Bose® S1 PRO MULTI POSITION PA SYSTEM

Service Manual
Reference Number 787930-
SM REV 07

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PRODUCT DESCRIPTION

The Bose® S1 Pro is a micro, powered, portable PA system that is targeted for small sound reinforcment application.
Designed for use by performing and home musicians, as well as general purpose PA applications.

Key Features:
Unique acoustic design/Best in Class Sound Quality:
Impressive size to performance ratio.
Lower X-over for better vocal clarity.
Articulated array provides consistent coverage.
Three unique aiming positions:
Allowing the best coverage for the applications.
EQ is automatically changed based on the position of the speaker.
Lightweight:
Weighs about 15LBS. Easily carry to any gig.
I**ntegrated Bluetooth®:**
Simple connection to wireless devices for music playback of backing tracks or foreground music.
Battery Included:
Integrates and charges within the product.
S1 Pro has a universal voltage power supply, which can be operated from 90 VAC to 264 VAC. The unit will ship with the appropriate power cord for these regions.

Manufactured Versions

Material Master #	Description	Region
787930-1120	S1 PRO, PA SYSTEM, W/BATT 120V US	120V US
787930-2120	S1 PRO, PA SYSTEM, W/BATT 230V EU	230V EU
787930-3120	S1 PRO, PA SYSTEM, W/BATT 100V JPN	100V JPN
787930-4120	S1 PRO, PA SYSTEM, W/BATT 230V UK	230V UK
787930-5120	S1 PRO, PA SYSTEM, W/BATT 230V AU	230V AU

S1 Pro Specifications

Enclosure	
Enclosure Material	Polypropylene plastic
Finish	Textured plastic
Grille	Steel with black powder-coat
Size	
Dimensions (H x W x D) - mm	330 x 241 x 286
Dimensions (H x W x D) - inches	13 x 9.5 x 11.2
Net Weight	15.7 lbs (7.1 kg)
Battery	
Type	Rechargeable lithium-ion battery
Charge Time	5 hours (3 hours in Quick Charge)
Play Time	Up to 11 hours

WARRANTY

ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICE HANDLING

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

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

Warranty

The Bose® S1 Pro contains no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory Service.

The S1 Pro is covered by a limited warranty. Visit our website at pro.Bose.com for details of the limited warranty.

Part List Notes

1. The individual parts located on the PCBs are listed in the Electrical Part List.

2. 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.

3. ⚠ This part is critical for safety purposes. Failure to use a Bose recommended part may result in a safety hazard and may void the regulatory certification.

Packaging Part List

Item Number	Description	Part Number	Qty	Note
1	INSERT, PE FOAM, CARTON, TOP, SVCE	802458-001S	1	
2	INSERT, PE, FOAM, BACK SUPPORT, SVCE	806003-001S	1	
3	POLYBAG, 480 X 610	806064-0010	1	
4	INSERT, PE, FOAM, CARTON, BOTTOM, SVCE	802459-001S	1	
5	CARTON, S1 PRO, SVCE, BATT, 00.2	802301-002S	1	
-	CABLE, LINE CORD, IEC C13, NA, 120V US CABLE, LINE CORD, IEC, C13, 230V UK CABLE, LINE CORD, IEC, C13, 230V EU CABLE, LINE CORD, IEC, C13, 240V AU CABLE, LINE CORD, IEC C13, 100V JP	350745-0010 350748-0010 350747-0010 350746-0010 350749-0020	1	3 ⚠
-	GUIDE,QUICK START, S1 PRO	811058-0010	1	

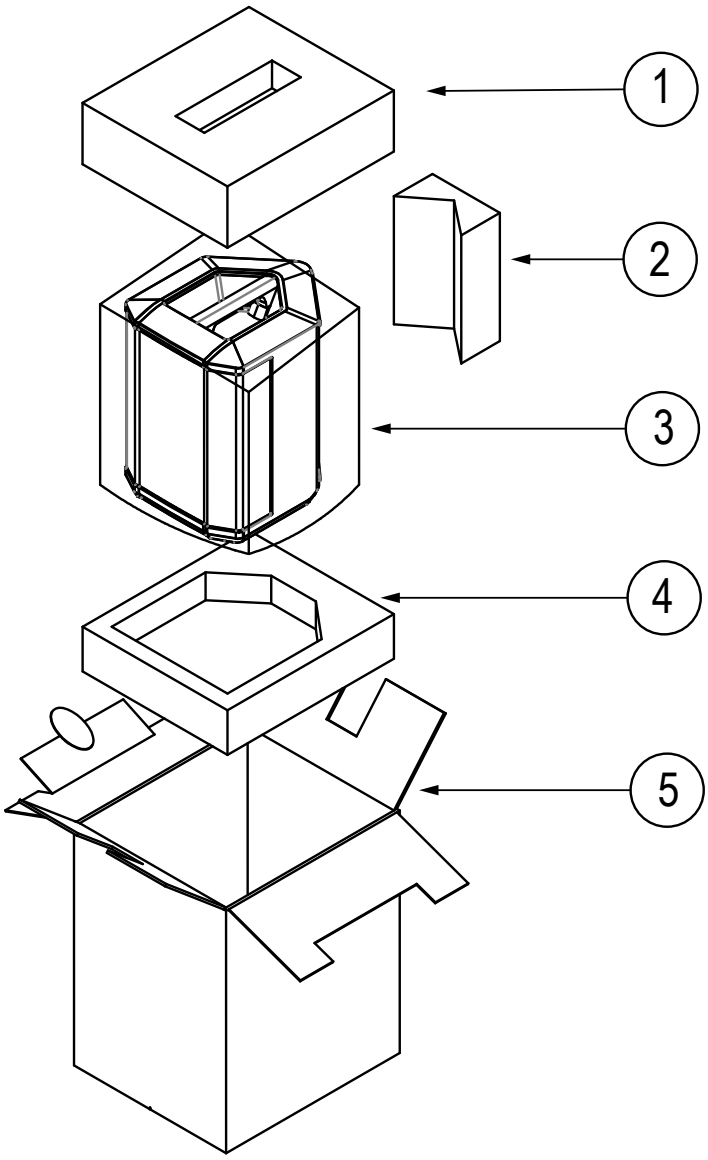


Figure 1. S1 Pro Packaging View

Main Assembly Parts List

Refer to figure 2

Item Number	Description	Part Number	Qty	Note
1	FOOT, SIDE, TOP, SVCE	787744-011S	1	
2	PANEL, I/O, SVCE	789257-011S	1	
3	FOOT, SIDE, BOTTOM, SVCE	789360-011S	1	
4	BATTERY JACK PCB	789274-002S	1	
5	ASSY, PCB, DETECT POLE	789263-001S	1	
6	COVER, BATTERY, SVCE	787787-011S	1	
7	FOOT, BOTTOM, SVCE	787736-011S	1	
8	LENS,LED,SVCE	720413-001S	1	
9	WOOFER, 6IN, SVCE	789361-001S	1	
10	TWIDDLER, 2.5IN, NEO, TXX	742631-0020	3	
11	GRILLE, SVCE, NO LOGO	787726-011S	1	
12	LOGO, S1 PRO	791175-0110	1	
-	S1 BATTERY PACK, SVCE	789175-001S	1	
-	ASSY, HARNESS, BATTERY, CLASS B	811820-001S	1	
-	ASSY, HARNESS, TWIDS, CLASS B	806009-002S	1	
-	ASSY, HARNESS, WOOFER TO BATTERY, CLASS B	806007-002S	1	

Main Assembly Exploded View

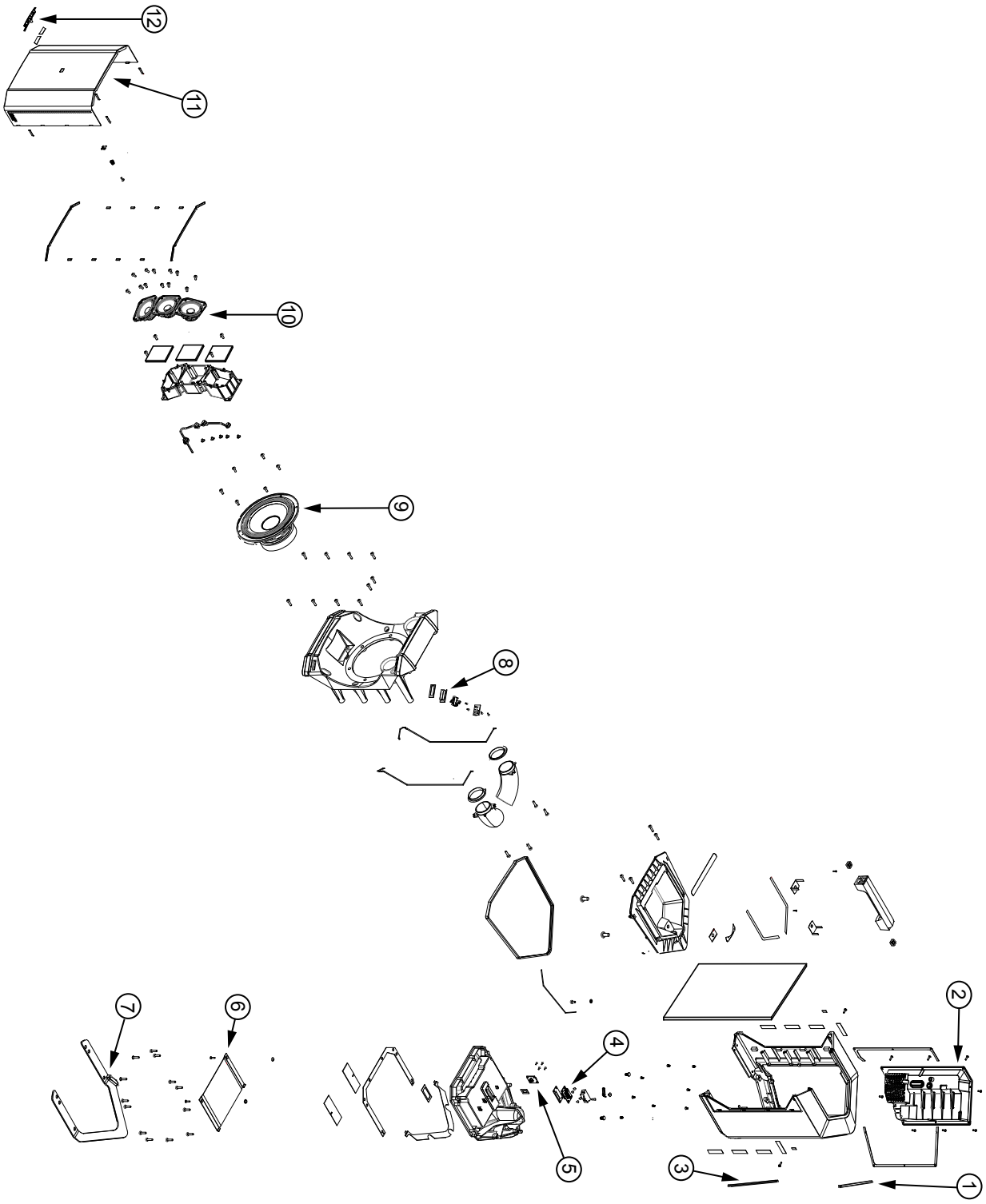


Figure 2. S1 Pro Exploded View

Input Panel Assy

Refer to figure 3

Item Number	Description	Part Number	Qty	Note
1	KNOB, TREBLE/BASS, 12mm DIA, SVCE	787967-011S	4	
2	KNOB, REVERB, 10mm, DIA, SVCE	787968-011S	2	
3	PANEL, I/O, SVCE	789257-011S	1	
4	KNOB, VOLUME, 16mm DIA, SVCE	787966-011S	3	
5	SWITCH, ROCKER, 3 POS, SVCE	788190-011S	1	3 ⚠
6	ASSY, PCB, SWITCH	789259-001S	1	3 ⚠
7	SLIDE SWITCH CAP	720517-011S	1	
8	LIGHTPIPE, ROW OF 3	789264-0010	3	
9	ASSY, PCB, CONTROL	788193-001S	1	
10	BUTTON, BLUETOOTH, SVCE	789267-001S	1	
11	HOLDER, BLUETOOTH BUTTON, 00.4	793939-0110	1	
12	ASSY, PCB, MAIN Note: Order items 10 and 11 when replacing the ASSY, PCB, MAIN	788189-003S	1	
13	GASKET, EDGE, PCB	797099-0110	1	

Input Panel Exploded View

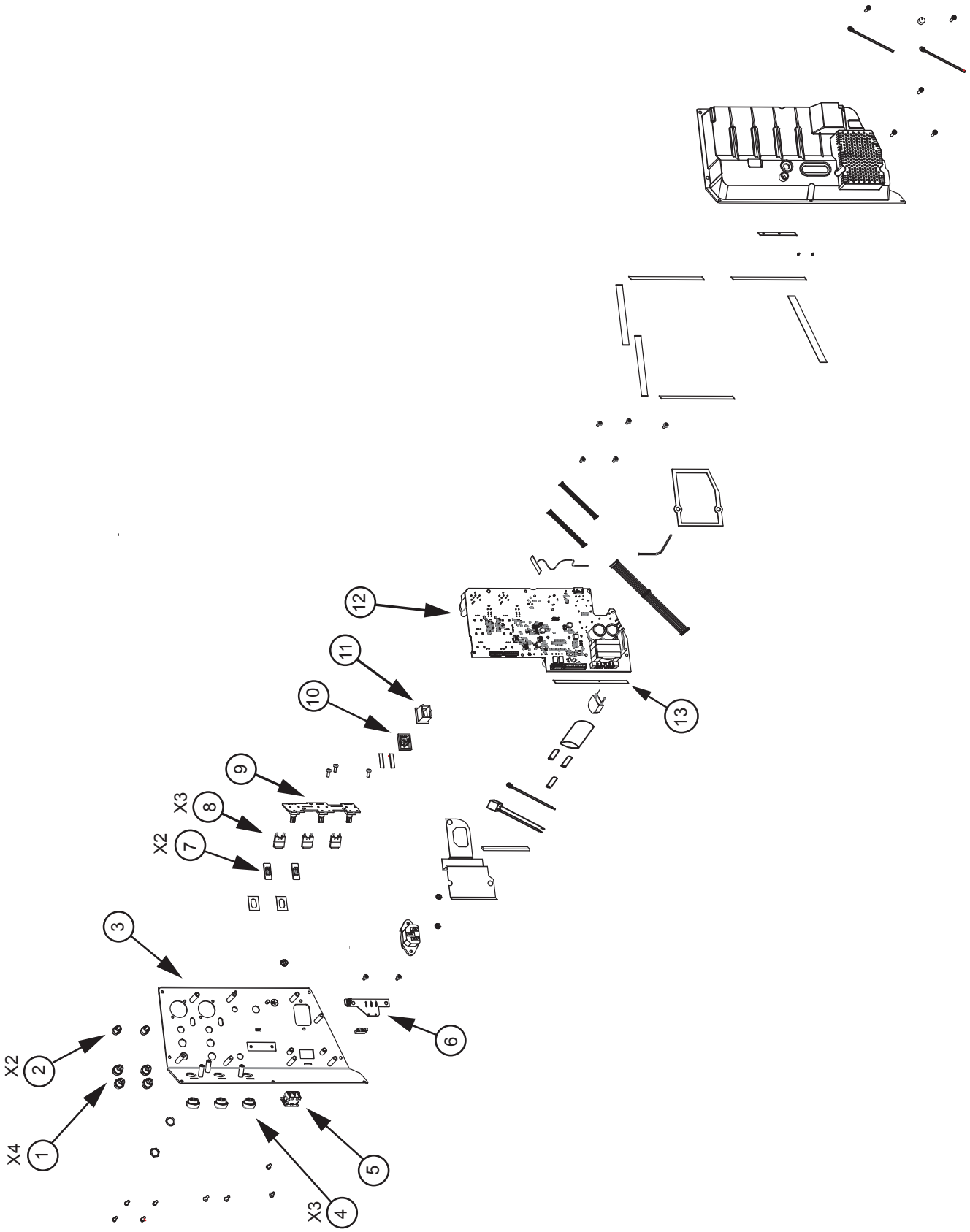


Figure 3. S1 I/O Assy Exploded View

Main PCB Electrical Part List

Resistors

Reference Designator	Description	Vendor Part Number	Note
R1, R18, R19, R50, R153, R154, R186, R235, R247, R332, R59, R66, R160	CHIP, 100 OHM, 100PPM, +- 1%, 0603, WALS, L	T502100002399	2
R2, R17, R152, R333	CHIP, 6.8K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X-6801FTL	T502680102399	2
R3, R41, R131, R175	CHIP, 6.04K OHM, 100PPM, +- 1%, 0603, WALS, L	T502604102399	2
R4, R60, R603	CHIP, 2.2K, OHM, 100PPM, +- 1%, 0402, WALS, L	T502220101399	2
R5, R7, R13, R45, R110, R133, R144, R146, R148, R178, R331, R334, R142, R200, R211, R221	CHIP, 1M OHM, 100PPM, +- 1%, 0603, WALS, L	T502100402399	2
R6, R16, R135, R150	CHIP, 10M OHM, 100PPM, +- 1%, 0603, WALS, L	T502100502399	2
R10, R25, R113, R149	CHIP, 330 OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X3300FTL	T502330002399	2
R11, R12, R31, R48, R125, R141, R162, R174, R176, R182, R209, R199, R204, R208, R679	CHIP, 100K OHM, 100PPM, +- 1%, 0402, WALS, L	T502100301399	2
R14, R20, R23, R27, R28, R35, R134, R136	CHIP, 47 OHM, 100PPM, +- 1%, 0402, WALS, L	T502470A01399	2
R15, R29, R38, R43, R47, R49, R63, R64, R76, R77, R198, R239, R252, R269, R274, R241, R242, R342, R346	CHIP, 1K OHM, 100PPM, +- 1%, 0402, WALS, L	T502100101399	2
R22, R53, R156, R188	CHIP, 10 OHM, 200PPM, +- 1%, 0603, WALS, L, WR06X10R0FTL	T502100A02399	2
R26, R44, R284, R291, R292, R327, R330, R336	CHIP, 5.9K OHM, 100PPM, +- 1%, 0603, WALS, L	T502590102399	2
R32, R33, R34, R42, R286, R290, R294, R329	CHIP, 4.42K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X-4421FTL	T502442102399	2
R37, R172	CHIP, 1.5K, OHM, 100PPM, +- 1%, 0603, ALS, L	T502150102399	2
R39, R40, R106, R107, R109, R112, R116, R120	CHIP, 6.2K OHM, 100PPM, +- 1%, 0402, WALS, L	T502620101399	2
R46	CHIP, 4.32K OHM, 100PPM, +- 1%, 0402, WALS, L	T502432101399	2
R54, R55, R57, R58, R67, R68, R82, R83, R130, R157, R212, R276, R170, R173, R512, R513, R514, R515, R166, R300	CHIP, 100 OHM, 100PPM, +- 1%, 0402, WALS, L, WR04X1000FTL	T502100001399	2
R56, R94, R95, R98, R103, R126, R128, R132, R137, R138, R151, R155, R181, R183, R190, R243, R244, R245, R246, R306, R310, R315, R340, R456, 139, R145, R187, R604, R655, R656, R158, R185	CHIP, 10K OHM, 100PPM, +- 1%, 0402, WALS, L	T502100201399	2

Main PCB Electrical Part List

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R61, R62	CHIP, 51 OHM, 100PPM, +- 1%, 0402, WALS, L	T502510A01399	2
R65, R88, R91, R97, R169, R201, R302, R303	CHIP, 47K OHM, 100PPM, +- 1%, 0402, WALS, L	T502470201399	2
R69, R74, R75, R84, R85, R92, R93, R102	CHIP, 3.6K OHM, 100PPM, +- 1%, 0402, WALS, L	T502360101399	2
R70, R72, R78, R80, R86, R89, R96, R100, R214	CHIP, 5.6K OHM, 100PPM, +- 1%, 0402, WALS, L	T502560101399	2
R71, R73, R79, R81, R87, R90, R99, R101	CHIP, 180 OHM 100PPM +-1% 0402 WALS L	T502180001399	2
R104, R344	CHIP, 1M OHM, 100PPM, +- 1%, 0402, WALS, L	T502100401399	2
R105, R114, R115, R127, R140	CHIP, 7.5K OHM,100PPM, +- 1%, 0402, WALS, L, WR04X7501FTL	T502750101399	2
R108, R111, R121, R123	CHIP, 470 OHM, 100PPM, +- 1%, 0402, WALS, L	T502470001399	2
R117	CHIP, 2M OHM, 100PPM, +- 1%, 0402, WALS, L	T502200401399	2
R118	CHIP, 453K OHM, 100PPM, +- 1%, 0402, WALS, L	T502453301399	2
R119, R195, R228	CHIP, 100K OHM, 100PPM, +- 1%, 0603, WALS, L	T502100302399	2
R124	CHIP, 390K OHM, 100PPM, +- 1%, 0402, WALS, L	T502390301399	2
R129	CHIP, 4.7 OHM, 100PPM, +- 5%, 1206, WALS, L	T502047A04499	2
R159	CHIP, 0 OHM, 1206, WALS, L	T502000004499	2
R161	CHIP, 10 OHM, 100PPM, +- 1%, 0805, WALS, L	T502100A03399	2
R163, R258, R259, R262	CHIP, 300K OHM, 100PPM, +- 1%, 1206, WALS, L, WR12X-3003FTL	T502300304399	2
R167	CHIP, 10K OHM, 100PPM, +- 1%, 0805, WALS, L	T502100203399	2,3 ⚠
R168	CHIP, 24K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X2402FTL	T502240202399	2
R171, R210, R516, R517	CHIP, 220 OHM, 100PPM, +- 1%, 0603, WALS L, WR06X2200FTL	T502220002399	2
R177	CHIP, 510 OHM, 100PPM, +- 1%, 0603, WALS, L	T502300302399	2
R179	CHIP, 300K OHM, 100PPM, - 1%, 0603 WALS, L, WR06X3003FTL	T502510002399	2
R180	CHIP, 91K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X9102FTL	T502910202399	2
R184, R313, R314, R9, R24, R51, R52	CHIP, 10K OHM, 100PPM, +- 1%, 0603, WALS, L	T502100202399	2

Main PCB Electrical Part List

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R189, R197, R202, R207, R215, R219, R222, R248	CHIP, 13.7K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X-1372FTL	T502137202399	2
R193	CHIP, 3.9K OHM, 100PPM, +- 1%, 0402, WALS, L	T502390101399	2
R196	CHIP, 680K OHM, 100PPM, +- 1%, 0402, WALS, L	T502680301399	2
R220, R236, R253, R264	CHIP, 910 OHM, 100PPM, +- 1%, 0402, WALS, L, WR04X9100FTL	T502910001399	2
R225, R229, R232, R233	CHIP, 4.7 OHM, 100PPM, +- 1%, 1206, WALS, L	T502470B04399	2
R226, R227, R231, R234	CHIP, 47 OHM, 100PPM, +- 1%, 1206, WALS, L	T502470A04399	2
R230, R122, R400	CHIP, 0 OHM, , 200PPM, +- 5%, 0402, WALS, L	T5020000014A9	2
R237, R249, R265, R271	CHIP, 4.02K OHM, 100PPM, +- 1%, 0402, WALS, L	T502402101399	2
R240	CHIP, 30K OHM, 100PPM, +- 1%, 0402, WALS, L	T502300201399	2
R250	CHIP, 560 OHM, 100PPM, +- 1%, 0603, WALS, L	T502560002399	2
R254, R255, R256, R257	CHIP, 820K OHM, 100PPM, +- 1%, 1206, WALS, L	T502820304399	2,3 ⚠
R260, R263, R668, R669, R21	CHIP, 100 OHM, 100PPM, +- 1%, 1206, WALS, L	T502100004399	2
R261, R266	CHIP, 3.3, OHM, 200PPM, +- 1%, 0603, WALS, L, WR06W3R3	T502330B02399	2
R267, R605	CHIP, 22K OHM, 100PPM, +- 1%, 0402, WALS, L	T502220201399	2
R275	CHIP, 2.7K OHM, 100PPM, +- 1%, 0402, WALS, L	T502270101399	2
R277	CHIP, 47K OHM, 100PPM, +- 1%, 1206, WALS, L	T502470204399	2
R283	CHIP, 470 OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X4700FTL	T502470002399	2
R285	CHIP, 2.2K OHM, 100PPM, +- 1%, 0603, WALS, L	T502220102399	2
R287, R295, R502, R297, R299	CHIP, 1.3 OHM, 100PPM, +- 1%, 1206, KOA, K, SR732BTTD1R30F	T710600016700	2
R289	CHIP, 2.7K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X-2701FTL	T502270102399	2
R296, R312, R317, R318, R319, R320	CHIP, 4.99K OHM, 100PPM, +- 1%, 0603, WALS, L	T502499102399	2
R305, R304	CHIP, 27K OHM, 100PPM, +- 1%, 0402, WALS, L, WR04X2702FT	T502270201399	2

Main PCB Electrical Part List

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R307, R328, R352	CHIP, 56K OHM, 100PPM, +- 1%, 0402, WALS, L	T502560201399	2
R308, R316	CHIP, 47K OHM, 100PPM, +- 1%, 0603, WALS, L	T502470202399	2
R311	CHIP, 1K OHM 100PPM, +- 1%, 0603, WALS, L, WR06X-1001FTL	T502100102399	2
R321	CHIP, 1.37K OHM, 100PPM, +- 1%, 0603, WALS, L, WR06X-1371FTL	T502137102399	2
R322, R323, R326, R377	CHIP, 2K OHM, 100PPM, +- 1%, 0603, WALS, L	T502200102399	2
R343, R348, R339	CHIP, 330K OHM, 100PPM, +- 1%, 0603, WALS, L	T502330302399	2
R345	CHIP, 560K OHM, 100PPM, +- 1%, 0402, WALS, L	T502560301399	2
R351	CHIP, 51K OHM, 100PPM, +- 1%, 0603, WALS, L	T502510202399	2
R356	CHIP, 3K OHM, 100PPM, +- 1%, 0603, WALS, L	T502300102399	2
R495	CHIP, 220 OHM, 100PPM, +- 1%, 0402, WALS, L	T502220001399	2
R498	CHIP, 4.7M OHM, 100PPM, +- 1%, 0603, WALS, L	T502470402399	2
R499, R500	CHIP, 2.2K OHM, 100PPM, +- 1%, 1206, WALS, L	T502220104399	2
R501	CHIP, 1 OHM, 100PPM, 1%,1206, KOA, K, SR732BTTD1R00F	T710600016600	2,3 ⚠
R510, R511	CHIP, 24 OHM, 100PPM, +- 1%, 1206, WALS, L, WR12X-24R0FTL	T502240A04399	2
R602, R194, R206, R218, R238	CHIP, 0 OHM, 0603, WALS, L, WR06X000PTL	T502000002009	2
R606	CHIP, 3.3K OHM, 100PPM, +- 1%, 0402, WALS, L	T502330101399	2
R610, R611	CHIP, 1M OHM, 100PPM, +- 1%, 0805, WALS, L	T502100403399	2
R620	CHIP, 10 OHM, 100PPM, +- 1%, 0402, WALS, L	T502100A01399	2

Main PCB Electrical Part List

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1,C3,C167,C176	CAP X7R 1.0uF 50V +-10% 0805 WALSIN L	T542031057508	2
C4, C7, C9, C11, C16, C37, C38, C39, C41, C45, C48, C54, C57, C61, C62, C67, C68, C69, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C86, C88, C89, C90, C93, C94, C95, C96, C97, C99, C100, C101, C102, C103, C104, C123, C128, C135, C143, C151, C161, C162, C197, C199, C207, C209, C216, C234, C237, C245, C273, C308, C505, C585, C594, C595, C598, C63, C87, C612, C613, C614, C615, C616, C617, C677, C678	CAP, X7R, .10uF, 50V, +- 10%, 0402, WALSIN, L	T542011047508	2
C5	SP, CAP, 0.47uF, 100V, +- 5%, C242A474J2S, K, C242A474J-2SA201	T560000000530	2
C6, C33, C44, C49, C50, C53, C56, C70, C84, C85, C91, C110, C113, C122, C129, C136, C137, C196, C198, C208, C215,	CAP, 10uF, 6.3V, +, -20%, 0603X5R, WALSIN, , L	T540000002118	2
C8, C10, C14, C28, C625, C626, C501, C502, C514, C515, C517	CAP, X7R, .01uF, 50V, +- 10%, 0402, WALSIN, L, 0402B103K500CT	T542011037508	2
C12, C13, C179, C190	CAP, X7R, .047uF, 50V, +- 10%, 0402, WALSIN, L	T542014737508	2
C15, C20, C124, C178, C232, C282, C264	CAP, NPO, 100pF, 50V, +- 5%, 0603, WALSIN, L	T541021016508	2
C17, C31, C32, C144, C242, C262, C266, C267	CAP, NPO, 100pF, 50V, +- 5%, 0402, WALSIN, L	T541011016508	2
C18, C36, C147, C270	CAP, NPO, 270pF, 50V, +- 5%, 0603, WALSIN, L, 0603N271J500CT	T541022716508	2
C19, C30, C98, C115, C138, C139, C148, C152, C241, C265	CAP, NPO, 470pF, 50V, +- 5%, 0402, WALSIN, L	T541014716508	2
C21, C157, C158, C160, C170, C172, C213, C233, C240, C244, C258, C268	CAP, X7R, .68uF, 25V, +- 10%, 1206, WALSIN, L	T542046847408	2
C23, C27, C175, C181, C184, C185, C202, C206, C210, C224, C235, C238, C239, C250, C253, C257, C280, C285, C286, C350, C610, C630, C631, C188, C516	CAP, X7R, .10uF, 50V, +- 10%, 0603, WALSIN, L	T542021047508	2
C24, C34, C35, C154, C155, C168, C243, C255	CAP, NPO, 220pF, 50V, +- 5%, 0603, MURATA, L, GRM-1885C1H221JA01D	T541022216505	2
C25, C261	CAP, NPO, 2700pF, 50V, +- 5%, 0603, WALSIN, L	T541022726508	2

Main PCB Electrical Part List

Capacitors (continued)

C26, C40, C46, C51, C52, C58, C60	CAP, X5R,10uF, 25V, +-0%, 0805, WALSIN, L, 0805X106K250CT	T545031067408	2
C42, C65, C66, C105, C108, C120, C156, C214	E, 100uF, 6.3V, +- 20%, 5X5.3M, VEJ101M0J, K, VEJ101M-0JTR-0505	T551101415010	2
C43, C131	CAP, X5R, 4.7uF, 50V, +- 10%, 0805, WALSIN, L	T545034757508	2
C46	CAP, X5R, 10UF, 50V, +-10%, 0805, WALSIN L	T545031067505	2
C47, C117, C119, C29	CAP, NPO, 22pF, 50V, - 5%, 0402, WALSIN, L, 0402N220J500CT	T541012206508	2
C55	CAP, X7R, 150pF, 50V, +- 10%, 0603, WALSIN, L	T542021517508	2
C59	CAP, X7R, 5600pF, 16V, +- 10%, 0402, WALSIN, L	T542015627308	2
C64, C112, C114, C118, C126, C127, C130, C142, C132, C145, C146, C153	CAP, NPO, 680pF, 50V, +- 5%, 0402, WALSIN, L	T541016816508	2
C92, C116, C134, C150	CAP, X7R, 1800pF, 50V, +- 10%, 0603, WALSIN, L	T542021827508	2
C106, C173, C259, C281	CAP, NPO, 1000pF, 50V, +- 5%, 0603, WALSIN, L	T541021026508	2
C107, C247	E, 100uF, 25V, +- 20%, 6.3X7., VEJ101M1E, K, VE-J101M1ETR-0607	T551101445020	2
C109, C227, C666	CAP, X7R, .10uF, 500V, +- 10%, 1210, KEMET, L	T542051047906	2
C111, C163, C165, C275	E, 220UF, 35V, +- 20%, 8*10.5, LV221M035, K, LV221M-035F105ETR	T551221452010	2
C121, C166, C222, C223	E 470uF, 35V +-20% 10*12. VZH471M1V K	T551471455000	2
C125	CAP, NPO, 390pF, 50V, +- 5%, 0603, WALSIN, L, 0603N391J500CT	T541023916508	2
C133, C141	E 1000uF, 16V +-20% 8X15MM RXW102M1C K	T552102435010	2
C149, C226, C231, C284	E, 47uF, 16V, +- 20%, 5X5.4M, CK1C470M-, K, CK-1C470M-CRD54	T551470434020	2
C164, C193, C503	CAP, NPO, 330pF, 50V, +- 5%, 0402, WALSIN, L	T541013316508	2
C171, C177, C189, C201	CAP, X7R, .01uF, 100V, +- 10%, 0805, WALSIN, L	T542031037608	2
C174, C278	CAP, NPO, 18pF, 50V, +- 5%, 0603, WALSIN, L	T541021806508	2
C180, C186, C187, C191, C22, C140, C159, C169, C194, C269	E, 22uF, 16V, +- 20%, 4X5.4M, CK1C220M-, K, CK-1C220M-CRC54	T551220434010	2

Main PCB Electrical Part List

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C182	CAP, X7R, 1000pF, 250V, +- 10%, 0805, WALSIN, L, 0805B102K251CT	T542031027G08	2
C183	E, 470uF, 16V, +- 20%, 8X10MM, VEJ471M1C, K,	T551471435010	2
C192	CAP, NPO, 330pF, 1KV, +- 5%, 1206, SAMSUN, K, CL31C-331JIHNNNE	T541043316H0E	2
C200, C518, C519, C520	CAP, NPO, 150pF, 250V, +- 5%, 0805, WALSIN, L	T541031516G08	2
C203	CAP, X7R, .01uF, 16V, +- 10%, 0402, WALSIN, L	T542011037308	2
C204, C700, C701, C702, C703, C704, C705, C706, C707	CAP, NPO, 10pF, 50V, +- 5%, 0402, WALSIN, L	T541011006508	2
C211	PLS-DIP, 0.22uF, 275V, +- 10%, T, MPX224KP, K, MPX224KP2A-PEL1DH02	T564224313080	2,3 ⚠
C212	PLS-DIP, 0.47uF, 275V, +- 10%, 1, MP2474K3, K, MP2474K344G0	T564474313090	2,3 ⚠
C218, C219	E, 82uF, 450V, +- 20%, 18X25M, RGA820M2W, K, WBK-1825G	T5528204D3020	2,3 ⚠
C220	CAP, X7R, 2200pF, 50V, +- 10%, 0603, WALSIN, L, 0603B222K500CT	T542022227508	2
C221	CAP, X7R, 2200pF, 1KV, +- 10%, 1206, WALSIN, L,	T542042227H08	2
C225	PLS-DIP, 2200pF, 400V, +- 20%, 1, 222M40XC, K, 222M40XC3	T564222414030	2
C228, C229, C295	CAP, X7R, 1.0uF, 25V, +- 10%, 0603, WALSIN, L	T542021057408	2
C236, C246, C263, C272	CAP, X7R, 1000pF, 100V, +- 10%, 0603, WALSIN, L	T542021027608	2
C254, C256	CAP, X7R, 1.0uF, 50V, +- 10%, 0603, WALSIN, L	T542021057508	2
C271, C667	CAP, X7R, 10uF, 25V, +- 10%, 1206, WALSIN, L	T542041067408	2
C276	CAP, X7R, .01uF, 50V, +- 5%, 0603, WALSIN, L, 0603B103K500CT	T542021036508	2
C279, C288	CAP, NPO, 470pF, 50V, +- 5%, 0603, WALSIN, L	T541024716508	2
C298, C304	CAP, 10uF, 10V, +- 20%, 0603X5R, SAMSUNG, L	T54000000260E	2
C299, C629	E, 22uF, 25V, +- 20%, 5*5.5, LV220M025, K, LV220M025C055ETR	T551220442020	2

Main PCB Electrical Part List

Capacitors (continued)

C301, C300	CAP, X7R, 4700pF, 50V, +- 10%, 0603, WALSIN, L	T542024727508	2
C467	CAP, X7R, .10uF, 25V, +- 10%, 0402, WALSIN, L	T542011047408	2
C508, C509	CAP, NPO, 1000pF, 50V, +- 2%, 0603, WALSIN, L	T541021025508	2
C510, C511, C512, C513	CAP, NPO, 220pF, 50V, +- 5%, 0402, WALSIN, L, 0402N221J500CT	T541012216508	2
C577, C578	E, 22uF, 50V, +- 20%, 6.3X5., CK1H220M-, K, CRE54SP00	T551220464000	2
C577, C578	E, 22uF, 50V, +- 20%, 6.3X5., VEJ220M1H, K, TR-0605	T551220465010	2
C601	CAP, X7R, .047uF, 50V, +- 10%, 0603, WALSIN, L, 0603B473K500CT	T542024737508	2
C620, C621	CAP, 1.0uF, 100V, +- 10%, 0805X7S, TDK, L	T54000000644C	2
C679	CAP, X7R, .022uF, 50V, +- 10%, 0603, WALSIN, L, 0603B223K500CT	T542022237508	2

Inductors

Reference Designator	Description	Vendor Part Number	Note
B1, B2, B3, B4, B10, L1, L3, L4, L5, L6, L8, L9, B5, B6, B7, B8, B9, B11, B35	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, K, TI160808U601	T710500000800	2
L2, L23	10UH, 10A, 1KHZ, TAPI, TSA, SRI1209, K, SRI1209M-100NT	T621000038600	
L7, L10	BEAD, FBMA-11-160808-601A10T, 600 OHM, 10, L, FBMA-11-160808-601A10T	T710500000900	2
L11, L12, L18, L32, L33, L35	CHIP, BEAD, 120 OHM, 25%, 100MHZ, 9A, 1812, K, FBMA-11-453215-121A90T	T710500015400	
L15, L19, L13	BEAD, 600 OHM, 0.3A, JI100505U-601-PF, K, JI100505U-601-PF	T710500014900	2
L17, L22	10UH, 6A, 100K, SMD, TSA, SRI0885, L, SRI0885M-100MT	T621000037300	2
L25, L29, L21	22UH, 1.5A, 100K, SMD, SGTE, GPSR055, K, GPSR0550-220M02	T621000020000	2
L27	10UH, 4.2A, 100K, 6.0X, CEN-KER, CKCS604, K, CKCS6045-10UH\M	T621000050100	2
L28	3.3UH, 1.35A, 1M, H, 2.5X, CENKER, CKCS252, K, CKCS252012-3.3UH\M-L	T621000050300	2

Main PCB Electrical Part List

Diodes

Reference Designator	Description	Vendor Part Number	Note
BD1	DIODE, 600V, 3A, GBLA06, TSC, K, GBLA06	T571002850104	2
D1, D2, D9, D16, D26, D27, D36, D57, D3, D17	SWITC, 100V, 150MA, 1N4148WS, TSC, K, 1N4148WS	T572005070208	2
D11, D25, D28	DIODE, 40V, 3A, SBR3U40P1-7, DIODE, K, SBR3U40P1-7	T571002830230	2
D18	ZD, 3.3V, 250MW, 5%, SOT-23, NXP, K	T573000910415	2
D19	SWITC, 40V, 1A, SK14, DC, K, SK14	T572005012247	2
D20, D29, D30	DIODE, 1000, 1.0A, M7, PINGW, K, M7	T571002880658	2
D21, D22	SWITC, 200V, 15A, TSP15H200S, TSC, K, TSP15H200S	T572005721008	2
D35	DIODE, 200V, 1A, ES1D-TR, PAN, J, K, ES1D-TR	T571002400612	2
D4, D5, D6, D7, D8, D10, D12, D13, D14, D15, D23, D24, D32, D34, D55, D56, D58, D60, D61	SWITC, 100V, 215MA, DAN217S3-0-T1-G, CYSTE, K, DAN217S3-0-T1-G	T572006171251	2
D46, D47	TVS, 5V, L06ESDU5V0CE, SMD, LITEON, L, L06ESDU5V0CE2	T593000120100	2
D59	TVS, 24V, ESDCAN01-2BL, SMD, ST, K, ESDCAN01-2BLY	T593000205100	2

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	PMOS, -50V, BSS84-7-F, SOT23, DIODES, K, BSS84-7-F	T585001160438	2
Q4, Q5, Q16, Q18, Q2	NMOS, 60, V, 2N7002DW-7-F, SC-88, DIODES, K, 2N7002DW-7-F	T586002602738	2
Q6, Q46	NMOS, 60V, L2N7002LT1G, SOT23, LRC, K, L2N7002LT1G	T586001860437	2
Q7, Q8, Q9, Q11, Q12, Q13	PNP, 40V, MMDT3906, SC-88, PANJIT, K, MMDT3906	T582002932760	2
Q10	PMOS, -30V, CJ3401A, SOT23, JCET, K, CJ3401A	T585002530466	2
Q14	NMOS, 700V, TSM70N380CP, TO252(, TSC, K, TSM70N380CP	T586000010398	2
Q17, Q32, Q60	NPN, 40V, MMBT3904W, SC70, PANJIT, K, MMBT3904W	T581004022460	2
Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26	SP, 60, V, MMDT4413, SC-88, DIODES, K, MMDT4413	T580000432738	2
Q29	NPN, 40V, MMDT3904, SC-88, PANJIT, K, MMDT3904	T581003912760	2
Q30, Q31	PMOS, -30V, CJQ4407S, SOP8, JCET, K, CJQ4407S	T585002844966	2

Main PCB Electrical Part List

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U1, U4	OP, TL074C, SO-14, ST, K, TL074C	T610500023802	2
U2, U5, U100	OP, NJM2068M, SO-8, JRC, K, NJM2068M	T610500024606	2
U3	DC-DC, CVT, TPS54202HDD, SOT-236, TI, K, TPS54202HD-DCR	T611700039022	2
U6	REG, LM1117-3.3L3-0-T3, SOT223, CYSTECH, K, LM1117-3.3L3-0-T3-G	T610600101194	2
U9	DC, DC, CVT, RT8059GJ5, TSOT23-5, RICHTEK, K, RT-8059GJ5	T611700035815	2
U10	MCU, MAX809STRG, SOT23-3, ON, SEMI, K, MAX809STRG	T610300090588	2
U11, U50	A\D, D\A, CS4272-CZZ, TS-SOP28, CIRRUS, K, CS4272-CZZ	T611500002006	2
U12	OP, TPA3251D2DDVR, HTS-SOP-4, TI, K, TPA3251D2DDVR	T610500031401	2
U13	BT, F/W, V1.0, K	T910600000630	2
U14	SP, LIS3DE, LGA-16, ST, K, LIS3DE	T610000053015	2
U15	REG, LV2843, TSOT23-6, TI, W, LV2843	T610600090405	2
U16	SP, RT7781GGS, SOP-7, RICHTEK, K, RT7781GGS	T610000055710	2
U17	PHOTO, 5V, EL817S1(C)(T, DIP, EVERLI, K, EL817S1(C)(TA)-F	T58A000491533	2
U18	REG, TL431G-AE3-R, SOT-23, UTC, K, TL431G-AE3-R	T610600100708	2
U19	DC, DC, CVT, TPS54335ADD, SOIC8, TI, K, TPS54335ADDAR	T611700035922	2
U20	REG, AS78L12RTR-G1, SOT-89, DIODES, K, AS78L12RTR-G1	T610600095367	2
U21	SP, ADAU1451, LFCSP-72, ADI, (AN, K, ADAU1451)	T610000050936	2
U22	REG, TPS562200, SOT-23, TI, K, TPS562200	T610600089505	2
U40,U60,U66,U67,U68	OP RC4558IDR SOP-8 TI K	T610500019101	2
U48, U49	OP, NJM4580, SOP-8, JRC, W, NJM4580	T610500010706	2

Main PCB Electrical Part List

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
F1	FUSE, DIP, FUSE, 250V, 5A, 8X8.5, 39215, K, 39215000000	T690100003600	2,3 ⚠
LED3	19-217\T1D-APQHY\3T	T575003410202	2
J1A, JTW, JWF	CONNECTOR, 2P, P:2.0MM, 90−, SMT, K, PH-2AT-JK	T690300109100	2
J2A	HOUSING, DUAL, PIN, 2*3PIN, 2.54MM, DIP, 180, K, 2.54Y-2X3P-11.5	T690300110100	2
J3	6.35MM, JACK, SOCKET, PLASTIC, BLACK, K, CK6.35-3-14-18LF	T690300121700	2
J4, J5	COMBO, JACK, RCJ9FI-V-0, REAN, K, RCJ9FI-V-0	T710200010000	2
J6A	CONNECTER, 11PIN, P=2.54, DIP180−, K, TJC3-11A-CS	T690300109800	2
J8	2X4P, P:2.54MM, 90−, DIP, K, 2.54-2X4AW-10.4	T690300110000	2
J9	CHIP, CONNECTOR, 6PIN, P:1.5MM, 90, K, ZH-6AT-JK	T690300087900	2
J11	CONNECTOR, 2PIN, 3.96MM, DIP, 180, K, VH-3A2-01	T690300109500	2,3 ⚠
JD11A	11PIN, 1.5MM, SMT, 90, K, ZH-11AT-JK	T690300109300	2
JWT1	CONNECTOR, TJC3-6A-CS, 6, PIN, K, TJC3-6A-CS	T690300097400	2
J20	SMD, IPEX, CONNECTOR, K, 818000281	T690300035700	2
J33A	CONNECTOR, 2PIN, 1.5MM, SMT, 90, K, ZH-2AT-JK	T690300108700	2
J35	CONNECTOR, 6IN, 2.0MM, DIP, 180, K, PH-6A-CS	T690300108800	2
MOV1	MOV, 350VA, TVR14561KSY, DIP, TKS, K, TVR14561KSY	T591000149300	2,3 ⚠
PJ1	EARPHONE, JACK, K, CK3.5-33C5	T710200010500	2
RT1	NTC, THERMISTOR, RES, 17*7.5MM, MF72-8D13, K, MF72-8D13N	T710600007800	2,3 ⚠
RT2	100K 0402, NTC, K, NCP15WF-104F03RC	T710600016200	2
RT3	NTC, 10K OHM, 1%, 0603, MURATA, K, NCP18XH103F03RB	T710600007400	2
SW1	TACT, SWITCH, 50MA, 12VDC, KFC-801B-1.6-M, K, Y.15. QC44.102	T670200002100	2,3 ⚠

Main PCB Electrical Part List

Miscellaneous (continued)

Reference Designator	Description	Vendor Part Number	Note
SW2, SW3	SLIDE, SWITCH, 8P, SS-23E03-G, PA, K, SS-23E03-G PA	T670600002700	2
T1, T2	12MH, 6A, 1KHZ, DIP, GLORIA, HLE-FT1, K, HLE-FT19A	T621000052200	2,3 ⚠
T3	TRANSF, 26V, 85-2, 10, GLORIA, HTS-PQ32E, K, HTS-PQ32E	T622000009700	2,3 ⚠
VR1, VR3, VR5, VR6, VR7, VR8	VR, CA, 10K, B, L=2570.5MM, RV09BCF-4, K, RV09BCF-40-25F-B10K-0C	T531220003000	2
Y1	CRYSTAL, 24.576MH, SMD, SIWARD, XTL571, K, XTL571200-F98-048	T690900003500	2
Z1	ZD, 15V, 250MW, 5%, SOD-88, NXP, K	T573003501815	2
ZD4	ZD, 4.7V, 250MW, + -5%, SOT-23, NXP, K	T573004040415	2
-	HEATSINK, AL, 6050, NATUR, PASSIV, K	T130148400100	2

Control PCB Part List

Resistors

Reference Designator	Description	Vendor Part Number	Note
R702, R701	CHIP, 100 OHM, 100PPM, + - 1%, 0402, WALS, L, WR04X1000FTL	T502100001399	2
R704, R708, R712	CHIP, 200 OHM, 100PPM, + - 1%, 0805, WALS, L	T502200003399	2
R705, R710, R714	CHIP, 1K OHM, 100PPM, + - 1%, 0805, WALS, L	T502100103399	2
R706, R707, R709, R711, R713, R715	CHIP, 10K OHM, 100PPM, + - 1%, 0402, WALS, L	T502100201399	2
R716	CHIP, 2M OHM, 100PPM, + - 1%, 0402, WALS, L,	T502200401399	2
R717	CHIP, 5.1K OHM, 100PPM, + - 1%, 0603, WALS, L, WR06X5101FTL	T502510102399	2

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C596, C703, C704, C705, C706, C707, C708	CAP, X7R, .10uF, 50V, + - 10%, 0402, WALSIN, L	T542011047508	2
C700	CAP, X7R, .10uF, 50V, + - 10%, 0603, WALSIN, L	T542021047508	2
C701	CAP, X7R, 4.7uF, 6.3V, + - 10%, 0603, WALSIN, L	T542024757108	2

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q700, Q701, Q702	NMOS, 60, V, 2N7002DW-7-F, SC-88, DIODES, K, 2N7002DW-7-F	T586002602738	2
Q703	PMOS, -30V, CJ3401A, SOT23, JCET, K, CJ3401A	T585002530466	2

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
LED700, LED701, LED702	LED, 625, 2*1.25, MS-PTB2012CU, MASON, K, MS-PTB2012CURS-GAC	T575009550253	2
JA11B	CONNECTOR, 10PIN, 1.5MM, 180−, DIP, K, ZH-10A-HY	T690300109400	2
SW33	DIP, SWITCH, 12V, 1MA, 4P, K, RM-021-01A	T670400000900	2
VR702	VR, CA, 10K, B, 15.4X13MM, RV112BCF-, K, 40-20A-B10K-0C	T531220000419	2
VR700, VR701	VR, CA, 10K, C, L=20MM, R11122G-F, K, FA20B7-5C103-167	T531230000320	2

Power Switch PCB Assy

Reference Designator	Description	Vendor Part Number	Note
R129, R251	CHIP, 560 OHM, 100PPM +-1%, 0603, WALS L	T502560002399	2
LED1	LED, 625 2*1.25 MS-PTB2012CU, MASON （K）	T575009310253	2
J2B	CONNECTOR, 2X3P, 2.54 K	T690300101200	2
J51	CONNECTOR, 2.5MM, 8PIN, DIP, 180, K, TSB1-05281-3BT8A	T690300109900	
J6B	CONNECTOR, 11P, 2.5MM, 90−, DIP, TJC3-11AWH, K, TJC3-11AWH-KL	T690300122400	

Disassembly Procedures

1 Battery Removal

Note: Place the S1 Pro on a soft cloth to prevent any scratches or damage to the enclosure.

1.1 Caution: To prevent damage and injury, Insure there is no power applied to the unit. Remove AC mains and the battery prior to disassembly of the S1 Pro.

1.2 Unscrew the two screws that secure the battery cover located at the bottom of the S1 Pro indicated by arrows in figure 4.

Figure 4

1.3 Lift up on the two plastic flexible pull tabs indicated by arrows in figure 5 and pull out the battery.

Note: When reinstalling the battery it can only be installed in one position.

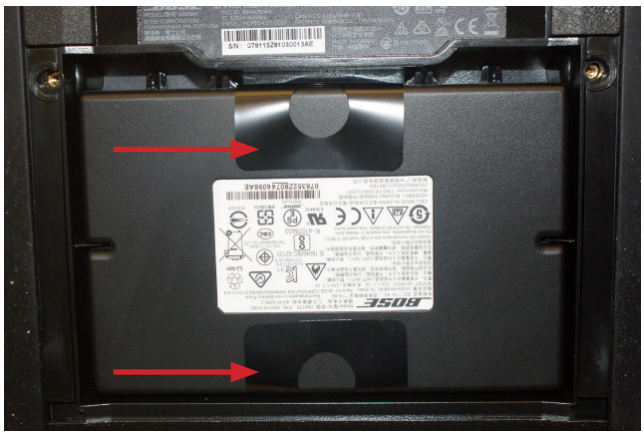


Figure 5

1.4 Figure 6 will show the battery connector and compartment.

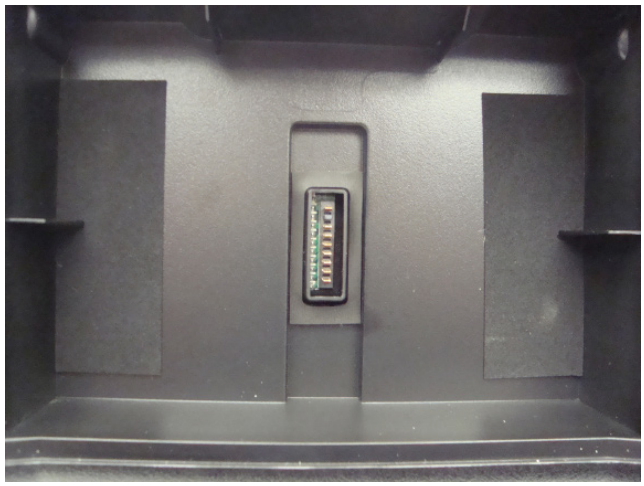


Figure 6

Disassembly Procedures

2. Grille Removal

Important Note: To prevent scratching the exterior surface, place a soft cloth onto a clean work surface.

2.1 Remove the grille by prying outward with a non-damaging tool. Arrows indicate the areas in figures 7 and 8 where the non abrasive tool may be inserted. Each side of the grille has 4 tabs indicated by red circles that must be pulled away without damaging the cabinet assembly.

Figure 7

Figure 8

2.2 Figure 9 shows each side of the grille with four tabs per side.

Note: When removing the grille insure tabs do not scrape along the enclosure.

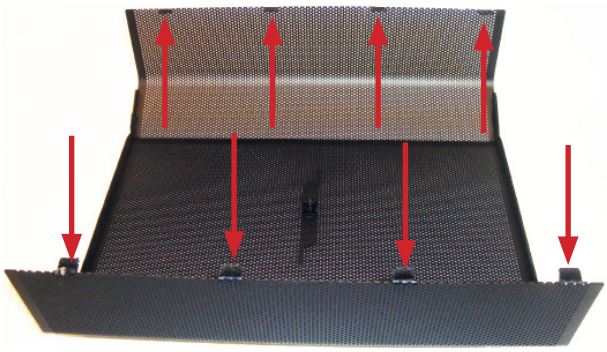


Figure 9

3. Twiddler™ Enclosure Removal

3.1 Perform procedure 2.

3.2 Remove the four screws indicated by arrows shown in figure 10.

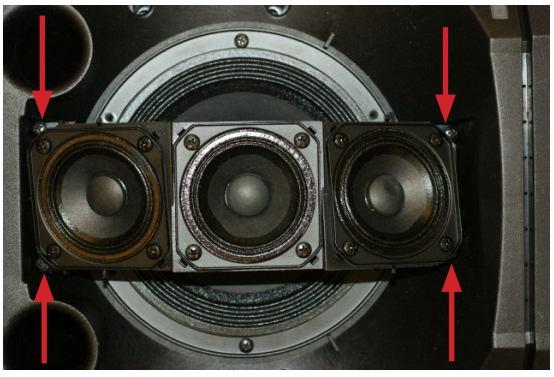


Figure 10

Disassembly Procedures

3.3 Lift out the Twiddler™ enclosure as indicated in Figure 11.

3.4 The circles shown in figure 11 indicate the mounting screws used to secure the Twiddlers. All Twiddler's are daisy chained.

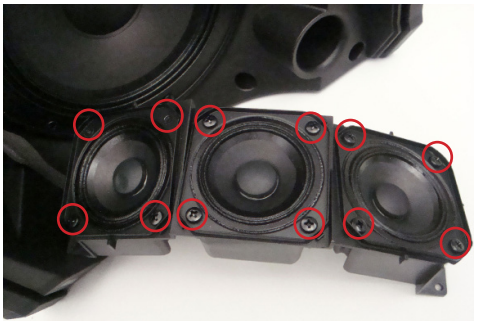


Figure 11

Note: The Twiddler enclosure harness is placed in the opening shown by the arrow during re-assembly as shown in figure 12.

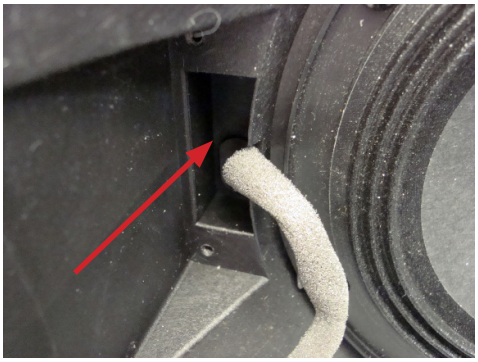


Figure 12

4. Woofer Removal

4.1 Perform procedures 2 and 3.

4.2 Remove the six screws indicated by arrows in Figure 13.

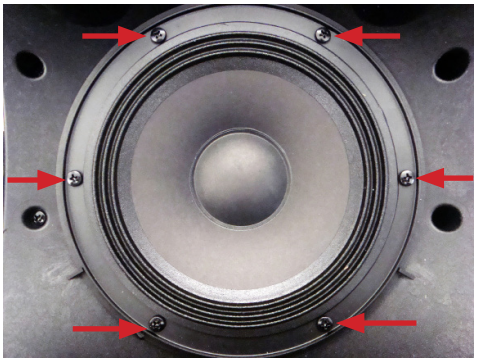


Figure 13

4.3 Remove the Faston™ connectors as shown in figure 14.

Note: The speaker lugs are locked and must be depressed downward to release.

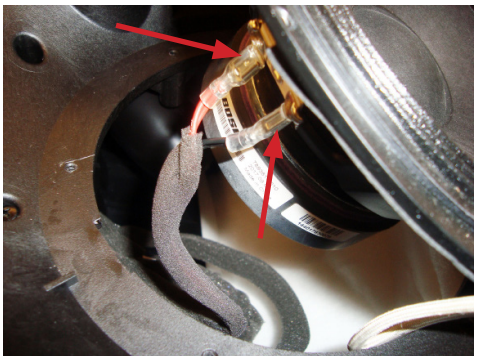


Figure 14

Disassembly Procedures

5. I/O Panel Removal

CAUTION: The integrated circuits used on the S1 Pro Main PCB are extremely sensitive to ESD damage. Be sure to use an approved and tested ESD strap that is properly grounded to your work bench before attempting disassembly or repair of the main PCB.

5.1 Red circles in figure 15 indicate #8 Torx screws, remove these screws.

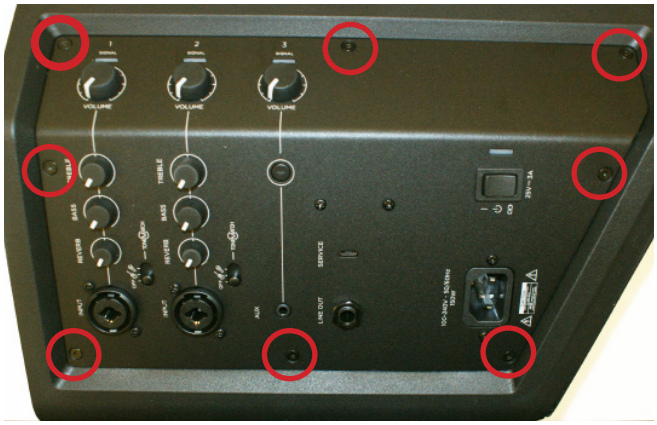


Figure 15

5.2 Remove the nine control knobs in figure 16.

5.3 Remove the screws indicated by the red arrows and the nut and washer indicated by a red circle in figure 16.

Figure 16

5.4 Lift out the I/O assembly as shown in figure 14.

Note: To avoid EMI issues, It is extremely important to insure that the harnesses are placed in the direction shown by arrows in figure 17 during reassembly.

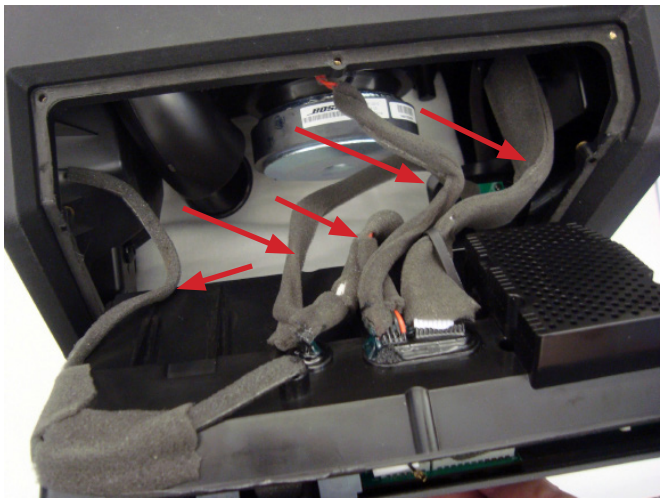


Figure 17

Disassembly Procedures

6. Removing the Main PCB and I/O panel

6.1 Remove the three screws indicated by the arrows as shown in figure 18.

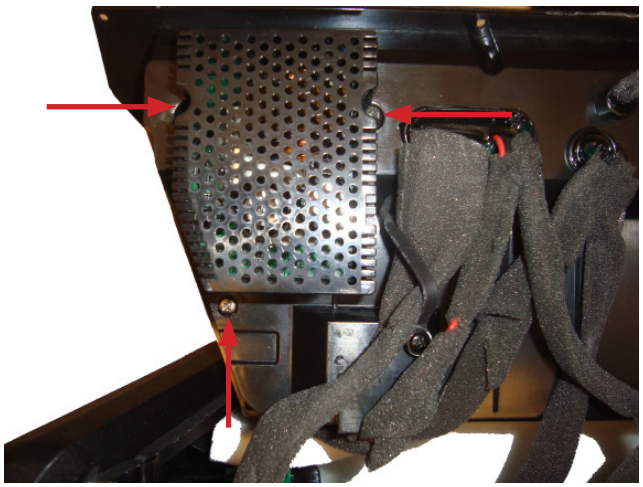


Figure 18

6.2 Lift the main PCB away from the enclosure to expose the connectors as indicated by the arrows shown in figure 19. Remove the connectors.

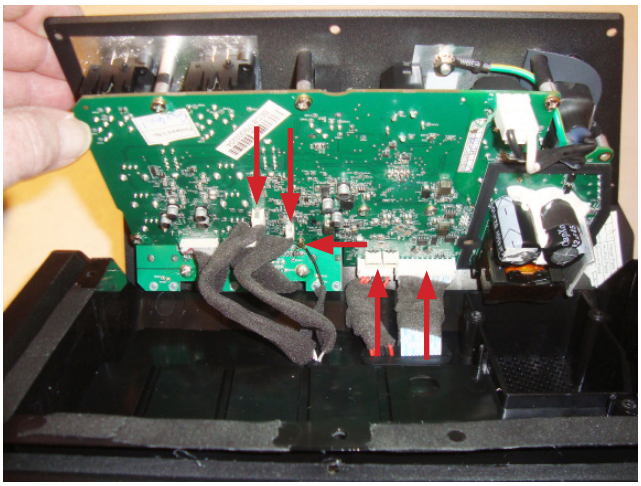


Figure 19

7. Removing the Main PCB from the I/O Panel

7.1 Remove the 5 screws indicated by circles and the two control board connectors and power connector indicated by arrows as shown in figure 20.

Note: The main PCB and the power switch board are connected by a six pin connector. Figures 21 and 22 on page 29 show the connectors. There will be a small amount of upward force required with the main PCB to separate the main PCB from the power switch board connector.

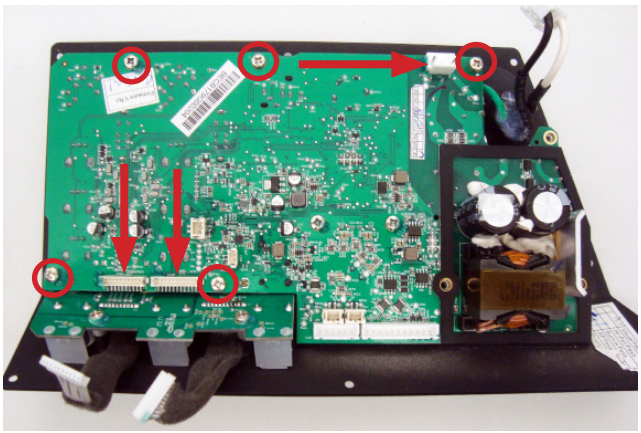


Figure 20

Disassembly Procedures

7.2 Figure 21 shows the power switch board male connector as indicated by an arrow. Figure 22 shows the female connector on the main PCB as indicated by an arrow.

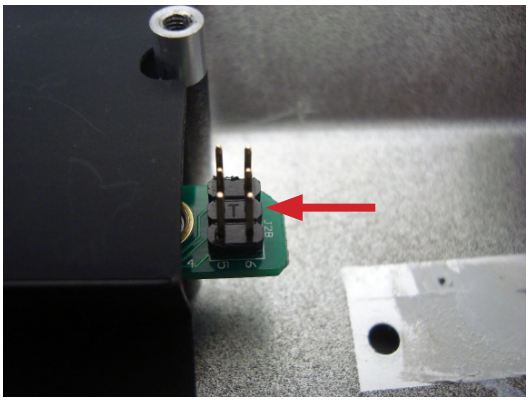


Figure 21

Note: When reinstalling the main PCB assy, insure that the two connectors are aligned.

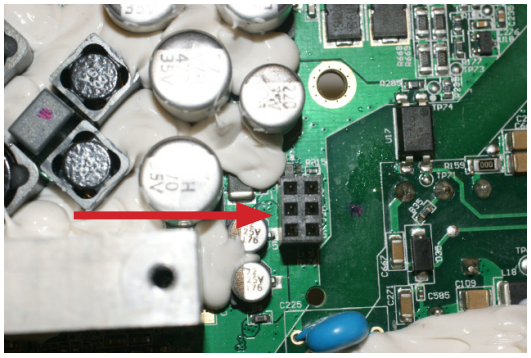


Figure 22

8. Removing the Volume Control PCB

8.1 Perform procedures 5 thru 7.

8.2 Remove the three screws indicated by arrows shown in figure 23.

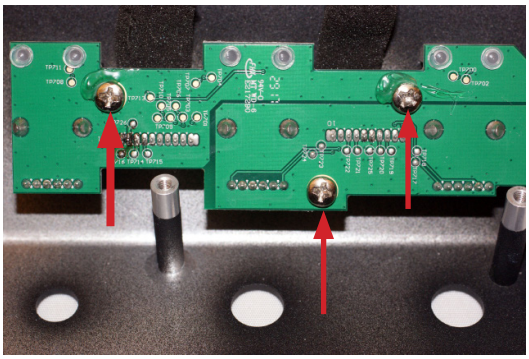


Figure 23

8.3 Figure 24 shows the volume control board assy and the two wire harnesses removed from the I/O panel.

Note: When ordering a replacement Control Board assy you must also order quantity of 3 789264-0010 Lightpipe. These will need to be heat staked.

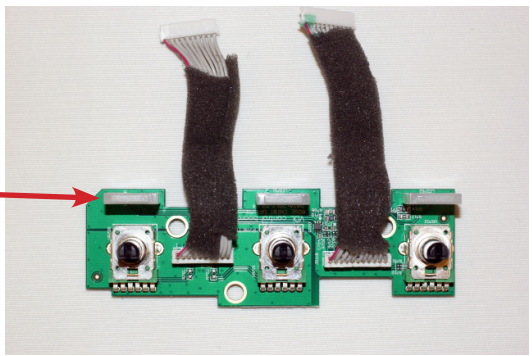


Figure 24

Disassembly Procedures

9. Bluetooth® button and micro USB replacement.

9.1 Perform procedures 5 thru 7.

9.2 The arrows in figure 25 shows the Bluetooth® button and the Micro USB connector, both are located on the Main PCB assy.

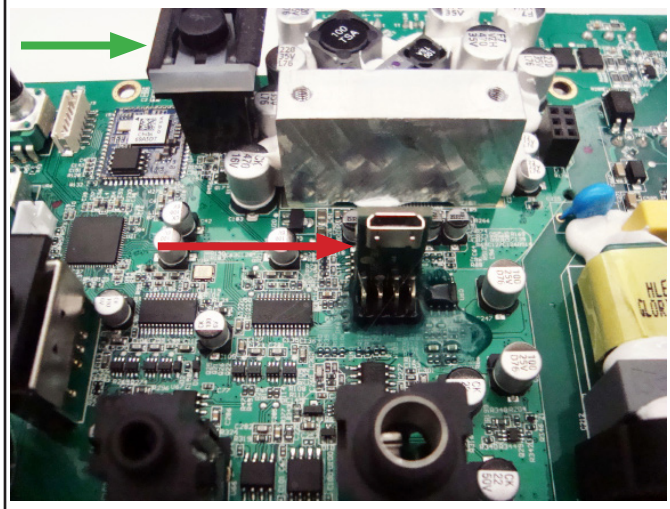


Figure 25

9.3 Figure 24 shows the main PCB and the eight pins which need to be unsoldered to remove the Micro USB.

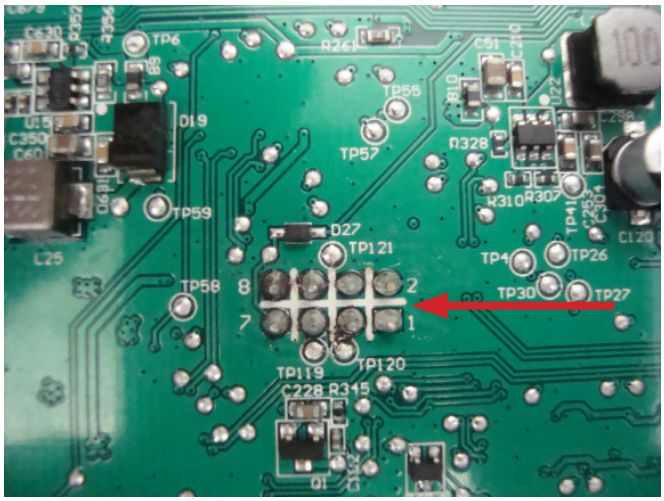


Figure 26

9.4 Figure 27 shows the Bluetooth® button which is heat staked as indicated at the arrows. Wire cutters will be needed to remove the excess plastic.

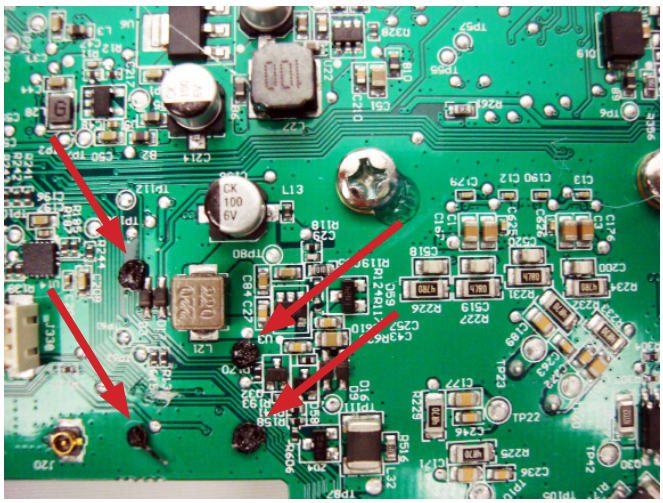


Figure 27

Disassembly Procedures

10.1 Power Switch and Power Switch PCB Assy removal.

10.2 Perform procedures 5 thru 7.

10.2 Figure 28 shows the insulator covering the power switch connect PCB. The red arrow indicates the section of the insulator that must be peeled away to access the PCB.

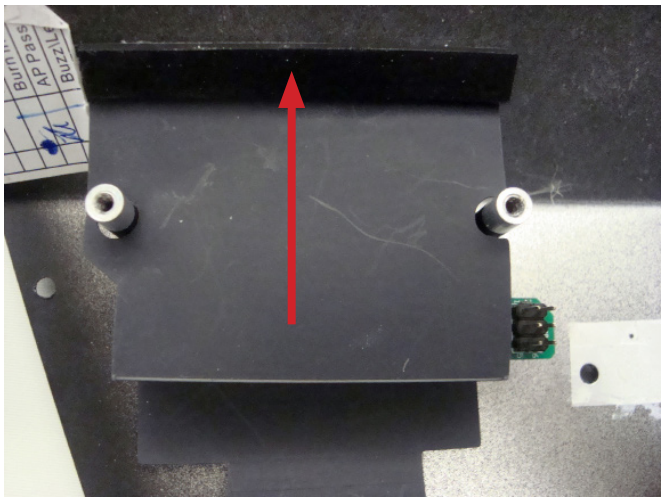


Figure 28

10.3 Remove the two screws indicated by arrows in figure 29. Unsolder the three power switch terminals from the power switch connect PCB as indicated by the red circle and remove the power switch connect PCB which also contains the power LED.

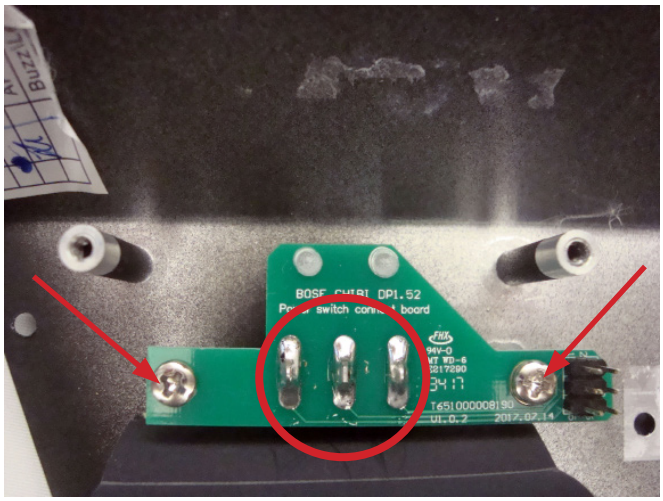


Figure 29

10.4 Figure 30 arrow indicates the power switch. Remove the switch from the finished side of the I/O panel indicated by the red arrow while depressing locking tabs.

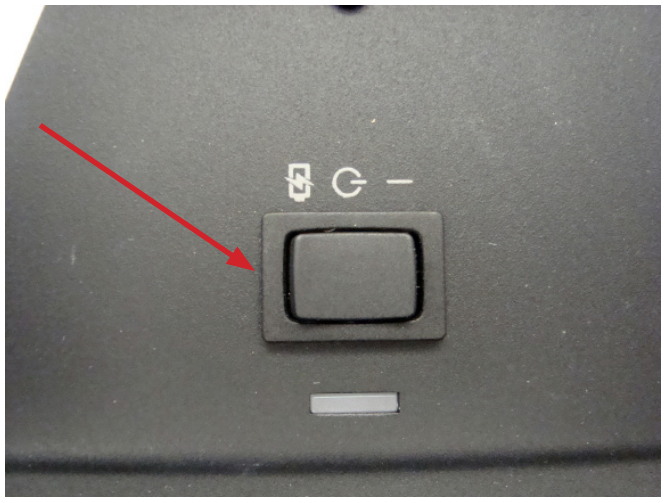


Figure 30

Disassembly Procedures

11. Pole Switch Removal

11.1 Figure 31 shows the pole receptacle and the micro switch that applies an additional 3dB of volume when the S1 Pro is mounted on a pole.

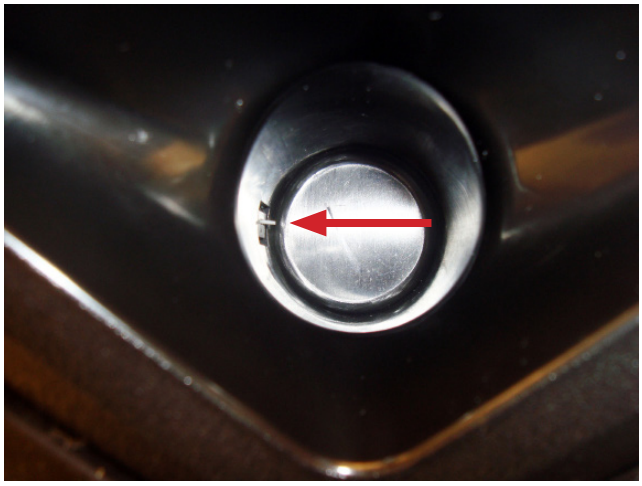


Figure 31

11.2 Remove the screws circled, as shown in figure 32. Remove the I/O Panel and access the Pole Switch PCB.

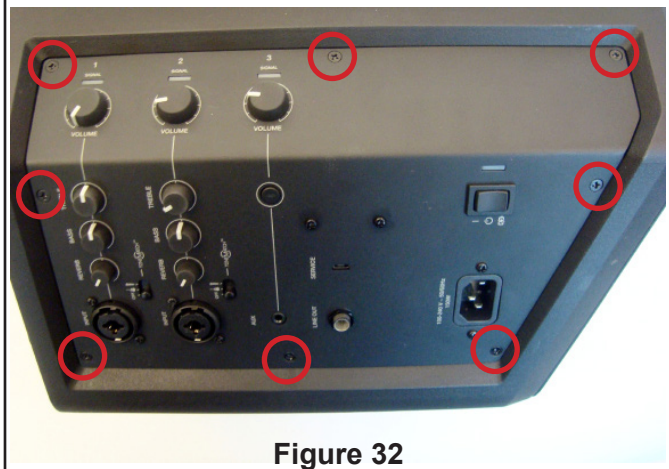


Figure 32

11.3 After removing the I/O panel, the pole switch is easily accessible. Remove the connector as indicated by the red arrow in figure 33.

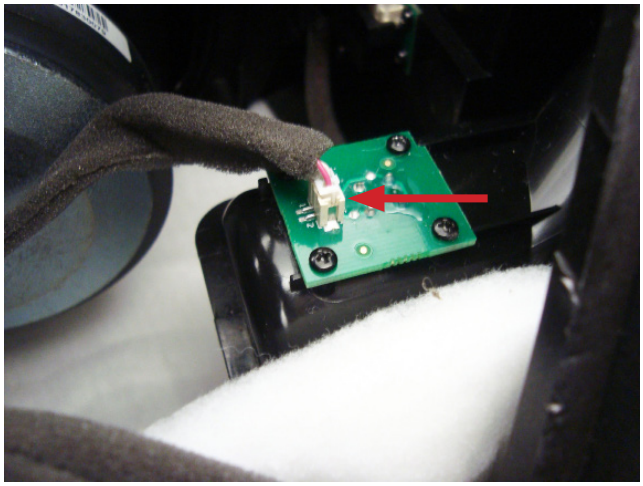


Figure 33

11.4 Remove the four screws indicated by the red arrows in figure 34 and lift out the pole switch PCB assy.

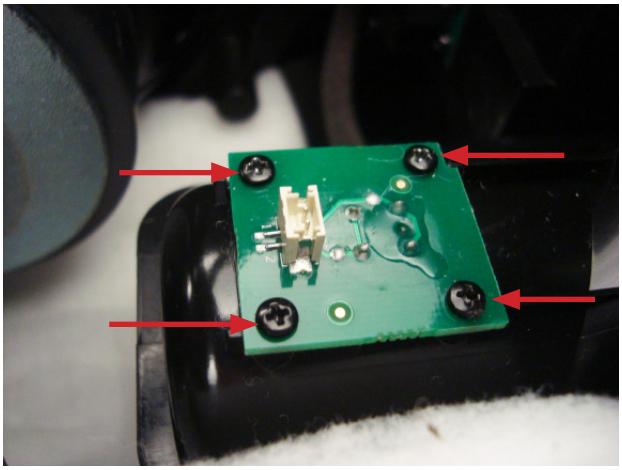


Figure 34

12 Battery PCB Removal

12.1 Perform procedures 2 thru 4. Remove the screw from the battery PCB Assy as indicated by a red arrow in figure 35.

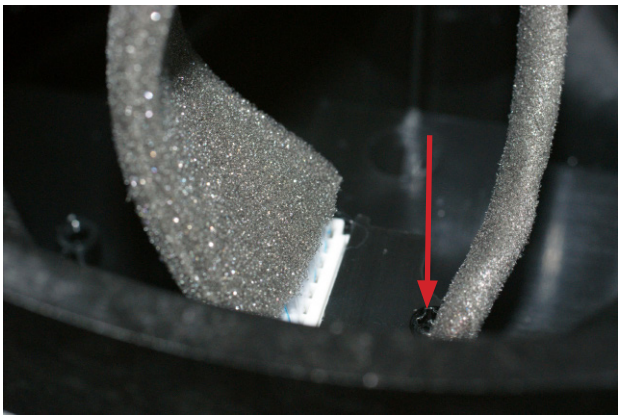


Figure 35

12.2 Remove the harness connector in figure 36 from the Battery PCB.

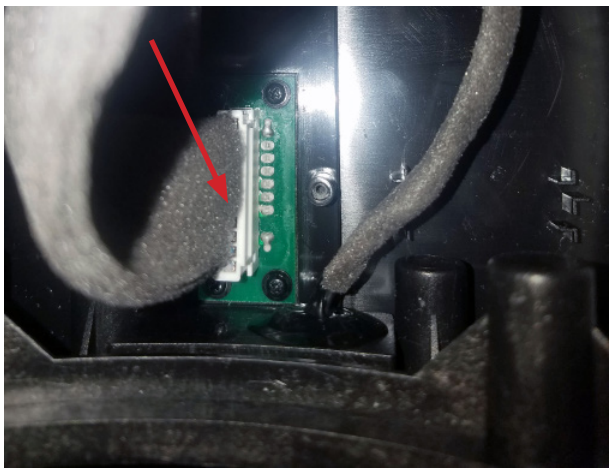


Figure 36

12.3 Remove the four screws indicated in figure 37 securing the battery PCB Assy to the enclosure and lift out the PCB.

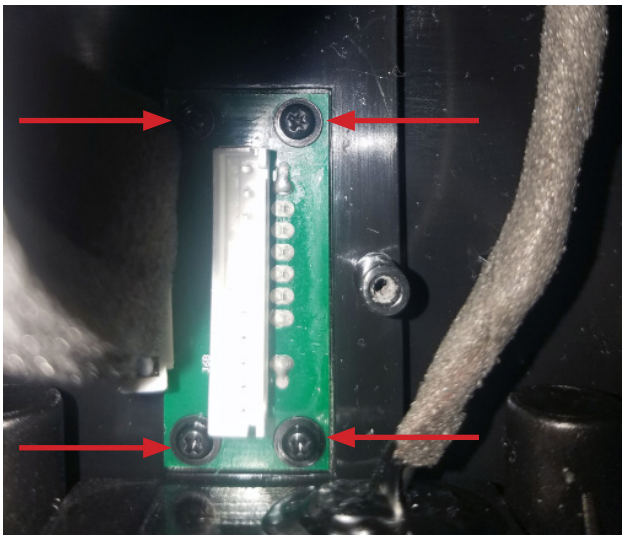


Figure 37

Test Procedures

Required Equipment:

1.Cell phone with audio tones/music and Bluetooth®
2. XLR Plug and 1/4 inch phone jack
3. 1/8 inch audio cable
4. Audio Signal Generator

1. Power Switch and Front LED Test

1.1 Apply AC Power Switch.

1.2, Place the unit in the on position, verify the front LED in the lower right corner is blue and the power switch LED is blue.

2. Channel 1 and 2 Green Red LED Test

2.1 Connect a balanced XLR mic plug that is connected to a signal generator into the channel input.

2.2 Place the volume at Minimum. Treble, Bass at Midrange, Tonematch off, Reverb off.

2.3 Apply a balanced 100mv, 80Hz, sinewave signal from the signal generator.

2.4 Adjust the volume upward while observing the LED change from Green to Red.

2.5 The Red LED should appear when the volume is beyond midrange indicating clipping.

3. Audio Test, Channel 1 and 2

3.1 Perform procedure 2.1

3.2 Insert a 1/4 inch Phone Jack in to the line out.

3.3 Connect an oscilloscope or another S1 Pro to the line out.

3.2 Apply a balanced 100 mv, 1KHz, ±1Hz signal to the input.

3.3 Rotate the volume clockwise to ensure audio is present while monitoring line out for audio and no distortion.

3.4 Adjust Treble and Reverb from minimum to maximum and observe tone change.

4. Tonematch Switch Test Channel 1 and 2

4.1 Connect a Balanced XLR mic plug that is connected to a signal generator into the channel input.

4.2 Apply a 100mv, 1KHz, sinewave signal to Channel 1.

4.3 Adjust volume to Mid/Center position.

4.4 Place the Tonematch switch to Guitar and observe minimal change in volume and tone.

4.5 Place the Tonematch switch to Mic and observe slight increase in volume and tone.

4.6 Repeat 4.1 thru 4.5 for Channel 2.

5. Frequency Sweep Test, Channel 1 and 2

5.1 Insert a 1/4 in Phone Jack that is connected to a signal generator into the input.

5.2 Place the volume at Maximum. Treble, Bass at Midrange, Tonematch off, Reverb off.

5.3 Apply a single-ended 100mv, 100Hz, sinewave signal from the signal generator into Channel 1.

5.4 Sweep the generator from 20Hz to 20KHz. There should be no extraneous noises such as rubbing, scraping or ticking heard, if so, replace driver and retest.

5.5 Repeat 5.1 to 5.4 for Channel 2.

6. Air Leak Test. Use Channel 1 or 2

6.1 Insert a 1/4 inch Phone Jack that is connected to a signal generator into the input.

6.2 Adjust Volume to MAX, Bass, Treble at Mid/Center. Tonematch off, Reverb off.

6.3 Apply a 70mv, 80Hz, sinewave to Channel 1.

6.4 Listen carefully around all gaskets and joints for air leaks.

Test Procedures
(Continued)

7. Rub and Buzz Test. Use Channel 1 or 2

7.1 Insert a 1/4 inch Phone Jack that is connected to a signal generator into the input.

7.2 Apply a 70mv, 80Hz, ± 1Hz signal to the channel under test.

7.2 Set volume at Max. Bass, Treble at Mid. Tonematch off, Reverb Off

7.3 There should be no rubbing or buzzing sounds.

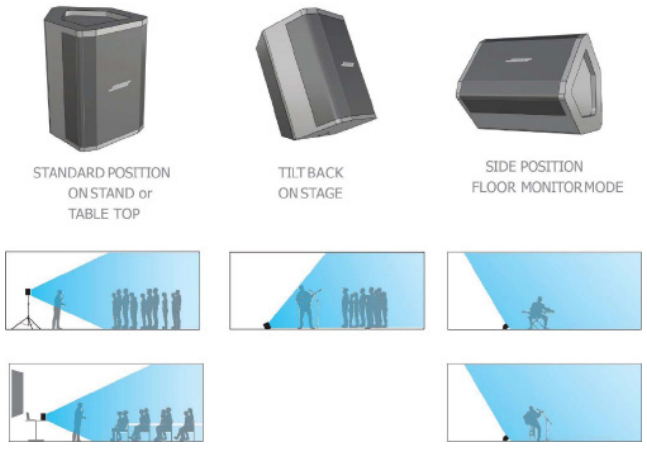
8. Orientation EQ Test, Channel 1 or 2

8.1 Insert a 1/4 inch phone jack that is connected to a signal generator in to either channel 1 or 2.

8.2 Apply 100mv, 1KHz, sinewave to channel input.

8.3 Position the system in the orientation as shown in the examples below. Standard, Tilt back and Floor Monitor.

8.4 Observe slight volume changes for each position.



9. Pole mount switch test

9.1 Perform procedure 8.1.

9.2 Locate the Pole mount receptical at the bottom of the S1 Pro as shown in figure 38.

9.3 The arrow indicates the Pole switch.

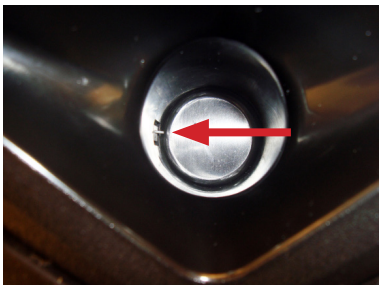


Figure 38

9.4 Insert a finger to toggle the Pole switch. There should be a 3dB higher volume change.

10. Channel 3 Bluetooth® Test

10.1 Pair the S1 Pro with a cellphone that is capable of audio content and output.

10.2 Press the Bluetooth button on the S1 Pro. It will display a blinking white LED in the center of the button. The white LED will remain solid once pairing is established.

10.3 Confirm Bluetooth audio is present thru Channel 3 up to 30ft distance.

11. AUX Test Channel 3

11.1 Insert a 1/8 plug into the AUX in of the S1 Pro.

11.2 Apply audio to the AUX plug. Confirm audio is present thru Channel 3.

Battery Charging and Testing

12. Charging the Battery

12.1 When the S1 PRO is plugged into AC Mains, the Power LED will flash blue if the battery requires a trickle charge regardless of the power switch position: On, Standby or Rapid Charge. Once fully charged, the power switch LED will remain solid blue.

13. Battery Charge Indicator

13.1 Utilizing the Bluetooth® button, press the Bluetooth button twice, the Power Switch LED will begin to flash. Check battery charge according to the chart in figure 39 while monitoring the power switch LED.

14. Quick Charge

14.1 The Quick Charge Power switch position shown by a red arrow in figure 40, is for rapid charge. The Power switch LED should flash blue until the battery is fully charged.

X 2	
X 4	>75%
X 3	50%–75%
X 2	25%–49%
X 1	10%–24%
X 1	<10%

Figure 39

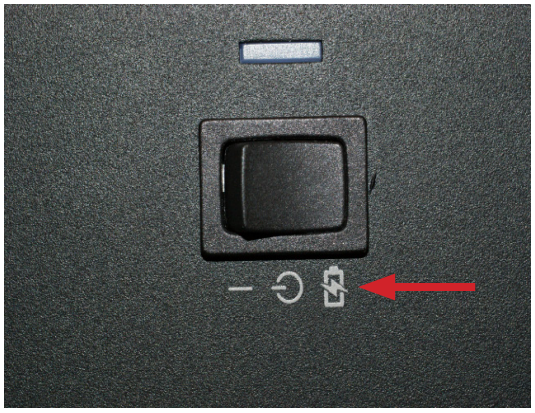


Figure 40

Safety Test Procedures

Hi-Pot Test

THIS IS A MANDATORY TEST

Note: If an the unit under test requires disassembly as part of the repair, it **MUST** be Hi-Pot tested before being returned to the customer to ensure that there is no potential shock hazard. This test requires a Hi-Pot tester with a ground bond attachment to perform this test.

Connections:

The Hi-Pot tester connects to the unit under test (UUT) by means of a wiring harness. The AC line cord of the UUT plugs into the Hi-Pot tester AC adapter box. The return line connects to the Heat Sink Screw on the I/O panel.

Hi-Pot Tester Settings:

1500 VAC, rise time = 1 second, dwell = 3 seconds, current limit = 5.0 mA**.** Connect the AC mains cord to unit under test. Plug the other end of the AC cord into the Hi-Pot tester AC adapter box. The AC adapter box connects to the High Voltage (HV) connection on the Hi-Pot tester.

• Connect the Hi-Pot tester RETURN line to the Heat Sink Screw as shown in figure 41.

Figure 41

• With the tester set to the above parameters, perform the test. If the unit fails, troubleshoot it and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond test to ensure the unit is safe to return to the customer.

Ground Bond Test:

Note: This test only needs to be performed if the chassis ground wire from the AC IE Cconnector to the inside of the chassis of the unit has been removed or disturbed as part of a repair. If it has not, this test does not need to be performed. This test measures current handling capability between the ground blade on the AC inlet or mains plug and the earth bond point GND of the Metal shell of the unit.

Ground Bond Tester Settings:

10A, < 12VAC open circuit, < 0.1 Ohms from AC earth terminal on IEC connector in chassis, to earth bond point on rear of chassis. Test duration = 3 seconds.

• Connect the AC mains cord to the back of the amplifier under test. Plug the other end ofthe AC cord into the ground bond test box.

• With the tester set to the above parameters, perform the test. If the unit fails, remove the top cover and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond tests to ensure the unit is safe to return to the customer.

REVISION HISTORY

DATE	REV	CN	DESCRIPTION
12/2018	04		REVISED
11/2022	05		CORRECTED MAIN ASSEMBLY NUMBERING
05/2023	06		Updated Main PCB Material Number
07/2023	07		Changed twiddler material number

Bose Corporation
The Mountain
Framingham Massachusetts USA 01701

P/N: 787930-SM REV 07, 07/2023
http://serviceops.bose.com