

SoundDock[®] Portable

Digital Music System



February 16, 2009 - The Apple[®] Computer security chip (U7042) was added to the DSP board to provide "Works With iPhone" compatibility. DOM 9026.

CONTENTS

Safety Information	3
Specifications	4
Part List Notes	5
Electrostatic Discharge Sensitive (ESDS) Device Handling	5
Warranty	5
Product Description	6-7
Power Supply Part List	8
Packaging Part List	9
Figure 1. Packaging Exploded View	9
Speaker Assembly Part List	10
Figure 2. Speaker Assembly Exploded View	10
Baffle Assembly Part List	11
Figure 3. Baffle Assembly Exploded View	11
Dock Assembly Part List	12
Figure 4. Dock Assembly Exploded View	12
Electrical Part Lists	13-25
Disassembly Procedures	26-28
Test Procedures	29
iPhone Test Procedures	30
Tap Command Set Up	31-33
Amplifier Gain Procedure	34
Battery Test	35-36
Block Diagram	37
Revision History	38

SAFETY INFORMATION

1. Parts that have special safety characteristics are identified by the  symbol on schematics or by special notes on the parts list. Use only replacement parts that have critical characteristics recommended by the manufacturer.

2. Make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the unit to the customer. Use the following checks to perform these measurements:

A. Leakage Current Hot Check-With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 "Leakage Current for Appliances" and Underwriters Laboratories (UL) UL6500 / UL60065 / IEC 60065 paragraph 9.1.1. With the unit powered on, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the unit (antennas, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the unit power cord plug in the outlet and repeat test. ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE UNIT TO THE CUSTOMER.

B. Insulation Resistance Test Cold Check-(1) Unplug the power supply and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the unit. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and each exposed metallic cabinet part on the unit. When testing 3 wire products, the resistance measured to the product enclosure should be between 2 and infinite MOhms. Also, the resistance measured to exposed input/output connectors should be between 4 and infinite MOhms. When testing 2 wire products, the resistance measured to exposed input/output connectors should be between 4 and infinite MOhms. If it is not within the limits specified, there is the possibility of a shock hazard, and the unit must be repaired and rechecked before it is returned to the customer.

CAUTION: The SoundDock® Portable Digital Music System contains no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory service.

WARNING: Danger of explosion if remote battery is incorrectly replaced. Replace with only Duracell, Eveready, Energizer, Maxell, Toshiba or Shun Wo CR2032 or DL2032 3-volt lithium battery.

PROPRIETARY INFORMATION

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SPECIFICATIONS

Electrical

Power Supply Input:

Voltage: 100VAC to 240VAC (universal), 50-60Hz
Current Consumption: 1 A (rms) max for 115VAC
.5 A (rms) max for 230VAC

Power Supply Output:

Voltage: 20V +/- 1V DC
Current: 2A (max)

SoundDock® Input:

Voltage: 20V, +/- 1V DC
Current Consumption: 2 Amp (max, continuous)
Power Consumption: 40W (max, continuous)

Acoustic

Drivers: 2 - 2.25" Full Range Twiddler™ speakers
Nominal Impedance: 2.2 Ohms
Port Tuning: 65 HZ

Physical Description

Mechanical Specifications: Battery attached, Dock open
6.59"H x 12.08"W x 5.75"D (16.73 cm x 30.68 cm x 14.60 cm)
Weight: System with Battery attached
4.45 lb (2.0 kg)
Enclosure: Ultrasonically welded PC/ABS plastic

ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICE HANDLING

This unit contains ESDS devices. We recommend the following precautions when repairing, replacing or transporting ESDS devices:

- Perform work at an electrically grounded work station.
- Wear wrist straps that connect to the station or heel straps that connect to conductive floor mats.
- Avoid touching the leads or contacts of ESDS devices or PC boards even if properly grounded. Handle boards by the edges only.
- Transport or store ESDS devices in ESD protective bags, bins, or totes. Do not insert unprotected devices into materials such as plastic, polystyrene foam, clear plastic bags, bubble wrap or plastic trays.

WARRANTY

The SoundDock® Portable Digital Music System electronics are covered by a limited 1-year transferable warranty.

PART LIST NOTES

1. This part is not normally available from Customer Service. Approval from the Field Service Manager is required before ordering.
2. The individual parts located on the PCBs are listed in the Electrical Part List.
3.  This part is critical for safety purposes. Failure to use a substitute replacement with the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards.
4. This part is referenced for informational purposes only. It is not stocked as a repair part. Refer to the next higher assembly for a replacement part.

PRODUCT OVERVIEW

PRODUCT DESCRIPTION

The SoundDock® Portable Digital Music System is the next product in the line of Bose® iPod speaker systems. It offers all of the features of the original SoundDock and adds rechargeable battery enabled portability, a stow-away dock, an auxiliary input and a fresh appearance.

Features:

- Rotating iPod Dock
- Volume Controls (touch sensors)
- Vibration Isolation Mounting
- Power Input
- AUX input
- Battery Connection
- Infrared Detector
- Indicator LED
- Carrying Handle (Acoustic Port)

POWER SUPPLY

A 20 Volt, 40 Watt switching power supply is provided. The power supply is intended to plug directly into an AC outlet rather than using an AC line cord. This universal power supply can be used with any standard power distribution network including 90 volts to 240 volts and 50 Hz to 60 Hz.

There are two version of the power supply, they were developed independently and therefore have different electrical designs. Outwardly they look very similar. Separate from the power supply will be one or more sets of clips – also referred to as prongs, plugs, or adapters. The clips connect to the power supply housing and interface to the local AC power socket convention.

There are seven different types of clips:

- North America
- EU
- China
- UK
- Australia
- Korea
- Argentina

The two different supplies do not have the same mechanical interface for the clips – clips from one version of the supply cannot be used on the other. It is easy to tell them apart: one uses a circular clip design and the other uses a rectangular clip design. The combination of two versions, two colors and seven regions results in a total of 28 different clips. The power supply is not serviceable.

REMOTE CONTROL

An infrared remote control is included. It uses the same battery that is used with our credit card style remote controls: CR2032. The infrared codes used for this remote control do not overlap with those used for other Bose products. The remote control is not serviceable.

PRODUCT DESCRIPTION CONTINUED

BATTERY

SoundDock® Portable uses a 4-cell lithium-ion rechargeable battery similar to those used for laptop computers. It comes in black or white to match the console.

The battery comes already attached to the SoundDock Portable console. A spring loaded coin screw serves as the attachment mechanism. Electrically, connection is made through an 8-pin blade connector.

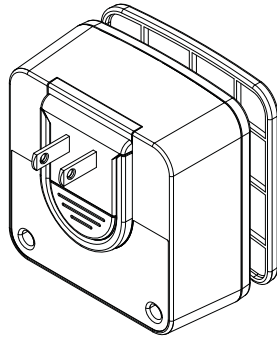
The battery contains the cells, protection circuitry, fuel-gauging circuitry and charging circuitry. It is not serviceable and must be recycled or returned to the vendor if it is not working properly. Note that the SoundDock Portable battery expected life time is about 3 years or 300 charging cycles. Additional batteries are available separately.

IPOD INSERTS

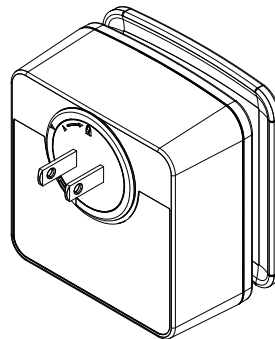
All SoundDock Portable systems are shipped with an iPod insert already inserted into the dock. It is purposely over-sized and allows any iPod with a docking connector to be plugged in. It does not, however, provide mechanical support to the iPod, and it is highly recommended that the appropriate insert from Apple be used.

Additionally, SoundDock Portable systems are shipped with an insert that is appropriate for use with an iPod Nano. This is because it is considered especially important that an insert be used with a Nano.

POWER SUPPLY PART LIST



301141-001 BLK
301141-002 WHT
or
301141-011 BLK
301141-012 WHT



306386-101 BLK
306386-102 WHT

Note: The power supply part number does not include the AC clip. See part list below for details.

There are two different power supplies created for the SoundDock® Portable Digital Music System. Each has a unique mechanical interface. One is circular and the other is rectangular, they are not interchangeable. Use the part list below to identify the part numbers needed for each version of the supply.

Description	Bose® Part Number	Note
PWR PACK, 20V, 2A, BLK (rectangular) PWR PACK, 20V, 2A, WHT (rectangular) or PWR PACK, 20V, 2A, BLK (rectangular) PWR PACK, 20V, 2A, WHT (rectangular)	301141-001 301141-002 or 301141-011 301141-012	3
PWR PACK, 20V, 2A, BLK (circular) PWR PACK, 20V, 2A, WHT (circular)	306386-101 306386-102	⚠
AC CLIP, 120V, US, BLK (rectangular) AC CLIP, 120V, US, WHT (rectangular) AC CLIP, 120V, US, BLK (circular) AC CLIP, 120V, US, WHT (circular) *AC CLIP KIT, APAC, BLK (rectangular) *AC CLIP KIT, APAC, WHT (rectangular) *AC CLIP KIT, APAC, BLK (circular) *AC CLIP KIT, APAC, WHT (circular) *AC CLIP KIT, EU/UK, BLK (rectangular) *AC CLIP KIT, EU/UK, WHT (rectangular) *AC CLIP KIT, EU/UK, BLK (circular) *AC CLIP KIT, EU/UK, WHT (circular)	304114-001 304114-002 304158-001 304158-002 304114-251 304114-252 304158-351 304158-352 304114-121 304114-122 304158-121 304158-122	3 ⚠

*APAC kit includes the AC clips for China, Australia and Korea

*EU/UK kit includes the AC clips for Europe and the United Kingdom

PACKAGING PART LIST

BOSE® SOUNDDOCK PORTABLE DIGITAL MUSIC SYSTEM

Item Number	Description	Part Number	QTY	Note
1	OWNERS GUIDE, MAX, 8L, US/EU/UK OWNERS GUIDE, SD P, 6L, AP	300673 306331	1	
2	SEE POWER SUPPLY DETAILS ON PAGE 7	-	-	
3	SEE AC PRONG DETAILS ON PAGE 7	-	-	
4	INSERT NANO, SD P, BLK INSERT NANO, SD P, WHT	307663-001 307663-002	1	
5	REMOTE CNTRL, IR, 6 FUNC, BLK REMOTE CNTRL, IR, 6 FUNC, WHT	301373-001 301373-002	1	
6	PACKING, TRAY, TOP 14 X 9 X 4	300698	1	
7	PACKING, TRAY, BOTTOM 14 X 9 X 4	300699	1	
8	CARTON, BLK 14.19 X 9.19 X 8, PRINTED CARTON, BLK 14.19 X 9.19 X 8, BLANK	311574 300697	1	
-	INSERT, UNIVERSAL, WHT	303570-002		
-	INSERT, UNIVERSAL, BLK	303570-001	1	
-	RECHARGE, LI-ION, BATTERY PACK, BLK RECHARGE, LI-ION, BATTERY PACK, WHT	043517 043516	1	3 ⚠

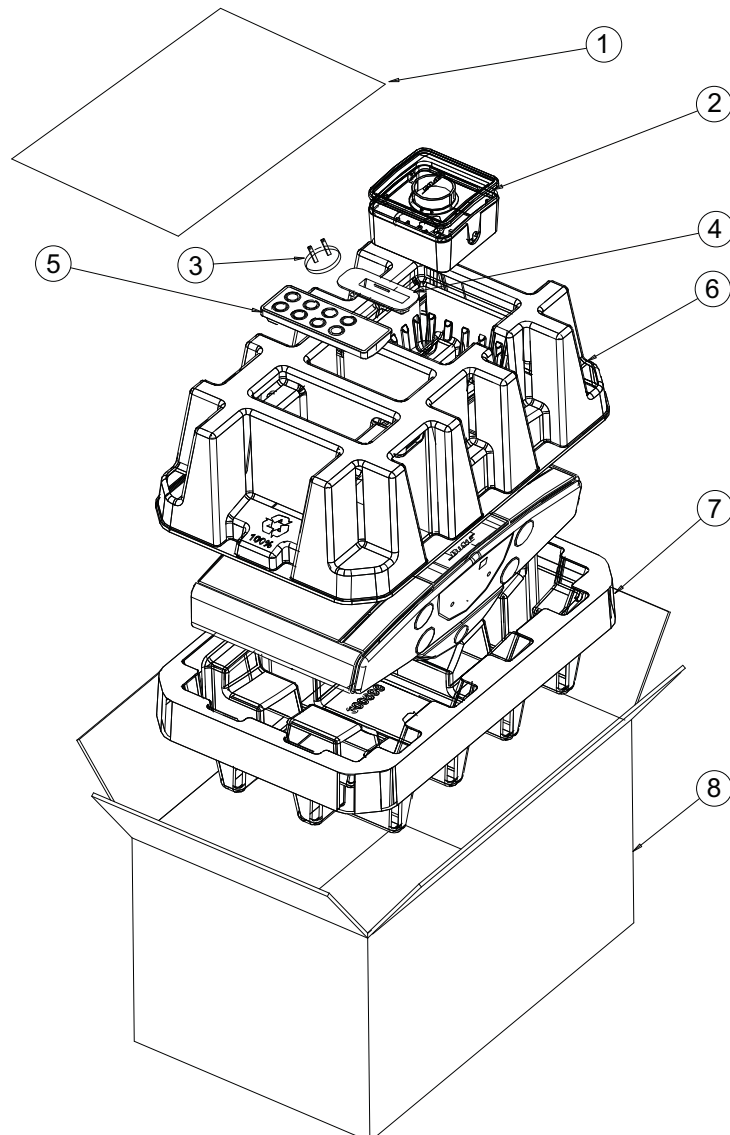


Figure 1. Packing Exploded View

SPEAKER ASSEMBLY PART LIST

BOSE® SOUNDDOCK PORTABLE DIGITAL MUSIC SYSTEM

Item Number	Description	Part Number	QTY	Note
1	BAFFLE, FRONT, SHEET METAL	-	1	4
2	NUT PLATE, LEFT	300679-001	1	
3	RECHARGE, LI-ION, BATTERY PACK, BLK RECHARGE, LI-ION, BATTERY PACK, WHT	043517 043516	1	3 ⚠
4	SCREW, 6-13 X .625, PAN, XREC/SQ	288374-010	6	4
5	TWIDDLER ASSY W/HARNESS	302612-001	1	
6	NUT PLATE, RIGHT	300680-001	1	
7	CABLE, 28AWG, RIBBON, 1.0MM, 220MM	302209-15220	1	
8	IO BOARD, PCB ASSY, SVC, ROHS	307957-002	1	3 ⚠
9	SCREW, 6-13 X .5/8 LG HD XREC/SQ	307354-010	1	4
10	SCREW, 6-13 X .625, PAN, XREC/SQ	288374-010	6	4
11	MODULE ASSY, CRADLE, SVC, MD SLVR, BLK MODULE ASSY, CRADLE, SVC, MD SLVR, WHT	300660-101 300660-102	1	
12	SCREW, 6-13 X 5/8 LG HD XREC/SQ	-	4	4
13	FOOT, RUBBER	301750-001	4	
14	GRILL, ASSY, MD SLVR, BLK GRILL, ASSY, MD SLVR, WHT	300684-001 or 309981-001 300684-002 or 309981-002	1	
15	GRILL GASKET	304107-018	4	
16	GASKET, EMI, RECTANGULAR	307375-050	2	
17	CABLE, FLEX, 2POS, 0.5P	310678-001	1	
18	ENCLOSURE, REAR, BLK ENCLOSURE, REAR, WHT	300676-011 300676-012	1	
-	FASTENER, INTERLOCK, 120mm (velcro)	309014-120	2	
-	FASTENER, INTERLOCK, 120mm (velcro)	309014-025	2	

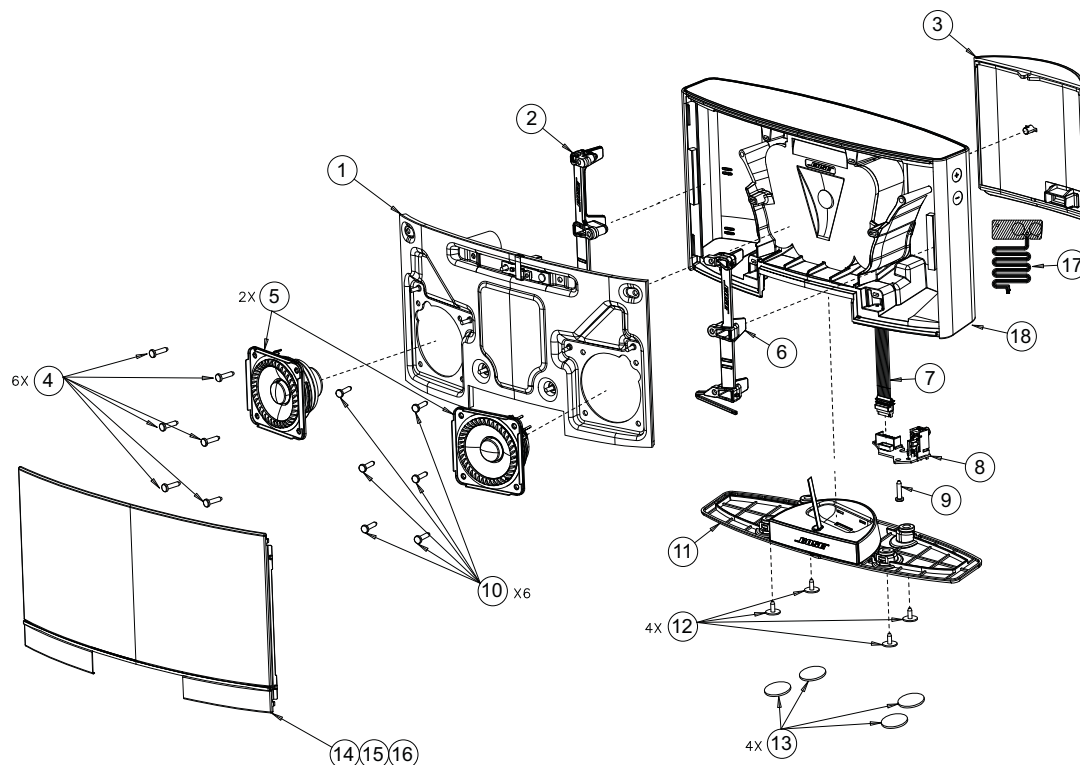


Figure 2. Speaker Assembly Exploded View

BAFFLE ASSEMBLY PART LIST

BOSE® SOUNDDOCK® PORTABLE DIGITAL MUSIC SYSTEM

Item Number	Description	Part Number	QTY	Note
1	FOAM, TOP, PORON	308109-002	1	
2	PAD, THERMAL	303561-001	1	
3	*AMP BOARD, SVC, ROHS	*307960-002	1	
4	CABLE, FFC, 25POS, 38MM	301956-038	2	
5	SCREW, TAPP, 6-32 x .375, PAN, TORX	-	7	4
6	IR, SVC BOARD, ROHS	307961-002	1	
7	CABLE, FFC, 5POS, 85MM	301957-085	1	
8	SCREW, TAPP, 6-32 x .375, PAN, TORX	-	1	4
9	TAPE, FOAM	307725-012	1	
10	BAFFLE, FRONT, SHEET METAL	300696-001	1	
11	FOAM, BOTTOM, PORON	308110-002	1	
12	*DSP, SVC BOARD, ROHS (Works With iPhone)	*319975-001S	1	
13	SPS, SVC BOARD, MAX, ROHS	307959-002	1	

* See page 33 - Default gain adjustment

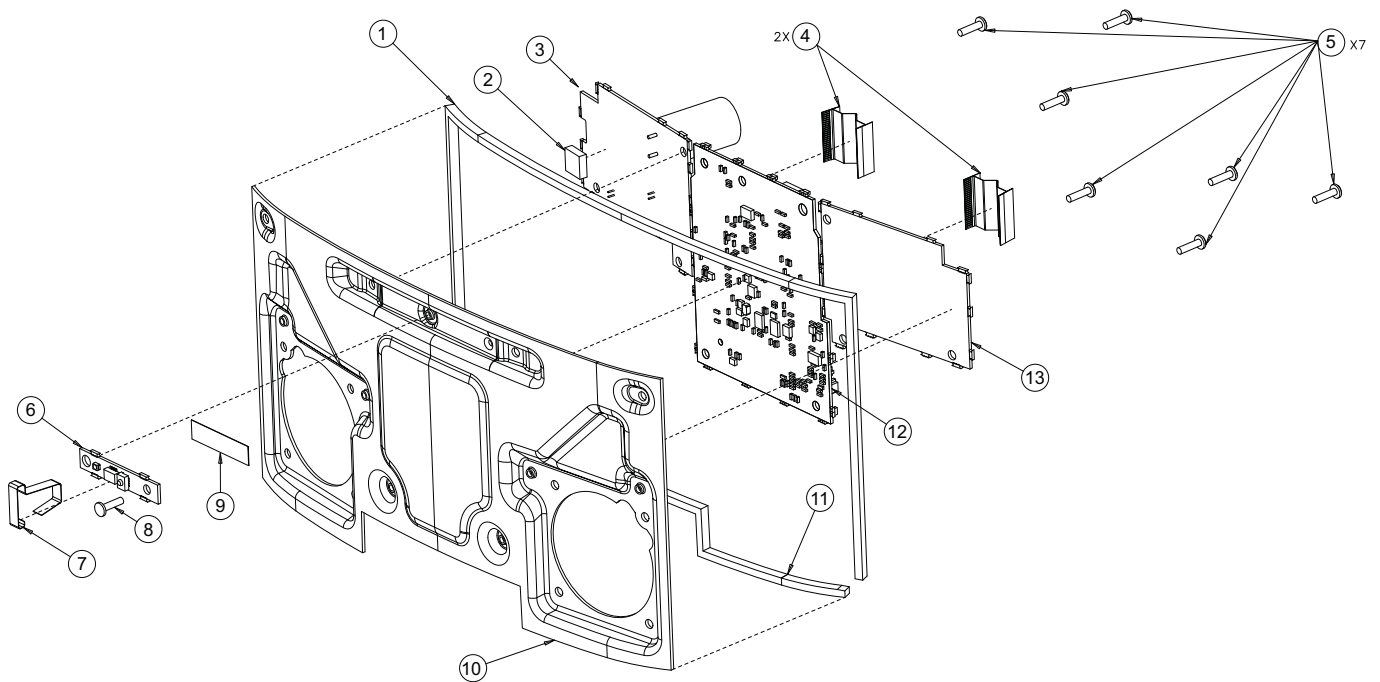


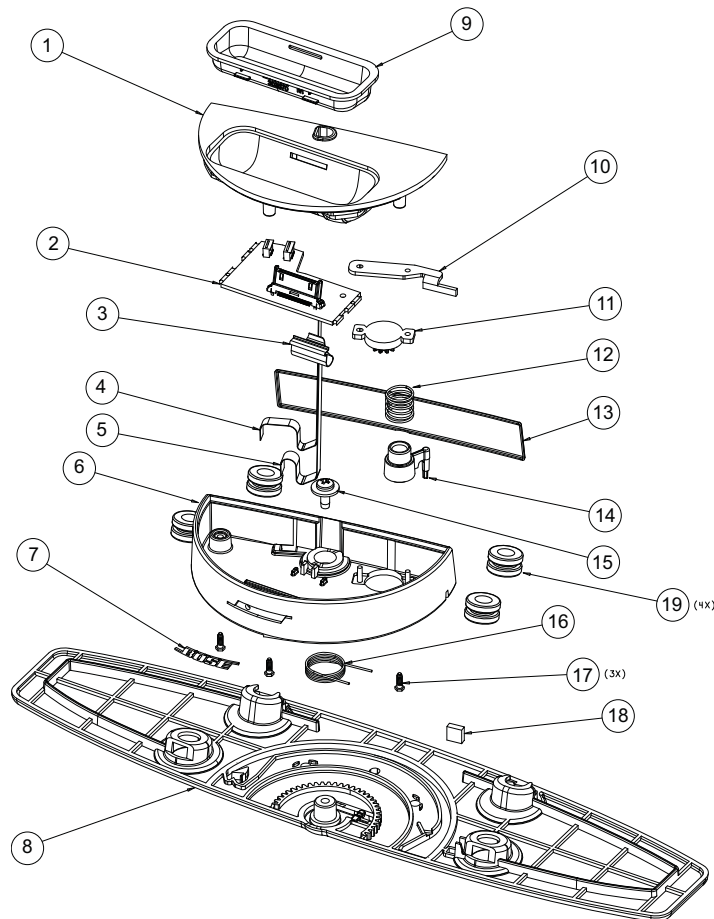
Figure 3. Baffle Assembly Exploded View

DOCK ASSEMBLY PART LIST

BOSE® SOUNDDOCK® PORTABLE DIGITAL MUSIC SYSTEM

Item Number	Description	Part Number	QTY	Note
1	TOP CRADLE, BLK TOP CRADLE, WHT	300690-001 300690-002	1	
2	DOCK, SVC BOARD	307958-002	1	
3	INSERT CLIP	303567-001	1	
4	CABLE, FFC, 8POS, 0.5P, 155MM	303564-155	1	
5	CABLE, FFC, 10POS, 0.5 MMP, 165MM	303565-165	1	
6	CRADLE ASSY, PTD, MED SLVR, BLK CRADLE ASSY, PTD, MED SLVR, WHT	300685-004 300685-003	1	
7	LOGO, NAMEPLATE, CURVED	301757-001	1	
8	PLATE, BOTTOM ENCL, BLK	305265-001	1	
9	UNIVERSAL INSERT, IPOD, BLK UNIVERSAL INSERT, IPOD, BLK	303570-001 303570-002	1	
10	PLATE, CRADLE STOP	304103-001	1	
11	DAMPER, GEAR, LOW PROFILE	305113-001	1	
12	SPRING, CRADLE LATCH	309584-002	1	
13	DOCK, TRIM, METAL, BLK DOCK, TRIM, METAL, WHT	301498-001 301498-002	1	
14	LATCH	300686-001	1	
15	SCREW-6-32-PAN_HD-ROLOK	306601-001	1	
16	SPRING, DOCK	301754-001	1	
17	SCREW, THD FRM, 2-28 X 1/4, PAN	289396-004	3	3
18	MAGNET, DOCK	304109-001	1	
19	ISOLATION GROMMET	305269-001	4	

Figure 4. Dock Assembly Exploded View



ELECTRICAL PART LIST

DSP PCB Assembly

Resistors

Reference Designator	Description	Part Number	Note
R7000	10K, 0603, .1W, 1%	191465-1002	
R7001	10K, 0603, .1W, 1%	191465-1002	
R7002	15K, 0805, .1W, 1%	133625-1502	
R7003	15K, 0805, .1W, 1%	133625-1502	
R7004	10K, 0603, .1W, 1%	191465-1002	
R7006	1M, 0603, .1W, 5%	199403-105	
R7007	1M, 0603, .1W, 5%	199403-105	
R7008	10K, 0603, .1W, 1%	191465-1002	
R7009	10K, 0603, .1W, 1%	191465-1002	
R7010	1M, 0603, .1W, 5%	199403-105	
R7012	1M, 0603, .1W, 5%	199403-105	
R7013	1M, 0603, .1W, 5%	199403-105	
R7014	1M, 0603, .1W, 5%	199403-105	
R7015	1M, 0603, .1W, 5%	199403-105	
R7016	1M, 0603, .1W, 5%	199403-105	
R7018	10K, 0603, .1W, 1%	191465-1002	
R7019	10K, 0603, .1W, 1%	191465-1002	
R7020	10K, 0603, .1W, 1%	191465-1002	
R7021	18.2K, 0603, .1W, 1%	191465-1822	
R7022	18.2K, 0603, .1W, 1%	191465-1822	
R7023	10K, 0603, .1W, 1%	191465-1002	
R7024	10K, 0603, .1W, 1%	191465-1002	
R7025	150 OHM, 0603, .1W, 1%	191465-1500	
R7026	150 OHM, 0603, .1W, 1%	191465-1500	
R7052	2.0K, 0603, .1W, 5%	199403-202	
R7053	100K, 0603, .1W, 1%	191465-1003	
R7054	49.9K, 0603, .1W, 1%	191465-4992	
R7055	1.82K, 0603, .1W, 1%,	191465-1821	
R7056	1K, 0603, .1W, 1%	191465-1001	
R7058	1K, 0603, .1W, 1%	191465-1001	
R7077	330 OHM, 0603, .1W, 5%	199403-331	
R7078	330 OHM, 0603, .1W, 5%	199403-331	
R7082	1K, 0603, .1W, 1%	191465-1001	
R7092	18.2K, 0603, .1W, 1%	191465-1822	
R7094	10K, 0603, .1W, 1%	191465-1002	
R7095	10K, 0603, .1W, 1%	191465-1002	
R7122	100 OHM, 0603, .1W, 5%	199403-101	
R7143	100 OHM, ARRAY, SMT, 4 POS, 5%	186433-1014	
R7146	100 OHM, 0805, .1W, 5%	133626-1015	
R7147	100 OHM, 0805, .1W, 5%	133626-1015	
R7150	330 OHM, 0603, .1W, 5%	199403-331	
R7151	10 OHM, 0603, .1W, 5%	199403-100	
R7203	10K, 0603, .1W, 1%	191465-1002	
R7208	10K, ARRAY, SMT, 4 POS, 5%	186433-1034	
R7209	100K, 0603, .1W, 1%	191465-1003	
R7210	100 OHM, 0603, .1W, 5%	199403-101	
R7213	100K, 0603, .1W, 1%	191465-1003	
R7220	15K, 0603, .1W, 1%	191465-1502	

ELECTRICAL PART LIST

DSP PCB Assembly
Resistors (continued)

Reference Designator	Description	Part Number	Note
R7222	10K, 0603, .1W, 1%	191465-1002	
R7231	100K, 0603, .1W, 1%	191465-1003	
R7232	3.9K, 0603, .1W, 1%	191465-3901	
R7233	6.19K, 0603, .1W, 1%	191465-6191	
R7238	100 OHM, 0603, .1W, 5%	199403-101	
R7241	100 OHM, 0603, .1W, 5%	199403-101	
R7246	100 OHM, 0603, .1W, 5%	199403-101	
R7248	330 OHM, 0603, .1W, 5%	199403-331	
R7249	330 OHM, 0603, .1W, 5%	199403-331	
R7250	330 OHM, 0603, .1W, 5%	199403-331	
R7251	330 OHM, 0603, .1W, 5%	199403-331	
R7255	330 OHM, 0603, .1W, 5%	199403-331	
R7256	330 OHM, 0603, .1W, 5%	199403-331	
R7257	100 OHM, 0603, .1W, 5%	199403-101	
R7258	100 OHM, 0603, .1W, 5%	199403-101	
R7260	100 OHM, 0603, .1W, 5%	199403-101	
R7262	330 OHM, 0603, .1W, 5%	199403-331	
R7263	330 OHM, 0603, .1W, 5%	199403-331	
R7264	330 OHM, 0603, .1W, 5%	199403-331	
R7267	330 OHM, 0603, .1W, 5%	199403-331	
R7269	330 OHM, 0603, .1W, 5%	199403-331	
R7271	330 OHM, 0603, .1W, 5%	199403-331	
R7273	330 OHM, 0603, .1W, 5%	199403-331	
R7275	330 OHM, 0603, .1W, 5%	199403-331	
R7276	10K, 0603, .1W, 1%	191465-1002	
R7277	330 OHM, 0603, .1W, 5%	199403-331	
R7279	3.01K, 0603, .1W, 1%	191465-3011	
R7280	100 OHM, 0603, .1W, 5%	199403-101	
R7281	200K, 0603, .1W, 1%	191465-2003	
R7283	49.9K, 0603, .1W, 1%	191465-4992	
R7285	10K, ARRAY, SMT, 4 POS, 5%	186433-1034	
R7291	10K, 0603, .1W, 1%	191465-1002	
R7292	10K, 0603, .1W, 1%	191465-1002	
R7294	1K, 0603, .1W, 1%	191465-1001	
R7295	100 OHM, 0603, .1W, 5%	199403-101	
R7296	100 OHM, 0603, .1W, 5%	199403-101	
R7297	10K, 0603, .1W, 1%	191465-1002	
R7300	49.9K, 0603, .1W, 1%	191465-4992	
R7306	100 OHM, 0603, .1W, 5%	199403-101	
R7307	100 OHM, 0603, .1W, 5%	199403-101	
R7308	100 OHM, 0603, .1W, 5%	199403-101	
R7309	100 OHM, 0603, .1W, 5%	199403-101	
R7310	100 OHM, 0603, .1W, 5%	199403-101	
R7311	30K, 0603, .1W, 5%	199403-303	
R7312	10K, 0603, .1W, 1%	191465-1002	
R7313	1.33K, 0603, 100MW, 1%	191465-1331	
R7314	1.33K, 0603, 100MW, 1%	191465-1331	
R7315	301K, 0603, .1W, 1%	191465-3013	

ELECTRICAL PART LIST

DSP PCB Assembly

Capacitors

Reference Designator	Description	Part Number	Note
C7000	180pF, 0603, COG, 50V, .1%	188454-181	
C7001	180pF, 0603, COG, 50V, .1%	188454-181	
C7002	180pF, 0603, COG, 50V, .1%	188454-181	
C7003	180pF, 0603, COG, 50V, .1%	188454-181	
C7004	180pF, 0603, COG, 50V, .1%	188454-181	
C7006	10uF, EL, 85C, 16V, 20%	177902-100C	
C7007	10uF, EL, 85C, 16V, 20%	177902-100C	
C7008	10uF, EL, 85C, 16V, 20%	177902-100C	
C7010	10uF, EL, 85C, 16V, 20%	177902-100C	
C7011	10uF, EL, 85C, 16V, 20%	177902-100C	
C7012	.033uF, 0603, X7R, 50V, 10%	191470-333	
C7013	100uF, EL, 85C, 16V, 20%	177902-101C	
C7035	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7036	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7037	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7038	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7039	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7040	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7041	100uF, EL, SMD, 105, 35V, 20%	255071-101V	
C7042	8pF, 0603, COG, 50V, .1%	188454-8R0	
C7043	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7044	8pF, 0603, COG, 50V, .1%	188454-8R0	
C7045	330pF, 0805, COG, 50V, 5%	133622-331	
C7048	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7049	100pF, 0805, COG, 50V, 5%	133622-101	
C7060	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7065	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7066	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7067	10uF, EL, 85C, 16V, 20%	177902-100C	
C7068	10uF, EL, 85C, 16V, 20%	177902-100C	
C7077	330pF, 0603, X7R, 50V	191470-331	
C7078	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7079	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7080	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7081	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7082	10uF, EL, 85C, 16V, 20%	177902-100C	
C7083	2.2uF, 1411, TANT, 25V, 20%	188588-225	
C7084	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7162	10uF, EL, 85C, 16V, 20%	177902-100C	
C7163	10uF, EL, 85C, 16V, 20%	177902-100C	
C7181	10uF, EL, 85C, 16V, 20%	177902-100C	
C7193	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7194	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7204	330pF, 0603, X7R, 50V	191470-331	
C7205	10uF, EL, 85C, 16V, 20%	177902-100C	
C7210	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7211	0.1uF, 0805, X7R, 50V, 10%	286499-104	
C7216	0.1uF, X7R, 0603, 50V, 10%	191470-104	

ELECTRICAL PART LIST

DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C7217	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7225	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7226	10uF, EL, 85, 16V, 20%	177902-100C	
C7227	10uF, EL, 85, 16V, 20%	177902-100C	
C7228	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7229	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7230	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7231	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7236	100pF, 0603, X7R, 50V, .1%	191470-101	
C7239	100pF, 0603, X7R, 50V, .1%	191470-101	
C7244	100pF, 0603, X7R, 50V, .1%	191470-101	
C7246	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7247	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7248	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7249	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7250	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7251	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7253	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7254	.01uF, 0603, X7R, 50V	191470-103	
C7255	10uF, EL, 85C, 16V, 20%	177902-100C	
C7258	.01uF, 0603, X7R, 50V	191470-103	
C7259	.01uF, 0603, X7R, 50V	191470-103	
C7261	.01uF, 0603, X7R, 50V	191470-103	
C7262	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7266	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7268	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7269	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7271	10uF, EL, 85, 16V, 20%	177902-100C	
C7272	0.47uF, 10V, X5R, 0603	278992-474	
C7275	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7276	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7277	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7278	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7279	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7280	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7281	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7282	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7283	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7284	33000pF, X7R SMD, 0603, 25V, .1%	257154-333K25	
C7285	330pF, 0603, X7R, 50V	191470-331	
C7286	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7400	100pF, 0603, X7R, 50V, .1%	191470-101	
C7401	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7402	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7403	100pF, 0603, X7R, 50V, .1%	191470-101	
C7404	100pF, 0603, X7R, 50V, .1%	191470-101	
C7405	3300pF, 0603, X7R, 50V, .1%	191470-332	

ELECTRICAL PART LIST

DSP PCB Assembly

Integrated Circuits

Reference Designator	Description	Part Number	Note
U7000	IC, OP-AMP, LO-PWR, 1MHz, SC-70	302888-001	
U7006	IC, INVERTER, SMD	266582-001	
U7008	IC, VOLT REG, SMD, POS, SOT89, +5V	258167-05	
U7010	IC, RESET, SOT-23, MAX809, 2.63V	191158-06	
U7011	IC, DSP, TMS320DA705, MASKED	289857-7051	
U7015	IC, FLASH, SERIAL, 1Mbit, 3.3V	307546-001	
U7018	IC, MULTIPLEX/DEMULTIPLEX 2-CH	298096-003	
U7019	IC, A/D CONV, 96KHz, 24BIT, AK5381	299343-001	
U7020	IC, DAC, 192kHz, 24Bit, 2ch, AK4384	299344-001	
U7027	IC, HI-PERFORMANCE, CPLD	298467-001	
U7036	TRANSISTOR, MOSFET, P-CH, 30V	298094-001	
U7037	IC, VOLT REG, SMD, POS, SOT89, 3.3V	258167-33	
U7038	IC, UC, 8-BIT, FLASH BASED, SSOP	299197-677ISS	
U7040	IC, DUAL BILAT, ANALOG SWITCH	299221-001	
U7041	IC, VOLT REG, ADJ, 500MA, DPAK	258496-001	

Miscellaneous

Reference Designator	Description	Part Number	Note
J200	CONN, SMT, .5MM, 10-POS, FFC	269863-010	
J201	CONN, SMT, .5MM, 8-POS, FFC	269863-008	
J300	CONN, HEADER, 25-POS, TOP ENTRY, SM	253356-T25	
J400	CONN, HEADER, 1mm, SMT, 20POS	301236-T020	
J500	CONN, HEADER, 5-POS, TOP ENTRY, SMD	253356-T05	
J800	CONN, HEADER, 25-POS, TOP ENTRY, SM	253356-T25	
Y7001	CRYSTAL, 16.9344MHz, 4-PIN SMD	291429-004	

ELECTRICAL PART LIST

DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C7407	3300pF, 0603, X7R, 50V, .1%	191470-332	
C7409	100pF, 0603, X7R, 50V, .1%	191470-101	
C7410	330pF, 0603, X7R, 50V	191470-331	
C7411	330pF, 0603, X7R, 50V	191470-331	
C7427	0.1uF, X7R, 0603, 50V, 10%	191470-104	
C7428	.033uF, 0603, X7R, 50V, 10%	191470-333	
C7429	5pF, 0603, COG, 50V, .1%	188454-5R0	
C7430	5pF, 0603, COG, 50V, .1%	188454-5R0	
C7431	0.1uF, X7R, 0603, 50V, 10%	191470-104	

Inductors

Reference Designator	Description	Part Number	Note
L7002	330 OHM, FERRITE BD, 0603, 200MA	268373-331	
L7019	330 OHM, FERRITE BD, 0603, 200MA	268373-331	
L7020	330 OHM, BEAD, FERRITE, 0805, 1.5A	267539-331	

Diodes

Reference Designator	Description	Part Number	Note
D7003	DIODE, SOT-23, BAV 99	147239	
D7004	DIODE, SHOTTKY, BAT42W, SOD-123	196984-002	
D7005	DIODE, SOT-23, BAV 99	147239	
D7006	DIODE, SHOTTKY, BAT42W, SOD-123	196984-002	

Transistors

Reference Designator	Description	Part Number	Note
Q7034	XSISTOR, BPLR, N, 50V, 100mA, SOT23	146817	
Q7037	XSISTOR, BPLR, N, 40V, 200mA, SOT23	146819	
Q7040	XSISTOR, BPLR, N, 40V, 200mA, SOT23	146819	
Q7041	XSISTOR, BPLR, P, 40V, 200mA, SOT23	148596	
Q7042	XSISTOR, P, 50V, 2SA1341	146818	
Q7043	XSISTOR, P, 50V, 2SA1341	146818	

ELECTRICAL PART LIST

Amplifier PCB Assembly

Resistors

Reference Designator	Description	Part Number	Note
R7116	100K, 0603, .1W, 1%	191465-1003	
R7224	10 OHM, 0603, .1W, 5%	199403-101	
R7225	121K, 0603, .1W, 1%	191465-1213	
R7226	121K, 0603, .1W, 1%	191465-1213	
R7227	121K, 0603, .1W, 1%	191465-1213	
R7228	121K, 0603, .1W, 1%	191465-1213	
R7229	10K, 0603, .1W, 1%	191465-1002	
R7230	10K, 0603, .1W, 1%	191465-1002	
R7231	10 OHM, 0603, .1W, 5%	199403-101	
R7234	10 OHM, 0603, .1W, 5%	199403-101	
R7236	10 OHM, 0603, .1W, 5%	199403-101	
R7237	10 OHM, 0603, .1W, 5%	199403-100	
R7238	10 OHM, 0603, .1W, 5%	199403-101	
R7239	10 OHM, 0603, .1W, 5%	199403-101	
R7240	10 OHM, 0603, .1W, 5%	199403-101	

Capacitors

Reference Designator	Description	Part Number	Note
C7128	.22uF, 0805, X7R, 25V, 10%	181264-224	
C7129	.22uF, 0805, X7R, 25V, 10%	181264-224	
C7130	.01uF, 0805, X7R, 50V, 10%	286499-103	
C7131	.01uF, 0805, X7R, 50V, 10%	286499-103	
C7134	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7135	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7136	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7137	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7138	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7139	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7140	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7141	10uF, EL, SMD, 105C, 35V, 20%	255071-100V	
C7146	.01uF, 0805, X7R, 50V, 10%	286499-103	
C7147	1uF, EL, SMD, 105C, 50V, 20%	255071-1R0H	
C7148	.22uF, 0805, X7R, 25V, 10%	181264-224	
C7149	.22uF, 0805, X7R, 25V, 10%	181264-224	
C7150	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7151	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7152	1uF, EL, SMD, 105C, 50V, 20%	255071-1R0H	
C7153	1uF, EL, SMD, 105C, 50V, 20%	255071-1R0H	
C7212	1uF, EL, 85C, 50V, 20%	177902-010H	
C7213	1uF, EL, 85C, 50V, 20%	177902-010H	
C7214	1uF, EL, 85C, 50V, 20%	177902-010H	
C7215	1uF, EL, 85C, 50V, 20%	177902-010H	
C7218	.1uF, X7R, 0603, 50V, 10%	191470-104	

ELECTRICAL PART LIST

Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C7219	.1uF, X7R, 0603, 50V, 10%	191470-104	
C7240	.01uF, EL, 105C, 25V, 20%	269823-103EZ	
C7241	100pF, 0603, X7R, 50V, .10%	191470-101	
C7242	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7243	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7244	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7245	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7246	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7247	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7248	3300pF, 0603, X7R, 50V, .10%	191470-332	
C7250	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7251	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7252	.1uF, 0805, X7R, 50V, 10%	286499-104	
C7253	.1uF, 0805, X7R, 50V, 10%	286499-104	

Inductors

Reference Designator	Description	Part Number	Note
L7015	22uH, INDUCTOR, FIXED, 3.9A	300618-220M	
L7016	22uH, INDUCTOR, FIXED, 3.9A	300618-220M	
L7017	22uH, INDUCTOR, FIXED, 3.9A	300618-220M	
L7018	22uH, INDUCTOR, FIXED, 3.9A	300618-220M	

Integrated Circuits

Reference Designator	Description	Part Number	Note
U7028	IC, PWR-AMP, CLASS D, 20W	298092-001	

Miscellaneous

Reference Designator	Description	Part Number	Note
J7001	CONN, HEADER, 25POS, TOP ENTRY, SM	253356-T25	
J7002	CONN, 2.5MM, 2 POS, FORMED	307962-001	
J7003	CONN, 2.5MM, 2 POS, FORMED	307962-001	

ELECTRICAL PART LIST

SPS (Switching Power Supply) PCB Assembly

Resistors

Reference Designator	Description	Part Number	Note
R003	10 OHM, 0603, .1W, 5%	199403-100	
R004	10 OHM, 0603, .1W, 5%	199403-100	
R005	1K, 0603, .1W, 5%	199403-102	
R006	1K, 0603, .1W, 5%	199403-102	
R007	100K, 0603, .1W, 1%	191465-1003	
R013	100 OHM, 0603, .1W, 5%	199403-101	
R014	30.1K, 0603, .1W, 1%	191465-3012	
R015	60.4K, 0603, .1W, 1%	191465-6042	
R017	2K, 0603, .1W, 1%	191465-2001	
R018	100K, 0603, .1W, 1%	191465-1003	
R019	2K, 0603, .1W, 1%	191465-2001	
R020	121K, 0603, .1W, 1%	191465-1213	
R021	100K, 0603, .1W, 1%	191465-1003	
R022	9.53K, 0603, .1W, 1%	191465-9531	
R023	0.10 OHM, 0805, 1/8W, 5%	304926-R10	
R024	0.10 OHM, 0805, 1/8W, 5%	304926-R10	
R026	1M, 0603, .1W, 5%	199403-105	
R027	1M, 0603, .1W, 5%	199403-105	
R028	1M, 0603, .1W, 5%	199403-105	
R029	1M, 0603, .1W, 5%	199403-105	
R030	1M, 0603, .1W, 5%	199403-105	
R033	10K, 0603, .1W, 1%	191465-1002	
R035	1M, 0603, .1W, 5%	199403-105	
R037	10K, 0603, .1W, 1%	191465-1002	
R038	2.2K, 0603, .1W, 5%	199403-222	
R039	1M, 0603, .1W, 5%	199403-105	
R040	1M, 0603, .1W, 5%	199403-105	
R041	22K, 0603, .1W, 5%	199403-223	
R042	12K, 0603, .1W, 5%	199403-123	
R043	100K, 0603, .1W, 1%	191465-1003	
R045	10K, 0603, .1W, 1%	191465-1002	
R046	2.2K, 0603, .1W, 5%	199403-222	

Capacitors

Reference Designator	Description	Part Number	Note
C001	470pF, 0603, X7R, 50V, 10%	191470-471	
C002	470pF, 0603, X7R, 50V, 10%	191470-471	
C003	.1uF, 0805, X7R, 50V, 10%	286499-104	
C004	.1uF, 0805, X7R, 50V, 10%	286499-104	
C005	.1uF, x7r, 0603, 50V, 10%	191470-104	
C006	.1uF, x7r, 0603, 50V, 10%	191470-104	
C007	.01uF, 0603, X7R, 50V, 10%	191470-103	
C008	100pF, 0603, X7R, 50V, 10%	191470-101	
C009	220pF, 0603, X7R, 50V, 10%	191470-221	

ELECTRICAL PART LIST

SPS (Switching Power Supply) PCB Assembly

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C010	.01uF, 0603, X7R, 50V, 10%	191470-103	
C011	1000pF, 0603, X7R, 50V, 10%	191470-102	
C012	1000pF, 0603, X7R, 50V, 10%	191470-102	
C013	47uF, 7343, TANT, 16V, LO-R, 10%	275411-476	
C014	100uF, 7343, TANT, LO-R, 10%	275411-107	
C015	.1uF, 0805, X7R, 50V, 10%	286499-104	
C016	.1uF, 0805, X7R, 50V, 10%	286499-104	
C020	.1uF, 0805, X7R, 50V, 10%	286499-104	
C024	.1uF, 0805, X7R, 50V, 10%	286499-104	
C025	3300pF, 0805, X7R, 50V, 10%	286499-332	
C027	220uF, EL, SMD, 105, 35V, 20%	255071-221V	
C028	3300pF, 0603, X7R, 50V, 10%	191470-332	
C029	.1uF, X7r, 0603, 50V, 10%	191470-104	
C033	3300pF, 0603, X7R, 50V, 10%	191470-332	
C037	.1uF, x7r, 0603, 50V, 10%	191470-104	
C040	1uF, EL, SMD, 105, 50V, 20%	255071-1R0H	
C041	1uF, EL, SMD, 105, 50V, 20%	255071-1R0H	
C042	.1uF, 0805, X7R, 50V, 10%	286499-104	
C043	100pF, 0603, X7R, 50V, 10%	191470-101	
C049	.0082uF, 0603, X7R, 50V, 10%	191470-822	
C053	.1uF, 0805, X7R, 50V, 10%	286499-104	
C054	.1uF, 0805, X7R, 50V, 10%	286499-104	
C056	1800pF, 0603, X7R, 50V, 10%	191470-182	
C058	.1uF, X7r, 0603, 50V, 10%	191470-104	
C061	100pF, 0603, X7R, 50V, 10%	191470-101	
C062	100pF, 0603, X7R, 50V, 10%	191470-101	
C063	220uF, EL, SMD, 105, 35V, 20%	255071-221V	

Inductors

Reference Designator	Description	Part Number	Note
L1	220uH, 1.0A, SMT, 20%	303213-221M	
L2	47uH, 1.1A, SMT, 20%	303222-470M	

Diodes

Reference Designator	Description	Part Number	Note
D1	DIODE, SCHOTTKY, 40V, 3A, SMB	193847-001	
D2	DIODE, SCHOTTKY, 40V, 3A, SMB	193847-001	
D3	DIODE, SWITCHING, 75V, 200mA	148582	
D4	DIODE, SWITCHING, 75V, 200mA	148582	

ELECTRICAL PART LIST

SPS (Switching Power Supply) PCB Assembly

Transistors

Reference Designator	Description	Part Number	Note
Q8	XSISTOR, MFET, P, SOT-23, 40V, 3.0A	303215-001	
Q9	XSISTOR, MFET, P, SOT-23, 40V, 3.0A	303215-001	

Integrated Circuits

Reference Designator	Description	Part Number	Note
U1	IC, PWM, VOLTAGE CONTROLLER, TPS40200	303218-001	
U2	IC, PWM, VOLTAGE CONTROLLER, TPS40200	303218-001	
U5	IC, V REG, POS, 3.3V, 0.15A, LDO	299071-033	
U8	IC, SENSOR, QT, 5V, QFN	300674-001	

Miscellaneous

Reference Designator	Description	Part Number	Note
J301	CONN, HEADER, 25POS, TOP ENTRY, SM	253356-T25	
J303	CONN, HDR, 6POS, VERT, SMT, ZIFF	305369-T06	

ELECTRICAL PART LIST

I/O PCB Assembly

Resistors

Reference Designator	Description	Part Number	Note
R4000	100K, 0603, .1W, 1%	191465-1003	
R4001	15K, 0805, .1W, 1%	133625-1502	
R4002	39K, 0603, SMD, .1W, 5%	199403-393	
R4003	39K, 0603, SMD, .1W, 5%	199403-393	

Capacitors

Reference Designator	Description	Part Number	Note
C4007	100pF, 0603, X7R, 50V 10%	191470-101	
C4008	100pF, 0603, X7R, 50V 10%	191470-101	
C4010	3300pF, 0603, X7R, 50V, 10%	191470-332	
C4001	330pF, 0603, X7R, 50V, 10%	191470-331	
C4003	330pF, 0603, X7R, 50V, 10%	191470-331	
C4004	330pF, 0603, X7R, 50V, 10%	191470-331	
C4006	330pF, 0603, X7R, 50V, 10%	191470-331	
C4005	.1uF, 0805, X7R, 50V, 10%	286499-104	
C4009	.1uF, 0805, X7R, 50V, 10%	286499-104	

Inductors

Reference Designator	Description	Part Number	Note
L4000	BEAD, FERRITE, CHIP, 1806	256116-181	

Diodes

Reference Designator	Description	Part Number	Note
D4000	DIODE, SCHOTTKY, 40V, 3A, SMB	193847-001	
D4002	DIODE, SCHOTTKY, 60V, 3A	307429-60	
ZR4000	DIODE, ZENER, 22V	307428-22	

Miscellaneous

Reference Designator	Description	Part Number	Note
J4000	CONN, HEADER, 1mm, SMT, 20 POS	301236-T020	
J4001	CONN, BATTERY, 8-PIN, 2.0mm	301572-008	
J4002	CONN, DC PWR, JP3.5MM, COMBO	301948-001	

ELECTRICAL PART LIST

IR PCB Assembly

Resistors

Reference Designator	Description	Part Number	Note
R2000	100 OHM, 0603, .1W, 5%	199403-101	

Capacitors

Reference Designator	Description	Part Number	Note
C2000	.1uF, X7R, 0603, 50V, 10%	191470-104	

Inductors

Reference Designator	Description	Part Number	Note
L4000	BEAD, FERRITE, CHIP, 1806	256116-181	

Diodes

Reference Designator	Description	Part Number	Note
DS2000	DIODE, LED, 625nm, 160mA, 5V	307558-001	

Miscellaneous

Reference Designator	Description	Part Number	Note
J2000	CONN. ,SMT, LIF, 5 POS., SIDE	255130-005	

DISASSEMBLY PROCEDURES

1. Grill removal

1.1 The grill is removed by pulling from the top center. The left and right sides of the grill are molded to fit inside the main assembly. Pulling from the center allows the left and right sides to dislodge and be removed. See Figure 5.

Note: The grill and the baffle assembly have velcro that may make removal difficult.



Figure 5

2. Removing Baffle Assembly

2.1 Remove the 12 Phillips-head screws that secure the assembly. See Figure 6.



Figure 6

2.2 Lift the assembly using a flat blade screwdriver. Once lifted, the baffle assembly can be easily lifted away from the main assembly. Be careful not to damage the gasket that is placed under the assembly. See figure 7.



Figure 7

2.3 Disconnect the J200, J201, J303 and J400. See figure 8.



Figure 8

DISASSEMBLY PROCEDURES

3. Dock Removal

3.1 Once the baffle assembly has been removed, lift up the four rubber feet. See Figure 9.

3.2 Remove the four phillips screws.

3.3 Remove the dock assembly being careful not to damage the two cables that feed into the main assembly. See Figure 10.



Figure 9



Figure 10

4. Dock Disassembly

4.1 Remove the three Phillips-head screws that secure the dock. See figure 11.

4.2 Lift the top section of the dock by pulling up on the dock connector. See figure 12.

4.3 Remove the one screw holding the dock in place.

4.2 Lift the dock away from the bottom plate.

Note: The dock spring is not secure when lifting the dock away from the bottom plate. The spring can be easily lost if not accounted for.



Figure 11



Figure 12

DOCK RE-ASSEMBLY PROCEDURES

1. Dock Re-assembly

1.1 Place the spring into the slotted groove on the bottom plate as shown in figure 14.

1.2 Place the other side of the spring into the slotted groove on the dock as shown in figure 15.

1.3 Turn the dock counter clockwise one full rotation. See figure 16.

1.4 Use the one screw to tighten down the dock to the bottom plate.



Figure 13

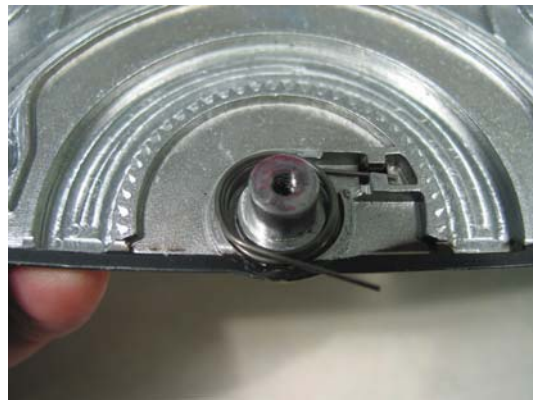


Figure 14



Figure 15



Figure 16

TEST PROCEDURES

SoundDock® Portable Digital Music System Functional Tests

Equipment Required

Digital Multi-meter
Audio Signal Generator
iPod Eliminator PCB, P/N 287089

Notes:

1. Begin the test with no power applied.
2. Confirm the Audio Signal Generator output is set to zero volts before connecting.

1.1 Air Leak Test

1.1 Connect the audio signal generator to the mini jack AUX input on the back of SoundDock® Portable.

1.2 Set the signal generator output to:

- A. Voltage = 0V
- B. Frequency = 80Hz $\pm 10\%$

1.3 Apply power to the SoundDock Portable, the system will default to the AUX input if there is nothing connected to the dock. Press and hold the volume plus button for 15 seconds, this should set the system to max volume.

1.4 Set the Signal generator output to:

- A. Voltage = 100mV $\pm 10\%$
- B. Frequency = 65Hz $\pm 10\%$

1.5 Listen for air leaks around all the cabinet seams, joints, and wire harness through-holes.

PASS if no audible air leaks can be heard at a distance of less than 1ft (0.3M) from any exterior surface of the enclosure.

FAIL if any air leaks can be heard at a distance less than 1ft (0.3M) from any exterior surface of the enclosure.

2. Left Right Driver Test

2.1 Apply the input signal to SoundDock Portable left channel only. Set generator as in step 1.3 and 1.4, except set the frequency to 800Hz and confirm that only the left driver plays.

2.2 Reduce generator output to zero volts

2.3 Repeat step 2.1 for the right channel.

2.4 Reduce input signal to zero volts and reconnect the right channel.

3. Frequency Sweep Test

3.1 Set audio signal generator to:

- A. Voltage = 100mV $\pm 10\%$
- B. Sweep range = 40 HZ - 5KHz $\pm 10\%$

3.2 Execute the sweep for a minimum of five seconds up and then down the range.

3.3 Listen for any extraneous noises such as buzzes, rattles, ticks, and distortion.

PASS if no noise can be heard at a distance of less than 1ft (0.3M).

FAIL if any noise can be heard at a distance less than 1ft (0.3M).

3.4 Reduce the input signal to zero volts.

TEST PROCEDURES CONTINUED

SoundDock® Portable iPhone Test

Equipment Required

Apple® iPhone.
SoundDock system built after January 26th 2009 (DOM 9026) See cover page for details.

1. Authorization Test

1.1 Apply AC power to the SoundDock system. Allow the system to power up by waiting for the boot beep sound from the speakers.

1.2 Place the iPhone on the dock cradle.

1.3 Confirm the following message does not appear on the iPhone screen.



Note: If this screen appears on the display, re-dock the iPhone to determine if the problem appears again. It is normal to see this screen on an occasional basis.

2. iPhone Functional Test

2.1 Apply AC power to the SoundDock system. Allow the system to power up by waiting for the boot beep sound from the

speakers.

2.2 Place the iPhone on the dock.

2.3 Press the play button on the remote, adjust the volume to a moderate level. Confirm audio is clean and no distortion can be heard.

TAP COMMAND SET UP

SoundDock® Portable Digital Music System TAP command set up

Equipment Required

IBM compatible computer
RS232 to TTL converter
iPod Eliminator PCB, P/N 287089
ETAP Cable, P/N 309866-001

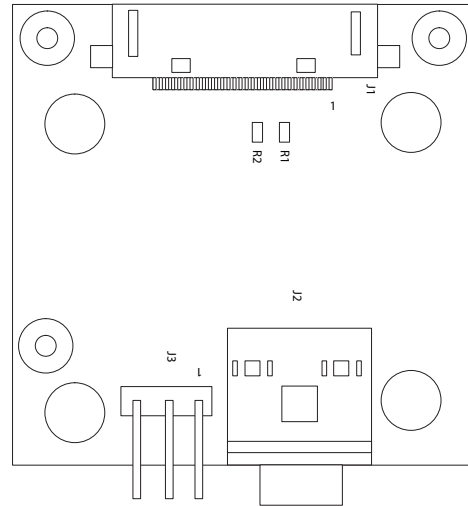
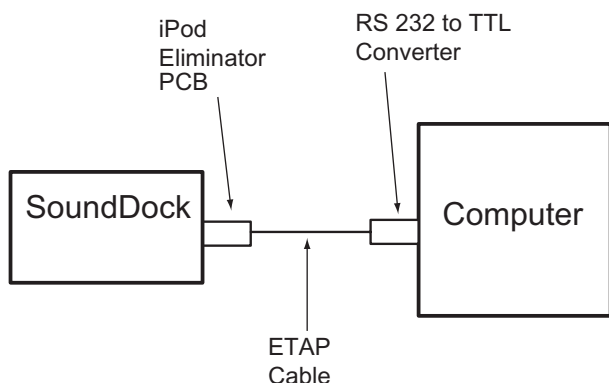
Notes: TAP commands can be sent to the SoundDock Portable system by connecting a PC to the iPod eliminator board via the 30 pin dock connector.

An ETAP cable, iPod eliminator PCB and RS232 to TTL Converter are required for this communication. The ETAP cable and iPod Eliminator PCB are available from Bose®. The RS232 to TTL Converter is made by B+B electronics, model number 232LPTTL. It can be purchased online at <http://www.bb-elec.com>.

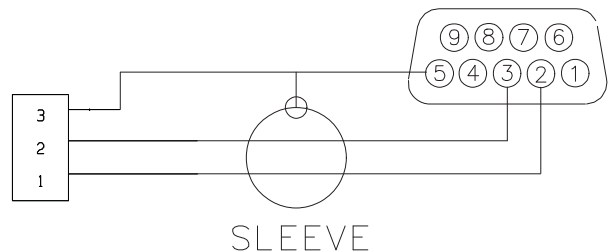
The TAP commands will be needed for the following procedures:

A. Calibration of the DSP board and amplifier board.

B. Battery test



iPod Eliminator PCB



ETAP cable schematic



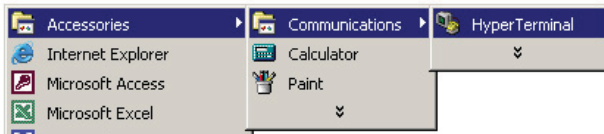
**B+B Electronics model 232LPTTL
RS232 to TTL converter**

TAP COMMAND SET UP CONTINUED

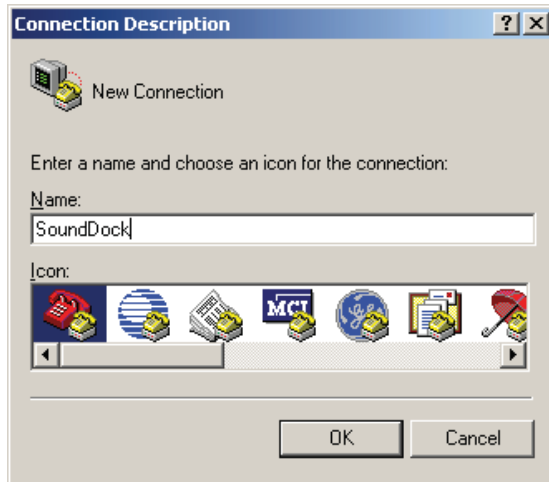
1. Hyper Terminal set up

Hyper Terminal is standard on IBM compatible PC's and is the interface used to send commands to the SoundDock® Portable system.

1.1 Use the Start menu to select Programs, Accessories, Communications then Hyper Terminal.



1.2 The new connection box will appear, type in SoundDock Portable as the name. Then select OK.

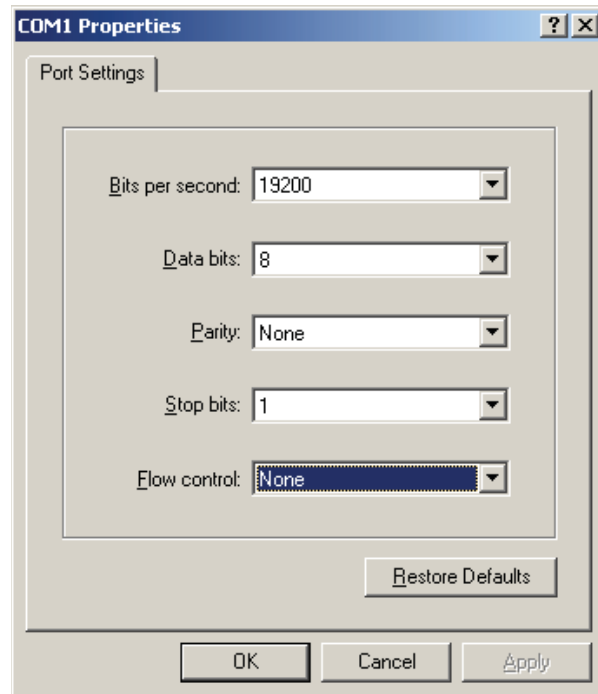


1.3 Confirm the **Connect using** option is set to COM1. Then select OK.



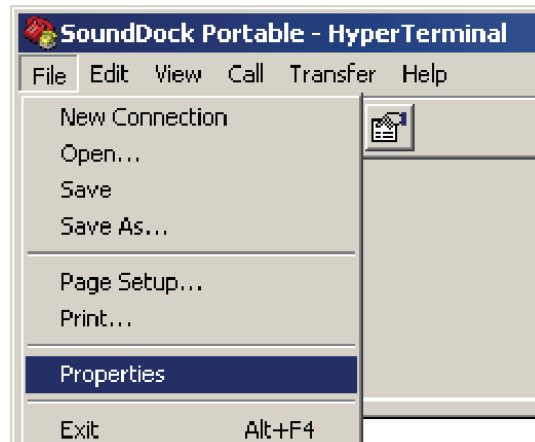
1.4 Select 19200 bits per second, 8 data bits, no parity, one stop bit and no flow control. Then select OK.

Note: If the flow control has **Hardware** selected the communication will not work. Flow control should be set to **None**.



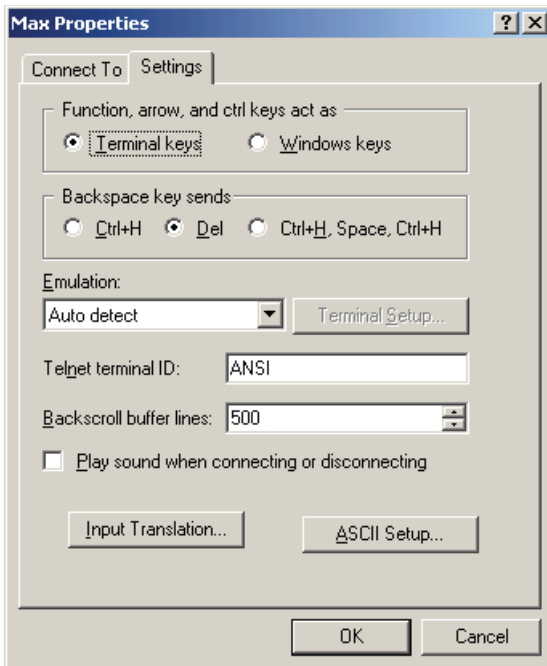
2. Configuring the properties and the ASCII settings

2.1 Once the Hyper terminal is running, select file then properties.

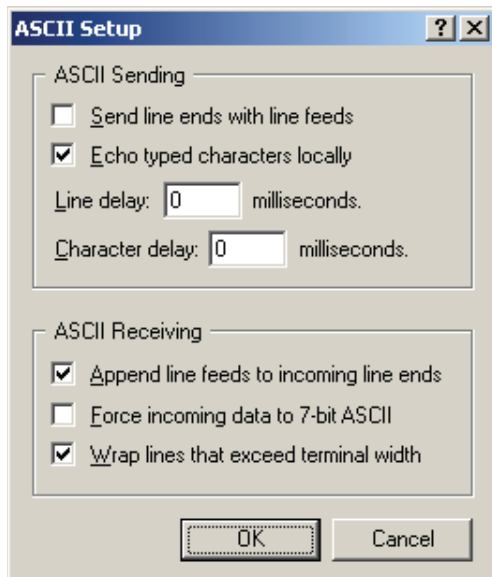


TAP COMMAND SET UP CONTINUED

2.2 Change the **Emulation** to **Auto detect**, then select ASCII setup.



2.3 Select **Echo typed characters locally**, **Append line feeds to incoming line ends** and **Wrap lines that exceed terminal width**. Then select OK.



2.4 Once these changes have been made, select OK. Select File and Save as SoudDock® Portable.

AMPLIFIER GAIN PROCEDURE

SoundDock® Amplifier gain value adjustment

Equipment Required

IBM compatible computer
RS232 to TTL converter
iPod Eliminator PCB, P/N 287089
Tap Cable- P/N 309866-001

***Note: This procedure must be run if the DSP board or the power amplifier board are replaced.**

A default gain value is sent via TAP commands from a PC to the SoundDock Portable system.

1. Setting the Default Gain

1.1 Use the TAP command set up procedure to allow the SoundDock Portable system to receive TAP commands (see TAP command setup on page 29).

1.2 Issue TAP command SP 109, 8D87 to set the gain to 36231.

8D87 is the hex number for 36231.

2. Confirm Gain Value has been changed

2.1 Power cycle the system by disconnecting the AC power supply and the battery for a minimum of 10 seconds.

2.2 Issue the TAP command SP 109 to confirm the default value was received by the SoundDock Portable. The number returned should be 3623109.

BATTERY TEST

SoundDock® Portable Digital Music Battery test

Equipment Required

iPod Eliminator PCB, P/N 287089
Tap Cable- part number 309866-001

Notes: The battery must meet the following requirements:

1. Number of Cycles: < 250
2. Time Since Production: < 30 months
3. V Battery: > 17 volts
4. V Balance: < 70mV

The battery tests are run by sending TAP commands from a PC to the SoundDock Portable system.

All Battery TAP commands must be followed by two commands to see the results:

“Check Read Status” Command = SP 506

“Get Result” Command = SP 507

This allows the results to be printed to the screen.

The results are returned in reversed byte order. For example, if the returned is Hex 1234, the two bytes need to be reversed to give Hex 3412 before further interpretation is performed.

1.0 Number of cycles

1.1 Execute the “Number of Cycle” command.

SP 50B,17

1.2 Execute the “Check Read Status” Command.

SP 506

1.3 Execute the “Get Result” Command.

SP 507

1.4 The results are returned with a Hex number with the bytes in reversed order. Convert this number to decimal and confirm it is less than 250.

Example - 0200 is displayed

Number of cycles = 2

2.0 Time Since Production

2.1 Use the four digit DOM within the serial number to determine the batteries age. If the battery is more than 30 months old, it should be replaced.

Serial Number Example -
040274Z62170107AC

The first 6 characters identify the product code - 040274

Characters 8 to 11 identify the DOM - 6217
6217 = the 217th day of 2006

3.0 V Battery - Total Battery Voltage

3.1 Execute the Total Battery Voltage command SP 50B,09.

3.2 Execute the “Check Read Status” Command SP 506.

3.3 Execute the “Get Result” Command SP 507.

3.4 The results are returned with a Hex number with the bytes in reversed order. Convert this number to decimal and confirm it is more than 16 Volts.

Example - 4140 is displayed

Total Battery Voltage is 16.449

4041 converted to decimal using Microsoft® Windows scientific calculator = 16449

BATTERY TEST CONTINUED

4.0 V Balance

4.1 To calculate V Balance, all four cell voltages need to be collected. Perform the cell commands below and execute the “Check Read Status” SP 506 and “Get Results” SP 507 after each command to read the results.

The results returned will be a Hex number with the bytes in reversed order. Convert this number to decimal and write down the results after each command. The highest and lowest voltages will be used at the end of the procedure to calculate the V Balance.

Cell commands needed for V Balance

SP 50B,3F - Cell One
SP 50B,3E - Cell Two
SP 50B,3D - Cell Three
SP 50B,3C - Cell Four

Note: “Read Status” and “Get Results” commands need to be executed after each of the Cell command.

Example -

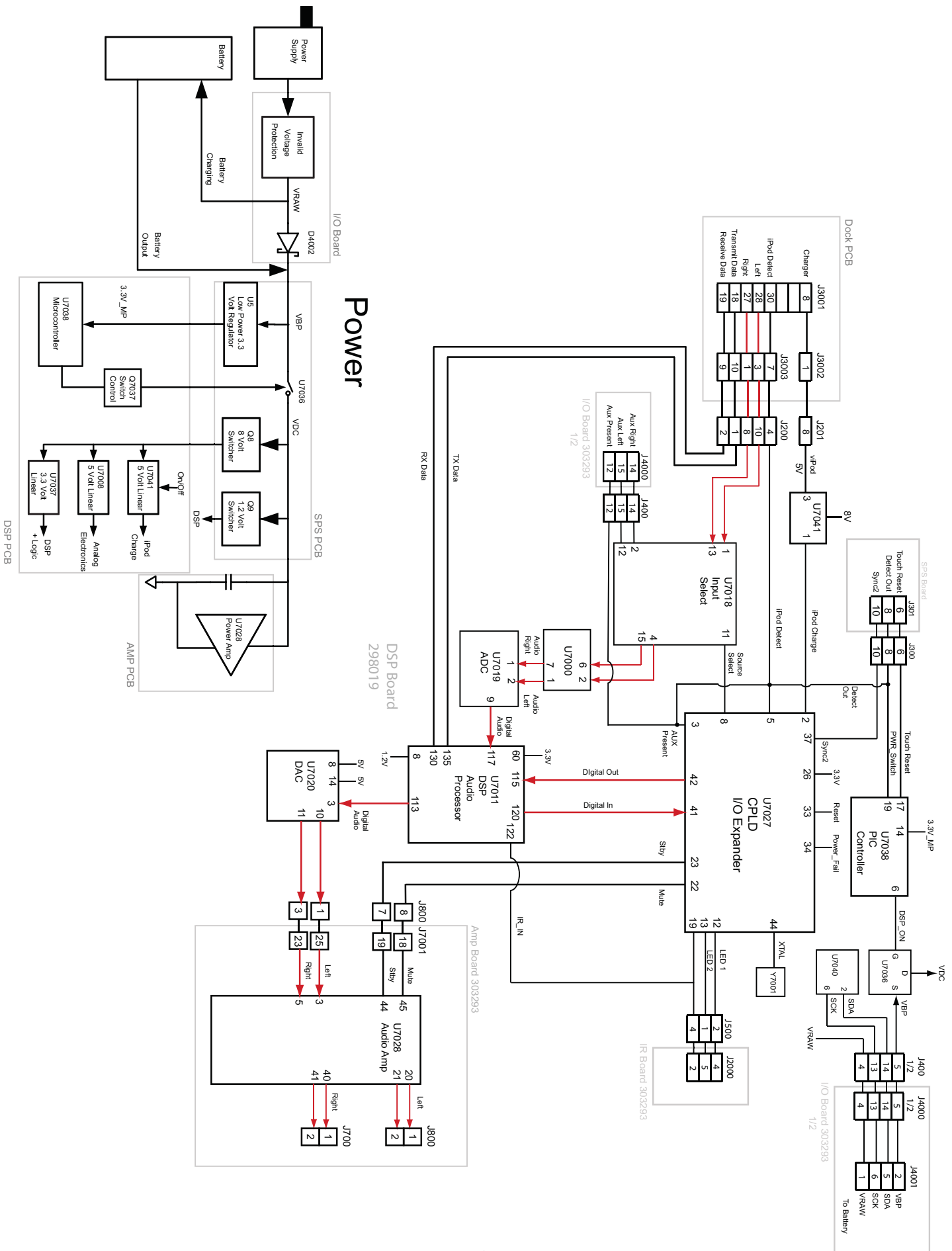
SP 50B, 3F / SP 506 / SP 507

4.2 Determine V Balance using the following calculation:

V_Balance = Max Cell Voltage - Min Cell Voltage

If V Balance is more than 70mV, the battery should be replaced.

BLOCK DIAGRAM



SERVICE MANUAL REVISION HISTORY

Date	Revision Level	Description of Change	Change Driven By	Pages Affected
08/17/07	00	Document released at revision 00	Service Manual release	All
10/09/07	01	Added universal inserts	Part missing from original	8
		Changed power supply part numbers from 301141-001 and -002 to 301141-011 and -012	Part number change	7
12/03/07	02	DSP part number change – From 297427-004 to 307983-001	Software change	10
12/10/07	03	Universal Insert part number change. From 303557-001, -002 to 303570-001, -002.	Part numbers where not correct	8
		Cradle Assembly part number change. 300660-001 and 300660-002 to 300660-101 and 300660-102.	Packaging change.	10
		Latch Cradle Spring part number changed from 300687 to 309584-002.	New part number (different size spring needed)	11
1/19/08	04	Calibration procedure change. It is not longer necessary to calculate the gain value. A default number can be used on all systems. Front cover product image change	Calibration procedure change based on extensive testing.	32,33 Cover
3/17/08	05	U7015 and R7055 changed part numbers. U7015 -307546-001 R7055 – 191465-1821 Screw part number added. Reference number 4 and 12 on page 9 Flex cable added, part number 310678-001		16 9
5/8/08				9
9/23/08	06	Dock board part number change. From 307958-001 to 307958-002 Grill part number added – 309981-001 and -002. New DSP PCB part number – 307983-021S	Board change to RoHS Improved part New DSP software	12 10 11
10/10/08	07	Changed printed carton part number to 311574 Added blank carton part number	New number created Generic blank carton created to fit all SoundDock products	9 9
12/22/08	08	Add rear enclosure part numbers. 300676-011 and 300676-012.	Scratches to the enclosure are very difficult to remove.	10
1/27/09	08	New power supply part numbers	Cost savings on new supply	8
2/18/09	09	DSP board part number change 319975-001S	Board modified and works with iPhone chip added.	10
8/24/09		iPhone test added	Repair Group test	30
10/8/09		Added fastener and screw part numbers	Missing from original drawing	10
10/20/09		Removed DSP board part numbers 307983-001 and 307983-021S. 319975-001S is now the only board available.	Manufacturing no longer builds the non-iPhone version.	10
9/10/10	10	304158-251 replaced by 304158-351 304158-252 replaced by 304158-352	AC Clips for APAC changed	8

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE



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P/N: 300657-SM Rev. 10 5/2008 (H)
<http://serviceops.bose.com>