

Service  
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**Service**



# Service Manual

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3141 785 31585

# 1.0 TECHNICAL SPECIFICATION

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## General

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Dimensions (W x H x D): 203 x 40.4 x 150 mm  
 Weight: 0.71kg  
 Power supply: 100 – 240V (AC adaptor)  
 DC 12V (Battery)  
 Power consumption: 20W  
 Operating temp. & RH: -5 – +50 degC / 30 – 90% RH

### Audio System

Output voltage 1kHz: 1.5V typical  
 THD 20-20kHz (%): 0.03% typical  
 Dynamic range: >80dB  
 Signal/Noise ratio: >80dB  
 Frequency response 0.2-20kHz: +1/-0.5dB  
 Channel Separation 1kHz: >75dB  
 Channel Balance 1kHz: 1dB

## Current consumption

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DC-IN SUPPLY (12V)	
Standby TFT on	500mA
Standby power in battery	100uA
BATT. SUPPLY	
Voltage	7.2V
Capacity	2300mAH
Battery playtime	3 hour
Charging time (standby)	<4.0 hour
Charging time (playback)	<6.0 hour

## Headphone out (headphone output load 2x16 ohm)

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Maximum output power: 10mW  
 Frequency response: +/-3dB  
 SNR (A-wght): >76dB  
 THD (0.2-20kHz): 0.2% typical  
 Left-Right Channel Separation: >55dB  
 Left-Right Channel Balance: 2dB

## Supported disc type

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Video Playback Formats:



Audio Playback Formats:



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

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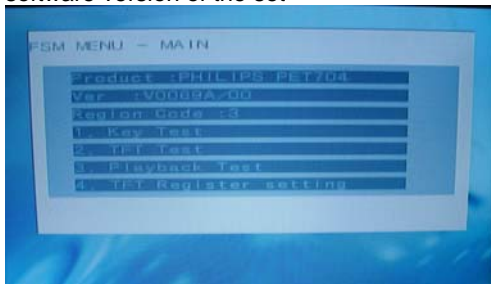
- 1 bright-dot & max. 3 dark-dots
  - Display resolution = 480 RGB (H) x 234(V)
-

# 1.0 TECHNICAL SPECIFICATION

## Factory Service Mode (FSM)

### Procedure to check the software version of your portable DVD Player

1. Open the DVD door at power off status
2. Press [POWER] + [SETUP] button on the main set at the same time
3. Release the buttons until PHILIPS LOGO is displayed
4. Figure#1 will be displayed and it will show the software version of the set



Figure#1 – MAIN FSM MENU

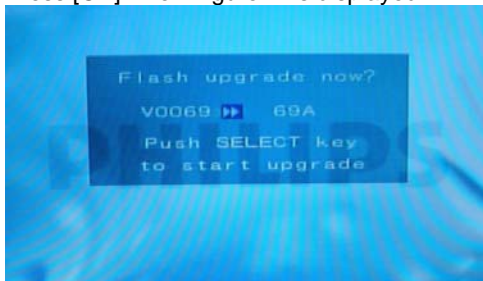
### Procedure to upgrade the software of your portable DVD Portable

For the best performance of your DVD Portable. Check [www.philips.com/support](http://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

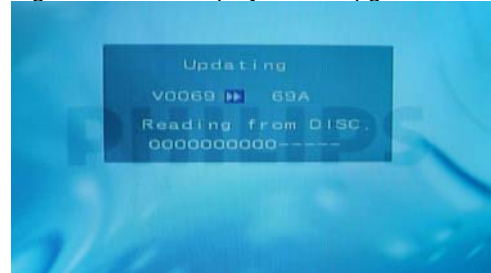
**Hint: Must be make sure folder named with "DVD\_FIRM"!**

3. Power on the Portable DVD Player with AC/DC adaptor
4. Play CD-ROM for firmware upgrade
5. Press [OK] when Figure#2 is displayed



Figure#2 – Flash upgrade

6. Figure#3 will be displayed and upgrade will start



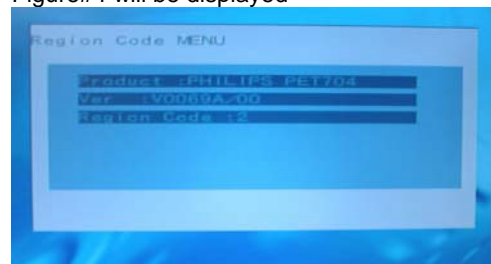
Figure#3 – Updating

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

7. Once upgrade is completed, the player is reset automatically and the upgrade screen is displayed again.
8. Open the DVD door to remove the disc

### Procedure to change region code of your portable DVD player

1. Open the DVD door at power off status
2. Press [POWER] + [MENU] button on the main set at the same time
3. Release the buttons until PHILIPS LOGO is displayed
4. Figure#4 will be displayed



Figure#4 – Region Code MENU

5. Press Number Key button by remote control to select the region code
6. 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

**Confidential: Region code "0" can be used for all region.**

7. Press [OK] to save your setting and power off to exit

## 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.

### **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.

### 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 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."



### **GB** Warning !

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

### **S** Varning !

Osynlig laserstrålning när apparaten är öppnad och spärrar är urkopplad. Beträkta 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.

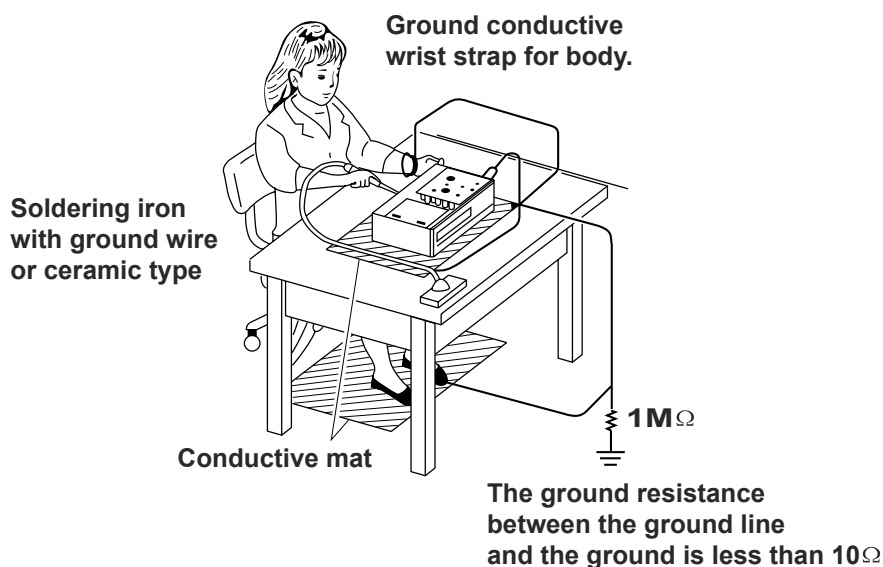
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of laser may be received.

### 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.



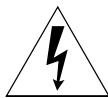
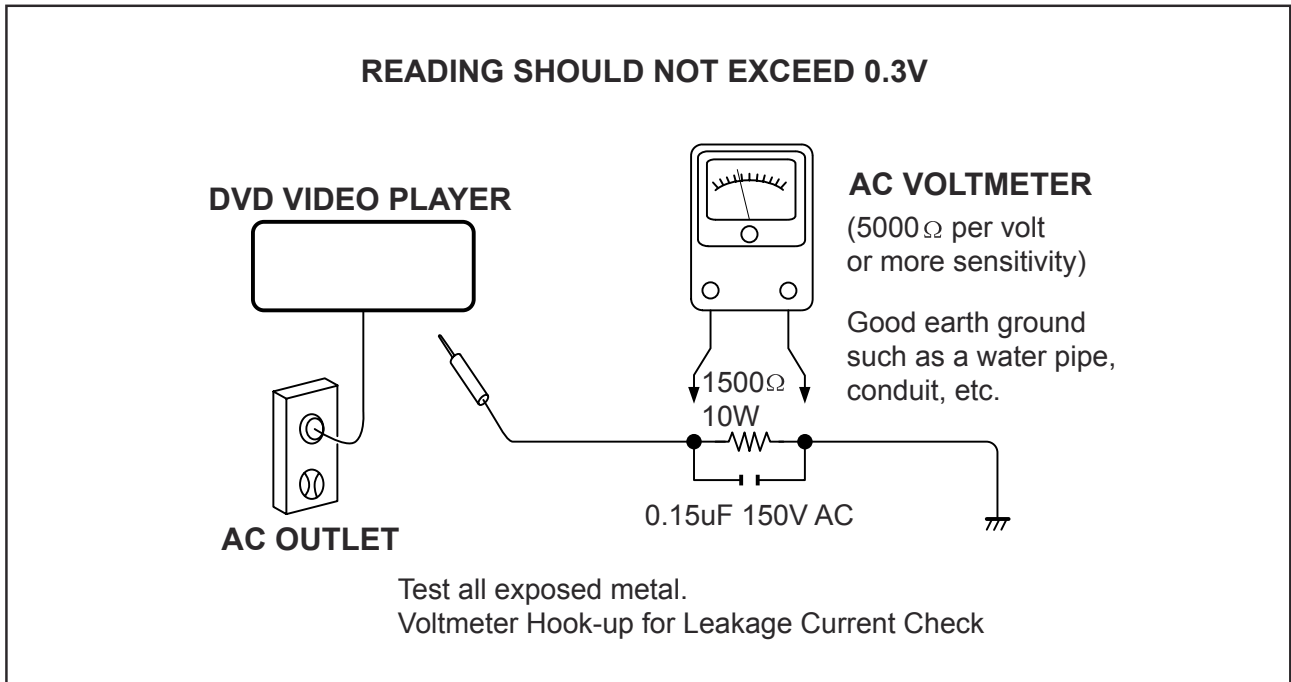
## SAFTY NOTICE

### 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  $5000\Omega$  per volt or more sensitivity. Connect a  $1500\Omega$  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  $1500\Omega$  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.



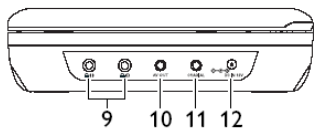
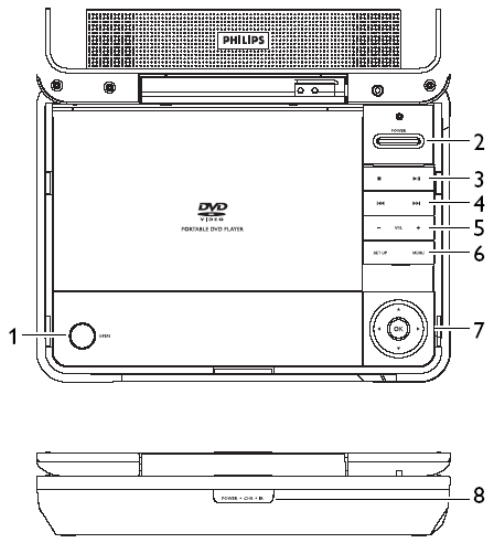
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



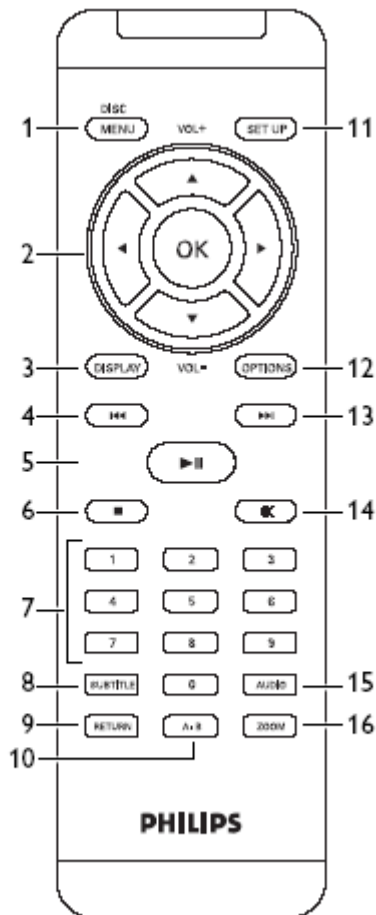
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### 3.0 INSTRUCTION FOR USE

1



2



#### 1.1 Main unit controls (see figure 1)

- 1 **OPEN** Open disc door to insert or remove disc
- 2 **POWER** Switch the player on / off
- 3 **■** Press once to resume stop. Press twice to stop playback
- ▶|| Start/resume playback / Pause playback
- 4 **◀◀ / ▶▶** Search backward (◀◀) or search forward (▶▶)  
Press and hold to search backward or search forward.
- 5 **- VOL +** Volume control
- 6 **SETUP** Enters **SETUP** menu
- MENU** Display **MENU** page
- 7 **▲, ▼, ◀, ▶** Up / down / left / right cursor
- OK** Confirm selection

#### 1.2 Front of player (see figure 1)

- 8 **POWER/CHG/IR**  
Power and charging indicator / Remote sensor

#### 1.4 Right of player (see figure 1)



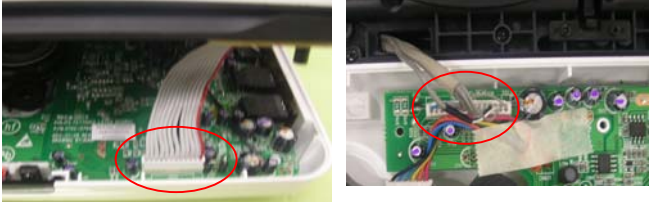

- 9 **PHONE 1 & 2** Headphones jack
- 10 **AV OUT** Audio/Video output jack
- 11 **COAXIAL** Digital audio output jack
- 12 **DC IN 12V** Power supply socket

#### 1.5 Remote Control (see figure 2)

- 1 **DISC/MENU** Displays **DISC MENU** page
- 2 **▲, ▼, ◀, ▶** Up / down / left / right cursor
- OK** Confirms selection
- VOL+ / -** Volume control
- 3 **DISPLAY** Display information
- 4 **◀◀** Press once to skip to previous chapter, track, or title. Press and hold for fast backward search.
- 5 **▶||** Starts / pauses / resumes playback
- 6 **■** Press once to resume stop. Press twice to stop playback
- 7 **0 - 9** Numeric keypad
- 8 **SUBTITLE** Subtitle language selector
- 9 **RETURN** For VCD menu page
- 10 **A - B** To repeat or loop a sequence in a title
- 11 **SETUP** Enters **SETUP** menu
- 12 **OPTIONS** Access addition functions
- 13 **▶▶** Press once to skip to next chapter, track or title. Press and hold for fast forward search.
- 14 **🔇** Muting player volume
- 15 **AUDIO** Audio language selector
- 16 **ZOOM** Enlarges video image

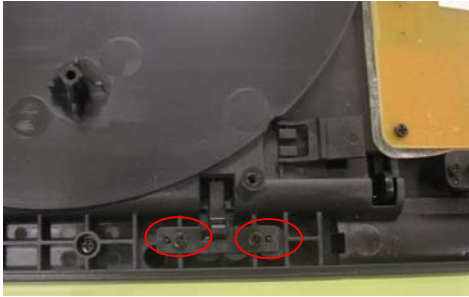
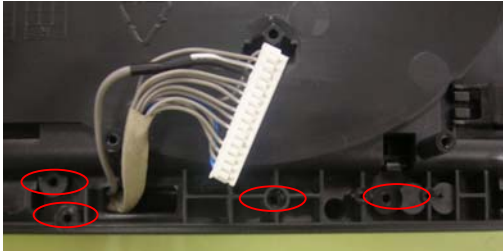
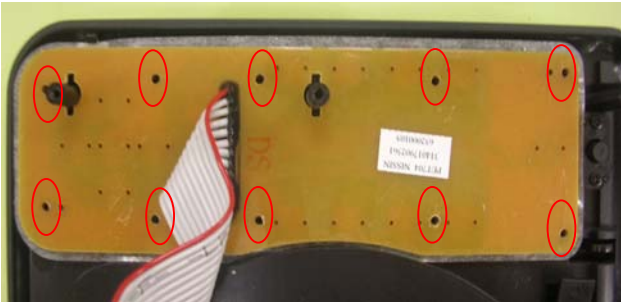

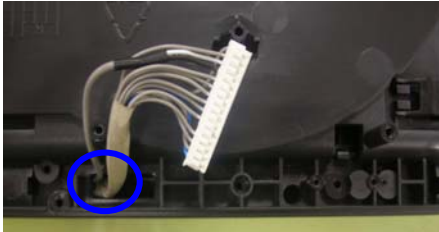



## 4.0 MECHANICAL INSTRUCTION



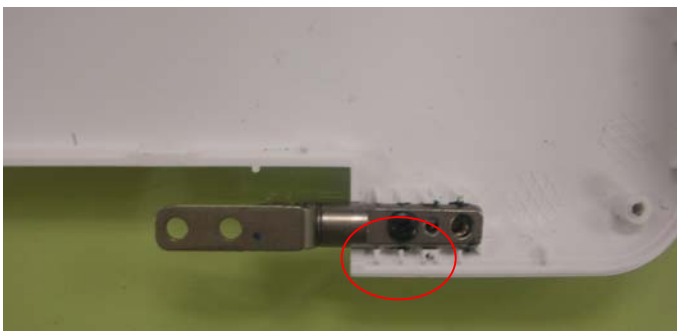

<b>Disassembly procedure on PET704 main set</b>	
	1 Remove four rubber feet on bottom cabinet
	2 Remove eight screws to separate middle cabinet and bottom cabinet
	3 Disassemble middle cabinet assembly and bottom cabinet assembly, then disassemble 12P and 15P cable from main board
	4 After 3 procedure, we will get top cabinet assembly and bottom cabinet assembly



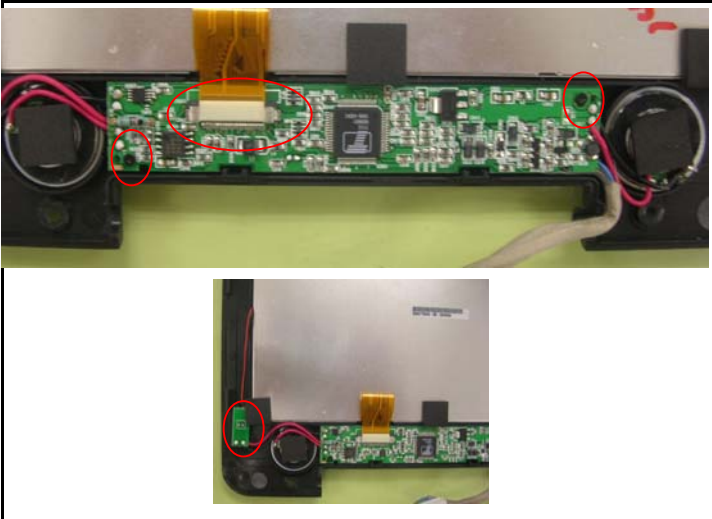
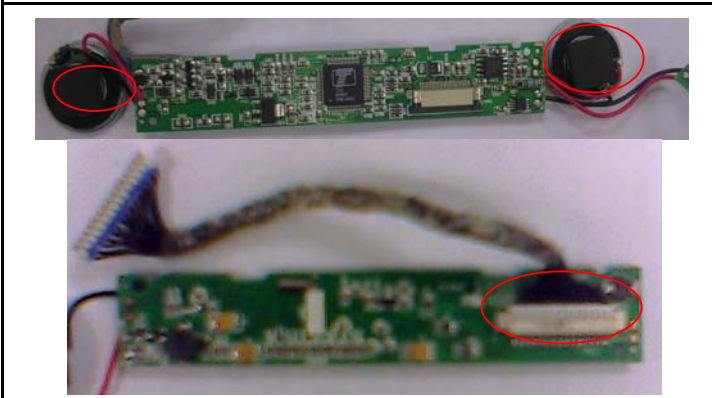
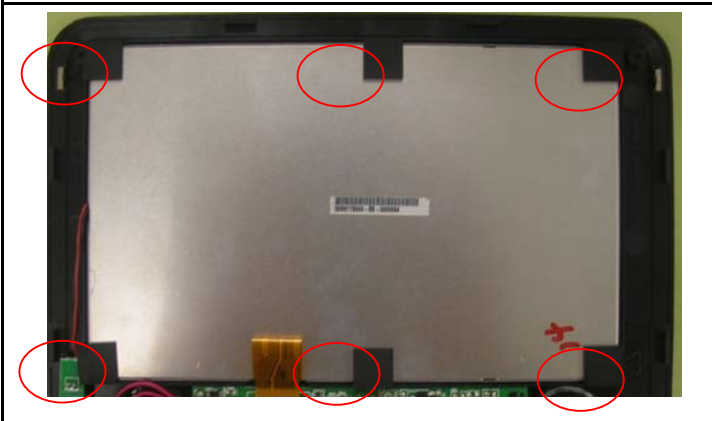

## 4.0 MECHANICAL INSTRUCTION

Disassembly procedure on PET704 main set	
	5 Remove two screws
	6 Remove four screws and take out cover hinge .
	7 Remove ten screws , get PCBA key board.
 	8 Remove two screws and take out the 12pin cable from the hole.
	9 After 8 procedure, we get TFT assembly and middle cabinet.




## 4.0 MECHANICAL INSTRUCTION

<b>Disassembly procedure on PET704 main set</b>	
	10 Remove six rubber screw covers on TFT front cabinet.
	11 Remove six screws on TFT front cabinet, then disassemble TFT front cabinet assembly and TFT rear cabinet assembly.
	12 Remove one screw on TFT rear cabinet.
	13 After 10,11 procedure, we will get the TFT rear cabinet and TFT front cabinet assembly.

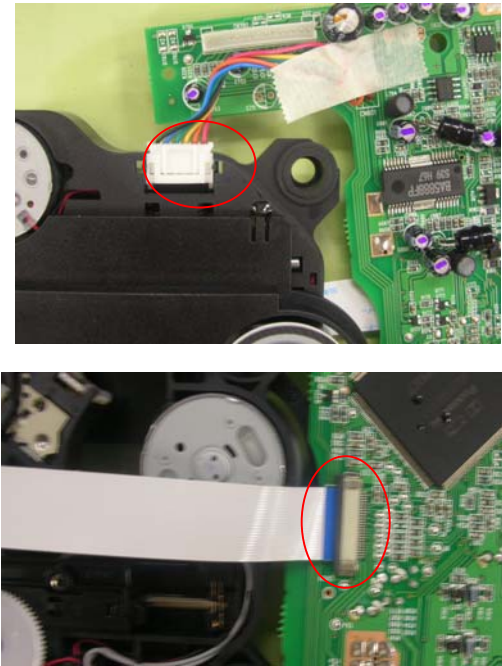


## 4.0 MECHANICAL INSTRUCTION

<b>Disassembly procedure on PET704 main set</b>	
	<p>14 Remove two screws, disassemble 2 pin cable from TFT panel and 24 FFC foil from TFT driver board.</p>
	<p>15 Remove two EVA foam on speaker and disassemble 15P cable from TFT driver board</p>
	<p>16 Remove six EVA foam on TFT panel.</p>
	<p>17 Remove two speaker felt on TFT front cabinet.</p>

## 4.0 MECHANICAL INSTRUCTION

Disassembly procedure on PET704 main set	
	18 After 13,14,16,17 procedure,we will get the TFT front cabinet and TFT panel.
	19 Remove tow screws and take out the 5P cable from main board.
	20 Slot solder of DVD mechanism .

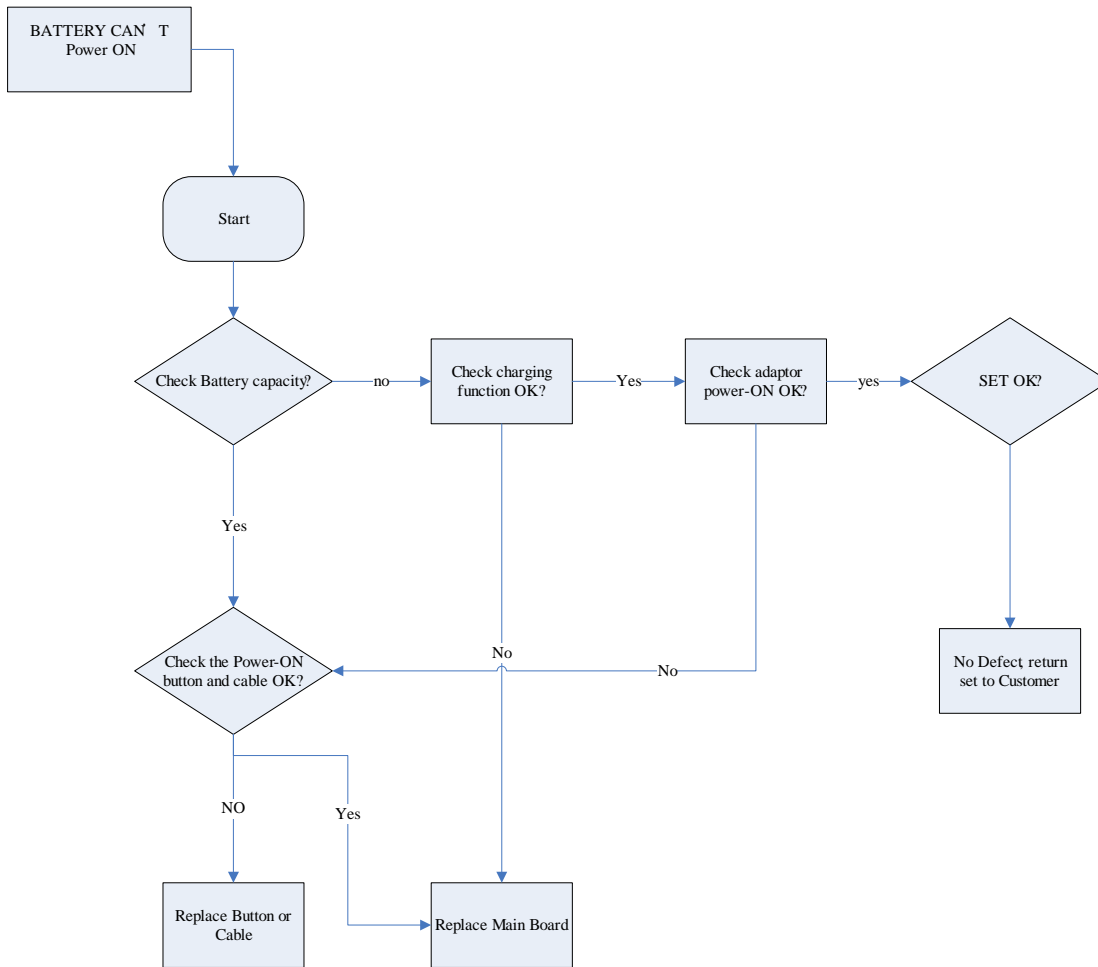
## 4.0 MECHANICAL INSTRUCTION

<b>Disassembly procedure on PET704 main set</b>	
	<p>21 Disassemble 6P cable on DVD mechanism and disassemble FFC foil 24P on main board.</p>
	<p>22 Disassemble two screws and remove fibre sheet on battery board.</p>
	<p>23 After 19,22 procedure,we will get bottom cabinet.</p>

## 5.0 TROUBLESHOOTING

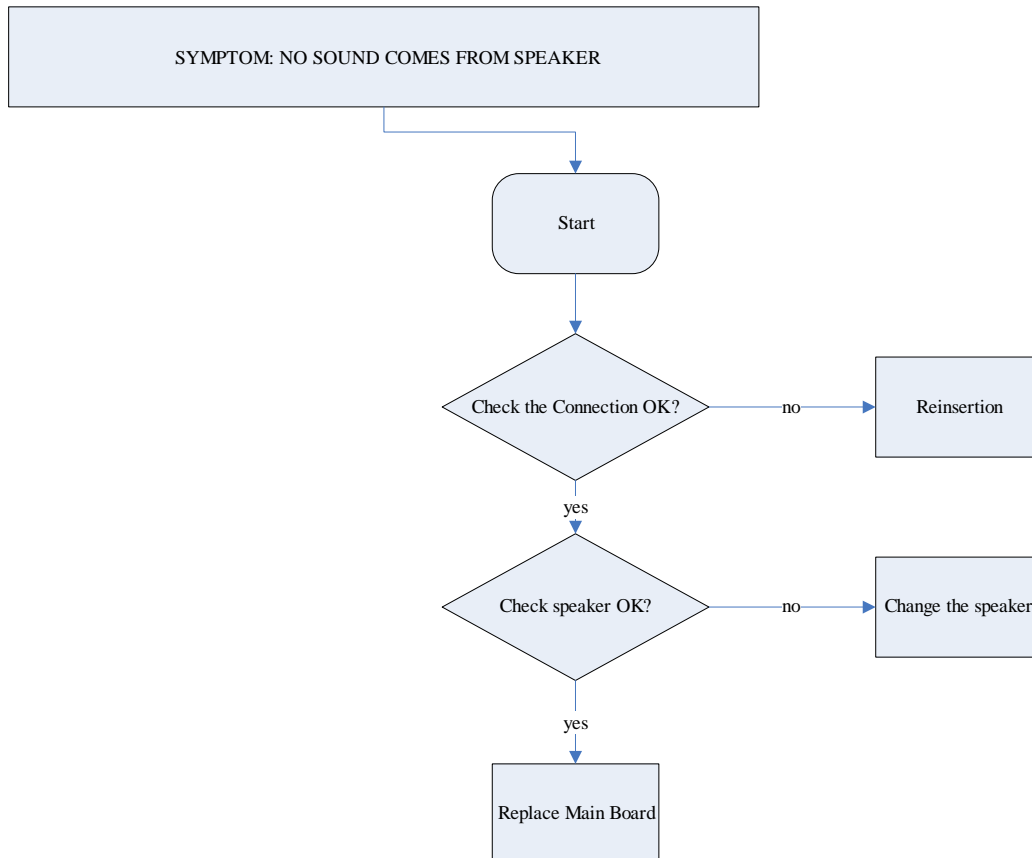
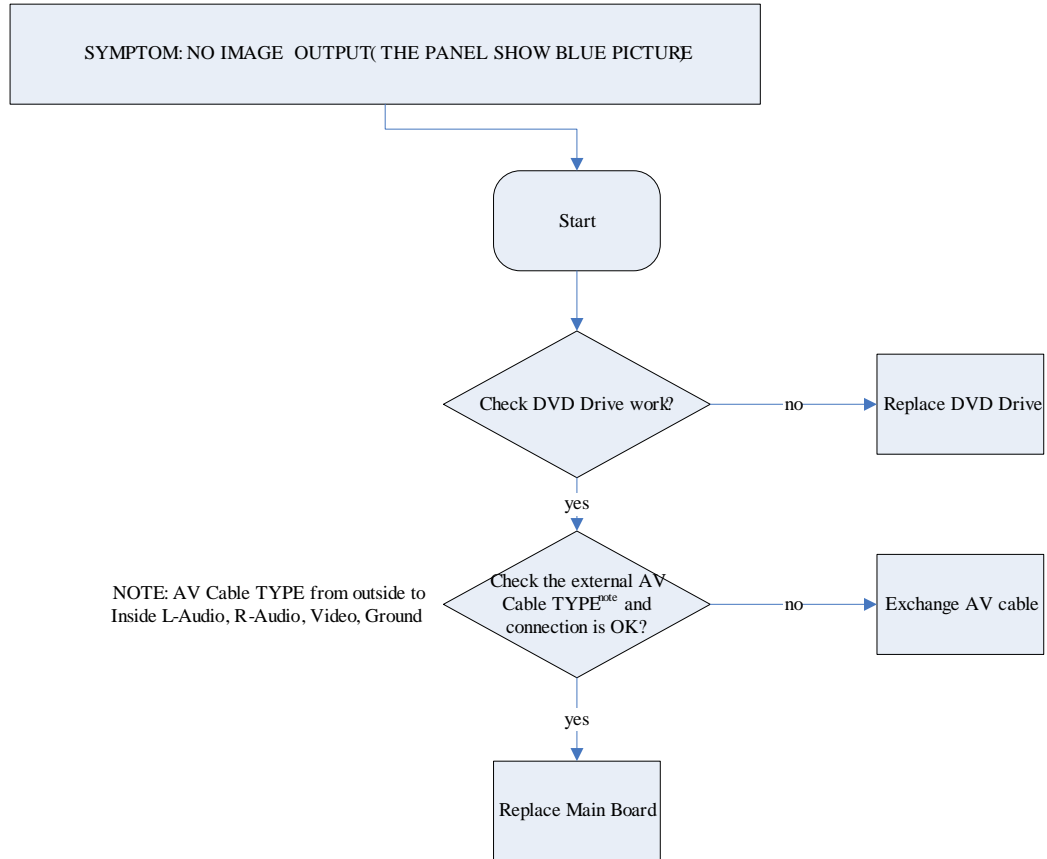
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### SYMPTOM: BATTERY NO POWER



## 5.0 TROUBLESHOOTING

### SYMPTOM: NO IMAGE / NO SOUND

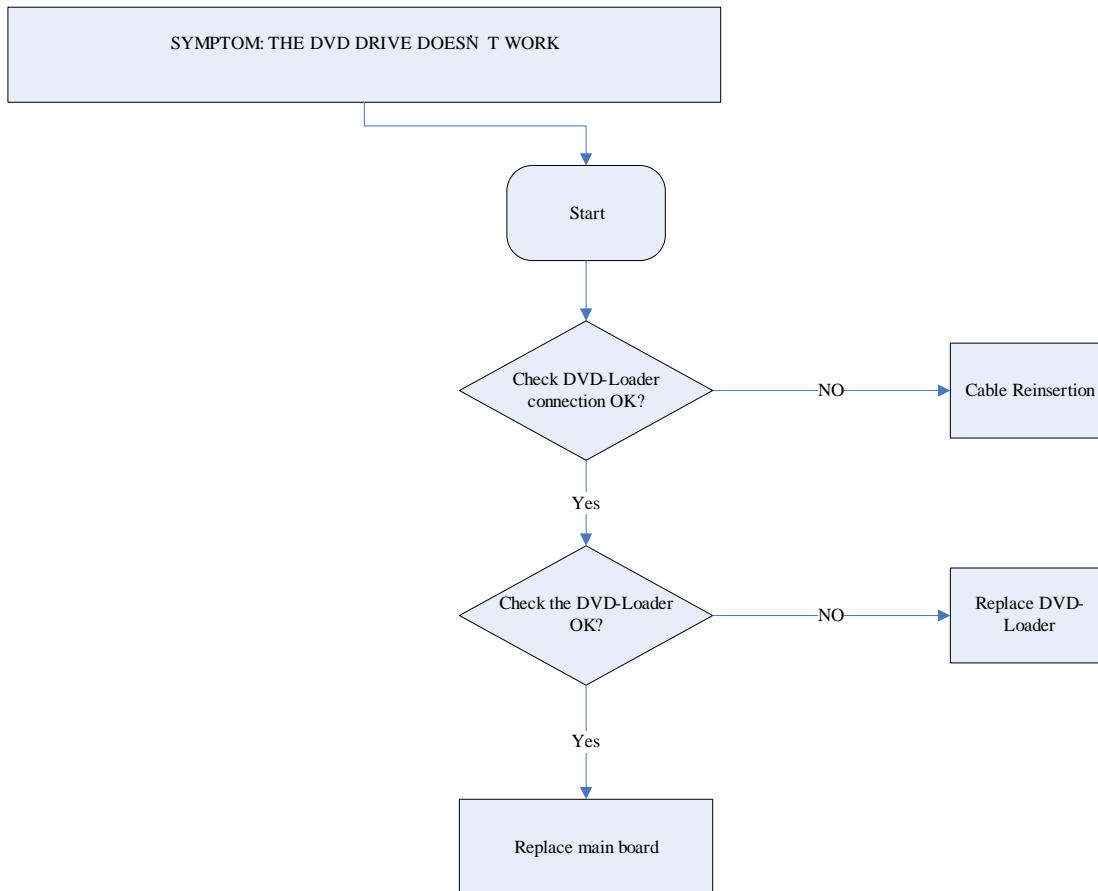




## 5.0 TROUBLESHOOTING

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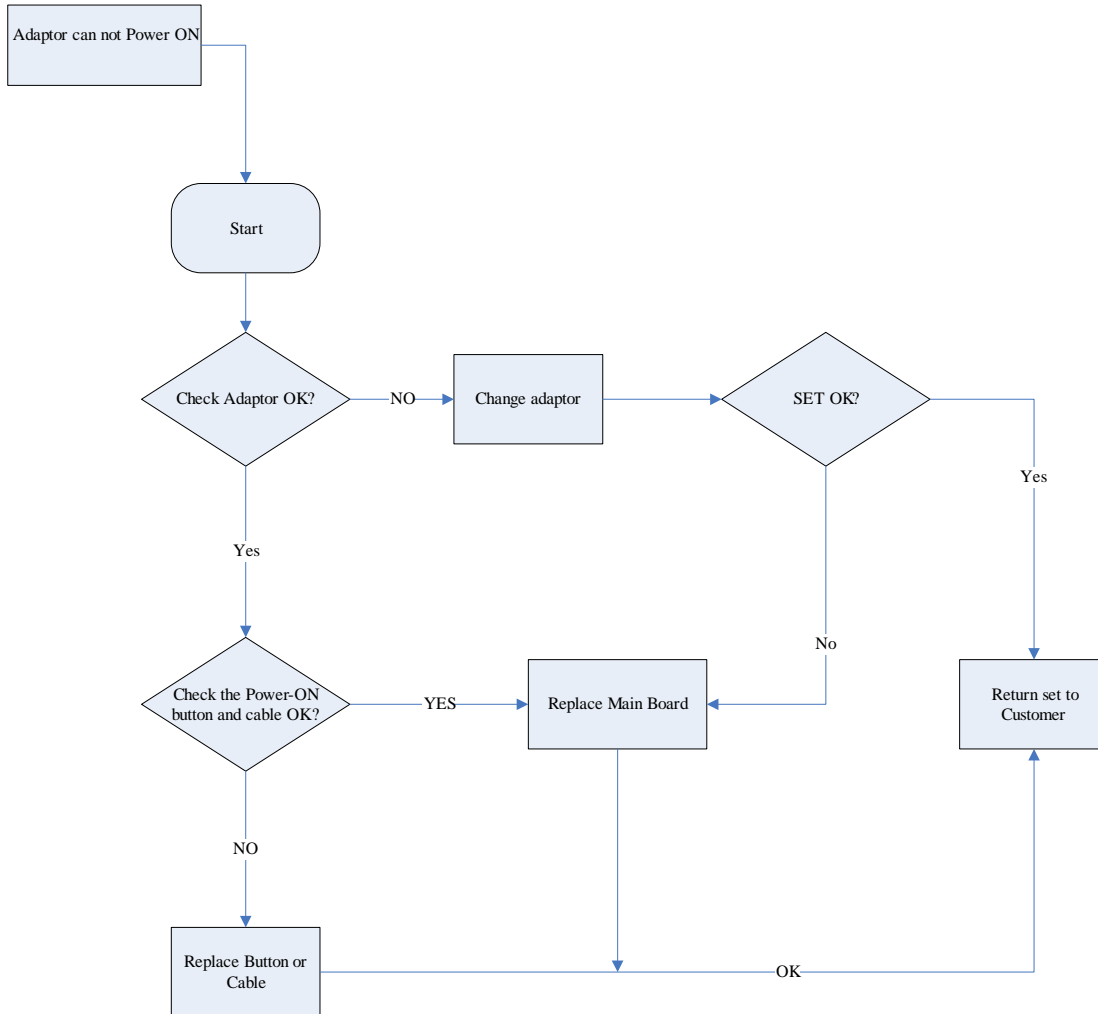
### SYMPTOM: THE DVD DRIVE DOES NOT WORK



## 5.0 TROUBLESHOOTING

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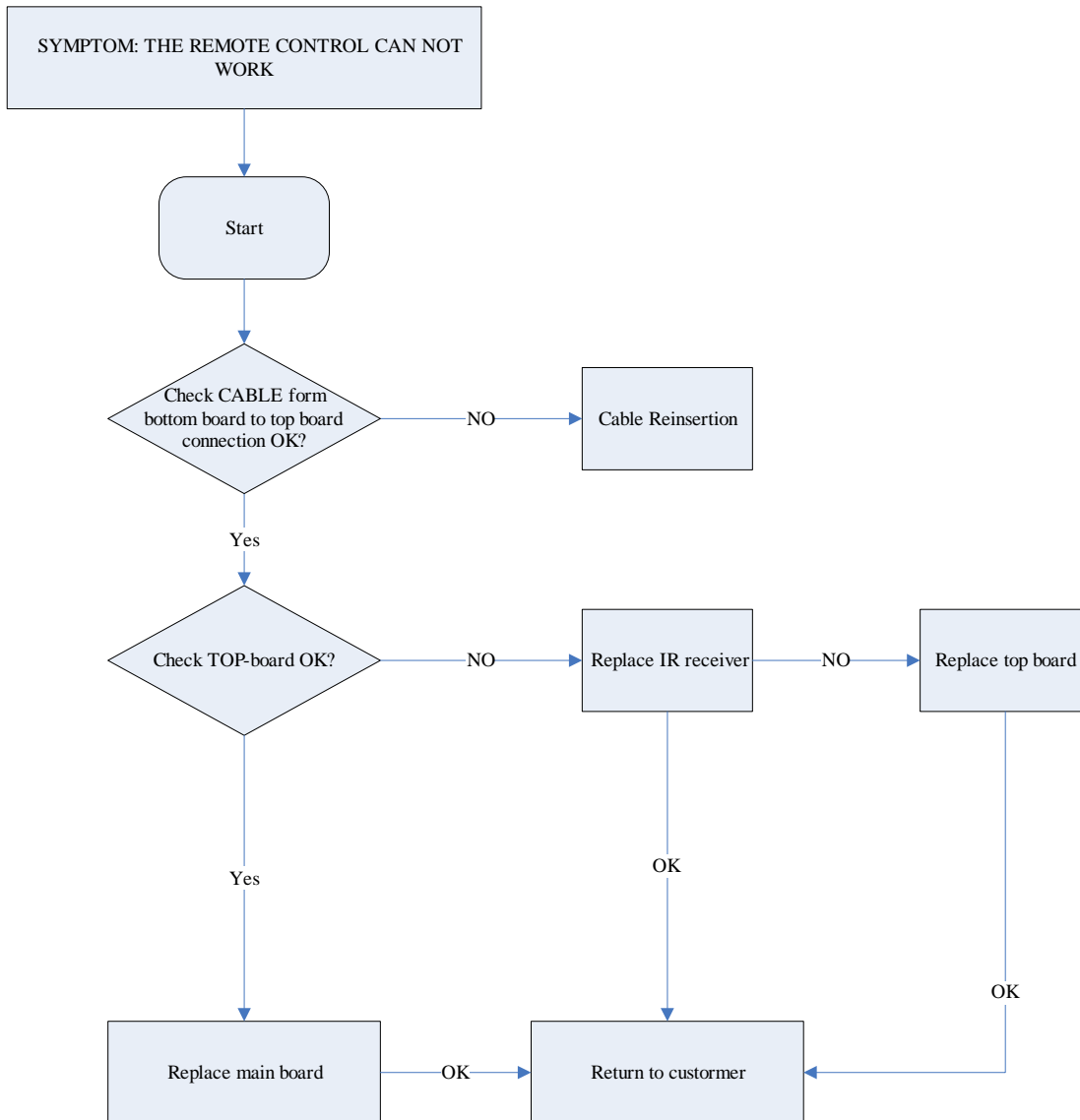
### SYMPTOM: ADAPTOR CANNOT POWER ON



## 5.0 TROUBLESHOOTING

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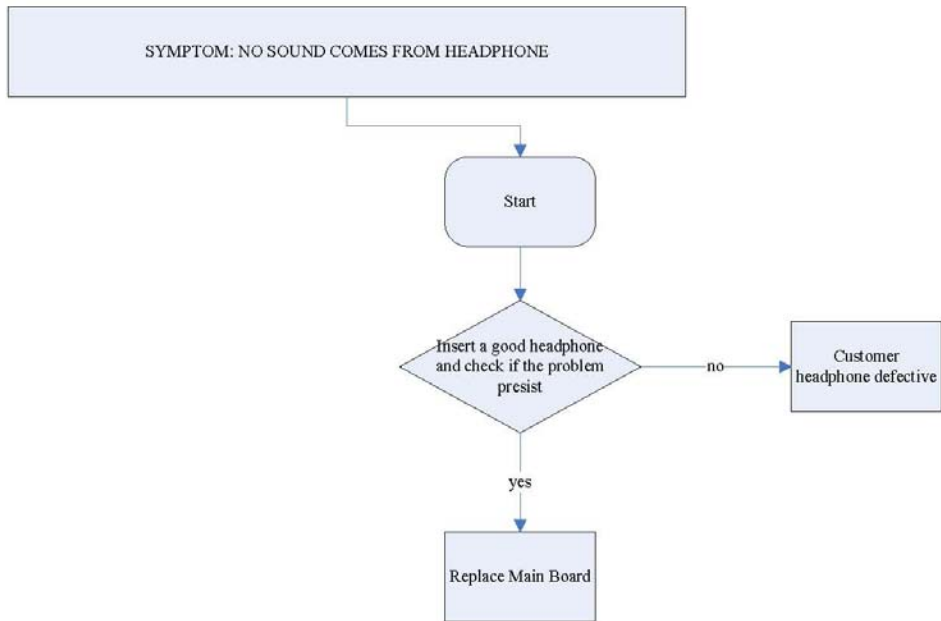
### SYMPTOM: REMOTE CONTROL CANNOT WORK



## 5.0 TROUBLESHOOTING

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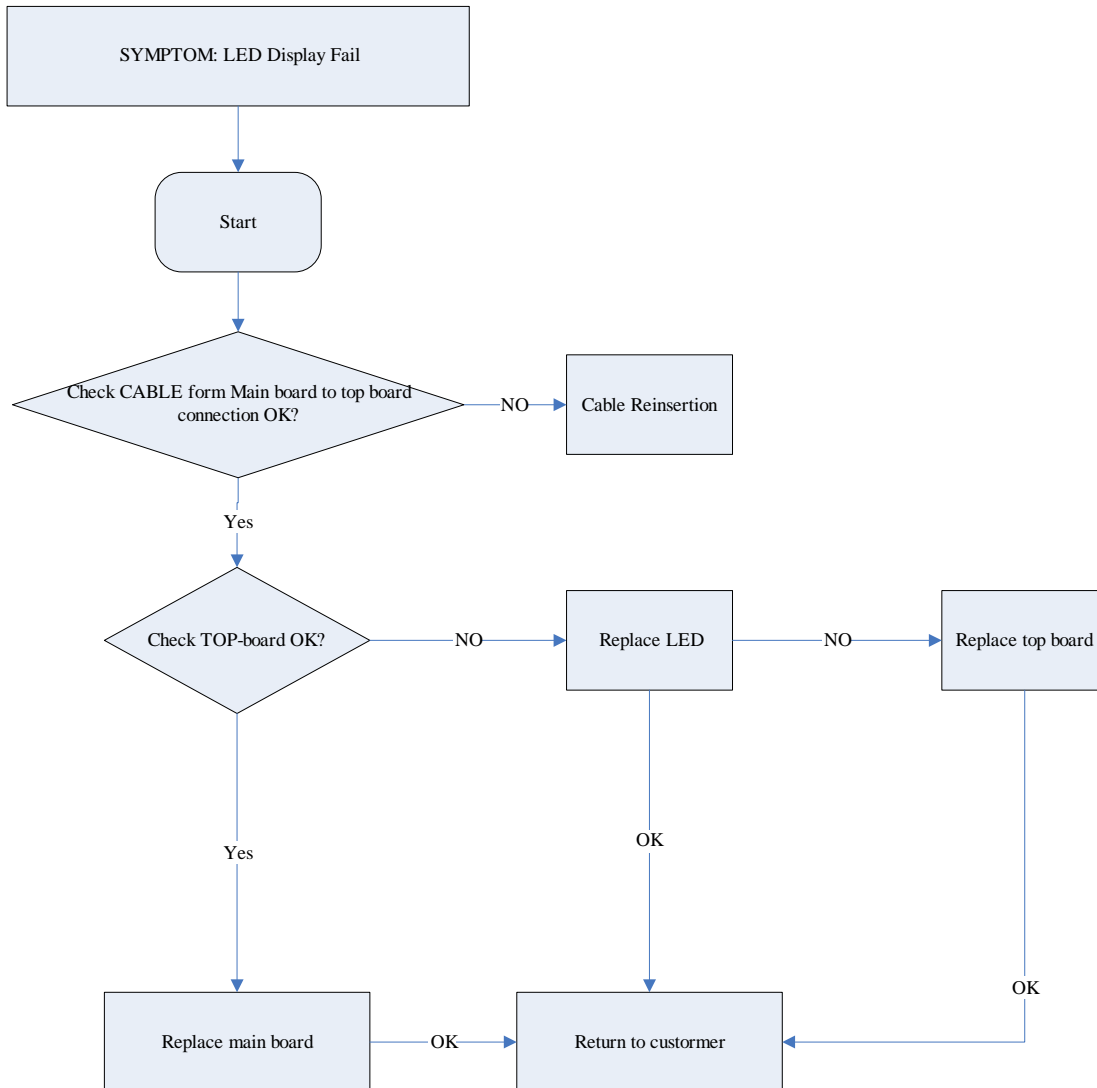
### SYMPTOM: NO SOUND FROM HEADPHONE



## 5.0 TROUBLESHOOTING

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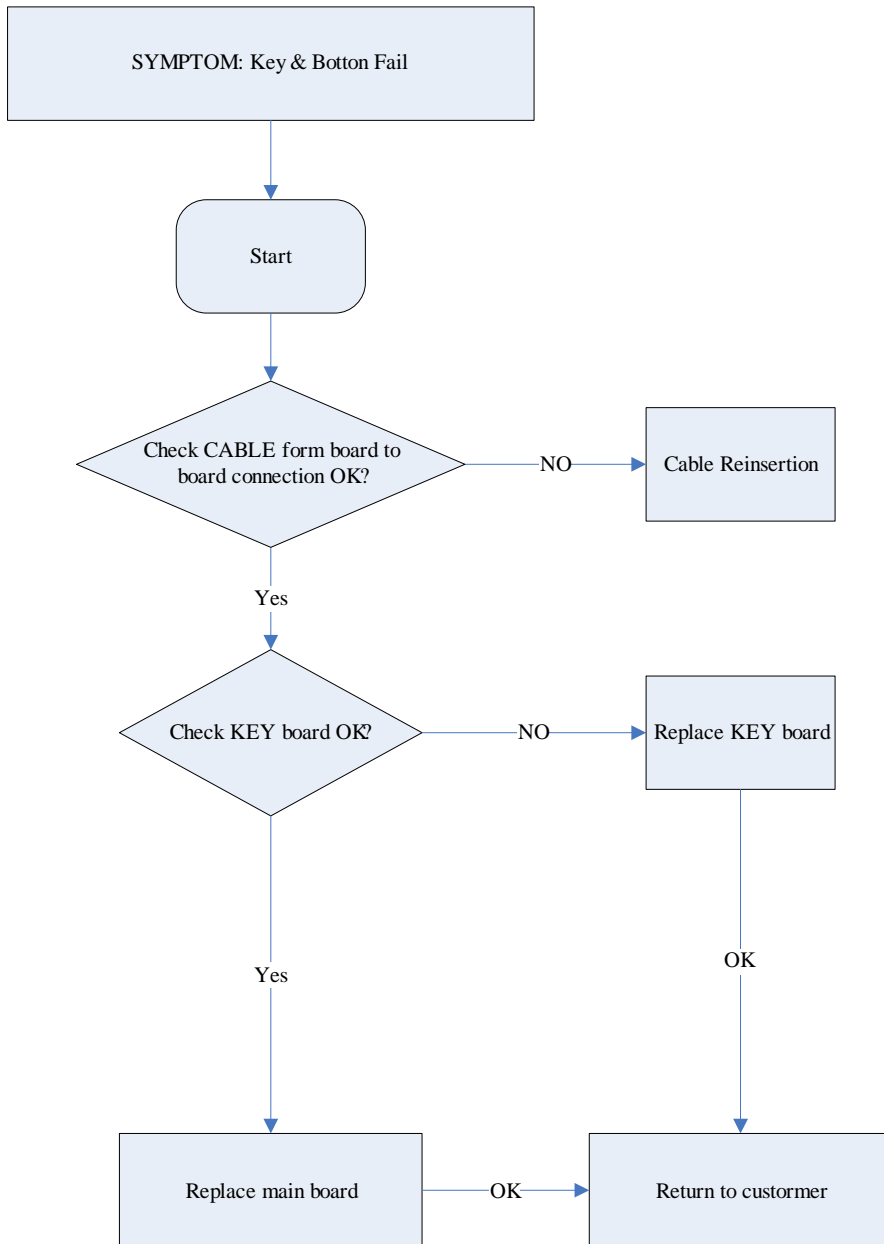
### SYMPTOM: LED DISPLAY FAILURE



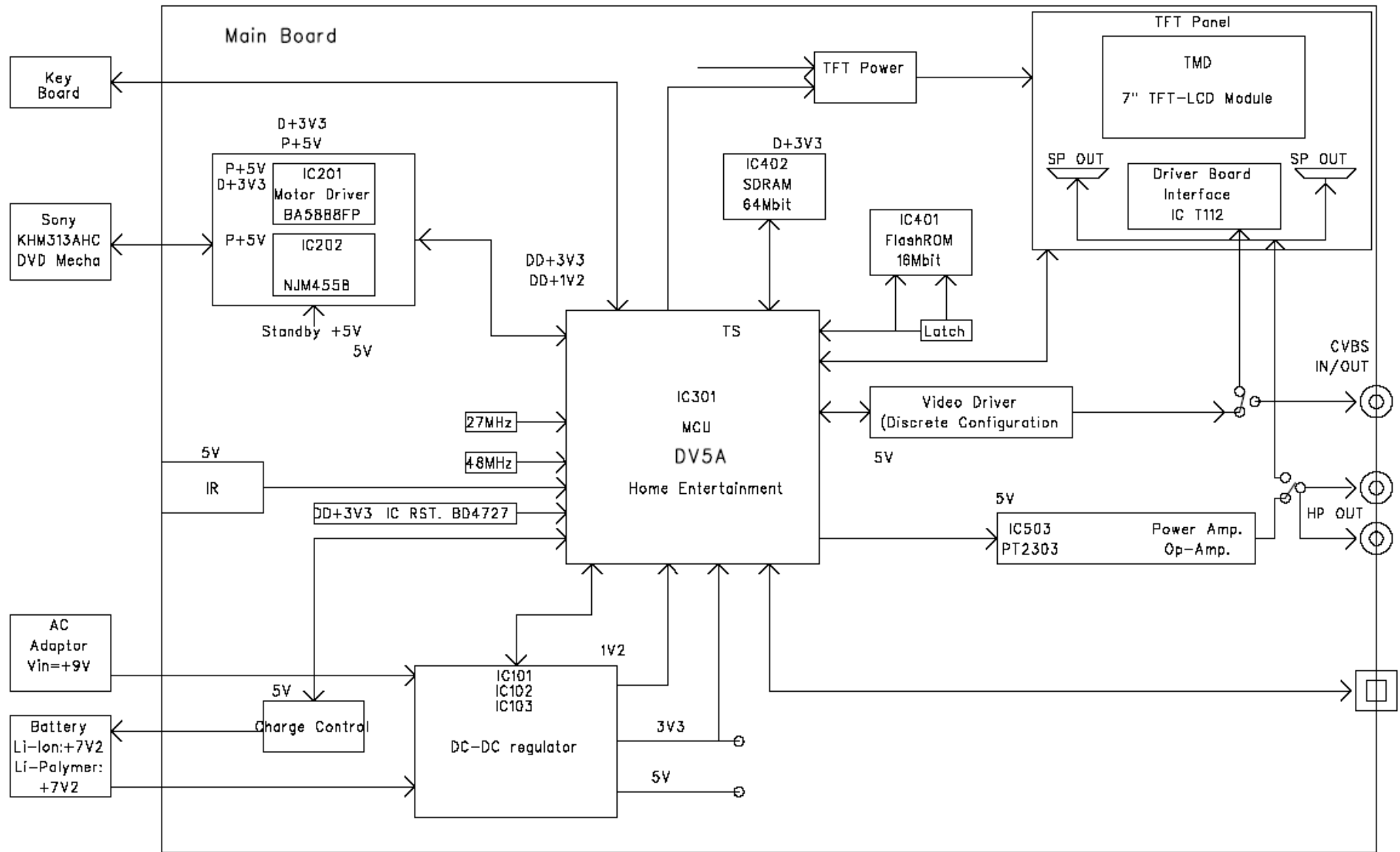
## 5.0 TROUBLESHOOTING

---

### SYMPTOM: KEY & BOTTON FAILURE



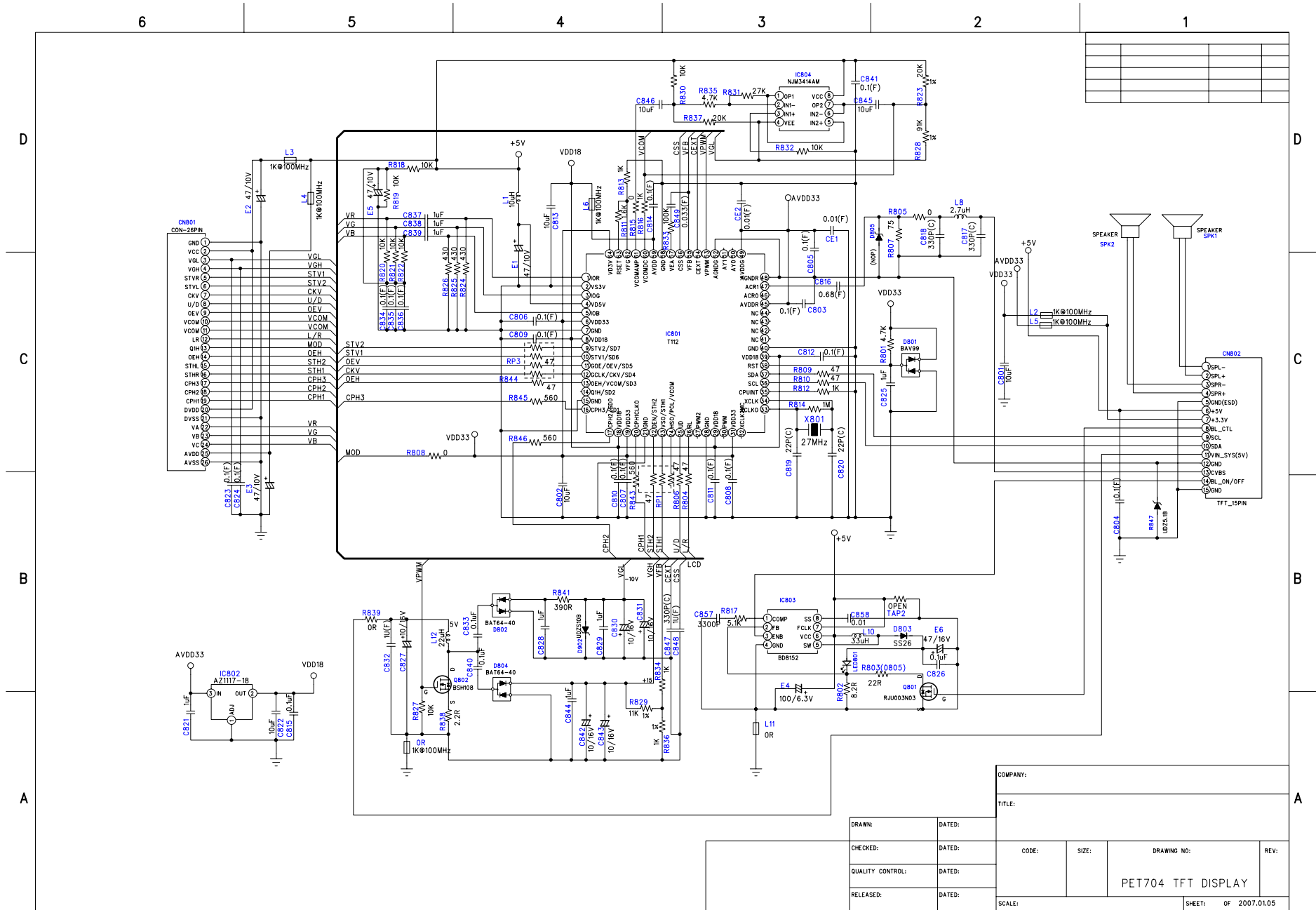
## 6.0 OVERALL BLOCK DIAGRAM



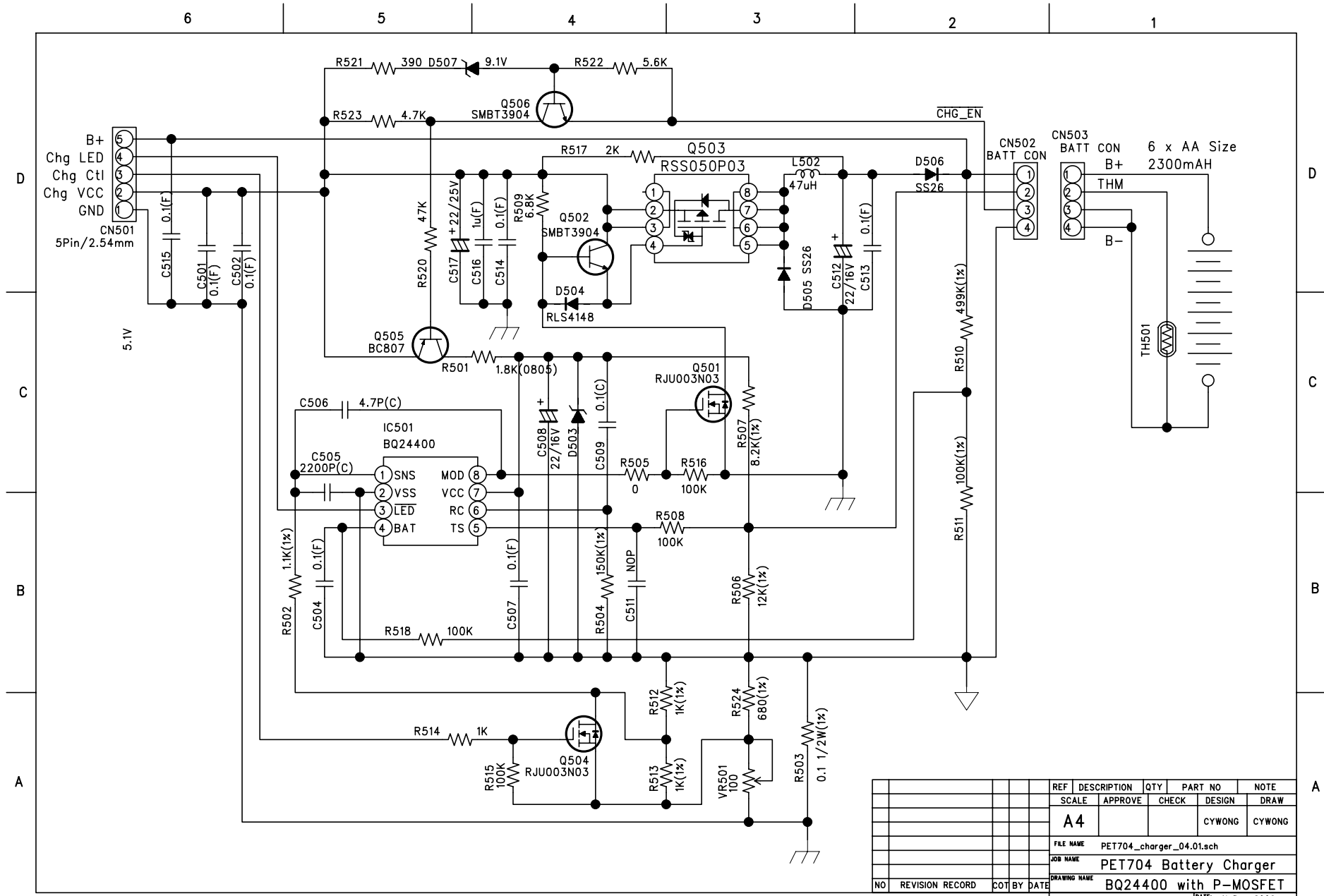




# 7.0 Electrical Diagram & Component Layout



# 7.0 Electrical Diagram & Component Layout

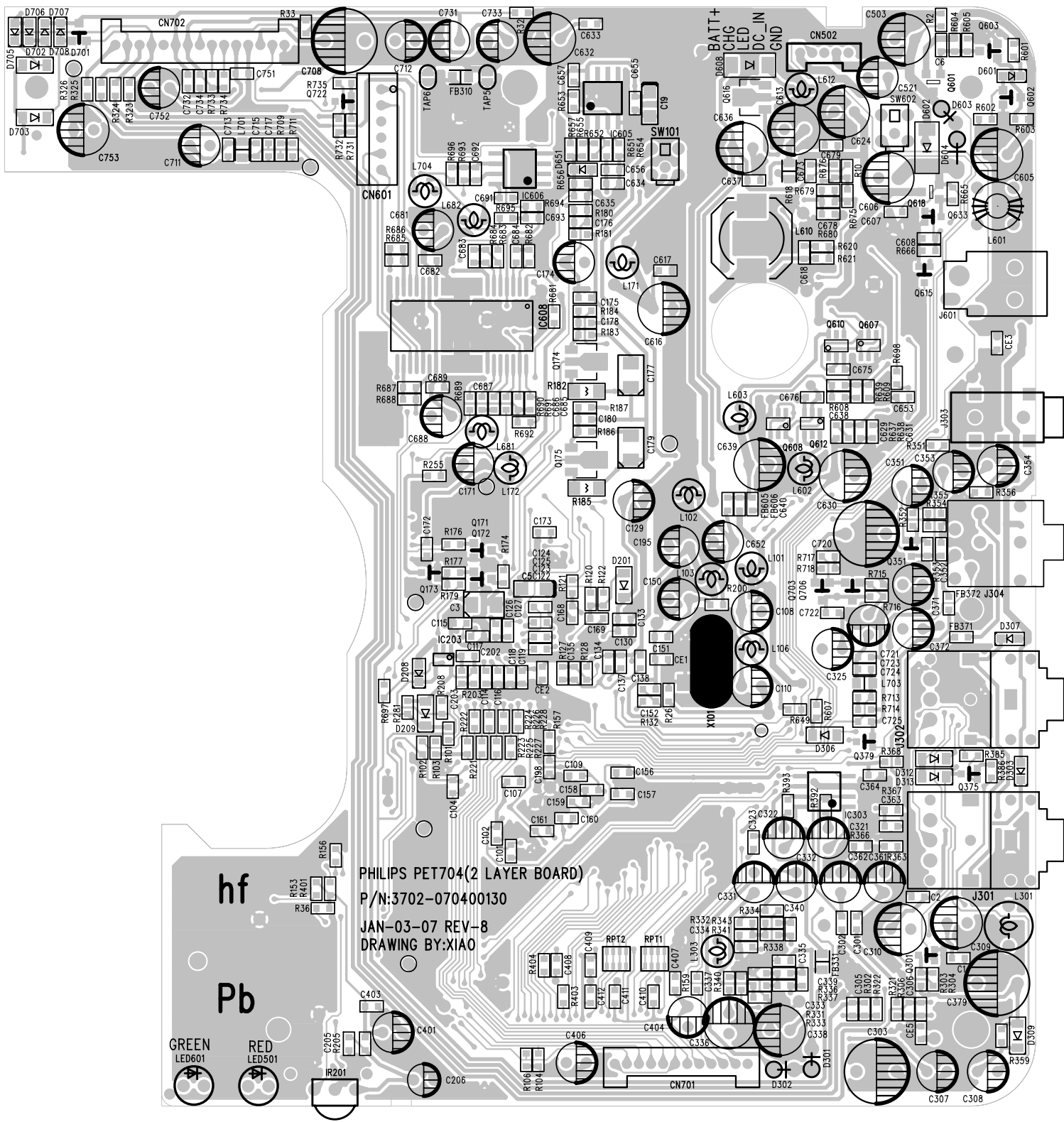


REF	DESCRIPTION	QTY	PART NO	NOTE
	SCALE	APPROVE	CHECK	DESIGN
	A 4			CYWONG
	CYWONG			CYWONG
FILE NAME: PET704_charger_04.01.sch				
JOB NAME: PET704 Battery Charger				
DRAWING NAME: BQ24400 with P-MOSFET				
DATE: 11 Dec 2006				

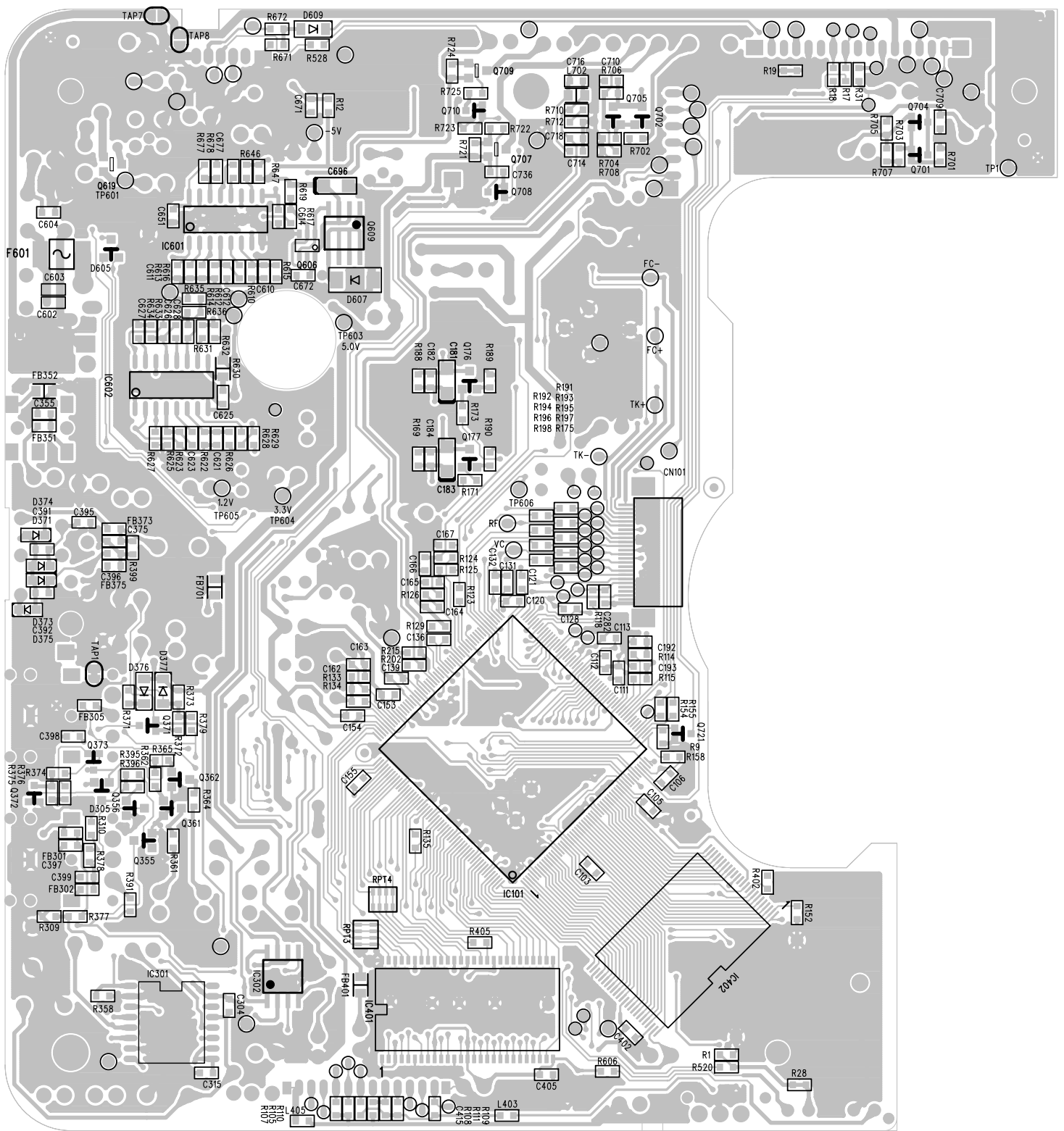
NO	REVISION RECORD	COI	BY	DATE

# 7.0 Electrical Diagram & Component Layout



MAIN PCB TOP LAYER ASSEMBLY

# 7.0 Electrical Diagram & Component Layout

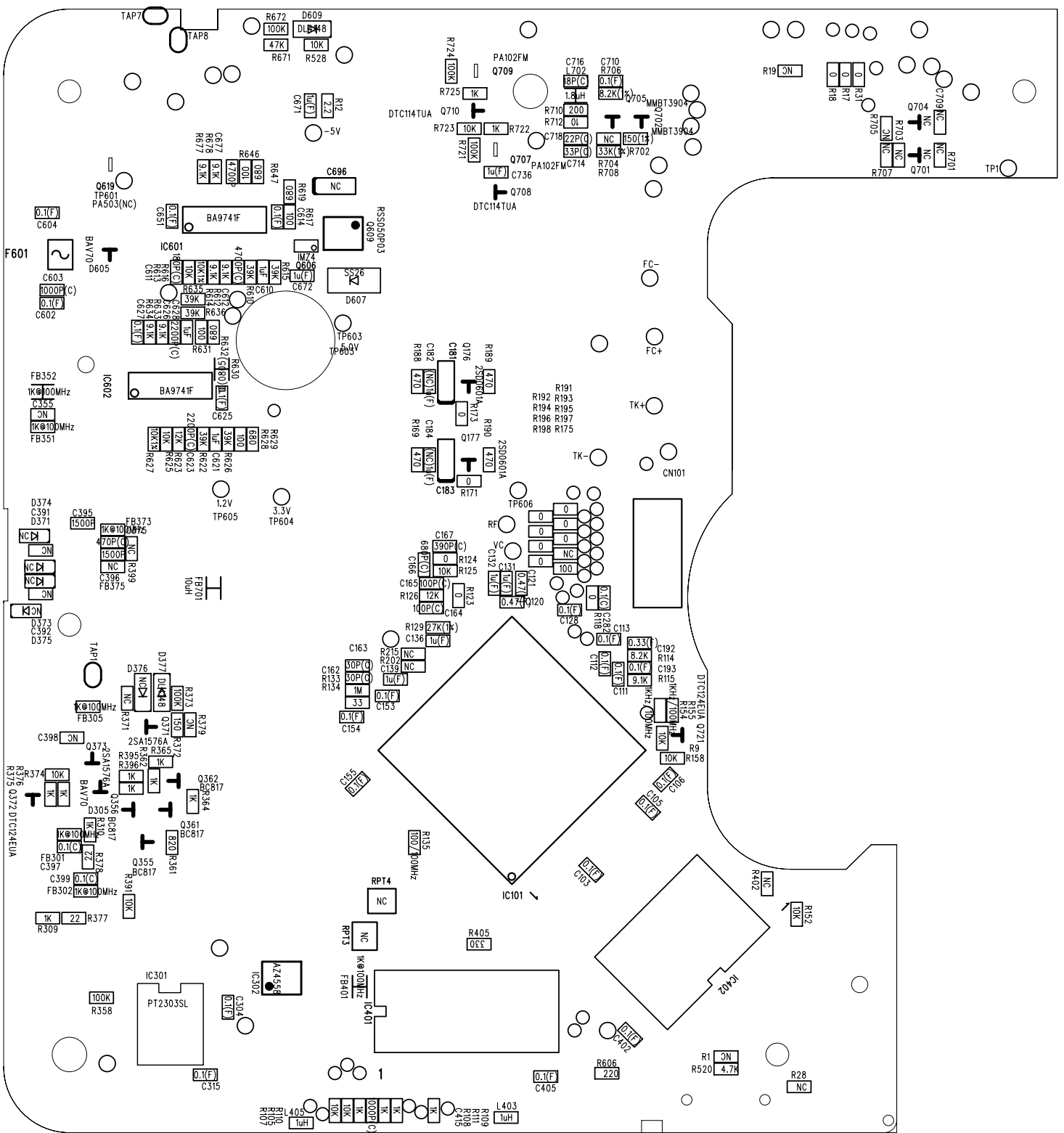


MAIN PCB BOTTOM LAYER ASSEMBLY





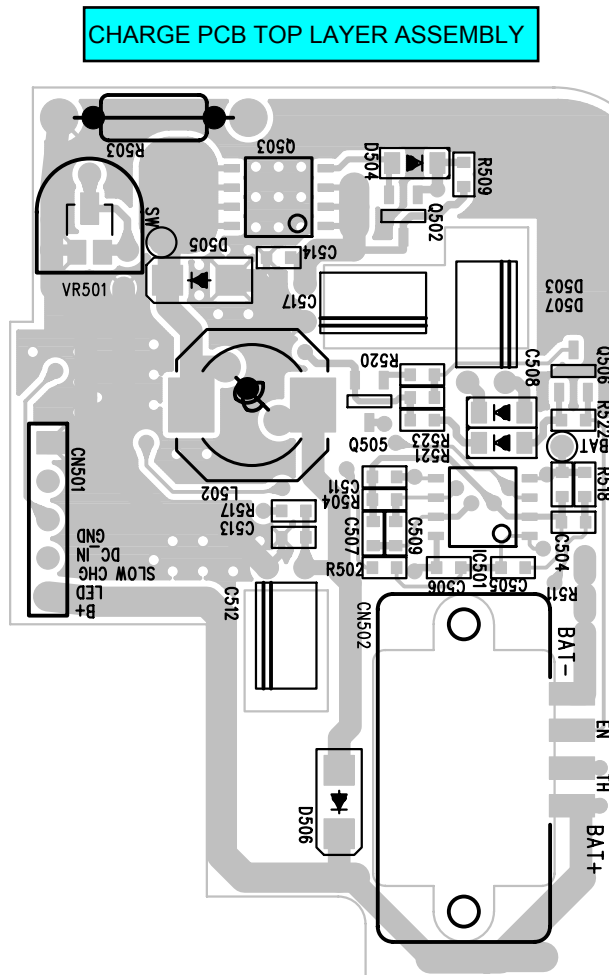
# 7.0 Electrical Diagram & Component Layout



MAIN PCB BOTTOM LAYER SILKSCREEN



## 7.0 Electrical Diagram & Component Layout



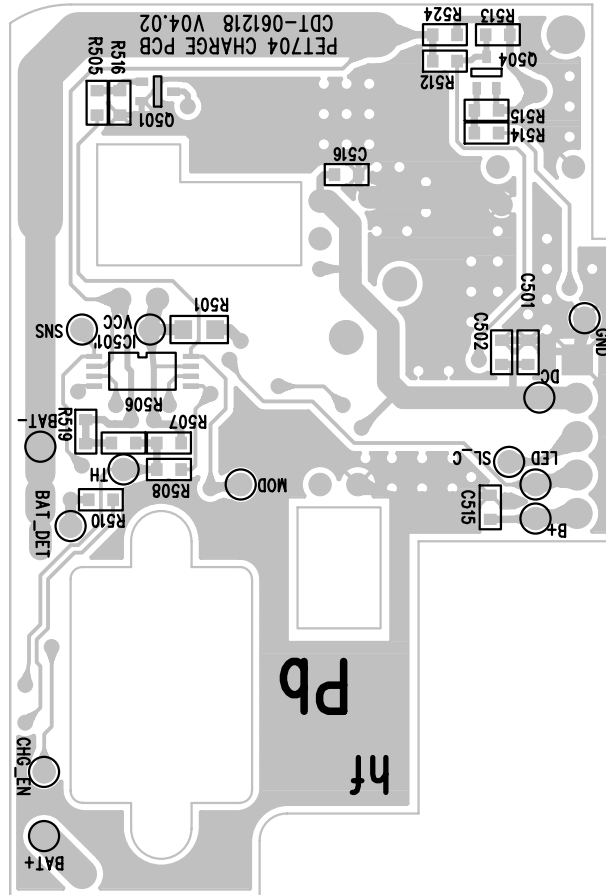
PET704 Charge PCB\_BQ24400

CDT-03 JAN. 2007 Version : 05.01

1.0mm FR4 PTH

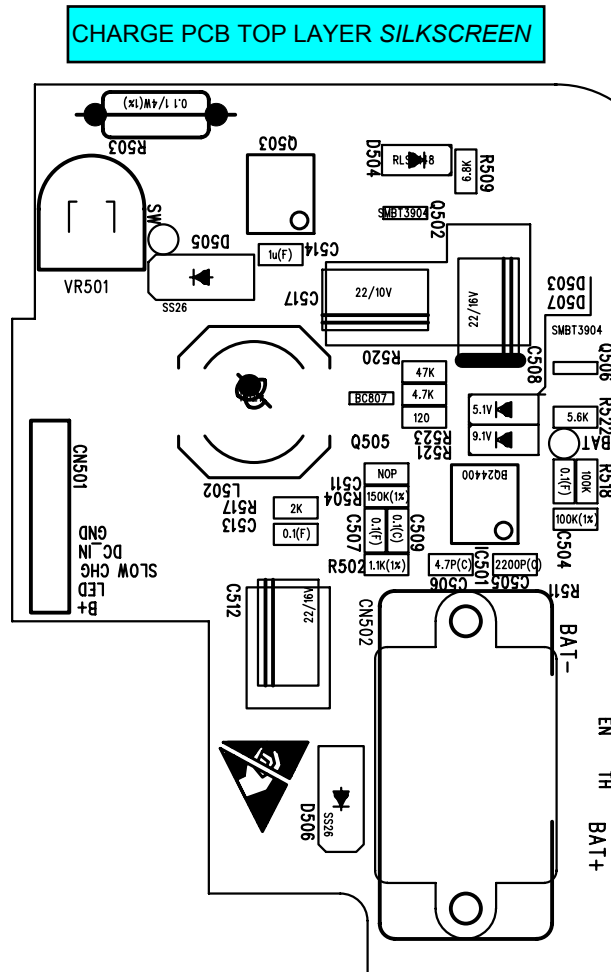
## 7.0 Electrical Diagram & Component Layout

### CHARGE PCB *BOTTOM* LAYER ASSEMBLY



1.0mm FR4 PTH  
CDT-03 JAN. 2007 Version : 02.01  
PET704 Charge PCB\_BQ54400

## 7.0 Electrical Diagram & Component Layout



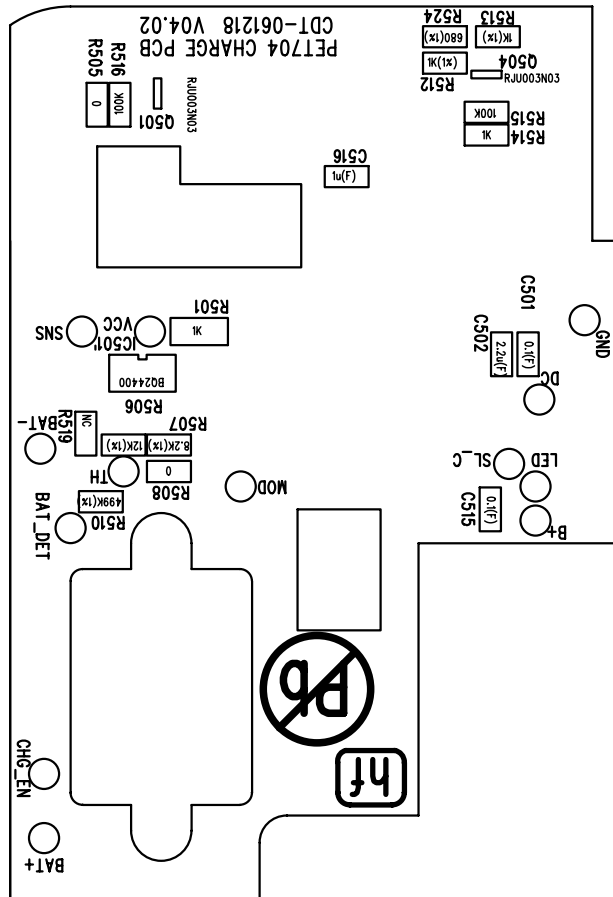
PET704 Charge PCB\_BQ24400

CDT-03 JAN. 2007 Version : 05.01

1.0mm FR4 PTH

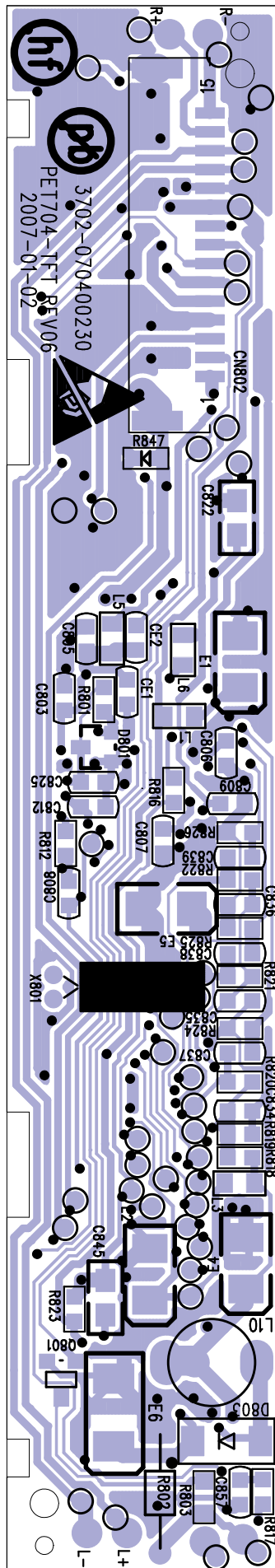
## 7.0 Electrical Diagram & Component Layout

### CHARGE PCB BOTTOM LAYER SILKSCREEN

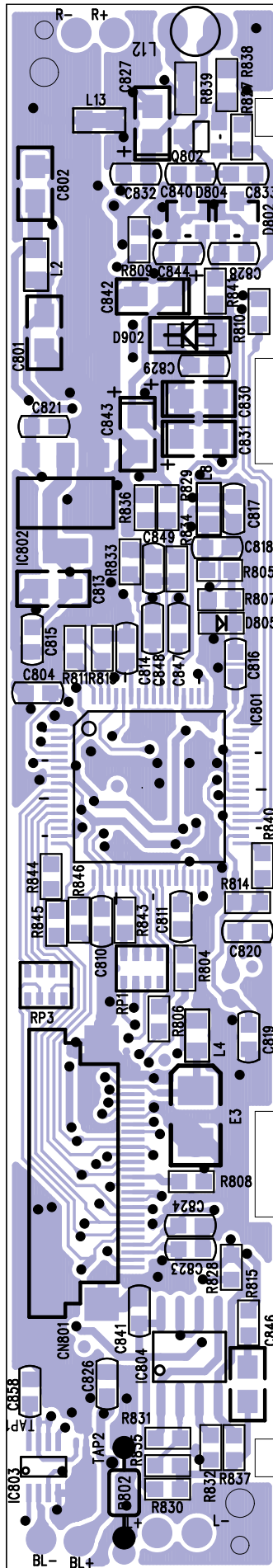


1.0mm FR4 PTH  
 CDT-03 JAN. 2007 Version : 02.01  
 PET704 Charge PCB\_BQ54400

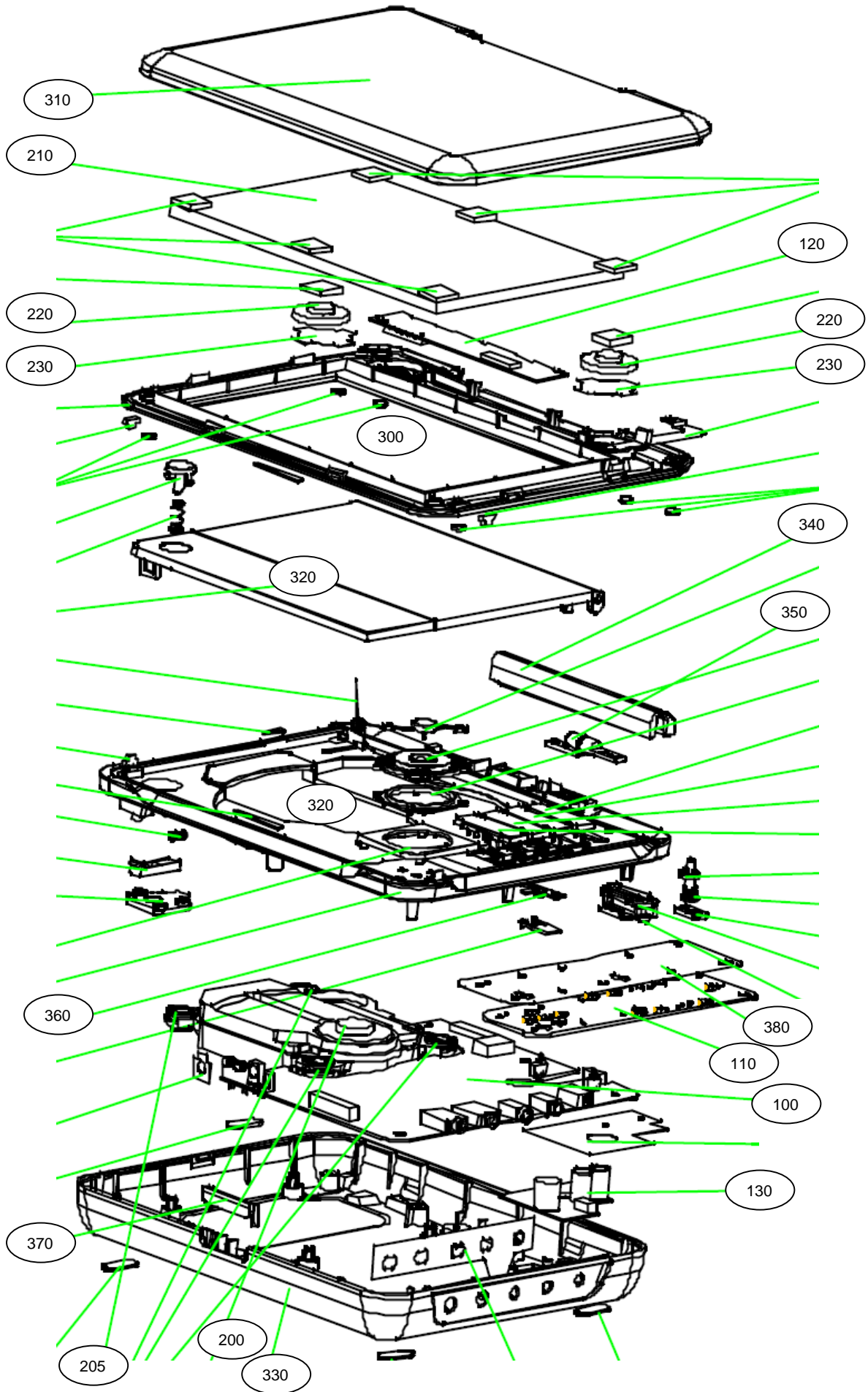
## 7.0 Electrical Diagram & Component Layout



## 7.0 Electrical Diagram & Component Layout



## 8.0 EXPLODED VIEW DIAGRAM & SERVICE PART LIST



## 8.0 EXPLODED VIEW DIAGRAM & SERVICE PART LIST

### Electrical Part list:

Pos No.	12NC	Description
100	314017902551	MAIN BOARD (FOR PET704/00, /05, PET704P/05)
	314017800391	MAIN BOARD (FOR PET704/44)
	314017800501	MAIN BOARD (FOR PET704/75)
	314017903591	MAIN BOARD (FOR PET704/58)
	314017904941	MAIN BOARD (FOR PET704/98)
110	314017902561	KEY BOARD PET704
110	314017902562	KEY BOARD PET704 (alternative of 314017902561)
120	314017902571	TFT DRIVE BOARD PET704
120	314017902572	TFT DRIVE BOARD PET704 (alternative of 314017902571)
130	314017903361	BATTERY CONNECTOR BOARD PET704
140	314017020151	CABLE PH 15P/110/15P PH 30ST
140	314017020152	CABLE PH 15P/110/15P PH 30ST (alternative of 314017020151)
150	314017020161	FFC FOIL 24P/125/24P
160	314017905001	TFT DC STEP UP PCBA (FOR PET704P/05)

### Mechanical Part list:

Pos No.	12NC	Description
200	242254901249	DVD MECHANISM KHM-313AHC Y FOR PET704 & PET704P
205	314017902931	DVD DAMPER PET704 & PET704P
210	314017902591	7" TFT PANEL PET704
210	314017904641	LOW COST 7" TFT PANEL PET704P
220	314017850031	MICRO SPEAKER 23MM PET704 & PET704P(IN PAIR)
230	314017903041	SPEAKER FELT PET704 & PET704P
300	314017903381	CABINET FRONT TFT ASSY PET704
300	314017905941	CABINET FRONT TFT ASSY PET704P
310	314017902901	CABINET REAR TFT PET704
310	314017906131	CABINET REAR TFT 2 PET704P
320	314017903371	CABINET MIDDLE ASSY PET704
320	314017905951	CABINET MIDDLE ASSY PET704P
330	314017750701	CABINET BOTTOM ASSY PET704
330	314017905961	CABINET BOTTOM ASSY PET704P
340	314017902831	COVER HINGE PET704
340	314017906111	COVER HINGE 2 PET704P
350	314017903001	ADJUSTABLE HINGE PET704 & PET704P
360	314017902871	BRACKET-DECELERATE PET704 & PET704P
370	314017902781	LENS REMOTE SENSOR PET704 & PET704P
380	314017902981	ANTI-STATIC TAPE KEY PCB

### Accessories Part list:

Pos No.	12NC	Description
ACADAPTOR	314017902641	AD/DC ADAPTOR AY4127/00 (FOR PET704/00,/44,/58, PET704P/05)
	824041002041	AD/DC ADAPTOR AY4127/05 (FOR PET704/05)
	824041002031	AD/DC ADAPTOR AY4127/37 (FOR PET704/37)
	824041006041	AD/DC ADAPTOR AY4127/75 (FOR PET704/75)
	824041006151	AD/DC ADAPTOR AY4127/98 (FOR PET704/98)
CARADAPTOR	314017902651	CAR ADAPTOR
RC	314017902621	REMOTE CONTROL AY5507
AV CABLE	314017902631	AV CABLE
BATTERY	314017902602	NI-MH BATTERY PACK PET704 (alternative of 314017902601)
BATTERY	314017906211	BATTERY PACK PET704P AY4390



## 9.0 REVISION LIST

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Version 1.0 (3141 785 31580)

- Initial release PET704/00/05/37/44

Version 1.1 (3141 785 31581)

- Updated service part list for PET704/75

Version 1.2 (3141 785 31582)

- Updated service part list for PET704/58

Version 1.3 (3141 785 31583)

- Updated service part list for PET704/98

Version 1.4 (3141 785 31584)

- Section 8, corrected 12NC of AC/DC adaptor/75 from 824041001641 to 824041006041.

Version 1.5 (3141 785 31585)

- Updated service part list for PET704P/05