Docking Speaker System DS9800W/10/37/93

Service
Service
Service

Service Manual

Made for iPod iPhone iPad

AirPlay

SoundSphere FullSound bg WiFi CERTIFIED SoundCurve

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Feature Different / Features	/10	/37	/93
RDS	√	√	√
Voltage Selector			
ECO Standby	√	√	√
DTS			

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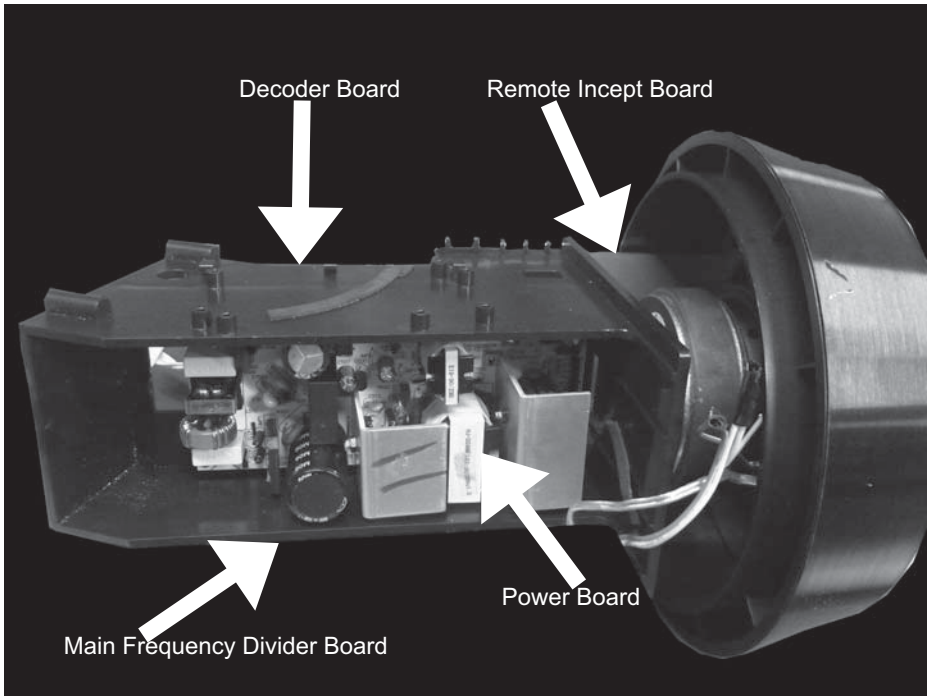
Version 1.1

PHILIPS

Location of PC Boards



Version Variations

Type /Versions: / Board in used: / Service policy	DS9800W											
	/05	/10	/12	/37	/55	/58	/61	/79	/93	/94	/96	/98
Key-Press+MPS Line+LED Board		C		C					C			
Remote Incept Board		C		C					C			
Main Frequency Divider Board		C		C					C			
Power Board		M		M					M			
Decoder Board		M		M					M			
Deputy Frequency Divider Board		C		C					C			
WIFI Board		M		M					M			
Ipod Board		C		C					C			
LED Board		C		C					C			
DC Board		C		C					C			
Type /Versions / Features / Feature diffrence	DS9800W											
	/05	/10	/12	/37	/55	/58	/61	/79	/93	/94	/96	/98
RDS		√		√					√			
VOLTAGE SELECTOR												
ECO STANDBY - DARK		√		√					√			
DTS												

* TIPS : C -- Component Lever Repair.
M -- Module Lever Repair
√ -- Used

Technical Specification

2. General Information and Requirement

Product Family Features

2.1.1 Identity and Key Features

DS9800W series are wireless speaker for iPhone,

Elements to include as generic requirements:

1. Detachable mains cord
2. Safety certification (cUL/FCC and CB/EMC/CE)

Following is a list of key features:

1. iPod/iPhone Airplay support
2. MP3 Link (via headphones jack from PC or MP3 player)
3. Total output power
   2x50Wrms @10%THD

2.1.2 Styling, Forms and Functions

DS9800W appearances are defined in their respective MUS. MUS is the leading document where product appearance is applicable..

Features	Products	DS9800W
	Stroke versions	All
	Design	Refer to MUS[3] for details
Front	IR Receiver	Y
Dimension	Height of feet	3mm
	Apparatus tray closed W x D x H (mm)	
Weight	Without packaging	11kg
Cosmetics	Color	Black
	Buttons	

2.1.3 External I/O Connections

Model	DS9800W
Stroke Version	All
30pin connector on docking	√
MP3 Link (3.5mm audio jack)	√
L Speaker out	√

2.1.4 ACCESSORIES (tbc)

Model	DS9800W		
Stroke Version	12	10	93
Region	Europe		China
Power Cord	1.8M	1.8M	1.8M
Audio cable (3.5mm audio)	0.5M	0.5M	0.5M
Speaker cablex1	6M	6M	6M
Remote Control	8keys	8keys	8keys
Battery for Remote control	CR2032	CR2032	CR2032
Quickly guide	1	1	1
IFU	1	1	1

Mechanical General Information

The product appearances and functions are defined in their respective MUS. Product management approves the MUS and it is a leading document where product appearance is applicable.

Please refer to Sh560 for mechanical information.

Safety Standards

Where applicable:

/12, /05 – EN-60065:2002 (Edition 7.0) +A1 +A11 +C11 +C12, UL-6500:2006 (Edition 2), other strokes IEC-60065:2005 (Edition 7.1), or
/12, /05 – EN-60950:2006 +A1, /37 – UL-60950 (Edition 2), /55 /79 /97 (other strokes than /12, /05, /37) – IEC-60950 +A1 (Edition 2)

EMC Requirements

Where applicable:

/12 – Audio functions: EN55013:2001; +A1:2003, +A2:2006, EN55020:2007
IT-functions: EN55022:2006,+A1:2007, EN55024:1998, +A1:2001, +A2:2003
WiFi-function: ETSI EN 300 328 (V1.7.1.), ETSI EN 301 489-1 (V1.8.1.) & -17 (V1.3.2), EN 62311:2008
Generic functions: EN 61000-3-2:2006, EN 61000-3-3:1995; +A1:2001; +A2:2005 or alternatively EN61000-3-3:2008
/97 (/55) – Audio functions: CISPR-13:2006 (or alternatively CISPR-13:2009), CISPR-20:2005;
IT-functions: CISPR-22;2008, CISPR-24:1997; +A1:2001, +A2:2002; IEC 62311:2007
Generic functions: IEC 61000-3-2:2005,+A1:2008,+A2:2009 or alternatively IEC 61000-3-2:2009, IEC 61000-3-3:2008
/37 – FCC-15.247 (Part B, C), OET Bulletin 65, Edition 97-01 Table 1; RSS-210 Issue 7

ESD Requirements(TBC)

The product shall withstand electro static discharges on all user accessible parts of the product.
Reference: IEC61000-4-2.

For contact discharges:

Level	General (kV)	USA (kV)	Requirement
1	0-2	0-3	No deviations allowed.
2	>2-4	>3-4	Short perceptible deviations allowed
3	>4-5	>4-5	Normal recallable functions function changes allowed.
4	>5-7	>5-7	Control recallable functions function changes allowed.
5	-	>7-8	No loss of stored data allowed.

For air discharge:

Level	General (kV)	USA (kV)	Requirement
1	0-4	0-6	No deviations allowed.
2	>4-8	>6-8	Short perceptible deviations allowed.
3	>8-10	>8-10	Normal recallable functions function changes allowed.
4	>10-15	>10-15	Control recallable functions function changes allowed.
5	-	>15-18	No loss of stored data allowed.

General requirement:
1. 10 arcs for positive and negative polarity for unit “on” and “off” for 1kV incremental steps.
2. Component or mechanical damage is not allowed. No loss of fixed stored data (stored in EEPROMs).
3. Hang-ups and malfunctions are allowed, as long as the customer can “recover” from the hang-up by pressing the Standby or ON/OFF button of the set.
4. Failures that disappear only by unplugging the AC mains cord and/or power sources are not acceptable.

Environmental Condition

The environmental condition requirements and test method is according to UAN-D1590.

Ambient temperature : max. 40 ° C - all climates
Apparatus acc. to spec. : +5 to + 35 ° C

Vibration test (acc. IEC 60 068/2/6) : operational vibration test to be proceeded in operating position of the set.

3. Technical Specifications

Power Supply

3.1.1 Type and versions

3.1.1.1 SMPS for main unit

Build-inSMPS will be used for all models and stroke versions.

All using figure '8' socket, will cater for all versions:

Versions	Region/Country	SMPS	Detachable mains cords
12 / 05	EUROPE / UK	1) 100 ~240Vac nom. (wide range from 90V~264Vac limit) used in all versions except India. Frequency: 47~63Hz.	EU (/12) round 2-pin & UK (/05) 3-pin
37	NAFTA		UL flat pin (non-polarized)
55	LATAM		INMETRO certified round 2-pin
98	APAC		EU round 2-pin
94	India	2) 100 ~310Vac limit (India compatible with up cost) used only for India. Frequency: 47~63Hz.	EU (/12) round 2-pin

All requirements per defined for each country should be met with sufficient testing.

3.1.1.2 Adaptor for Docking

AC/DC adaptor 5V/ 2.1A for docking, wide range input voltage.

3.1.2 Surge Immunity (Lightning Test)

The product shall withstand mains interference's of:

<u>Differential mode:</u>

- 2kV/2 ohm criteria C for Europe.
- 6kV/12 ohm criteria C for NAFTA.

Parameters:

- Bi-wave
- Open circuit voltage: 2/50us
- Short circuit current: 8/20us
- From +/1kV to +/-2kV (for Europe) or +/-6kV (for Nafta) in steps of 1kV.
- 10 shots per combination.
- One shot per minute.
- Serial impedance: 2 Ohm for Europe, 12Ohm for Nafta.
- Polarity and phase: Positive (phase 90º) & Negative (phase 270º)

Common mode:

- 6kV/2 ohm criteria C for Europe.
- 6kV/12 ohm criteria C for Nafta.

Parameters:

- Ring-wave (100kHz)
- From +/3kV to +/-6kV in steps of 1 kV.
- 10 shots per combination.
- One shot per minute.
- Serial impedance: 2 Ohm for Europe, 12Ohm for Nafta
- Polarity and phase: Positive (phase 90º) & Negative (phase 270º)

Reference: IEC61000-4-5 and for USA: 3135 019 8029 Reliability evaluation.

Requirements:

- Apparatus should fulfil the leakage current requirements of IEC60065 point 9.1.1 (UAN-D1631)
- Defects or permanent deviations are not allowed.

3.1.3 Mains Drop-out Immunity

The product shall withstand mains failures of:

- Variation 0% (=100% dip) at T-event = 50 mSec. Performance criterion B
- Variation 40% (=60% dip) at T-event = 100 mSec. Performance criterion B
- Variation 0% (=100% dip) at T-event = 5 Sec. Performance criterion C

Additional for USA apparatus: See 3135 019 8029 Reliability evaluation.

- Variation 0% (=100% dip) at T-event = 100 mSec in standby mode. Performance criterion B

Requirement:

No misoperation and no interference of user in order to guarantee continuation of performed function.
Reference: IEC61000-4-11 For measuring method refer to UAN-D1724, as far as applicable.
Performance criterions according to IEC61000-4-4 Amendment 1
Performance Requirement
Criterion A - No any degradation of specification.
Criterion B - Temporary degradation / self recoverable.
Criterion C - No damage, resolvable hang-up.
Criterion D - Not recoverable loss of function.

3.1.4 iPod/iPhone/iPad charging

3.1.5 Power Consumption

Power consumption at nominal AC input:

1. CD play mode at 1/8 P-rated output power DS9800W: ≤ 22 W
2. Low Power Standby Mode : ≤ 0.5 W

Technical Description

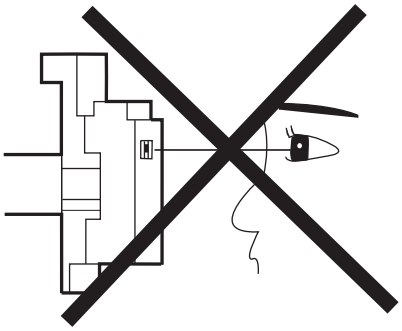
3.2.1 Audio part

Gerneral Part Output Stage Protection: NA Temperature : Yes Short Circuit: Yes					
Indicators Standby Mode Indicator: Clock Display Active Power Standby Mode: LED Turns Off					
Electrical Data				Normal	Limit
DSC:	NA	Channel Difference:		± 3dB	
DBB:	NA	Hum (Vol_{min} --- Vol_{max}-20dB)		100nW	150nW
Bass:	Y	Residual Noise(Volume Minimum)		40nW	
Treble:	Y	Channel Seperation: 1kHz/10kHz		40dB/35dB	
Loudness:	Y	THD,Maximal		<0.8%	
		SNR(*1) @ROP(A-weighted):		90dBA(*3)	92dBA
		SNR @standard output(A-weighted)(*2):		82dBA	78dBA
		Crostalk:		≥55dB	
Audio Inputputs					
Audio Input Sensitivity(± 3dB) rated output power at 1kHz		Audio Output			
MP3_link(front)	1000mV± 200mV; Rin ≥ 22kΩ				
iPhone Airplay	tbc				
Docking charging current		2.1A @5V voltage power supply			
		DS9800W			
Output Power(*4) At THD=10%, 1kHz sinewave		50W± 1dB		(At Cold Condition with 10% THD	
Output Power with limitation(shipment sample)		36W± 1dB		(At Cold Condition with 10% THD	
Frequency Response(± 3dB)		30Hz-20kHZ			
Loudspeaker(Boxes): Separable speaker box		Refer to package document of Speaker Box Assy			
Speaker driver Impedance: Right/Left:		8Ω @ 30 Hz ~ 20kHz(-1db)(tbc)			
Subwoofer:					

REMARKS:
Electrical Parameters are to be measured at Speaker Terminals across rated impedance Load(8ohm) with Rated Input Signal in CD Mode setting in DBB/Loudness Off and Pre-eq at Flat unless specified otherwise.
*1) Add 10dB to the measured SNR for the final result →as a -10dB reference signal is used (IEC (A) weighted @ Vol.max with -10dB)
*2) standard output --- 1W output with 1kHz sinewave
*3) SNR value is defined at Airplay mode, at MP3-link mode are worse a little.(SNR @ROP(A-Weighted): limit 85dBA, @1W output (A-Weighted): limit 78dBA)
*4) Test mode : press RESET and WPS key 5s, the set go to factory mode. Many electrical parameter should measured at factory mode.

Laser Beam Safety Precautions

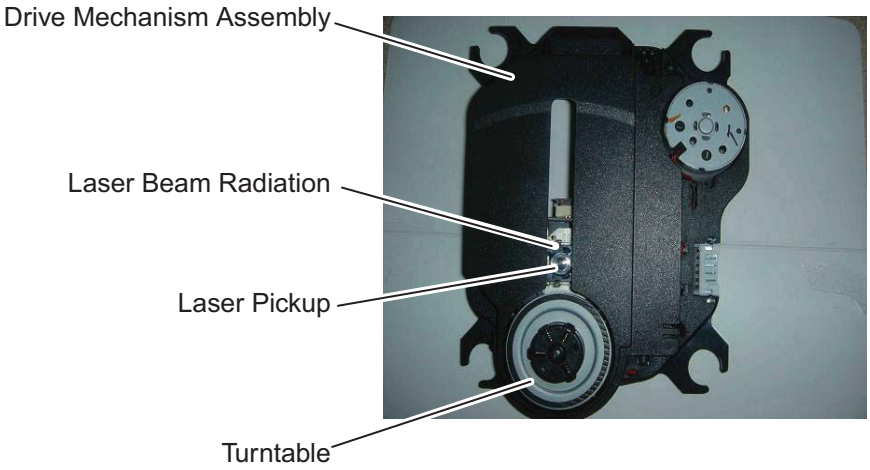
This Blu-Ray player uses a pickup that emits a laser beam.

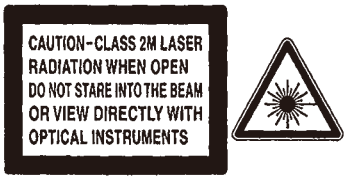


Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.





Location: Inside Top of Blu-Ray mechanism.

Caution: These servicing instructions are for use by qualified service personnel only.To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Important

Read and understand all instructions before you use your home theater. If damage is caused by failure to follow instructions, the warranty does not apply.

Safety

Riskof electricshock or fire!

- Never expose the product and accessories to rain or water. Never place liquid containers, such as vases, near the product. If liquids are spilt on or into the product, disconnect it from the power outlet immediately. Contact Philips Consumer Care to have the product checked before use.
- Never place the product and accessories near naked flames or other heat sources, including direct sunlight.
- Never insert objects into the ventilation slots or other openings on the product.
- Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
- Disconnect the product from the power outlet before lightning storms.
- When you disconnect the power cord, always pull the plug, never the cable.

Riskof short circuit or fire!

- Before you connect the product to the power outlet, ensure that the power voltage matches the value printed on the back or bottom of the product. Never connect the product to the power outlet if the voltage is different.

Risk of injury or damage to the home theater!

- For wall-mountable products, use only the supplied wall mount bracket. Secure the wall mount to a wall that can support the combined weight of the product and the wall mount. Koninklijke Philips Electronics N.V. bears no responsibility for improper wall mounting that results in accident, injury or damage.
- For speakers with stands, use only the supplied stands. Secure the stands to the speakers tightly. Place the assembled stands on flat, level surfaces that can support the combined weight of the speaker and stand.
- Never place the product or any objects on power cords or on other electrical equipment.
- If the product is transported in temperatures below 5°C, unpack the product and wait until its temperature matches room temperature before connecting it to the power outlet.
- Visible and invisible laser radiation when open. Avoid exposure to beam.
- Do not touch the disc optical lens inside the disc compartment.

Risk of overheating!

- Never install this product in a confined space. Always leave a space of at least four inches around the product for ventilation. Ensure curtains or other objects never cover the ventilation slots on the product.

Risk of contamination!

- Do not mix batteries (old and new or carbon and alkaline, etc.).
- Remove batteries if they are exhausted or if the remote control is not to be used for a long time.
- Batteries contain chemical substances, they should be disposed of properly.

Product care

- Do not insert any objects other than discs into the disc compartment.
- Do not insert warped or cracked discs into the disc compartment.
- Remove discs from the disc compartment if you are not using the product for an extended period of time.
- Only use microfiber cloth to clean the product.

Disposal of your old product and batteries

Your product is designed and manufactured with high quality materials and components, which can be recycled and reused.

When this crossed-out wheeled bin symbol is attached to a product it means that the product is covered by the European Directive 2002/96/EC. Please inform yourself about the local separate collection system for electrical and electronic products.
Please act according to your local rules and do not dispose of your old products with your normal household waste.
Correct disposal of your old product helps to prevent potential negative consequences for the environment and human health.

Your product contains batteries covered by the European Directive 2006/66/EC, which cannot be disposed with normal household waste.
Please inform yourself about the local rules on separate collection of batteries because correct disposal helps to prevent negative consequences for the environmental and human health.

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
110V~220V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

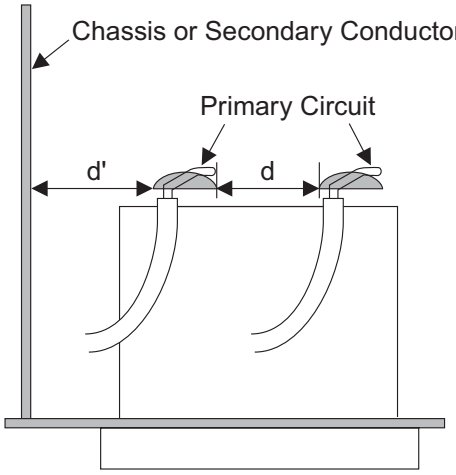


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

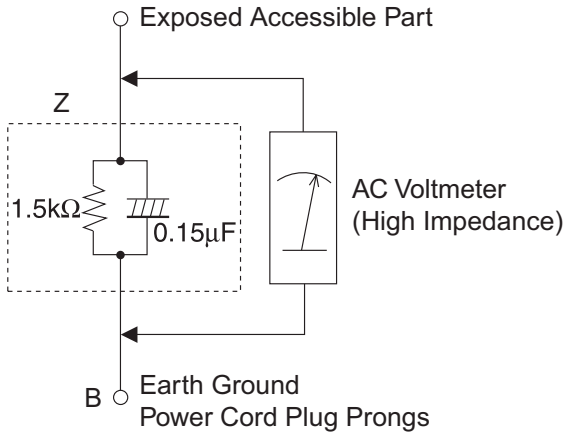


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
110V~220V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

Safety Information, General Notes & Lead Free Requirements

1 Safety Instructions

1.1 General Safety

Safety regulations require that during a repair:
- Connect the unit to the mains via an isolation transformer.
- Replace safety components, indicated by the symbol ⚠ , only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:
- Route the wires/cables correctly, and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the electrical DC resistance between the mains plug and the secondary side:
  1. Unplug the mains cord, and connect a wire between the two pins of the mains plug.
  2. Set the mains switch to the 'on' position (keep the mains cord unplugged!).
  3. Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
  4. Repair or correct unit when the resistance measurement is less than 1 MΩ.
  5. Verify this, before you return the unit to the customer/ user (ref. UL-standard no. 1492).
  6. Switch the unit 'off', and remove the wire between the two pins of the mains plug.

1.2 Laser Safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser Device Unit	
Type	:AlGaInN(BD) :AlGaInP(DVD) : AlGaInP(CD)
Wavelength	: 650 nm (DVD) : 780 nm (VCD/CD) : 405nm(BD)
Output Power	: 20 mW (DVD+RW writing) : 0.8 mW (DVD reading) : 0.3 mW (VCD/CD reading)
Beam divergence	: 60 degree

CLASS 1
LASER PRODUCT

Figure 2-1

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

2 Warnings

2.1 General

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential.
  Available ESD protection equipment:
  – Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  – Wristband tester 4822 344 13999.
- Be careful during measurements in the live voltage section. The primary side of the power supply, including the heatsink, carries live mains voltage when you connect the player to the mains (even when the player is 'off'!). It is possible to touch copper tracks and/ or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A 'lightning stroke' and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.
- Never replace modules, or components, while the unit is 'on'.

2.2 Laser

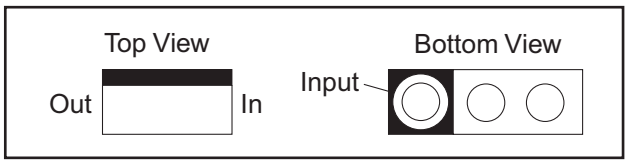
- The use of optical instruments with this product, will increase eye hazard.
- Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.
- Repair handling should take place as much as possible with a disc loaded inside the player.
- Text below is placed inside the unit, on the laser cover shield:

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

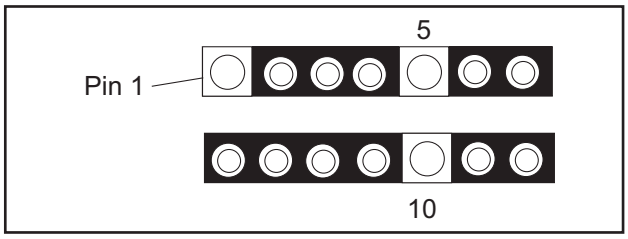
Figure 2-2

Circuit Board Indications

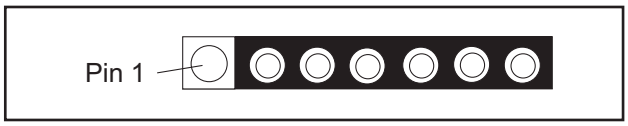
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

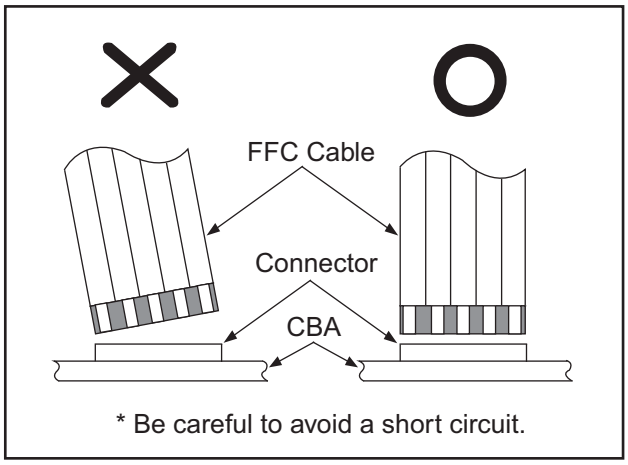


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

Information about lead-free soldering

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION

Regardless of special logo (not always indicated)

One must treat all sets from 1 Jan 2005 onwards, according to the next rule:
Serial Number gives a 14-digit. Digit 5&6 shows the YEAR, and digit 7&8 shows the WEEK.

So from 0501 onwards=from 1 Jan 2005 onwards

Important note : In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.

- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website www.atyourservice.ce.Philips.com you find more information to:
  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the “magazine”, chapter “workshop news”.

For additional questions please contact your local repair-helpdesk.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

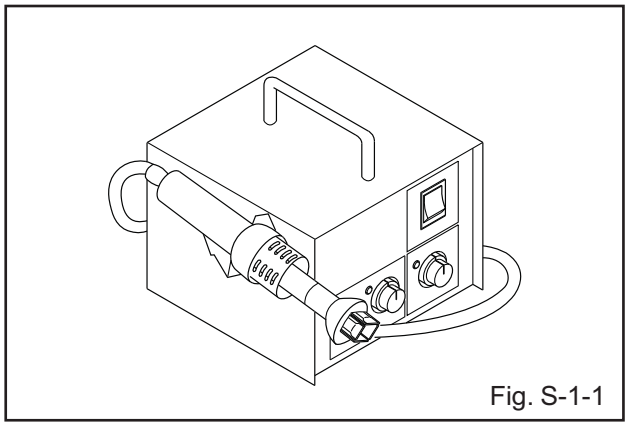


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

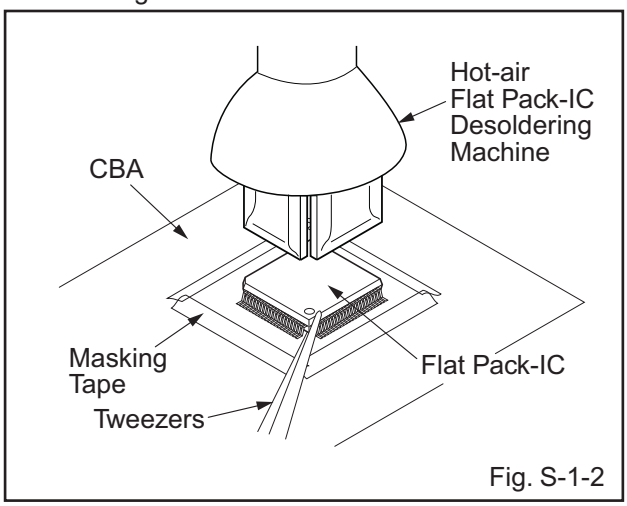


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

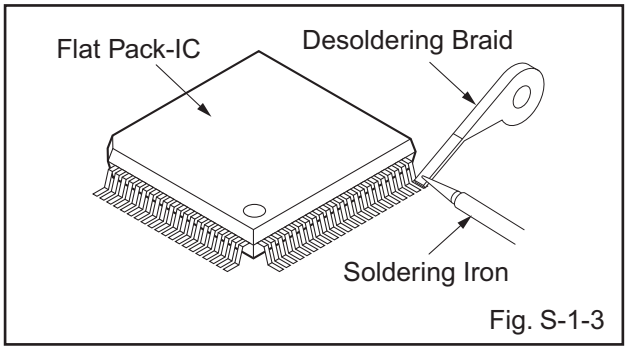


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

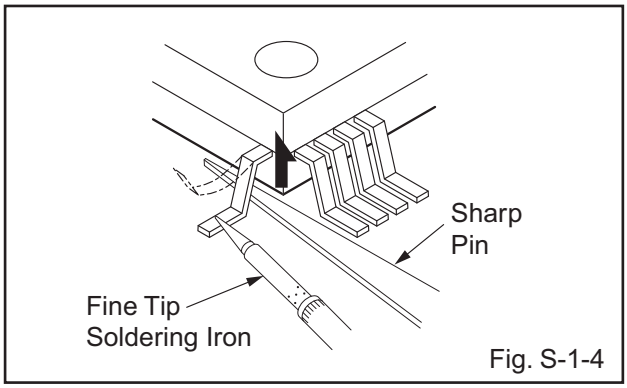


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

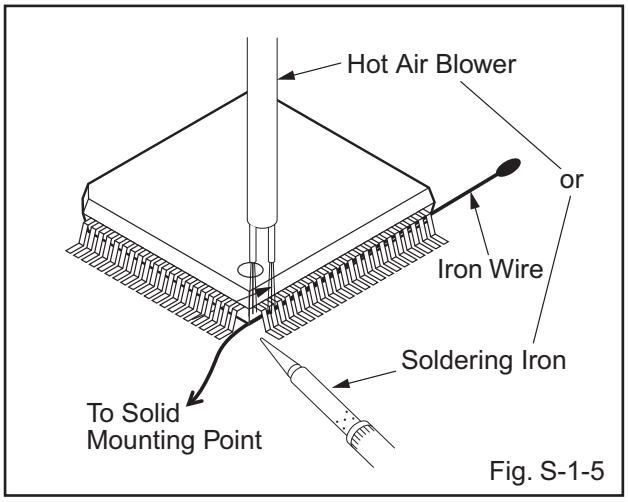


Fig. S-1-5

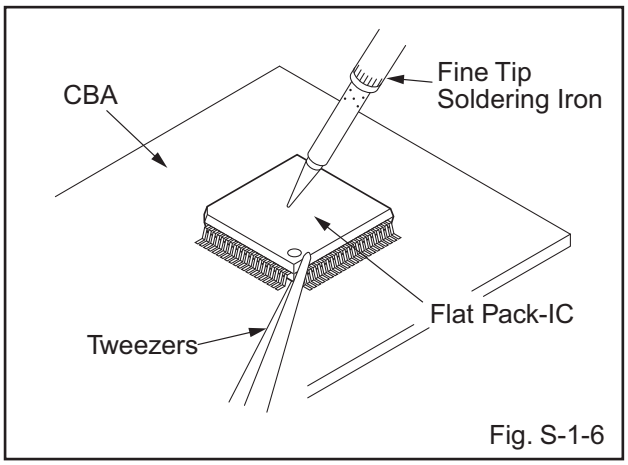


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

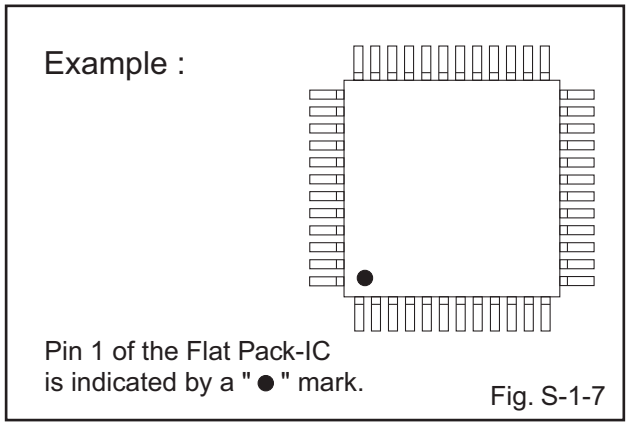


Fig. S-1-7

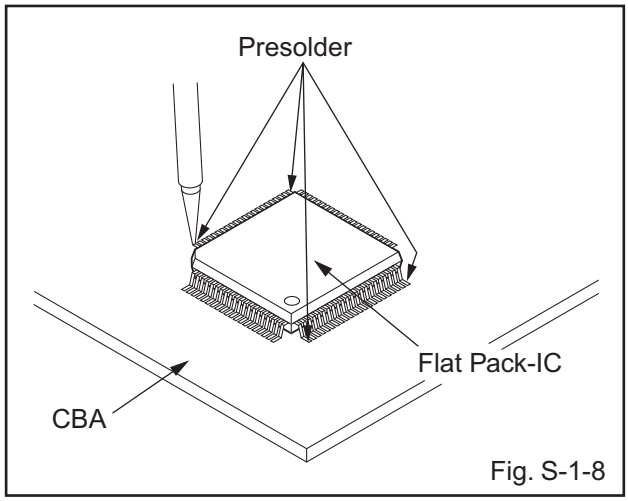


Fig. S-1-8

Instructions for Handling Semi-conductors

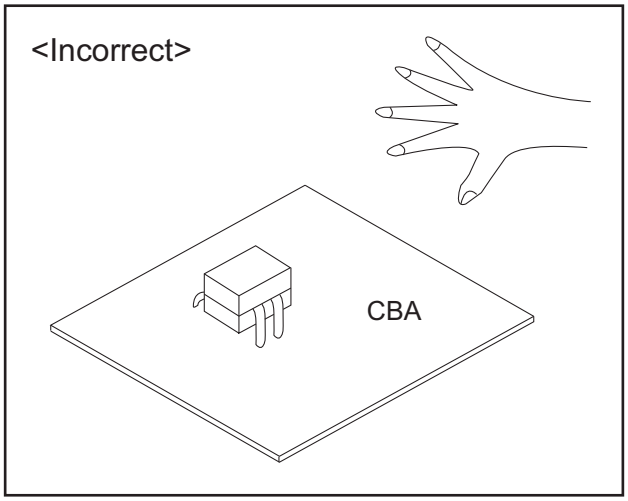
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

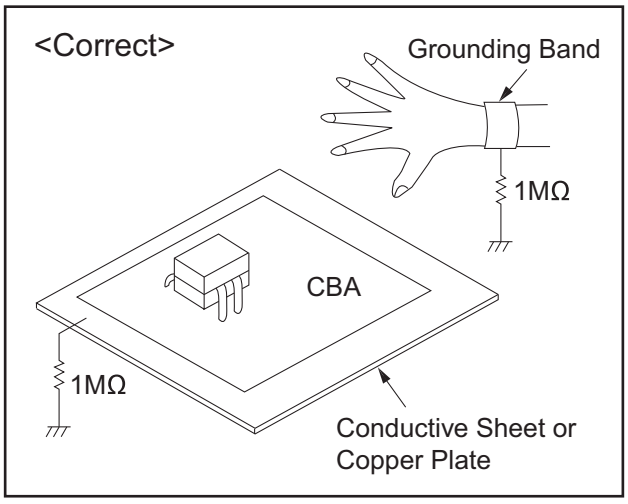
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

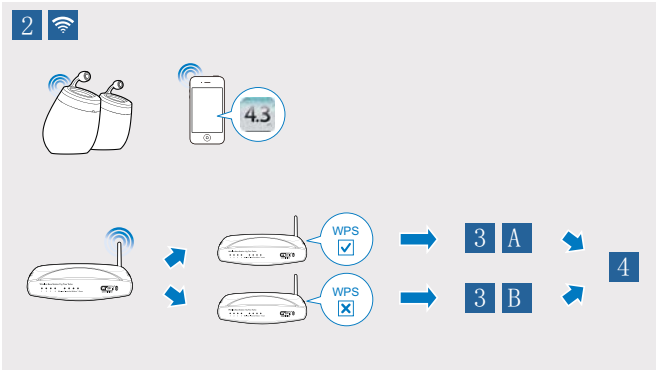
2. Ground for Workbench

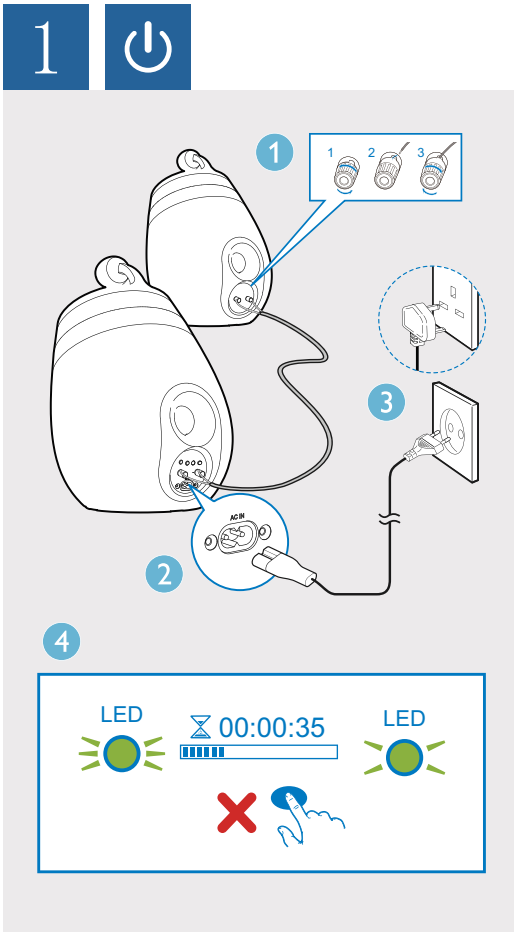
Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

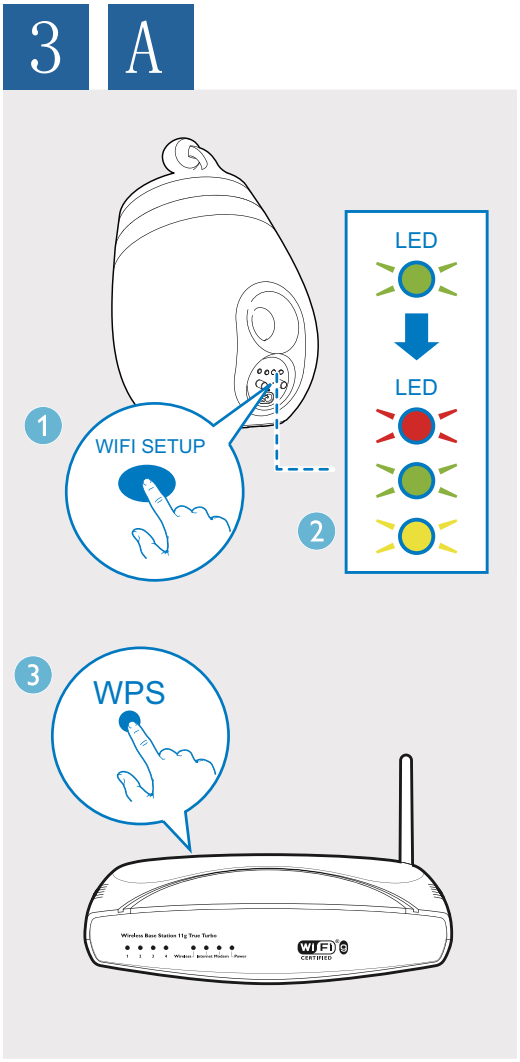




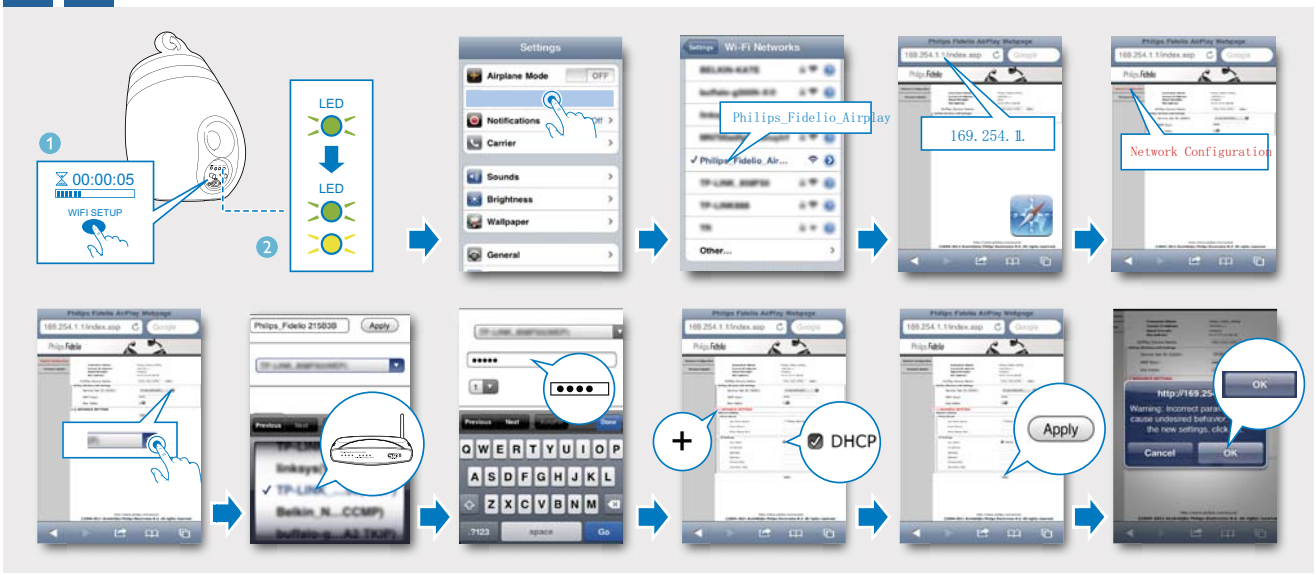
*The following excerpt of the DFU/QSG serves as an introduction to the set. The Complete Direction for Use can be download in different languages from the internet site of Philips Customer care Center : www.support.philips.com







3 B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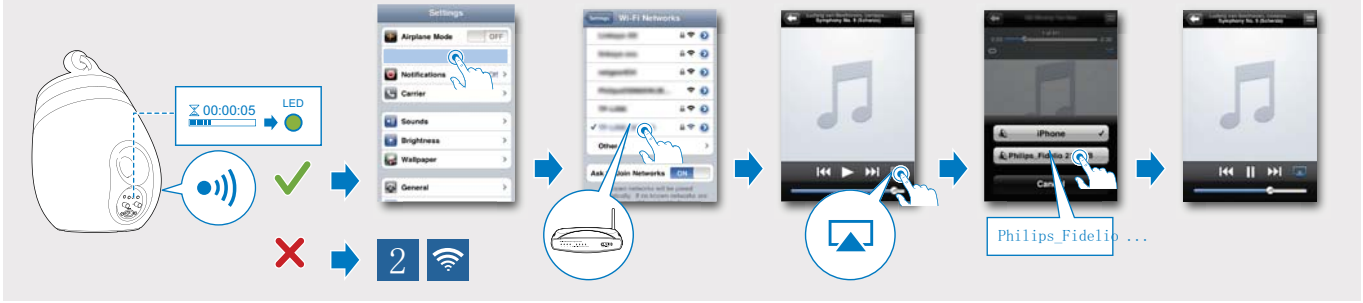
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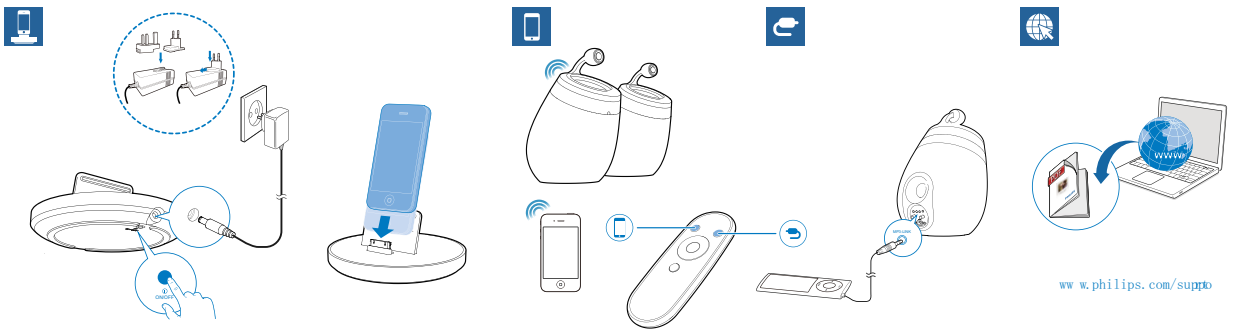
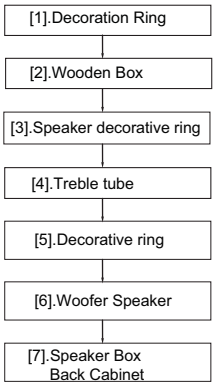

ww w.philips.com/suppo

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/Loc. NO.	Part	Removal		
		Fig.NO.	Remove/Unhook /Unlock/Release/ Unplug/Desolder	Note
[1]	Decoration Ring	D1	4(A01) D3*12 FA	
[2]	Wooden Box	D2		
[3]	Speaker decorative ring	D3		
[4]	Treble tube	D4		
[5]	Decorative ring	D5		
[6]	Woofer Speaker	D6		
[7]	Speaker Box Back Cabinet	D7		

Note:

(1) Identification (location) No. of parts in the figures

(2) Name of the part

(3) Figure Number for reference

(4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
Axx = Screw, CNxx/Jxx/CONxx = Connector
D3.5X12BA is specification of screw.

* = Unhook, Unlock, Release, Unplug, or Desolder

e.g. 7(A01) = seven Screws

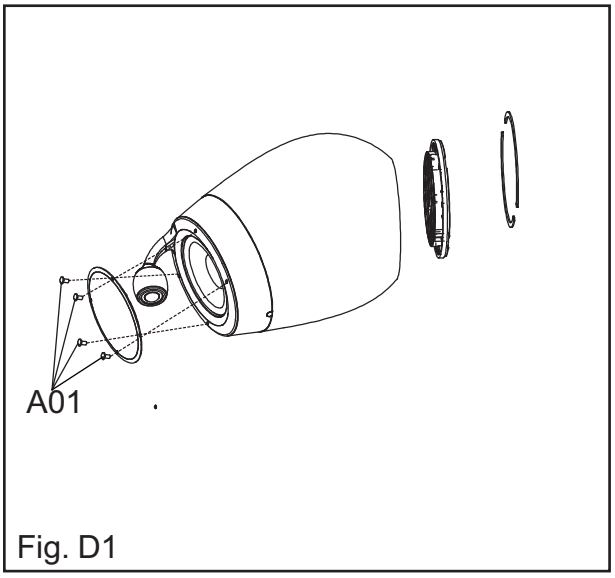


Fig. D1

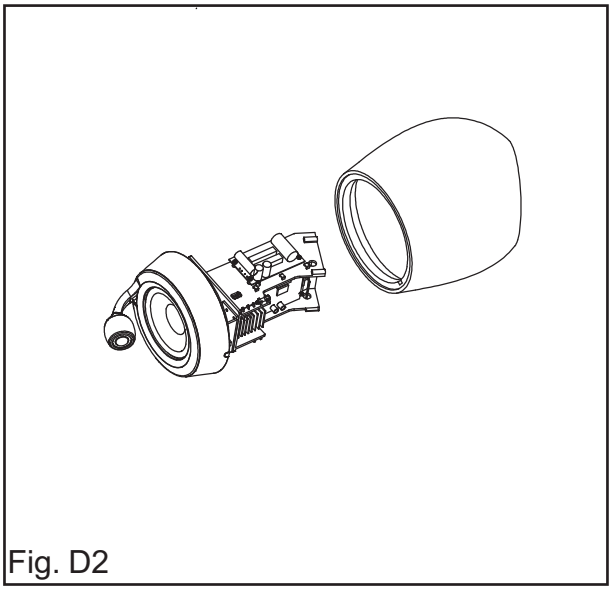


Fig. D2

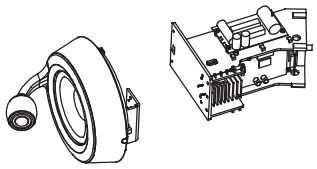


Fig. D3

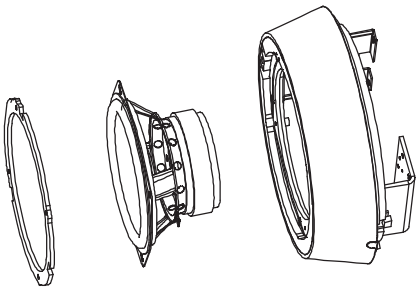


Fig. D6

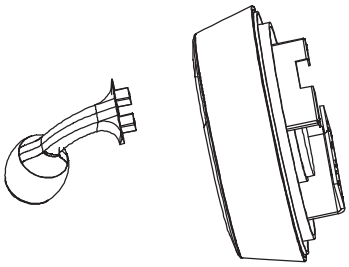


Fig. D4

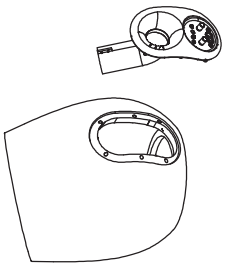


Fig. D7

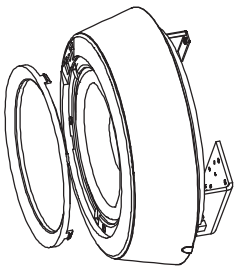
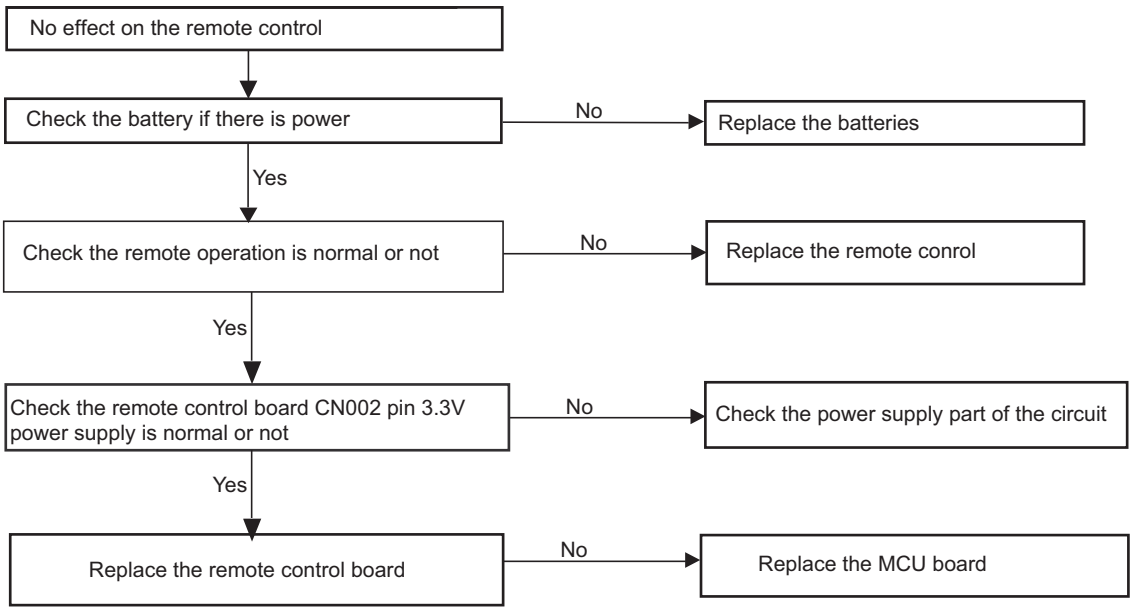


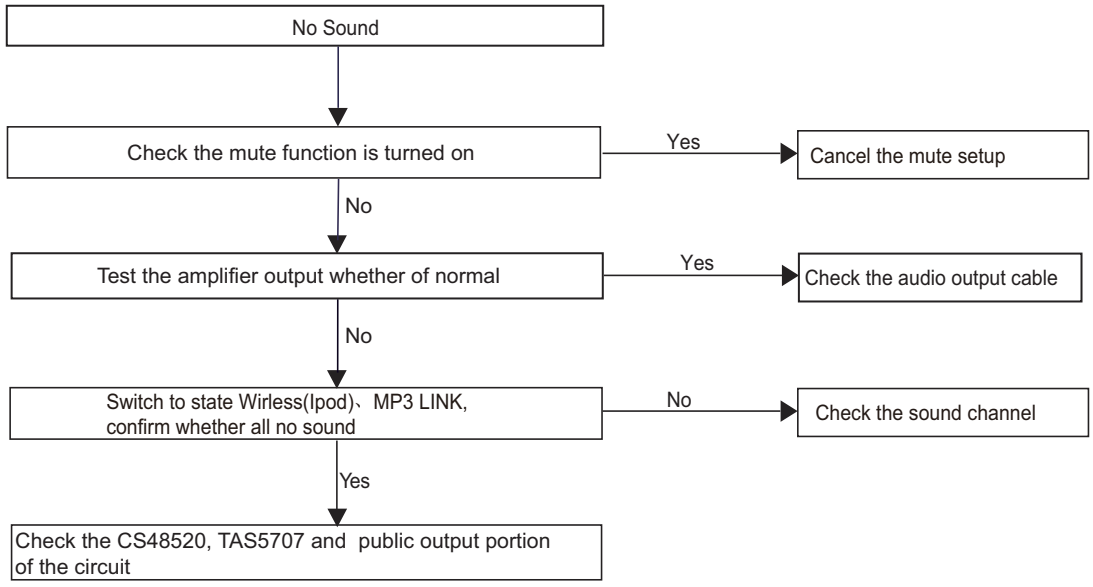
Fig. D5

Troubleshooting

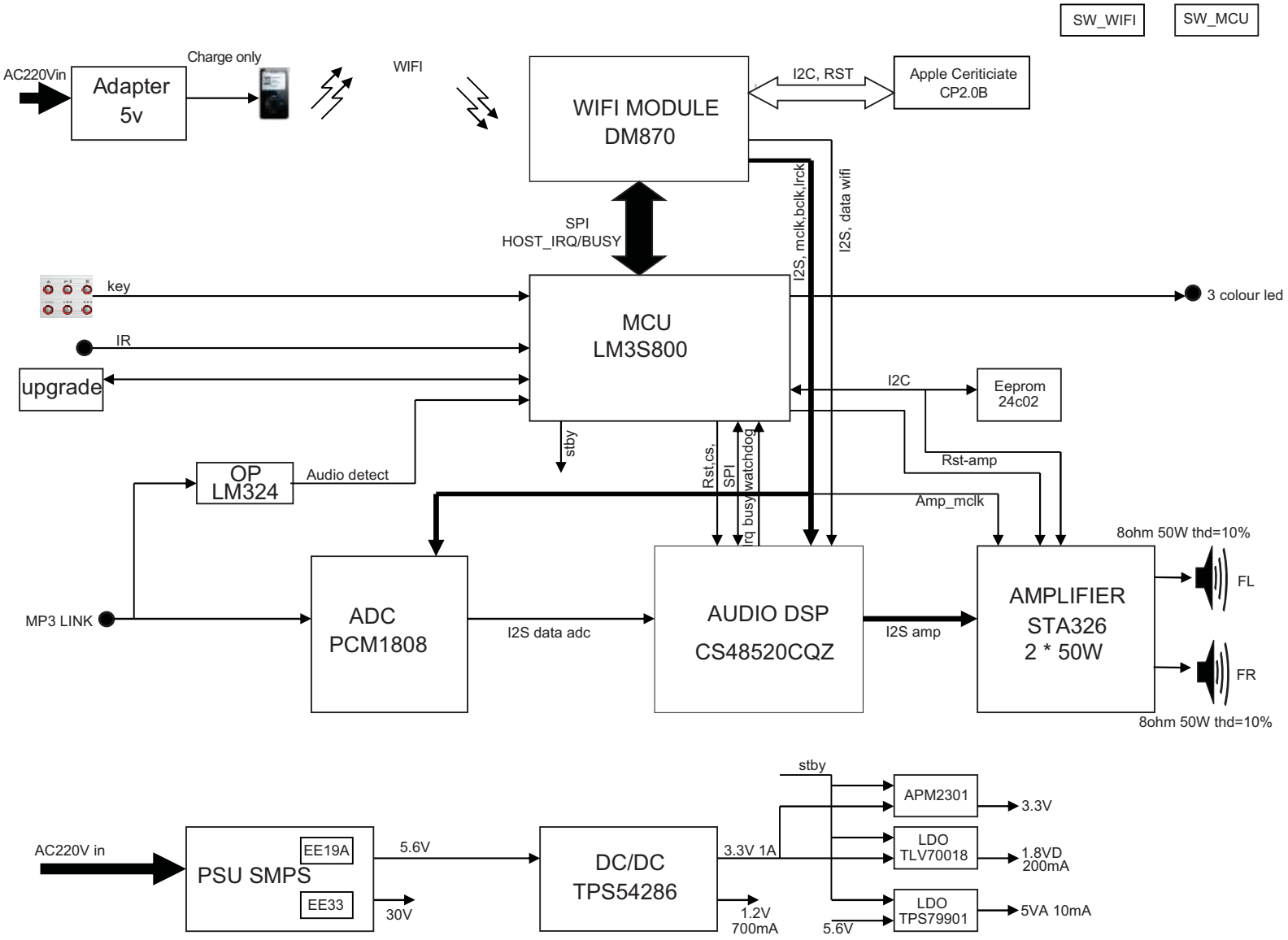
FLOW CHART NO.1



FLOW CHART NO.2

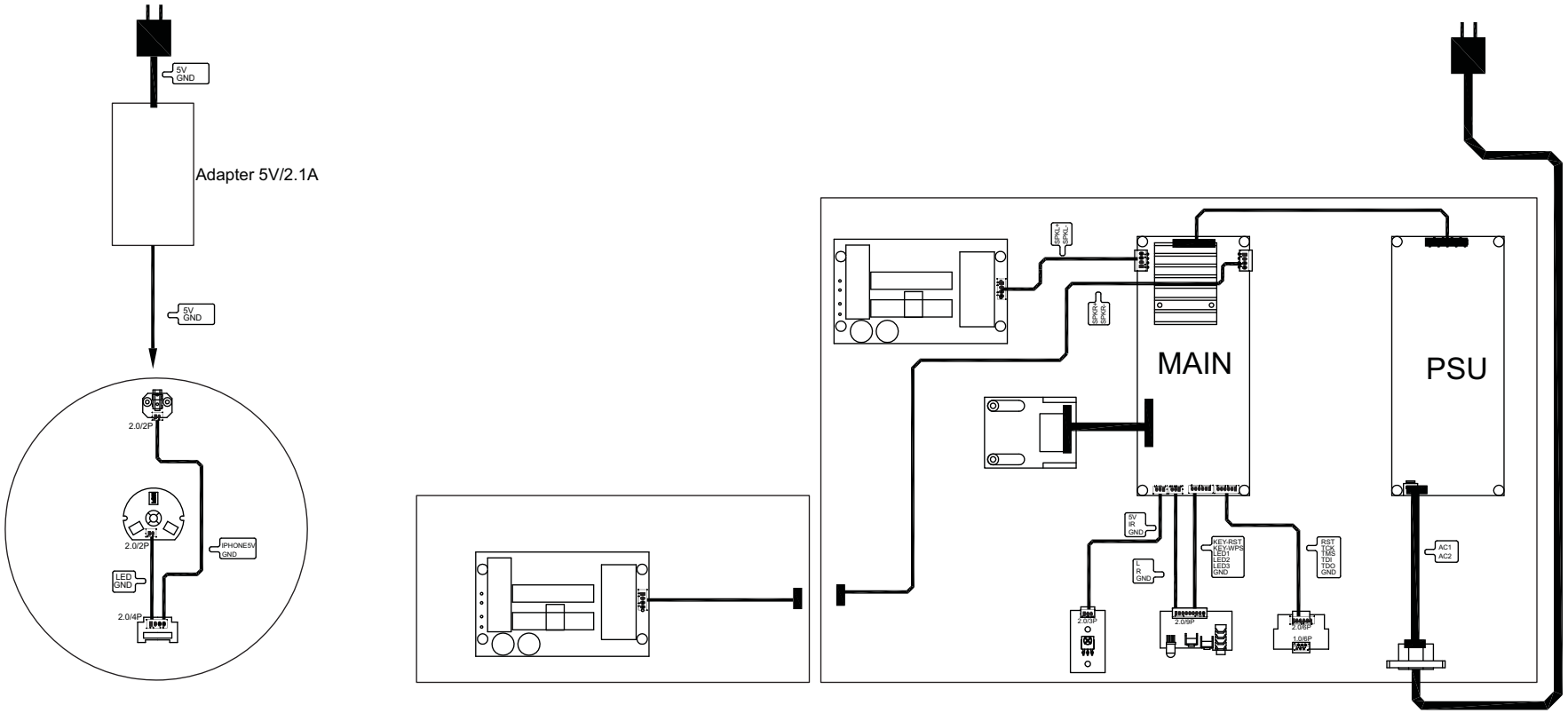


Block Diagram



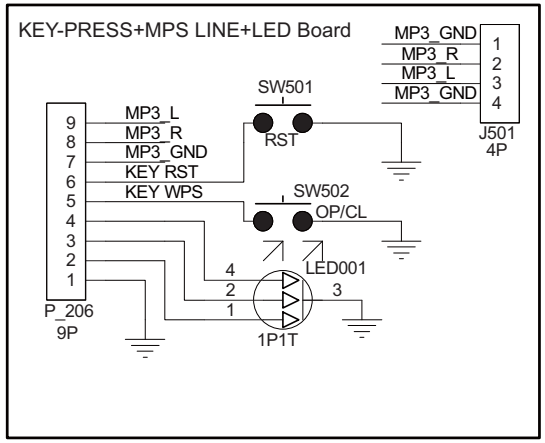
10-1

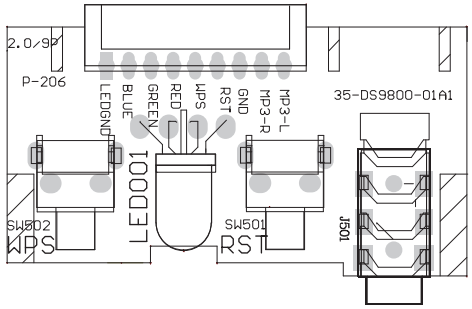
Wiringe Diagram

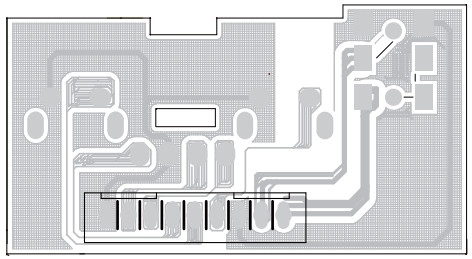


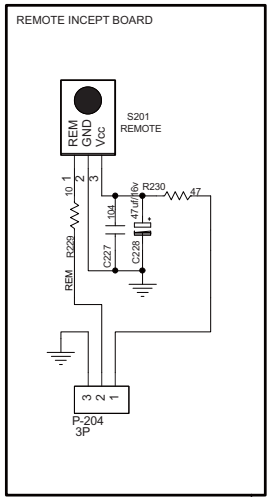
11-1

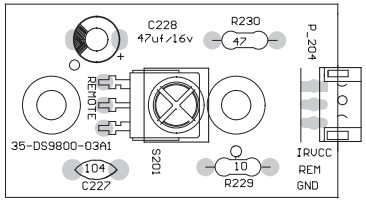
KEY-Press+MPS Line+LED and REMOTE INCEPT BOARD -- Circuit and Layout Diagram

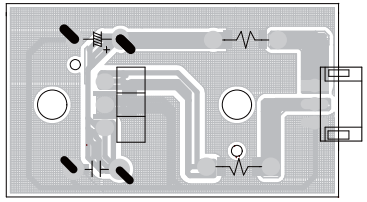




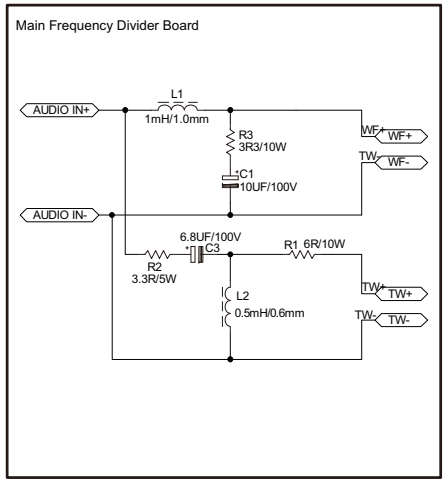


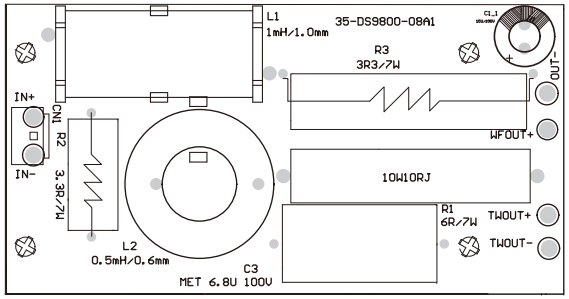


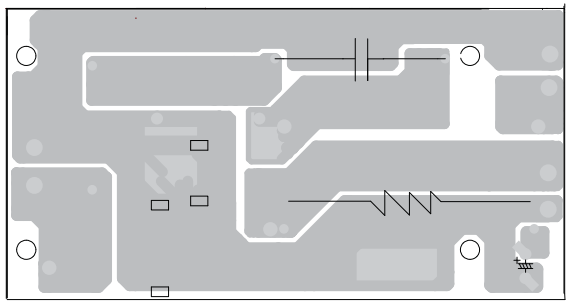




Main Frequency Divider Board -- Circuit and Layout Diagram

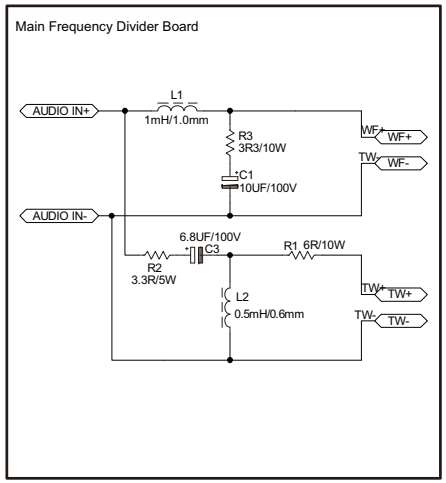


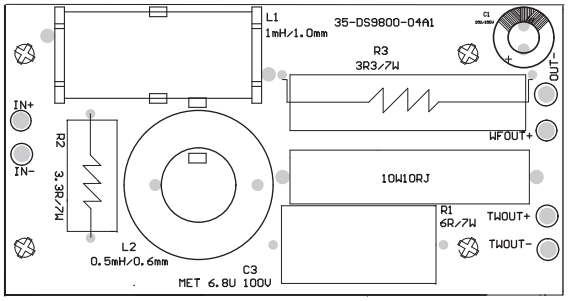


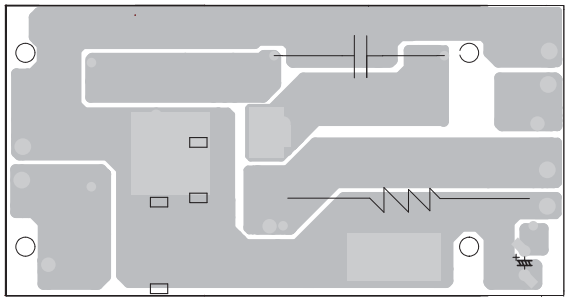


12-2

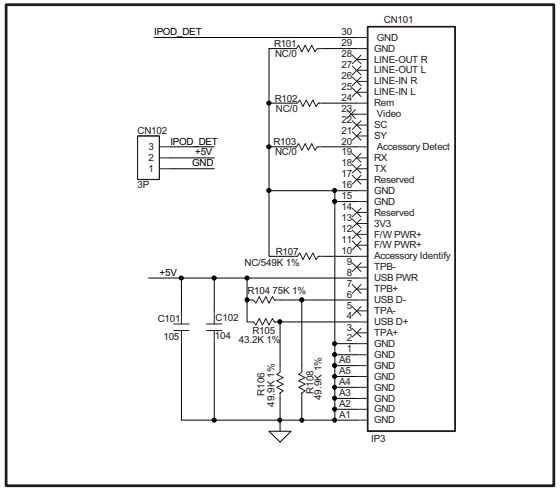
Deputy Frequency Divider Board -- Circuit and Layout Diagram







12-3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R101 NC/0
R102 NC/0
R103 NC/0
R107 NC/549K 1%
R104 75K 1%
R105 43.2K 1%
R106 49.9K 1%
R108 49.9K 1%
CN102
IPOD_DET
+5V
GND
3P
+5V
C101
C102
105
104
GND
Reserved
LINE-OUT R
LINE-OUT L
LINE-IN R
LINE-IN L
Rem
Video
SC
SY
Accessory Detect
RX
TX
Reserved
GND
GND
Reserved
3V3
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F/W PWR+
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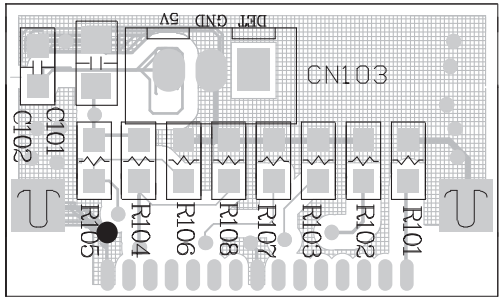
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DET
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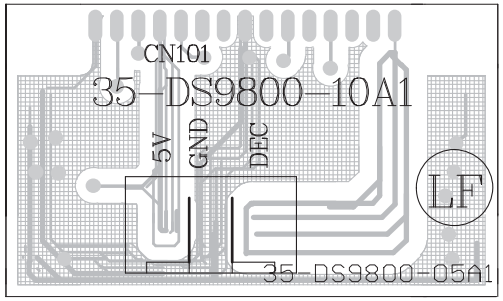
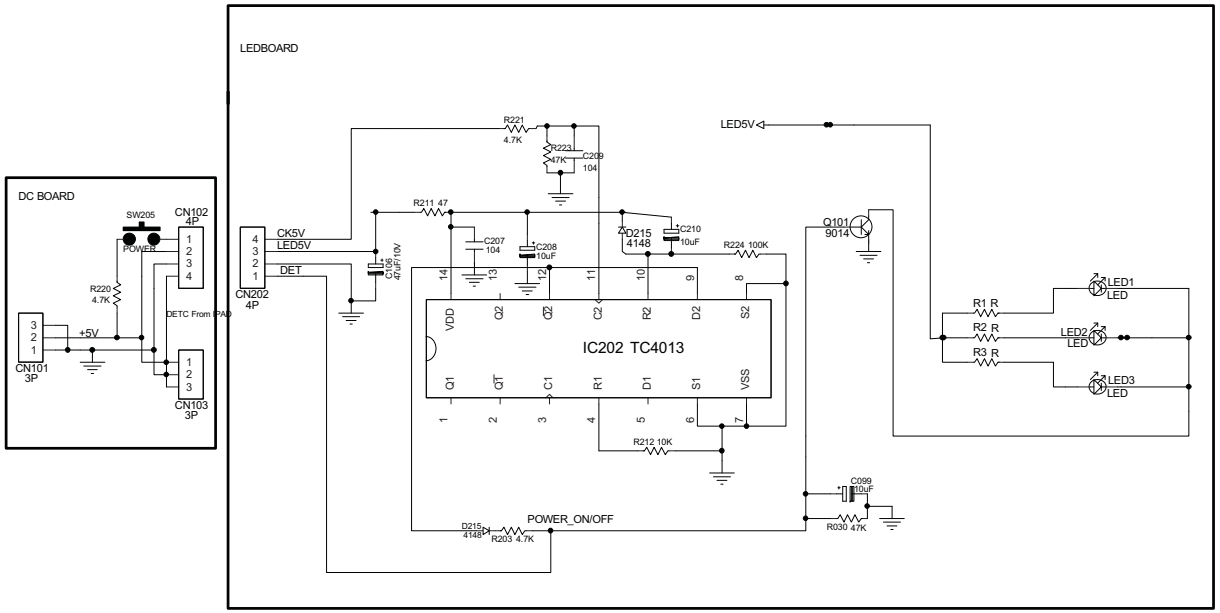
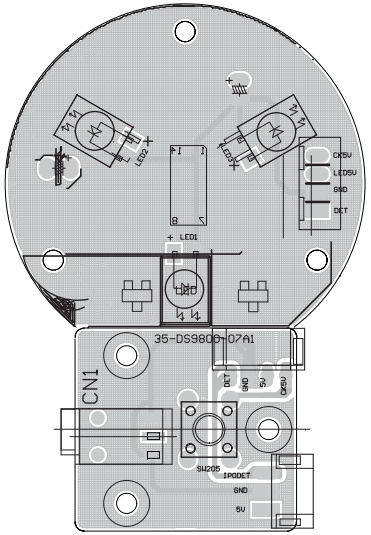
C101
C102
R105
R104
R106
R108
R107
R103
R102
R101

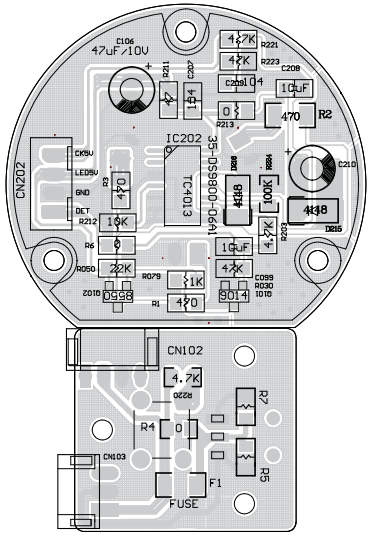

CN101
35-DS9800-10A1
5V
GND
DET
LF
35-DS9800-05A1

12-4

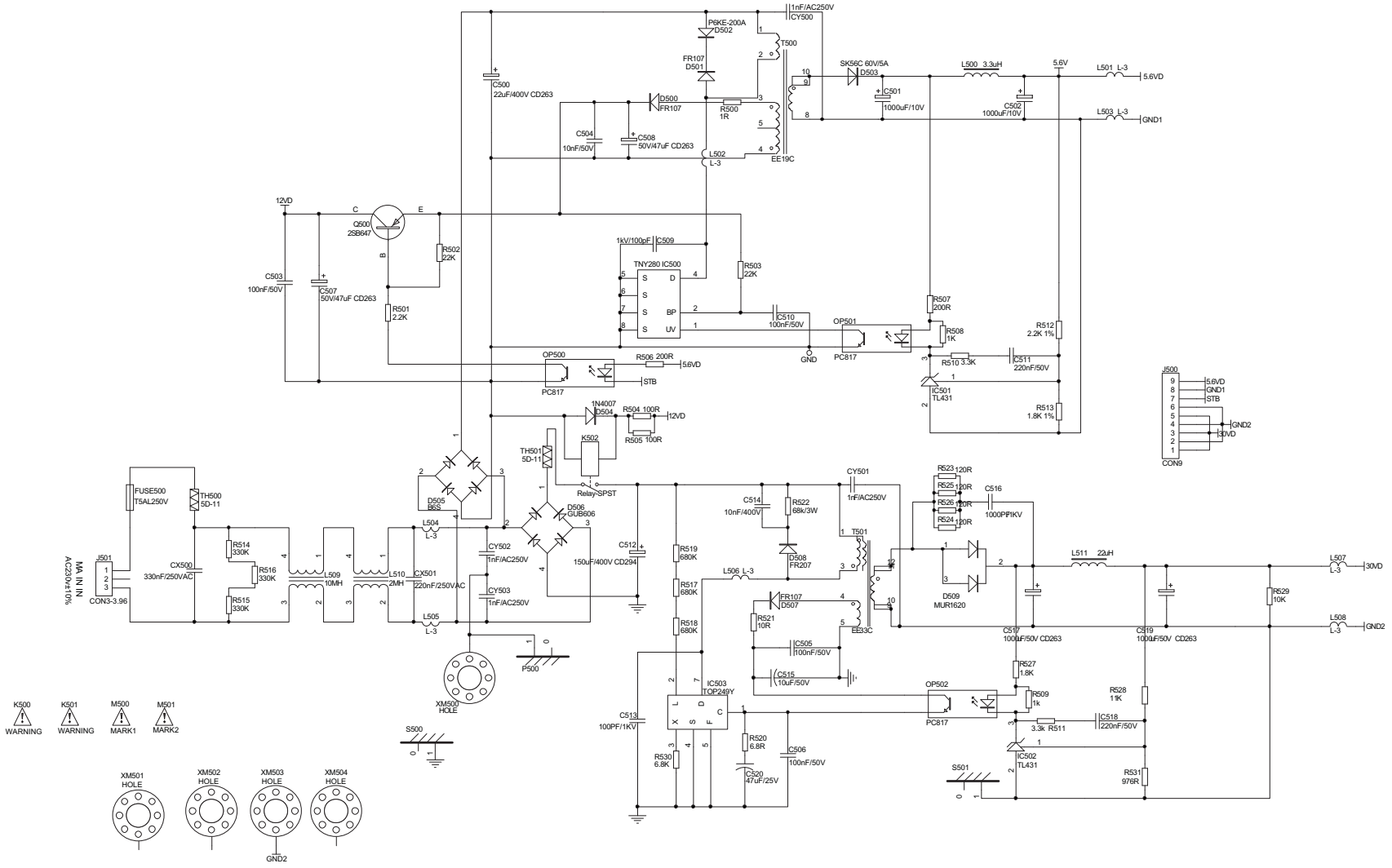
LED and DC Board -- Circuit and Layout Diagram





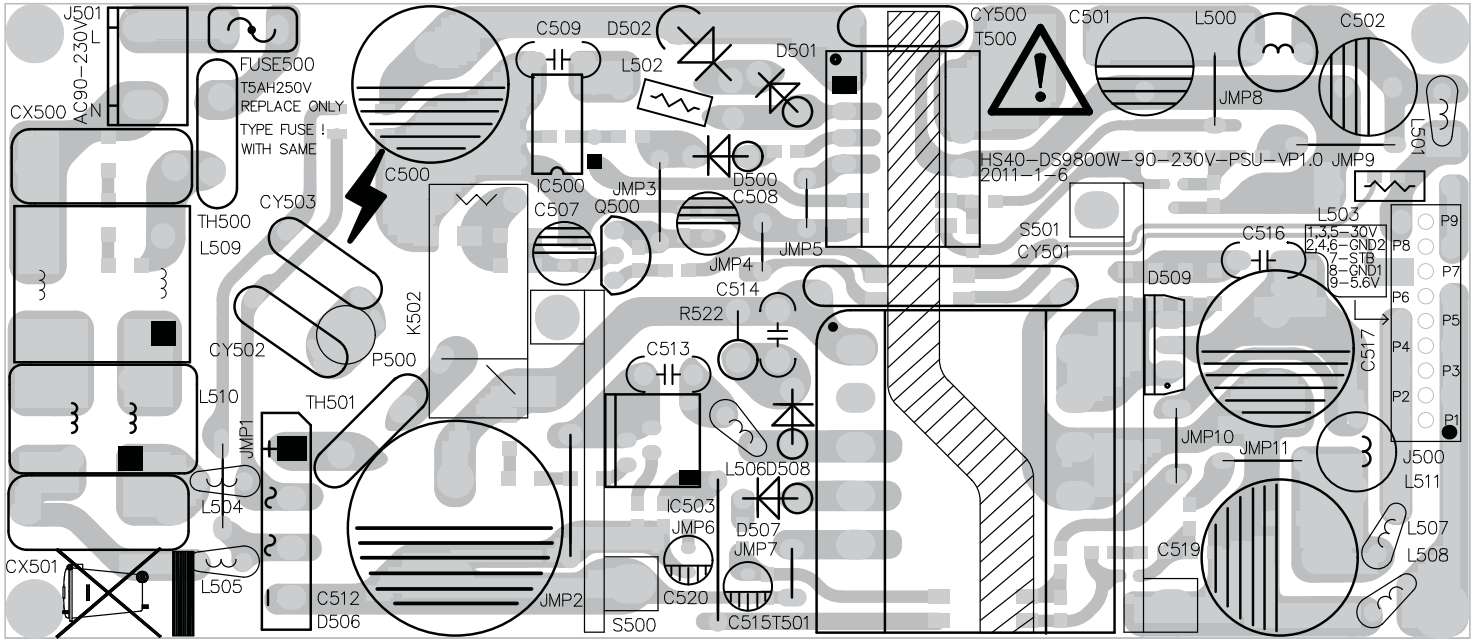


12-5


1nF/AC250V
CY500
P6KE-200A
D502
T500
FR107
D501
C500
22uF/400V CD263
D500
FR107
R500
1R
SK56C 60V/5A
D503
L500 3.3uH
5.6V
L501 L-3
5.6VD
+ C501
1000uF/10V
C502
1000uF/10V
L503 L-3
GND1
C504
10nF/50V
C508
50V/47uF CD263
L502
L-3
EE19C
12VD
Q500
2SB647
R502
22K
C503
100nF/50V
C507
50V/47uF CD263
R501
2.2K
1kV/100pF
C509
TNY280 IC500
R503
22K
C510
100nF/50V
OP501
PC817
R507
200R
R508
1K
R512
2.2K 1%
GND
R510 3.3K
C511
220nF/50V
IC501
TL431
R513
1.8K 1%
OP500
PC817
R506 200R
5.6VD
STB
1N4007
D504
R504 100R
12VD
R505 100R
K502
TH501
5D-11
Relay-SPST
J500
CON9
5.6VD
GND1
STB
GND2
30VD
FUSE500
T5AL250V
TH500
5D-11
D505
B6S
L504
L-3
CY502
1nF/AC250V
D506
GUB606
C512
150uF/400V CD294
CY501
1nF/AC250V
C514
10nF/400V
R522
68k/3W
R523 120R
R525 120R
R526 120R
R524 120R
C516
1000PF/1KV
J501
CON3-3.96
AC230V/110V
CX500
330nF/250VAC
R514
330K
R516
330K
R515
330K
L509
10MH
L510
2MH
CX501
220nF/250VAC
L505
L-3
CY503
1nF/AC250V
R519
680K
R517
680K
R518
680K
L506 L-3
T501
D508
FR207
FR107
D507
EE33C
R521
10R
C505
100nF/50V
C515
10uF/50V
D509
MUR1620
L511 22uH
L507
L-3
30VD
L508
L-3
GND2
C517
1000uF/50V CD263
C519
1000uF/50V CD263
R529
10K
R527
1.8K
R528
1K
R509
1k
OP502
PC817
3.3k R511
C518
220nF/50V
IC502
TL431
R531
976R
S501
IC503
TOP249Y
C513
100PF/1KV
R530
6.8K
R520
6.8R
C520
47uF/25V
C506
100nF/50V
P500
XM500
HOLE
S500
K500
WARNING
K501
WARNING
M500
MARK1
M501
MARK2
XM501
HOLE
XM502
HOLE
XM503
HOLE
XM504
HOLE
GND2

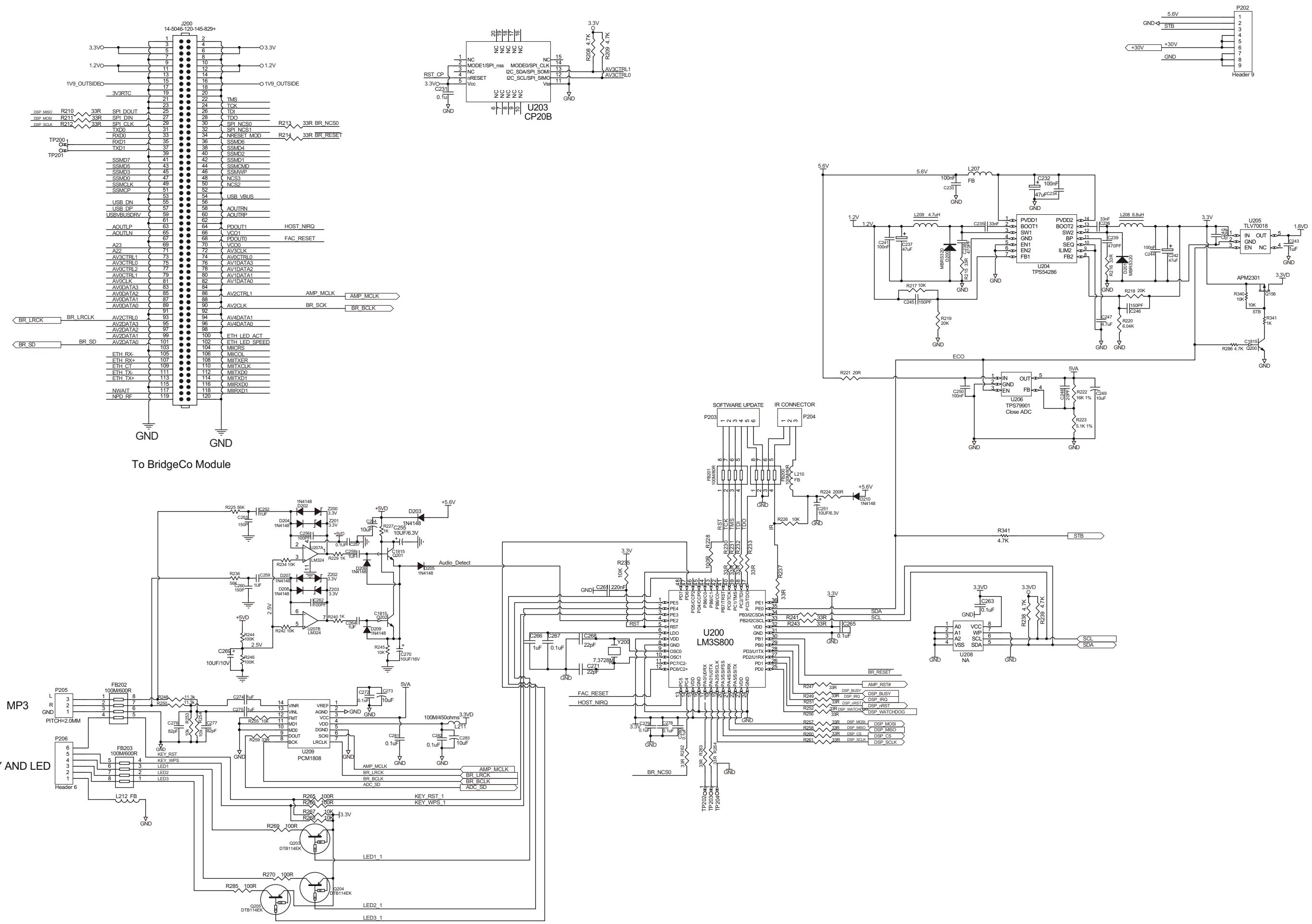
12-6

Power Board -- Layout Diagram



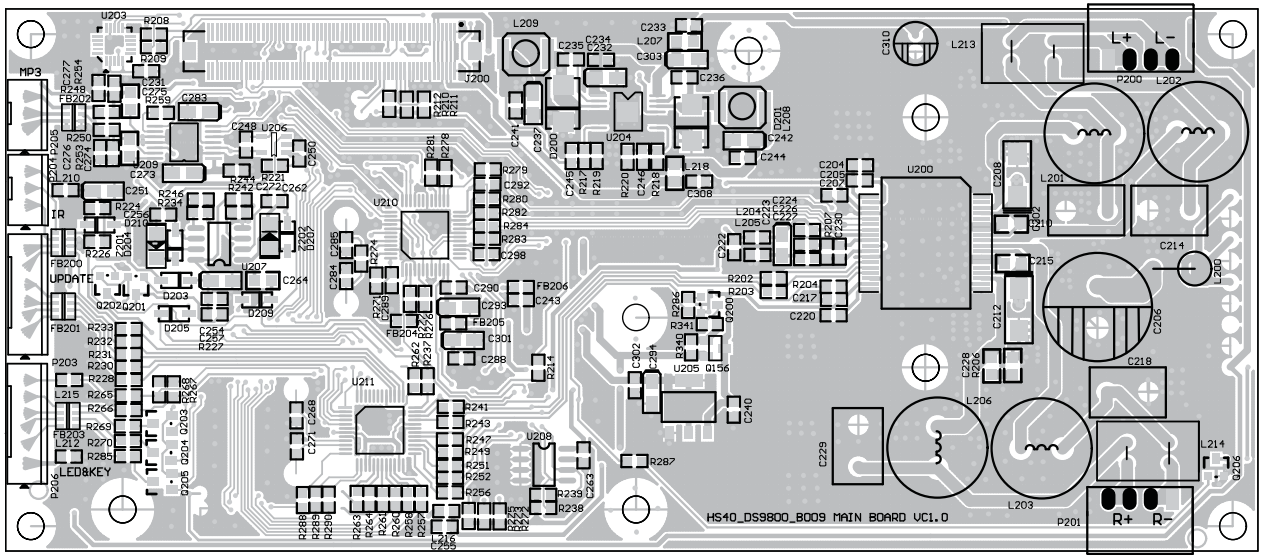
12-7

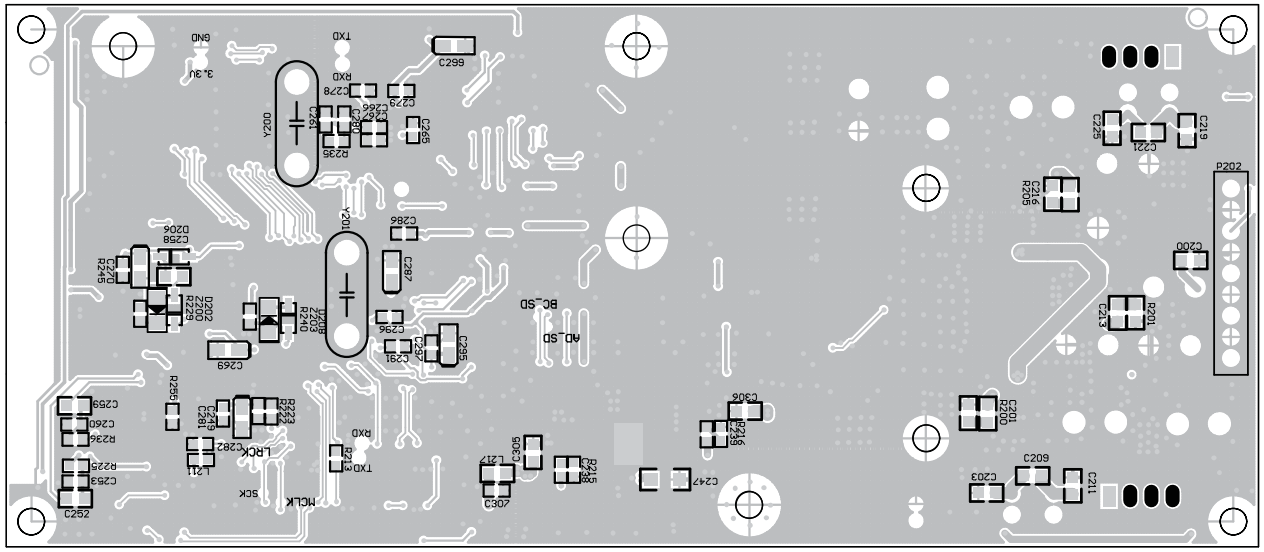
Decoder Board -- Circuit Diagram



12-8

Decoder Board -- Layout Diagram





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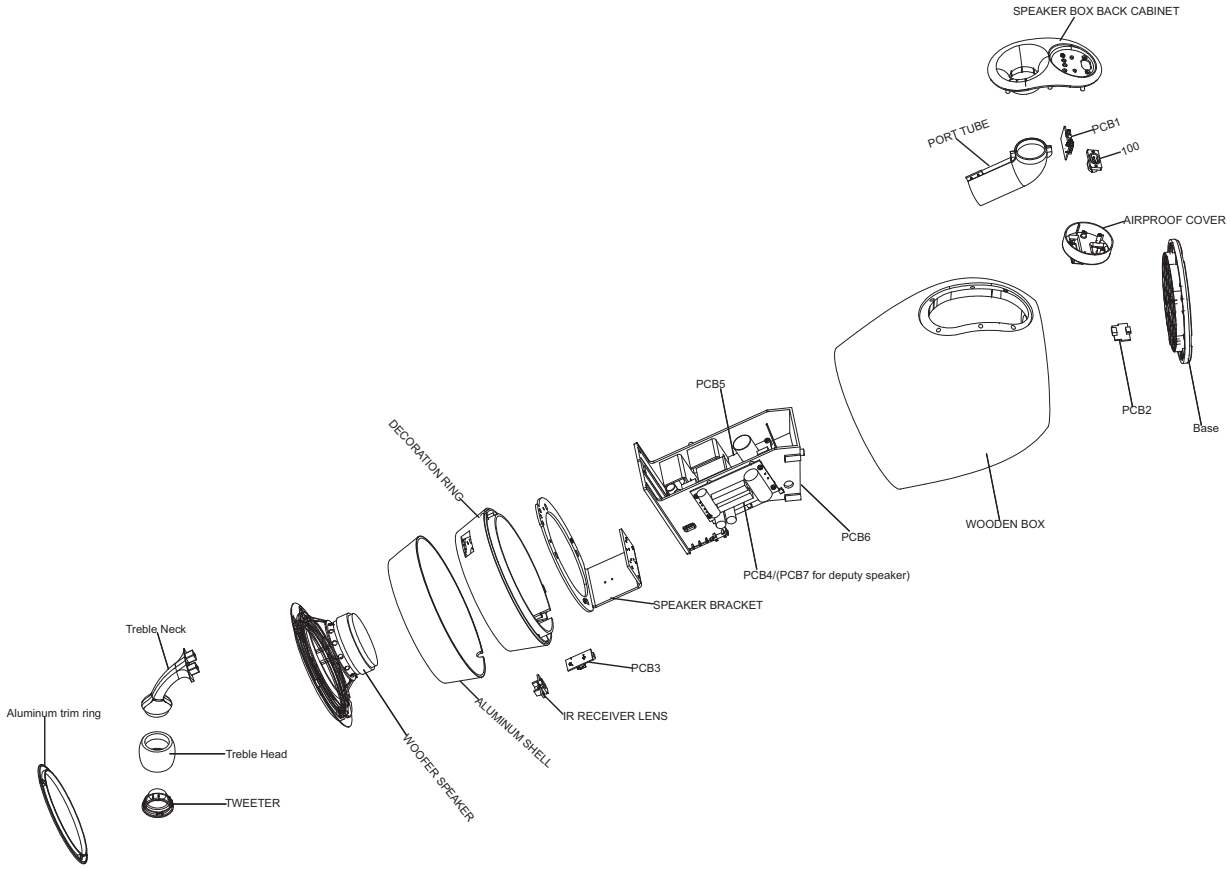
Exploded View



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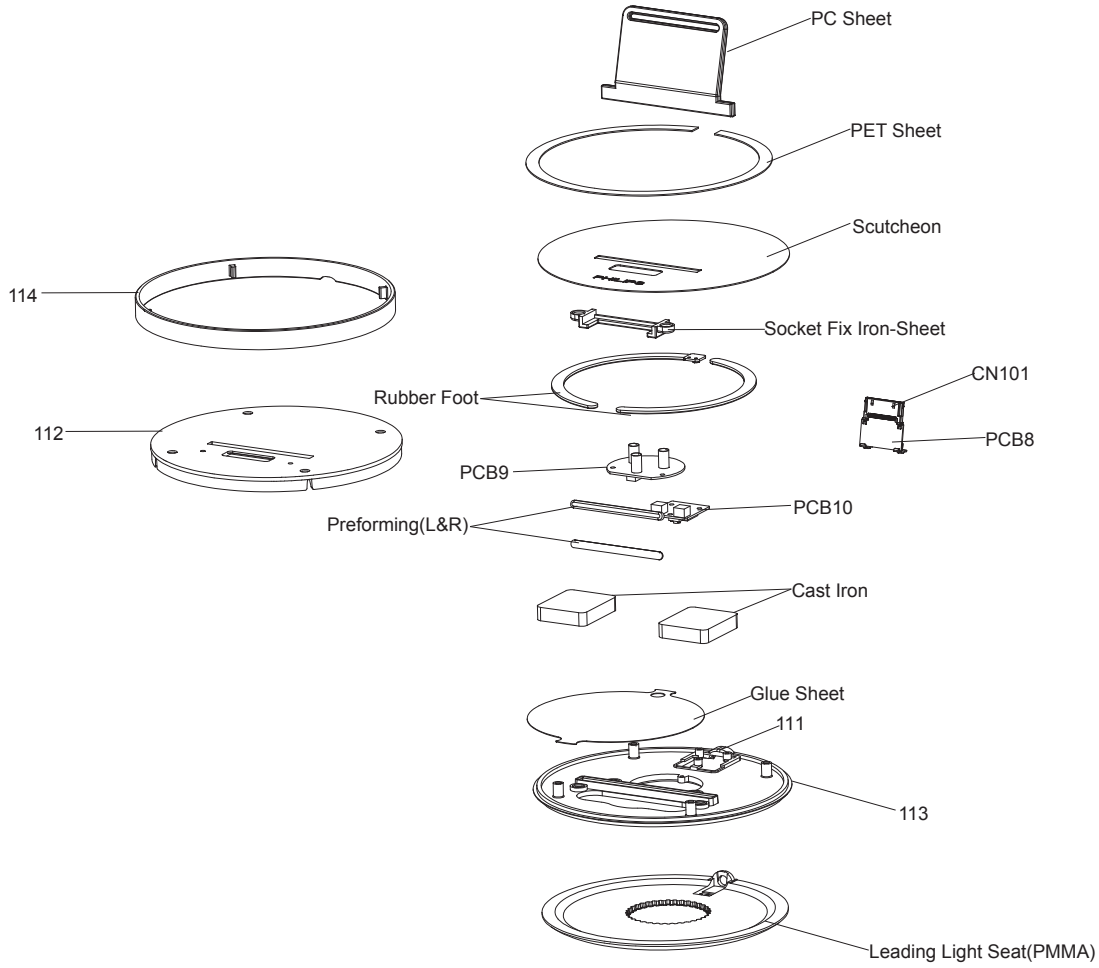
Docking Exploded View



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Revision List

Version 1.0
* Initial Release

Version 1.1
* Addition of DOCKING Exploded View