S1 PRO+ WIRELESS PA SYSTEM

Service Manual
Reference Number 869583-SM
REV 04

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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 264V (line-neutral), 60Hz power source. (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) UL 101 "Leakage Current for Appliances" and Underwriters Laboratories (UL) 60065/ IEC 60065 Clause 9.1.1.

With the unit Standby switch either in the ON position or 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, metallicoverlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis.

Any current measured must not exceed 3.5 mA (or MIU). 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 line and neutral blades of the plug.

(2) Measure the resistance with an ohmmeter between the jumpered AC plug and each exposed metallic cabinet part on the unit. The resistance measured to the metal panel should be between 2 and infinite MOhms. Also, 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 S1 Pro+ Wireless PA System contains no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory service.

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+ Wireless PA System is covered by a limited 1-year transferable warranty.
2 years in Europe.

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 substitute replacement with the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards.

PRODUCT DESCRIPTION

S1 Pro+ Wireless PA System is the next generation of the S1 Pro loudspeaker. Size and weight are similar to the S1 Pro. It uses the same input panel/controls form factor as the L1 Pro products and it is also compatible with Bose Music app.

S1 Pro+ has full ToneMatch and Bluetooth capability.
S1 Pro+ has 2 wireless transmitters for instruments and microphones as options/accessories. The transmitters part numbers are 869721-0010 & 869722-0010.

S1 Pro+ uses the same drivers in the same configuration as S1 Pro.
There are 3 input channels.
Channels 1 and 2 are for instruments and microphones.
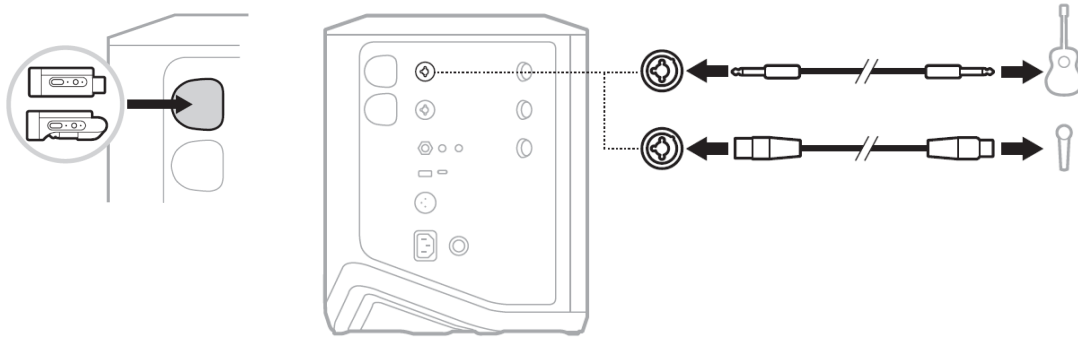
Channel 3 is for Bluetooth devices and line-level audio sources.
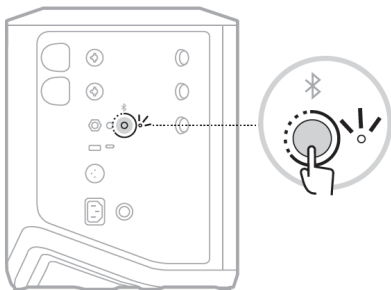
S1 Pro+ has a battery pack similar to that used on S1 Pro as standard.

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 279
Dimensions (H x W x D) - inches	13 x 9.5 x 11
Net Weight	15 lbs
Battery	
Type	Rechargeable lithium-ion battery
Charge Time	4 hours
Play Time	Up to 11 hours

PRODUCT DESCRIPTION
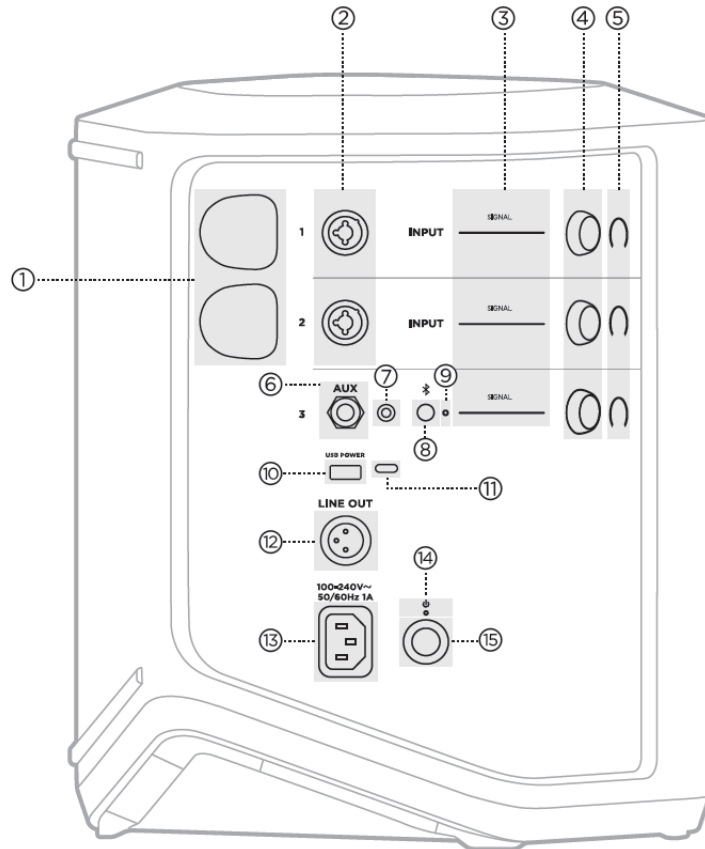
① **Wireless transmitter charging ports.**
② **Channel inputs** (balanced/unbalanced combined ¼″ or 6.35 mm TS/TRS and XLR).
③ **Signal/clip lights.**
④ **Channel controls**.

⑤ **Channel displays.**
⑥ **TRS balanced mono line input** (¼″ or 6.35 mm TS/TRS).
⑦ **AUX stereo line input** (⅛″ or 3.5 mm TRS).
⑧ *Bluetooth* **button.**

⑨ *Bluetooth* **light.**
⑩ **USB charging port** (USB-A).
⑪ **USB Type-C**®**port.**
⑫ **Line out** (XLR). Use an XLR cable to connect a post-mix line-level output to another system.

⑬ **Power port.**
⑭ **Power light.**
⑮ **Power button.**

Packaging Part List

Item Number	Description	Bose Part Number	Quantity	Note
1	CARTON	867645-0010	1	
2	PACKAGING,FOAM,EPE,FRONT	870576-0010	2	
3	PACKAGING,FOAM,EPE,REAR	870577-0010	2	
4	CARTON,LINE CORD	870579-0010	1	
5	CABLE, LINE CORD, IEC C13, NA	350745-0010	1	3 ⚠
	CABLE, LINE CORD, IEC C13, EU	350747-0010		
	CABLE, LINE CORD, IEC C13, UK	350748-0010		
	LINE CORD, 250V, INDIA, GROUND	814702-0010		
	CABLE, LINE CORD, IEC C13, JP	350749-0020		
	CABLE, LINE CORD, IEC C13, AU	350746-0010	1	
7	POLYBAG,480 X 610	806064-0010	1	
8	GUIDE,SAFETY,SYSTEM	872240-0010	1	
9	GUIDE,QUICKSTART,SYSTEM	872238-0020	1	
10	POLYBAG, MANUAL	870850-0010	1	
12	LABEL,WARNING,BATTERY	870698-0010	1	
13	SLIPSHEET,BOSE,S1,PRO+,FW,UPDATE	883029-0010	1	
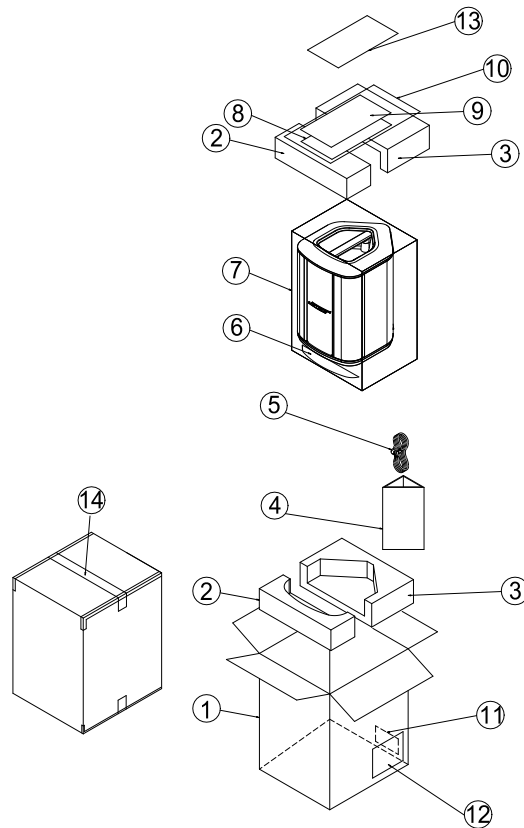
Figure 1. S1 PRO+ Packaging Exploded View

Main Assembly Part List

S1 PRO+ (see Figure 2)

Item Number	Description	Bose Material Number	Quantity	Note
1	TWIDDLER, 2.5IN, NEO, TXX, SVCE	742631-002S	3	
4	WOOFER, 6IN, TYMPHANY	789361-001S	1	
5	ASSY, PCB, ANTENNA AND CABLE	796036-001S	1	
28	GRILLE SUBASSEMBLY, SVCE	866407-001S	1	
30	BATTERY, LG, SERVICE	867095-0020	1	3 ⚠
31	PCB ASSY, POWER, SVCE	867125-002S	1	3 ⚠
33	INLAY, IO PANEL	867145-0010	1	
34	PCB ASSY, POLE SWITCH, SVCE	867157-001S	1	
37	FOOT, SIDE, UPPER	867709-0010	1	
38	FOOT, SIDE, LOWER	867710-0010	1	
40	BASSY, LOGO, SVCE	868338-001S	1	
51	FOOT, FRONT, RIGHT	868840-0010	1	
52	FOOT, FRONT, LEFT	868841-0010	1	
53	FOOT, SIDE, RIGHT	868842-0010	1	
54	FOOT, SIDE, LEFT	868843-0010	1	
55	FOOT, REAR	868844-0010	1	
56	INLAY, BOTTOM, FRONT	868845-0010	1	
57	INLAY, BOTTOM, SIDE	868846-0010	2	
58	INLAY, BOTTOM, REAR, RIGHT	868847-0010	1	
59	INLAY, BOTTOM, REAR, LEFT	868848-0010	1	
68	FFC CABLE, 22 PIN, MAIN TO PWR BRD	869441-0010	1	
72	FFC CABLE, 24 PIN, MAIN TO DISPLAY-BRD	869445-0010	1	
75	ANTENNA, RF, 270MM LG CABLE	869515-0010	1	
76	ANTENNA, RF, 360MM LG CABLE	869515-0020	1	
85	PLUG, TRANSMITTER DOCK	872341-0010	2	
126	KNOB, VOLUME	841657-0110	3	
136	PCB ASSY, DISPLAY, SVCE	867127-001S	1	
137	PCB ASSY, MAIN IO, SVCE	867128-003S	1	
140	DISPLAY, OLED, FUTABA ELW1104AA	868546-0010	3	
141	GASKET, OLED	868705-0010	3	
-	RUBBER RING	861676-0010	3	

Note: For item 137**,** the PCBA is without the software yet, which can be loaded by polycomm. Using the .bin file below:

https://hepdsw-web.bose.com/ec/prod/BabyYoda/Release/pro_crescendo_master/3.0.4-728+c67bcd3/app_babyyoda/encrypted_prod/software_update/

Main Assembly Exploded View

Figure 2. S1 PRO+ Main Assembly Exploded View

5.5 ±0.5kgf-cm
4.5 ±0.4 lb in
10X IO PANEL SCREWS

9.0 ±0.5kgf-cm
7.8 ±0.4 lb in
24X TOP COVER, BOTTOM
COVER, IO FRAME, AND
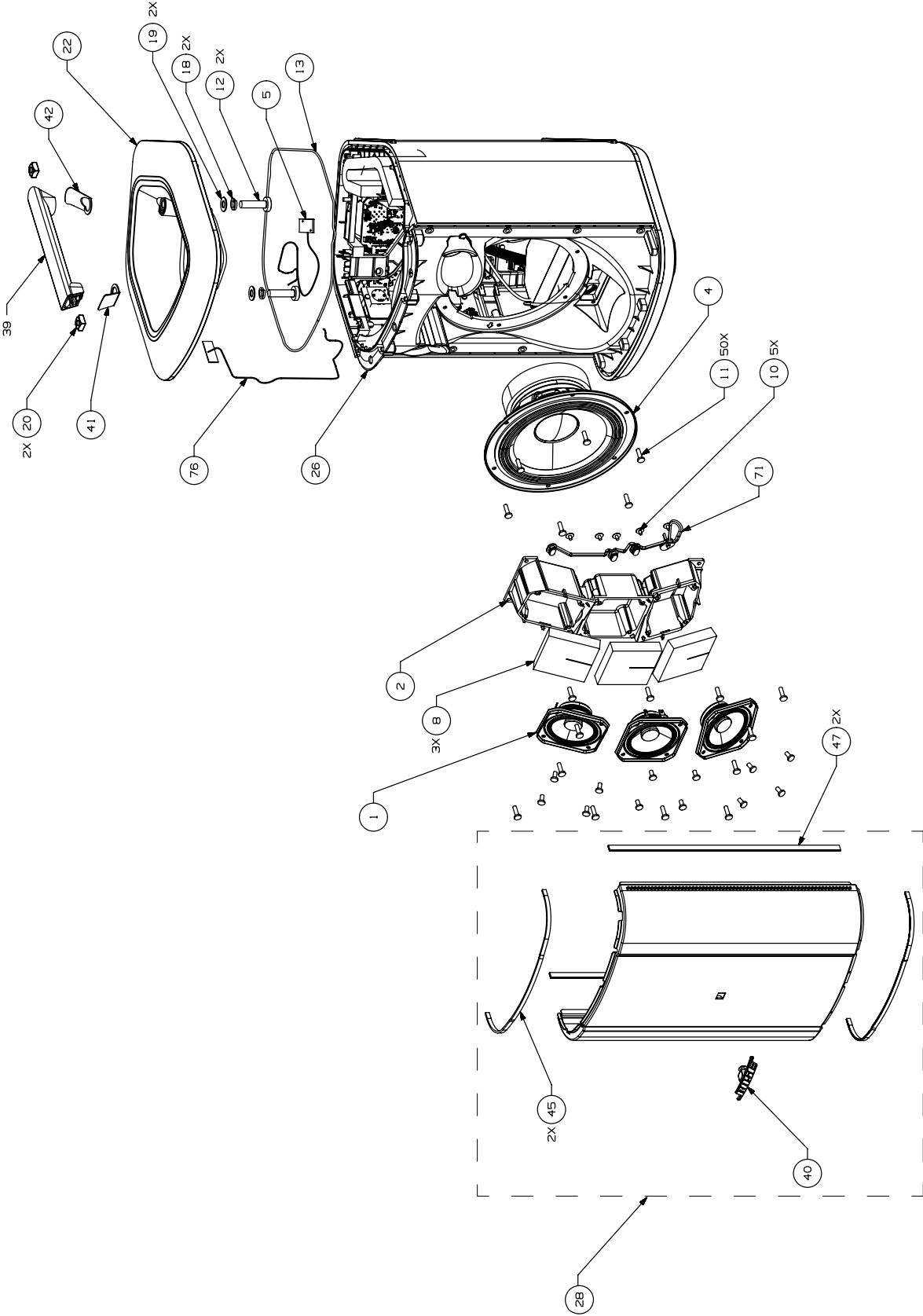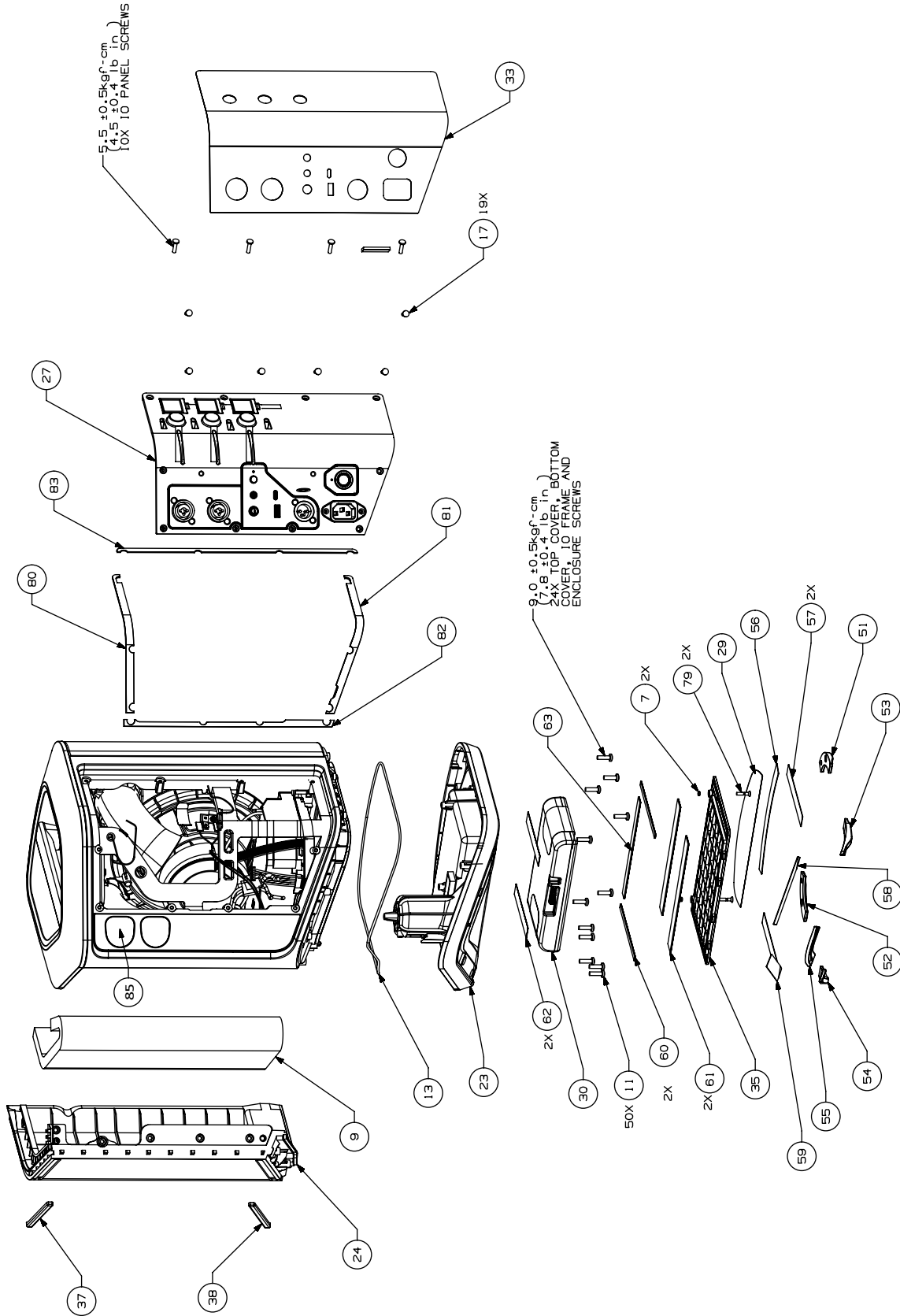ENCLOSURE SCREWS

Figure 3. S1 PRO+ Main Assembly Exploded View
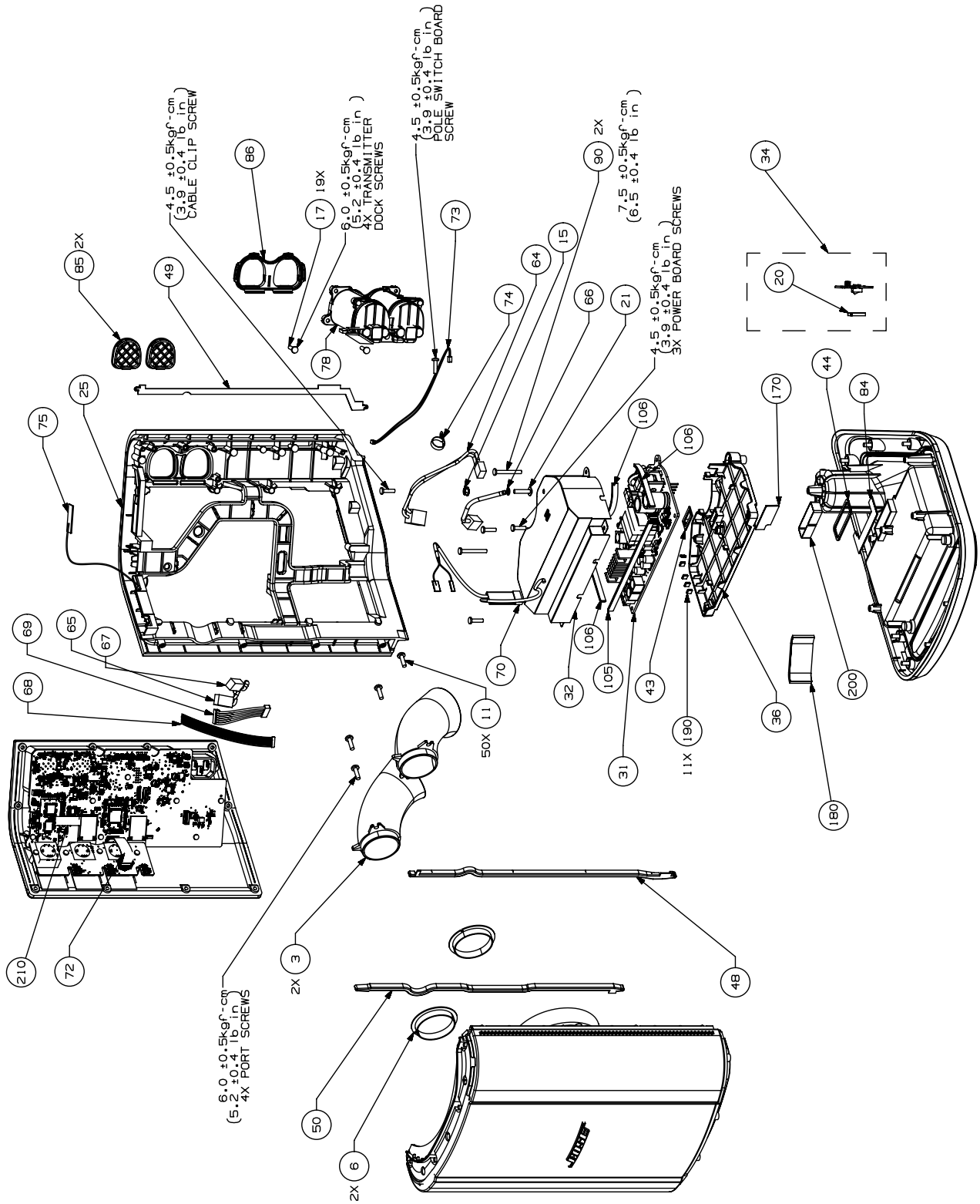
Main Assembly Exploded View

Figure 4. S1 PRO+ Main Assembly Exploded View
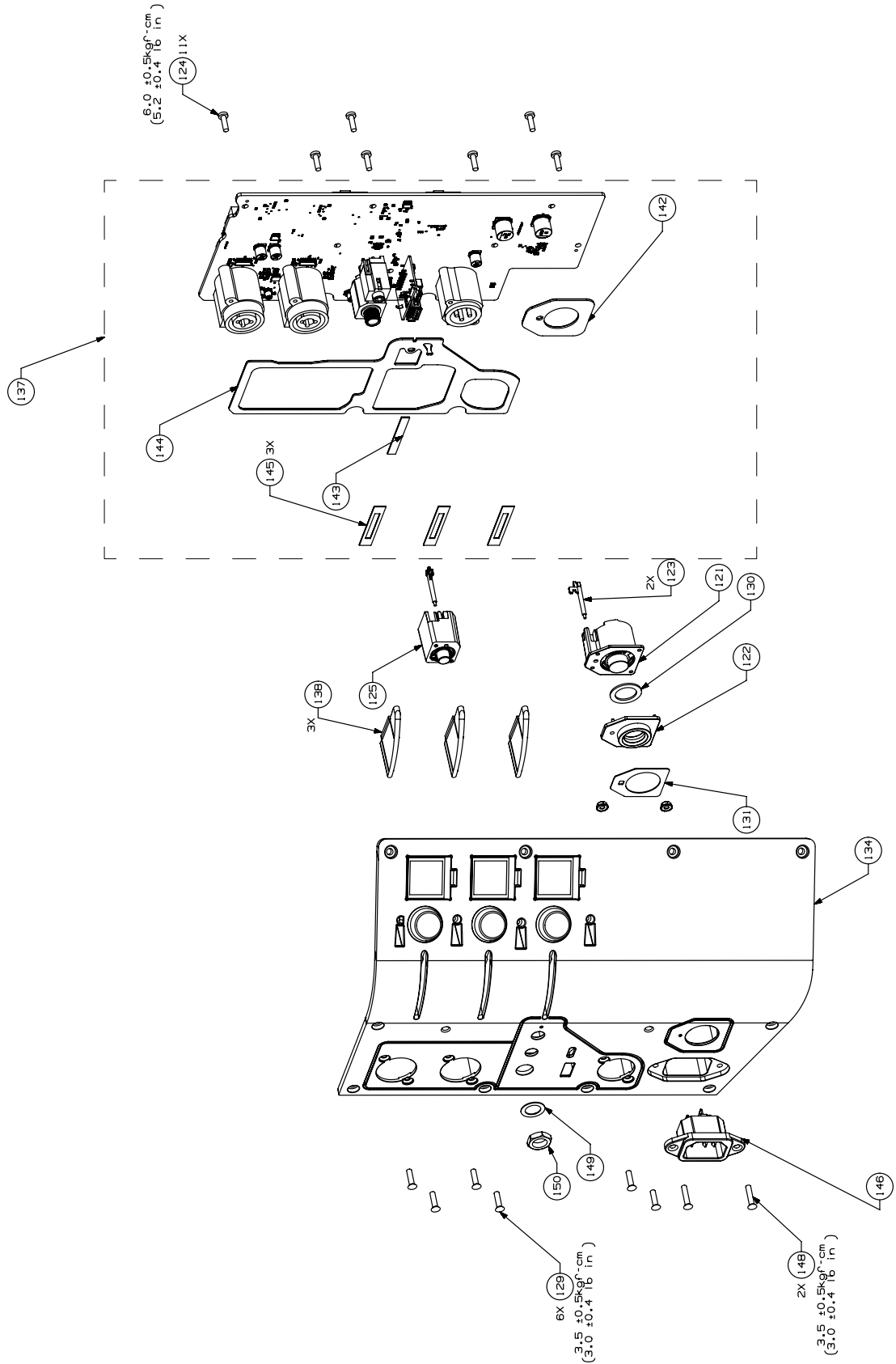
IO Panel Assy Exploded View

Figure 5. S1 PRO+ IO Panel Assy Exploded View

IO Panel Assy Exploded View

3X 126

140
3X

3X 141

3X 147

136

11X 124

6.0 ±0.5kgf-cm
(5.2 ±0.4 lb-in)
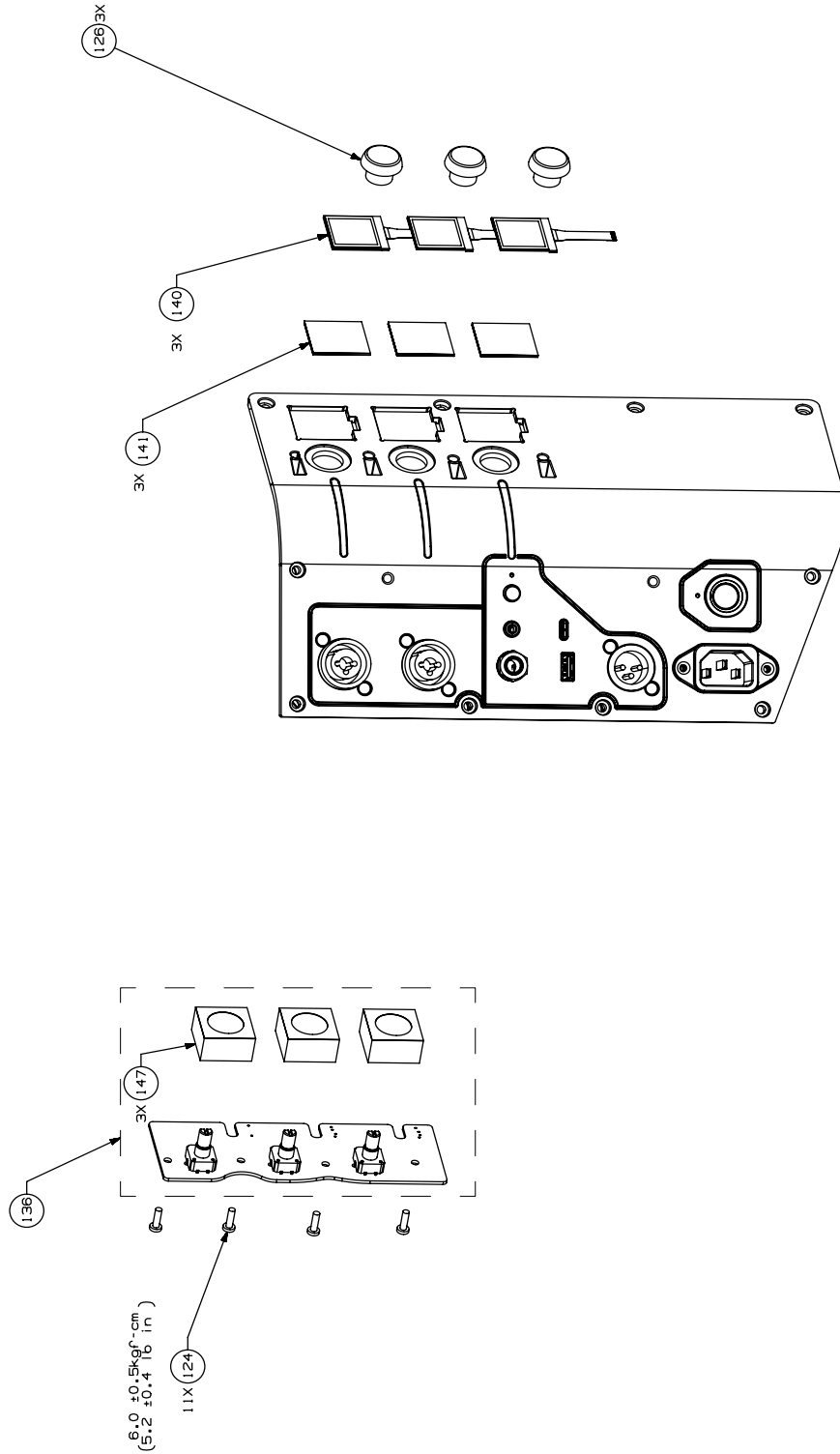
Figure 6. S1 PRO+ IO Panel Assy Exploded View

MAIN-I/O PCB PARTS LIST

Resistors

Reference Designator	Description	Material Number	Note
R1, R325A, R325B, R336A, R336B	RES, THICK FILM, 0402, 0.063W, 1%, 2K	801703-2001F	
R10-R11, R16-R17, R24-R26, R58, R64, R66, R68, R73-R74, R77-R79, R81, R84-R89, R91-R92, R99-R100, R102-R111, R120, R123, R127-R133, R137-R138, R140, R144-R145, R147-R148, R150-R154, R159, R161, R167-R172, R181, R190-R193, R195, R198, R200-R204, R392, R397, R408, R446-R449, R457-R459, R462, R485-R490, R505-R506, R580	RES, THICK FILM, 0402, 0.063W, 1%, 33 OHM	801703-33R0F	
R113	RES, THICK FILM, 0402, 0.063W, 1%, 82K	801703-8202F	
R118, R316A, R316B, R346A, R346B	RES, THICK FILM, 0402, 0.063W, 1%, 3.3K	801703-3301F	
R12	RES, THICK FILM, 0402, 0.063W, 1%, 49.9 OHM	801703-49R9F	
R124, R126, R491-R492	RES, THICK FILM, 0402, 0.063W, 1%, 4.22K	801703-4221F	
R13	RES, THICK FILM, 0402, 0.063W, 1%, 5.1 OHM	801704-5R10F	
R14	RES, THICK FILM, 0402, 0.063W, 1%, 13.3K	801703-1332F	
R143, R146	RES, THICK FILM, 0603, 0.1W, 1%, 75 OHM	801706-75R0F	
R15, R57, R93-R94, R112, R162-R165, R177, R196, R205, R210, R249, R284, R298, R301, R303, R369, R375, R385, R388, R429, R431, R451-R453, R501-R502, R348A, R348B, R356A, R356B	RES, THICK FILM, 0402, 0.063W, 1%, 100K	801703-1003F	
R211, R280, R288, R299, R307	RES, THICK FILM, 0402, 0.063W, 1%, 2.2K	801703-2201F	
R212-R213	JUMPER, CHIP, 0805	806732-0805	
R241-R242, R248, R282, R286, R300, R305, R444-R445, R450, R469, R319A, R319B, R343A, R343B	RES, THICK FILM, 0402, 0.063W, 1%, 4.7K	801703-4701F	
R255, R267, R291, R311, R313, R21A, R21B, R22A, R22B	RES, THICK FILM, 0402, 0.063W, 1%, 1K	801703-1001F	
R256, R270, R292, R312	RES, THICK FILM, 0402, 0.063W, 1%, 1.5K	801703-1501F	
R27, R37-R38, R49	RES, THICK FILM, 0402, 0.063W, 1%, 9.1K	801703-9101F	
R273, R287, R293, R306	RES, THICK FILM, 0603, 0.1W, 1%, 28K	801706-2802F	

MAIN-I/O PCB PARTS LIST

Resistors (continued)

Reference Designator	Description	Material Number	Note
R274, R281, R297, R308	RES, THICK FILM, 0805, 0.125W, 1%, 100 OHM	802354-1000F	
R275, R289, R294, R309	RES, THICK FILM, 0603, 0.1W, 1%, 14K	801706-1402F	
R276, R279, R439, R456	RES, THICK FILM, 0402, 0.063W, 1%, 20K	801703-2002F	
R277, R283, R295, R302	RES, THICK FILM, 0402, 0.063W, 1%, 120K	801703-1203F	
R28, R32, R43, R48	RES, THICK FILM, 0402, 0.063W, 1%, 5.1K	801703-5101F	
R29, R33, R35-R36, R39-R40, R44, R47, R220, R224, R260, R264, R520, R524	RES, THICK FILM, 0402, 0.063W, 1%, 470 OHM	801703-4700F	
R290, R310	RES, THICK FILM, 0402, 0.063W, 1%, 2.4K OHM	801703-2401F	
R31, R46, R315A, R315B, R320A, R320B, R340A, R340B, R344A, R344B	RES, THICK FILM, 0402, 0.063W, 1%, 47 OHM	801703-47R0F	
R314A, R314B, R324A, R324B, R332A, R332B, R347A, R347B	RES, THICK FILM, 0402, 0.063W, 1%, 2.7K	801703-2701F	
R317A, R317B, R321A, R321B, R341A, R341B, R345A, R345B, R365A, R365B	RES, THICK FILM, 0402, 0.063W, 1%, 1.8K	801703-1801F	
R322A, R322B, R338A, R338B	RES, THICK FILM, 0805, 0.125W, 1%, 20 OHM	802354-20R0F	
R323A, R323B, R326A, R326B, R337A, R337B, R339A, R339B	RES, THICK FILM, 0402, 0.063W, 1%, 220 OHM	801703-2200F	
R327A, R327B, R328A, R328B, R334A, R334B, R335A, R335B	RES, THICK FILM, 0402, 0.063W, 1%, 2.2 MEG	801703-2204F	
R333A, R333B	RES, THICK FILM, 0603, 0.1W, 1%, 2.1K	801706-2101F	
R34, R41, R166, R197, R418, R522, R552, R330A, R330B	RES, THICK FILM, 0402, 0.063W, 1%, 47K	801703-4702F	
R349A, R349B, R350A, R350B, R351A, R351B, R352A, R352B, R360A, R360B	RES, THICK FILM, 0603, 0.1W, 1%, 1K	801706-1001F	
R353A, R353B, R357A, R357B	RES, THICK FILM, 0402, 0.063W, 1%, 470K	801703-4703F	
R362A, R362B	RES, THICK FILM, 0402, 0.063W, 1%, 56 OHM	801703-56R0F	
R364A, R364B	RES, THICK FILM, 0402, 0.063W, 1%, 390 OHM	801703-3900F	
R370, R394	RES, THICK FILM, 0603, 0.1W, 1%, 511K	801706-5113F	
R371	RES, THICK FILM, 0603, 0.1W, 1%, 453K	801706-4533F	
R374	RES, THICK FILM, 0603, 0.1W, 1%, 105K	801706-1053F	
R395	RES, THICK FILM, 0603, 0.1W, 1%, 150K	801706-1503F	
R398	RES, THICK FILM, 0603, 0.1W, 1%, 6.2K	801706-6201F	

MAIN-I/O PCB PARTS LIST
Resistors (continued)

Reference Designator	Description	Material Number	Note
R4, R6, R9, R19, R23, R83, R96-R97, R156-R157, R160, R475-R477, R479-R481	RES, THICK FILM, 0402, 0.063W, 1%, 120 OHM	801703-1200F	
R402	RES, THICK FILM, 0603, 0.1W, 1%, 56K	801706-5602F	
R403	RES, THICK FILM, 0603,0.1W, 1%, 3K	801706-3001F	
R42, R142, R176, R222, R226-R227, R232, R234, R238-R240, R243-R244, R372, R460, R470-R472	JUMPER, CHIP, 0603	806732-0603	
R468	RES, THICK FILM, 0402, 0.063W, 1%, 12.7K	801703-1272F	
R5, R7-R8, R18, R20, R30, R45, R60, R62, R71, R95, R98, R155, R158, R454, R467, R473-R474, R363A, R363B	RES, THICK FILM, 0402, 0.063W, 1%, 100 OHM	801703-1000F	
R50, R52, R54, R69, R76, R82, R101, R114, R135, R199, R207-R209, R373, R376, R381-R382, R384, R400, R409, R414, R420, R424, R427-R428, R434-R435, R438, R483, R498-R499, R529, R533-R534, R559, R563-R564, R577	RES, THICK FILM, 0402, 0.063W, 1%, 10K	801703-1002F	
R516, R546	RES, THICK FILM, 0603, 0.1W, 1%, 100 OHM	801706-1000F	
R53	RES, THICK FILM, 0402, 0.063W, 1%, 5.6K	801703-5601F	
R55	RES, THICK FILM, 0603, 0.1W, 1%, 10 OHM	801707-10R0F	
R59, R70, R75, R117, R121-R122, R134, R136, R178-R180, R182-R188, R217-R219, R221, R228-R230, R245, R247, R251, R257-R259, R262, R268-R269, R272, R377-R378, R380, R383, R386, R391, R404, R406, R411-R413, R415-R416, R425, R463-R466, R482, R493-R497, R515, R517, R519, R521, R527-R528, R531	JUMPER, CHIP, 0402	806732-0402	

MAIN-I/O PCB PARTS LIST
Capacitors

Reference Designator	Description	Material Number	Note
C1, C112-C113, C124-C125, C252-C253, C257	CAP, X5R, 0805, 50V, 10%, 4.7uF, COMM	743447-475K1H	
C10, C133	CAP, C0G, 0402, 50V, 5%, 680pF, COMM	766718-681J1H	
C107, C218A, C218B	CAP, C0G, 0402, 50V, 5%, 15pF, COMM	766718-150J1H	
C11, C17, C19, C84, C135-C136	CAP, X5R, 0402, 10V, 10%, 1uF, COMM	716994-105K1A	
C114, C286	CAP, X5R, 0402, 25V, 10%, 1uF, COMM	716994-105K1E	
C121-C122	CAP, C0G, 0402, 50V, 5%, 10pF, COMM	766718-100J1H	
C13	CAP, X7R, 0603, 50V, 10%, 0.1uF, COMM	718875-104K1H	
C149-C150, C163-C164, C380-C381	CAP, X7R, 0402, 50V, 10%, 2200pF, COMM	718866-222K1H	
C15	CAP, C0G, 0402, 50V, 5%, 330pF, COMM	766718-331J1H	
C16, C57, C62, C111, C123, C287	CAP, EL, SMT, 105C, 25V, 20%, 100uF, COMM	856752-101M1ECC	
C172, C180, C187, C195, C197, C250, C235A, C235B, C236A, C236B, C237A, C237B, C238A, C238B	CAP, C0G, 0402, 50V, 5%, 100pF, COMM	766718-101J1H	
C2, C6-C8, C22, C24, C27, C33, C41, C51, C55, C71-C75, C81, C86-C87, C91, C93, C100, C102, C106, C110, C115, C117, C119-C120, C126, C128, C134, C137-C139, C141, C144, C146, C152, C155-C156, C158-C159, C161, C167, C176, C184, C200-C206, C244-C247, C249, C251, C254, C256, C258, C260, C262-C263, C285, C358, C361, C363-C364, C366, C370, C373, C378, C383, C385-C387, C398, C408, C410-C412, C229A, C229B, C230A, C230B, C231A, C231B, C232A, C232B, C233A, C233B, C234A, C234B, C239A, C239B, C241A, C241B, C243A, C243B	CAP, X7R, 0402, 50V, 10%, 0.1uF, COMM	718866-104K1H	
C210A, C210B, C227A, C227B	CAP, C0G, 0603, 50V, 5%, 2700pF, COMM	780788-272J1H	
C211A, C211B, C225A, C225B	CAP, EL, SMT, 105C, 50V, 20%, 2.2uF, COMM	856752-2R2M1HAA	

MAIN-I/O PCB PARTS LIST

Capacitors (continued)

Reference Designator	Description	Material Number	Note
C23, C30, C32, C39, C76, C82, C88, C90, C92, C95, C103, C105, C140, C143, C148, C151, C154, C157, C242, C356-C357, C359-C360, C362, C365, C368, C379	CAP, X5R, 0402, 10V, 20%, 10uF, COMM	716994-106M1A	
C248, C255	CAP, C0G, 0402, 50V, 5%, 33pF, COMM	766718-330J1H	
C259, C261, C264-C267	CAP, X5R, 0805, 10V, 20%, 47uF, COMM	743447-476M1A	
C34, C101, C268-C269	CAP, X5R, 0805, 25V, 10%, 10uF, COMM	743447-106K1E	
C3-C4	CAP, EL, SMT, 105C, 50V, 20%, 220uF, COMM	856752-221M1HED	
C5, C21, C142, C145, C160, C162, C369, C374	CAP, X5R, 0402, 6.3V, 20%, 2.2uF, COMM	716994-225M0J	
C52, C58-C59, C63-C64, C69, C178, C181, C193, C196, C208A, C208B, C217A, C217B, C224A, C224B, C228A, C228B	CAP, C0G, 0402, 50V, 5%, 220pF, COMM	766718-221J1H	
C53, C68, C168, C171, C177, C179, C182, C185-C186, C192, C194, C198, C371, C396, C212A, C212B, C223A, C223B	CAP, EL, SMT, 105C, 16V, 20%, 22uF, COMM	856752-220M1CBB	
C56, C60-C61, C65, C169-C170, C173-C174, C188-C191, C207, C270, C279, C281, C09A, C209B, C213A, C213B, C219A, C219B, C226A, C226B	CAP, C0G, 0402, 50V, 5%, 470pF, COMM	766718-471J1H	
C67, C77, C79, C94, C376, C401, C214A, C214B, C220A, C220B	CAP, C0G, 0402, 50V, 5%, 47pF, COMM	766718-470J1H	
C83, C216A, C216B, C222A, C222B	CAP, C0G, 0402, 50V, 5%, 1000pF, COMM	766718-102J1H	
C9, C12, C14, C18, C20, C25-C26, C28-C29, C31, C35-C38, C40, C43-C50, C54, C78, C80, C85, C89, C97, C99, C104, C116, C118, C129-C132, C147, C153, C175, C183, C199, C275-C278, C280, C326-C329, C340-C341, C165A, C165B, C215A, C215B, C221A, C221B	CAP, X7R, 0402, 50V, 10%, 10000pF, COMM	718866-103K1H	

MAIN-I/O PCB PARTS LIST

Diodes

Reference Designator	Description	Material Number	Note
D12	DIODE, SCHOTTKY, 2A, 60V, SOD123F	852398-0010	
D14, D17-D18, D21, D27A, D27B, D49A, D49B	DIODE, SW, 75V, 0.3A, SOT-23, BAV99	747976-0010	
D22-D23, D28A, D28B, D29A, D29B	DIODE, SWITCHING, 100V, 0.15A, SOD323F	856395-0010	
D3, D24, D39-D40, D44, D61-D62	DIODE, TVS, BIDIR, 5V, 13pF, SOD882	863152-0030	
D5, D38, D41-D43, D45-D48, D50-D59	VARISTOR, MULTILAYER, 0402, 130pF, 12V	855757-120M131	
D6	DIODE, SCHOTTKY, 30V, BAT54C, SOT-23	330427-0030	
D60	DIODE, SCHOTTKY, 30V, BAT54A, SOT-23	330427-0020	
D8-D9	DIODE, TVS, BIDIR, 5V, D5V0X1B2LP, 2DFN	859878-0020	
LED1	DIODE, LED, 0603, WHITE, VERT	851300-0010	
LED10	DIODE, LED, 0606, WHITE, RED, VERT	851297-0010	
LED2	DIODE, LED, 0603, BLUE, VERT	851299-0010	
LED4-LED6, LED9, LED12, LED14	DIODE, LED, 0606, RED, BLUE, GREEN, VERT	851304-0020	

Inductors

Reference Designator	Description	Material Number	Note
L1	INDUCTOR, POWER, SMT, 4.2A, 20%, 10uH, COMM	852883-100M	
L17-L18, L30	INDUCTOR, POWER, SMT, 2.5A, 20%, 22uH, COMM	853388-220M	
L2-L3, L10-L12, L24-L27, L28A, L28B, L29A, L29B	BEAD, FERRITE, 0402, 0.25A, 1.1 OHM, Z=1K	371767-0010	
L4	INDUCTOR, CM, 0805, 0.4A, 25%, 90 OHM, COMM	879305-900	
L5-L9	BEAD, FERRITE, PWR, 0603, 1A, 1000 OHM, COMM	852198-102	

MAIN-I/O PCB PARTS LIST

Transistors

Reference Designator	Description	Material Number	Note
Q1, Q26-Q27, Q32-Q33, Q36-Q37	TRANSISTOR, MFET, N-CH, 0.3A, 60V, SOT-23	356154-0010	
Q13	TRANSISTOR, MFET, N-CH, 0.23A, 60V, SOT363	852240-0010	
Q15-Q18, Q23A, Q23B, Q24A, Q24B	TRANSISTOR, DUAL, COMP, 40V, 0.6A, 200mW, SOT-363	850060-0100	
Q2-Q5	TRANSISTOR, NPN, 20V, 0.3A, 2SD2704K, SC-59	861699-0010	
Q6, Q8, Q14, Q21A, Q21B	TRANSISTOR, PNP, 40V, 0.2A, MMBT3906, SOT23	148596	
Q7, Q10, Q25	TRANSISTOR, NPN, 40V, 0.2A, MMBT3904, SOT323	195357	
Q9, Q11-Q12, Q34-Q35	TRANSISTOR, MFET, P-CH, 3.6A, 20V, SOT-23	804774-0010	

Transistors

Reference Designator	Description	Material Number	Note
U1	IC, GATE, NAND, 74HC00, 14TSSOP	871053-0040	
U10	IC, VREG, SW, BUCK, 3A, TPS54308, SOT23-6	877627-0010	
U13, U23	IC, DAC, 24b, 2CH, 112dB, 20TSSOP, PC-M5102A	767720-0010	
U14	IC, ADC, AUDIO, 4CH, TLV320ADC5140, 24WQFN	855431-0010	
U15	IC, DAC, 24b, 2CH, 106dB, 20TSSOP, PC-M5101A	767720-0020	
U19-U20	IC, DCDC CONV, STEP DOWN, 2A, 28V, TPS54202H	842669-0010	
U2, U16A, U16B, U17A, U17B	IC, OP AMP, DUAL, AUDIO, OPA1678, 8SOIC	858219-0010	
U22	IC, DCDC CONV, BUCK, PWM, 1A, TSOT, LV2843	842705-0010	
U24	IC, UC, ARM M4, 32b, 512kB, STM32F401, LQFP	870337-VET6	
U25	IC, SWITCH, DPDT, BD11600, 10SON	871052-0010	
U26	IC, HIGH SIDE SWITCH, I-LIMIT, BD2242	857379-0020	
U27	IC, FLASH, 4Mbit, 3V, SOIC-8	765571-0040	
U31, U34, U18A, U18B	IC, SWITCH, SPST, QUAD, 16SO, SGM4510	873669-0010	
U4, U7-U8, U11	IC, OP AMP, DUAL, NJM4580M-TE2, DMP8, 90DEG	855786-03A2	
U5, U9	MODULE, WiFi, 2.4GHz, Rx	873766-0020	
U6	IC, SENSOR, 3AXIS, ACCEL, 12LGA, KXTJ3	877147-0010	

MAIN-I/O PCB PARTS LIST
Integrated Circuit

Reference Designator	Description	Material Number	Note
EDG1	MODULE, RF, BLUETOOTH, BABY YODA	833933-0020	
F1	PTC, RESETTABLE, 0.75A, 100ms	320968-0754	
J1	CONN, FPC, 0.5mm C, 22P, 1R, R, SMT, RA, Au	857203-0022	
J11	CONN, PHONE JACK, 6.35mm, 3P, R, TH	873494-0010	
J12A, J12B	CONN, IO, XLR, 10P, R, TH, ST	870566-0010	
J5	CONN, FPC, 0.5mm C, 24P, 1R, R, SMT, ST	870476-0024	
J6	CONN, HDR, 2mm C, 6P, 1R, P, TH, ST, WHT	859609-0006	
J7, J15	CONN, FPC, 0.5mm C, 10P, R, SMT, ST, ZIF	869518-0010	
J8	CONN, HDR, 1.5mm C, 2P, 1R, P, SMT, ST, BEIGE	847746-0020	
J9, J14, J16	CLAMP, CABLE, COAX, 1.13mm DIAM	873491-0010	
P1	CONN, IO, XLR, 3P, R, TH, ST	870675-0010	
PJ1	CONN, IO, 3.5mm EAR PHONE JACK, TH, 31.1L	852736-0010	
SW1	SWITCH, TACT, 15V, 20mA, 320GF	854394-0010	
SW2	SWITCH, TACT, 12V, 50mA, 250gf	850862-0010	
Y1	CRYSTAL, FUND, 2520, 10ppm, 10pF, 24MHz	800165-24M000BB10	

POWER PCB PARTS LIST
Resistors

Reference Designator	Description	Material Number	Note
R1, R6, R97	RES, THICK FILM, 0402, 0.063W, 1%, 47K	801703-4702F	
R100, R108, R120, R122	RES, THICK FILM, 0603, 0.1W, 1%, 22 OHM	801706-22R0F	
R102, R112	RES, THICK FILM, 0603, 0.1W, 1%, 1 OHM	801707-1R00F	
R103, R118	RES, THICK FILM, 0805, 0.125W, 1%, 4.75 OHM	802355-4R75F	
R104	RES, THICK FILM, 0402, 0.063W, 1%, 150K	801703-1503F	
R105	RES, THICK FILM, 0603, 0.1W, 1%, 270K	801706-2703F	
R106	RES, THICK FILM, 0603, 0.1W, 1%, 20K	801706-2002F	
R111	RES, THICK FILM, 0603, 0.1W, 1%, 2.2 OHM	801707-2R20F	
R12, R15, R22, R25, R40, R42-R43, R45	RES, THICK FILM, 0402, 0.063W, 1%, 2.2K	801703-2201F	
R123, R175	RES, THICK FILM, 0402, 0.063W, 1%, 910K	801703-9103F	
R124-R125, R183-R186	RES, THICK FILM, 0603, 0.1W, 1%, 4.7 OHM	801707-4R70F	
R130	RES, THICK FILM, 0402, 0.063W, 1%, 120K	801703-1203F	
R133	RES, THICK FILM, 0402, 0.063W, 1%, 9.1K	801703-9101F	
R134	RES, THICK FILM, 0402, 0.063W, 1%, 3.9K OHM	801703-3901F	
R135	RES, THICK FILM, 0402, 0.063W, 1%, 33K	801703-3302F	
R14, R41, R109, R119	JUMPER, CHIP, 0402	806732-0402	
R143-R144	RES, THICK FILM, 1206, 0.25W, 1%, 100K	806729-1003F	
R145, R147, R149, R151-R153, R155-R158, R161-R162	RES, THICK FILM, 0402, 0.063W, 1%, 120 OHM	801703-1200F	
R146, R174	RES, THICK FILM, 0402, 0.063W, 1%, 470K	801703-4703F	
R150	RES, THICK FILM, 0402, 0.063W, 1%, 12.7K	801703-1272F	
R163	RES, THICK FILM, 0402, 0.063W, 1%, 13K	801703-1302F	
R17, R31, R93, R114, R117	RES, METAL FOIL, 1206, 1W, 1%, 0.01 OHM	755170-R010F	
R176	RES, THICK FILM, 0402, 0.063W, 1%, 68K	801703-6802F	
R177	RES, THICK FILM, 0603, 0.1W, 1%, 33K	801706-3302F	
R178	RES, THICK FILM, 0603, 0.1W, 1%, 47K	801706-4702F	
R18, R26, R34	RES, THICK FILM, 0402, 0.063W, 1%, 20K	801703-2002F	
R2, R32, R46, R86	RES, THICK FILM, 0402, 0.063W, 1%, 1K	801703-1001F	
R21, R24, R35, R37	RES, THICK FILM, 0603, 0.1W, 1%, 3.3 OHM	801707-3R30F	
R23, R141	RES, THICK FILM, 0402, 0.063W, 1%, 470 OHM	801703-4700F	
R3, R9, R101	RES, THICK FILM, 0402, 0.063W, 1%, 27K	801703-2702F	
R36, R142	RES, THICK FILM, 0402, 0.063W, 1%, 100 OHM	801703-1000F	
R38-R39	RES, THICK FILM, 0402, 0.063W, 1%, 3.3 OHM	801704-3R30F	
R4, R10, R30, R33, R107, R136-R139	RES, THICK FILM, 0402, 0.063W, 1%, 10K	801703-1002F	

POWER PCB PARTS LIST
Resistors (continued)

Reference Designator	Description	Material Number	Note
R44, R47-R48, R110	RES, THICK FILM, 0603, 0.1W, 1%, 100K	801706-1003F	
R49-R50, R52-R53	RES, THICK FILM, 1206, 0.25W, 1%, 825K	806729-8253F	3 ⚠
R5, R11, R16, R113, R127-R129, R172-R173	RES, THICK FILM, 0402, 0.063W, 1%, 100K	801703-1003F	
R51,R54	RES,THICK FILM,1206,0.25W,1%,1M	806729-1004F	
R55-R56, R61-R62, R75, R179	RES, THICK FILM, 1206, 0.25W, 1%, 10 OHM	806730-10R0F	
R57-R60, R63-R66	RES, THICK FILM, 1206, 0.25W, 1%, 56K	806729-5602F	3 ⚠
R67	RES, THICK FILM, 0805, 0.125W, 1%, 47K	802354-4702F	
R68-R69	RES, THICK FILM, 1206, 0.25W, 1%, 2.2K	806729-2201F	
R7, R13, R20	JUMPER, CHIP, 0603	806732-0603	
R70, R159-R160, R165-R169	RES, THICK FILM, 0805, 0.125W, 1%, 100 OHM	802354-1000F	
R72, R77, R154, R180-R182	JUMPER, CHIP, 1206	806732-1206	
R73	RES, THICK FILM, 0603, 0.1W, 1%, 100 OHM	801706-1000F	
R74, R90	RES, THICK FILM, 0603, 0.1W, 1%, 10K	801706-1002F	
R76	RES, THICK FILM, 0603, 0.1W, 1%, 470 OHM	801706-4700F	
R78	RES, THICK FILM, 1206, 0.25W, 1%, 1 OHM	806730-1R00F	
R79-R83	RES, THICK FILM, 1206, 0.25W, 1%, 1.3 OHM	806730-1R30F	
R84	RES, THICK FILM, 0603, 0.1W, 1%, 2.7K	801706-2701F	
R85	RES, THICK FILM, 0603, 0.1W, 1%, 510 OHM	801706-5100F	
R87, R89, R171	RES, THICK FILM, 0603, 0.1W, 1%, 1K	801706-1001F	
R88	RES, THICK FILM, 0603, 0.1W, 1%, 91K	801706-9102F	
R91	RES, THICK FILM, 0603, 0.1W, 1%, 300K	801706-3003F	
R92	RES, THICK FILM, 0805, 0.125W, 1%, 1 OHM	802355-1R00F	
R94, R116	RES, METAL FOIL, 1206, 1W, 1%, 0.005 OHM	755170-R005F	
R95	RES, THICK FILM, 0603, 0.1W, 1%, 10 OHM	801707-10R0F	
R96, R121	RES, THICK FILM, 0402, 0.063W, 1%, 10 OHM	801704-10R0F	
R98	RES, THICK FILM, 0603, 0.1W, 1%, 120K	801706-1203F	
R99	RES, THICK FILM, 0402, 0.063W, 1%, 12K	801703-1202F	
RT1, RT3-RT4	THERMISTOR, NTC, 0402, 4250K, 1%, 100K	790375-104	3 ⚠
RT2	THERMISTOR, NTC, ICL, BULK, 20%, 10 ohm	856032-100MB	3 ⚠

POWER PCB PARTS LIST
Capacitors

Reference Designator	Description	Material Number	Note
C1, C3-C4, C7, C9, C12, C15, C18, C72-C73, C76-C77, C96, C118-C119, C122, C125-C128, C137-C138, C141-C143, C159-C164, C176	CAP, X7R, 0402, 50V, 10%, 0.1uF, COMM	718866-104K1H	
C102, C117, C124, C130, C132, C144-C146, C156, C165-C166	CAP, X5R, 0805, 50V, 10%, 4.7uF, COMM	743447-475K1H	
C110	CAP, EL, SMT, 105C, 50V, 20%, 220uF, COMM	856752-221M1HED	
C123	CAP, C0G, 0402, 50V, 5%, 1000pF, COMM	766718-102J1H	
C136	CAP, C0G, 0603, 50V, 5%, 22pF, COMM	780788-220J1H	
C140	CAP, X5R, 0402, 10V, 10%, 1uF, COMM	716994-105K1A	
C152-C155, C168	CAP, C0G, 0402, 50V, 5%, 220pF, COMM	766718-221J1H	
C16, C20-C21, C27-C28, C30, C50-C55, C109, C151, C183	CAP, X7R, 0402, 50V, 10%, 2200pF, COMM	718866-222K1H	
C17	CAP, X5R, 0805, 25V, 10%, 10uF, COMM	743447-106K1E	
C171, C175	CAP, EL, SMT, 105C, 35V, 20%, 4.7uF, COMM	856752-4R7M1VAA	
C172	CAP, C0G, HI VOLT, 1206, 1000V, 5%, 150pF, COMM	777098-151J3A	
C179	CAP, X5R, 0603, 16V, 10%, 2.2uF, COMM	718835-225K1C	
C19, C22, C45, C47, C112	CAP, X7R, 0402, 50V, 10%, 0.033uF, COMM	718866-333K1H	
C2, C10-C11, C25, C32, C56-C67, C104-C107, C114-C116, C134, C139	CAP, X7R, 0603, 50V, 10%, 1uF, COMM	718875-105K1H	
C23, C34, C37, C46, C101, C121, C131	CAP, X7R, 0603, 50V, 5%, 10000pF, COMM	718875-103J1H	
C24, C26, C31, C33, C39-C40, C43-C44, C103, C111, C173	CAP, C0G, 0603, 50V, 5%, 1000pF, COMM	780788-102J1H	
C29, C35-C36, C41	CAP, EL, SMT, 105C, 16V, 20%, 10uF, COMM	856752-100M1CAB	
C38, C42	CAP, FILM, LS 5mm, AMMO, 5%, 100V, 1uF	329288-1004BJA	
C48-C49	CAP, X5R, 0402, 25V, 10%, 1uF, COMM	716994-105K1E	
C5, C74-C75, C120, C150	CAP, X7R, 0402, 50V, 10%, 10000pF, COMM	718866-103K1H	
C6	CAP, C0G, 0402, 50V, 5%, 330pF, COMM	766718-331J1H	
C70, C83-C84, C108, C135, C147-C149, C157-C158, C167, C169-C170, C174	CAP, C0G, 0402, 50V, 5%, 100pF, COMM	766718-101J1H	
C71, C133, C180-C182	CAP, C0G, 0603, 50V, 5%, 220pF, COMM	780788-221J1H	
C78-C80	CAP, X7R, HI V, FT, 1210, 500V, 10%, 0.1uF, COMM	852058-104K2H	
C8, C68-C69, C91-C92	CAP, EL, LOW Z, SMT, 35V, 20%, 470uF, COMM	856727-471M1VDE	
C81-C82	CAP, EL, 18x25mm, 105C, 450V, 20%, 82uF	872481-820M2WGF	3 ⚠

POWER PCB PARTS LIST
Capacitors (continued)

Reference Designator	Description	Material Number	Note
C85	CAP, X7R, HI VOLT, 0805, 500V, 10%, 470pF, COMM	852020-471K2H	
C86-C87	CAP, X7R, HI V, 1206, 1000V, 10%, 4700pF, COMM	852057-472K3A	
C88-C90, C100, C113, C129, C177-C178	CAP, X7R, 0603, 50V, 10%, 0.1uF, COMM	718875-104K1H	
C93-C94	CAP, X7R, HI V, 1206, 1000V, 10%, 1000pF, COMM	852057-102K3A	
C95	CAP, EL, POLYMER, SMT, 25V, 20%, 47uF, COMM	857020-470M1EAA	
C97-C99	CAP, C0G, 0603, 50V, 5%, 100pF, COMM	780788-101J1H	
CX1-CX2	CAP, FILM, X2, LS 15mm, 305VAC, 20%, 0.47uF	310415-474MG	3 ⚠
CY1-CY2	CAP, CER, X1/Y1, Bulk 5mm, 20%, 1000pF	855444-102MN	
CY3, CY5-CY6	CAP, CER, X1/Y1, AMMO PACK, 10%, 330pF	855444-331KV	3 ⚠

Diodes

Reference Designator	Description	Material Number	Note
BD1	DIODE, BRIDGE, RECT, 8A, 800V, GBU806	873672-0800	3 ⚠
D12, D14, D16-D17	DIODE, SWITCHING, 100V, 0.15A, SOD323F	856395-0010	
D13, D19	DIODE, RECTIFIER, BARRIER, 40V, 3A, SB-R3U40	861704-0010	
D15, D20	DIODE, SWITCHING, 90V, 225mA, SOD-323	842754-0010	
D22	DIODE, TVS, BIDIR, DUAL, 25V, SOT23, AUTO	855760-0010	
D24	DIODE, SW, 75V, 0.3A, SOT-23, BAV99	747976-0010	
D25	DIODE, SCHOTTKY, 30V, BAT54A, SOT-23	330427-0020	
D2-D3, D21	DIODE, SCHOTTKY, 2A, 60V, SOD123F	852398-0010	
D4-D5, D26-D27	DIODE, TVS, BIDIR, 5V, D5V0X1B2LP, 2DFN	859878-0020	
D6-D7, D11	DIODE, RECT, FAST, 1000V, 0.8A, RS1ML, FLSMA	856386-1000	
D8	DIODE, RECT, S-FAST, 400V, 10A, TPMR10G, SMPC	855873-0400	
D9	DIODE, RECT, FAST, 1000V, 1A, RS1M, SMA	873679-1000	
	DIODE, ZENER, 0.2W, 15V, 5%, SOD-323	883107-15V0	

POWER PCB PARTS LIST

Inductors

Reference Designator	Description	Material Number	Note
L12	BEAD, FERRITE, PWR, 1206, 4.5A, 270 OHM, COMM	875917-271	
L13	INDUCTOR, POWER, SMT, 23A, 20%, 3.3uH	873657-3R3M	
L15-L16	INDUCTOR, CUSTOM, COMM MODE, VERT, 1A, 12mH	873591-0010	3 ⚠
L1-L2	BEAD, FERRITE, HI PWR, 1206, 12A, 50 OHM, COMM	872475-500	
L3, L5, L14	INDUCTOR, POWER, SMT, 10A, 20%, 10uH, COMM	852916-100M	
L4, L6, L8	BEAD, FERRITE, 0402, 0.25A, 1.1 OHM, Z=1K	371767-0010	
L7, L10	INDUCTOR, POWER, SMT, 10A, 20%, 4.7uH, COMM	852916-4R7M	

Transistors

Reference Designator	Description	Material Number	Note
Q1	TRANSISTOR, MFET, P-CH, 30V, 15A, IRF9321, SO8	847949-0010	
Q10, Q13, Q15	TRANSISTOR, NPN, 40V, 0.2A, MMBT3904, SOT323	195357	
Q2, Q4-Q5, Q8, Q14	TRANSISTOR, MFET, N-CH, 0.3A, 60V, SOT-23	356154-0010	
Q3, Q7	TRANSISTOR, MFET, P-CH, -30V, DMG4435, SO8	861705-0010	
Q6	TRANSISTOR, MFET, N-CH, 700V, IPD70R360	871060-0010	3 ⚠

Integrated Circuit

Reference Designator	Description	Material Number	Note
U1	IC, PWR AMP, CLASS D, 2X100W, 44HTSSOP	871061-0010	
U10	IC, BATT CHRG, Li, Pb, 10A, BQ24610, 24VQFN	858577-0010	
U2	IC, FLYBACK CONTROLLER, PWM, RT7781G	871062-0010	3 ⚠
U3	IC, OPTOCOUPLER, EL817, 4SO	326344-0020	3 ⚠
U4, U11	IC, LIN REG, ADJ, SHUNT, TL431, 1%, SOT23-3	330361-1030	
U5-U6, U8-U9	TRANSISTOR, MFET, N-CH, 40V, 49A, 9.3MOHMS	318688-001	
U7	IC, LOW Q, BOOST, DC, DC CNTRLLR, TPS43060	754853-0010	

POWER PCB PARTS LIST
Miscellaneous

Reference Designator	Description	Material Number	Note
F1	FUSE, TIME LAG, RADIAL, AMMO PACK, 250V, 5A	871274-5R00A	3 ⚠
F2-F3	FUSE, SLO-BLO, 1206, 63V, 1.5A	871804-1R50	3 ⚠
J1	CONN, HDR, 2mm C, 6P, 1R, P, TH, ST, WHT	859609-0006	
J2	CONN, FPC, 0.5mm C, 22P, 1R, R, SMT, RA, Au	857203-0022	
J3	CONN.HDR, 2.5mm PITCH, 6P, P, TH, ST, 25.5mmH	871254-0163	
J4, J6	CONN, HDR, 1.25mm C, 4P, 1R, P, SMT, ST	845374-0401	
J5	CONN, HDR, 2.5mm C, 6P, 1R, R, TH, ST, WHITE	847750-0006	
J7	CONN, HDR, 7.92 mm C, 2P, 1R, P, TH, RA, WHITE	870484-0002	
T3	TRANSFORMER, CUSTOM, 5A, Vout 26Vdc	873604-0010	3 ⚠
MOV1	VARISTOR, METAL OXIDE, DIA 14mm, 420Vrms	856832-4200D	3 ⚠

DISPLAY PCB PARTS LIST

Resistors

Reference Designator	Description	Material Number	Note
R15, R59-R67, R70-R71, R73-R76	JUMPER, CHIP, 0402	806732-0402	
R19-R21	RES, THICK FILM, 0402, 0.063W, 1%, 1.2M	801703-1204F	
R1-R2	JUMPER, CHIP, 0603	806732-0603	
R24-R26	RES, THICK FILM, 0402, 0.063W, 1%, 100K	801703-1003F	
R37-R39, R48-R53	RES, THICK FILM, 0402, 0.063W, 1%, 10K	801703-1002F	
R3-R14, R16-R18	RES, THICK FILM, 0402, 0.063W, 1%, 33 OHM	801703-33R0F	

Capacitors

Reference Designator	Description	Material Number	Note
C10-C15, C19-C24, C30, C32-C43, C46-C47, C50-C53	CAP, X7R, 0402, 50V, 10%, 10000pF, COMM	718866-103K1H	
C1-C3, C7-C9	CAP, X5R, 0402, 25V, 10%, 1uF, COMM	716994-105K1E	
C4-C6, C16-C18	CAP, X5R, 0603, 25V, 10%, 4.7uF, COMM	718835-475K1E	

Diodes

Reference Designator	Description	Material Number	Note
D1-D9, D15-D17	DIODE, TVS, BIDIR, 5V, 13pF, SOD882	863152-0030	

Miscellaneous

Reference Designator	Description	Material Number	Note
J1	CONN, FPC, 0.5mm C, 24P, 1R, R, SMT, ST	870476-0024	
J2-J4	CONN, FFC, 0.3 mm C, 21P, 2R, R, SMT, RA, ZIF	870525-0021	
SW1-SW3	ENCODER, ROTARY, SWITCH, XRE0126	850872-0020	

POLE SWITCH PCB PARTS LIST

Miscellaneous

Reference Designator	Description	Material Number	Note
J4	CONN, HDR, 1.5mm C, 2P, 1R, P, SMT, ST, BEIGE	847746-0020	
SW1	SWITCH, SENSOR, 1mA, 12VDC, 4P, DIP	860329-0010	

DISASSEMBLY PROCEDURE

CAUTION: The SMD integrated circuits used on the Main-I/O board 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 S1 Pro+ Wireless PA system.

1. I/O Panel Assy Removal

1.1 Use a nut driver to turn the nut anticlockwise to remove the nut & washer as the red arrow indicated in Figure 7.

1.2 Remove the 3 Volume Knobs. See Figure 7.

1.3 The Inlay for I/O Panel are secured with Pressure Sensitive Adhesive - use a spudger, lift the Inlay up and grasp and pull it off. See Figure 8.

Note:
a. Be careful to not cause cosmetic damage to the unit.
b. Use a blow drier to warm up the Inlay before removing the Inlay.

Re-assembly Note:

a. Align the edge of the replacement Inlay along the edge shown and then press the Inlay firmly to ensure proper adhesion.

Part Number : 867145-0010

b. Clear all the adhesive remains on the I/O Panel before installing the new Inlay. See Figure 9.

c. The Inlay must be properly re-applied and completely adhered to the product with no air leaks.

1.4 Remove the 10 screws securing the I/O Panel as indicated in Figure 10.

Figure 7. 1 Nut & Washer and 3 Volume Knobs Location
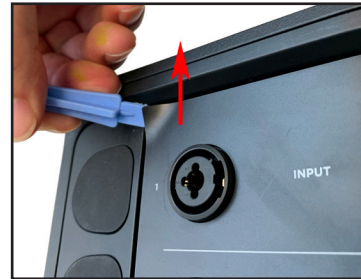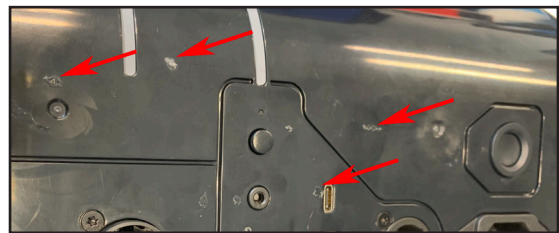

Figure 8. The Inlay Removal

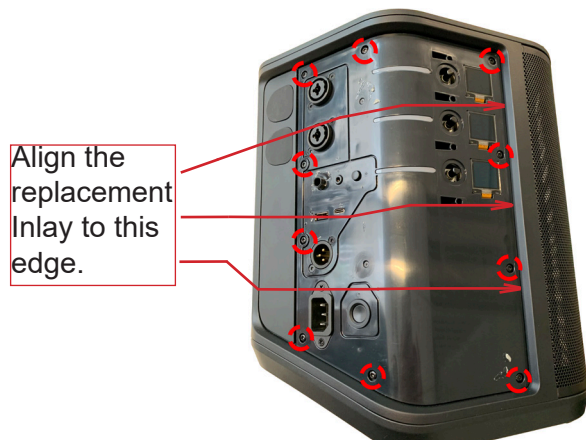
Figure 9. The Adhesive Remains on the I/O Panel

Align the replacement Inlay to this edge.

Figure 10. 10 screws Location

1.5 Use your hands and lift up on the I/O panel assy.

1.6 Detach the AC cables. See Figure 11.

Figure 11. Detach the AC cables

1.7 Once the I/O panel assy is out from the Cabinet you will notice that the 2 transmitter FFC cables **1** **2** & the 3 Antenna cables **3** **4** **5** are attached to the Main-I/O board and the 2 Transducer harnesses **8** **9** that connect to the Power board. FFC cable **6** connects to the Display board and cable **7** is to the Pole Switch board. See Figure 12.

Note:
Be careful to not damage the Antenna cables when removing the glue.

2. Bottom Cover Removal

2.1 Perform procedure 1**.**

2.2 The Rubber Foot **4** **6** **8** and Bottom Inlay **1** **2** **3** **5** **7** are secured with Pressure Sensitive Adhesive - using a spudger, lift the Feet and Bottom Inlays up and grasp and pull them off. See Figure 13.

Re-assembly Note:
a. Makes sure all the old PSA is removed.

b. Clean/wipe the plastic surface with some isopropyl alcohol and let dry.

c. Install new foot and apply good pressure for >30 seconds per foot. (It is important as this will activate the PSA and ensure good adhesion)
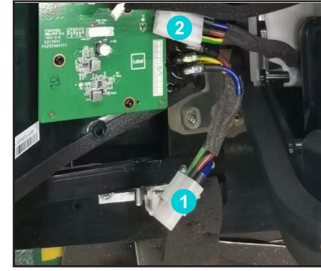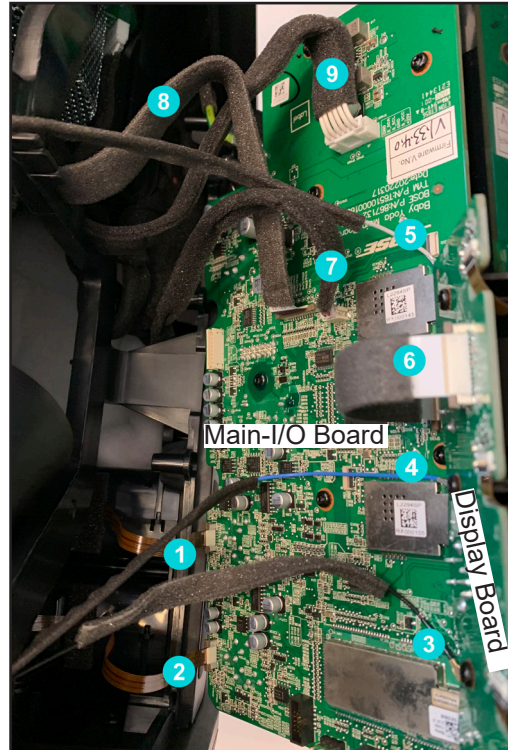

Figure 12. FFC Cables Direction

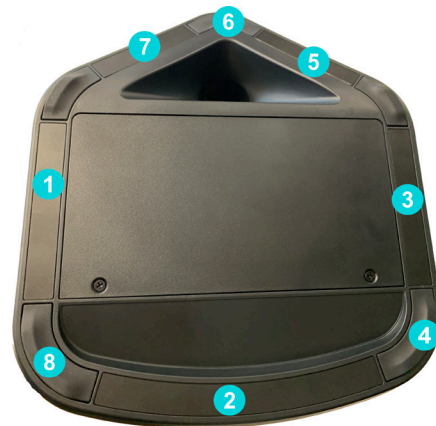**Figure 13. Rubber Feet and Bottom Inlays Location**

2.3 Remove the 12 screws securing the Bottom Cover as indicated in Figure 14.

Figure 14. 12 screws Location

2.4 Once the Bottom Cover is out from the Cabinet, you will notice that the cable ❶ connects to the power port and the cables ❷ & ❸ attach to the Main-I/O board. The cable ❹ is to the transducer harnesses. See Figure 15.

Note:
• Use a spudger / screwdriver to separate the white glue from the edge of connections.

• Be careful when regluing the RTV to fix the connections.

2.5 Detach all the board cables from the Power board.

Figure 15. 4 Cables Direction

3. Grille Removal

3.1 Perform procedure 2**.**

3.2 Grasp the Grille and carefully slide the Grille off of the baffle. See Figure 16.

Figure 16. Grille Removal

DISASSEMBLY PROCEDURE

4. Twiddler Removal

4.1 Perform procedure 3**.**

4.2 Remove the 4 screws that secure the Twiddler as indicated in Figure 17.

Figure 17. 4 screws Location

Note: When installing the Twids Cable, RTV needs to be used to prevent buzz and vibration. See Figure 18(Left).

4.3 Remove the foam and detach the cable that connects to the Woofer as indicated in Figure 18 (Right).

Figure 18. The Location for RTV and Foam

5. Woofer Removal

5.1 Perform procedure 4.

5.2 Remove the 6 screws securing the Woofer as indicated in Figure 19.

Figure 19. 6 screws Location

5.3 Detach the 2 Cable harnesses from the Woofer by pressing the white fastener. See Figure 20.

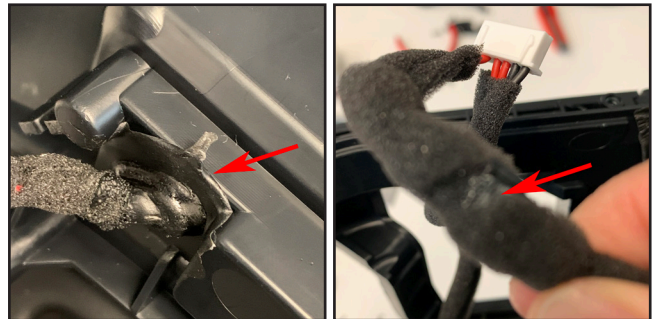**Note:** Be careful the Woofer is heavy.
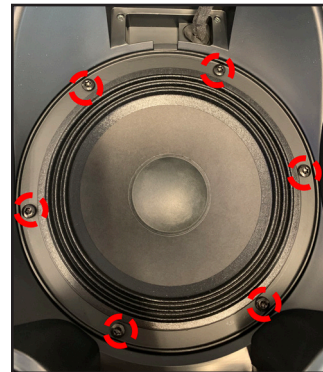

Figure 20. 2 Cable Harnesses Removal

DISASSEMBLY PROCEDURE

6. Main-I/O Board Removal

6.1 Perform procedure 1.

6.2 Remove the 7 screws that secure the Main-I/O board as indicated in Figure 21.

6.3 Detach the 1 FFC cable that attaches to the Display board as red arrow indicated in Figure 21.

6.4 Remove the 6 screws that secure the Channel input jacks. See Figure 22.

Re-assembly Note:

There are no Device ID concerns when replacing the Main-I/O board. The Device ID is assigned at the factory. Service replacement Main-I/O PCBA's use the PCBA serial number instead of the system serial number. As a result, the system serial number will not show up in the S1 Pro+ Wireless PA System app.

7. Display Board Removal

7.1 Perform procedure 1.

7.2 Remove the 4 screws securing the Display board as indicated in Figure 23.

7.3 Detach the FFC Cable that is attaching the Main-I/O board. See Figure 23.

7.4 Apply Isopropyl Alcohol to the around of the OLED to decrease gasket's adhesion. See Figure 24 (left).

7.5 Separate the OLED using the tweezers.

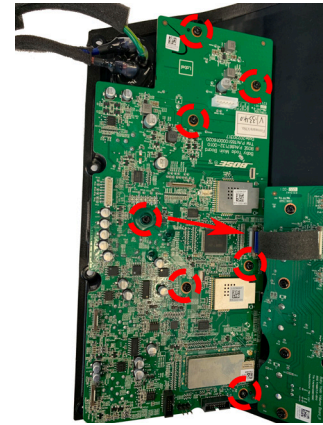**Note:** Don't force the OLED to avoid damage.

Figure 21. 7 Screws & 1 FFC Cable Location
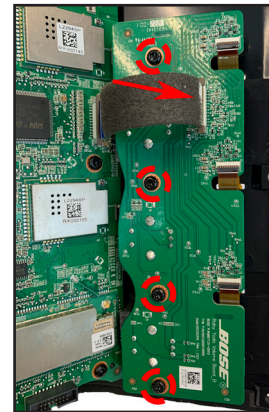

Figure 22. 6 Screws Location
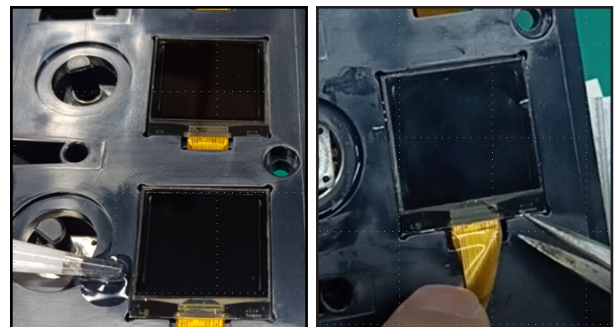

Figure 23. 4 Screws & 1 FFC Cable Location

Figure 24. OLED Removal

7.6 Remove the Gasket. See Figure 25 (left).

7.7 Clean the Alcohol. See Figure 25 (right).

Re-assembly Note:
Place the new OLED and OLED Gasket to ensure proper adhesion during reassembly.

OLED Part Number : 868546-0010
OLED Gasket PN: 868705-0010

Figure 25. OLED Gasket Removal & Clean

8. Power Board Removal

8.1 Perform procedure 2.

8.2 Remove the 4 screws that secure the Shield cover of Power board as indicated in Figure 26.

Note: When installing the Shield cover, RTV need to be used to prevent buzz and vibration. The location for RTV is same as the white glue that is originally installed.

Figure 26. Shield Cover Removal

8.3 Remove the 1 screw that secure the Power board. See Figure 27.

Figure 27. 1 screw Location

9. Pole Switch Board Removal

9.1 Perform procedure 2.

9.2 Remove the 1 screw securing the Pole Switch board as indicated in Figure 28 .
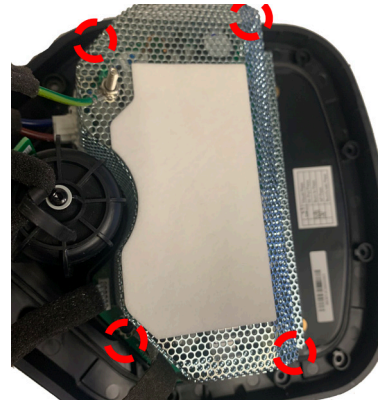

Figure 28. 1 screw Removal

DISASSEMBLY PROCEDURE

10. 3 Antenna Removal

10.1 Perform procedure 3.

10.2 Remove the 11 screws that secure the Top Cover. See Figure 29.

Figure 29. 11 screw Location

10.3 Remove the Cabinet. The *Bluetooth* Antenna is on the Top Cover. See Figure 30.

Figure 30. *Bluetooth* Antenna Removal

10.4 2 Wireless Transmitter Antenna location on the I/O Frame. See Figure 31.

Part number: 869515-0010 & 869515-0020

Note:
• Use a spudger / screwdriver to separate the green adhesive.

• RTV may be used if the green adhesive is not available for reassembly.
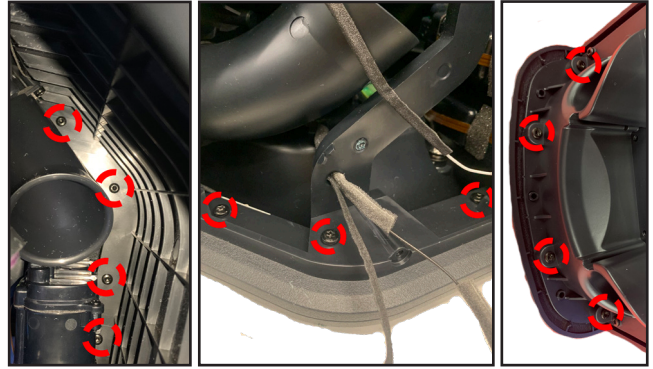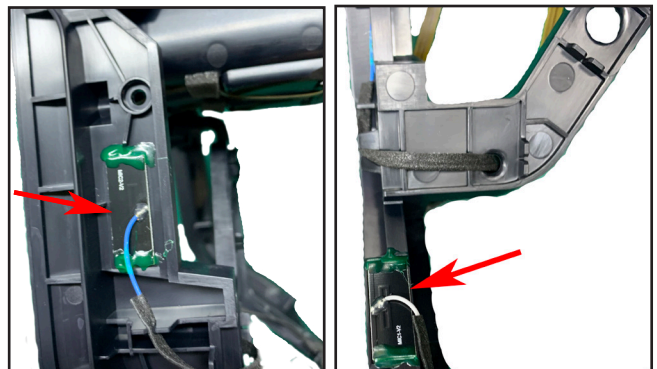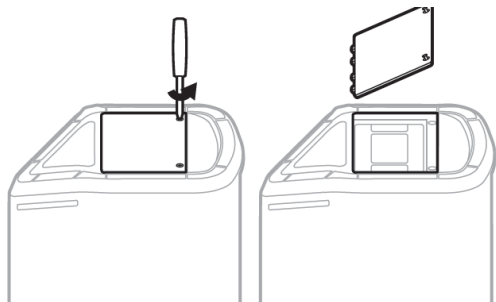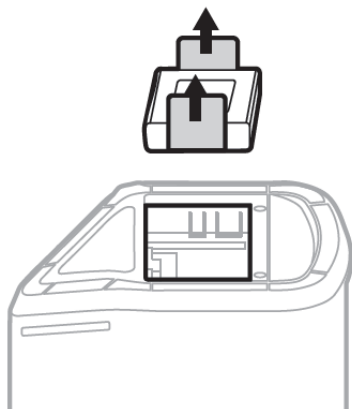

Figure 31. The Location for 2 Transmitter Antenna
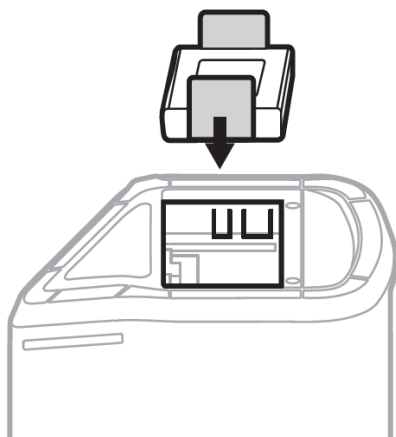
REPLACE THE SYSTEM BATTERY

1. Press the Power button to power off the system, then disconnect the system from power.

2. Turn the system upside down. Loosen the two screws, then remove the bottom plate.

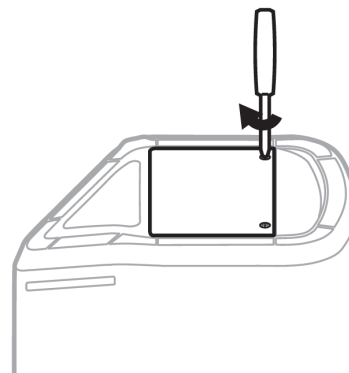**3**. Remove the old battery using the pull tabs.

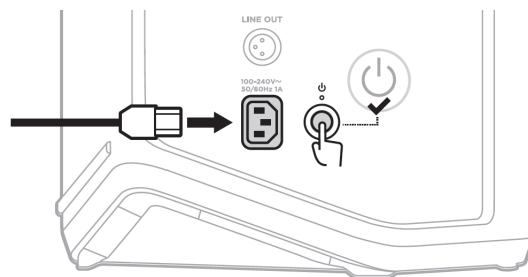**4**. Insert the new battery, ensuring the connector pins line up appropriately.

5. Replace the bottom plate, then tighten the two screws until secure.

6.Connect the system to power.

7.Press the Power button to power on the system.

Note: The replacement battery remains in Sleep mode until the system is connected to AC (mains) power and powered on.

TEST PROCEDURE

Required Equipment:
1. Bose S1 Pro+ Wireless PA System (unit under test)
2. Audio Signal Generator, Audio Precision ATS-1 or equivalent
3. iPod Touch/Smart Phone with audio test files / music installed
4. Multi-meter
5. Cables listed below:
   - Male XLR audio cable
   - 1/8 inch audio cable
   - 1/4 inch RS/TRS audio cable
   - AC Line cord - per region - refer to packaging part list
6. Bose Wireless Transmitter

Set-up & Connections:
- Connect the Power Stand AC line cord to AC Mains.

Functional Tests:

1. Button and Knob Functionality Test
   Refer to the Figure at right for this test

1.1 Press the Power button (15) to turn on the unit. Verify that the power light (14) which glows solid white.

1.2 Rotate the Channel 1 Channel Control knob (4). Verify that the LED's light on the Channel display (5) as you rotate.

1.3 Press and hold the Channel 1 Channel Parameter Control to step through each of the selections. Verify that the associated additional controls menu.

1.4 Repeat steps 1.2 and 1.3 for the two remaining channels.

Note: The Signal/Clip LED's (3) will be tested during the signal input tests later in this procedure.

1.5 Remove the cap (1) and insert the transmitter into the charging port for Channel 1 & 2. Verify the battery icon with a lightning bolt next to it briefly appears.

Note: A lightning bolt icon then appears in the upper-right corner of the display.
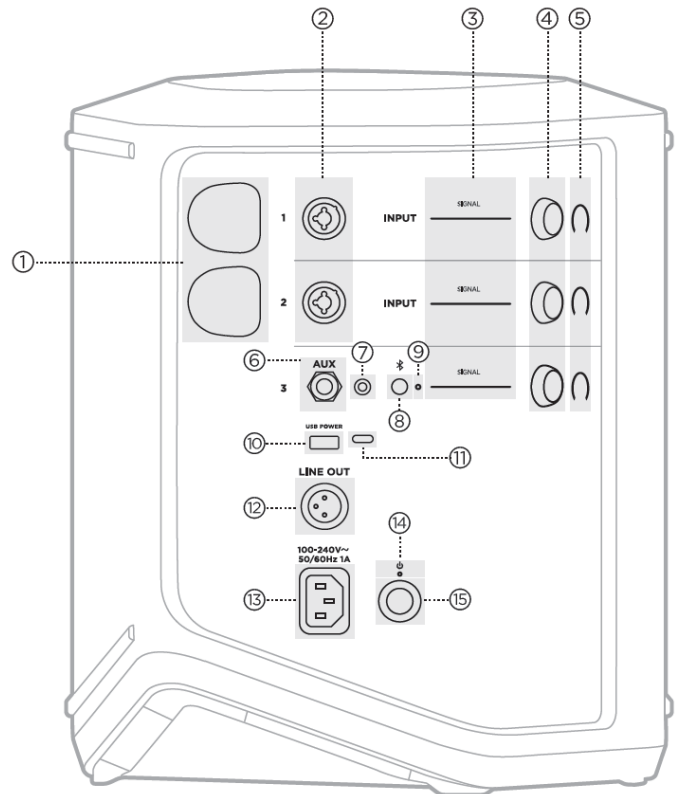
TEST PROCEDURE

2. Line Input / Output Verification Tests

2.1 Connect the AC power cord to the power port and to AC Mains. Press the Power button (15) to turn on the unit. The button should illuminate solid white.

2.2 Set the channel 1 volume control (4) to 50%.

2.3 Input a balanced 150 mV, 1 kHz audio signal into the Channel 1 audio input (2). Reference a dB meter to the input level.

2.4 Measure the output level at the Line Out jack (12). This is a balanced output. Output level should be 0.0dB +/- 2dBV, THD <1%-10%.

2.5 Change the input frequency to 20 Hz. Reference a dB meter to the input level.

2.6 Measure the output level at the Line Out jack (12). Output level should be 0.0dB +/- 2 dBV, THD <1%-10%.

2.7 Change the input frequency to 20 kHz. Reference a dB meter to the input level.

2.8 Measure the output level at the Line Out jack (12). Output level should be 0.0dB +/- 2 dBV, THD <1%-10%.

2.9 Repeat steps 2.2 to 2.8 for the Channel 2 XLR/TRS/TS input and Channel 3 Aux 1/4" and 1/8" inputs.

3. System Sweep Test

3.1 Connect the AC power cord to the power and to AC Mains. Press the Power button (15) to turn on the unit. The button should illuminate solid white.

3.2 Set the Channel 1 volume control (4) 100%.

3.3 Apply a 250mV, 1kHz balanced audio signal into the channel 1 audio input (2).

3.4 Verify that the Signal/clip indicator (3) is lit green. Sweep the input frequency 40Hz to 2kHz over a period of six seconds. Listen from a distance of 12 - 20 inches (30 - 50cm). Verify that you hear no buzzing, air leaks or other artifacts. Repeat sweep 3 times.

3.5 Set the input frequency to 1kHz. Rotate the Channel 1 control (4) to change the volume level between 0 and 100%. Verify that the sound output level changes and that there is no noticeable distortion or other audio artifacts.

3.6 Set the volume control to 100%. Slowly increase the input signal level from the Audio Signal Generator. Verify that the Signal indicator changes from Green to Red. Reduce the input level back to 250mV.

3.7 Press the Channel 1 control to change function to Treble. Rotate the control to change the treble level. Verify that the treble changes. Press the control to change to Bass and apply a 250mV, 200Hz balanced audio signal into the channel 1 audio input (2). Verify that the bass level changes. Press the control to change to Reverb. Verify that the reverb level changes when you rotate the control.

TEST PROCEDURE

3.8 Repeat steps 3.2 to 3.6 for the Channel 2 XLR/TRS/TS input and Channel 3 Aux 1/4" and 1/8" inputs.

4. *Bluetooth* Connection and Bose Music App Test

4.1 Press and hold the *Bluetooth* button (8) for 2 seconds. It is located beside the Channel 3 AUX input. It will flash BLUE while the S1 Pro+ is discoverable.

4.2 Using a Smart phone or similar, open your *Bluetooth* connections settings. Look for the S1 Pro+ and connect to it. Once you are connected the *Bluetooth* button, the BLUE will illuminate solid white. While connected, stream music audio and verify that you have clean audio playback.

4.3 Download and install Bose Music app on the Smart phone or other device. It is available at the Apple App Store and Google Play. Open the app and verify that you can connect to the product and control it using the app. Note: Bose Music app operates via Bluetooth.
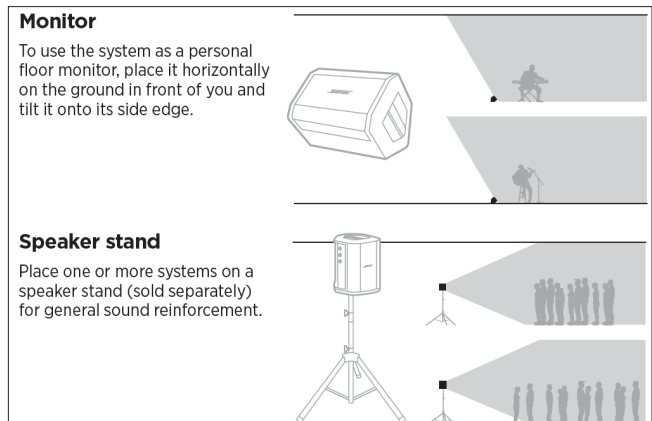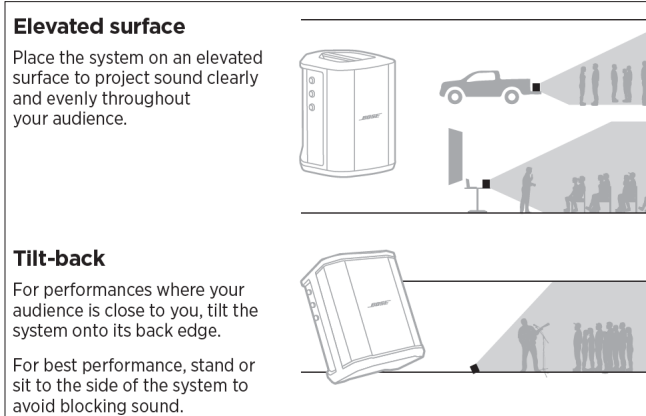
5. Orientation EQ Test, Channel 1 or 2

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

5.2 Apply 100mv, 500Hz, sinewave to channel input.

5.3 Position the system in the orientation as shown in the examples below. Elevated surface, Tilt-back, Monitor and Speaker stand.

5.4 Observe slight volume changes for each position.

Elevated surface

Place the system on an elevated surface to project sound clearly and evenly throughout your audience.

Tilt-back

For performances where your audience is close to you, tilt the system onto its back edge.

For best performance, stand or sit to the side of the system to avoid blocking sound.

Monitor

To use the system as a personal floor monitor, place it horizontally on the ground in front of you and tilt it onto its side edge.

Speaker stand

Place one or more systems on a speaker stand (sold separately) for general sound reinforcement.

6. Pole Mount Switch Test

6.1 Perform procedure 5.1.

6.2 Locate the Pole mount receptical at the bottom of the unit as shown.

6.3 The arrow indicates the Pole switch.

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

TEST PROCEDURE

7. Button Extended Functions Test

7.1 Perform the button tests below to verify extended functionality of the buttons/control.

Product I/O	User control	Trigger	User action
	Power button	Short press the power button when system is off/on	Power LED on and system power on/off.
		Press and hold the button for 10 sec	"Resetting the system" appears on the channel displays then all the settings will be set to default and reboot the system.
	BT button	Press and hold the BT button for 2 seconds	BT LED will blink in 2Hz (0.5 sec on and 0.5 sec off). Start the BT pairing/Disconnect any BT connection.
		Press and Hold 10 seconds	*Bluetooth* factory reset and clear all current devices.
	Channel 1 or 2 Channel controls button	Rotate the channel control	Singal/Clip LED will be ON if inserting. Volume adjust.
		Press and Hold the Channel 1 or 2 Channel controls 10 seconds	Additional controls menu appears on the channel display.
		Press the channel control	Select appropriate item.
		Rotate the channel control	Highlight the appropriate preset.
		Press the channel control	To select the item.
		Press and Hold the Channel 1 or 2 Channel controls	Additional controls menu disappears on the channel display.
	Channel 3 Channel controls button	Rotate the channel control	Singal/Clip LED will be ON. Volume adjust.
		Press and Hold the Channel 3 Channel controls 10 seconds	Additional controls menu appears on the channel display.
		Press the channel control	Select appropriate item.
		Rotate the channel control	Highlight the appropriate preset.
		Press the channel control	To select the item.
		Press and Hold the Channel 3 Channel controls	Additional controls menu disappears on the channel display.

7.2 Before returning the system to the customer, Factory Default the system by pressing and holding the Power Button for 10 seconds.

TEST PROCEDURE

8 Reset the system

8.1 Press and hold the Power button for 10 seconds until the power light turns off and a message appears on the channel displays.
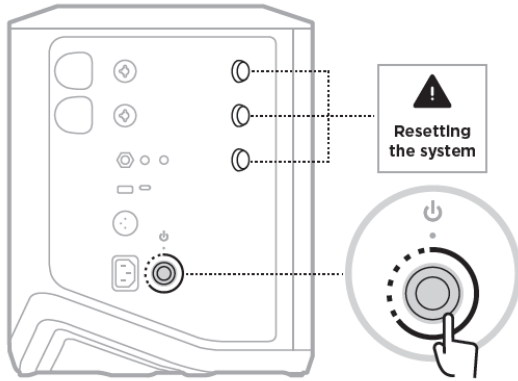
8.2 The system reboots.When the reset is complete, the power light glows solid white.

Note:
a. You can restore your channel and system settings after a system reset using the Bose Music app.

b. The first step to troubleshooting should be to perform a full system reset to ensure a consistent starting point.

8.3 Update the system

To check for and download system software updates, use your computer to visit the Bose updater website at: btu.Bose.com

For more detailed instructions, visit: support.Bose.com/S1ProPlusUpdate

9 Reset a wireless transmitter

9.1 Press and hold the Power button for 10 seconds until the power light turns off.

9.2 Update a wireless transmitter

When you insert a wireless transmitter into either of the wireless transmitter charging ports, the system checks whether a software update is available. If it is, follow the instructions on the channel display to install the update.

10 Charge your mobile device using the USB charging port

10.1 Connect one end of a USB-A charging cable (not provided) to the USB POWER port on the system.

10.2 Connect the other end to your mobile device.
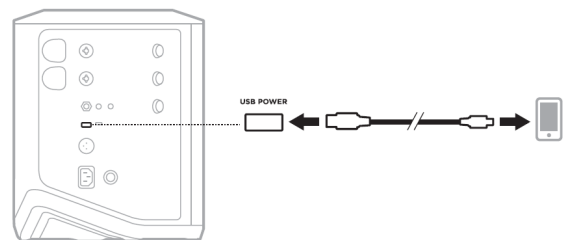
SYSTEM BATTERY CHARGING AND TEST

11. Charging the System Battery

11.1 When the S1 Pro+ is plugged into AC Mains, the Power light pulses white to indicate that the system battery is charging. When the battery is fully charged, the power light turns off.
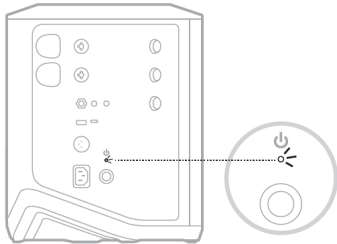
12 System Battery Charge Indicator

12.1 If the system is powered on, on the Channel 3 display, a lightning bolt icon appears next to the battery icon to indicate that the system battery is charging.
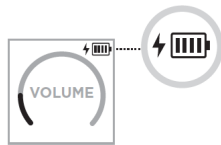
12.2 When the battery is fully charged, the lightning bolt icon disappears.

13. System Battery Level Test

13.1 On the Channel 3 display, battery icons show the system battery level and charging status.

ICON	SYSTEM BATTERY LEVEL
	67% - 100%
	34% - 66%
	10% - 33%
	0% - 9%
	67% - 100% and charging
	34% - 66% and charging
	10% - 33% and charging
	0% - 9% and charging

Note: The charging status appear in the upper-right corner of the display.
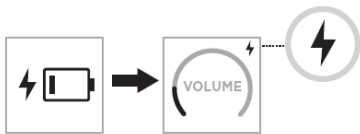
TRANSMITTER CHARGING AND TEST

14. Charging a Wireless Transmitter

14.1 Fully insert the wireless transmitter into the wireless transmitter charging port for either Channel 1 or 2.

14.2 If the system is powered on, on the channel display, a battery icon with a lightning bolt next to it briefly appears to indicate that the transmitter battery is charging. A lightning bolt icon then appears in the upper-right corner of the display.

14.3 When the transmitter is fully charged, the lightning bolt icon disappears.

15. Wireless Transmitter Battery Level Test

15.1 Remove the transmitter from the wireless transmitter charging port.

15.2 Check the battery icon on the channel display.

ICON	WIRELESS TRANSMITTER BATTERY LEVEL
	67% - 100%
	34% - 66%
	10% - 33%
	0% - 9%
	67% - 100% and charging
	34% - 66% and charging
	10% - 33% and charging
	0% - 9% and charging
	Charging
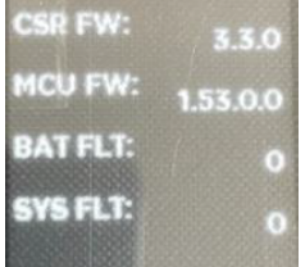
Note: You can also check the transmitter battery level by powering the transmitter on.

LIGHT ACTIVITY	SYSTEM STATE
Blinks white 4 times (when powering on)	75% - 100% battery level
Blinks white 3 times (when powering on)	50% - 75% battery level
Blinks white 2 times (when powering on)	25% - 50% battery level
Blinks white 1 time (when powering on)	10% - 25% battery level
Solid white	Powered on or charging
Blinking red	Transmitter battery low
Solid red	Error - contact Bose customer service

CHECK FIRMWARE VERSIONS ON OLEDS

S1 Pro+ system comprises of following items which are updatable. It is important to make sure that these components are updated properly.

- CSR68015 *Bluetooth* SoC
- STM32F401VE I/O MCU
- SYNCOMM Wireless RX Modules Ch1/Ch2
- Transmitters (TX STM32L01F4 MCU + SYNCOMM Wireless TX Module)

Method	What OLED will show	Sample OLED screen
Press and hold Ch1 Encoder for > 10 Seconds.	Ch1 OLED will show: - 1. Ch1 Wireless RX module FW version 2. Transmitter MCU FW version 3. Transmitter TX Module FW version	RX1 MDL FW: 09.00 TX1 MCU FW: 01.09 TX1 MDL FW: 09.00
Press and hold Ch2 Encoder for > 10 Seconds.	Ch2 OLED will show: - 1. Ch2 Wireless RX module FW version 2. Transmitter MCU FW version 3. Transmitter TX Module FW version	RX2 MDL FW: 09.00 TX2 MCU FW: 01.09 TX2 MDL FW: 09.00
Press and hold Ch3 Encoder for > 10 Seconds.	Ch3 OLED will show: - 1. CSR FW version 2. System STM32 FW version 3. Battery Fault code 4. System Fault code	CSR FW: 3.3.0 MCU FW: 1.53.0.0 BAT FLT: 0 SYS FLT: 0

Note: - Ch1 and Ch2 OLED will show Transmitter related information only if Transmitter is available in the system bay.

HI-POT TEST

1. Hi-Pot Test

THIS IS A MANDATORY TEST

CAUTION - All units that are disassembled as part of a repair MUST be Hi-Pot tested before being returned to the customer.

This test applies a high voltage to the AC line cord and measures the current leakage to the chassis and/or other metal parts on the outside of the unit to check for potential shock hazards.

If the unit fails Hi-Pot test, it must be returned to the technician for troubleshooting and repair of the problem, after which it must be Hi-Pot tested again.

Hi-Pot Tester Settings:

Type of product: 100-240 VAC 3 wire Class I
Test Voltage: 1592 VAC
Trip Current Limits: 0.5mA min, 10mA max
Ramp: 1 second
Dwell: 3 seconds

Procedure

1.1 Connect the positive side (hot) of the Hi-Pot tester to both terminals of the AC mains input.

1.2 Connect the return of the Hi-Pot tester to the channel 1 to 3 audio connector ground connections. Pin 1 on the channel 1 and 2 XLR combo jacks, sleeve of 1/8" and 1/4" inputs and the shell of the Service USB-C jack.

This test must be performed only after the system has been completely assembled. Failure of this test indicates a faulty transformer, defective or incorrectly dressed primary wiring, improperly attached leads, surface contamination of either the power board or the Main-I/O board, or incorrectly adjusted trip point on tester.
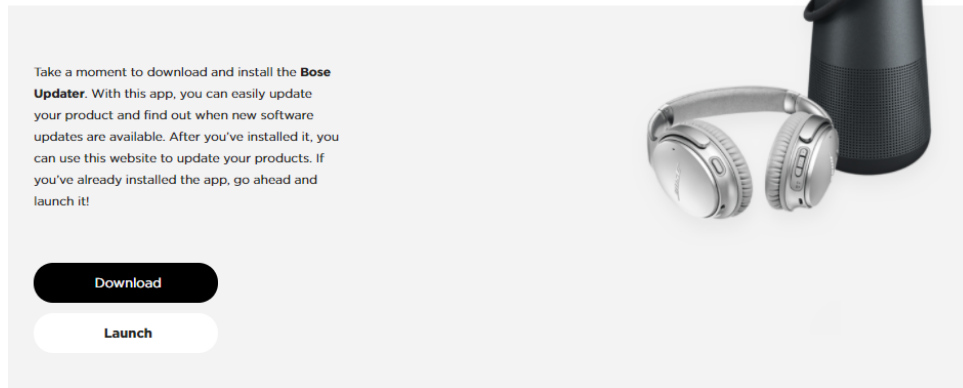
SOFTWARE UPDATE

These instructions explain how to update the firmware of your S1 Pro+ Wireless PA System.

Note: *A USB-C cable is required (not included with your product). The S1 Pro+ Wireless PA System is not compatible with Thunderbolt 3 cables.*

Compatible Web Browsers	
Windows	Google Chrome, Mozilla Firefox, Microsoft Edge
Mac	Google Chrome, Mozilla Firefox

1. On a computer, open a web browser and go to **btu.bose.com**.
   Note: *Not compatible with Internet Explorer or Safari.*

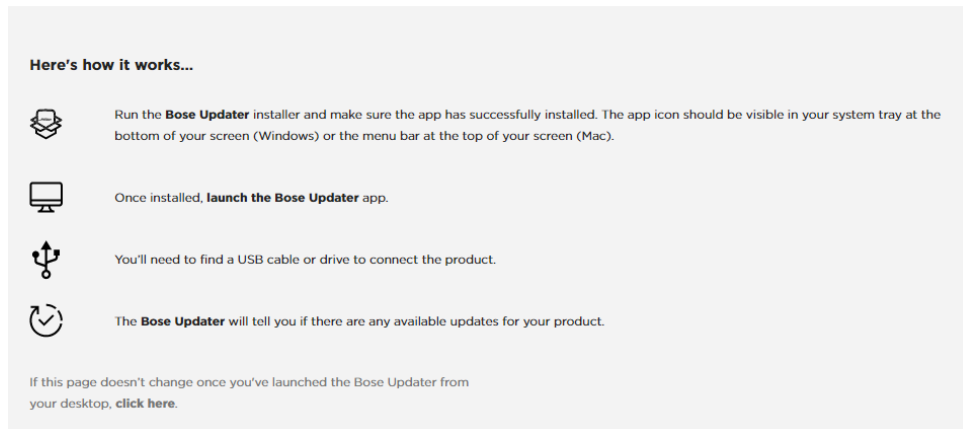2. Click **Download** to download the **Bose Updater.**

Bose Updater

Take a moment to download and install the **Bose Updater**. With this app, you can easily update your product and find out when new software updates are available. After you've installed it, you can use this website to update your products. If you've already installed the app, go ahead and launch it!

Download

Launch

3. View the End-User License Agreement, then click **I Agree**.

4. Install the **Updater**.

Bose Updater

Here's how it works...

Run the **Bose Updater** installer and make sure the app has successfully installed. The app icon should be visible in your system tray at the bottom of your screen (Windows) or the menu bar at the top of your screen (Mac).

Once installed, **launch the Bose Updater** app.

You'll need to find a USB cable or drive to connect the product.

The **Bose Updater** will tell you if there are any available updates for your product.

If this page doesn't change once you've launched the Bose Updater from your desktop, **click here**.

5. Once installed, open the **Updater**.

6. Plug your product into a power source.

7. Connect your product to your computer using a USB-C cable. The **Updater** will identify your product automatically.

SOFTWARE UPDATE

8. If your product needs a software update, your screen will read, **There's an update available for your product!**

Bose Updater

S1 Pro+ Wireless PA System

There's an update available for your product!

Update Now

Version 1.0.1

This may take a minute. Make sure you're connected to the internet and don't close the browser or **Bose Updater**.

Initial release.

Product Version: 1.0.0

- DO NOT DISCONNECT DURING UPDATE
- IF YOUR PRODUCT IS NOT UPDATING, CONTACT US

9. Click **Update Now**.
   Note: Do not unplug or power off your product while the update is in progress.

Bose Updater

S1 Pro+ Wireless PA System   20%

Updating your product...

Version 1.0.1

This may take a minute. Make sure you're connected to the internet and don't close the browser or **Bose Updater**.

- DO NOT DISCONNECT DURING UPDATE
- IF YOUR PRODUCT IS NOT UPDATING, CONTACT US

10. Once the update is complete, your screen will read, **Your product is now up-to-date!**.

Bose Updater

S1 Pro+ Wireless PA System   100%

Your product is now up-to-date!

You're all set!

If you'd like to update a different product, connect it to your computer. If you're done, you can disconnect your product and quit the app.

SERVICE MANUAL REVISION HISTORY

Date	Revision Level	Description of Changes	Changes Driven By	Pages (s) Affected
6/9/2023	00	Document released at revision 00	Initial Release	ALL
11/2/2023	01	Update QSG part numbe		P7
11/8/2023	02	Update Encoder Switch part number		P29
11/30/2023	03	Add note for item 137		P9
12/1/2023	04	Add the new page for "Check FW versions on OLEDs".		P46

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