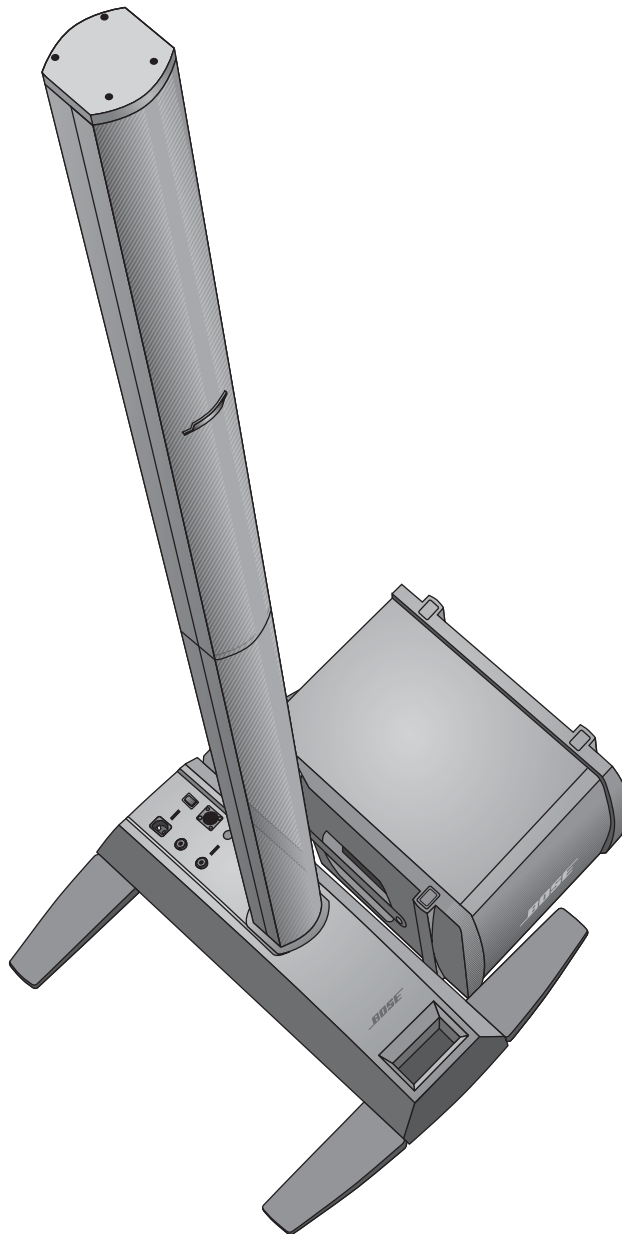


L1[®] Model II System

Power Stand, Cylindrical Radiator[®] and B1 Bass Module

US/Canada, European, UK and Australian Versions



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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) 6500 / IEC 60056 paragraph 9.1.1. With the unit AC switch first in the ON position and then in OFF position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the unit (antennas, handle bracket, metal cabinet, screwheads, 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 Bose® L1® Model II system contains no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory service.

PROPRIETARY INFORMATION

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF BOSE CORPORATION WHICH IS BEING FURNISHED ONLY FOR THE PURPOSE OF SERVICING THE IDENTIFIED BOSE PRODUCT BY AN AUTHORIZED BOSE SERVICE CENTER OR OWNER OF THE BOSE PRODUCT, AND SHALL NOT BE REPRODUCED OR USED FOR ANY OTHER PURPOSE.

Warranty

The Bose L1 Model II Power Stand is covered by a limited 2-year transferable warranty. The L1 Model II Cylindrical Radiator® and the B1 bass module are covered by a 5-year limited warranty.

Specifications

External Dimensions

Cylindrical Radiator®:	Height: 2070 mm Width: 89 mm Depth: 120 mm
Power Stand:	Height: 110 mm Width: 200 mm Depth: 660 mm (Legs Folded)
Bass Module:	Height: 380 mm Width: 260 mm Depth: 450 mm ± 10 mm

Weight

Cylindrical Radiator:	15 lbs (6.8 kg) each section.
Power Stand:	20 lbs (9.1 kg)
Bass Module:	27 lbs (12.3 kg)

Input / Output Panel Connections

Line-level Inputs:	(1) Input (1/4in" TRS)
Line-level Outputs:	(1) Bass Out (1/4in" TRS)
Speaker Outputs:	(1) Bass Out (Neutrik NL4)
Data In & Power:	(2) Ethercon / RJ45
Power Input:	(1) IEC Connector - recessed

Input / Output Panel Controls:	
Input Trim	(1)
Display	(1) LED for Preamp signal present/clipping (1) LED of Power On and Fault Condition Display

Electrical Specifications:

Note: All measurements made in "Debug" mode [No EQ or Limiting]

Balanced ¼" Line Input to Bass Line Output assuming 10dB of digital gain

Description	System State	Specification
Input Impedance (Unbalanced)		10 kOhm +/- 10%
Maximum Input Voltage	Trim @ Min, <1% THD	20 V Min
THD @ Rated Power	Trim @ Max, Vin = -20dBV	0.1% Max 30Hz to 15kHz
S/N Ratio (Dynamic Range), A-wtd	Trim @ Max, Ref. 1% THD	80 dB Min.
Frequency Response	Trim @ Max, Vin = -30dBV	20Hz to 20kHz +/- 1dB
Line Input Gain – Trim Control @ Max.	Vin = 32mV (-30dBV)	+30dB (0dBV)+/-2dB
Line Input Gain – Trim Control @ 12.00	Vin = 32mV (-30dBV)	+10dB (-20dBV) +/-3dB
Line Input Gain – Trim Control @ Min.	Vin = 32mV (-30dBV)	< -80 dBV
Line Input – Line Output Polarity		Non-Inverting

Specifications

Power Amplifiers (All measured using AES17 20kHz Filter Line Input 1,2)

Description	System State	Specification
Power @ THD = 1%	Vin = Approx 1V (0dBV)	240W Min, 250W Nom.
Gain – Vin req'd for 250W into 4 Ohm	Vin = Approx 1V (0dBV)	1dBV +/-0.5dB
THD @ Full Power –3dB (125W/4Ohm) 40kHz AES17	Vin = Approx 3dBV, Regulate to 125W	1.0% Max, 30Hz to 15kHz
Power Bandwidth, -3dB re Max Power for THD = 1%	Vin = Approx 1V (0dBV)	20Hz to 20 kHz +/- 0.5dB
Frequency Response, Small Signal (1W)	Vin = Approx 63.2mV	20Hz to 20kHz Min
S/N Ratio (Dynamic Range), A-wtd, +22kHz Filter	Adjust Vin for ref 1% THD	100dB Min.
DC Offset	No Signal, R-L = 4 Ohms	< +/- 30mV
Input – Output Polarity	Vin = -20dBV	Non-Inverting
Square Wave Response (Stability)	Vin = 0.71V (-3dBV), R-L=4	Overshoot <20%
Current Limit Margin @ Min Z Frequency	Behavior w/R-L = 2 Ohms	Iss pk = 13A Min
Low Impedance Behavior	Behavior w/R-L = 2 Ohms	Shut-Down, No Damage

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.

Part List Notes

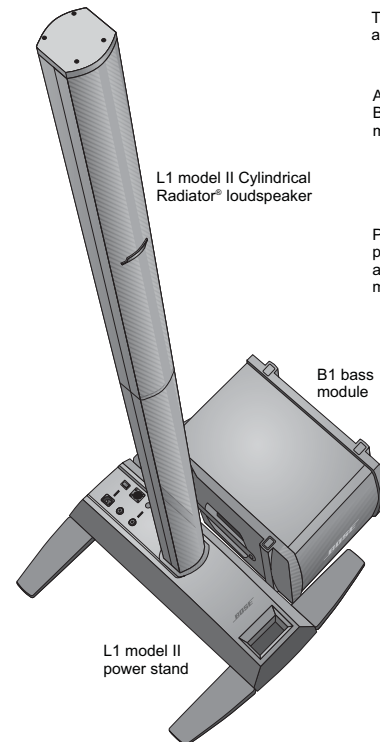
1. This part is not normally available from Customer Service. Approval from the Field Service Manager is required before ordering.
2. The individual parts located on the PCBs are listed in the Electrical Part List.
3.  This part is critical for safety purposes. Failure to use a substitute replacement 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 Description

The L1® Model II system – with ToneMatch® port consists of the L1 model II power stand, the L1 model II Cylindrical Radiator® loudspeaker, and a B1 bass module. The L1 model II system comes with a padded carrying bag for each of its parts. To expand your system and enhance performance, you can add:

- A second B1 bass module for bass guitar, kick drum, or organ. Each power stand can power up to two B1 bass modules.
- A T1 ToneMatch audio engine for digital signal processing, additional inputs and user-interface control.
- A PackLite® power amplifier model A1 for adding up to two more B1 bass modules to your system.

L1 model II system with ToneMatch port



Optional equipment

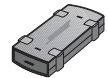
T1 ToneMatch audio engine



Additional B1 bass module

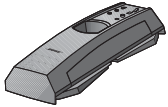
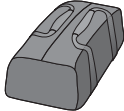
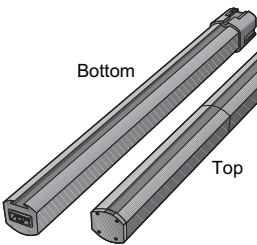
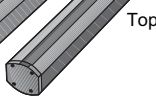
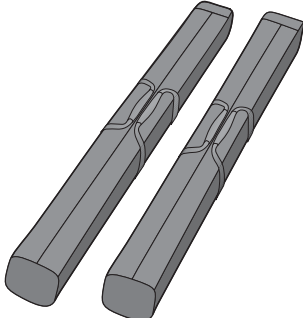


PackLite power amplifier model A1



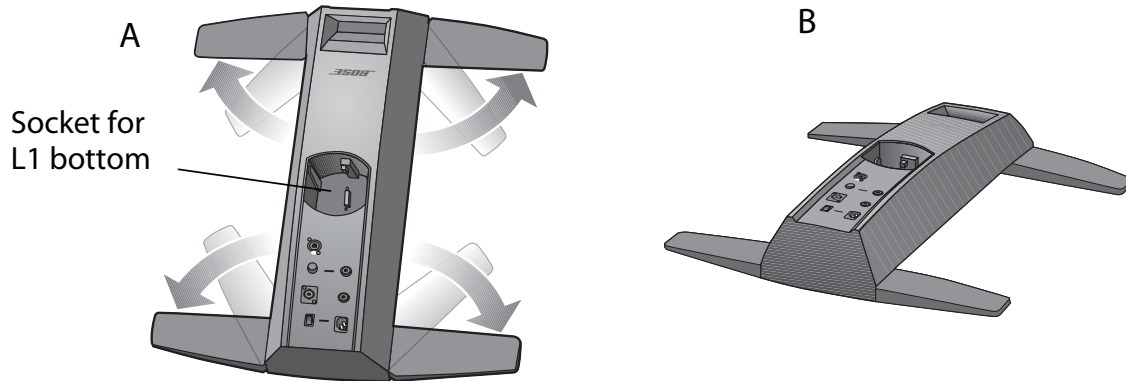
System Components

The L1 Model II system is shipped in three separate cartons. Refer to the figure below.

Power stand carton	Cylindrical Radiator® carton	B1 bass module carton
L1 model II power stand  Carrying bag  AC power cord  Demonstration CD  Quick setup guide  Owner's guide  Product registration card 	L1 model II Cylindrical Radiator® loudspeaker Bottom  Top  Carrying bags 	B1 bass module  Carrying case  Bass module cable (blue 4-wire)  B1 bass module owner's guide 

Setting up the L1® model II power stand

1. Holding the power stand vertically on the floor (Figure A), grasp one leg and swing it out as far as it will go. Notice that the other legs swing out automatically. **The legs must be fully open before you can plug the L1 Cylindrical Radiator® bottom section into the power stand.**
2. Lay the power stand flat on the floor in the desired position (Figure B).

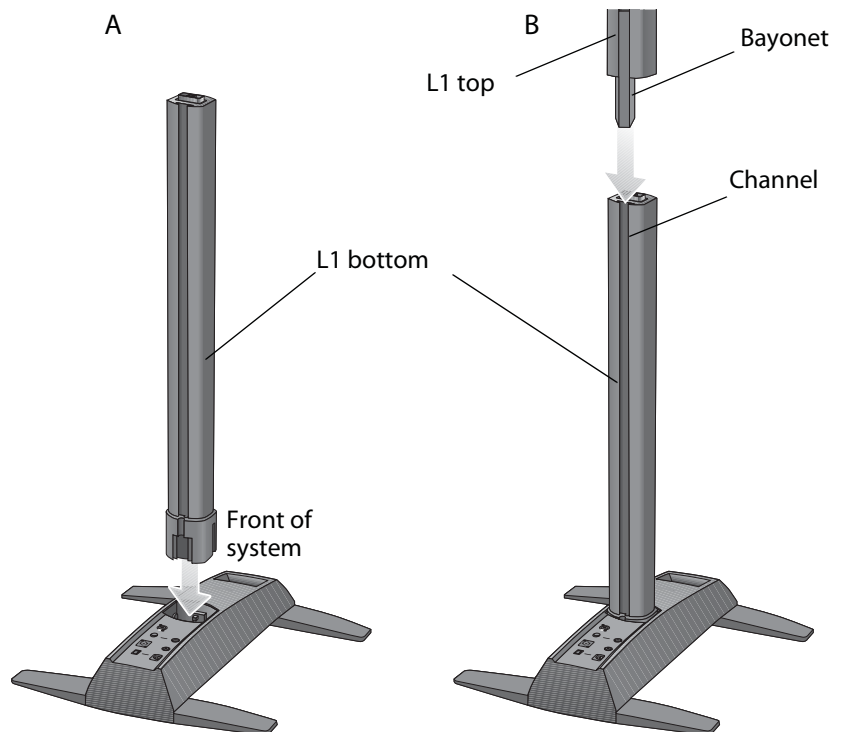


WARNING: DO NOT move the completely assembled system as a unit. This could result in personal injury and/or damage to the product. Position the power stand on the floor in the chosen location before assembling the system.

Assembling the L1 model II Cylindrical Radiator® loudspeaker

Note: If you plan to mount the T1 ToneMatch® audio engine on the L1 model II system, see “Adding a T1 ToneMatch audio engine” before installing the top section of the loudspeaker.

1. Hold the L1 bottom so that the grille faces front and plug it into the power stand (Figure A). Be sure to fully insert it into the socket to assure stability and a good connection.
2. Align the bayonet on the L1 top with the channel on the back of the L1 bottom, and lower the L1 top onto the L1 bottom until it is flush (Figure B).



Connecting the B1 bass module

You can place the B1 bass module either vertically or horizontally on the floor. Normal placement is between the legs of the power stand.

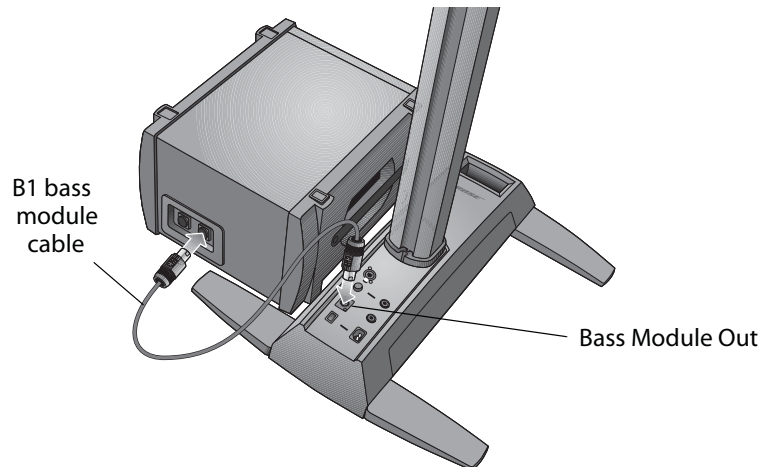
1. Plug one end of the B1 bass module cable into one of the B1 connectors. Rotate the plug clockwise to lock it in place. You should hear a click as it locks.

2. Plug the other end of the cable into the Bass Module Out connector on the power stand. Rotate the plug clockwise to lock it.

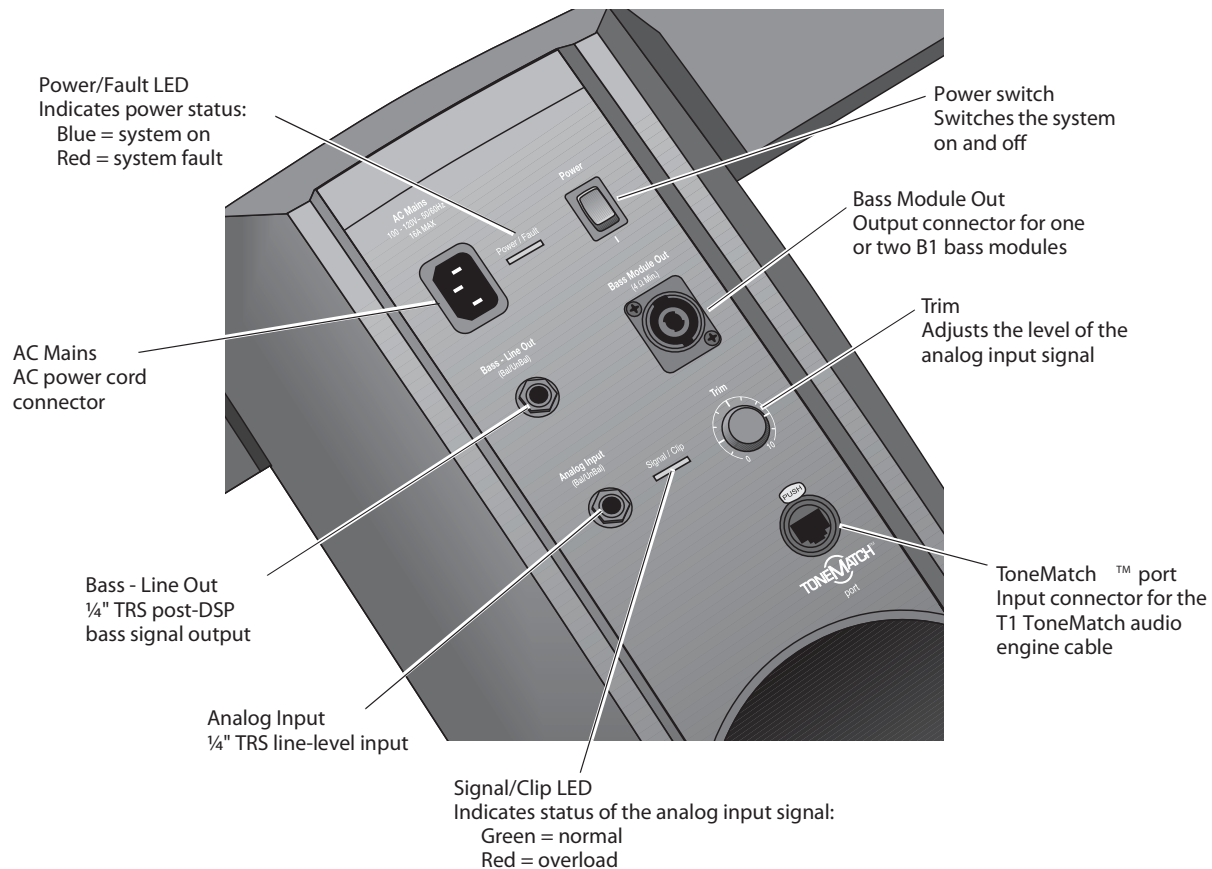
To disconnect a B1 cable, slide back the metal tab on the body of the plug, rotate the plug counterclockwise, and pull it out of the connector.

Note:

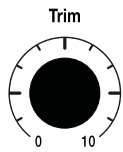
- DO NOT connect a B1 bass module to two power stands at the same time.
- DO NOT connect any bass module other than the B1 to the power stand.
- DO NOT substitute the supplied cable with a 2-wire speaker cable. The power stand uses the signals on two of the wires to automatically sense how many B1 bass modules are connected.



L1® Model II Power Stand Input and Output Connectors, Controls



Setting the Analog Input Level on the L1® Model II Power Stand



When connecting an audio source to the Analog Input, follow these steps to adjust the input Trim control.

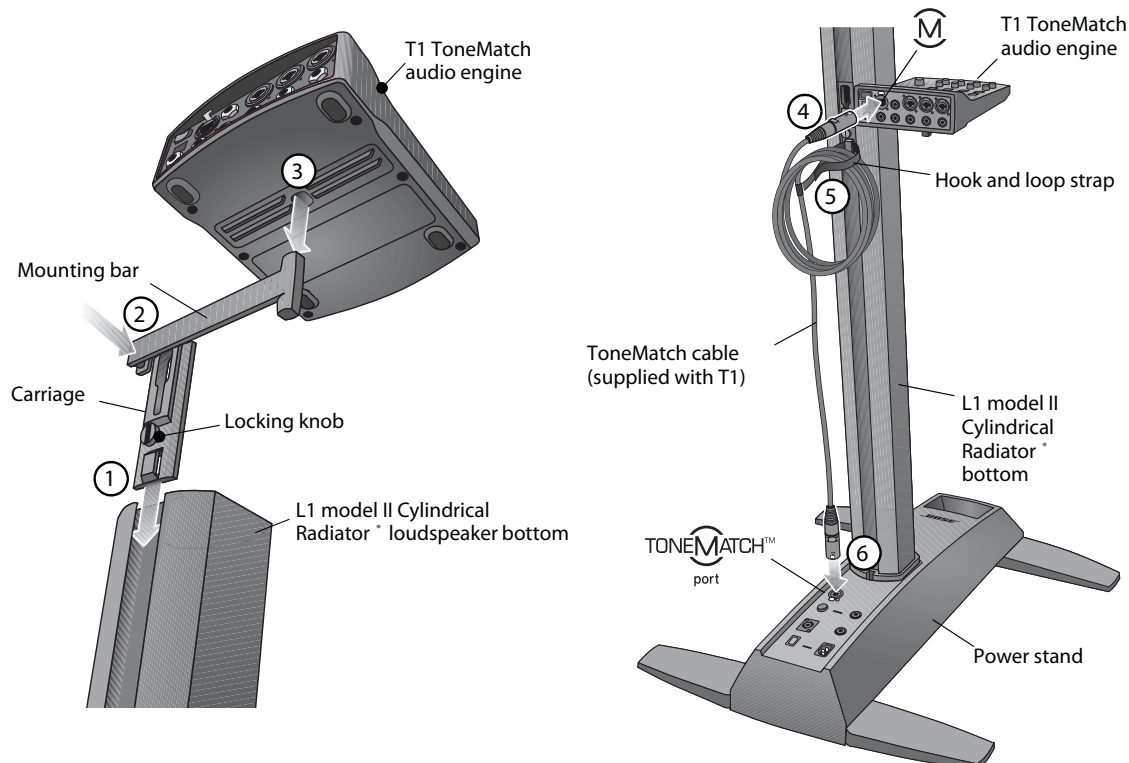
1. Set the Trim control on the power stand to the 0 (zero) position.
2. Connect the audio source to the Analog Input.
3. Adjust the volume of the audio source to the desired level.
4. While playing the source, increase the Trim level until the Signal/Clip indicator glows green or yellow.
5. If the Signal/Clip indicator glows red, decrease the Trim level so that it glows only green or yellow.

Adding a T1 ToneMatch® audio engine

The T1 ToneMatch audio engine provides additional input/output capabilities to your system, plus digital signal processing to customize the way you sound. The audio engine comes with hardware for mounting it on the left or right side of the L1 model II Cylindrical Radiator® loudspeaker.

Note: The audio engine mounts on the bottom section of the loudspeaker and requires removal of the top section before starting this procedure.

1. Slide the carriage into the channel on the rear of the L1 bottom and turn the knob clockwise to lock it in place.
2. Insert the mounting bar into the slot in the carriage and push it downward.
3. Place the T1 on the mounting bar as shown.
4. Plug one end of the ToneMatch cable (supplied with the audio engine) into the ToneMatch output port (M) on the T1.
5. Using the hook and loop strap, secure the cable to the carriage.
6. Plug the other end of the cable into the ToneMatch port on the power stand.



Packaging Part List

L1® Model II Power Stand (see Figure 1)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
	Carton Kit, Includes items 1, 2 and 3	307728	-		
1	Carton Sheet, 770x340x6	304982	1450-9300+1	2	
2	Filler, Corner, Card, 440x170x6	304981	1450-9310+1	4	
3	Carton, Printed, 770x340x190	298674	1437-9302+2-3	1	
4	Poly Bag, Manual	-	1497-1062+0	1	
5	Owners Manual, US	303153	4301-7281+0	1	
6	Carry Bag, PS2	044024	SVC-PS211+ABAG**	1	
7	Poly Bag, 730x270x320	-	1497-7832+0	1	
8	L1 Model II Power Stand	REF	-	1	
9	Quick Start Guide	303152	4301-7282+0	1	
10	Bag, Carry, 775x345x180	303883	4201-1050+0	1	
11	Power Cord, 120V, US/Can Power Cord, 230V, Euro Power Cord, 230V, UK Power Cord, 240V, Australia	035393 283048 283624 284241-006	7010-9640+0 - 7012-5010+0 -	1	3 
12	Poly Bag, 10x14"	-	1497-4122+0	1	

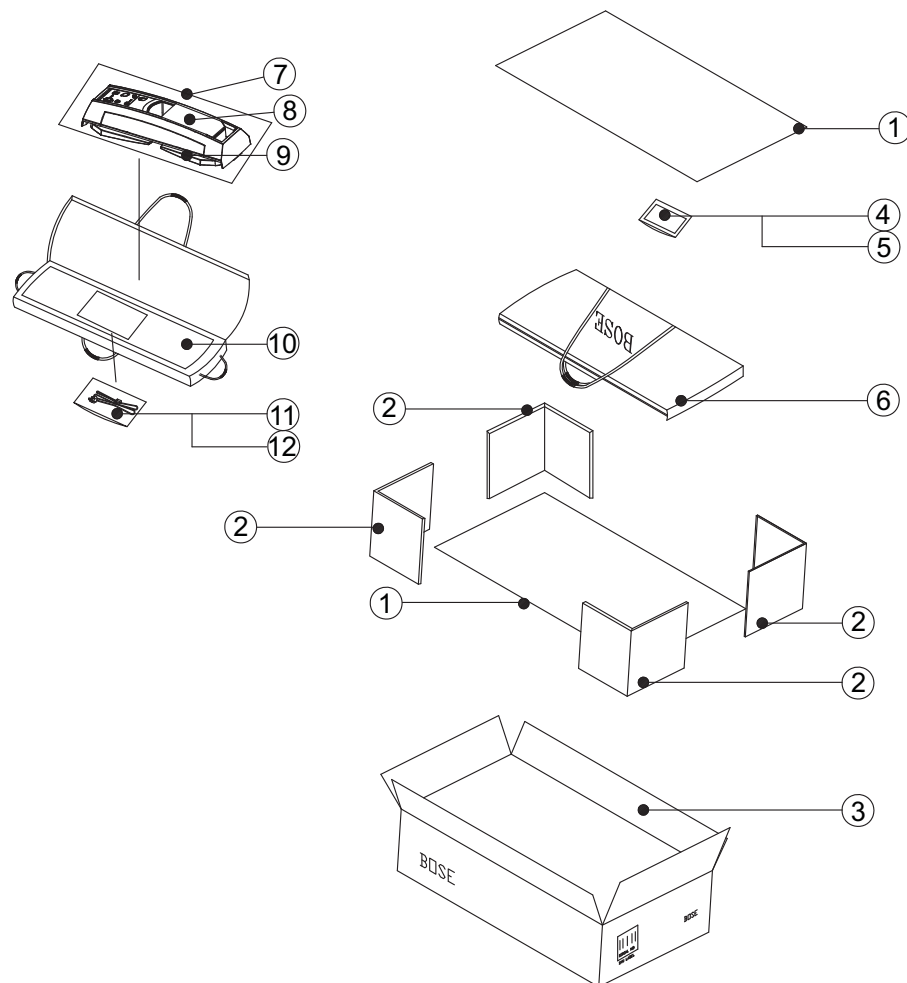


Figure 1. L1 Model II Power Stand Packaging View

Packaging Part List

L1® Model II Line Array (see Figure 2)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
	Carton Kit, includes items 1 - 6	307721	-		
1	Card Sheet	307720	1450-9370+1	2	
2	Filler, PE, Type 1	307716	1493-1641+1	1	
3	Filler, PE, Type 4	307719	1493-1644+1	2	
4	Filler, PE, Type 3	307718	1493-1643+1	2	
5	Filler, PE, Type 2	307717	1493-1642+1	1	
6	Carton	298675	1437-9702+2-3	1	
7	Carry Bag, Line Array Section	044023	SVC-L211+ABAG**	1	
8	Poly Bag	-	1497-7592+0	2	4

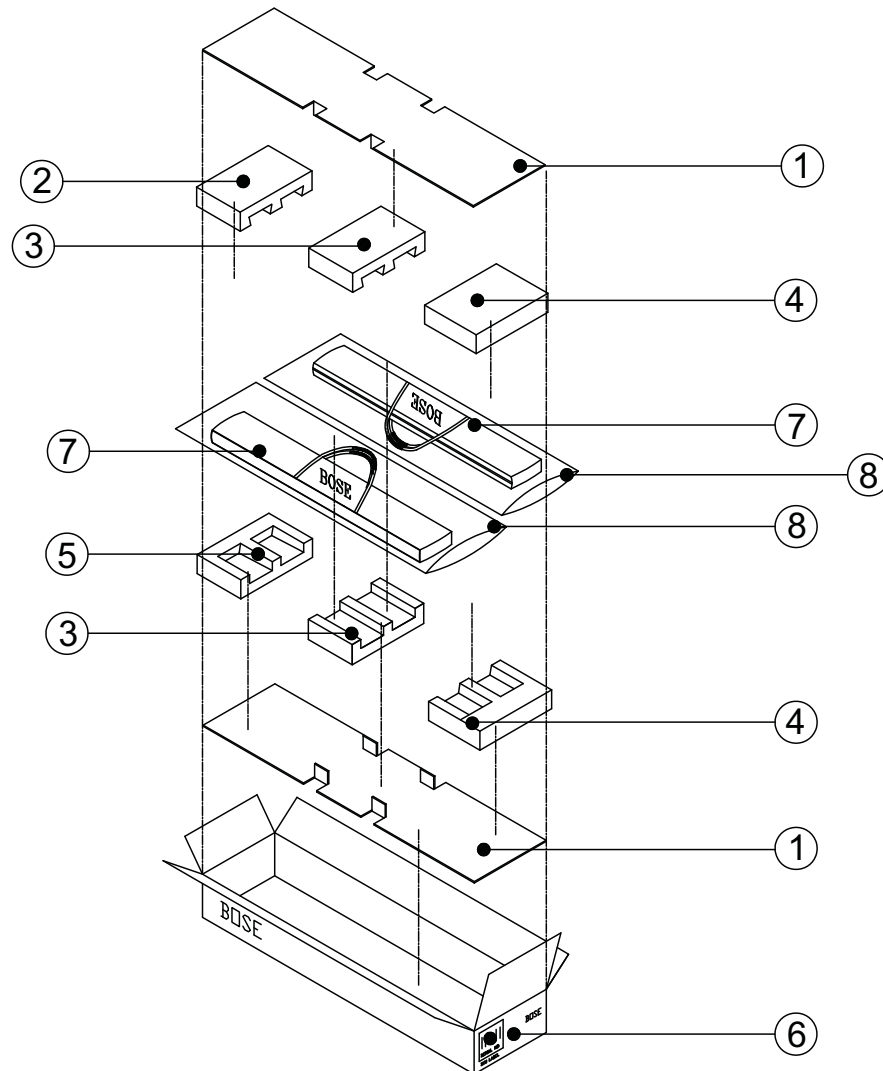


Figure 2. L1 Model II Line Array Packaging View

Packaging Part List

B1 Bass Module (see Figure 3)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty	Note
1	CUSHION, PACKING	303838	1491-7231+0	2	
2	BAG, POLY, 12 X 16 X 49"	-	1497-4552+0	1	4
3	BASS MODULE	032494	-	1	
4	CARTON	303837	145B-3030+1	1	
5	BUBBLE BAG	-	1497-1122+0	1	4
6	SPEAKER CABLE, L=1.5M	035404	SVC-FM040C+CABLE	1	
7	POLYBAG (FOR MANUAL)	-	1497-1062+0	1	4
8	MANUAL, INSTRUCTION	303154	4301-5348+0	1	
9	CARRY BAG	035025	SVC-FM040C+HAND	1	
10	SKU LABEL	-	3000-8368+0	2	4

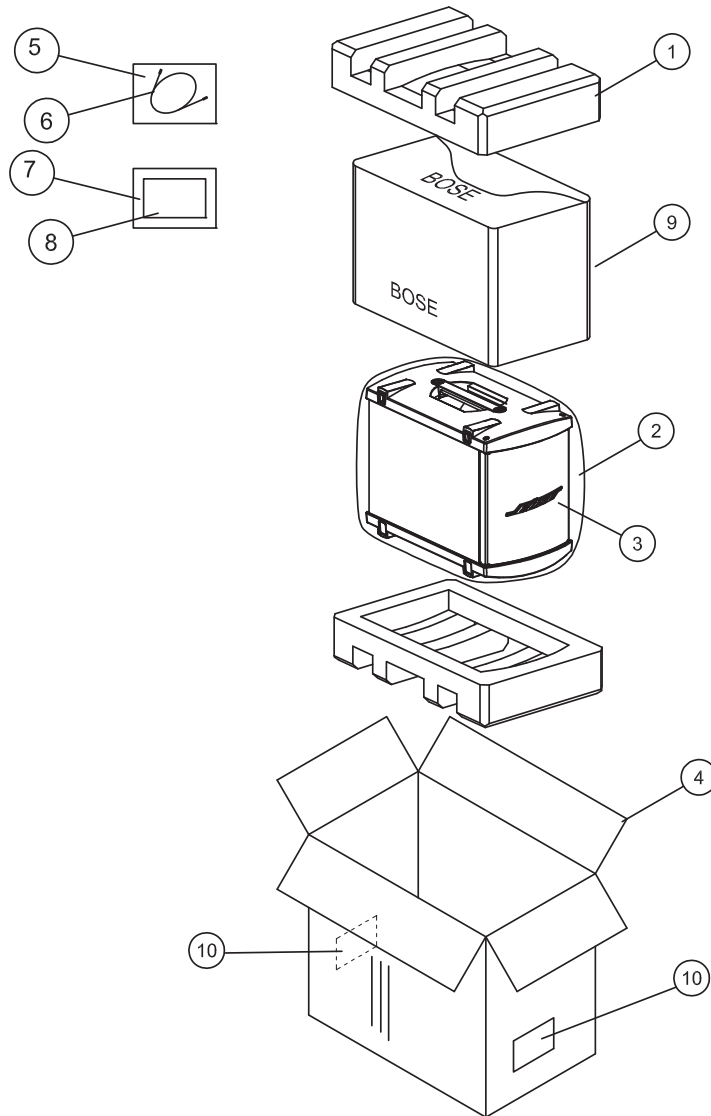


Figure 3. B1 Bass Module Packaging View

Main Part List

Power Stand to Leg Assembly (see Figure 4)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
1	UPPER HOUSING ASSEMBLY	298051	1467-7901+0	1	
2	LEG ASSEMBLY	304129	SVC-PS211+LEGASY	1	
3	SCREW, MACHINE, FLAT-CS, M4X12, BZ	-	2901-4012+3000	20	4
4	LABEL, PRODUCT	-	3001-1607+0	1	4
5	LEG BUMPER, RUBBER	-	4157-1291+0	4	4

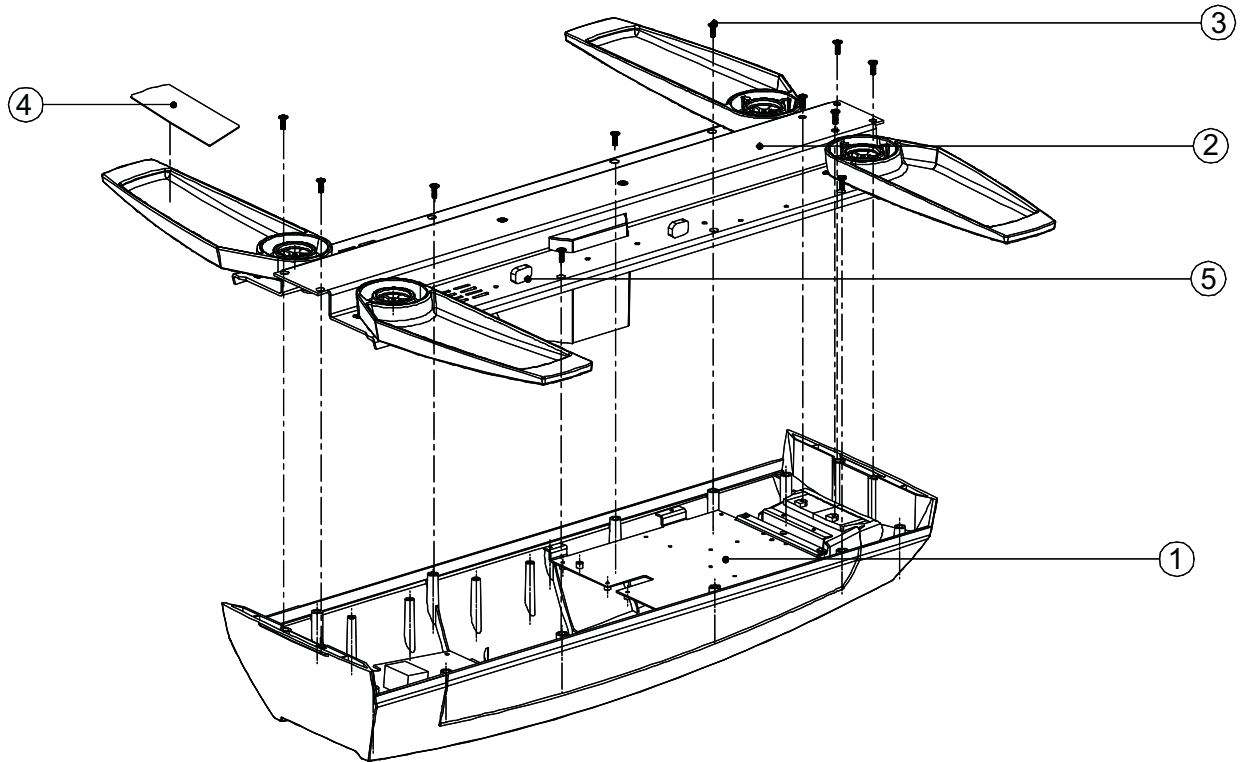


Figure 4. Power Stand to Leg Assembly Exploded View

Main Part List

L1® Model II Power Stand Upper Housing (see Figure 5)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
1	HOUSING, UPPER	298051	1467-7901+0	1	
-	I / O PANEL ASSY, CONSISTS OF ITEMS 2 TO 15 AND 32	304130 304990	SVC-PS211+IOPAN SVC-PS211+IOPANEU	1 1	US/CAN EU/AUS
2	SWITCH, AC POWER, ROCKER, 2P1T	304984	5200-4910+0	1	3 
3	SCREW, M3X12, CSH, BK	-	2901-3012+3000	2	4
4	SCREW, M3X12, CSH, BK	-	2901-3012+3000	2	4
5	SCREW, B-TITE, FLAT-CS, M3X10, BZ	-	2951-3010+3000	2	4
6	I/O PANEL COVER, US/CAN I/O PANEL COVER, EU/AUS	298072 311082	1467-8001+0 1467-8002+0	1 1	
7	SCREW, M4X12, PH, BK	-	2900-4012+3000	6	4
8	LED LIGHTPIPE #2	298381	3717-4306+0	1	
9	LED LIGHTPIPE #1	298380	3717-4206+0	1	
10	AC POWER SOCKET	304131	2113-1144+0	1	3 
11	BRACKET, AC INLET	298383	4135-6971+0	1	
12	AC PRIMARY PCB ASSEMBLY	304983	SVC-PS211+PRI	1	2
13	I/O-DSP PCB ASSY	298612	SVC-PS211+DSP	1	2
14	SHIELD, COVER	-	4135-6841+0	1	
15	SCREW, B-TITE, BIND, M3X8	-	2954-3006+0000	8	4
-	AMP/SMPs ASSY, CONSISTS OF ITEMS 16 TO 31	304985 304987	SVC-PS211+AMPASY SVC-PS211+AMPASYEU	1	1, 2
16	SCREW, 3*8, 5.2MM, BK, ZINC	-	2930-3008+3000	2	4
17	WASHER, METAL, ID 3.3, OD 8, T=0.5	-	2600-3005+0640	2	4
18	HANDLE	298054	4155-2221+0	1	
19	SCREW, D3X5, B-TITE, YEL ZN	-	2954-3005+0000	2	4
20	FAN GRILLE	298058	4135-6801+0	1	
21	SCREW, MACHINE, FLAT-CS, M3X6, BZ	-	2901-3006+3000	3	4
22	PCB BRACKET	298067	4135-6721+0	1	
23	FAN BRACKET	-	4135-7131+0	1	4
24	SCREW, M4X6, P/M, BLK	-	2900-4006+3000	4	4
25	FAN, DC, 12V, 5500 RPM	291332	8913-0007+0	2	
26	SCREW, MACHINE, M3X12, B/H, BLACK, ZINC	-	2900-3010+3000	4	4
27	PCB SHIELD SHEET	-	4155-2281+0	1	
28	MICA INSULATING SHEET	304986	3100-6751+1	2	
29	HEAT SINK, PCB BRACKET	298073	5400-9811+0	2	
30	SMPs/PWR AMP PCB ASSY US/CANADA EURO/AUS	283302 291337	PCB-PS211-+AMP PCB-PS211-+AMPEU	2 2	2
31	SCREW, MACHINE, M3X5, BH, Y-ZINC	-	2904-3005+0000	14	4
32	KNOB, VR	298382	2447-4011+0	1	

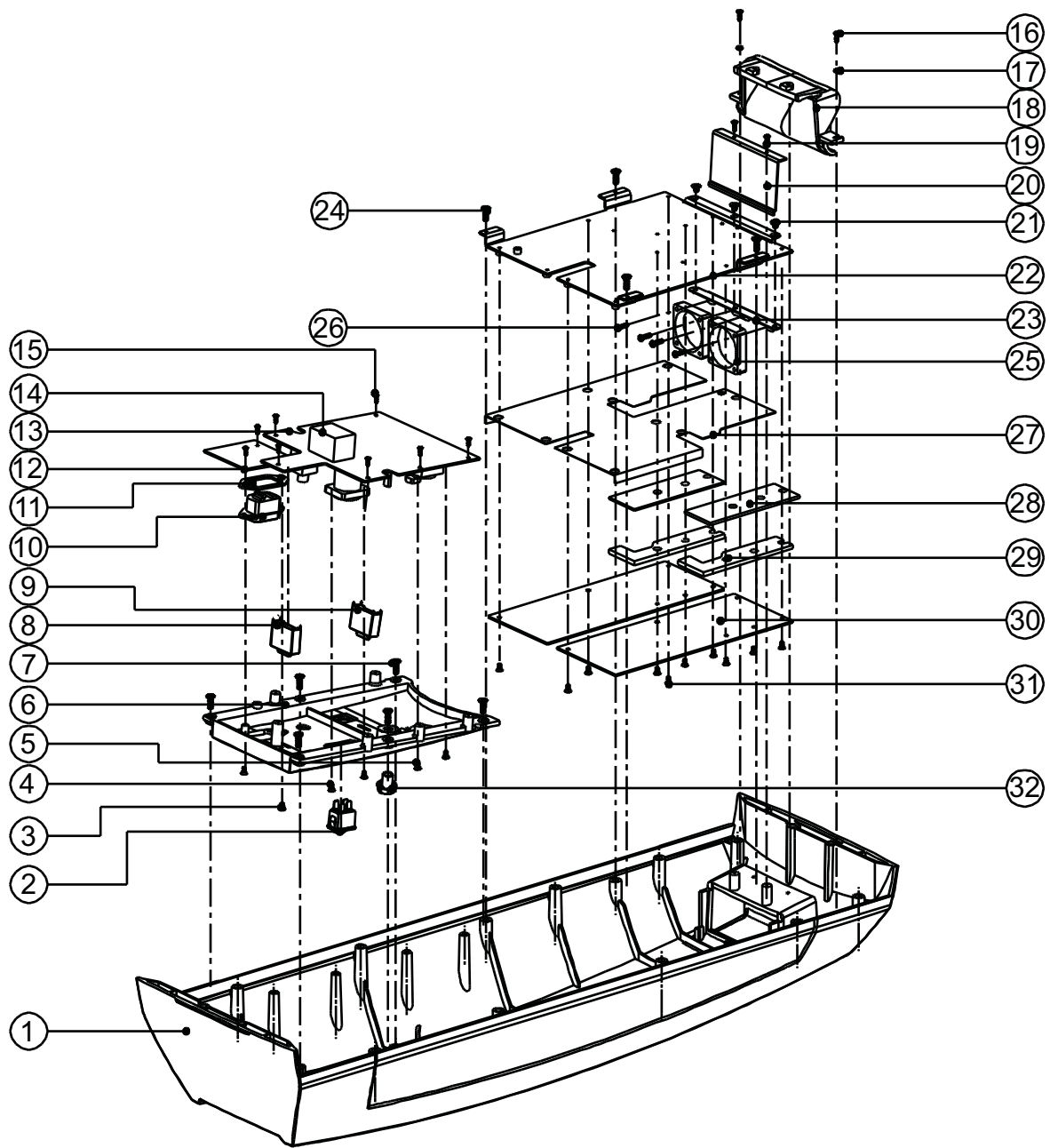


Figure 5. Power Stand Upper Housing Exploded View

Main Part List

L1® Model II Power Stand Cavity and Leg Assembly (see Figure 6)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
	LEG ASSEMBLY, INCLUDES:	304129	SVC-PS211+LEGASY	1	
1	LEG-1	-	4135-6821+0	2	4
2	FOOT	-	4157-1191+0	4	4
3	WASHER, METAL, M4X0.8X10	-	2600-4008+1003	4	4
4	SCREW, M4X12, PH, BK	-	2900-4012+3000	4	4
5	LEG-2	-	4135-6831+0	2	4
6	LOWER LEG BEARING	-	4155-2271+0	4	4
7	SCREW, MACHINE, FLAT-CS, M3X6, BZ	-	2901-3006+3000	16	4
8	SCREW, MACHINE, 4*6, 6.8MM, BK, CR HD	-	2901-4006+9000	16	4
9	SCREW, MACHINE, FLAT-CS, M4X12, BZ	-	2901-4012+3000	2	4
10	BOTTOM COVER	-	1406-1701+0	1	4
11	BEARING SUPPORT	-	4135-6731+0	4	4
12	UPPER LEG BEARING	-	4155-2261+0	4	4
13	SCREW, FLAT-CS, M3X5MM, BZ	-	2901-3005+3000	12	4
14	CROSS BEAM	-	4135-6781+0	2	4
15	SCREW, M4X6, P/M, BLK	-	2900-4006+3000	4	4
16	LINE ARRAY CONNECTOR / CABLE HARNESS	-	7012-8500+0	1	4
17	CAVITY, LINE ARRAY	-	4135-6811+0	1	4
18	SCREW, MACHINE, 4*5, 6MM, BLK, CROSS RCS	-	2901-4005+3000	4	4
19	LINKAGE MOTHER PLATE	-	4135-6711+0	1	4
20	GUIDE MOTHER PLATE	-	4155-2231+0	1	4
21	SCREW, MACH, PAN, M3X8, BZ	-	2900-3008+3000	6	4
22	GUIDE SHAFT, BLACK	-	4135-6891+0	2	4
23	CAVITY STOP	298069	4155-2241+2	1	4
24	BEARING PLATE #1	-	4135-6761+0	2	4
25	SCREW, FLAT-CS, M6X14, BZ	-	2901-6014+3000	8	4
26	BEARING PLATE #2	-	4135-6771+0	2	4
27	FRONT LINK	-	4135-6741+0	2	4
28	REAR LINK	-	4135-6751+0	2	4
29	LINK BEARING	-	4155-2251+0	8	4
30	LINK BEARING WASHER	-	2608-8508+1601	8	4
31	METAL WASHER	-	2600-6005+1003	8	4
32	SPRING WASHER	-	2607-6212+1200	8	4
33	NUT, HEX, 6MMX5.0T, BK, ZN	-	2640-6050+1003	8	4
34	EMI GASKET, SHIELDING	-	4149-1111+0	4	4
	PS2 CAVITY ASSEMBLY INCLUDES:	304128	-	1	
16	CONN, CABLE HARNESS	-	7012-8500+0		4
17	CAVITY, ALUMINUM	-	4135-6811+0		4

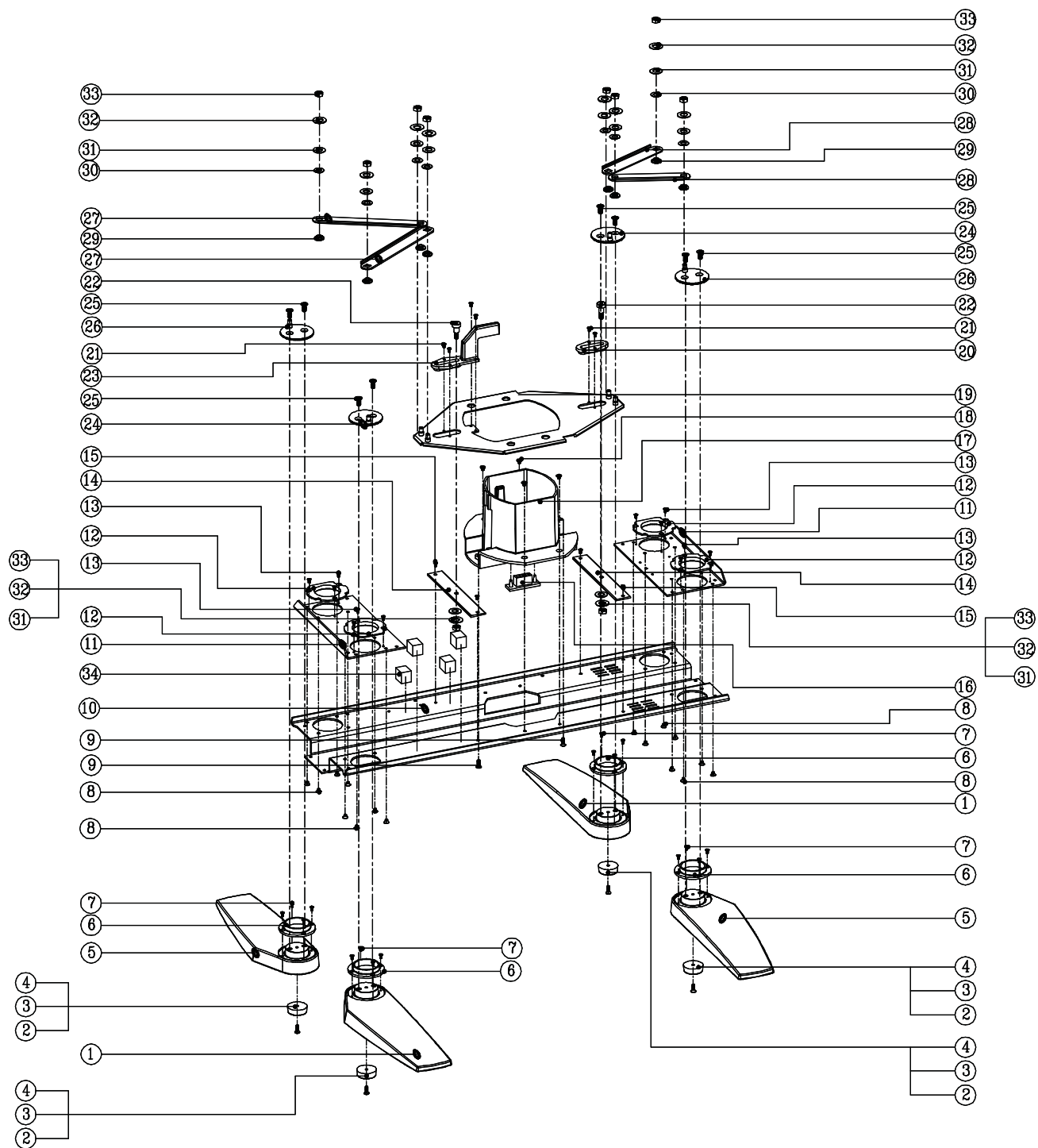


Figure 6. Power Stand Cavity and Leg Assembly Exploded View

Main Part List

L1® Model II Line Array (see Figure 7)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
-	UPPER GRILLE ASSEMBLY; CONSISTS OF ITEMS 3, 25, & 26	304988	SVC- L211+GRILLUP	1	
-	LOWER GRILLE ASSEMBLY; CONSISTS OF ITEMS 3 AND 7	304989	SVC- L211+GRILLOW	1	
1	MS SCREW, M3X12, CSH.BK	-	2901-3012+3000	8	4
2	SCREW, B-TITE, FLAT-CS, M3X10	-	2951-3010+3000	8	4
3	GASKET, GRILLE	-	4149-1261+0	4	
4	GASKET, BAFFLE SCREW	-	4149-1181+0	24	
5	BAFFLE, DRIVER	-	4155-2291+0	4	
6	GASKET, BAFFLE TOP	-	4149-1191+0	2	
7	GRILLE, LOWER SECTION, NO LOGO	298024-02	4135-6851+1	1	
8	SCREW, 3.5X10MM, B-TITE, BLK	-	2954-3510+3000	53	4
9	WASHER, RUBBER, M4X1.5X6.5	-	2603-4015+0651	48	
10	BRACKET, END CAP #4	298029	4135-6861+0	1	
11	SCREW, M4X8, TTP/B, YW, ZN	-	2920-4007+0000	1	4
12	WASHER, SPRING, M4X1X7, YZ	-	2607-4010+0700	1	4
13	WASHER, EXT TOOTH, M4X0.8X8.5	-	2605-4008+0850	1	4
14	SHEET, AIRPROOF	-	4155-2701+0	1	
15	SCREW, 3.5X10MM, B-TITE, BLK	-	2954-3510+3000	53	4
16	SCREW, M3X8, C'SINK, FLT HD	-	2951-3008+3000	1	4
17	EVA GASKET, BAFFLE	-	4149-1121+0	8	
18	WIRE, 4P, P5.08, #20, UL1007	-	7012-8520+0	1	
19	HOUSING, LOWER SECTION	-	1406-1901+0	1	
20	SPONGE, AIRPROOF	-	4149-1301+0	2	
21	SCR, MACH, 4*15, 6.8MM, BK/C HD	-	2900-4015+3000	1	4
22	WASHER, METAL, M4X0.8X10, BZ	-	2600-4008+1003	1	4
23	2.75" DRIVER, GR, 6 OHM	303836	SVC-WF+BSPAL2	24	
24	SCREW, MACH, M3.5X8, 6.7MM	-	2940-3508+3000	96	4
25	GRILLE, UPPER SECTION, NO LOGO	298024-01	4135-6852+1	1	
26	BOSE LOGO	303709	2150-7012+0	1	
27	WIRE, 4P, P5.08, #20, UL1007	-	7012-8530+0	1	
28	HOUSING, UPPER SECTION	-	1406-1801+0	1	
29	SCREW, MACH, OVAL-CS, M6X20	-	2902-6020+3000	2	4
30	BAYONET, LINE SOURCE	035407	8901-4270-0	1	

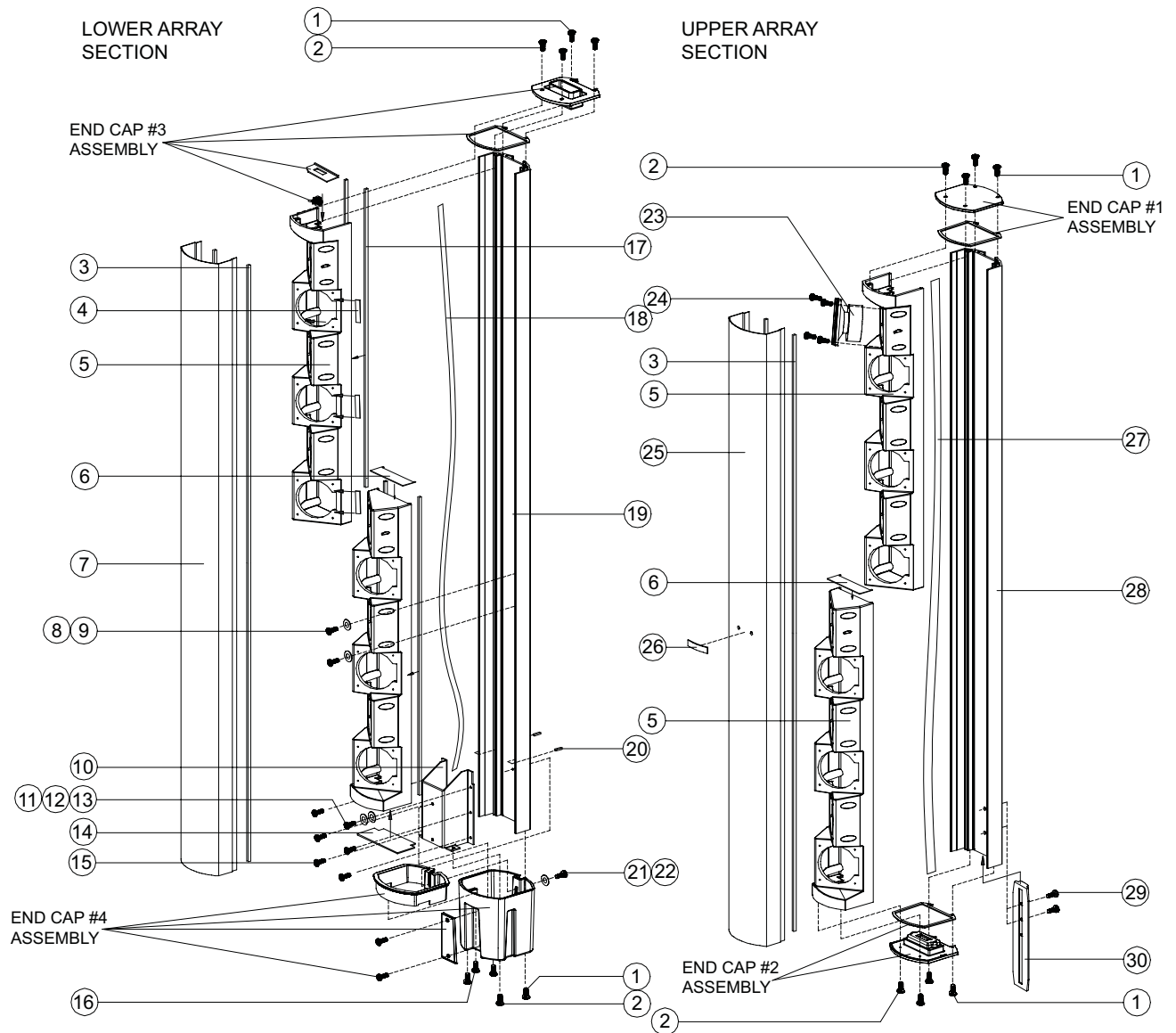


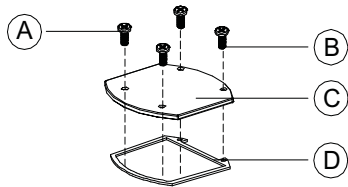
Figure 7. L1® Model II Line Array Exploded View

Main Part List

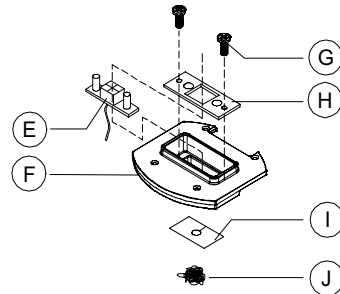
L1® Model II Line Array End Cap Assemblies (see Figure 8)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
	END CAP #1 ASSEMBLY	304133	SVC-L211- ENDCAP1	1	
A	MS SCREW, M3X12, CSH.BK	-	2901-3012+3000	8	4
B	SCREW, B-TITE, FLAT-CS, M3X10	-	2951-3010+3000	8	4
C	COVER, END CAP #1	-	1467-8101+0	1	
D	GASKET, END CAP, 83X82X1.5	-	4149-1141+0	3	
	END CAP #2 ASSEMBLY	304134			
E	CONNECTOR ASSY, MOLEX, 4 PIN	-	7012-6615+0	1	
F	COVER, END CAP #2	-	1467-8201+0	1	
G	SCREW, B-TITE, PAN, M3X10	-	2950-3010+3000	6	4
H	PLATE, MOLEX, FLOATING	-	4135-3511+0	1	
I	ENDCAP AIRPROOF SHEET	-	4154-6841+1	2	
J	BUTYL TAPE	-	9500-1100+0		
D	GASKET, END CAP, 83X82X1.5	-	4149-1141+0	3	
A	MS SCREW, M3X12, CSH.BK	-	2901-3012+3000	8	4
B	SCREW, B-TITE, FLAT-CS, M3X10	-	2951-3010+3000	8	4
	END CAP #3 ASSEMBLY	304135			
G	SCREW, B-TITE, PAN, M3X10	-	2950-3010+3000	6	4
H	PLATE, MOLEX, FLOATING	-	4135-3511+0	1	
K	PCB ASSY, CONNECTOR, 4 PIN	-	PCB-L211+CN4P	1	
I	ENDCAP AIRPROOF SHEET	-	4154-6841+1	2	
J	BUTYL TAPE	-	9500-1100+0		
L	COVER, END CAP #3	-	1467-8301+0	1	
D	GASKET, END CAP, 83X82X1.5	-	4149-1141+0	3	
A	MS SCREW, M3X12, CSH.BK	-	2901-3012+3000	8	4
B	SCREW, B-TITE, FLAT-CS, M3X10	-	2951-3010+3000	8	4
-	PLATE, METAL, ENDCAP #3	-	4135-7291+0	1	
	END CAP #4 ASSEMBLY	304136			
M	GASKET, LOWER COLLAR	-	4149-1251+0	1	
N	FRAME, LOWER COLLAR	-	4155-2301+0	1	
O	SHIM, CAVITY	-	4155-2311+0	1	
P	SCREW, M3X8, C'SINK, BLK	-	2901-3008+3000	2	4
Q	SCREW, M3X8, C'SINK, FLT HD	-	2951-3008+3000	1	4
R	COVER, END CAP #4	-	1467-8401+0	1	
S	PCB ASSY, CONNECTOR, 10 PIN	-	PCB- L211+CN10P	1	
G	SCREW, B-TITE, PAN, M3X10	-	2950-3010+3000	6	4
T	PLATE, MOLEX, FIXED, 10 PIN	-	4135-3531+0	1	
A	MS SCREW, M3X12, CSH.BK	-	2901-3012+3000	8	4
B	SCREW, B-TITE, FLAT-CS, M3X10	-	2951-3010+3000	8	4
	DRIVER BAFFLE ASSEMBLY				
U	GASKET, BAFFLE SCREW	-	4149-1181+0	24	
V	BAFFLE, DRIVER	298023	4155-2291+0	4	

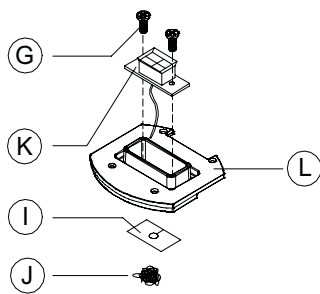
END CAP # 1 ASSY



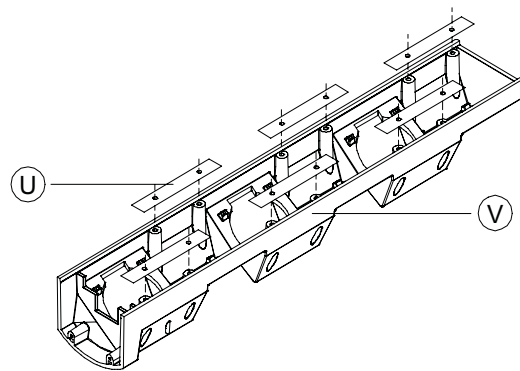
END CAP # 2 ASSY



END CAP # 3 ASSY



DRIVER BAFFLE ASSY



END CAP # 4 ASSY

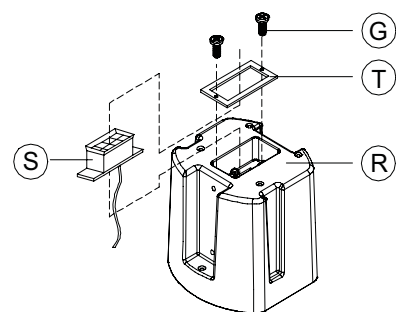
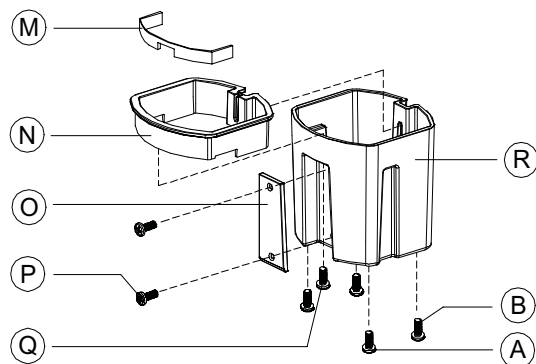


Figure 8. L1® Model II Line Array End Cap Assemblies Exploded View

Main Part List

B1 Bass Module Exploded View (see Figure 9)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty	Note
1	Screw, M4 X 28, BK, B1 Grille	275465	2908-4028+3400	4	
2	Woofer Assembly	263998	SVC-FM040C+WF	2	
3	Gasket, Woofer Assembly	263998	-	2	4
4	Screw, M4 X 17, BK, B1 Driver	275466	2913-4017+3000	8	
5	Grille Assembly	263992	SVC-FM040C+GRILL	1	
6	Gasket, Grille Assembly	-	-	2	4
7	Logo Assembly	-	-	1	4
8	B1 Terminal Panel Assembly	276409	SVC-B2+TML	1	
9	Screw, M3 X 12, BK, B1 Input Cup	275467	2900-3012+3000	4	
-	4-Wire Speakon to Speakon Cable Assembly, L=1.5M	035404	SVC-FM040C+CABLE	1	

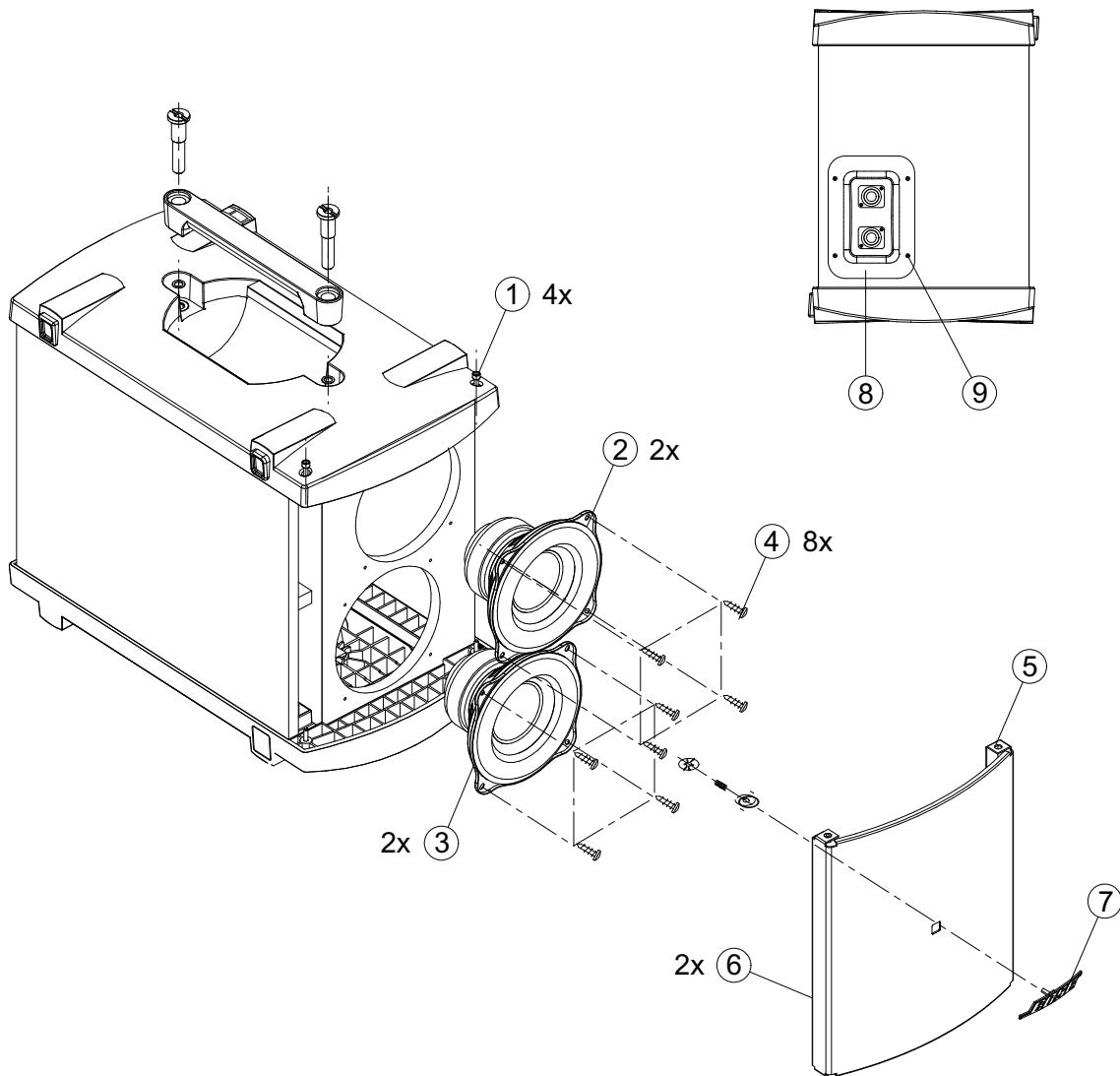


Figure 9. B1 Bass Module Exploded View

Electrical Part List

Input/Output PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R98	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R99	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R102	4.99K, 0603, RMG, 1/16W, 1%	4723-4991	4
R104	4.99K, 0603, RMG, 1/16W, 1%	4723-4991	4
R114	5.6K, 0603/1608, RMG, 1/16W, 1%	4723-562A	4
R115	5.6K, 0603/1608, RMG, 1/16W, 1%	4723-562A	4
R116	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R117	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R119	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R120	15K, 0603/1608, RMG, 1/16W, 1%	4723-153A	4
R121	15K, 0603/1608, RMG, 1/16W, 1%	4723-153A	4
R129	5.6K, 0603/1608, RMG, 1/16W, 1%	4723-562A	4
R130	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R131	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R134	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R139	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R140	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R143	RCFA, 10KX4, 0603, 1/16W, 5%	4703-103J04	4
R144	RCFA, 10KX4, 0603, 1/16W, 5%	4703-103J04	4
R155	RCFA, 10KX4, 0603, 1/16W, 5%	4703-103J04	4
R159	RCFA, 10KX4, 0603, 1/16W, 5%	4703-103J04	4
R167	RCFA, 47 OHMX4, 0603, 1/16W, 5%	4703-470J04	4
R168	RCFA, 47 OHMX4, 0603, 1/16W, 5%	4703-470J04	4
R170	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R171	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R174	634 OHM, 0603, RMG, 1/16W, 1%	4723-6340	4
R175	634 OHM, 0603, RMG, 1/16W, 1%	4723-6340	4
R176	634 OHM, 0603, RMG, 1/16W, 1%	4723-6340	4
R177	91 OHM, 0603, RMG, 1/16W, 1%	4723-910A	4
R178	91 OHM, 0603, RMG, 1/16W, 1%	4723-910A	4
R179	1.33K, 0603, RMG, 1/16W, 1%	4723-1331	4
R180	1.33K, 0603, RMG, 1/16W, 1%	4723-1331	4
R181	4.42K, 0603, RMG, 1/16W, 1%	4723-4421	4
R182	4.42K, 0603, RMG, 1/16W, 1%	4723-4421	4
R185	715 OHM, 0603, RMG, 1/16W, 1%	4723-7150	4
R186	715 OHM, 0603, RMG, 1/16W, 1%	4723-7150	4
R187	2.32K, 0603, RMG, 1/16W, 1%	4723-2321	4
R188	2.32K, 0603, RMG, 1/16W, 1%	4723-2321	4
R189	4.99K, 0603, RMG, 1/16W, 1%	4723-4991	4
R190	4.99K, 0603, RMG, 1/16W, 1%	4723-4991	4
R200	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R201	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R227	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R229	1M, 0603/1608, RMG, 1/16W, 5%	4723-105J	4

Electrical Part List

Input/Output PCB Assembly
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R234	16 OHM, 2512, RMG, 1W, 5%	4728-160J	3, 4 
R238	240 OHM, 0603/1608, RMG, 1/16W, 5%	4723-241J	4
R252	9.1K, 0603/1608, RMG, 1/16W, 1%	4723-912A	4
R257	30.9K, 0603/1608, RMG, 1/16W, 1%	4723-3092	4
R261	510 OHM, 1206, RMG, 1/4W, 5%	4725-511J	4
R264	510 OHM, 1206, RMG, 1/4W, 5%	4725-511J	4
R268	510 OHM, 1206, RMG, 1/4W, 5%	4725-511J	4
R271	510 OHM, 1206, RMG, 1/4W, 5%	4725-511J	4
R291	120 OHM, 0603/1608, RMG, 1/16W, 5%	4723-121J	4
R294	120 OHM, 0603/1608, RMG, 1/16W, 5%	4723-121J	4
R298	15K, 0603/1608, RMG, 1/16W, 1%	4723-153A	4
R299	5.6K, 0603/1608, RMG, 1/16W, 1%	4723-562A	4
R300	7.5K, 0603/1608, RMG, 1/16W, 1%	4723-752A	4
R301	200K, 0603/1608, RMG, 1/16W, 1%	4723-204A	4
R302	7.5K, 0603/1608, RMG, 1/16W, 1%	4723-752A	4
R305	0 OHM, 1206, RMG, 1/8W, 5%	4721-000J	4
R309	0 OHM, 0603, RMG, 1/16W, 5%	4723-000JR	4
R311	22 OHM, 0603, RMG, 1/16W, 5%, 0603, HK	4723-220J+P-R	4
R312	22 OHM, 0603, RMG, 1/16W, 5%, 0603, HK	4723-220J+P-R	4
R317	5.1K, 1206, RMG, 1/4W, 5%	4725-512J	4
R318	5.1K, 1206, RMG, 1/4W, 5%	4725-512J	4
R319	5.1K, 1206, RMG, 1/4W, 5%	4725-512J	4
R320	5.1K, 1206, RMG, 1/4W, 5%	4725-512J	4

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C100	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C101	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C102	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C103	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C104	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C105	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C106	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C107	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C108	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C109	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C110	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C111	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C112	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C113	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C114	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C115	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C116	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C117	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C118	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C119	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C120	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C121	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C122	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C123	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C124	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C125	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C126	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C127	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C128	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C129	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C130	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C134	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C135	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C136	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C137	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C138	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C139	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C140	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C141	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C142	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C143	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C146	10uF, CE, 25V, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106MJJC	4
C147	10uF, CE, 25V, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106MJJC	4
C150	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C151	47pF, 0603, CC, 50V, 5%, 1x2	150F-470JAC	4
C152	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C153	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C154	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C155	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C156	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C157	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C158	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C159	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C160	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C161	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C162	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C163	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C164	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C165	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C166	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C167	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C168	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C169	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C170	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C171	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C173	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C174	470pF, 0603, CC, 50V, 5%	150F-471JAC	4
C175	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C176	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C177	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C180	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C181	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C182	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C183	220pF, 0603, CC, 50V, 5%	150F-221JAC	4
C184	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C185	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C191	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C192	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C195	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C196	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C200	100pF, 0603, CC, 50V, 5%, 1X2	150F-101JAC	4
C201	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C202	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C203	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C204	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C205	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C206	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C207	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C208	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C209	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C210	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C211	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C212	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C213	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C214	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C215	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C216	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C217	10uF, CT, 16V, 20%, SMD, 1.6X3.2	154D-106MCF	4
C218	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C219	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C220	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C221	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C222	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C223	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C224	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C225	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C228	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C229	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C230	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C231	1uF, 0603, CC, 10V, 20%	150C-105ZAC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C232	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C233	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C234	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C235	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C236	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C237	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C238	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C239	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C240	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C241	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C242	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C243	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C244	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C245	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C246	10uF, CT, 16V, 20%, SMD, 1.6X3.2	154D-106MCF	4
C247	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C248	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C249	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C252	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C253	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C254	470pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-471JAC	4
C255	470pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-471JAC	4
C256	470pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-471JAC	4
C257	470pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-471JAC	4
C258	0.015uF, 0603, CC, 50V, 10%	150F-153KAC	4
C259	0.015uF, 0603, CC, 50V, 10%	150F-153KAC	4
C260	47uF, CT, 85C, 16V, 10%, SMD, 6.0X3.2	154D-476KKF	4
C261	1uF, CT, 16V, 20%, SMD, 1.6X3.2	154D-105MCF	4
C262	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C263	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C264	10uF, CE, 16V, 20%, SMD, 4X5.4	157D-106MGJ	4
C265	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C266	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C267	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C268	1uF, 0805, CC, 10V, 10%	150C-105KBD	4
C272	22pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-220JAC	4
C273	22pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-220JAC	4
C274	2200pF, 0603, CC, 50V, 10%, 0.8x1.6	150F-222KAC	4
C275	2200pF, 0603, CC, 50V, 10%, 0.8x1.6	150F-222KAC	4
C276	6800pF, 0603/1608, CC, 50V, 10%, 1X2	150F-682KAC	4
C277	6800pF, 0603/1608, CC, 50V, 10%, 1X2	150F-682KAC	4
C278	22uF, CE, 16V, 20%, SMD, 5X5.8, UUD1C220MCR1GS, NICHICON	157D-226MIKC	4
C279	22uF, CE, 16V, 20%, SMD, 5X5.8, UUD1C220MCR1GS, NICHICON	157D-226MIKC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C280	22uF, CE, 16V, 20%, SMD, 5X5.8, UUD1C220MCR1GS, NICHICON	157D-226MIKC	4
C281	22uF, CE, 16V, 20%, SMD, 5X5.8, UUD1C220MCR1GS, NICHICON	157D-226MIKC	4
C282	22uF, CE, 16V, 20%, SMD, 5X5.8, UUD1C220MCR1GS, NICHICON	157D-226MIKC	4
C283	1500pF, CC, 50V, 10%, 0603/1608	150F-152KAC	4
C284	1500pF, CC, 50V, 10%, 0603/1608	150F-152KAC	4
C285	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C286	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C287	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C288	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C289	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C290	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C291	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C292	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C293	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C294	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C295	100uF, CE, 35V, 105C, 20%, RLT, 6.3X11, LOW ESR	157Q-107MLUTR	4
C296	100uF, CE, 35V, 105C, 20%, RLT, 6.3X11, LOW ESR	157Q-107MLUTR	4
C298	220uF, CE, 35V, 105C, 20%, RLT, 8X11.5, LOW ESR	157Q-227MOVTR	4
C299	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C300	1800pF, 0603, CC, 50V, 5%, 0.8X1.6	150F-182JAC	4
C302	47uF, CT, 85C, 16V, 10%, SMD, 6.0X3.2	154D-476KKF	4
C303	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C304	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C305	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C306	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C307	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C308	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C309	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C310	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C311	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C312	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C313	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C314	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C315	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C316	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C317	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C318	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C319	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C320	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C321	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C322	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C323	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C324	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C325	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C326	100uF, CE, 35V, 105C, 20%, RLT, 6.3X11, LOW ESR	157Q-107MLUTR	4
C327	100uF, CE, 35V, 105C, 20%, RLT, 6.3X11, LOW ESR	157Q-107MLUTR	4
C328	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C329	220uF, CE, 35V, 105C, 20%, RLT, 8X11.5, LOW ESR	157Q-227MOVTR	4
C330	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C331	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C332	2700pF, 0603/1608, CC, 50V, 10%	150F-272KAC	4
C334	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C335	47uF, CT, 85C, 16V, 10%, SMD, 6.0X3.2	154D-476KKF	4
C336	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C337	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C338	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C339	1uF, 0603, CC, 10V, 20%	150C-105ZAC	4
C340	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C341	0.1uF, CC, 50V, 10%, 0603/1608, 1x2	150F-104KAC	4
C342	100uF, CT, 6.3V, 20%, SMD, 3.5X2.8MM	154B-107MFE	4
C343	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C344	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C346	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C347	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C348	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C349	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C350	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C351	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C352	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C353	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C354	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C356	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C357	10uF, CT, 16V, 20%, SMD, 1.6X3.2	154D-106MCF	4
C358	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C359	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C360	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C361	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C362	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C363	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C364	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C365	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C366	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C367	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4

Electrical Part List

Input/Output PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C368	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C369	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C370	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C371	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C372	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C373	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C374	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C375	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C376	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C377	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C378	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C379	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C380	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C381	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C382	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C383	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C384	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C385	0.01uF, 0603, CC, 50V, 10%, 1x2	150F-103KAC	4
C386	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C387	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C388	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C391	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C392	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C393	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C394	100uF, CE, 16V, 20%, RLT, 5X11, RE3	157D-107MIUE	4
C396	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C397	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C398	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C399	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C400	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C401	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C402	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C403	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4
C404	1000pF, 0603/1608, CC, 50V, 10%, 1X2	150F-102KAC	4

Electrical Part List

Input/Output PCB Assembly

Inductors

Reference Designator	Description	Vendor Part Number	Note
L101	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L102	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L104	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L105	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L106	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L107	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L108	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L109	22uH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	4
L110	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L111	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L112	22uH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	4
L113	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L116	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L117	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4
L302	FERRITE BEAD, 125 OHM, SMD, ACB453215	1802-0630	4

Diodes

Reference Designator	Description	Vendor Part Number	Note
D100	SCHOTTKY, 40V, 3A, ST, PS3L40S, DO-214AB, SMD, ST	480L-40S0	4
D101	BAV99, SOT23, PHILIPS	4840-8970	4
D102	BAV99, SOT23, PHILIPS	4840-8970	4
D103	BAV99, SOT23, PHILIPS	4840-8970	4
D104	SCHOTTKY, 40V, 3A, ST, PS3L40S, DO-214AB, SMD, ST	480L-40S0	4
D105	1SS355TE-17, ROHM	4840-1660	4
D106	1SS355TE-17, ROHM	4840-1660	4
D107	1SS355TE-17, ROHM	4840-1660	4
D108	1SS355TE-17, ROHM	4840-1660	4
D110	BAV99, SOT23, PHILIPS	4840-8970	4
D114	BAV99, SOT23, PHILIPS	4840-8970	4
D115	BAV99, SOT23, PHILIPS	4840-8970	4
D118	LOW CURRENT SMD LED, RED, 2mA	3700-7829	4
D119	LED, SMD, 3.2X2.4X2.4, RED	3700-7840	4
D120	LED, SMD, 3.2X2.4X2.4, RED	3700-7840	4
D121	LED, SMD, 3.2X2.4X2.4, RED	3700-7840	4
D122	LED, SMD, 3.2X2.4X2.4, RED	3700-7840	4
D123	LED, SMD, 3.2X2.4X2.4, BLUE	3700-7840	4
D124	LED, SMD, 3.2X2.4X2.4, BLUE	3700-7840	4
D125	LED, SMD, 3.2X2.4X2.4, GREEN	3700-7840	4
D126	LED, SMD, 3.2X2.4X2.4, GREEN	3700-7840	4

Electrical Part List

Input/Output PCB Assembly

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q100	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q101	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q102	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q103	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q104	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q105	MMBT4403LT1G, SMD	4854-4030	4
Q106	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q107	MMBT4403LT1G, SMD	4854-4030	4
Q108	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q109	MMBT4403LT1G, SMD	4854-4030	4
Q110	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q111	MMBT4403LT1G, SMD	4854-4030	4
Q112	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q113	PNP, HM1426, SOT-89, 20V, 3A, SMD	4851-4260	4
Q114	MMBT4403LT1G, SMD	4854-4030	4
Q115	MMBT4403LT1G, SMD	4854-4030	4
Q116	MMBT4403LT1G, SMD	4854-4030	4
Q117	MMBT4403LT1G, SMD	4854-4030	4
Q118	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q119	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q120	MMBT4403LT1G, SMD	4854-4030	4
Q121	2N2222, SMD, MMBT2222ALT1G	4860-5410	4
Q122	MMBT4403LT1G, SMD	4854-4030	4
Q123	MMBT4403LT1G, SMD	4854-4030	4
Q124	MMBT4403LT1G, SMD	4854-4030	4
Q125	MMBT4403LT1G, SMD	4854-4030	4
Q126	2N2222, SMD, MMBT2222ALT1G	4860-5410	4

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U100	NJM2068M-#ZZZB, DUAL OP AMP	3130-6890	4
U101	NJM2068M-#ZZZB, DUAL OP AMP	3130-6890	4
U102	NJM2068M-#ZZZB, DUAL OP AMP	3130-6890	4
U103	NJM2068M-#ZZZB, DUAL OP AMP	3130-6890	4
U104	BA4560F-E2, ROHM	3131-5330	4
U105	BA4560F-E2, ROHM	3131-5330	4
U106	KIA393F-EL/P, DUAL VOLTAGE COMPARATOR	3130-4990	4
U107	KIA393F-EL/P, DUAL VOLTAGE COMPARATOR	3130-4990	4
U108	CODEC, CS4272-CZZ, 28 PIN, TSSOP, CIRRUS LOGIC (BOSE® PART NUMBER 271836)	3132-4471	4
U109	SPI FLASH, 4M, AT45DB04, 1B-SU, SOIC8, 8S2	3132-4721	4
U110	DSP ADSP-21366KBCZ, 136-BALL, CSP-BGA, ADI	3132-4461	4
U111	BA4560F-E2, ROHM	3131-5330	4
U113	HEX INVERTER, SN74LVCU, 04APW, TSSOP, 14 PIN	3132-4731	4
U115	VOLT REG, -15V, L7915CD2T, D2PAK, ST	3132-3891	4

Electrical Part List

Input/Output PCB Assembly

Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U116	VOLT REG, L7815ACD2T, D2PAK, ST	3132-3881	4
U117	STEP-DOWN CONVERTER, MP1591DN, SOIC8N, MPS	3132-4711	4
U118	REG, NCP1117ST33T3G, 3.3V, SOT-223	3132-1481	4
U119	RESET, MCP100T-315I/TT, SOT23, MICROCHIP	3132-4481	4
U120	STEP-DOWN CONVERTER, MP1591DN, SOIC8N, MPS	3132-4711	4

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CN101	2P, ST. WAFER, P=2.0, COULOMB	2102-020S	4
CN102	2P, ST. WAFER, P=2.0, COULOMB	2102-020S	4
CN301B-B	WAFER, 2P, P7.92, STRAIGHT	2101-3092	4
E1B	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
E2B	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
F100	THERMAL FUSE, 40A, MAX 60V, MAX PTC, RESETTABLE, 8X5.5	5201-5006	3, 4 
F101	THERMAL FUSE, 40A, MAX 60V, MAX PTC, RESETTABLE, 8X5.5	5201-5006	3, 4 
FOR DSP	COVER, SHIELD, BSPAPS2	4135-6841	4
FOR J102	BRACKET, POWER STAND, 4P, SPK SOCKET	4135-3801	4
J100	JACK, PHONE, 5P, 6.4MM, BLACK, W/SW	2113-3269	4
J101	JACK, PHONE, 5P, 6.4MM, BLACK	2113-3270	4
J102	SPEAKON® NEUTRIK®, 4 WIRE, NL4MD-V	2113-1336	4
J103	JACK, RJ45, ST-NE8FAV, 8 PIN, NEUTRIK	2113-3210	4
J301B	3P, ST.WAFER, P=2.0, COULOMB	2102-030S	4
J301L	3P, ST.WAFER, P=2.0, COULOMB	2102-030S	4
J302B	6 PIN WF	2102-060S	4
J302L	6 PIN WF	2102-060S	4
J303B	3P, ST.WAFER, P=2.0, COULOMB	2102-030S	4
J303L	3P, ST.WAFER, P=2.0, COULOMB	2102-030S	4
L100	FERRITE CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	4
T100	CHOKE, CM, 2200 OHM, AT, 100 MHZ, SM, DLW31SN222SQ2L, MURATA	1806-3966	4
T101	CHOKE, CM, 2200 OHM, AT, 100 MHZ, SM, DLW31SN222SQ2L, MURATA	1806-3966	4
T103	PULSE TRANSFORMER, 225uH, 0.35 OHM, 1=1, 100K	1806-3670	4
T104	PULSE TRANSFORMER, 225uH, 0.35 OHM, 1=1, 100K	1806-3670	4
VR1	VR-ROTARY, 100KAX2, 20%, V, L15, D, LOW RESIDUAL ALPHA	4751-1359	4
X100	CRYSTAL, HC49, 12.288MHZ, 20PPM, 4.7X13	2300-3284	4

Electrical Part List

Power Amplifier PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R1	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R3	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R5	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R6	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R7	16K, 0805, RMG, 1/10W, 1%	4720-163A	4
R8	12K, 1206, RMG, 1/4W, 1%	4725-123A	4
R9	9.1K, 0805, RMG, 1/10W, 1%	4720-912A	4
R10	9.1K, 0805, RMG, 1/10W, 1%	4720-912A	4
R13	1M, 0603/1608, RMG, 1/16W, 5%	4723-105J	4
R14	1M, 0603/1608, RMG, 1/16W, 5%	4723-105J	4
R16	0 OHM, 0805, RMG, 1/10W, 5%	4720-000J	4
R18	6.8K, 0603/1608, RMG, 1/16W, 1%	4723-682A	4
R19	9.1K, 0805, RMG, 1/10W, 1%	4720-912A	4
R20	4.7 OHM, RWR, 5W, 5%, RL	474B-4R7J	3, 4 
R21	64.9K, 0603, RMG, 1/16W, 1%	4723-6492	4
R22	0 OHM, 0805, RMG, 1/10W, 5%	4720-000J	4
R23	9.1K, 0805, RMG, 1/10W, 1%	4720-912A	4
R26	64.9K, 0603, RMG, 1/16W, 1%	4723-6492	4
R27	4.7K, 0603/1608, RMG, 1/16W, 1%	4723-472A	4
R28	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R29	12K, 1206, RMG, 1/4W, 1%	4725-123A	4
R30	16K, 0805, RMG, 1/10W, 1%	4720-163A	4
R34	10 OHM, 1206, RMG, 1/4W, 5%	4725-100J	4
R35	10 OHM, 1206, RMG, 1/4W, 5%	4725-100J	4
R38	10 OHM, 0805, RMG, 1/10W, 1%	4720-100A	4
R39	10 OHM, 0805, RMG, 1/10W, 1%	4720-100A	4
R41	4.7 OHM, RWR, 5W, 5%, RL	474B-4R7J	3, 4 
R45	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R46	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R47	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R48	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R53	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R54	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R55	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R56	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R58	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R61	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R62	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R63	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R64	1K, 0603/1608, RMG, 1/16W, 1%	4723-102A	4
R66	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R67	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4

Electrical Part List

Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R69	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R70	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R71	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R72	2.7K, 0603/1608, RMG, 1/16W, 1%	4723-272A	4
R77	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R78	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R79	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R80	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R81	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R83	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R87	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R88	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R89	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R92	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R93	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R94	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R95	2.2K, 0603/1608, RMG, 1/16W, 1%	4723-222A	4
R100	100K, 0805, RMG, 1/10W, 1%	4720-104A	4
R101	100K, 0805, RMG, 1/10W, 1%	4720-104A	4
R102	820K, 0805, RMG, 1/10W, 5%	4720-824J	4
R103	820K, 0805, RMG, 1/10W, 5%	4720-824J	4
R104	820K, 0805, RMG, 1/10W, 5%	4720-824J	4
R105	82K, 0805, RMG, 1/10W, 5%	4720-823J	4
R106	82K, 0805, RMG, 1/10W, 5%	4720-823J	4
R204	22 OHM, 0805, RMG, 1/10W, 5%	4720-220J	4
R205	22 OHM, 0805, RMG, 1/10W, 5%	4720-220J	4
R206	0.12 OHM, 1206, RMG, 1/4W, 5%	4725-R12J	3, 4 
R207	0.12 OHM, 1206, RMG, 1/4W, 5%	4725-R12J	3, 4 
R208	47K, 0805, RMG, 1/10W, 5%	4720-473J	4
R209	47K, 0805, RMG, 1/10W, 5%	4720-473J	4
R210	47K, 0805, RMG, 1/10W, 5%	4720-473J	4
R212	100 OHM, 0805, RMG, 1/10W, 5%	4720-101J	4
R213	0.12 OHM, 1206, RMG, 1/4W, 5%	4725-R12J	3, 4 
R214	0.12 OHM, 1206, RMG, 1/4W, 5%	4725-R12J	3, 4 
R215	47K, 0805, RMG, 1/10W, 5%	4720-473J	4
R218	10 OHM, 0805, RMG, 1/10W, 5%	4720-100J	4
R219	10 OHM, 0805, RMG, 1/10W, 5%	4720-100J	4
R230	10 OHM, 0805, RMG, 1/10W, 1%	4720-100A	4

Electrical Part List

Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R231	10 OHM, 0805, RMG, 1/10W, 1%	4720-100A	4
R232	36K, 0603, RMG, 1/16W, 1%	4723-363A	4
R233	36K, 0603, RMG, 1/16W, 1%	4723-363A	4
R238	36K, 0603, RMG, 1/16W, 1%	4723-363A	4
R239	36K, 0603, RMG, 1/16W, 1%	4723-363A	4
R241	36K, 0603, RMG, 1/16W, 1%	4723-363A	4
R291	100 OHM, 0603, RMG, 1/16W, 1%	4723-101A	4
R300	10K, 1206, RMG, 1/8W, 5%	4721-103J	4

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C2	0.47uF, 0805/2012, CC, 16V, 10%, 1.5X2.5	150D-474KBDL	4
C3	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C4	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C5	2700pF, 0805, CC, 50V, 10%, 1.2X2.0	150F-272KBD	4
C6	47pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-470JAC	4
C7	330pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-331JAC	4
C8	0.22uF, 0805, CC, 16V, 10%, 1.2X2.0	150D-224KBD	4
C9	220pF, 1206, CTC, 0/30, 100V, 5%	15CG-221JCFH	4
C10	3300pF, 0805, CC, 50V, 10%, 1.2x2.0	150F-332KBD	4
C11	680pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-681JBD	4
C12	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C13	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C14	4.7uF, 1206, CC, Y5V, 16V, 20%	150D-475ZCF	4
C15	0.47uF, CM, 100V, 10%, RB, 7.5X8	153H-474KNO	4
C16	0.33uF, CM, 100V, 5%, RBT, 7.5X9.5, MKS2, WIMA	153H-334JNRU	4
C17	3300pF, 0805, CC, 50V, 10%, 1.2x2.0	150F-332KBD	4
C18	2700pF, 0805, CC, 50V, 10%, 1.2X2.0	150F-272KBD	4
C19	680pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-681JBD	4
C20	0.22uF, 0805, CC, 16V, 10%, 1.2X2.0	150D-224KBD	4
C21	4.7uF, 1206, CC, Y5V, 16V, 20%	150D-475ZCF	4
C22	0.47uF, CM, 100V, 10%, RB, 7.5X8	153H-474KNO	4
C23	220pF, 1206, CTC, 0/30, 100V, 5%	15CG-221JCFH	4
C24	0.33uF, CM, 100V, 5%, RBT, 7.5X9.5, MKS2, WIMA	153H-334JNRU	4
C25	2200pF, 0603, CC, 50V, 10%, 0.8x1.6	150F-222KAC	4
C26	2200pF, 0603, CC, 50V, 10%, 0.8x1.6	150F-222KAC	4
C27	47pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-470JAC	4
C28	330pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-331JAC	4
C29	0.47uF, 0805/2012, CC, 16V, 10%, 1.5X2.5	150D-474KBDL	4
C31	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C32	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C33	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C34	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C35	0.01uF, 0805, CC, 50V, 20%, 1.2x2.0	150F-103MBD	4

Electrical Part List

Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C36	0.01uF, 0805, CC, 50V, 20%, 1.2x2.0	150F-103MBD	4
C37	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C38	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C39	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C40	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C43	2200uF, CE, 50V, 105C, 20%, RL, 18X31	157F-228M7\$T	4
C44	2200uF, CE, 50V, 105C, 20%, RL, 18X31	157F-228M7\$T	4
C45	220pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-221JAC	4
C46	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C47	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C48	2.2uF, CM, 50V, 5%, RLT, 10X8, METALLIZED	153F-225JSOM	4
C49	2.2uF, CM, 50V, 5%, RLT, 10X8, METALLIZED	153F-225JSOM	4
C51	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C52	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C53	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C54	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C56	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C57	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C58	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C59	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C60	220pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-221JAC	4
C61	220pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-221JAC	4
C62	220pF, 0603, CTC, 0/60, 5%, 0.8X1.6	15CH-221JAC	4
C63	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C68	0.1uF, 0603/1608, CC, 50V, 10%, 1x2	150F-104KAC	4
C100	0.33uF, CM, 300V, 10%, RB, P15, 18X15.5X10	1511-334K03Z	4
C103	0.015uF, 1206, CC, 630V, 10%, X7R	150M-153KCF	4
C104	0.015uF, 1206, CC, 630V, 10%, X7R	150M-153KCF	4
C105	0.015uF, 1206, CC, 630V, 10%, X7R	150M-153KCF	4
C106	0.015uF, 1206, CC, 630V, 10%, X7R	150M-153KCF	4
C107	680uF, CE, 105C, 200V, 20%, RL, 25X35	157U-687M&^T	4
C108	680uF, CE, 105C, 200V, 20%, RL, 25X35	157U-687M&^T	4
C109	1000pF, CC, 400V, 20%, RL, 9X6	150T-102MQK	4
C110	1000pF, CC, 400V, 20%, RL, 9X6	150T-102MQK	4
C111	2200pF, CC, 400V, 20%, RL, 10X6	150T-222MSK	4
C112	0.33uF, CM, 300V, 10%, RB, P15, 18X15.5X10	1511-334K03Z	4
C200	680pF, 0603, CTC, 0/60, 5%	15CH-681JAC	4
C201	0.22uF, 0805, CC, 16V, 10%, 1.2X2.0	150D-224KBD	4
C202	0.47uF, CM, 400VDC, 5%, RB, P15, 18X17.5X9	1511-474J0T	4
C203	0.47uF, CM, 400VDC, 5%, RB, P15, 18X17.5X9	1511-474J0T	4
C204	1uF, 0805, CC, 25V, 10%	150E-105KBD	4
C205	1uF, 0805, CC, 25V, 10%	150E-105KBD	4
C206	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C207	2.2uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-225KCFM	4
C208	1uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-105KCFM	4
C210	470pF, 2211, CC, 250VAC, 10%, 2.8X5.7	150R-471KEKZ	4

Electrical Part List

Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C211	1uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-105KCFM	4
C212	470pF, 2211, CC, 250VAC, 10%, 2.8X5.7	150R-471KEKZ	4
C213	470pF, 2211, CC, 250VAC, 10%, 2.8X5.7	150R-471KEKZ	4
C214	100pF, 0603/1608, CC, 50V, 5%, 1X2	150F-101JAC	4
C215	100pF, 0603/1608, CC, 50V, 5%, 1X2	150F-101JAC	4
C216	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C217	1000pF, 0805, CTC, 0/30, 5%, 1.2x2.5	15CG-102JBD	4
C218	470pF, 2211, CC, 250VAC, 10%, 2.8X5.7	150R-471KEKZ	4
C219	1uF, 1206, CC, 50V, 10%, X7R, MURATA	150F-105KCFM	4
C220	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C221	1uF, CC, 10V, 20%, 0603, 332181050R1	150C-105ZAC	4
C222	470uF, CE, 35V, 105C, 20%, RL, 10X20	157Q-477MS9T	4
C223	470uF, CE, 35V, 105C, 20%, RL, 10X20	157Q-477MS9T	4
C226	0.15uF, 0805, CC, 50V, 10%	150F-154KBD	4
C227	0.15uF, 0805, CC, 50V, 10%	150F-154KBD	4
C300	0.01uF, CC, 50V, 10%, 1206, 1.6x3.2	150F-103KCF	4

Inductors

Reference Designator	Description	Vendor Part Number	Note
L1	CHOKE, COIL, 10uH, 10%, 7A, T94-2	1806-3899	4
L3	CHOKE, COIL, 10uH, 10%, 7A, T94-2	1806-3899	4
L6	FERRITE BEAD INDUCTOR, BL01RN1A1F1J	1808-0680	4
L7	FERRITE BEAD INDUCTOR, BL01RN1A1F1J	1808-0680	4
L8	CHOKE, COMMON MODE, 2X16uH, 8A, FT50-43	1806-3913	4
L100	CHOKE, COMMON MODE, 2X10MH, 3A, TC-2510	1806-3934	4
L101	CHOKE, COMMON MODE, 2X10MH, 3A, TC-2510	1806-3934	4
L200	INDUCTOR, 10uH, 1210, 500MA, SMD	1803-0092	4
L201	INDUCTOR, 10uH, 1210, 500MA, SMD	1803-0092	4

Diodes

Reference Designator	Description	Vendor Part Number	Note
Z200	ZENER, 0.4W, 15V, BZX284-B15	4840-9230	4
Z201	ZENER, 1/2W, 11V, SOD110, SMD, BZX284-C11@115	4837-1109	4
D1	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D2	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D3	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D4	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D5	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D6	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D7	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D8	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D9	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D10	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4
D14	200V, 250MA, 50NS, BAS321, SOD323	480S-3210	4

Electrical Part List

Power Amplifier PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D100	BRIDGE, 800V, 8A, GBU8K, RL	4840-9218	4
D200	600V, 1A, 75NS, US1J, SOD124	480U-S1J0	4
D201	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D202	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D203	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D204	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D205	RECTIFIER, 100V, 12A, 12CWQ10FNTRBF, DPAK, SMDIR	4840-9213	4
D206	RECTIFIER, 100V, 12A, 12CWQ10FNTRBF, DPAK, SMDIR	4840-9213	4
D207	RECTIFIER, 100V, 12A, 12CWQ10FNTRBF, DPAK, SMDIR	4840-9213	4
D208	RECTIFIER, 100V, 12A, 12CWQ10FNTRBF, DPAK, SMDIR	4840-9213	4
D209	RECTIFIER, 200V, 1A, RS1D, SOD124	4840-9212	4
D210	RECTIFIER, 200V, 1A, RS1D, SOD124	4840-9212	4
D211	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D212	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D216	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D217	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D218	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4
D290	75V, 250MA, 4NS, BAS216, SOD110	480S-2160	4

Transistors

Reference Designator	Description	Vendor / Bose® Part Number	Note
Q1	MOSFET, N-CH, FDD368, 2_NL, 100V, 32A, TO-252AA	291330	4
Q2	MOSFET, N-CH, FDD368, 2_NL, 100V, 32A, TO-252AA	291330	4
Q3	MOSFET, N-CH, FDD368, 2_NL, 100V, 32A, TO-252AA	291330	4
Q4	MOSFET, N-CH, FDD368, 2_NL, 100V, 32A, TO-252AA	291330	4
Q5	BC856S, PNP PAIR, 60V, SOT363	4858-56S0	4
Q6	BC856S, PNP PAIR, 60V, SOT363	4858-56S0	4
Q200	MOSFET, N-CHANNEL, STB12NM50FDT4, D2PAK	291329	4
Q201	MOSFET, N-CHANNEL, STB12NM50FDT4, D2PAK	291329	4
Q202	REGULATOR, 5V, LM78L05ACM, SO-8	3131-3390	4
Q203	NPN, BCP56-10, SOT223	485C-P560	4
Q204	REGULATOR, 250MA, LM79L05, SO8	3132-3091	4
Q205	NPN/PNP PAIR, FFB2227A, SC70-6	4852-27A0	4
Q206	NPN/PNP PAIR, FFB2227A, SC70-6	4852-27A0	4
Q207	BC856S, PNP PAIR, 60V, SOT363	4858-56S0	4
Q208	MOSFET, N-CH, 60V, 115MA, 2N7002, SOT-23	4907-0020	4
Q209	MOSFET, N-CH, 60V, 115MA, 2N7002, SOT-23	4907-0020	4
Q210	BC856S, PNP PAIR, 60V, SOT363	4858-56S0	4
Q211	BC846B, SOT23, PHILIPS, SMD	4858-46B0	4
Q290	PUMZ1, NPN/PNP PAIR, SOT363	485U-MZ10	4

Electrical Part List

Power Amplifier PCB Assembly

Integrated Circuits

Reference Designator	Description	Vendor / Bose® Part Number	Note
IC1	HALF BRIDGE DRIVER, LV4970M, SO-16	3132-3051	4
IC2	HALF BRIDGE DRIVER, LV4970M, SO-16	3132-3051	4
IC3	ANALOG 2CH CONT, LV4930M, QUAD44	3132-3061	4
IC4	MC33078DR2G, OP-AMP, SO-8	3132-2711	4
IC200	L6571BD013TR, HALF BRIDGE DRIVER, SO8	291328	4

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CON300	WAFER, 3P, P7.92/11.88, ST	2101-3097	4
CON301	WAFER, 4P, P3.96, ST, MALE	2101-3053	4
F200	0 OHM, 1206, RMG, 1/8W, 1%	4721-000A	4
J301	6 PIN, WF	2102-060S	4
J302	6 PIN, WF	2102-060S	4
J303	WAFER, 3P, P2.0, ST, MALE	2101-3008	4
MOV	VARISTOR, 320V, 10%, SIOV-S10K320	4735-0003	4
N1	THERMISTOR, NTC, 100K, 5%, B5, 7620C0104J162, 0805, EPCOS	5202-0019	4
N100	NTC THERMISTOR, 5 0HM, 4A, NIOSP005L, UL/CSA/VDE	5202-0010	4
N101	NTC THERMISTOR, 5 0HM, 4A, NIOSP005L, UL/CSA/VDE	5202-0010	4
N200	THERMISTOR, PTC, 1K, 0805, 90 DEG, EPCOS	5202-0011	4
N201	THERMISTOR, PTC, 1K, 130 DEG, 0805, EPCOS	5202-0021	4
TRAF200	TRANSFORMER, SWITCHING, ETD29	1806-3898	4

AC Primary PCB Assembly

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CON300B	WAFER, 3P, P7.92/11.88, STRAIGHT	2101-3097	4
CON300L	WAFER, 3P, P7.92/11.88, STRAIGHT	2101-3097	4
E1A	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
E2A	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
E3A	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
FOR AC INLET	BRACKET, A/C INLET, BSPAPS2	4135-6791	4
J105	INLET, AC, UL/CSA/VDE, 250V, 10A	2113-1144	4
P1	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4
P2	SPADE TERMINAL, 6.3X0.8, STRAIGHT	2101-1231	4

Disassembly Procedures

L1® Model II Power Stand Procedures

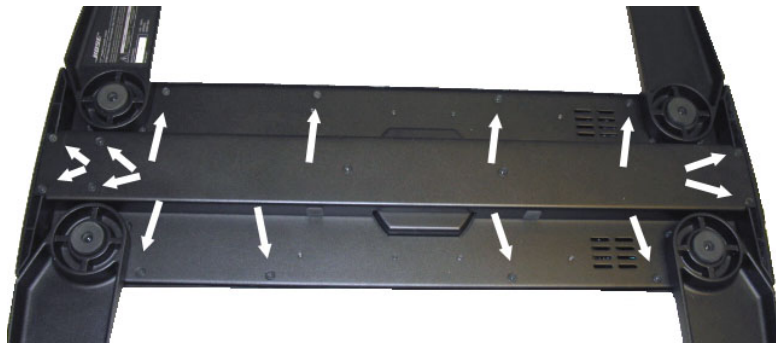
1. Leg Assembly Removal

1.1 On a soft surface, place the power stand upside down on its top housing with the legs facing upward.

1.2 With the power stand legs closed, remove the four screws indicated at right.



1.3 Open the power stand legs by rotating the leg assembly open. Remove the fourteen remaining screws that secure the leg assembly to the upper housing.



1.4 Carefully lift off the leg assembly. Unplug the amplifier cable that connects to the line array cavity. Unplug the green/ yellow ground wire from the AC Input PCB at terminal E1A.

2. Input / Output Panel Assembly Removal

Note: This procedure removes the entire input / output panel assembly with the circuit boards attached. Procedures for removing individual boards are below.

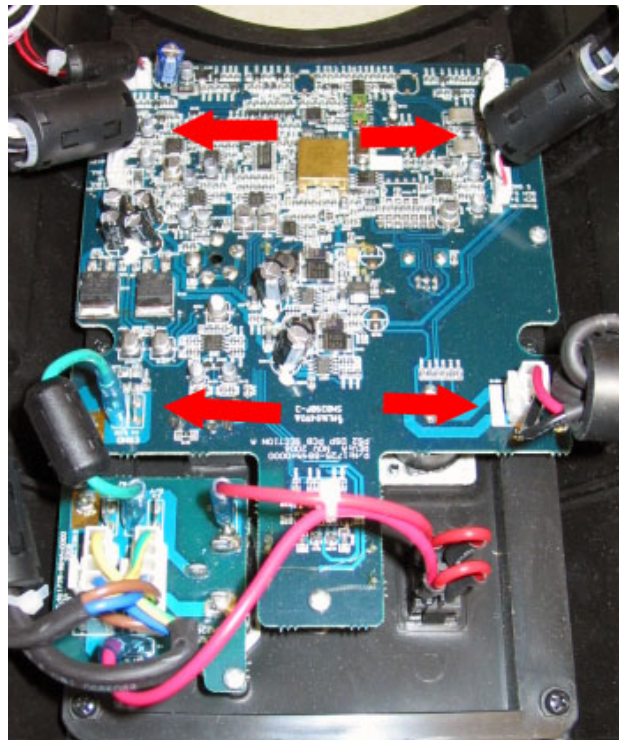
2.1 Perform procedure 1.

2.2 Unplug the wire harnesses at CON300L and CON300B on the AC Input PCB.

2.3 Unplug the wire harnesses at CN301B-B, J301B, J303B, J302B, CN101, CN102, J302L, J301L and J303L on the DSP PCB.

2.4 Remove the six screws that secure the Input / Output Panel assembly to the power stand upper housing.

2.5 Lift out the Input / Output Panel assembly.



Disassembly Procedures

3. AC Input PCB Removal

3.1 Perform procedure 1.

3.2 Unplug the wire harnesses at CON300L and CON300B on the AC Input PCB.

3.3 Unplug the green/yellow ground wire at terminal E2A.

3.4 Unplug the red wires at terminals P1 and P2. These wires go to the AC power switch.

3.5 Remove the two screws that secure the AC input jack to the outside of the input / output panel.

3.6 Remove the two screws that secure the AC Input PCB to the back of the input / output panel.

3.7 Lift out the AC Input PCB.



4. DSP PCB Removal

4.1 Perform procedure 1.

4.2 Make a note of the wiring configuration, and unplug the wire harness at connectors CN301B-B, J301B, J303B, J302B, CN101, CN102, J302L, J301L and J303L on the DSP PCB.

Re-assembly Note: Be sure to plug the proper wire harness into the 3-pin connectors on the DSP board. Damage to the board could result.

4.3 Unplug the green/yellow ground wire at terminal E2B.



Disassembly Procedures

4.4 Remove the screws that secure the bass module output jack and the ToneMatch jack to the input / output panel.

4.5 Remove the nuts that secure the analog input and bass line out jacks to the input / output panel.

4.6 Remove the Trim knob.

4.7 Remove the six screws that secure the DSP board to the back of the input / output panel. Lift out the DSP board.

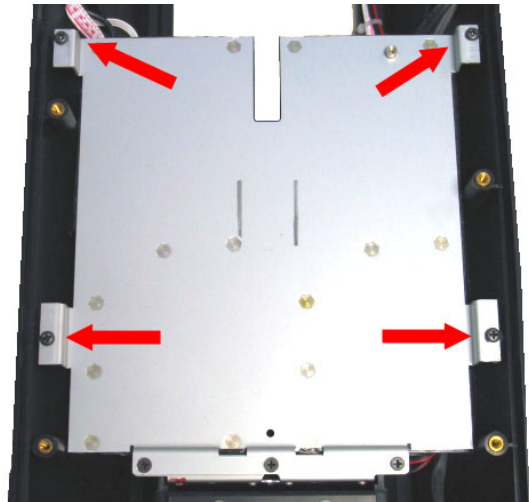


5. Amplifier Board Removal

Note: The amplifier boards used to drive the line array and bass module are identical. One amplifier PCB is used for each.

5.1 Perform procedure 1.

5.2 Remove the four screws that secure the amplifier PCB bracket to the upper housing. Do not remove the three screws located near the power stand handle.



5.3 Flip over the amplifier bracket assembly. Unplug the wire harnesses at connectors J301, J302, CON301, J303 and CON300.

5.4 Remove the eight screws that secure the amplifier PCB assembly to the amplifier bracket. Lift off the amplifier PCB assembly. Be sure to retain the thermal pad located under the amplifier board for re-use.



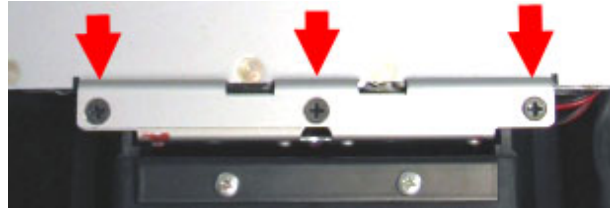
Disassembly Procedures

6. Fan Removal

6.1 Perform steps 5.1 and 5.2 above.

6.2 Remove the two screws that secure the fan. Lift out the fan.

6.3 Unplug the wire harness from CN101 or CN102 located on the DSP PCB.



Line Array Procedures

Refer to the figure at right for the following procedures.

1. Upper Line Array Grille Removal

1.1 Remove the four screws (1&2) that secure the end cap # 1 assembly to the line array enclosure. Lift off the end cap. Do not unplug the molex connector from the speaker harness.

Re-assembly Note: There are two different types of screws used to secure the end caps to the line arrays. Be sure to use the correct screw type in the proper location during re-assembly.

1.2 Remove the four screws (1&2) that secure the end cap # 2 assembly to the line array enclosure (28). Lift off the end cap. Do not unplug the molex connector from the speaker harness.

1.3 Grasp the edge of the grille (25) and gently lift it away from the enclosure.

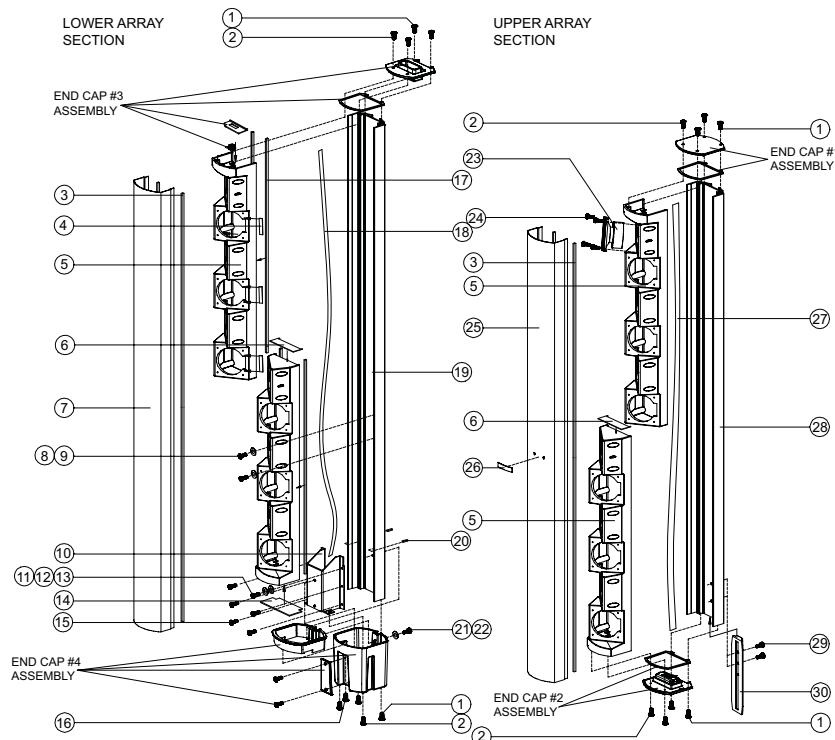
2. Bose® Logo Removal

2.1 Perform procedure 1.

2.2 On the back of the grille (25), unbend the legs of the logo (26). Lift off the Bose logo.

3. Lower Line Array Grille Removal

3.1 Remove the four screws (1&2) that secure the end cap # 3 assembly to the line array enclosure. Lift off the end cap. Do not unplug the molex connector from the speaker harness. Be sure to use the correct screw type in the proper location during re-assembly.



Disassembly Procedures

3.2 Remove the two screws that secure the teflon strip to the front of the end cap # 4 assembly. Lift off the teflon strip. Remove the four screws that secure the end cap # 4 assembly to the line array enclosure. Slide off the end cap. Do not unplug the molex connector from the speaker harness. When re-installing the end cap # 4 assembly, be sure that the green/yellow ground wire is routed through the notch in the steel bottom plate.

3.3 Grasp the edge of the grille and gently lift it away from the enclosure.

4. Driver Removal

4.1 Perform procedure 1.

4.2 Remove the four screws (24) that secure the driver (23) to the baffle (5).

4.3 Lift the driver out of the baffle. Unplug the wires from the driver terminals. Be sure to observe polarity when installing the new driver.

5. Upper Line Array Top End Cap (# 1) Removal

5.1 Remove the four screws (1&2) that secure the end cap to the line array enclosure. Lift off the end cap.

6. Upper Line Array Bottom End Cap (# 2) Removal

6.1 Remove the four screws (1&2) that secure the end cap to the line array enclosure. Lift off the end cap. Unplug the molex connector from the speaker harness.

7. Lower Line Array Top End Cap (# 3) Removal

7.1 Remove the four screws (1&2) that secure the end cap to the line array enclosure. Lift off the end cap. Unplug the molex connector from the speaker harness.

8. Lower Line Array Bottom End Cap (# 4) Removal

8.1 Remove the two screws that secure the teflon strip to the front of the end cap # 4 assembly. Lift off the teflon strip. Remove the four screws that secure the end cap # 4 assembly to the line array enclosure. Slide off the end cap. Unplug the molex connector from the speaker harness.

When re-installing the end cap # 4 assembly, be sure that the green/yellow ground wire is routed through the notch in the steel bottom plate.

Disassembly Procedures

Bass Module Procedures

Refer to the figure at right for the following procedures.

1. Grille Removal

1.1 Remove the four allen screws (1) that secure the grille (5) to the upper and lower speaker end caps.

1.2 Lift off the grille.

2. Bose® Logo Removal

2.1 Perform procedure 1.

2.2 On the back of the grille (5), remove the retaining nut and spring from the post of the logo (7). Lift the Bose logo off of the grille.

3. Woofer Removal

3.1 Perform procedure 1.

3.2 Remove the four screws (4) that secure the woofer (2) to the bass module enclosure.

3.3 Lift the woofer out of the enclosure. Note the wiring configuration and unplug the wires from the driver terminals. Be sure to observe polarity when installing the new woofer.

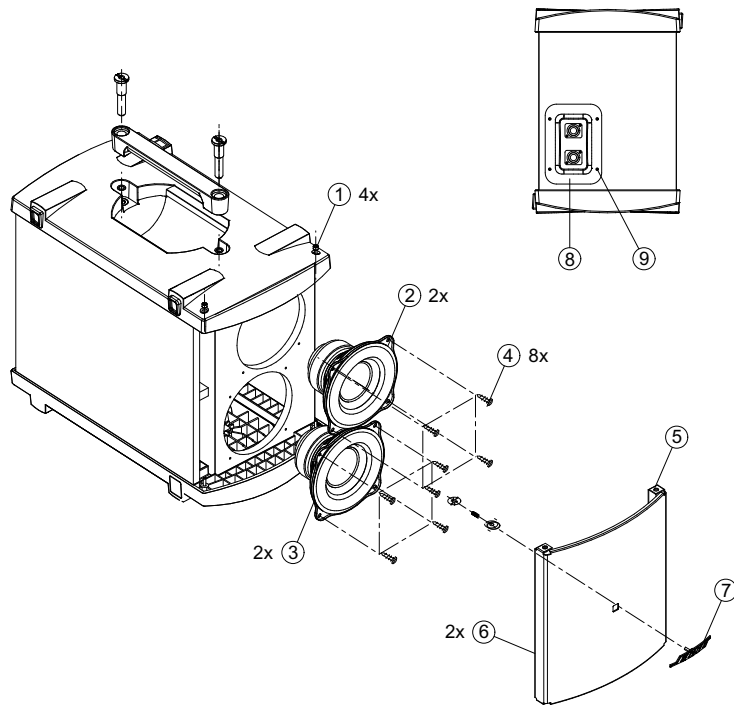
4. Input Panel Removal

4.1 Perform procedure 3, removing the top woofer (2) only. It should have a red wire and a black wire connected to it. Unplug the wires from the woofer.

Re-assembly Note: Be sure to observe polarity when installing the woofer.

4.1 Remove the four screws (9) that secure the input panel (8) to the bass module enclosure.

4.2 Lift the input panel away from the bass module enclosure.



Test Procedures

L1® Model II Power Stand Tests

Equipment Required

- dB Meter
- Digital Multi-meter
- Audio Signal Generator
- Distortion Meter
- 2 - 4 Ohm, 250 Watt Load Resistors
- Neutrik® Speakon® NL4 plug
- Test cables, see Appendix

Test Setup

For the following tests, connect a Neutrik® Speakon® NL4 plug to the bass module out jack on the power stand input/output panel. Short pins 2+ and 2- on the plug together. This will put the power stand into test mode.

1. Line Array Amplifier THD+N Test

1.1 Connect a power stand boot test cable to the line array output jack located in the line array cavity well in the power stand. Terminate the cable with a 4 ohm, 250 Watt load resistor.

1.2 Set the power stand trim knob to mid-point. Using a TRS input cable, apply a balanced 3mVrms, 1 kHz input signal to the analog input jack on the power stand input panel.

1.3 Slowly increase the input level from -50dBV to 500mVrms. While increasing the input level, measure the THD+N level across the load resistor. Verify that the noise level is <0.05% @ -20dBV.

2. Line Array Amplifier Noise Test

2.1 Connect a power stand boot test cable to the line array output jack located in the line array cavity well in the power stand. Terminate the cable with a 4 ohm, 250 Watt load resistor.

2.2 Set the power stand trim knob to mid-point. Using a shorted TRS plug, short the analog input jack on the power stand input panel.

2.3 Measure the output noise level at the load resistor. It should be <0.3mVrms, A-Weighted.

3. Bass Module Amplifier THD+N Test

3.1 Connect a Bass Amplifier Output Test Cable to the bass module output jack located on the input/output panel on the power stand. Terminate the 1+ and 1- leads on the cable with a 4 ohm, 250 Watt load resistor. Short the 2+ and 2- leads together to put the power stand into test mode.

3.2 Set the power stand trim knob to mid-point. Using a TRS input cable, apply a balanced 3mV rms, 1 kHz input signal to the analog input jack on the power stand input panel.

3.3 Slowly increase the input level from 3mVrms to 500mVrms. While increasing the input level, measure the THD+N level across the load resistor. Verify that the noise level is <0.05% @ 100mVrms.

4. Bass Module Amplifier Noise Test

4.1 Connect a Bass Amplifier Output Test Cable to the bass module output jack located on the input/output panel on the power stand. Terminate the 1+ and 1- leads on the cable with a 4 ohm, 250 Watt load resistor. Short the 2+ and 2- leads together to put the power stand into test mode.

4.2 Set the power stand trim knob to mid-point. Using a shorted TRS plug, short the analog input jack on the power stand input panel.

4.3 Measure the output noise level at the load resistor. It should be <0.3 mVrms, A-Weighted.

Test Procedures

Note: The Neutrik® Speakon® NL4 test plug is not used for the following tests.

5. Bass Line Output Test

5.1 Set up the L1® Model II power stand with an L1 Model II line array and B1 bass module connected as shown on pages 6 - 8 of this manual.

5.2 With a 500mVrms audio signal applied to the power stand, listen to the output of the line array.

5.3 Plug an un-balanced TRS cable into the bass line output jack located on the power stand input/output panel. Verify that the output of the line array mutes briefly when the TRS cable is plugged in. This muting action indicates that the DSP in the power stand has detected the connection of the TRS cable.

6. L1 Model II System Sweep Test

6.1 Set up the L1 Model II power stand with an L1 Model II line array and two B1 bass modules connected.

6.2 Set the power stand trim knob to mid-point.

6.3 Using a balanced TRS cable, apply a 100mVrms, 20 Hz signal to the power stand line input jack.

6.4 Sweep the input frequency from 20 Hz to 20 kHz. Verify that the system does not produce any audible acoustical or mechanical abnormalities.

7. ToneMatch® (M) Port Test

7.1 Set up the L1 Model II power stand with an L1 Model II line array and B1 bass module connected as shown on pages 7 & 8 of this manual.

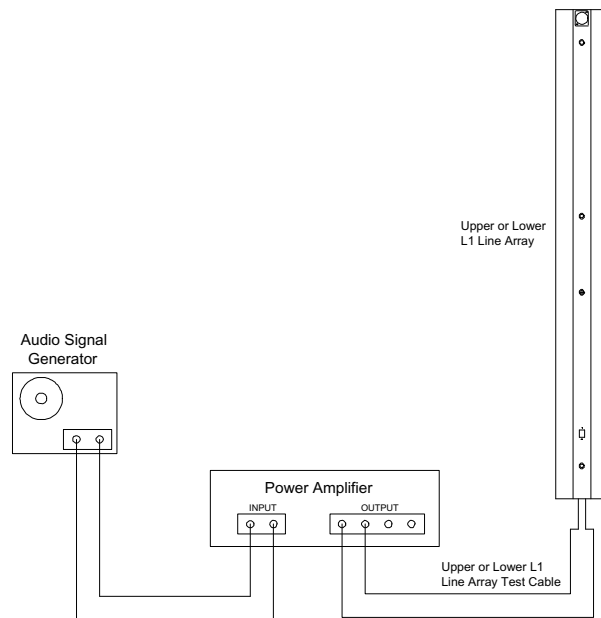
7.2 Connect a T1 ToneMatch Audio Engine to the ToneMatch port located on the power stand input/output panel as shown on page 9 of this manual..

7.3 Apply a 10mVrms, 20Hz signal to either the channel 4 or 5 input on the T1. Verify that the T1 powers up and appears to operate properly. **Note:** Refer to the T1 ToneMatch owner's guide on the Bose Live Music Technology Group website at <http://www.bose.com/musicians> if you have any questions about operation of the T1.

7.4 Sweep the input frequency from 20 Hz to 20 kHz. Verify that the audio output sounds normal across the audio output range.

L1 Model II Line Array Tests

Set up the unit under test as shown below.



1. Air Leak Test

1.1 Apply a 100 Hz, 10 Vrms sine wave to the unit under test.

Test Procedures

1.2 Listen carefully for air leaks from around the end cap, the transducers and the grille. Air leaks will be heard as a hissing or sputtering sound. All repairs must be hidden. Test duration should be 5 seconds minimum.

2. Transducer Rub and Tick Test

2.1 Remove the transducer you wish to test using the disassembly procedures in this manual.

2.2 Connect a signal generator directly to the terminals of the transducer assembly under test.

2.3 Apply a 20 Hz, 5 Vrms sine wave to the transducer assembly.

2.4 Listen carefully for any extraneous noises such as rubbing, scraping or ticking.

Note: To distinguish between normal suspension noise and rubs or ticks, displace the cone slightly with your fingers. If the noise stays the same, it is normal suspension noise and the driver is good. Suspension noise will not be heard with program material.

3. Transducer Phase Test

3.1 Apply a DC voltage of 10V, positive applied to the positive tab of the dual banana jack on the line array test cable and negative applied to negative (gnd) tab.

3.2 All of the driver cones should move outward when the DC voltage is applied.

3.3 Rewire any incorrectly connected transducers.

4. Line Array Sweep Test

4.1 Set up the upper or lower line array section as shown in the figure on the previous page.

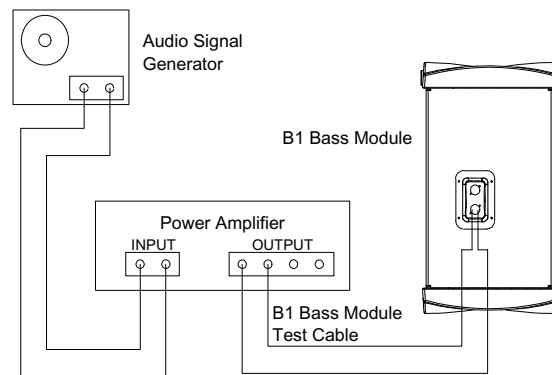
4.2 Apply a 100 Hz, 10 Vrms sine wave to the input.

4.3 While listening to the output of the system, sweep the input frequency slowly from 100 Hz to 15 kHz.

4.4 Listen carefully for any extraneous noises such as buzzing and ticking.

B1 Bass Module Tests

Set up the unit under test as shown below.



1. Air Leak Test

1.1 Apply a 100 Hz, 20 Vrms sine wave to the unit under test.

1.2 Listen carefully for air leaks from around the end cap, the transducers and the grille. Air leaks will be heard as a hissing or sputtering sound. All repairs must be hidden. Test duration should be 5 seconds minimum.

2. Transducer Rub and Tick Test

2.1 Remove the transducer you wish to test using the disassembly procedures in this manual.

2.2 Connect a signal generator directly to the terminals of the transducer assembly under test.

2.3 Apply a 10 Hz, 10 Vrms signal to the transducer assembly.

Test Procedures

2.4 Listen carefully for any extraneous noises such as rubbing, scraping or ticking.

Note: To distinguish between normal suspension noise and rubs or ticks, displace the cone slightly with your fingers. If the noise stays the same, it is normal suspension noise and the driver is good. Suspension noise will not be heard with program material.

3. Transducer Phase Test

3.1 Apply a DC voltage of 20V, positive applied to the positive tab of the dual banana jack on the bass module test cable and negative applied to negative (gnd) tab.

3.2 Note that all driver cones move outward when the DC voltage is applied.

3.3 Rewire any incorrectly connected transducers.

4. System Sweep Test

4.1 Set up the bass module as shown on the previous page.

4.2 Apply a 10 Hz, 20 Vrms sine wave to the Neutrik® Speakon® input connector.

4.3 While listening to the output of the system, sweep the input frequency slowly from 10 Hz to 400 Hz.

4.4 Listen carefully for any extraneous noises such as buzzing and ticking.

Appendix

L1® Model II Power Stand Test Cables

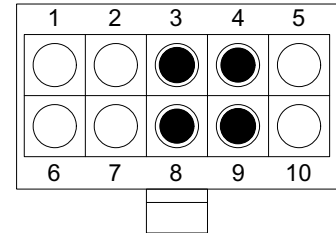
Note: In order to be able to properly test the L1 Model II Power Stand, you will need to make a few test cables.

1. Powerstand Boot Test Cable

This test cable plugs into the boot connector of the L1™ Model II Power Stand for all line array amplifier tests.

Parts needed:

- 1 - 10 pin Molex female connector, Molex part number 39-01-3103
- 4 - Molex crimp-on pins for above connector
- 1 - dual banana jack
- 12 feet of 16 or 18AWG twisted pair wire



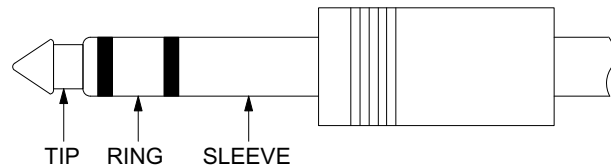
Molex Connector Rear View

Cut the 12 foot length of twisted pair wire in half. Strip all of the wires back about 1/4 inch. Crimp the molex pins onto the wires. The positive (+) side of the twisted pair wires will go into pins 3 and 8 of the Molex connector. The negative (-) side of the twisted pair wires will go into pins 4 and 9 of the Molex connector. Connect the wires that go to pins 3 and 8 of the Molex connector to the positive (+) side of the dual banana jack. Connect the wires that go to pins 4 and 9 of the Molex connector to the negative (-) side of the dual banana jack.

2. Line Input 1/4" Phono Jack Test Cable

Parts needed:

- 1 - TRS 1/4" phono jack
 - 1 - Dual banana jack
 - 16 - 18 AWG shielded 3-wire cable, 6 feet
- This cable is used to test the line input on the power stand.



Connect the dual banana jack's positive (+) connection to the tip connection of the 1/4" phono jack. Connect the dual banana jack negative (-) connection to the ring connection of the 1/4" phono jack. Connect the sleeve of the TRS jack to a single banana connector.

Appendix

3. Bass Amplifier Output Test Cable:

This cable is used to connect the B1 Bass Module output jack to the load resistors used in the test procedures.

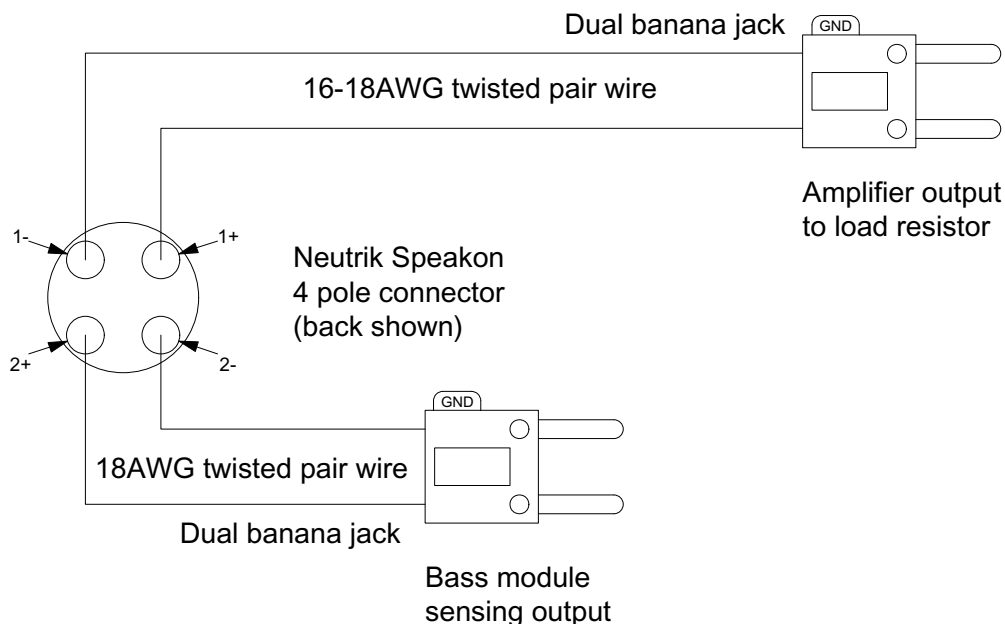
Parts needed:

- 1- Neutrik® Speakon® NL4FX X-Line/4 Pole connector.
- 4 - Dual banana jacks
- 2 - 10k ohm, 1/4 Watt resistors
- 16 or 18 AWG twisted pair wire, 6 feet
- 18 AWG twisted pair wire, 2 feet

The connector used is a Neutrik NL4FX Speakon X-Line / 4 Pole type. This connector has 4 terminals labeled 1+, 1-, 2+ and 2-. Terminals 1+ and 1- are used to connect to the load resistors. Use 18 or 16 AWG wire for these terminals. Use twisted pair wires to avoid inducing noise into the cable during use.

The 2+ and 2- terminals will be used to sense the loads connected to the Speakon connector when used with the B1 Bass Module jack. This jack automatically senses the load on this jack to properly tailor the EQ and output level for the connection of one or two bass modules. It does this by sensing the resistive value across terminals 2+ and 2-. The bass modules have a 10k ohm resistor across these terminals. When only one bass module is connected, the power stand sees the 10k resistance and sets the EQ and output level accordingly. When two bass modules are connected, it sees 5k and sets the EQ and output level accordingly. For the test cable, you will use 18 AWG twisted pair wire to a dual banana jack.

It is also useful to have 3 spare banana jacks, one with a short across it and 2 with a 10k Ohm, 1/4 Watt resistor each to simulate a bass module connected to the terminals.



Amplifier Output Test Cable Wiring Diagram

Appendix

4. L1® Model II Line Array Test Cables

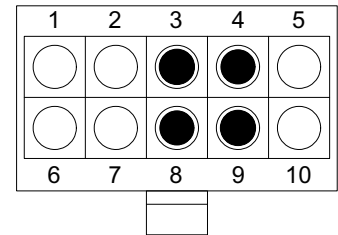
These two cables will allow you to test the upper and lower line array sections without an L1 Model II power stand. Use these cables for the line array test procedures in this service manual.

Lower Line Array Section Test Cable

Parts needed:

- 1 - 10 pin Molex male connector, Molex part number 39-00-0039 (F)
- 4 - Molex crimp-on pins for above connector, Molex part number 39-00-0039
- 1 - dual banana jack
- 12 feet of 16 or 18AWG twisted pair wire

Cut the 12 foot length of twisted pair wire in half. Strip all of the wires back about 1/4 inch. Crimp the molex pins onto the wires. The positive (+) side of the twisted pair wires will go into pins 3 and 8 of the Molex connector. The negative (-) side of the twisted pair wires will go into pins 4 and 9 of the Molex connector. Connect the wires that go to pins 3 and 8 of the Molex connector to the positive (+) side of the dual banana jack. Connect the wires that go to pins 4 and 9 of the Molex connector to the negative (-) side of the dual banana jack.



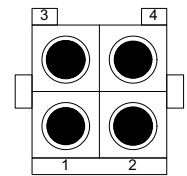
Molex Connector Rear View

Upper Line Array Section Test Cable

Parts needed:

- 1 - 4 pin Molex male connector, Molex part number 39-01-2041
- 4 - Molex crimp-on pins for above connector, Molex part number 39-00-0041 (M)
- 1 - dual banana jack
- 12 feet of 16 or 18AWG twisted pair wire

Cut the 12 foot length of twisted pair wire in half. Strip all of the wires back about 1/4 inch. Crimp the molex pins onto the wires. The positive (+) side of the twisted pair wires will go into pins 2 and 4 of the Molex connector. The negative (-) side of the twisted pair wires will go into pins 1 and 3 of the Molex connector. Connect the wires that go to pins 2 and 4 of the Molex connector to the positive (+) side of the dual banana jack. Connect the wires that go to pins 1 and 3 of the Molex connector to the negative (-) side of the dual banana jack.



Molex Connector Rear View

Appendix

L1® Model II Power Stand EQ and Firmware Update Procedure

This update procedure uses a software program that is designed to update the software used on the T1 ToneMatch® Audio Engine. At the end of this update procedure, there is a provision to update the L1 Model II system EQ and firmware. You must have a T1 ToneMatch Audio Engine connected to the power stand to be able to perform this update. If you would like to update the T1's firmware, presets and themes as well during this process, refer to the Bose L1 updater instructions as found on the Bose Live Music Technology Group website at <http://www.bose.com/musicians>.

Note: The software application used for this update is PC only. At this time there is no version available for Apple computers.

Required Equipment:

- T1 ToneMatch Audio Engine
- ToneMatch System cable (RJ45 provided with the T1)
- USB interface cable (not included)
- PC with Microsoft Windows 2000 or higher, internet access and a USB 1.1 or USB 2.0 port

Setup:

- Connect the T1 ToneMatch Audio Engine to the PS II power stand using the RJ45 cable.
- Connect the T1 to the computer using the USB interface cable.
- Connect the L1 power stand to AC mains and turn it on at the AC power switch.
- Turn on the T1 ToneMatch Audio Engine at the power switch on the rear panel.
- Verify that the T1 appears to power up properly.
- Verify that the computer recognizes the T1 connected as a USB audio device.

Downloading and Running the L1 Updater Software:

1. Open a web browser and navigate to the Bose Musicians web site at <http://www.bose.com/musicians>. Click on the download L1 Updater Software link. Save the updater file to a folder on your desktop. **Note:** DO NOT attempt to run the file from the internet, as this will cause the update process to fail.

2. When your download is complete, navigate to the folder on your desktop where you saved the L1 Updater file. Click the Open button to run the L1 Updater Software. You should see the L1 Updater application screen as shown below.

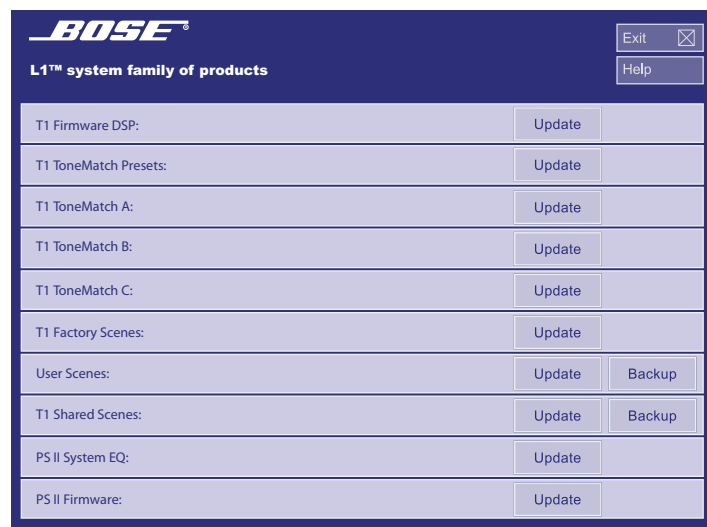
3. Follow the update instructions on the computer screen. The bottom two buttons on the updater software are used to update the PSII power stand EQ and firmware.

4. Click on the PS II System EQ Update button.

5. Once the System EQ is updated, click on the PS II Firmware Update button.

6. Once the firmware is updated, you may exit the L1 Updater program.

L1 Updater Application Screen



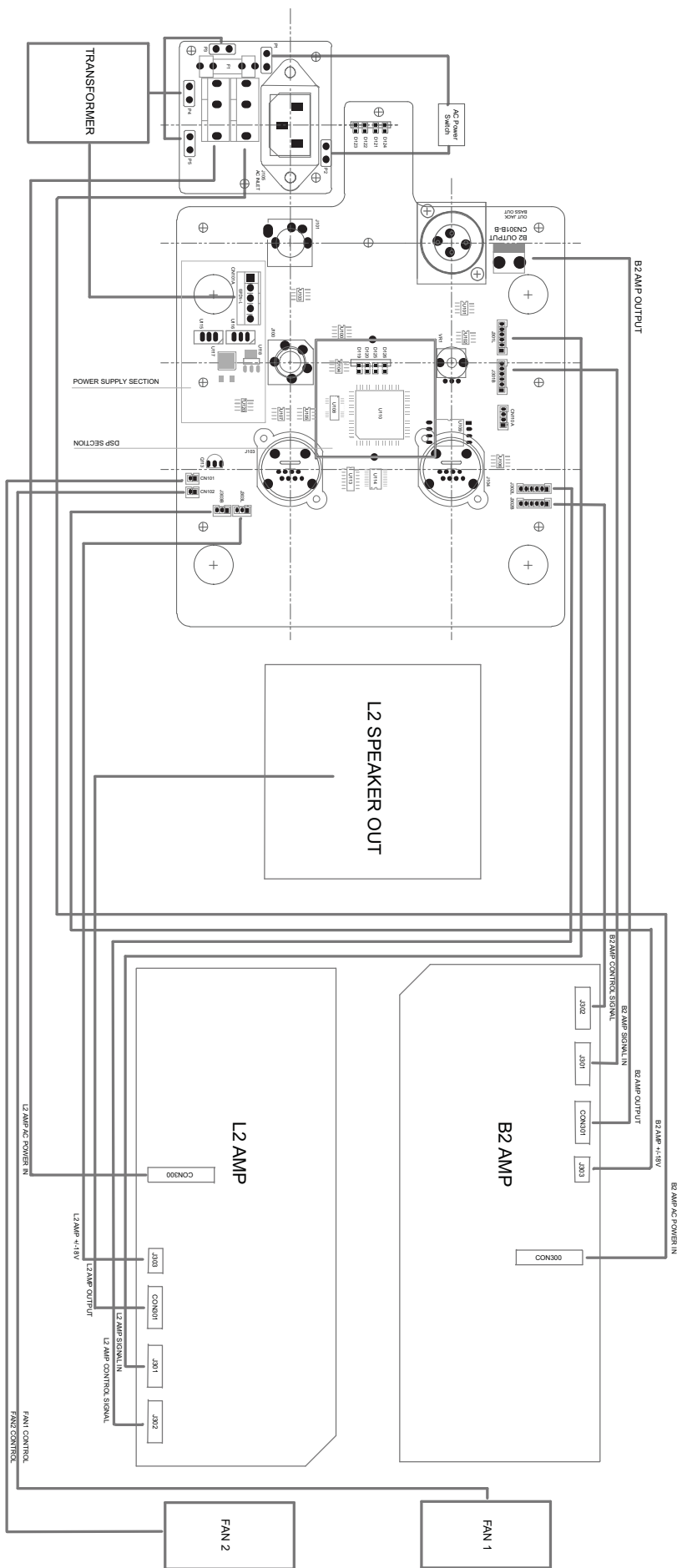


Figure 10. L1® Model II Power Stand Wiring Diagram

Theory of Operation

L1® Model II Power Stand

The L1 Model II Power Stand houses input and output connectors, a DSP circuit board, two amplifier circuit boards, and a receptacle for the L1 Cylindrical Radiator®.

L1 Model II power stand firmware can be updated when connected to a T1, then to a PC via USB port. The PC software application is called the L1 updater. See *Bose L1 Updater Instructions.pdf* on the Bose Musicians web site at <http://www.bose.com/musicians> for software update instructions. Note: The L1 updater software is PC only. There is no Apple version.

1. DSP PCB

1.1 Input / Output Connectors

- AC mains input- IEC connector
- ¼" balanced analog input jack
- Bass Line Out – ¼" Line level bass signal output
- Bass Module Out – Neutrik® 4 pin connector for B1 bass modules
- ToneMatch® port – Ethercon Input connector for the T1 ToneMatch Audio Engine, and power output for the T1

1.2 Line Input

The ¼" Input accepts a line level signal. It is protected with spark gaps (SG1 and SG2) and capacitors (C100, C112, C113) to chassis ground for ESD, and diodes (D10-1, D102) to the supply rails for overvoltage. U100 performs differential to single-sided conversion, and VR1 provides a trim control. U104 converts back to a differential signal and buffers the codec input.

1.3 ToneMatch Input

The ethercon connector provides input and output for isolated S/PDIF – format digital signals. Pins 3 and 6 are the signal input, they are fed through common-mode choke T101 for RF isolation and T104 for electrical (DC) isolation. D110 clips the received signal, and it is passed through a low pass filter (C181, C182, C183, R241, R242, R243) to U113, which acts as a comparator with hysteresis.

U113 is also used to square the transmit S/PDIF signal output, which is passed through transformers T103 and T100 to pins 1 and 2 on the ethercon connector.

Received S/PDIF signals are passed directly to the DSP. The DSP signal processing will be described later in the document.

The DSP output is sent to the D/A converter (U108B). Channel A is used for the high frequency signals for the line array, Channel B is for the bass signal. Each D/A output is filtered and buffered (U105), then sent to the appropriate power amplifier.

1.4 Controls

- Power Switch - Switches the system on and off
- Trim Control - Adjusts the level of the analog input signal

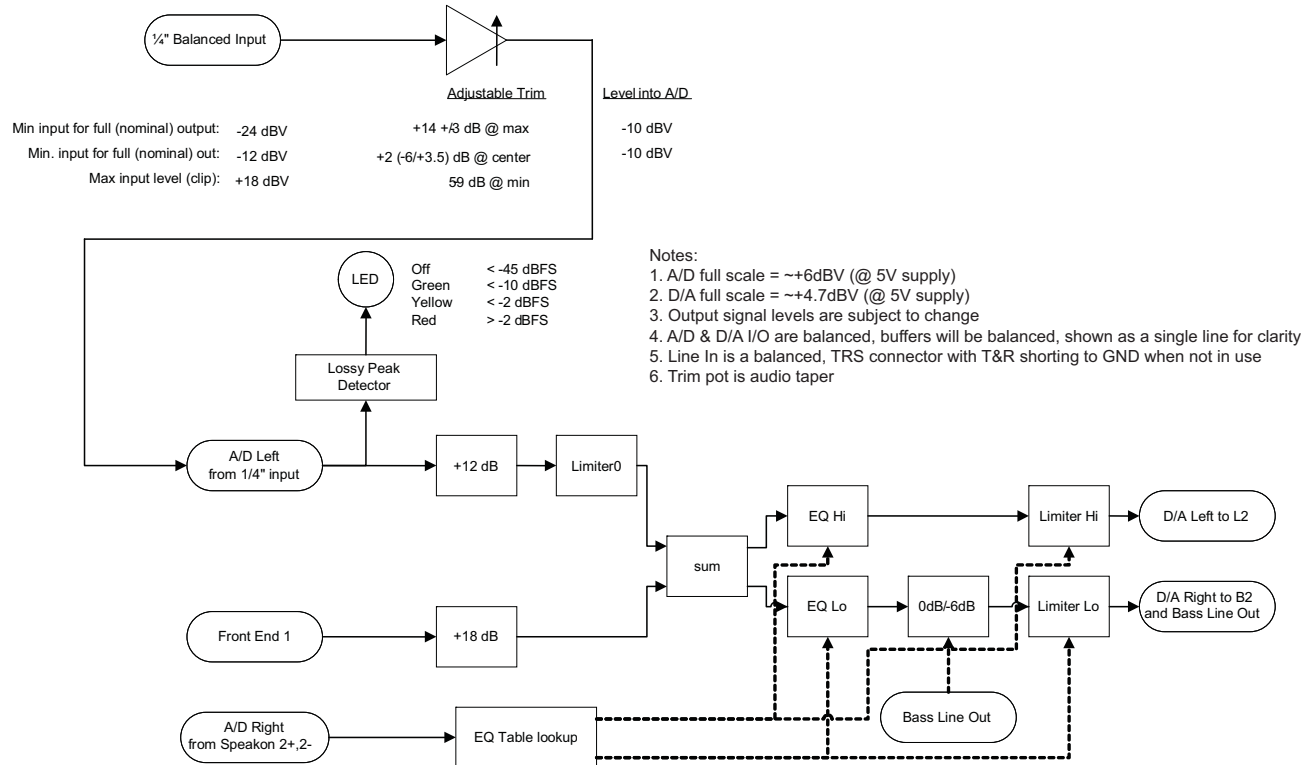
Theory of Operation

1.5 Indicators

- Power/Fault Indicator - Indicates power status: Blue = system on. Red = system fault.
- Signal/Clip Indicator - Indicates status of the analog input signal: Green = normal. Yellow = high level. Red = overload.

1.6 Signal Processing

The audio processing chain is shown in the following figure:



1.7 Amplifier Controls

The DSP provides an ENABLE control to each of the two amplifiers. The control is used to mute the amplifiers on Power up, power down, and in fault conditions.

The DSP receives status indicators from the amplifiers, including Thermal shutdown indication and an OverCurrent shutdown indication. It also is connected to an NTC voltage which is currently not used.

The DSP provides fan control to turn on the cooling fans when signal is present over a fixed audio threshold level.

Theory of Operation

2. Amplifier Boards

2.1 120/230V Variants

To manufacture the separate SKUs for different AC mains voltages, a jumper (S100) on the amplifier boards is changed.

2.2 DC Power

Each of the two amplifier modules is fed directly from the AC mains, and provides a $\pm 18\text{VDC}$ nominal supply, referred to as $\pm 18\text{V A}$ and $\pm 18\text{V B}$.

The A supply is used to power the DSP circuit board. It is converted to $\pm 15\text{VDC}$ for the audio circuitry, 5V, 3.3V, and 1.2 V to supply the circuitry.

The B supply is fed through the ethercon cable to supply the T1 ToneMatch™ Audio Engine. Pins 4 & 5 are the $\pm 18\text{V}$, and pins 7 and 8 are for the $\pm 18\text{V}$.

2.3 Amplifier PCB Architecture

Note: Refer to the Amplifier Block Diagram, sheet 1 of 1 for the following. The information inside the brackets [] is the schematic grid location on the sheet.

The amplifier comprises two PCB's, a Switch Mode Power Supply (SMPS)/Amplifier PCB and an Input/Limiter PCB. The SMPS/Amplifier PCB filters the AC mains power, converts it to the DC voltages required by the audio amplifier and the input/limiter PCB, and provides a switching audio amplifier with 30 dB of gain.

The block diagram shows the amplifier board PCB architecture. The amplifier uses a three-wire, grounded AC power configuration, with the cast aluminum chassis connected to earth ground.

Connectors

The amp pcb has connectors for AC power (con300) [C1], line-level audio in (J301) [C4], speaker out (con301) [D4], control signals (J302) [B/C4], and DC voltage output (J303) [B4].

Switches

S301 [A3] is a DC bypass option for the ground connection, left open in production for best EMC performance. S302 [A1] was a design option to allow a second grounding point on the board, left closed in production for best EMC performance.

2.4 AC Power Input Filter Section

Note: Refer to the SMPS/Amplifier PCB Schematic Diagram, sheet 1 of 3 for the following.

L100, L101, C100, C109, C110, C111, and C112 [all located at B/C2] provide filtering to keep radio frequencies off the power supply for compliance with FCC and EN55103 emissions requirements. R102, R103, and R104 [B/C2] provide a DC discharge path for the capacitors on the input to discharge when power is removed.

L100 and L101 are progressively wound common mode chokes with an impedance peak greater than 450 kHz.

Theory of Operation

D100 [B/C3] rectifies the AC signal, which is filtered by C107 [C4] and C108 [B4].

N100 [C3] and N101 [B3] provide in-rush current protection when connected to the AC line.

MOV1 [C4] and MOV2 [B4] are for surge protection.

SG101 through 104 [B/C2] provide an ESD discharge path to the AC mains around the higher impedance of the coils.

S100 [B3] is a manufacturing option to control use for 120 or 230 VAC. The StartUp signal must be over 9 volts for the converter circuitry to start.

2.5 Converter Section Circuitry

Note: Refer to the SMPS/Amplifier PCB Schematic Diagram, sheet 2 of 3 for the following. The information inside the brackets [] is the schematic grid location on the sheet.

The DC to DC converter is a transformer isolated but unregulated switching power supply. Output voltages are generated by the secondary windings, and consist of:

- Vss/Vdd: +/-5VDC regulated
- +/-18VDC for the limiter board (+/-16.5 to 29 VDC)
- Amp Vd / Amp Vs - Amplifier rail voltages: +/-40VDC (+/- 30to 45.5)
- Vdrive: 10V above Vs, regulated, for internal use

R200 [C1] and C200 [B1] set up a 100 kHz oscillating frequency for the half bridge driver IC200 [C1] which controls Q200 [C2] and Q201 [B2] to provide the high current switching.

N201 [A3] forms a resistive divider with R290 [B2], and turns on Q290 [A3] if the temperature at the converter rises above 130 degrees C. Q290 turns the half bridge driver off.

N200 [D4] protects the rectifying diodes on the amplifeir DC rails from overheating by bringing Enable low if the temperature goes too high, shutting off the amplifier section.

R206 [C2] in parallel with R207 [B2], and R213 [C2] in parallel with R214 [B2] improve current sensing. If the DC current in the FETs goes above ten amps, Q205 [D2] and Q210 [D2] will shut down Q200 [C2], or Q206 [A2] and Q207 [A2] will shut down Q201 [B2].

2.6 Amplifier Section

Note: Refer to the SMPS/Amplifier PCB Schematic Diagram, sheet 3 of 3 for the following.

Refer to the Appendix for pinout diagrams and block diagrams for the amplifier chipset consisting of ICCI (reference designator IC3) and ICdrive1 (IC1 and IC2).

The amplifier board is designed to provide 30 dB of gain, and drive 250 W into a 4 ohm load. It is a dual amp used in a bridged configuration. The pcb has the capability of being configured for two channel use, but is not used for two separate channels in this product.

Theory of Operation

IC4A and IC4B [D2] provide buffers for the audio input, and provide the ability to accept balanced or unbalanced inputs. The amplifier uses the inputs in an unbalanced configuration.

R21, R24, R25, R26 [A/B3] provide resistive dividers to determine the under and over-voltage protection thresholds.

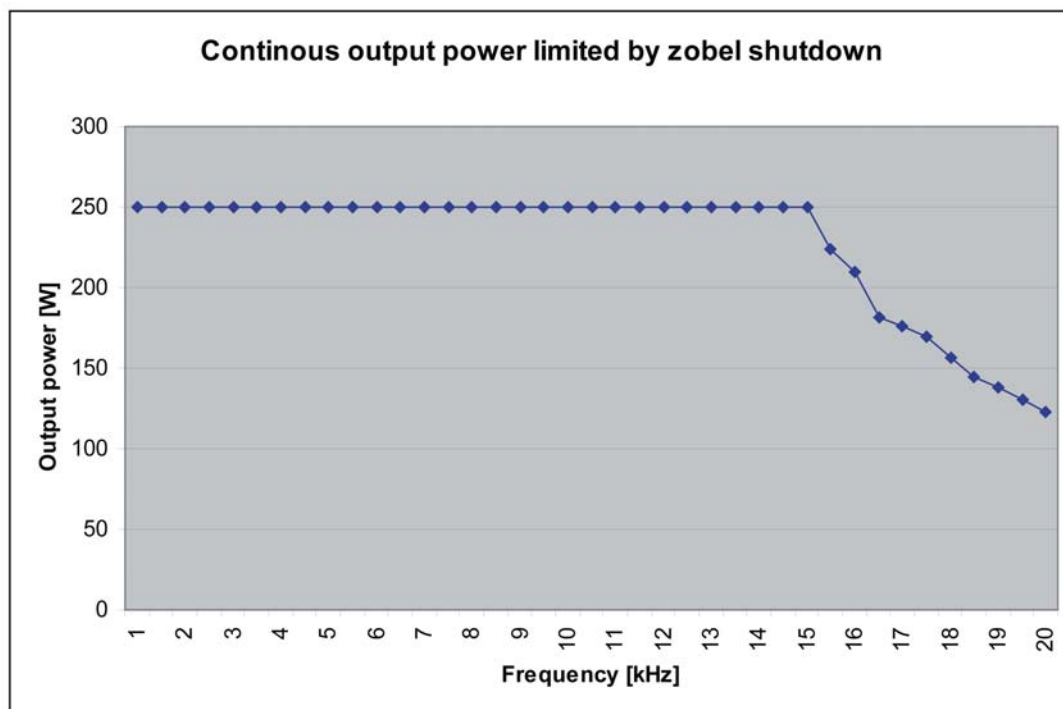
R36 [C3] is assembled (0 Ohms), and R37 [C3] is not, which turns off the on-chip under-voltage protection feature. See Pre-amplifier Enable Circuitry in section 6 for under-voltage protection. N1 and R18 [C6] provide a temperature-sensitive voltage to protect the output FETs. The voltage is fed to ICC1 [C3] where it can initiate a thermal shutdown of the amplifier above 120 degrees C, and is brought externally to J302, pin 1 [Input/Limiter PCB Schematic Sheet 1, C8].

Other signals provided externally on connectors:

- Enable (bidirectional/open collector, can signal that the amp has shut down, or can be used to shut down the amp)
- OC – output, over current protection, or Zobel protection is active
- TH – output – signals that the amp has shut down based on its NTC input (N1)
- Vdd – 5 Volts output for detection that power is on
- Control Ground

C45 [D2], C65 [C8], C66 [B8], and R40 [C8] are not assembled. L8 [C8] provides common mode filtering of radio frequencies for FCC and EN55103 emissions compliance.

The voltage on the Zobel network is divided by R15 [C6] and R17 [C7] (and R31 [A6], R32 [A7]) and sensed by IC3 (ICC1) [C3], and will shut down the amplifier as represented below in the following curve:



Theory of Operation

2.7 Protection Mechanism Summary

Fault	Detection	What shuts down	Indicator Output	Recovery when fault is removed	Notes	Fault LED
Input Signal Level Clipping	Output signal level re: 0.865 of amplifier DC supply	Per channel	None	Immediate	Detection threshold tied to DC over/under voltage threshold	NO
Output Signal Current Limit	Output MOSFET 'on' voltage	Per MOSFET	None	Immediate	FET is shut off for short time (1.25 usec) then restored causing "self-oscillation"	NO
Output Over-current /O.C. (short circuit, saturation)	Detects output current limit over a settable time constant	Per channel	OC	Time settable by resistor value	Time constants shared with Zobel protection	RED
Zobel Protection	Over-voltage across Zobel resistor	Shutdown per channel	OC	Time settable by resistor value	Shared time constant with OC	RED
Thermal	External Negative Temperature Coefficient resistor - threshold detection with hysteresis	Both amplifiers	TH	System turns back on when NTC when voltage above threshold (depends on thermal constant of system)	One NTC resistor per system - will be two	RED
Amp DC voltage over/under	Percentage of amplifier DC supply voltage (typically 135%). Under voltage detection optional to insure controlled startup.	Both amplifiers	EN	Capacitors are given a discharge path to prevent long recovery time - but enable circuit has long recovery	Detection threshold tied to input signal clipping threshold	NO
Control Voltage (5 Vdc) DC over / under	Percentage of 5V voltage	Both amplifiers	EN	Immediate		NO
Converter	Over-current	System	None	Immediate		NO
Converter	Thermal	System	None	Depends on thermal constant of system		NO

L1® Model II Cylindrical Radiator® Loudspeaker

The L1 Cylindrical Radiator speaker array consists of two sections, an upper and lower section, with 12 drivers each for a total of 24 drivers. The lower array section plugs directly into the cavity in the center of the L1 Model II power stand. Electrical connections are made via Molex connectors in the power stand and the bottom of the lower array section. The upper section of the line array plugs directly into the top of the bottom section, aligned by a bayonet pin. Electrical connection is made by another Molex connector to the top of the lower array section. The result is that there are no cables needed to connect the line array sections to the power stand.

There is no crossover or protection circuitry in either section of the line array. All protection and EQ is performed in the power stand. The drivers of both sections are replaceable, as are the grilles and the Bose® logo.

Theory of Operation

Bass Module B1

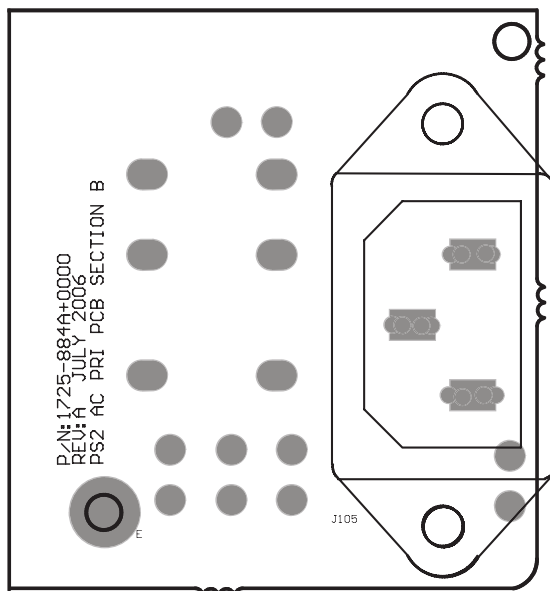
The B1 bass module is a dedicated passive unit that houses two 5 1/4" drivers. The input is via one of two 4-pole Neutrik® Speakon® connectors on the rear panel. Both of these inputs are paralleled, allowing you to jumper multiple bass modules together. There are no crossover or protection circuit components located on the input panel. All EQ and protection is performed in the PS1 power stand.

Pins 1+ and 1- of the input connector are used to apply the input signal to the bass module. Pins 2+ and 2- are connected to a 10k ohm resistor on the bass module rear panel PCB. This allows the power stand to detect how many bass modules are connected to it from the Bass Out connector.

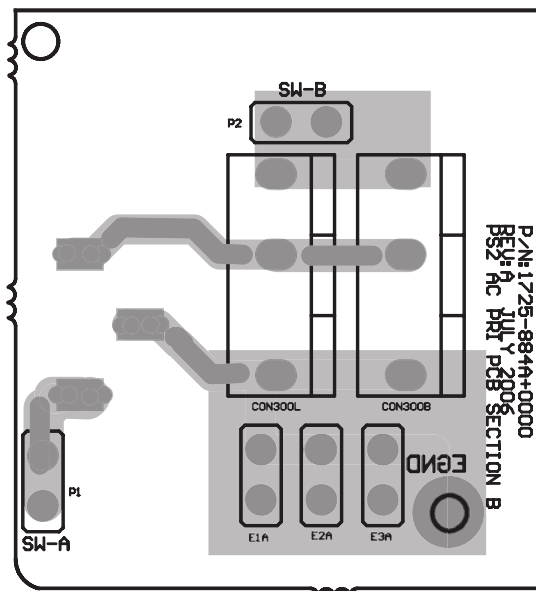
If the power stand sees a 10k resistance, it knows that there is only one bass module connected and adjusts the output level and EQ accordingly. If it sees 5k ohm resistance, it then knows that there are 2 bass modules connected, and again, adjusts the output level and EQ accordingly. If the power stand sees an infinite resistance, it knows that there is no bass module connected and adjusts accordingly.

The woofers in the bass module are replaceable. The input panel, grille and Bose® logo are also replaceable.

Circuit Board Layout Diagrams

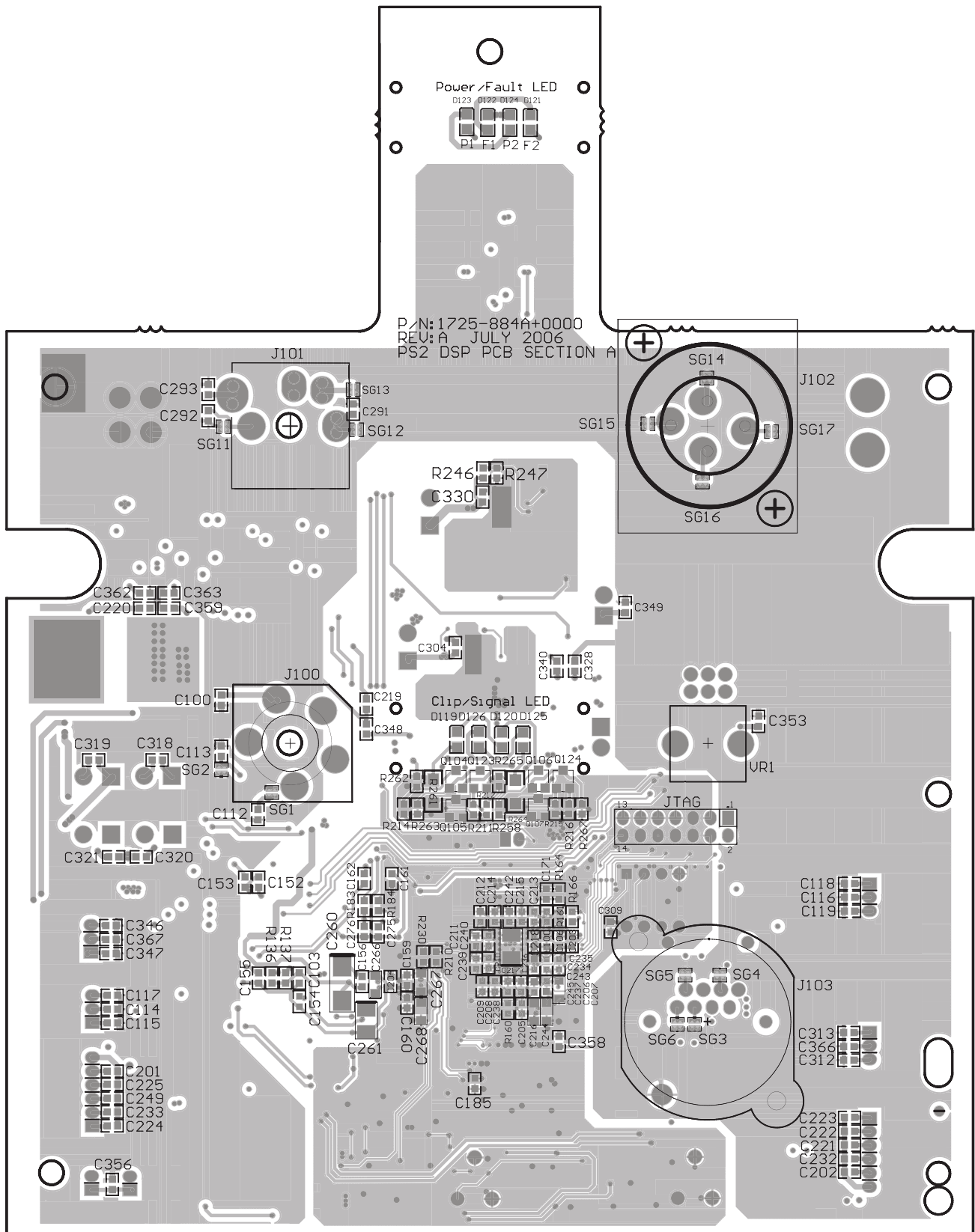


**Figure 11. AC Input PCB
Topside Etch and Layout**



**Figure 12. AC Input PCB
Bottom Etch and Layout**

Circuit Board Layout Diagrams



Circuit Board Layout Diagrams

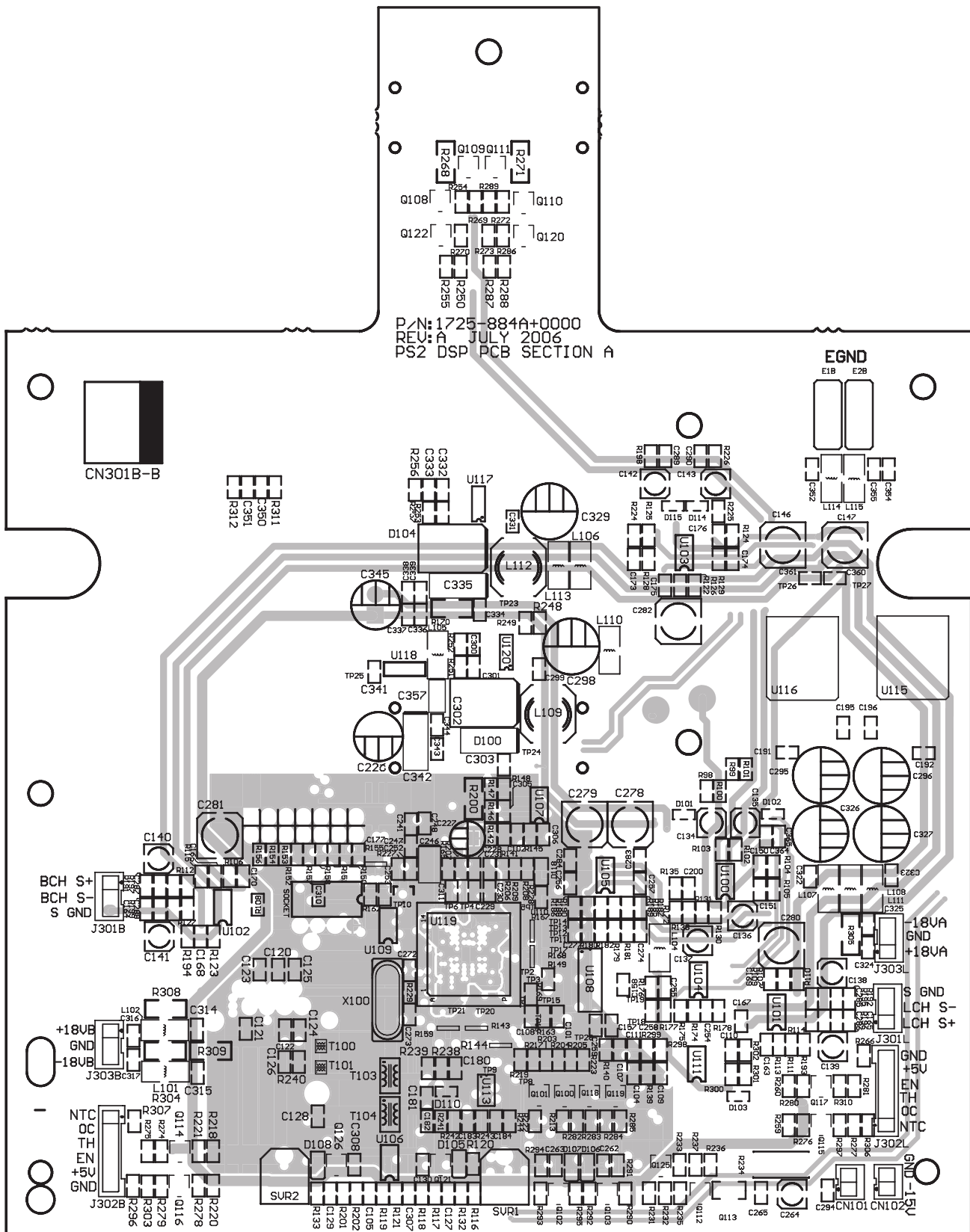


Figure 14. DSP PCB Bottom Silk and Internal Layer 1

Circuit Board Layout Diagrams

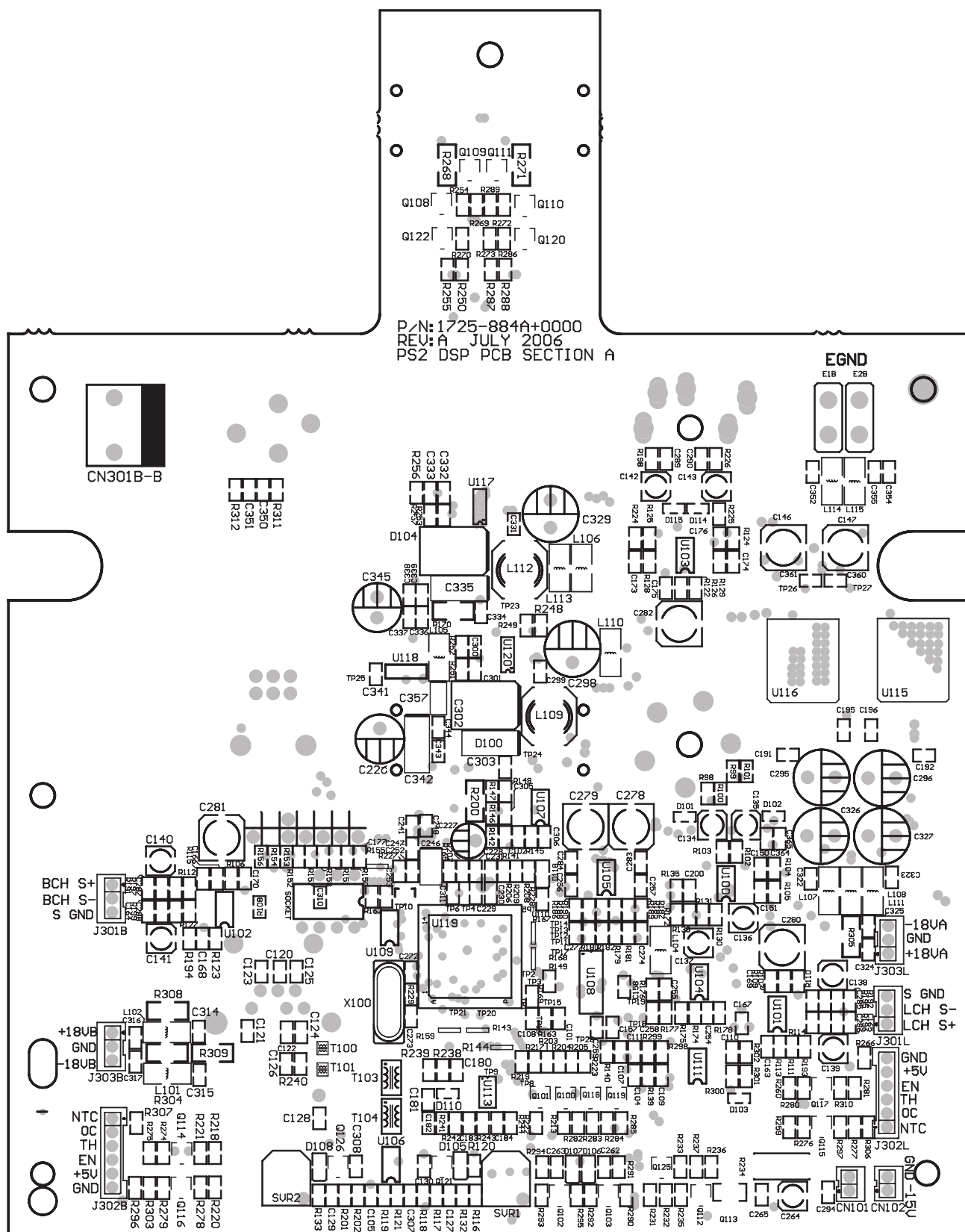


Figure 15. DSP PCB Bottom Silk and Internal Layer 2

Circuit Board Layout Diagrams

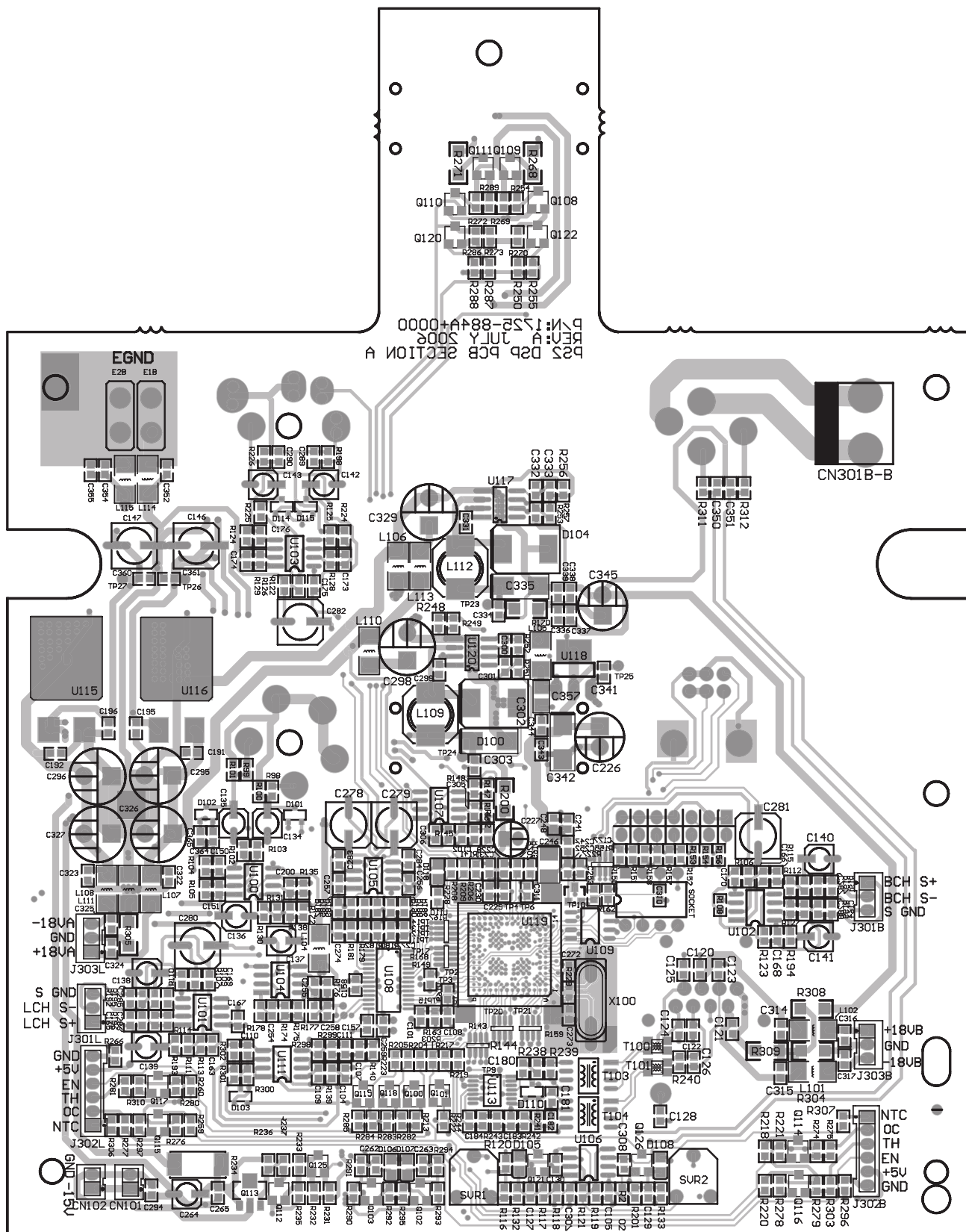
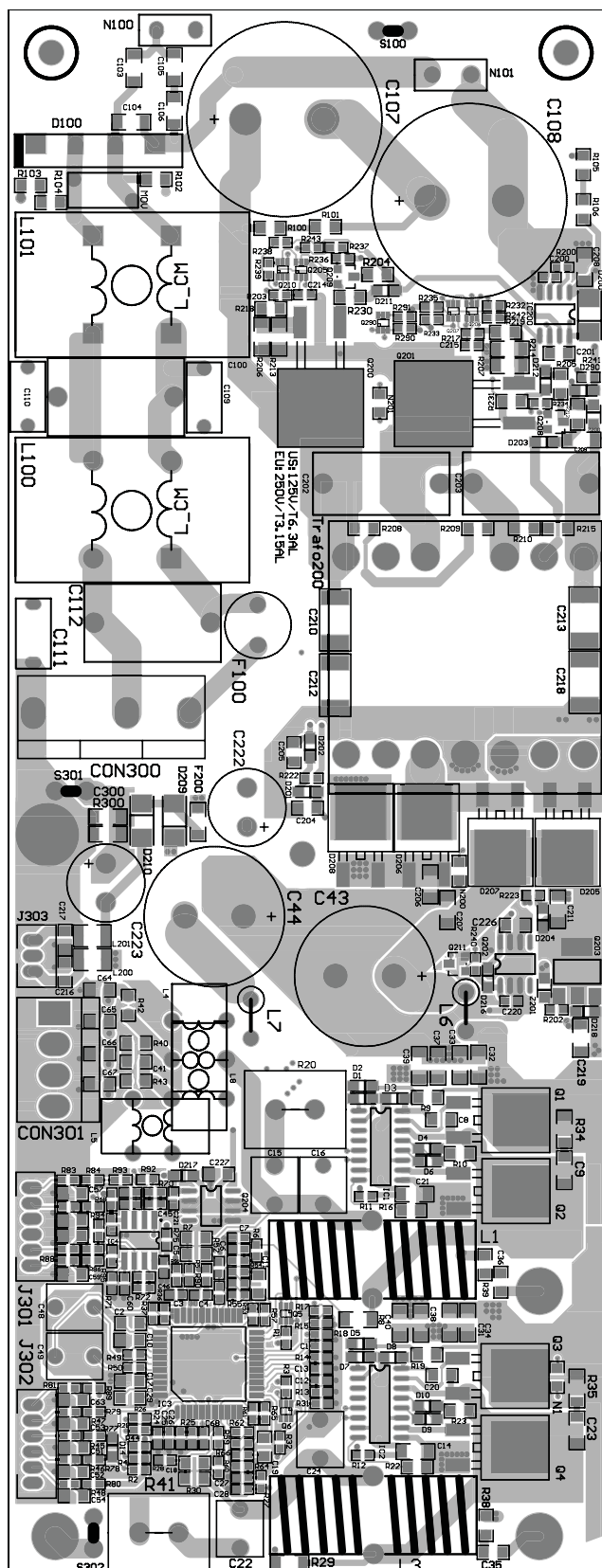
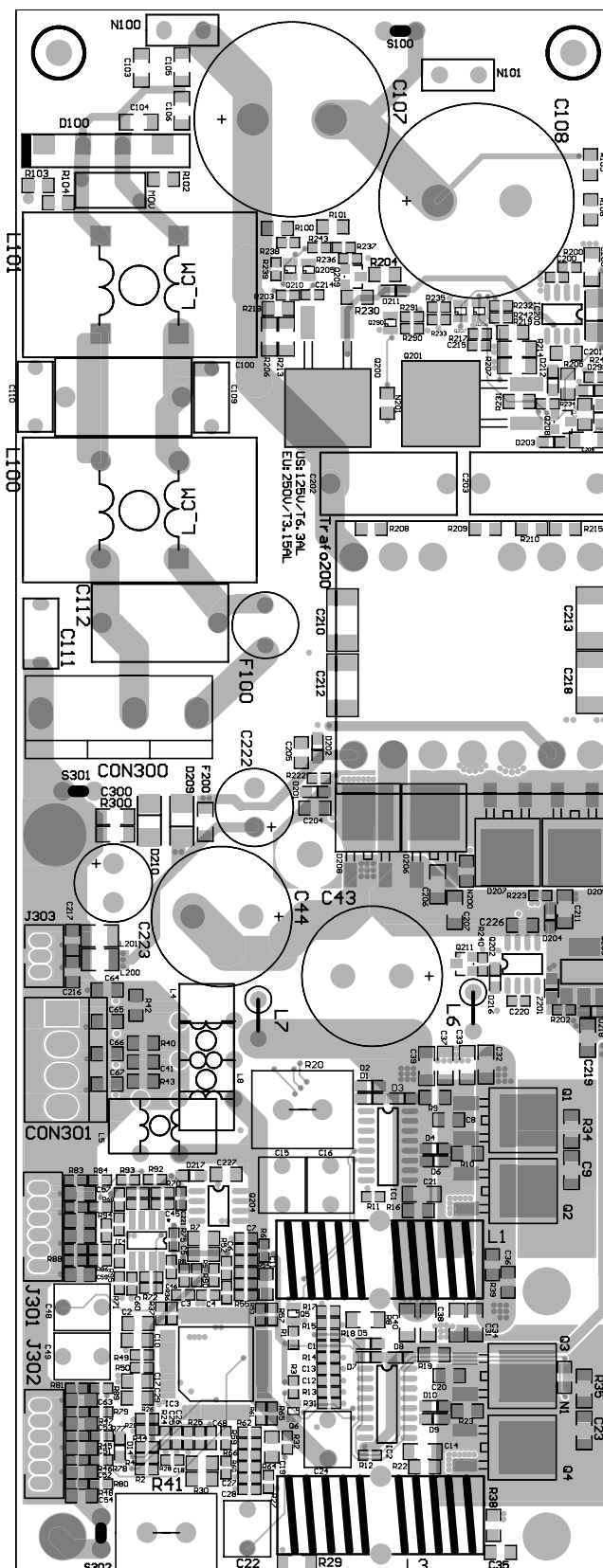


Figure 16. DSP PCB Bottom Silk and Etch

Circuit Board Layout Diagrams

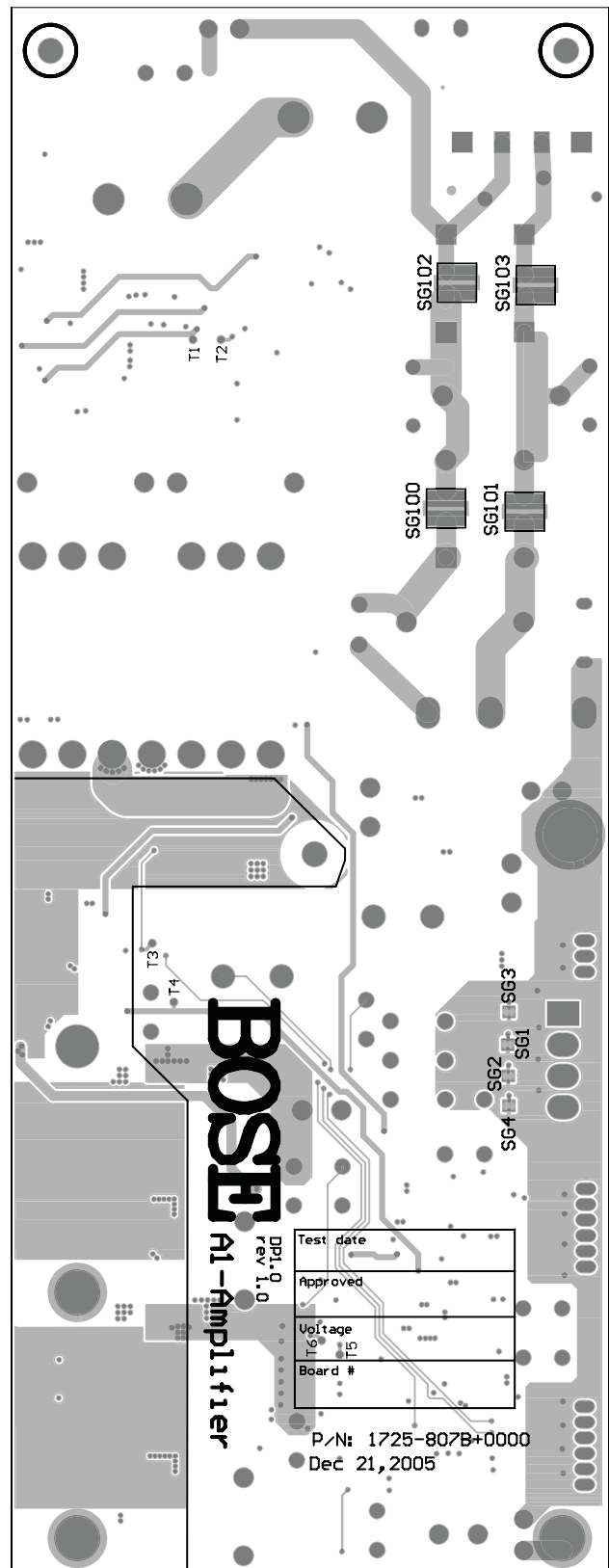


**Figure 17. Amplifier/SMPS PCB
Topside Etch Layout**



**Figure 18. Amplifier/SMPS PCB
Internal Etch Layer 1 Layout**

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**Figure 20. Amplifier/SMPS PCB
Bottom Etch Layout**

Service Manual Revision History

Date	Revision Level	Description of Change	Change Driven By	Pages Affected
10/07	00	Document released at revision 00.	Service manual release	All
5/09	01	Added Bose® part number for cavity stop.	New part	16

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE



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