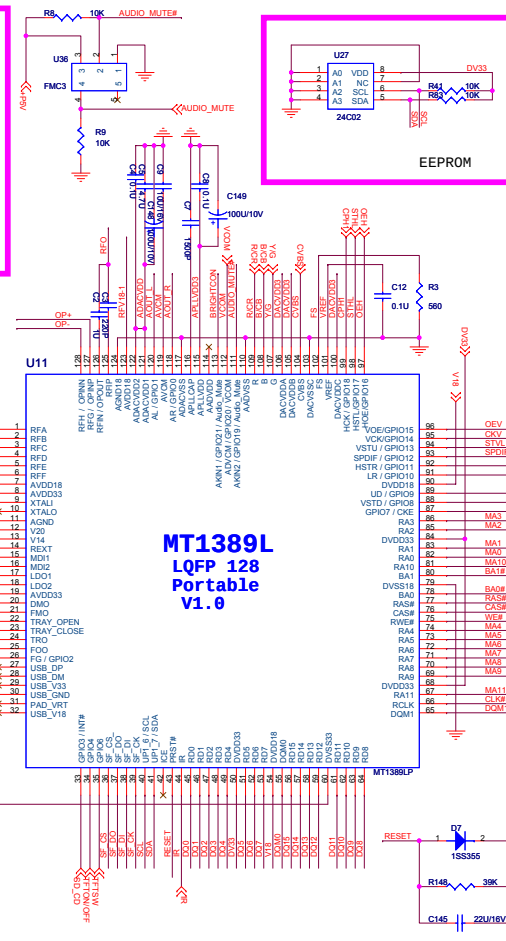
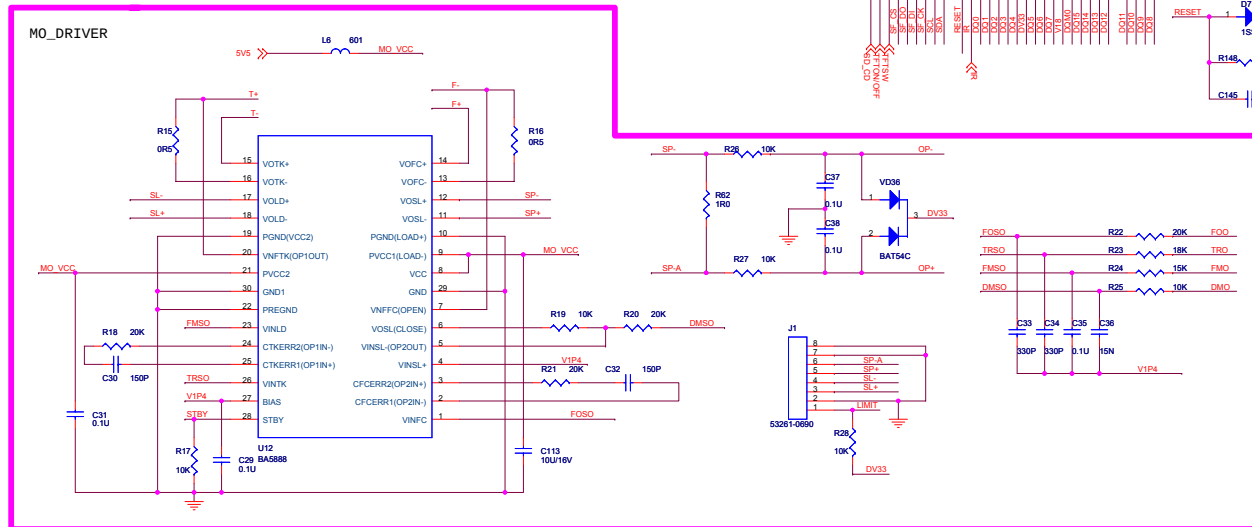
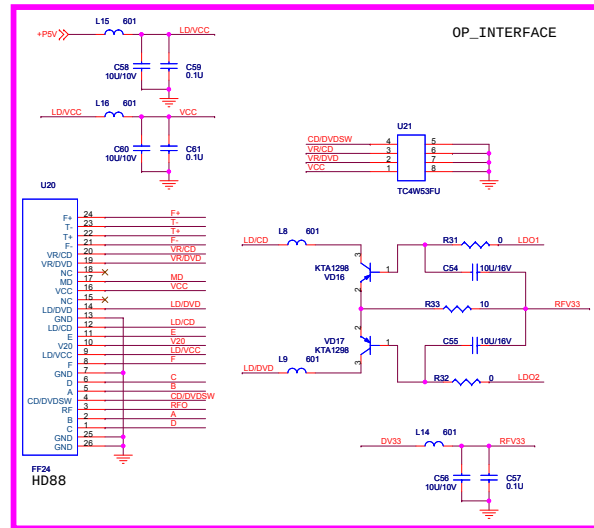
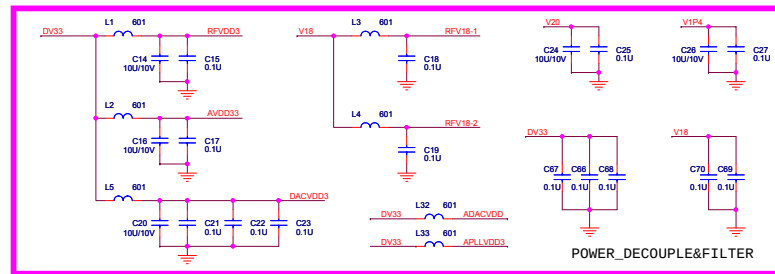
6.0 OVERALL BLOCK DIAGRAM



7.0 OVERALL WIRING DIAGRAM

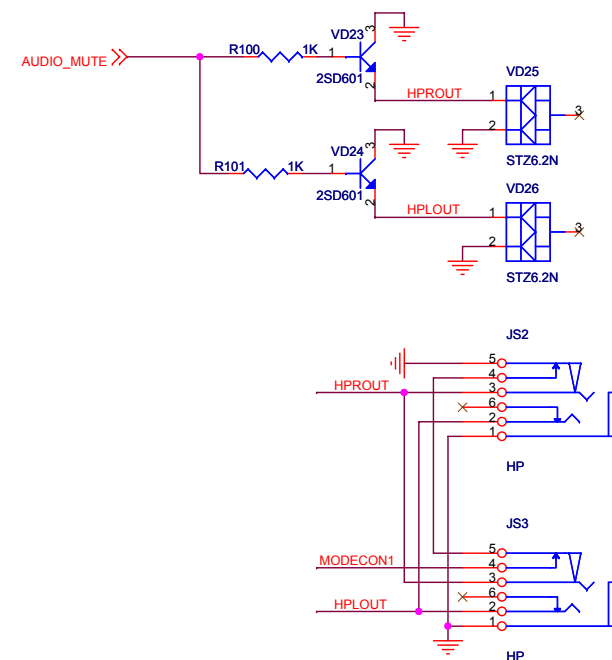
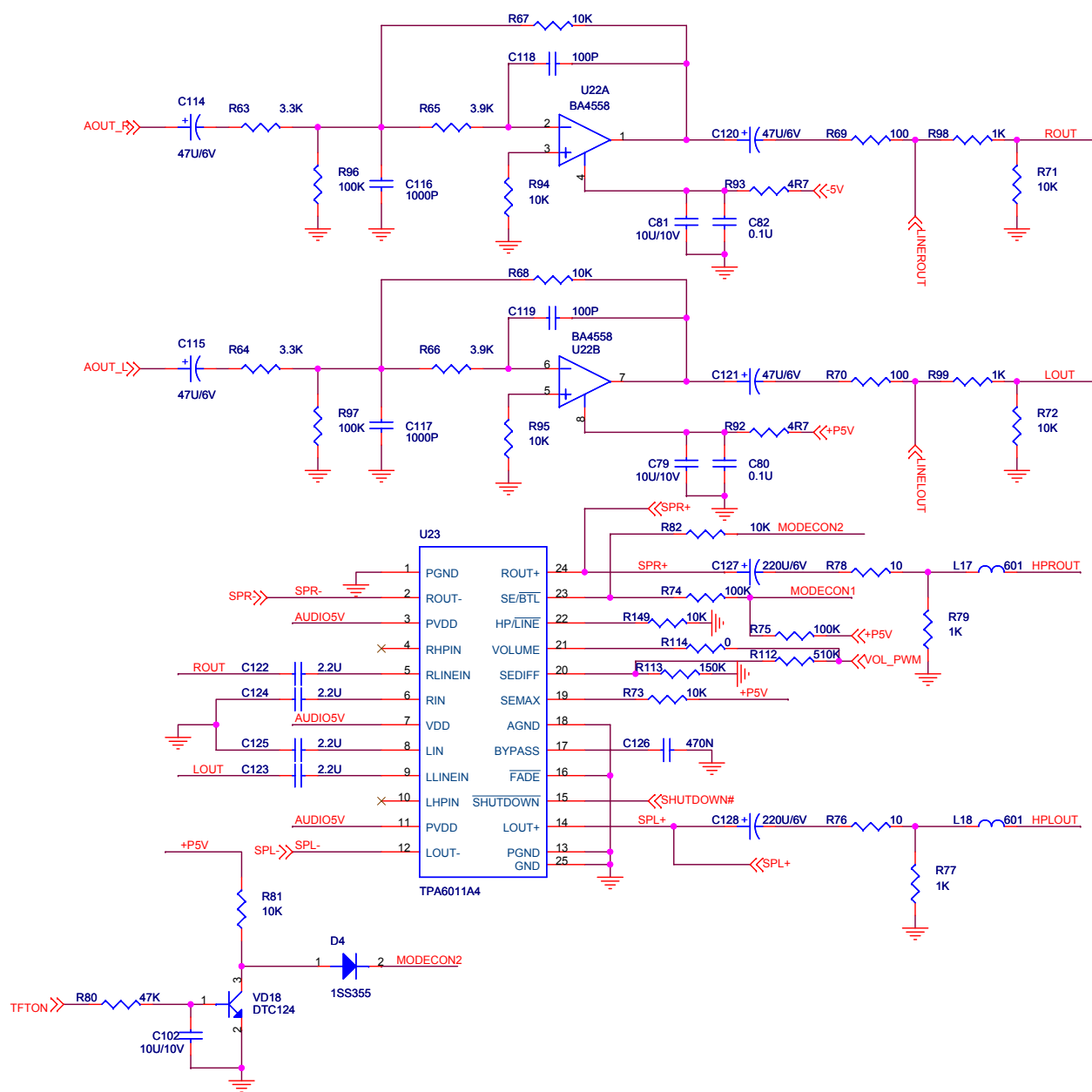


8.0 ELECTRICAL DIAGRAM MAIN BOARD CIRCUIT DIAGRAM (1389LP)



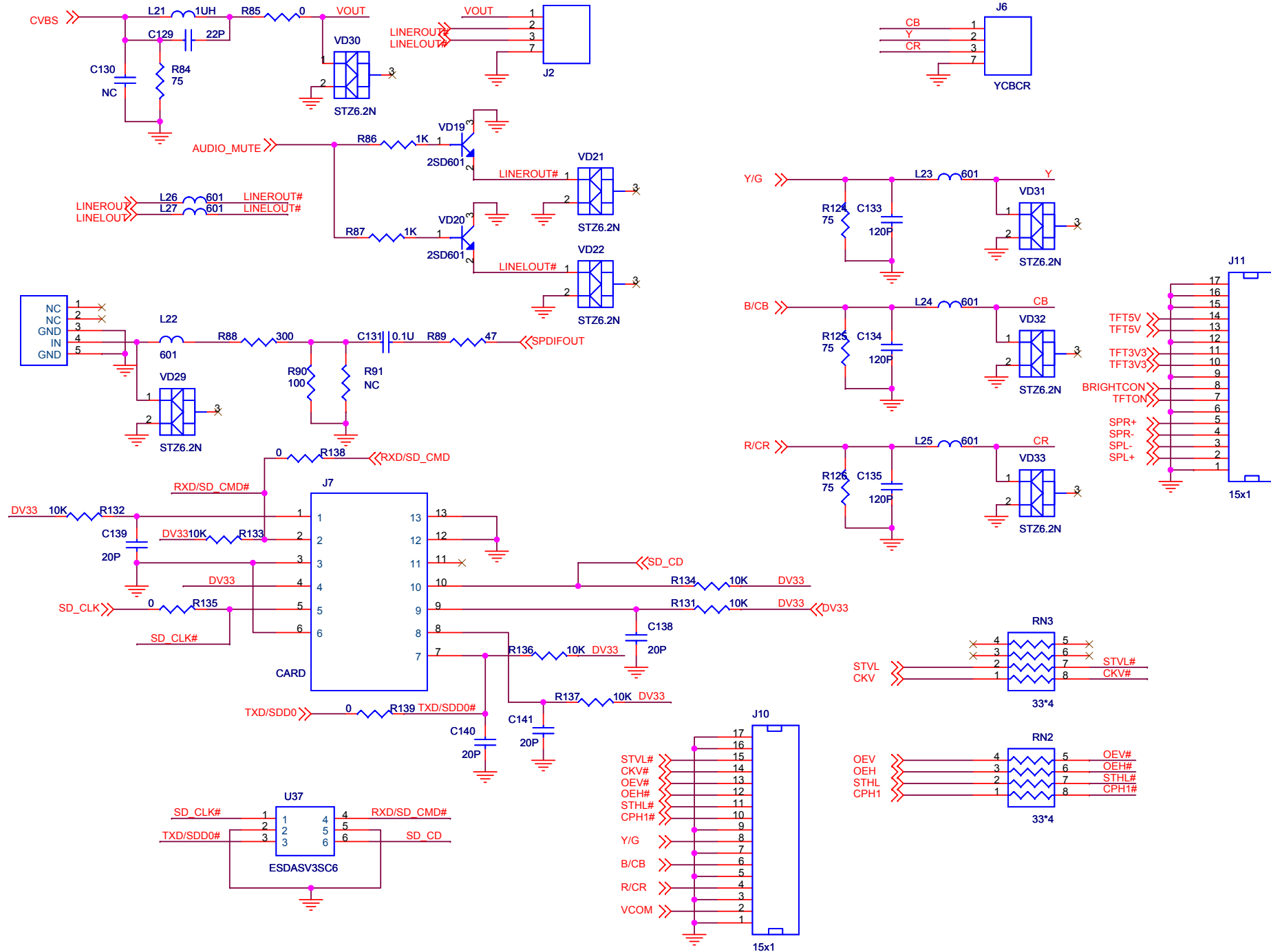
8.0 ELECTRICAL DIAGRAM

MAIN BOARD CIRCUIT DIAGRAM (AUDIO)



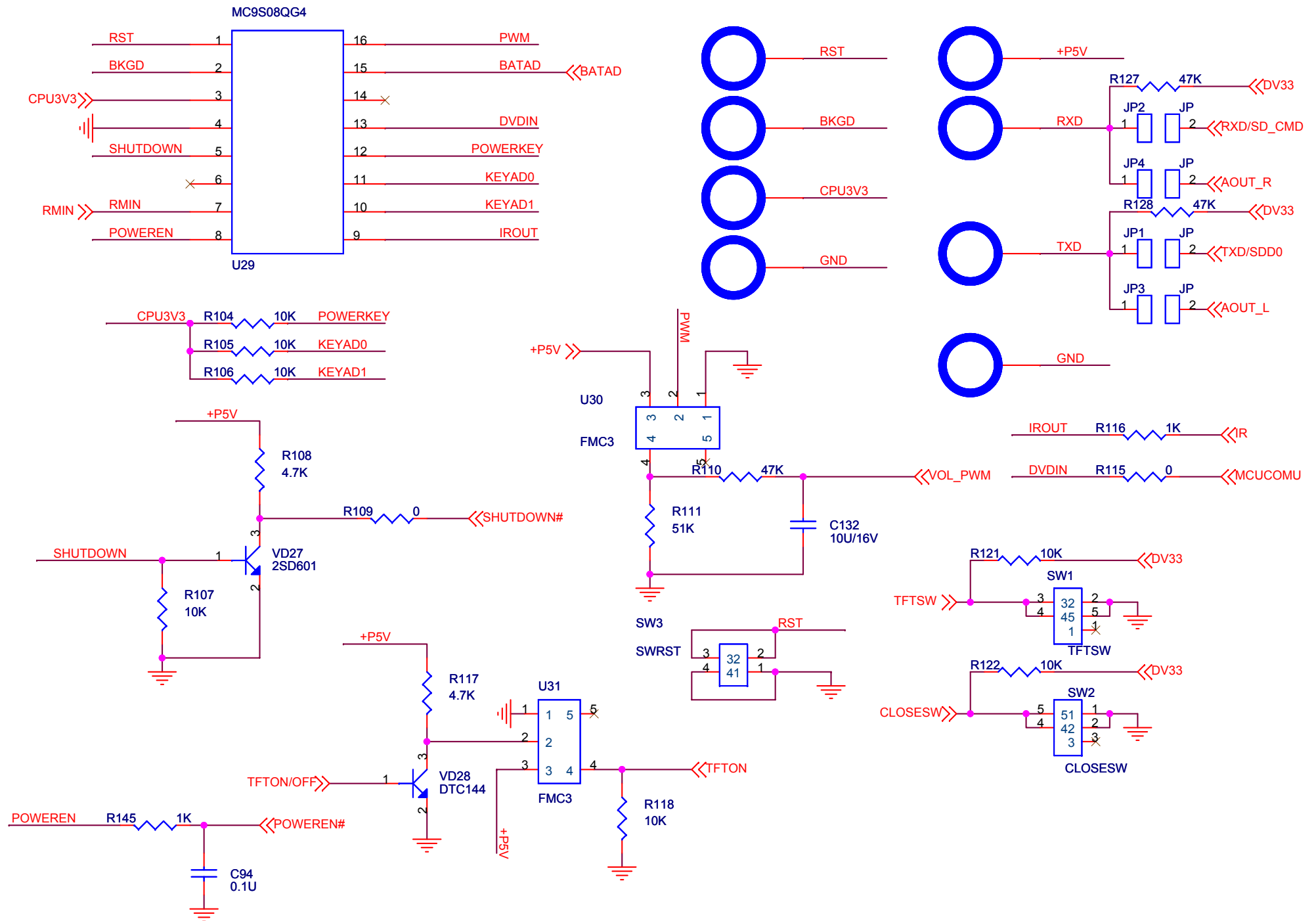
8.0 ELECTRICAL DIAGRAM

MAIN BOARD CIRCUIT DIAGRAM (AVINTERFACE)

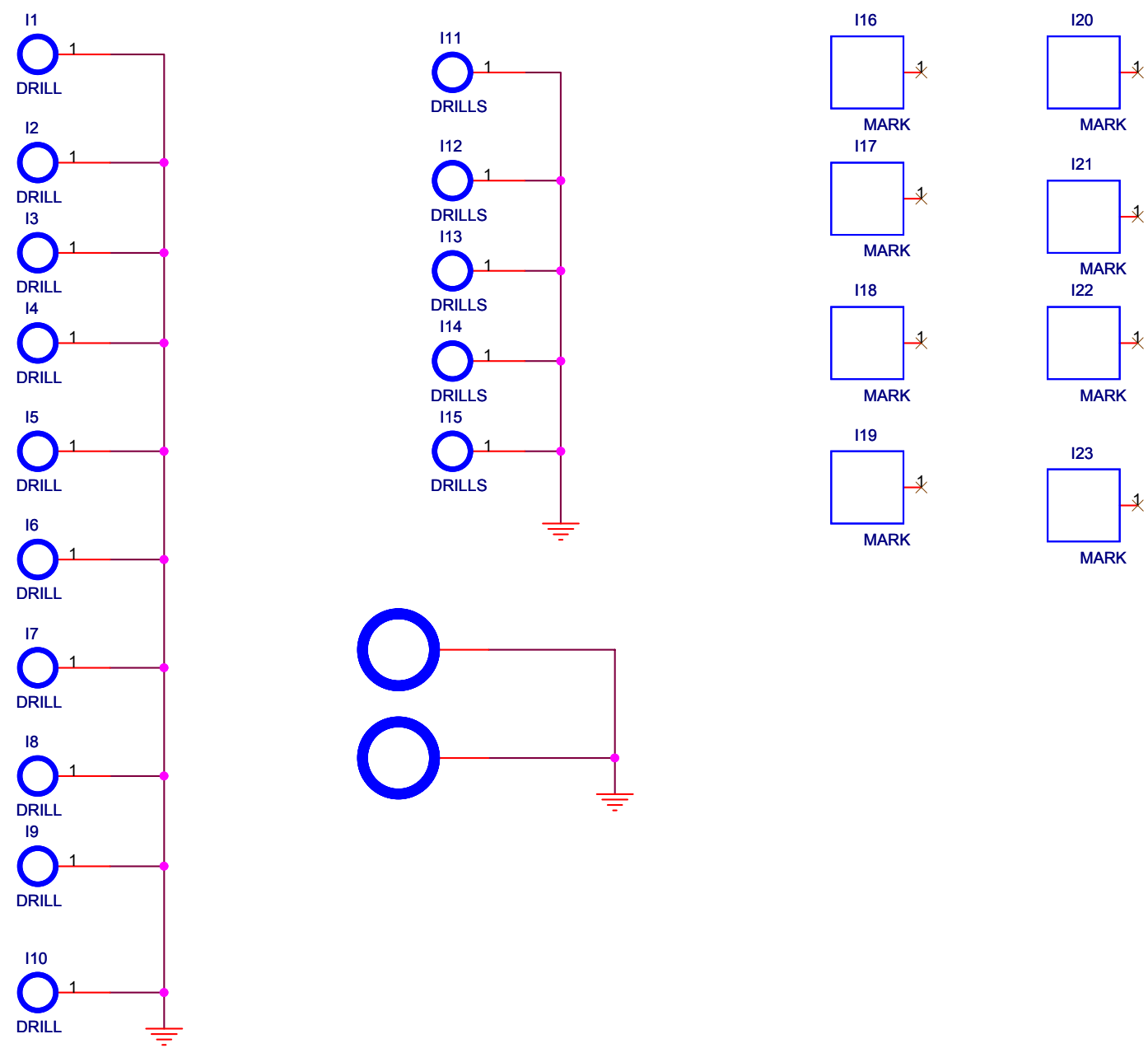


8.0 ELECTRICAL DIAGRAM

MAIN BOARD CIRCUIT DIAGRAM (CPU & CONTROL)

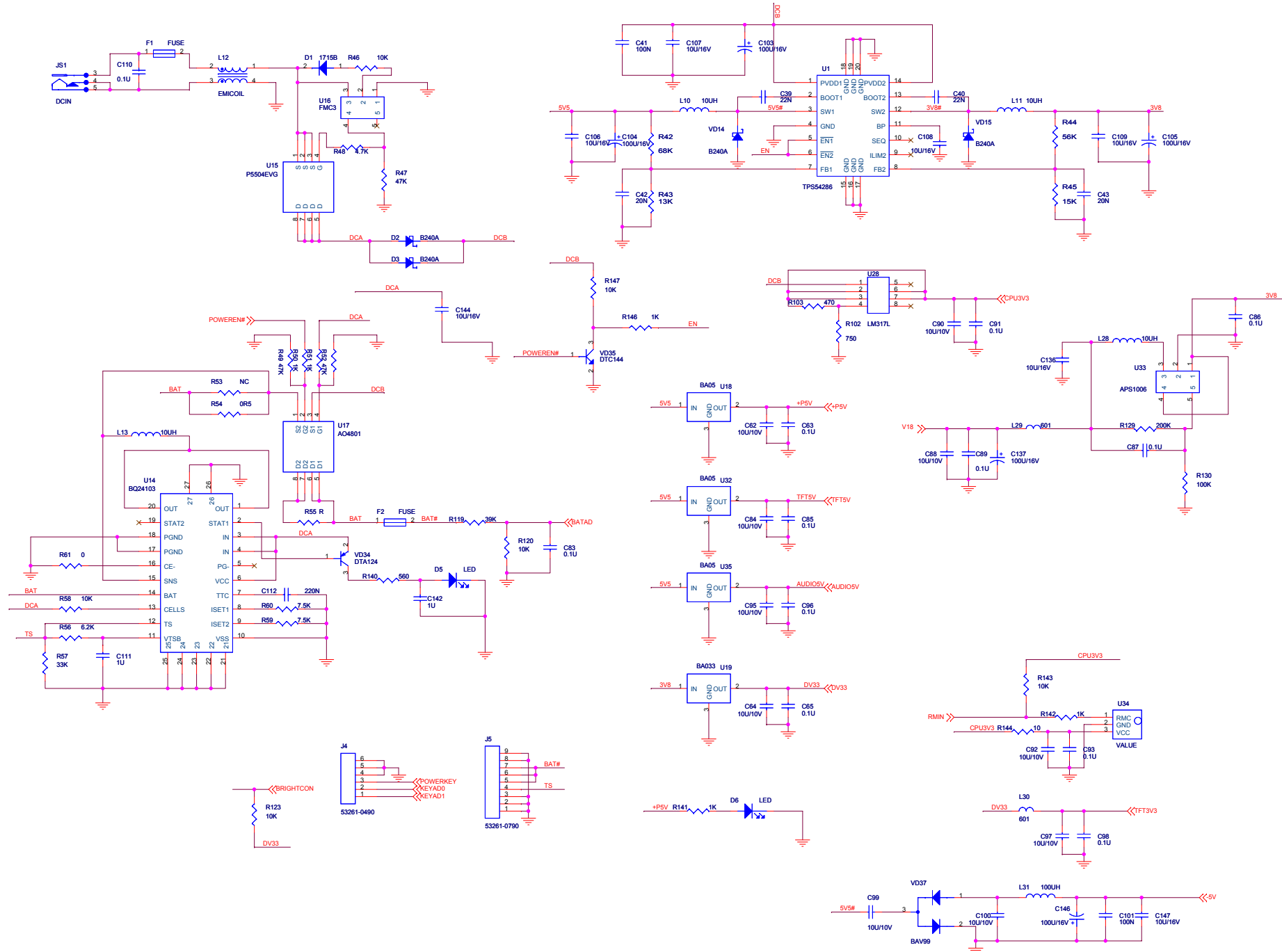


8.0 ELECTRICAL DIAGRAM
MAIN BOARD CIRCUIT DIAGRAM (DRILL)



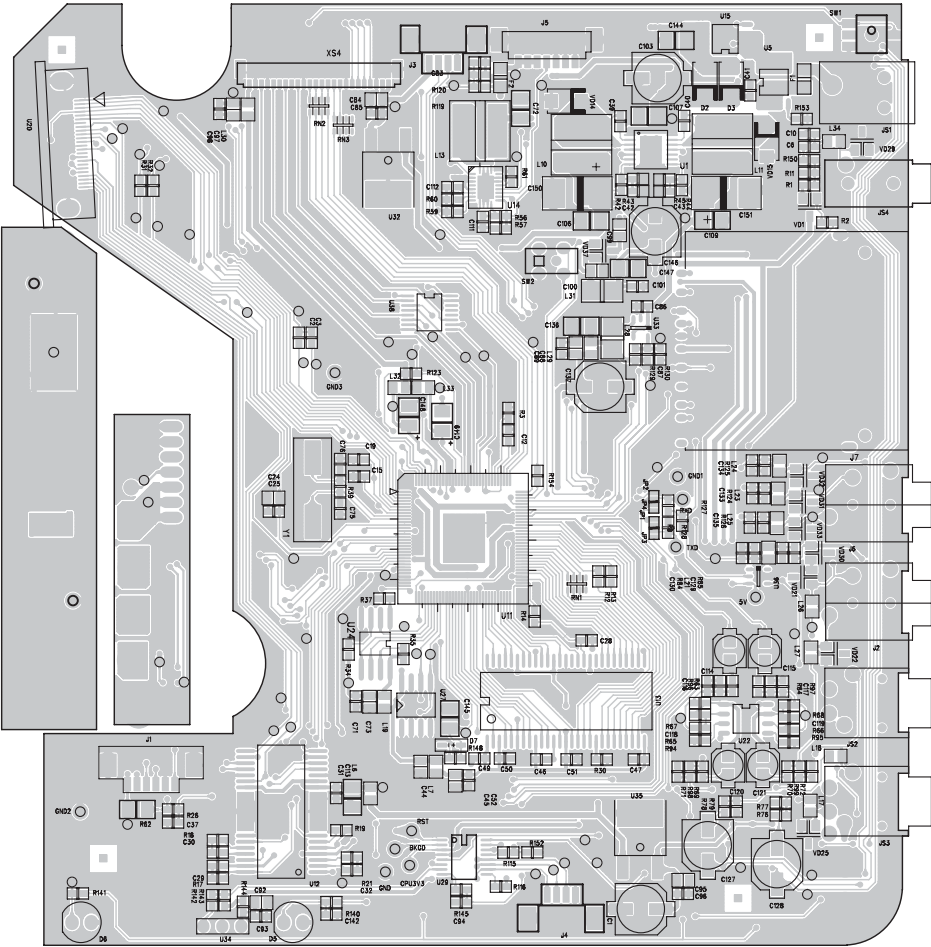
8.0 ELECTRICAL DIAGRAM

MAIN BOARD CIRCUIT DIAGRAM (POWER & CHARGE)

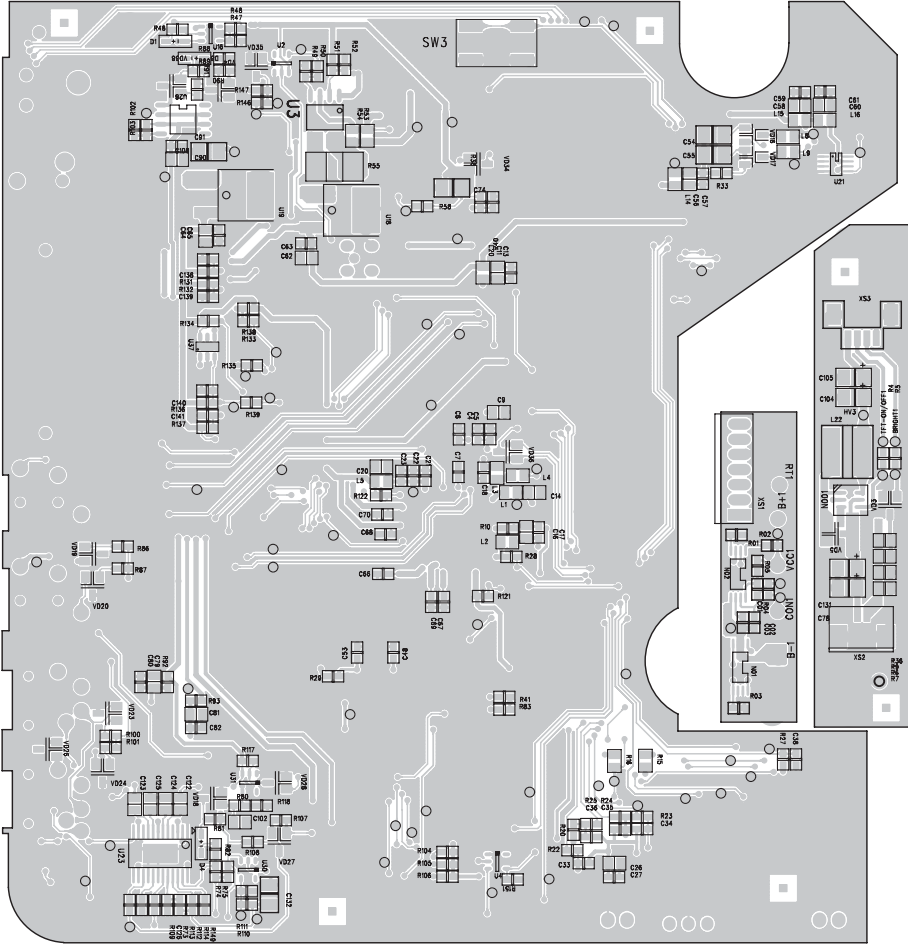


9.0 COMPONENT LAYOUT

PET731M MAIN BOARD DIAGRAM (TOP)

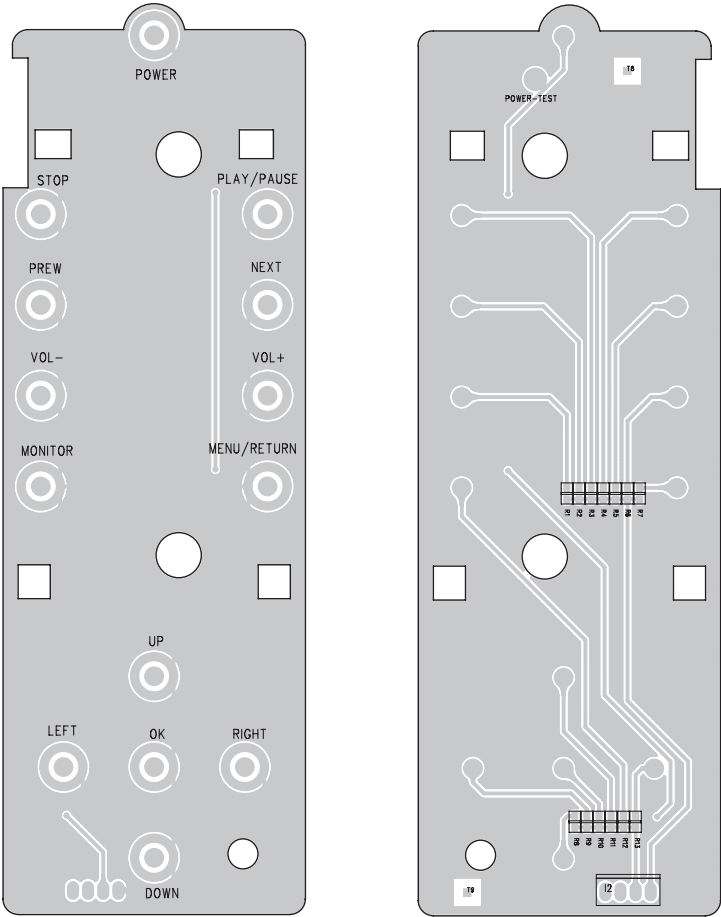


PET731M MAIN BOARD DIAGRAM (BOTTOM)

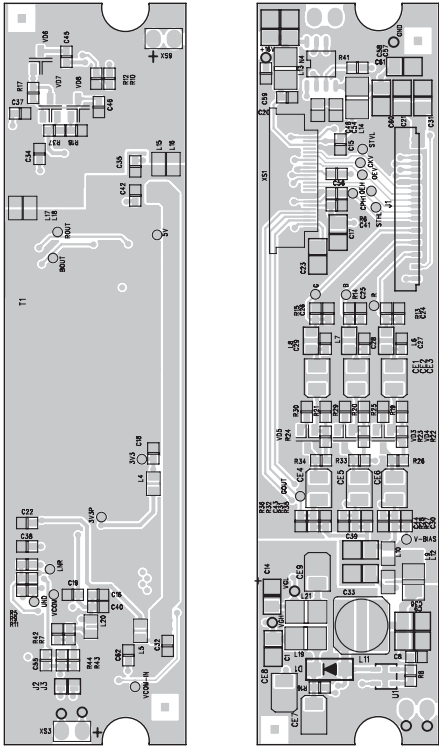


9.0 COMPONENT LAYOUT

PET735K FUNCTION BOARD DIAGRAM



PET731T IF BOARD DIAGRAM



10.0 SERVICE PART LIST

Electrical Part List:

No.	CTN	Service 12NC	Service Description	Photo	Pos. No.
1	PET731/12	996510010984	PET731M MAIN PCB ASS'Y/12 (for S/N: LL1Axxxx)		100
		996510018456	PET731M MAIN PCB ASS'Y/12 (TME4) (for S/N: LL2Bxxxx or above and VNxx)		
2	PET731/12	996510010985	PET731T IF PCB ASS'Y (for S/N: LL1Axxxx)		110
		996510018451	PET731T IF PCB ASS'Y (TME4) (for S/N: LL2Bxxxx or above and VNxx)		
3	PET731/12	996510003006	PET735K FUNCTION PCB ASS'Y		120
4	PET731/12	996510001273	PET730X BATTERY ASS'Y		130
5	PET731/12	996510001274	24 PIN HARDNESS-180- PF		146

10.0 SERVICE PART LIST

Mechanical Part List:

No.	CTN	Service 12NC	Service Description	Photo	Pos. No.
6	PET731/12	996510010986	LB070W02-TMJ2-LED10 TFT LCD (for S/N: LL1Axxxx)		200
		996510017356	LB070W02-TME4-LED10 TFT LCD (for S/N: LL2Bxxxx or above and VNxx)		
7	PET731/12	996510004977	DV23FC LOADING ASS'Y		210
8	PET731/12	994000002157	YD2027 SPEAKER		220
9	PET731/12	996510001277	SPEAKER GRILL PET73X		230
10	PET731/12	996510006300	TOP COVER PET73X		300
11	PET731/12	996510001279	DISPLAY FRAME PET73X (BLACK COLOR)		310
12	PET731/12	996510001280	MIDDLE CAB & BUTTON ASSY PET73X (without navigation key)		320

10.0 SERVICE PART LIST

Mechanical Part List:

No.	CTN	Service 12NC	Service Description	Photo	Pos. No.
13	PET731/12	996510011000	BASE COVER PET731		330
14	PET731/12	996510001282	ADJUST HINGE PET73X		340
15	PET731/12	996510001283	DOOR DISCRETENESS PET73X		350
16	PET731/12	996510001284	LENS REMOTE SENSOR PET73X		360
17	PET731/12	996510010989	DIRECTION KEY / NAVIGATION KEY		370
18	PET731/12	996510010990	OPEN DOOR SPRING		430

10.0 SERVICE PART LIST

Accessories Part List:

No.	CTN	Service 12NC	Service Description	Photo	Pos. No.
19	PET731/12	996510010987	ADPV60A AC POWER ADAPTOR/12		ACAPT
20	PET731/12	996510001124	CAR CIGARETTE ADAPTER		CARAPT
21	PET731/12	994000001912	AV CABLE		AVCABLE
22	PET731/12	996510001287	AY5507 REMOTE CONTROL		RC
23	PET731/12	996510001130	CAR MOUNT AY4246		MOUNT

11.0 REVISION LIST

Version 1.0 (3141 785 32410)

- Initial release PET731/12

Version 1.1 (3141 785 32411)

- Add service partlist for design variant 2 on section 10