

**Lifestyle<sup>®</sup> PS 18, 28 and 48  
Digital Acoustimass<sup>®</sup> Powered Speakers**

100V, 120V, 230V, Dual Voltage



Lifestyle<sup>®</sup> 35 Home Theater System  
5 Jewel Cube<sup>®</sup> Speakers  
PS48 bass module



Lifestyle<sup>®</sup> 28 Home Theater System  
5 Double Cube Speakers  
PS28 bass module



Lifestyle<sup>®</sup> 18 Home Theater System  
5 Single Cube Speakers  
PS18 bass module

Power PCB, Assembly - 260327-001, Bare PCB - 266459-001  
AMP PCB, Assembly - 266999-0, Bare PCB - 267083-001  
DSP PCB, Assembly - 267391-0, Bare PCB - 267086-001

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## Warranty

The Lifestyle® PS18/28/35 powered speaker system is covered by a limited 1-year transferable warranty.

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

## SAFETY INFORMATION

1. Parts that have special safety characteristics are identified by the symbol on  schematics or by special notes on the parts list. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the unit to the customer. Use the following checks to perform these measurements:

**A. Leakage Current Hot Check**-With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Refer to UL6500 paragraph 9.1.1. Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 "Leakage Current for Appliances" and Underwriters Laboratories (UL) 6500, IEC 60065 paragraph 9.1.1. With the unit AC switch first in the ON position and then in OFF position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the unit (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the unit power cord plug in the outlet and repeat test. ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE UNIT TO THE CUSTOMER.

**B. Insulation Resistance Test Cold Check**-(1) Unplug the power supply and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the unit. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and each exposed metallic cabinet part on the unit. When testing 3 wire products, the resistance measured to the product enclosure should be between 2 and infinite Meg ohms. Also, the resistance measured to exposed output/input connectors should be between 4 and infinite Meg ohms. When testing 2 wire products, the resistance measured to exposed output/input connectors should be between 4 and infinite Meg ohms. 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.

## 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.

**CAUTION: THE BOSE® PS 28 AND PS 35 POWERED SPEAKER CONTAINS NO USER-SERVICEABLE PARTS. TO PREVENT WARRANTY INFRACTIONS, REFER SERVICING TO WARRANTY SERVICE STATIONS OR FACTORY SERVICE.**

# Specifications


## Mechanical

<b>Dimensions:</b>	Bass Module:	8.0" W x 23.0" D x 16.0" H (20.32 x 58.42 x 40.64 cm)
	Single Satellite:	3.1" W x 4.0" D x 3.1" H (7.0 x 10.2 x 7.9 cm)
	Double Satellite:	3.1" W x 4.0" D x 6.02" H (7.8 x 10.2 x 15.7 cm)
	Jewel Cube <sup>®</sup> speaker:	2.2" W x 8.0" D x 2.6" H (39.4 x 20.3 x 6.6 cm)
<b>Weight:</b>	Module:	35.9 lb (16.3 kg)
	Single Satellite:	1.1 lb (0.5 kg)
	Double Satellite:	2.4 lb (1.1 kg)
	Jewel Cube speaker:	1 lb (0.5 kg)

## Electrical

Drivers:	Bass module:	Two woofers, 5 1/4", 2.33 Ohms, (wired in parallel)
	Single Satellite speaker:	One Twiddler™ speakers per cube, 50 mm, 4 Ohms
	Double Satellite speaker:	Two Twiddler speakers per cube, 50 mm, 4 Ohms (wired in series)
	Jewel Cube speaker:	Two Twiddler speakers per cube, 2 1/4", 3.2 Ohms (wired in series)
Amplifier power:	Bass Channel:	125W, <0.2% THD, 40 Hz-200 Hz, 120 Vrms AC mains
	L/R/C/LS/RS:	20W, <0.2% THD, 200 Hz-15 kHz, 120 Vrms AC mains
Input impedance:	Bass Module:	1.16 Ohms (two 2.33 Ohm woofers wired in parallel)
	Single Satellite:	4 Ohms (one 4 Ohm Twiddler speaker)
	Double Satellite:	8 Ohms (two 4 Ohm Twiddler speakers wired in series)
	Jewel Cube Speaker:	6.4 Ohms (two 3.2 Ohm Twiddler speakers wired in series)
L/R/C/LS/RS output distortion:	<0.1% THD at 0.5W	
Bass distortion:	<0.2% THD at 0.5W	
L/R/C/LS/RS output noise:	<500 uVrms, A weighted	
Bass output noise:	<2 mVrms, unweighted	
L/R/C/LS/RS DC offset:	<25 mVdc	
L/R/C/LS/RS balance:	±2.0 dB	
Channel separation:	>40 dB at 1 kHz	(stereo mode)
	>30 dB at 10 kHz	
Turn-on delay:	1.5 seconds maximum	
Turn-off delay:	200 ms maximum	
Main Voltage:	USA/Canada : 120 VAC, 60Hz	
	Europe, UK, AUS : 230/240VAC, 50Hz	
	Dual Voltage : 115/230VAC, 50/60Hz	
Inrush current:	20A peak for first 33.3 msec.	

## Part List Notes

1. This part is not normally available from customer service. Approval from the Field Service Manager is required before ordering.
2. The individual parts located on the PCB are listed in the part list.
3.  This part is critical for safety purposes. Failure to use a substitute replacement with the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards.
4. This part is set to the Lifestyle® 28/38 system equalization. To use this part on a Lifestyle® 18, 35 or 48 system, refer to the instructions located on page 31 for setting the Equalizer using TAP commands. Except for the Lifestyle® 18 system, in place of using TAP commands to set the EQ, the customer may use the Bose® AdaptIQ™ audio calibration system to customize the EQ to their room. The Lifestyle® 18 system bass module is set to provide a lower output to match the single cubes, which can only be set using TAP commands. The AdaptIQ audio calibration system is shipped with the Lifestyle® 18,28,35,38,48 system.

## Part List Table of Contents

The part list is broken into sections relative to the way the system is packaged and built, starting from the system level and ending at the component level.

**System Packaging** - Console, bass module, cube pack, essentials kit.

**Essentials Kit** - Remote, batteries, antennas, power pack, line cords, IR Blaster, TV sensor.

**Lit Kit** - Feet, owner's guide, installer's guide.

**Cube Speaker Pack** - Cubes, connection cables

**Bass Module Assembly** - Amplifier module, woofer, grille

**Amplifier Module Assembly** - Power PCB, amplifier PCB, DSP PCB

**Electrical Part List** - Resistors, Capacitors, Diodes, Transistors, ICs, Misc.

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## Lifestyle® 18 Home Theater System Packaging

Item Number	Description	Part Number	Note
1	CARTON	268787-001	
2	PACKING, INSERT, GRILL	258465	
3	PACKING, END CAP, EPS, FRONT	258466	
4	PACKING, END CAP, EPS, REAR	258475	
5	BAG, POLY	196638	
6	PACKING PAD, 29.38X21.38	258469	
7	AV28, US TUNER, RC1 AV28, EURO TUNER, RC4 AV28, JAP, IR REMOTE, RC2	266440-1019 266440-2049 266440-3029	1
8	PS18 BASS MODULE, 120V, BLACK PS18 BASS MODULE, 120V, WHITE PS18 BASS MODULE, 230V, BLACK PS18 BASS MODULE, 230V, WHITE PS18 BASS MODULE, DUAL, BLACK PS18 BASS MODULE, DUAL, WHITE	269720-119 269720-129 269720-219 269720-229 269720-619 269720-629	1, 4
9	SINGLE SAT, 5 PK, BLACK SINGLE SAT, 5 PK, WHITE	268791-119 268791-129	1
10	ESSENTIALS KIT, LS18, 120V, (US) ESSENTIALS KIT, LS18, 220V, (EURO) ESSENTIALS KIT, LS18, 230V, (UK) ESSENTIALS KIT, LS18, 240V, (AUS) ESSENTIALS KIT, LS18, DUAL	269660-1 269660-2 269660-4 269660-5 269660-6	1
11	FOAM, SHT, ADHESIVE BACK	263426	
12	GUIDE, QUICK SETUP	268796	
13	COMMITMENT LETTER	251001	

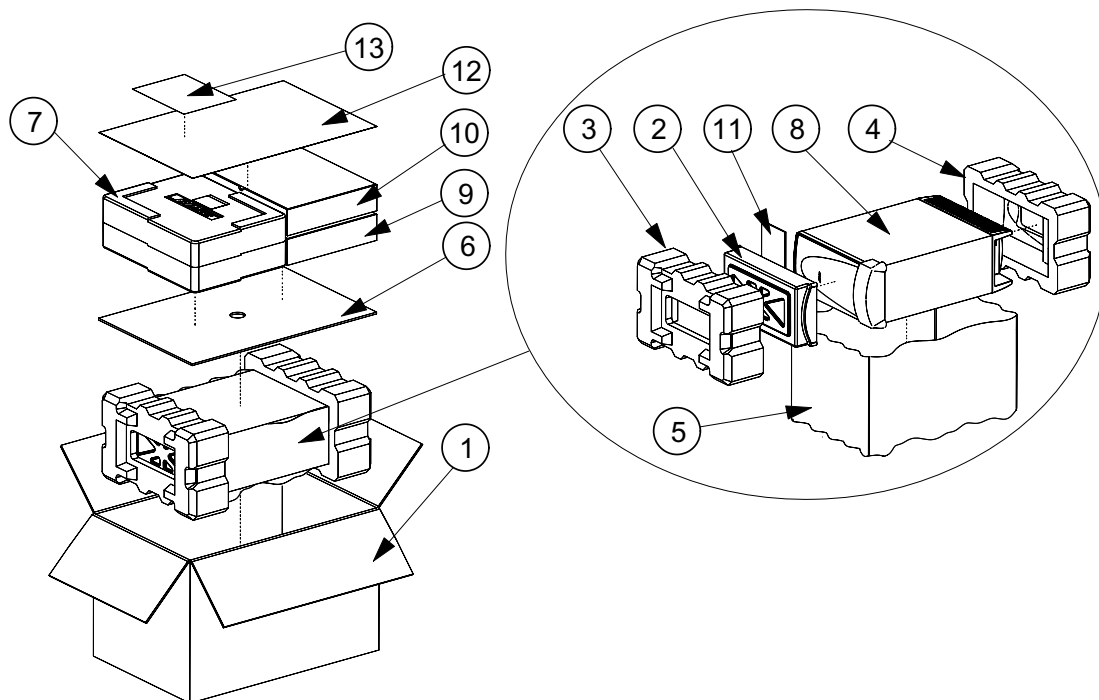


Figure 1. LS18 System Packaging Exploded View



## Lifestyle® 28 Home Theater System Packaging

Item Number	Description	Part Number	Note
1	CARTON, RSC	258474-002	
2	PACKING INSERT GRILLE	258465	
3	PACKING END CAP EPS FRONT	258466	
4	PACKING END CAP EPS REAR	258475	
5	BAG POLY	196638	
6	PACKING PAD 29.38X21.38	258469	
7	AV28, US TUNER, RC1 AV28, EURO TUNER, RC4 AV28, JAP, IR REMOTE, RC2	266440-1019 266440-2049 266440-3029	1
8	BASS MODULE, BLACK, 120V BASS MODULE, WHITE, 120V BASS MODULE, BLACK, 220V BASS MODULE, WHITE, 220V BASS MODULE, BLACK, DUAL BASS MODULE, WHITE, DUAL	269498-119 OR 269720-119 267498-129 OR 269720-129 269498-219 OR 269720-219 269498-229 OR 269720-229 269498-619 OR 269720-619 269498-629 OR 269720-629	1, 4
9	SAT ASSY, 5 PK, BLACK SAT ASSY, 5 PK, WHITE	256815-113 OR -119 256815-123 OR -129	1
10	ESSENTIALS KIT, LS-35, 120V, (US) ESSENTIALS KIT, LS-35, 220V, (EURO) ESSENTIALS KIT, LS-35, 230V, (UK) ESSENTIALS KIT, LS-35, 240V, (AUS) ESSENTIALS KIT, LS-35, DUAL	266217-1 266217-2 266217-4 266217-5 266217-6	1
11	FOAM, SHT, ADHESIVE BACK	263426	
12	GUIDE, QUICK SETUP	266254	
13	COMMITMENT LETTER	251001	

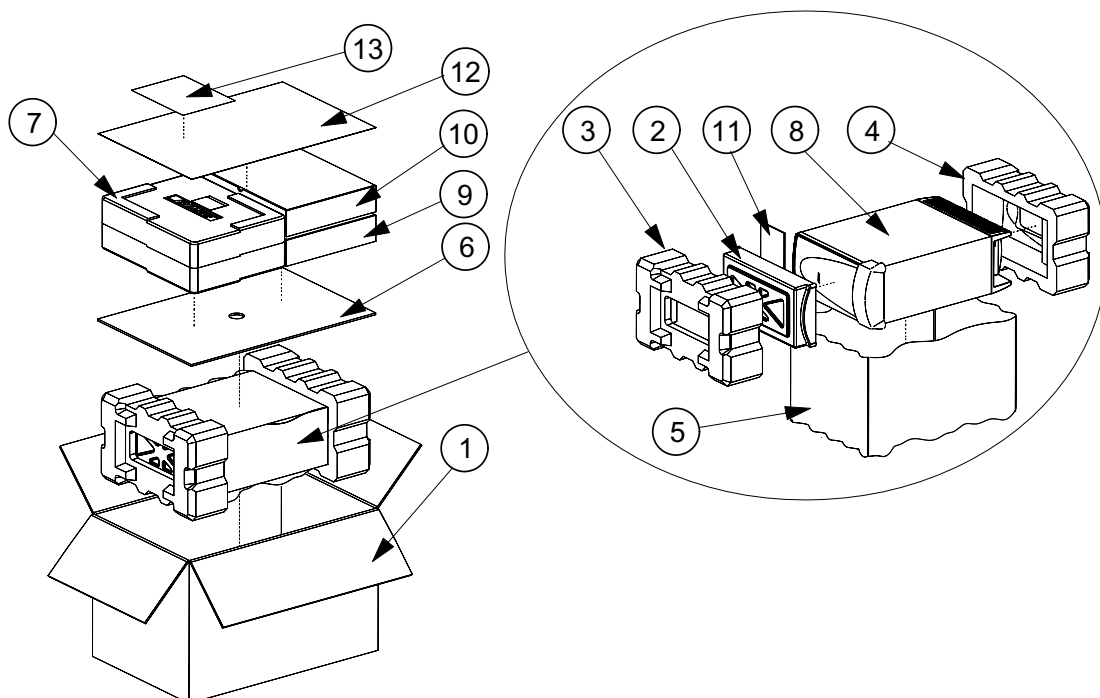


Figure 2. LS28 System Packaging Exploded View

## Lifestyle® 35 Home Theater System Packaging

Item Number	Description	Part Number	Note
1	CARTON, RSC	258474-002	
2	PACKING INSERT GRILLE	258465	
3	PACKING END CAP EPS FRONT	258466	
4	PACKING END CAP EPS REAR	258475	
5	BAG POLY	196638	
6	PACKING PAD 29.38X21.38	258469	
7	AV28, US TUNER, RC1 AV28, EURO TUNER, RC4 AV28, JAP, IR REMOTE, RC2	266440-1019 266440-2049 266440-3029	1
8	PS18/28/35, BASS MODULE, BLACK, 120V PS18/28/35, BASS MODULE, WHITE, 120V PS18/28/35, BASS MODULE, BLACK, 220V PS18/28/35, BASS MODULE, WHITE, 220V PS18/28/35, BASS MODULE, BLACK, DUAL PS18/28/35, BASS MODULE, WHITE, DUAL	269499-119 or 269720-119 266499-129 or 269720-129 266499-219 or 269720-219 266499-229 or 269720-229 266499-619 or 269720-619 266499-629 or 269720-629	1, 4
9	SAT ASSY, 5 PK, BLACK SAT ASSY, 5 PK, WHITE	256816-013 OR -019 256816-023 OR -029	1
10	ESSENTIALS KIT, LS-35, 120V, (US) ESSENTIALS KIT, LS-35, 220V, (EURO) ESSENTIALS KIT, LS-35, 230V, (UK) ESSENTIALS KIT, LS-35, 240V, (AUS) ESSENTIALS KIT, LS-35, DUAL	266218-1 266218-2 266218-4 266218-5 266218-6	1
11	FOAM, SHT, ADHESIVE BACK	263426	
12	GUIDE, QUICK SETUP	266255	
13	COMMITMENT LETTER	251001	

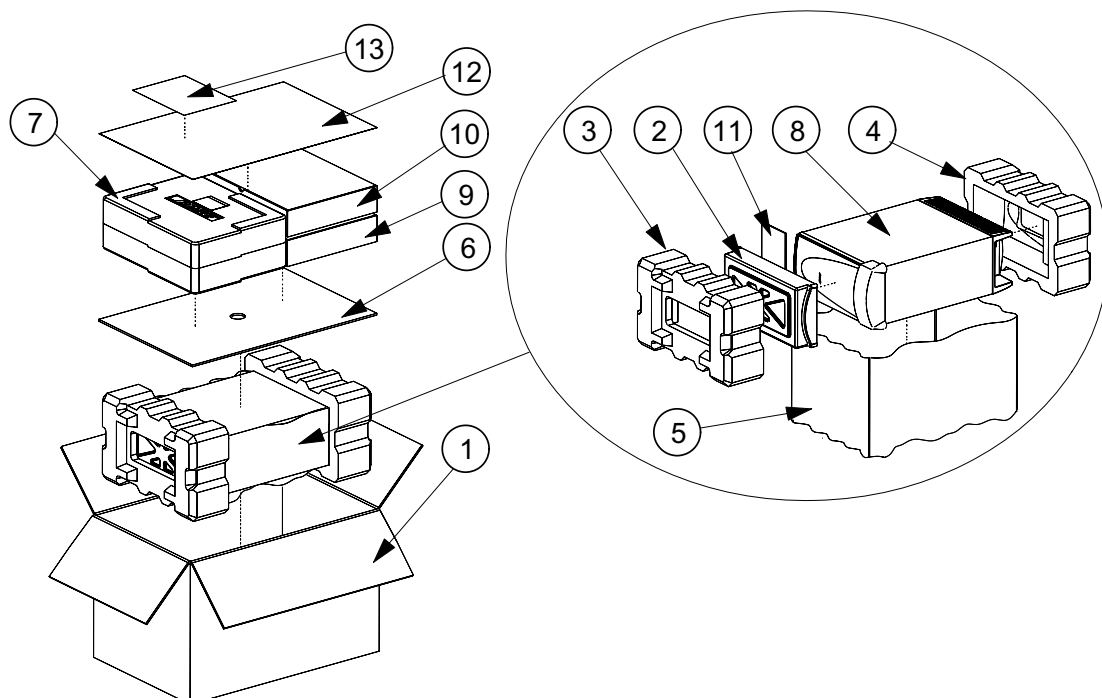


Figure 3. LS35 System Packaging Exploded View



# Lifestyle® 18/28/35 Essentials Kit Part List

Refer to figure 4

Item Number	Description	Part Number	Variant Packaging	QTY	Note
1	REMOTE CONTROL	256119-001	US, CAN, AUS, EU, UK, SE ASIA/EAST ASIA, SING	1	
	REMOTE, CONTROL EU, 40MHZ	256119-002	S. AF, MID E, DUAL-V		
2	BATTERY, AAA SIZE	179223-01	ALL	4	
3	ANTENNA, FM DIPOLE, F-CONN	148589	US, CAN, DUAL-V	1	
	ANTENNA, FM DIPOLE, PAL CONN	143185	AUS, EU, UK, SE ASIA/EAST ASIA, SING, S. AF, MID E, DUAL-V		
4	POWER PACK, 35W, 120V, DCS-91	256764-001	US, CAN	1	3
	POWER PACK, 35W, 230V, DCS-92	256764-007	AUS, UK, SE ASIA/EAST ASIA, SING		
	POWER PACK, 35W, DUAL-V, DCS-94	256764-004	EU, LATIN AMERICA, S. AF, MID E, DUAL-V		
5	ANTENNA, ASSY, AM	199824-002	ALL	1	
6	TV POWER SENSOR	258359	ALL	1	
7	LINE CORD, 120V, AV28	258491-001	US, CAN, DUAL-V	1	3
	LINE CORD, 220V, AV28	148203	EU, LATIN AMERICA, MID E, S. AF, SE ASIA/EAST ASIA, DUAL-V		
	LINE CORD, 230V, AV28	134725	UK, SING		
	LINE CORD, 240V, AV28	134726	AUS		
8	LINE CORD, 120V, PS18/28/48	263453-006	US, CAN, DUAL-V	1	3
	LINE CORD, 220V, PS18/28/48	264355-006	EU, LATIN AMERICA, MID E, S. AF, SE ASIA/EAST ASIA, DUAL-V		
	LINE CORD, 230V, PS18/28/48	264356-006	UK, SING		
	LINE CORD, 240V, PS18/28/48	264357-006	AUS		
9	BAG, POLY, 3X3MIL	194392	ALL	1	
10	IR BLASTER	260335	ALL	1	
11	TRAY PACK INSERT	258471	ALL	1	
12	CARTON, ACCY KIT	258470-001	ALL	1	
13	KIT, ADAPTIQ™	258363	ALL	1	
14	SCART ADAPTOR	266221-001	AUS, SING, EU, UK, SE ASIA/EAST ASIA, S. AF, MID E, DUAL-V	1	
15	LIT KIT, LS18	268793-1	US, CAN, LATIN AMERICA	1	
	LIT KIT, LS18	268793-2	EU, S. AF, MID E		
	LIT KIT, LS18	268793-4	AUS, UK, SING, SE ASIA/EAST ASIA		
	LIT KIT, LS28	266219-1	US, CAN, LATIN AMERICA		
	LIT KIT, LS28	266219-2	AUS, EU, S. AF, MID E		
	LIT KIT, LS28	266219-4	UK, SING, SE ASIA/EAST ASIA		
	LIT KIT, LS35	266220-1	US, CAN, LATIN AMERICA		
	LIT KIT, LS35	266220-2	AUS, EU, S. AF, MID E		
	LIT KIT, LS35	266220-4	UK, SING, SE ASIA/EAST ASIA		

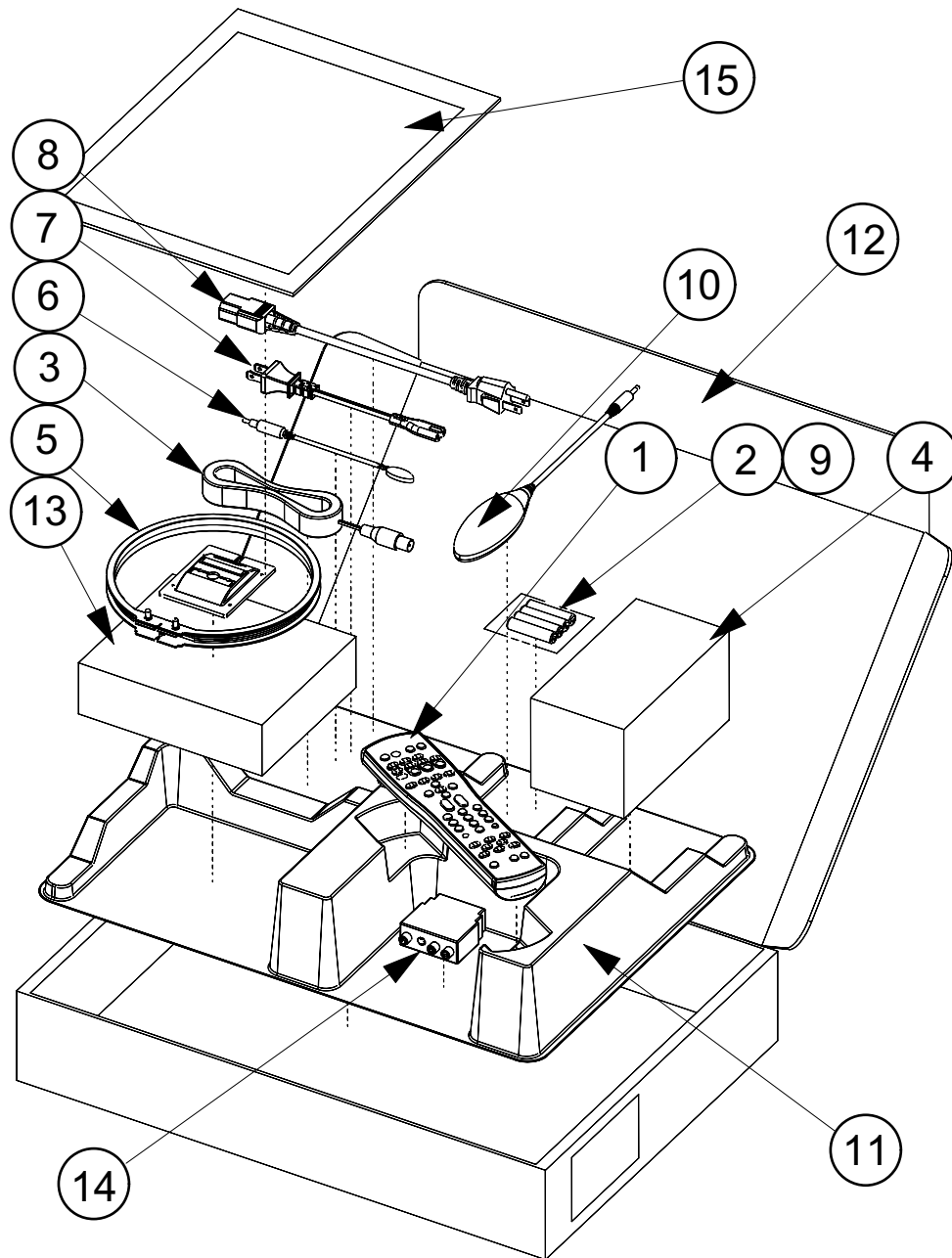


Figure 4. LS18, 28, 35 Essentials Kit Exploded View

## Lifestyle® 18 Lit Kit Part List

Description	Part Number	Variant Packaging	QTY	Note
FOOT, CUBES	178321-04	ALL	4	
FOOT, BASS MODULE	142839	ALL	4	
OPERATING GUIDE, 3 LANG	269711	ALL	1	
OPERATING GUIDE, 5 LANG	269713	EU, S. AF, MID E, DUAL-V		
INSTALL GUIDE, 3 LANG	269712	US, CAN, AUS, UK, EU, S. AF, MID E, SING, SE ASIA/EAST ASIA, DUAL-V	1	
INSTALL GUIDE, 5 LANG	269714	EU, S. AF, MID E, DUAL-V		
BAG, POLY, 14.38x9.87x2 mil	103351	ALL	1	
CARD, INFO, WARRANTY, MULTI LANG	181460	EU, S. AF, MID E, DUAL-V, AUS, UK, SING, SE ASIA/EAST ASIA, DUAL-V		
SHEET SLIP COMPONENT AUDIO	255805	ALL	1	
ADDRESS PAGE	259434	US, CAN, LATIN AMERICA	1	
CARD REGISTRATION AND WARRANTY	262933	US, CAN, LATIN AMERICA	1	
CARD, LIFESTYLE UPDATE	268157	US, CAN, LATIN AMERICA	1	
DEC OF CONF	268794	AUS, UK, SING, SE ASIA/EAST ASIA, DUAL-V	1	

## Lifestyle® 28 Lit Kit Part List

Description	Part Number	Variant Packaging	QTY	NOTE
FOOT, CUBES	178321-04	ALL	4	
FOOT, BASS MODULE	142839	ALL	4	
OPERATING GUIDE, 3 LANG	264341	ALL	1	
OPERATING GUIDE, 5 LANG	264342	AUS, EU, S. AF, MID E.		
INSTALL GUIDE, 3 LANG	264343	ALL	1	
INSTALL GUIDE, 5 LANG	264344	AUS, EU, S. AF, MID E.		
BAG, POLY, 14.38x9.87x2 mil	103351	ALL	1	
CARD, INFO, WARRANTY, MULTI LANG	181460	AUS, EU, S. AF, MID E., UK, SING, SE ASIA/EAST ASIA	1	
SHEET SLIP COMPONENT AUDIO	255805	ALL	1	
ADDRESS PAGE, BOSE	259434	US, CAN, LATIN AMERICA	1	
CARD REGISTRATION AND WARRANTY	262933	US, CAN, LATIN AMERICA	1	
CARD, LIFESTYLE UPDATE	268157	US, CAN, LATIN AMERICA	1	
DEC OF CONF	266994	AUS, EU, S. AF, MID E., UK, SING, SE ASIA/EAST ASIA	1	

## Lifestyle® 35 Lit Kit Part List

Description	Part Number	Variant Packaging	QTY	NOTE
FOOT, CUBES	183621	ALL	4	
FOOT BASS MODULE	142839	ALL	4	
OPERATING, GUIDE, 3 LANG	264341	ALL	1	
OPERATING GUIDE, 5 LANG	264342	AUS, EU, S. AF, MID E.		
INSTALL GUIDE, 3 LANG	264343	ALL	1	
INSTALL, GUIDE, 5 LANG	264344	AUS, EU, S. AF, MID E.		
BAG, POLY, 14.38x9.87x2 mil	103351	ALL	1	
CARD, INFO, WARRANTY, MULTI LANG	181460	AUS, EU, S. AF, MID E., UK, SING, SE ASIA/EAST ASIA	1	
SHEET SLIP COMPONENT AUDIO	255805	ALL	1	
ADDRESS PAGE, BOSE	259434	US, CAN, LATIN AMERICA	1	
CARD REGISTRATION AND WARRANTY	262933	US, CAN, LATIN AMERICA	1	
CARD, LIFESTYLE UPDATE	268157	US, CAN, LATIN AMERICA	1	
DEC OF CONF	266994	AUS, EU, S. AF, MID E., UK, SING, SE ASIA/EAST ASIA	1	

### Lifestyle® 18 Single Cube Speaker, 5 Pack Packaging List

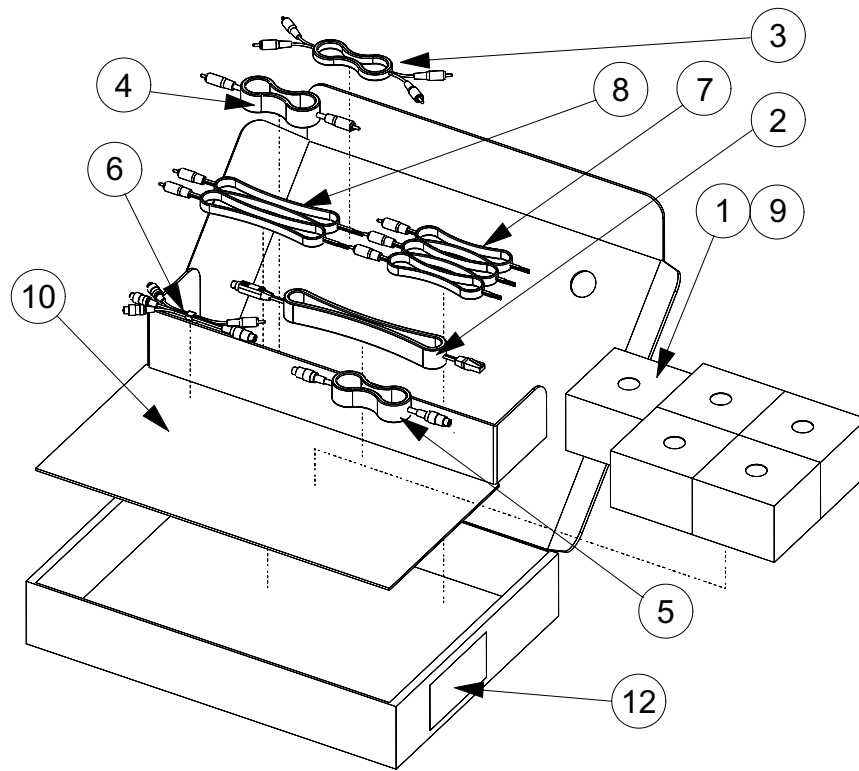
Item Number	Description	Part Number	Qty	Note
1	SATELLITE ASSEMBLY, SINGLE, BLACK SATELLITE ASSEMBLY, SINGLE, WHITE	250490-119 250490-129	5	
2	CABLE, RJ-45/8 PIN DIN	260351-002	1	
3	CABLE, AUDIO, DUAL RCA	185931-01	1	
4	CABLE, VIDEO, 6', YL	183200	1	
5	CABLE, S-VIDEO, 6'	258369	1	
6	CABLE, COMPONENT, VIDEO, ADAPTOR	260350	1	
7	CABLES, SPKR, 18 AWG, L/C/R, BLACK CABLES, SPKR, 18 AWG, L/C/R, WHITE	180643-4 176201-4	1	
8	CABLE, SPEAKER, REAR, BLACK CABLE, SPEAKER, REAR, BLACK	180644 176202	1	
9	BAG, POLY, 10X12X2mil	144677	5	
10	PACKING, INSERT	258473	1	
11	CARTON, CHIPBOARD, SATELLITE	250555-001	5	
12	CARTON, D/C	258472-001	1	

### Lifestyle® 28 Double Cube Speaker, 5 Pack Packaging List

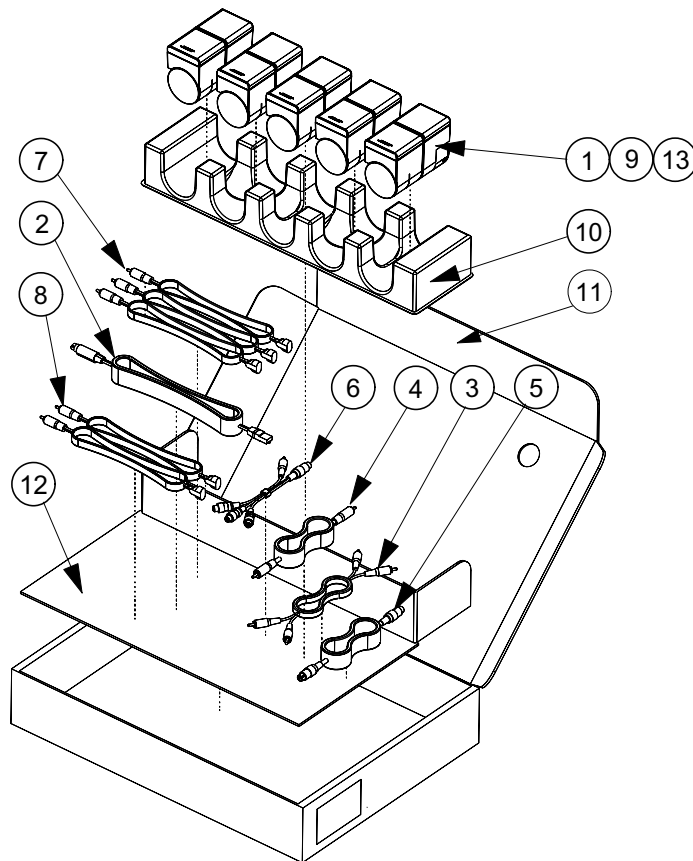
Item Number	Description	Part Number	Qty	Note
1	SATELLITE ASSEMBLY, SINGLE, BLACK SATELLITE ASSEMBLY, SINGLE, WHITE	192420-119 192420-129	5	
2	CABLE, RJ-45/8 PIN DIN	260351-002	1	
3	CABLE, AUDIO, DUAL RCA	185931-01	1	
4	CABLE, VIDEO, 6', YL	183200	1	
5	CABLE, S-VIDEO, 6'	258369	1	
6	CABLE, COMPONENT, VIDEO ADAPTOR	260350		
7	CABLES, SPKR, 18 AWG, L/C/R, BLACK CABLES, SPKR, 18 AWG, L/C/R, WHITE	180643-4 176204-4	1	
8	CABLE, SPEAKER, REAR, BLACK CABLE, SPEAKER, REAR, WHITE	180644 176202	1	
9	BAG, POLY, 10X12X2 mil	144677	5	
10	PACKING, INSERT	258473		
11	CARTON, CHIPBOARD, SATELLITE, BLUE	197330-002	5	
12	CARTON, D/C, SAT KIT	258472-001	1	

### Lifestyle® 35 Jewel Cube Speaker, 5 Pack Packaging List

Item Number	Description	Part Number	Qty	Note
1	JEWEL CUBE SPEAKER, BLACK JEWEL CUBE SPEAKER, WHITE	194420-019 194420-029	5	
2	CABLE, RJ-45/8 PIN DIN	260351-002	1	
3	CABLE, AUDIO, DUAL RCA	185931-01	1	
4	CABLE, VIDEO, 6', YL	183200	1	
5	CABLE, S-VIDEO, 6'	258369	1	
6	CABLE, COMPONENT, VIDEO ADAPTOR	260350		
7	CABLESET, 3PK, L/C/R, BLACK CABLESET, 3PK, L/C/R, WHITE	193145-04 193145-14	1	
8	CABLESET, 2PK, LS/RS, BLACK CABLESET, 2PK, LS/RS, WHITE	193146-03 193146-13	1	
9	BAG, POLY, 3X3.5X.004	185214	5	
10	SATELLITE TRAY	190211-001	1	
11	CARTON, D/C, SAT KIT	258472-001	1	
12	PACKING, INSERT	258473	1	
13	PACKING, PULL TAB, 2.25X1.75	188029-001	5	



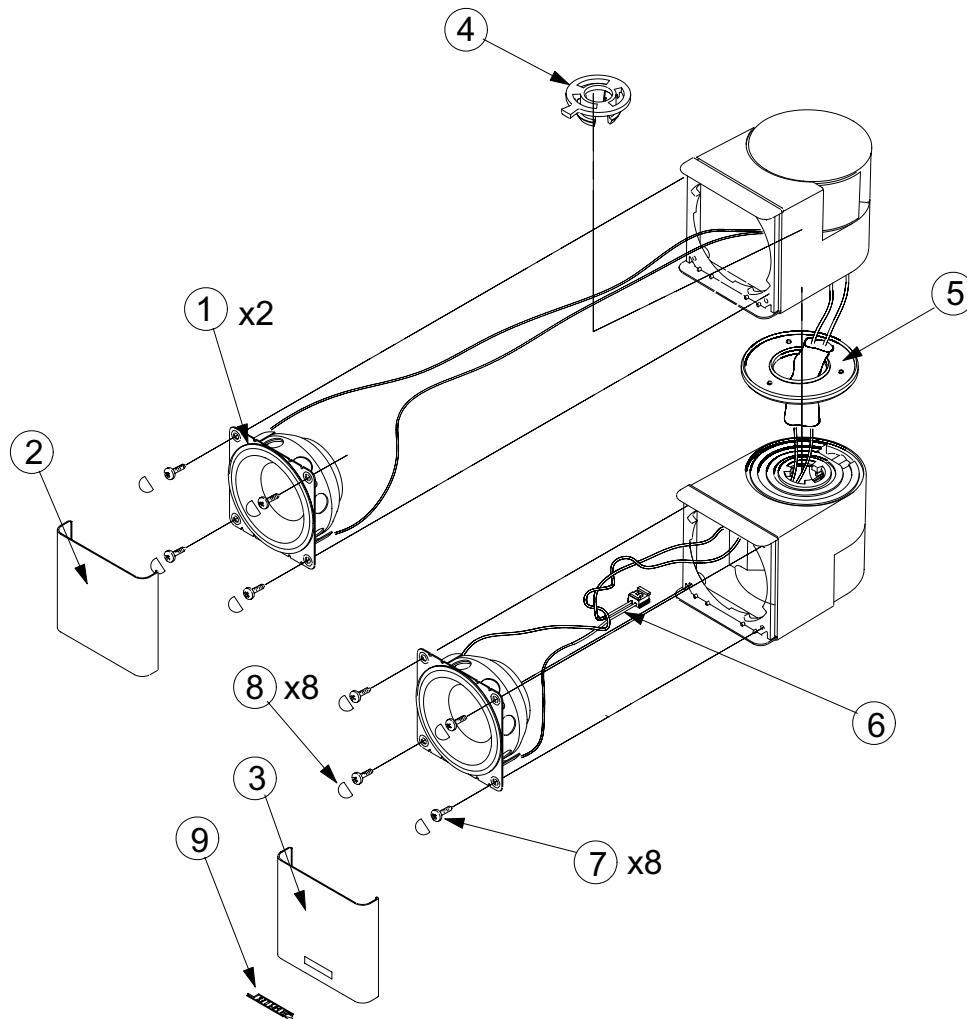
**Figure 5. LS18, 28 Cube Pack Exploded View**



**Figure 6. LS35 Cube Pack Exploded View**

## Jewel Cube® Part List

Item Number	Description	Part Number	Qty	Note
1	TWIDDLER™ ASSY, 50MM	195840	2	
2	GRILLE, CUBE, BLACK, W/O SLOT GRILLE, CUBE, WHITE, W/O SLOT	192935-01 192935-03	1	
3	GRILLE, CUBE, BLACK, W/SLOT GRILLE, CUBE, WHITE, W/SLOT	192935-02 192935-04	1	
4	SNAP RING	178709	1	
5	H-RING, SEAL, BLACK H-RING, SEAL NATURAL	178710-01 178710-02	2	
6	HARNESS ASSY, TWIDDLER	196136-01	1	
7	SCREW, HILO, 4-16x.375, PAN, XREC	181621-06	8	
8	DAMPER, ANTI-BUZZ	185951	8	
9	NAMEPLATE, BOSE, BLACK/PEWTER NAMEPLATE, BOSE, WHITE/PEWTER	178725-01 178725-02	1	

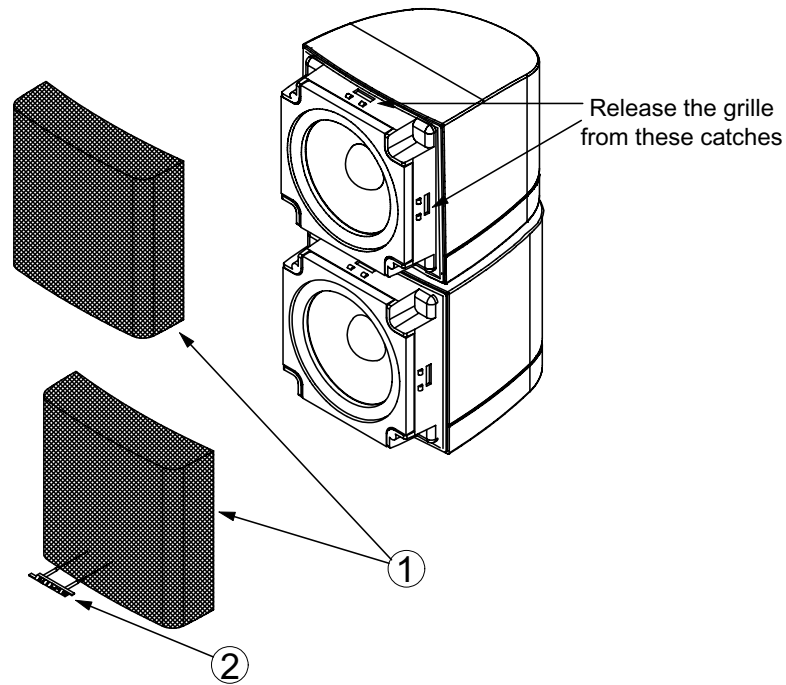


**Figure 7. Jewel Cube Exploded View**



## Single and Dual Cube Speaker Part List

Item Number	Description	Part Number	Qty	Note
1	GRILLE, BLACK	192410-019	2	
	GRILLE, WHITE	192410-029		
2	LOGO, 1" DIAMOND CUT, BLACK	193250-11	1	
	LOGO, 1" DIAMOND CUT, WHITE	193250-12		



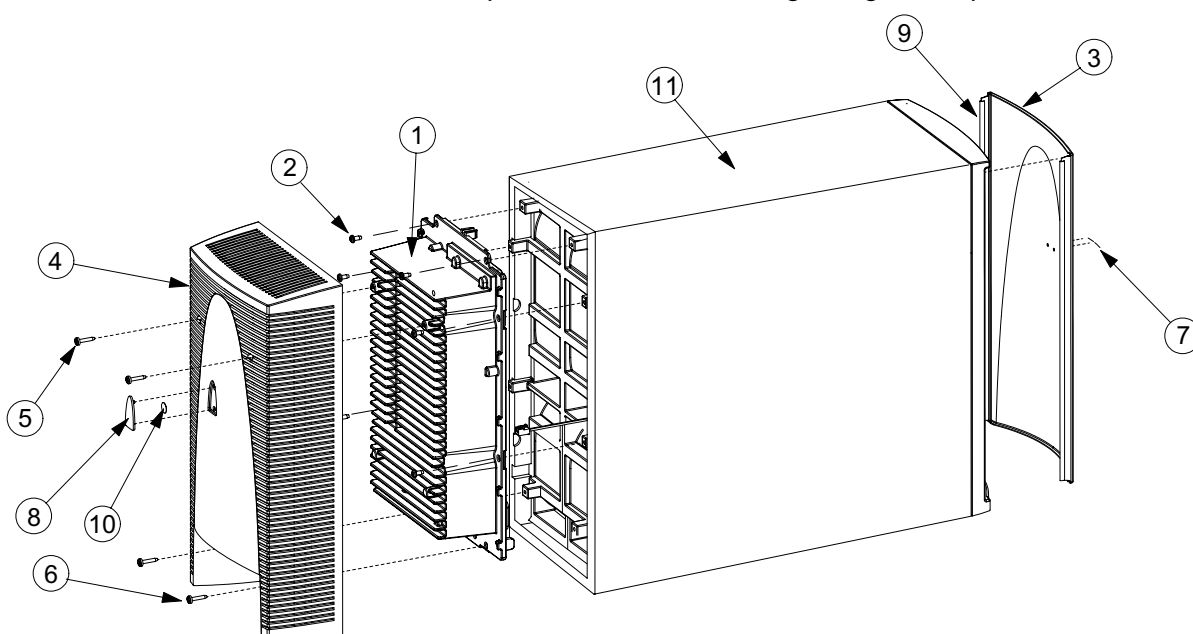
**Figure 8. Cube Exploded View**

## PS18/28/48 Bass Module Assembly Part List

Item Number	Description	Part Number	Qty	Note
1	AMP MODULE ASSY, 120V AMP MODULE ASSY, 230V AMP MODULE ASSY, 100V AMP MODULE ASSY, DUAL-V	277096-132F 277096-631F 277096-631F 277096-631F	1	1, 4
2	SCREW, TAPP, 8-11x.75, PAN, XRC/SQ	172672-12	14	
3	GRILLE, BLACK GRILLE, WHITE	256761-001 256761-002	1	
4	COVER, REAR, BLACK COVER, REAR, WHITE	256762-001 256762-002	1	3
5	SCREW, 8-32X.75, RLX, PN, QDRX, BLACK SCREW, 8-32X.75, RLX, PN, QDRX, WHITE	260400-12 193637-20	2	
6	SCREW TAPP, 8-11X1.25, PAN, XRS/C	172672-20	2	
7	LOGO, NAMEPLATE, GRILL, BLACK LOGO, NAMEPLATE, GRILL, WHITE	258484-01 258484-02	1	
8	INSERT, PLASTIC, REAR COVER, BLACK INSERT, PLASTIC, REAR COVER, WHITE	258485-01 258785-02	1	
9	GASKET, GILLE EDGE	260349	2	
10	TAPE, VHB, REAR, COVER, PLUG	262871	1	
-	WOOFER ASSY, 5.25" 2.33 OHM	256765	2	
-	GASKET, WOOFER	263455	2	

**Important - Note 4.** This part is set to the Lifestyle® 28/38 system equalization. To use this part on a Lifestyle® 18, 35 or 48 system, refer to the instructions located on page 31 for setting the Equalizer using TAP commands. Except for the Lifestyle® 18 system, in place of using TAP commands to set the EQ, the customer may use the Bose® AdaptIQ™ audio calibration system to customize the EQ to their room. The Lifestyle® 18 system bass module is set to provide a lower output to match the single cubes, which can only be set using TAP commands. The AdaptIQ audio calibration system is shipped with the Lifestyle® 18, 28, 35, 38, 48 system.

For other notes referenced, refer to the part list notes at the beginning of the part list section.



**Figure 9. Bass Module Exploded View**

## PS18/28/48 Amplifier Module Assembly Part List

Item Number	Description	Part Number	Qty	Note
11	POWER PCB ASSY, 120V POWER PCB ASSY, 230V POWER PCB ASSY, 120V/100V POWER PCB ASSY, DUAL-V	285837-001 285837-002 285837-003 285837-006	1	1, 2, 3 ⚠
12	AMP PCB ASSY	285826-001	1	1, 2
13	DSP PCB ASSY	285828-101	1	1, 2, 4
14	ENCLOSURE, HEATSINK	266998-001	1	3 ⚠
15	HOUSING, LOWER, AMPLIFIER	256142-001	1	3 ⚠
16	HEATSINK, ASSY, DSP	260369	1	
17	PAD, CONDUCTIVE, THERMAL	258353-001	1	
18	PAD, CONDUCTIVE, THERMAL	258356-001	1	
19	SCREW, 6-32X1/2 THREAD ROLLING	258492-08	18	
20	GASKETING, EMI	256826-001	1	
21	GASKETING, EMI	256826-002	1	
22	GASKET, CONNECTOR	256827	1	
23	BAR, SPRING, POWER AMPS	260375	1	
24	FOAM, SHIM, DIODES	258483	1	
25	CLIP, GROUNDING, FINGER STOCK	262870-001	4	
26	PAD, HEXAGON, .433 X .063	262869	3	
27	SHIM, ELECTRONICS MODULE	263456	1	
28	GASKET FOAM EMI	262635-025	1	
-	FOAM, SHIM, POWER AMP	263454	1	

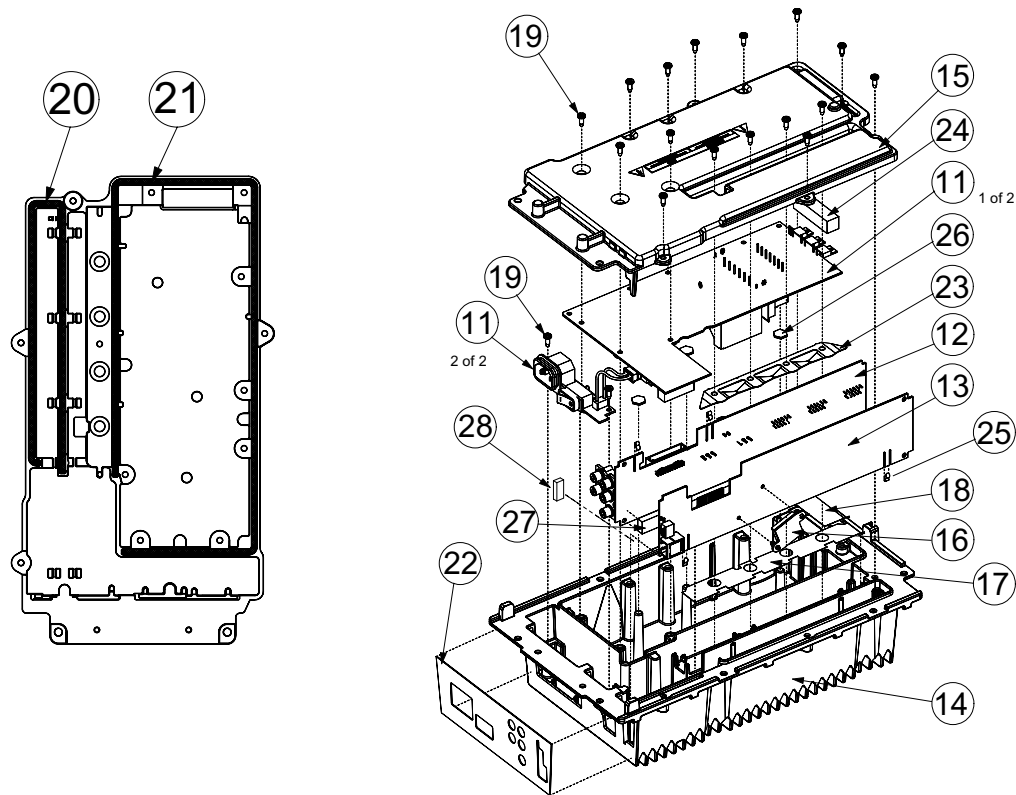




Figure 10. Amplifier Module Exploded View

## Power PCB Assembly 260327-XXXX, PCB 266459-001

## PS18/28/48 Electrical Part List



## Resistors

Reference Designator	Description	Part Number	Note
R101	10 OHM, 1206, 1/8W, 5%	124895-1005	
R102	33 OHM, 1206, 1/8W, 5%	124895-3305	
R103	10 OHM, 1206, 1/8W, 5%	124895-1005	
R104	100 OHM, 1206, 1/8W, 5%	124895-1015	
R106	1.00K, 1206, 1/8W, 5%	124895-1025	
R107	2.0K, 0603, .1W, 5%	199403-202	
R109	20K, 0603, .1W, 5%	199403-203	
R110	1M, 0603, .1W, 5%	199403-105	
R111	43.2K, 0603, .1W, 1%	191465-4322	
R112	60.4K, 0603, .1W, 1%	191465-6042	
R113	47.5K, 0603, .1W, 1%	191465-4752	
R121	75.0K, 1206, 1/8W, 1%	124894-7502	
R122	75.0K, 1206, 1/8W, 1%	124894-7502	
R123	75.0K, 1206, 1/8W, 1%	124894-7502	
R124	75.0K, 1206, 1/8W, 1%	124894-7502	
R127	9.1M, 0603, .1W, 5%	199403-915	
R128	220K, 0603, .1W, 5%	199403-224	
R129	261K, 1206, 1/4W, 1%	124894-2613	
R150	681 OHM, 1206, 1/8W, 1%	124894-6810	
R151	2.87K, 0603, 100MW, 1%	191465-2871	
R152	20K, 0603, .1W, 5%	199403-203	
R153	75.0K, 1206, 1/8W, 1%	124894-7502	
R154	75.0K, 1206, 1/8W, 1%	124894-7502	
R155	75.0K, 1206, 1/8W, 1%	124894-7502	
R156	75.0K, 1206, 1/8W, 1%	124894-7502	
R157	261K, 1206, 1/4W, 1%	124894-2613	
R158	220 OHM, 1206, 1/4W, 5%	124895-2215	DUAL-V
R159	220 OHM, 1206, 1/4W, 5%	124895-2215	DUAL-V
R160	220 OHM, 1206, 1/4W, 5%	124895-2215	DUAL-V
R161	220 OHM, 1206, 1/4W, 5%	124895-2215	DUAL-V
R201	10 OHM, FUSING, AX, RAD TAPE	260352-100	3 
R202	10 OHM, FUSING, AX, RAD TAPE	260352-100	3 
R207	100K, 0603, .1W, 1%	191465-1003	
R208	10K, 0603, .1W, 1%	191465-1002	
R212	10K, 0603, .1W, 1%	191465-1002	
R213	10K, 0603, .1W, 1%	191465-1002	
R216	68.1K, 0603, .1W, 1%	191465-6812	
R217	13.7K, 0603, 0.1W, 1%	191465-1372	
R218	5.11K, 0603, .1W, 1%	191465-5111	
R219	2.1K, 0603, .1W, 1%	191465-2101	
R220	432 OHM, 0603, .1W, 1%	191465-4320	
R223	432 OHM, 1206, 1/4W, 1%	124894-4320	
R224	2.0K, 0603, .1W, 5%	199403-202	
R225	49.9K, 0603, .1W, 1%	191465-4992	
R226	432 OHM, 0603, .1W, 1%	191465-4320	
R227	3.01K, 0603, .1W, 1%	191465-3011	
R228	432 OHM, 0603, .1W, 1%	191465-4320	
R229	3.01K, 0603, .1W, 1%	191465-3011	
R230	100K, 0603, .1W, 1%	191465-1003	
R231	100K, 0603, .1W, 1%	191465-1003	







## Power PCB Assembly 260327-XXXX, PCB 266459-001

## PS18/28/48 Electrical Part List

Resistors (continued)

Reference Designator	Description	Part Number	Note
R234	5.9K, 0603, .1W, 1%	191465-5901	
R235	10K, 0603, .1W, 1%	191465-1002	
R236	2.2 OHM, FUSING, 1/2W, 5%	188460-2R2	3 
R237	2.2 OHM, FUSING, 1/2W, 5%	188460-2R2	3 
R238	100K, 0603, .1W, 1%	191465-1003	
R300	2.00K, 1206, 1/8W, 5%	124895-2025	
R301	2.49K, 1206, 1/8W, 1%	124894-2491	
R303	20K, 0603, .1W, 5%	199403-203	
R304	20K, 0603, .1W, 5%	199403-203	
R305	18.7K, 0603, .1W, 1%	191465-1872	
R306	2.87K, 0603, 100MW, 1%	191465-2871	
R403	261K, 1206, 1/4W, 1%	124894-2613	
R404	18.7K, 0603, .1W, 1%	191465-1872	
R405	91K, 0603, .1W, 5%	199403-913	
R406	390 OHM, 0603, .1W, 5%	199403-391	
R407	261K, 1206, 1/4W, 1%	124894-2613	
R410	261K, 1206, 1/4W, 1%	124894-2613	
R411	261K, 1206, 1/4W, 1%	124894-2613	

## Capacitors

Reference Designator	Description	Part Number	Note
C101	0.1uF, FILM, X1, 310VAC, 15MM	260387-104B	3 
C101	0.1uF, FILM, X2, 275VAC, 15MM	268166-104B	3  100V, 230V, DUAL-V
C102	0.1uF, FILM, X1, 310VAC, 15MM	260387-104B	
C102	0.1uF, FILM, X2, 275VAC, 15MM	268166-104B	100V, 230V, DUAL-V
C103	1.5nF, FILM, Y2, 250VAC	254145-152A	3 
C104	1.5nF, FILM, Y2, 250VAC	254145-152A	3 
C106	.47uF, BOX, 85, 50V, 5%	137127-474	
C110	.470uF, EL, 105, 250V, 20%	170170	3 
C111	.470uF, EL, 105, 250V, 20%	170170	3 
C112	.047uF, FILM, 630VDC, 85, 10%	260357-473T21	
C113	470pF, MICA, 10%, 500V	254164-471B	
C114	470pF, MICA, 10%, 500V	254164-471B	
C115	18000pF, FILM, 2KVDC, 5%	258419-183C	
C117	1.0uF, EL, 105, 50V, 20%	196991-1R0H	
C118	10uF, EL, 105, 25V, 20%	196991-100E	
C119	.47uF, BOX, 85, 50V, 5%	137127-474	
C120	.01uF, 0603, X7R, 50V	191470-103	
C121	.01uF, 0603, X7R, 50V	191470-103	

## Power PCB Assembly 260327-XXXX, PCB 266459-001

## PS18/28/48 Electrical Part List

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C122	220pF 0603, COG, 50V, 5%	188454-221	
C126	.047uF, 0603, X7R, 5%, 25V	196999-473	
C128	.047uF, 0603, X7R, 5%, 25V	196999-473	
C129	.47uF, BOX, 85, 50V, 5%	137127-474	
C130	.047uF, 0603, X7R, 5%, 25V	196999-473	
C201	5.6uF, FILM, 10%, 100VDC	260333-565C	
C202	5.6uF, FILM, 10%, 100VDC	260333-565C	
C211	1.0uF, FILM, 10%, 100 VDC	260333-105A	
C212	1.0uF, FILM, 10%, 100 VDC	260333-105A	
C213	10uF, EL, 105, 25V, 20%	190382-100E	
C214	10uF, EL, 105, 25V, 20%	190382-100E	
C215	.022uF, 0603, X7R, 25V	196999-223	
C219	.047uF, 0603, X7R, 5%, 25V	196999-473	
C220	.047uF, 0603, X7R, 5%, 25V	196999-473	
C233	.001uF, BOX, 85, 100V, 5%	137127-102	
C234	.001uF, BOX, 85, 100V, 5%	137127-102	
C235	.001uF, BOX, 85, 100V, 5%	137127-102	
C236	.001uF, BOX, 85, 100V, 5%	137127-102	
C237	3300pF, 1206, X7R, 50V, 10%	124957-332	
C238	3300pF, 1206, X7R, 50V, 10%	124957-332	
C239	3300pF, 1206, X7R, 50V, 10%	124957-332	
C240	22uF, EL, 105, 63V, 20%	196991-220I	
C241	22uF, EL, 105, 63V, 20%	196991-220I	
C255	.1uF, 0805, X7R, 10%, 25V	181264-104	
C256	.1uF, 0805, X7R, 10%, 25V	181264-104	
C300	.47uF, BOX, 85, 50V, 5%	137127-474	
C301	.047uF, 0603, X7R, 5%, 25V	196999-473	
C401	100pF, 0603, COG, 50V, 5%	188454-101	
C402	47uF, EL, 105, 16V, 20%	126767-470	DUAL-V
C408	.047uF, FILM, 630VDC, 85, 10%	260357-473T21	DUAL-V

## Diodes

Reference Designator	Description	Part Number	Note
BR1	BRIDGE, 600V, 4A	256789-600	3 
D101	MMBD914LT1, SOT	148582	
D102	MMBD914LT1, SOT	148582	
D103	MMBD914LT1, SOT	148582	
D105	MMBD914LT1, SOT	148582	
D106	MMBD914LT1, SOT	148582	
D108	SHOTTKY, BAT42W, SOD-123	196984-002	
D111	MMBD914LT1, SOT	148582	
D112	SHOTTKY, BAT42W, SOD-123	196984-002	
D150	BAV70, SOT-23	147249	
D201	PWR SCHOTTKY, 8AX2, 80V	258432-080	
D202	MMBD914LT1, SOT	148582	
D203	PWR SCHOTTKY, 8A, 80V	258437-080	
D204	PWR SCHOTTKY, 8A, 80V	258437-080	
D205	MMBD914LT1, SOT	148582	
D206	MMBD914LT1, SOT	148582	



## Power PCB Assembly 260327-XXXX, PCB 266459-001

## PS18/28/48 Electrical Part List



Resistors (continued)

Reference Designator	Description	Part Number	Note
D207	BAV70, SOT-23	147249	
D208	SOT23, BAV99	147239	
D209	1N4001, RECTIFIER, 400V, 1A	260340-1	
D210	1N4001, RECTIFIER, 400V, 1A	260340-1	
D211	BAV99, SOT23	147239	
D401	RECTIFIER, 700V, 1A, 12.5MM	260340-7	DUAL-V
ZR101	1N5246, ZEN, 12V, 225MW, 5%	135247-5242	
ZR102	1N5246, ZEN, 12V, 225MW, 5%	135247-5242	
ZR103	ZENER, 3.3V	135247-5226	
ZR300	SOT-23, ZEN, 6.2V, 225MW, 5%	135247-5234	

## Transistors

Reference Designator	Description	Part Number	Note
Q101	CLIP, TINNEMAN	258354	
Q101	MOS FET, N-CH, 500V, 6.6A	254121-001	
Q102	CLIP, FET	258354	
Q102	MOSFET, N-CH, 500V, 6.6A	254121-001	
Q103	MFET, N, SOT	252043	
Q104	MMBT3906, PNP, SOT	148596	
Q201	MMBT3904, TRANSISTOR, NPN, SOT	146819	
Q300	MMBT3906, PNP, SOT	148596	
Q301	MMBT3904, TRANSISTOR, NPN, SOT	146819	
Q401	TRIAC, AVS12CB	254188-001	DUAL-V











## Integrated Circuits

Reference Designator	Description	Part Number	Note
U101	HV RESONANT CONTROL, L6598	254119-001	
U102	OPTO ISOLATOR, CNY17F-1	254120-001	3 
U103	OPTO ISOLATOR, CNY17F-1	254120-001	3 
U201	VOLT REG, 37V, POS,	137927	
U202	VOLT REG, 37V, NEG	137927	
U203	TLO74D, QUADOPAMP, SOIC	186112	
U401	AUTO V, SW, 110/220V, 50/60HZ	254187-001	DUAL-V

# Power PCB Assembly 260327-XXXX, PCB 266459-001

## PS18/28/48 Electrical Part List

### Miscellaneous

Reference Designator	Description	Part Number	Note
L101	2.2uH, COMMON MODE	187598-2R2	3 
L102	2.2uH, COMMON MODE	187598-2R2	3 
L103	1.5MH, 2.0A, TOROIDAL	269334-001	100V, 230V
L201	12.5uH	176500	
L202	12.5uH	176500	
L103	1.5MH, 2.0A, TOROIDAL	269334-001	DUAL-V
T101	CHOKE, LINE, COMMON MODE, 3MH	260371-001	3 
T102	XFORMER, PWR, HIGH-FREQ, EE42/20	258422-001	
F101	FUSE, 4.0A, SLO BLO	177311-04000	3 
F101	FUSE CLIP, 5MM	178548	3 
J101	CONN, AC INPUT, IEC320, W/O WINGS	256777-001	3 
J102	CABLE, AC INPUT	258454-001	3 
J103	CONNECTOR, 2 POS, POWER	258436	3 
J104	CLIP, GROUND, SPRING	260365-001	
J105	CLIP, GROUND, SPRING	260365-001	
J204	CONNECTOR, CARDEDGE, 20-POS	258423-020	
J205	CONN, BRD TO BRD, 24 POS	258426-24	
RT100	PTC, TEMP SENSE, 16V, 125C, 20%	258497-125	
VR101	VARISTOR, MET OX, 275V, 75 JOULE	170189	100V, 230V, DUAL-V
VR102	VARISTOR, METOX, 150V, 45 JOULE	170186	3 120V 
VR103	VARISTOR, METOX, 150V, 45 JOULE	170186	3 
JP1	JUMPER, 22AWG, INSUL, 5MM, TAPED	179645	120V
S1	SWITCH, POWER, 16A, PC MOUNT	196101-001	

## Amplifier PCB Assembly 266999-0, PCB 267083-001

## PS18/28/48 Electrical Part List

## Resistors

Reference Designator	Description	Part Number	Note
R1	5.1K, 0603, .1W, 5%	199403-512	
R2	100K, 0603, .1W, 5%	199403-104	
R3	2.0K, 0603, .1W, 1%	191465-2001	
R4	1.0K, 0603, .1W, 1%	191465-1001	
R5	10K, 0603, .1W, 5%	199403-103	
R6	10K, 0603, .1W, 5%	199403-103	
R7	2.32K, 0603, .1W, 1%	191465-2321	
R9	JUMPER, CHIP 0805	133627	
R101	560 OHMS, 0603, .1W, 5%	199403-561	
R102	10K, 0603, .1W, 1%	191465-1002	
R103	3.9K, 0603, .1W, 1%	191465-3901	
R104	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R105	100K, 0603, .1W, 5%	199403-104	
R106	15K, 0603, .1W, 5%	199403-153	
R201	560 OHMS, 0603, .1W, 5%	199403-561	
R203	3.9K, 0603, .1W, 1%	191465-3901	
R204	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R301	560 OHMS, 0603, .1W, 5%	199403-561	
R302	10K, 0603, .1W, 1%	191465-1002	
R303	3.9K, 0603, .1W, 1%	191465-3901	
R304	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R305	100K, 0603, .1W, 5%	199403-104	
R401	560 OHMS, 0603, .1W, 5%	199403-561	
R402	10K, 0603, .1W, 1%	191465-1002	
R403	3.9K, 0603, .1W, 1%	191465-3901	
R404	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R405	100K, 0603, .1W, 5%	199403-104	
R406	5.1K, 0603, .1W, 5%	199403-512	
R407	15K, 0603, .1W, 5%	199403-153	
R501	560 OHMS, 0603, .1W, 5%	199403-561	
R502	10K, 0603, .1W, 1%	191465-1002	
R503	3.9K, 0603, .1W, 1%	191465-3901	
R504	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R505	100K, 0603, .1W, 5%	199403-104	
R506	10K, 0603, .1W, 1%	191465-1002	
R601	3.9K, 0603, .1W, 1%	191465-3901	
R602	10K, 0603, .1W, 1%	191465-1002	
R603	4.7 OHM, 0805, 1/10W, 5%	133626-4R75	
R604	10.0 OHM, 0805, 1/10W, 1%	133625-10R0	
R605	100K, 0603, .1W, 5%	199403-104	
R606	10.0 OHM, 0805, 1/10W, 1%	133625-10R0	
R607	5.1K, 0603, .1W, 5%	199403-512	
R608	100 OHM, 1206, 1/8W, 5%	124895-1015	
R609	100K, 0603, .1W, 5%	199403-104	
R610	200 OHMS, 0603, .1W, 5%	199403-201	
R612	300 OHMS, 0603, .1W, 5%	199403-301	

## Amplifier PCB Assembly 266999-0, PCB 267083-001

## PS18/28/48 Electrical Part List

## Capacitors

Reference Designator	Description	Part Number	Note
C1	10uF, EL, 85, 25V, 20%	177902-100E	
C4	0.1uF, 0805, X7R, 50V, 10%	133624	
C10	0.1uF, 0805, X7R, 50V, 10%	133624	
C12	0.1uF, 0805, X7R, 50V, 10%	133624	
C13	0.1uF, 0805, X7R, 50V, 10%	133624	
C14	0.1uF, 0805, X7R, 50V, 10%	133624	
C15	0.1uF, 0805, X7R, 50V, 10%	133624	
C16	0.1uF, 0805, X7R, 50V, 10%	133624	
C17	0.1uF, 0805, X7R, 50V, 10%	133624	
C18	0.1uF, 0805, X7R, 50V, 10%	133624	
C19	0.1uF, 0805, X7R, 50V, 10%	133624	
C20	0.1uF, 0805, X7R, 50V, 10%	133624	
C21	0.1uF, 0805, X7R, 50V, 10%	133624	
C101	1uF, EL, 85, 50V, 20%	177902-010H	
C102	.0068uF, 0603, X7R, 50V	191470-682	
C104	0.1uF, 0805, X7R, 50V, 10%	133624	
C106	.01uF, 0603, X7R, 50V	191470-103	
C109	470pF, 0603, COG, 50V, 5%	188454-471	
C110	68pF, 0805, COG, 50V, 5%	133622-680	
C111	68pF, 0805, COG, 50V, 5%	133622-680	
C201	1uF, EL, 85, 50V, 20%	177902-010H	
C202	.0068uF, 0603, X7R, 50V	191470-682	
C205	.01uF, 0603, X7R, 50V	191470-103	
C209	470pF, 0603, COG, 50V, 5%	188454-471	
C301	1uF, EL, 85, 50V, 20%	177902-010H	
C302	.0068uF, 0603, X7R, 50V	191470-682	
C304	0.1uF, 0805, X7R, 50V, 10%	133624	
C305	.01uF, 0603, X7R, 50V	191470-103	
C309	470pF, 0603, COG, 50V, 5%	188454-471	
C310	68pF, 0805, COG, 50V, 5%	133622-680	
C401	1uF, EL, 85, 50V, 20%	177902-010H	
C402	.0068uF, 0603, X7R, 50V	191470-682	
C404	0.1uF, 0805, X7R, 50V, 10%	133624	
C406	.01uF, 0603, X7R, 50V	191470-103	
C409	470pF, 0603, COG, 50V, 5%	188454-471	
C410	68pF, 0805, COG, 50V, 5%	133622-680	
C501	1uF, EL, 85, 50V, 20%	177902-010H	
C502	.0068uF, 0603, X7R, 50V	191470-682	
C504	0.1uF, 0805, X7R, 50V, 10%	133624	
C505	.01uF, 0603, X7R, 50V	191470-103	
C506	0.1uF, 0805, X7R, 50V, 10%	133624	
C507	0.1uF, 0805, X7R, 50V, 10%	133624	
C508	0.1uF, 0805, X7R, 50V, 10%	133624	
C509	470pF, 0603, COG, 50V, 5%	188454-471	
C510	68pF, 0805, COG, 50V, 5%	133622-680	
C601	10uF, EL, 85, 25V, 20%	177902-100E	
C602	22uF, EL, 85, 20%, 16V	177902-220C	
C603	0.1uF, 0805, X7R, 50V, 10%	133624	
C604	.047uF, 0603, X7R, 5%, 25V	196999-473	
C606	.047uF, 0603, X7R, 5%, 25V	196999-473	
C607	.047uF, 0805, X7R, 50V, 10%	133623-473	
C608	100pF, 0805, COG, 50V, 5%	133622-101	

## Amplifier PCB Assembly 266999-0, PCB 267083-001

## PS18/28/48 Electrical Part List

## Diodes

Reference Designator	Description	Part Number	Note
D101	BAV70, SOT-23	147249	
D301	BAV70, SOT-23	147249	
D401	BAV70, SOT-23	147249	
D402	BAV70, SOT-23	147249	
ZR1	DIODE, ZENER, 3.3V	135247-5226	
ZR2	1N5236, DIODE, ZEN, 7.5V, 225 mW	135247-5236	

## Transistors

Reference Designator	Description	Part Number	Note
Q1	2SC2812 SOT23	134741	
Q2	NPN, SOT, 47K	146817	
Q3	NPN, SOT, 47K	146817	
Q4	2SA1179N6-CPA-TB	258007	
Q5	2SA1179N6-CPA-TB	258007	
Q6	2SA1179N6-CPA-TB	258007	
Q7	NPN, SOT, 47K	146817	
Q401	2SC2812 SOT23	134741	
Q601	NPN, 25A, 80V	256095-001 OR 256095-002	
Q602	PNP, 25A, 80V	256096-001 OR 256096-002	
Q603	2SC2812 SOT23	134741	
Q604	NPN, SOT, 47K	146817	

## Integrated Circuits

Reference Designator	Description	Part Number	Note
U1	LM4766T, 2X25W	267330-001 ▲	
U2	LM4766T, 2X25W	267330-001 ▲	
U3	LM4766T, 2X25W	267330-001 ▲	

## Miscellaneous

Reference Designator	Description	Part Number	Note
J2	CONNECTOR, BRD-TO-BRD, 24-POS	258455-24	
J3	CONN, PHONO JACK, 5 POS, CUSTOM	260382-001	
J4	CONN, HEADER, RTANG, JSTS2P-VH	190552-02	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

## Resistors

Reference Designator	Description	Part Number	Note
R6	2.2K, 0603, .1W, 5%	199403-222	
R8	47K, 0603, .1W, 5%	199403-473	
R9	47K, 0603, .1W, 5%	199403-473	
R13	22 OHMS, 0603, .1W, 5%	199403-220	
R14	47K, 0603, .1W, 5%	199403-473	
R17	4.99K, 0603, .1W, 1%	191465-4991	
R18	75 OHMS, 0603, 0.1W, 5%	199403-750	
R19	75 OHMS, 0603, 0.1W, 5%	199403-750	
R20	47K, 0603, .1W, 5%	199403-473	
R23	47K, 0603, .1W, 5%	199403-473	
R24	75 OHMS, 0603, 0.1W, 5%	199403-750	
R25	10K, 0603, .1W, 5%	199403-103	
R26	4.7K, 0603, .1W, 5%	199403-472	
R29	1K, 0603, .1W, 5%	199403-102	
R30	510 OHMS, 0603, .1W, 5%	199403-511	
R31	100K, 0603, .1W, 5%	199403-104	
R32	47K, 0603, .1W, 5%	199403-473	
R34	100K, 0603, .1W, 5%	199403-104	
R35	4.7K, 0603, .1W, 5%	199403-472	
R36	100K, 0603, .1W, 5%	199403-104	
R38	JUMPER, CHIP 0805	133627	
R40	330 OHMS, 0603, .1W, 5%	199403-331	
R41	100 OHM, 0603, .1W, 5%	199403-101	
R101	270 OHMS, 0603, .1W, 5%	199403-271	
R104	4.7K, 0603, .1W, 5%	199403-472	
R105	4.7K, 0603, .1W, 5%	199403-472	
R106	33K, 0603, .1W, 5%	199403-333	
R107	4.7K, 0603, .1W, 5%	199403-472	
R108	4.7K, 0603, .1W, 5%	199403-472	
R109	4.7K, 0603, .1W, 5%	199403-472	
R117	75 OHMS, 0603, 0.1W, 5%	199403-750	
R118	75 OHMS, 0603, 0.1W, 5%	199403-750	
R119	75 OHMS, 0603, 0.1W, 5%	199403-750	
R120	75 OHMS, 0603, 0.1W, 5%	199403-750	
R121	75 OHMS, 0603, 0.1W, 5%	199403-750	
R122	75 OHMS, 0603, 0.1W, 5%	199403-750	
R123	75 OHMS, 0603, 0.1W, 5%	199403-750	
R201	4.7K, 0603, .1W, 5%	199403-472	
R203	4.7K, 0603, .1W, 5%	199403-472	
R204	4.7K, 0603, .1W, 5%	199403-472	
R205	75 OHMS, 0603, 0.1W, 5%	199403-750	
R206	75 OHMS, 0603, 0.1W, 5%	199403-750	
R207	75 OHMS, 0603, 0.1W, 5%	199403-750	
R208	75 OHMS, 0603, 0.1W, 5%	199403-750	
R209	7.87K, 0603, .1W, 1%	191465-7871	
R210	75 OHMS, 0603, 0.1W, 5%	199403-750	
R211	4.7K, 0603, .1W, 5%	199403-472	
R212	4.7K, 0603, .1W, 5%	199403-472	
R213	4.7K, 0603, .1W, 5%	199403-472	
R217	6.81K, 0603, 0.1W, 1%	191465-6811	
R218	47 OHM, 0603, SMD, 100mW	199403-470	
R219	4.7K, 0603, .1W, 5%	199403-472	



## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

Resistors (continued)

Reference Designator	Description	Part Number	Note
R301	100K, 0603, .1W, 5%	199403-104	
R302	10K, 0603, .1W, 5%	199403-103	
R303	4.7K, 0603, .1W, 5%	199403-472	
R416	100K, CHIP, 0805, 1%	133625-1003	
R417	4.7K, 0603, .1W, 5%	199403-472	
R421	18.2K, 0603, .1W, 1%	191465-1822	
R422	18.2K, 0603, .1W, 1%	191465-1822	
R423	18.2K, 0603, .1W, 1%	191465-1822	
R424	18.2K, 0603, .1W, 1%	191465-1822	
R427	18.2K, 0603, .1W, 1%	191465-1822	
R428	18.2K, 0603, .1W, 1%	191465-1822	
R429	300 OHMS, 0603, .1W, 5%	199403-301	
R430	300 OHMS, 0603, .1W, 5%	199403-301	
R431	300 OHMS, 0603, .1W, 5%	199403-301	
R432	300 OHMS, 0603, .1W, 5%	199403-301	
R440	10K, 0603, .1W, 5%	199403-103	
R441	100K, 0603, .1W, 1%	191465-1003	
R443	20.0K, 0603, .1W, 1%	191465-2002	
R444	20.0K, 0603, .1W, 1%	191465-2002	
R448	36.5K, 0603, .1W, 1%	191465-3652	
R449	10K, 0603, .1W, 1%	191465-1002	
R450	10K, 0603, .1W, 1%	191465-1002	
R451	10K, 0603, .1W, 1%	191465-1002	
R452	10K, 0603, .1W, 1%	191465-1002	
R453	10K, 0603, .1W, 1%	191465-1002	
R454	10K, 0603, .1W, 1%	191465-1002	
R455	10K, 0603, .1W, 1%	191465-1002	
R456	10K, 0603, .1W, 1%	191465-1002	
R501	49.9K, 0603, .1W, 1%	191465-4992	
R502	10K, 0603, .1W, 1%	191465-1002	
R504	0.1 OHM, 2512, 1W, 5%	149322-100	
R505	2.2 OHM, 2512, 1W, 5%	181895-2R2	
R506	3.32K, 0603, .1W, 1%	191465-3321	
R507	1.69K, 0603, .1W, 1%	191465-1691	
R508	1 OHM, 0805, 1/10W, 5%	133626-1R05	
R509	300 OHMS, 0603, .1W, 5%	199403-301	
R510	300 OHMS, 0603, .1W, 5%	199403-301	
R512	1.0 OHMS, 1210, 1/4W, 5%	187607-1R05	
R601	75 OHMS, 0603, 0.1W, 5%	199403-750	
R602	330 OHMS, 0603, .1W, 5%	199403-331	
R603	330 OHMS, 0603, .1W, 5%	199403-331	
R604	330 OHMS, 0603, .1W, 5%	199403-331	
R605	4.7K, 0603, .1W, 5%	199403-472	
R607	2.0K, 0603, .1W, 5%	199403-202	
R608	1K, 0603, .1W, 5%	199403-102	
R609	1K, 0603, .1W, 5%	199403-102	
R610	4.7K, 0603, .1W, 5%	199403-472	
R611	4.7K, 0603, .1W, 5%	199403-472	
R612	4.7K, 0603, .1W, 5%	199403-472	
R613	10K, 0603, .1W, 1%	191465-1002	
R614	30.1K, 0603, 1W, 1%	191465-3012	
R615	10 OHM, 0603, .1W, 5%	199403-100	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

Resistors (continued)

Reference Designator	Description	Part Number	Note
R616	100K, 0603, .1W, 5%	199403-104	
R617	4.7K, 0603, .1W, 5%	199403-472	
R619	3.32K, 0603, .1W, 1%	191465-3321	
R620	36.5K, 0603, .1W, 1%	191465-3652	
R621	36.5K, 0603, .1W, 1%	191465-3652	
R622	36.5K, 0603, .1W, 1%	191465-3652	
R623	36.5K, 0603, .1W, 1%	191465-3652	
R624	300 OHMS, 0603, .1W, 5%	199403-301	
R625	300 OHMS, 0603, .1W, 5%	199403-301	
R626	18.2K, 0603, .1W, 1%	191465-1822	
R627	18.2K, 0603, .1W, 1%	191465-1822	
R628	18.2K, 0603, .1W, 1%	191465-1822	
R629	36.5K, 0603, .1W, 1%	191465-3652	
R630	36.5K, 0603, .1W, 1%	191465-3652	
R631	36.5K, 0603, .1W, 1%	191465-3652	
R632	18.2K, 0603, .1W, 1%	191465-1822	
R633	36.5K, 0603, .1W, 1%	191465-3652	
R634	10K, 0603, .1W, 1%	191465-1002	
R635	10K, 0603, .1W, 1%	191465-1002	
R636	10K, 0603, .1W, 1%	191465-1002	
R637	10K, 0603, .1W, 1%	191465-1002	
R639	18.2K, 0603, .1W, 1%	191465-1822	
R640	18.2K, 0603, .1W, 1%	191465-1822	
R641	24.3K, 0603, .1W, 1%	191465-2432	
R642	39.2K, 0603, .1W, 1%	191465-3922	
R643	33.2K, 0603, .1W, 1%	191465-3322	
R644	36.5K, 0603, .1W, 1%	191465-3652	
R645	36.5K, 0603, .1W, 1%	191465-3652	
R646	36.5K, 0603, .1W, 1%	191465-3652	
R647	330 OHMS, 0603, .1W, 5%	199403-331	
R648	100K, 0603, .1W, 5%	199403-104	
R649	100K, 0603, .1W, 5%	199403-104	
R650	510 OHMS, 0603, .1W, 5%	199403-511	
R651	4.7K, 0603, .1W, 5%	199403-472	
R652	75 OHMS, 0603, 0.1W, 5%	199403-750	
R653	100K, 0603, .1W, 5%	199403-104	
R654	100K, 0603, .1W, 5%	199403-104	
R655	4.02K, 0603, .1W, 1%	191465-4021	
R901	4.7K, 0603, .1W, 5%	199403-472	
R902	4.7K, 0603, .1W, 5%	199403-472	
R903	10 OHM, 0603, .1W, 5%	199403-100	
R908	75 OHMS, 0603, 0.1W, 5%	199403-750	
R909	4.7K, 0603, .1W, 5%	199403-472	
R910	75 OHMS, 0603, 0.1W, 5%	199403-750	
RT600	10K, THERMISTOR, 0805, 5%	197229	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

## Capacitors

Reference Designator	Description	Part Number	Note
C5	47pF, 0603, COG, 50V, 5%	188454-470	
C7	.047uF, 0603, X7R, 25V, 5%	196999-473	
C8	2200pF, 0805, 50V, COG, 5%	133622-222	
C9	.047uF, 0603, X7R, 25V, 5%	196999-473	
C11	.047uF, 0603, X7R, 25V, 5%	196999-473	
C12	.047uF 0603, X7R, 25V, 5%	196999-473	
C13	100pF, 0603, COG, 50V, 5%	188454-101	
C17	100pF, 0603, COG, 50V, 5%	188454-101	
C18	.047uF, 0603, X7R, 25V, 5%	196999-473	
C22	.047uF, 0603, X7R, 25V, 5%	196999-473	
C23	.047uF, 0603, X7R, 25V, 5%	196999-473	
C30	.047uF, 0603, X7R, 25V, 5%	196999-473	
C31	75pF, 0603, COG, 50V, 5%	188454-750	
C32	.047uF, 0603, X7R, 25V, 5%	196999-473	
C34	75pF, 0603, COG, 50V, 5%	188454-750	
C40	.047uF, 0805, X7R, 50V, 10%	133623-473	
C41	100pF, 0603, COG, 50V, 5%	188454-101	
C42	100pF, 0603, COG, 50V, 5%	188454-101	
C43	100pF, 0603, COG, 50V, 5%	188454-101	
C44	100pF, 0603, COG, 50V, 5%	188454-101	
C101	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	
C102	33pF, 0603, COG, 50V, 5%	188454-330	
C103	.047uF, 0603, X7R, 25V, 5%	196999-473	
C104	.047uF, 0603, X7R, 25V, 5%	196999-473	
C105	.047uF, 0603, X7R, 25V, 5%	196999-473	
C106	470pF, 0603, COG, 50V, 5%	188454-471	
C107	.047uF, 0603, X7R, 25V, 5%	196999-473	
C108	.01uF, 0603, X7R, 50V	191470-103	
C109	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	
C110	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	
C111	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	
C112	.047uF, 0603, X7R, 25V, 5%	196999-473	
C201	27pF, 0603, COG, 50V, 5%	188454-270	
C202	20pF, 0603, COG, 50V	188454-200	
C203	.01uF, 0603, X7R, 50V	191470-103	
C204	220pF, 0805, COG, 50V, 5%	133622-221	
C205	47pF, 0603, COG, 50V, 5%	188454-470	
C301	.047uF, 0603, X7R, 25V, 5%	196999-473	
C303	.047uF, 0603, X7R, 25V, 5%	196999-473	
C304	.047uF, 0603, X7R, 25V, 5%	196999-473	
C305	.047uF, 0603, X7R, 25V, 5%	196999-473	
C306	.047uF, 0603, X7R, 25V, 5%	196999-473	
C307	.047uF, 0603, X7R, 25V, 5%	196999-473	
C308	.047uF, 0603, X7R, 25V, 5%	196999-473	
C309	.047uF, 0603, X7R, 25V, 5%	196999-473	
C310	.047uF, 0603, X7R, 25V, 5%	196999-473	
C311	.047uF, 0603, X7R, 25V, 5%	196999-473	
C312	.047uF, 0603, X7R, 25V, 5%	196999-473	
C313	.047uF, 0603, X7R, 25V, 5%	196999-473	
C314	.047uF, 0603, X7R, 25V, 5%	196999-473	
C407	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	
C410	2.2uF, TANT, 10V, A SIZE, 20%	196981-A225A2	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C415	0603, X7R, 5%, 25V, .047uF	196999-473	
C416	2.2uF, TANT, 10V, 20%, A SIZE	196981-A225A2	
C418	220pF, 0603, COG, 50V, 5%	188454-221	
C419	220pF, 0603, COG, 50V, 5%	188454-221	
C420	220pF, 0603, COG, 50V, 5%	188454-221	
C424	470pF, 0603, COG, 50V, 5%	188454-471	
C425	470pF, 0603, COG, 50V, 5%	188454-471	
C426	470pF, 0603, COG, 50V, 5%	188454-471	
C427	470pF, 0603, COG, 50V, 5%	188454-471	
C428	4700pF, 0603, X7R, 50V	191470-472	
C429	4700pF, 0603, X7R, 50V	191470-472	
C430	4700pF, 0603, X7R, 50V	191470-472	
C431	4700pF, 0603, X7R, 50V	191470-472	
C432	470pF, 0603, COG, 50V, 5%	188454-471	
C433	470pF, 0603, COG, 50V, 5%	188454-471	
C434	220pF, 0603, COG, 50V, 5%	188454-221	
C435	220pF, 0603, COG, 50V, 5%	188454-221	
C436	.047uF, 0603, X7R, 5%, 25V	196999-473	
C437	.047uF, 0603, X7R, 5%, 25V	196999-473	
C438	.047uF, 0603, X7R, 5%, 25V	196999-473	
C439	.047uF, 0603, X7R, 5%, 25V	196999-473	
C440	.047uF, 0603, X7R, 5%, 25V	196999-473	
C441	.047uF, 0603, X7R, 5%, 25V	196999-473	
C442	220pF, 0603, COG, 50V, 5%	188454-221	
C443	.047uF, 0603, X7R, 5%, 25V	196999-473	
C444	.047uF, 0603, X7R, 5%, 25V	196999-473	
C450	4700pF, 0603, X7R, 50V	191470-472	
C451	4700pF, 0603, X7R, 50V	191470-472	
C500	.047uF, 0603, X7R, 5%, 25V	196999-473	
C501	.047uF, 0603, X7R, 5%, 25V	196999-473	
C502	.047uF, 0603, X7R, 5%, 25V	196999-473	
C503	.047uF, 0603, X7R, 5%, 25V	196999-473	
C504	.047uF, 0603, X7R, 5%, 25V	196999-473	
C505	.047uF, 0603, X7R, 5%, 25V	196999-473	
C507	.047uF, 0603, X7R, 5%, 25V	196999-473	
C508	.047uF, 0603, X7R, 5%, 25V	196999-473	
C509	1000pF, 0603, X7R, 50V	191470-102	
C510	.22uF, TANT, SMT, 35V	262073-V224A	
C511	.015uF, 0603, X7R, 50V, 10%	191470-153	
C513	.1uF, 1206, X7R, 25V, 5%	131754-104	
C515	2.2uF, TANT, 10V, 20%, ASIZE	196981-A225A2	
C517	330uF, EL, SMD, 105, 10V, 20%	256772-331A	
C519	330uF, EL, SMD, 105, 35V, 20%	256772-331V	
C520	22uF, EL, 85, 20%, 16V	177902-220C	
C525	.047uF, 0603, X7R, 5%, 25V	196999-473	
C526	.047uF, 0603, X7R, 5%, 25V	196999-473	
C527	.047uF, 0603, X7R, 5%, 25V	196999-473	
C528	.047uF, 0603, X7R, 5%, 25V	196999-473	
C532	.047uF, 0805, X7R, 50V, 10%	133623-473	
C533	100pF, 0805, COG, 50V, 5%	133622-101	
C535	68pF, 0805, COG, 50V, 5%	133622-680	
C536	.047uF, 0805, X7R, 50V, 10%	133623-473	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

Capacitors (continued)

Reference Designator	Description	Part Number	Note
C601	100pF, 0603, COG, 50V, 5%	188454-101	
C602	.047uF, 0603, X7R, 5%, 25V	196999-473	
C603	.047uF, 0603, X7R, 5%, 25V	196999-473	
C604	2.2uF, TANT, 10V, 20%, A SIZE	196981-A225A2	
C605	2.2uF, TANT, 10V, 20%, A SIZE	196981-A225A2	
C606	100pF, 0603, COG, 50V, 5%	188454-101	
C611	0603, X7R, 5%, 25V, .047uF	196999-473	
C612	100pF, 0603, COG, 50V, 5%	188454-101	
C613	100pF, 0603, COG, 50V, 5%	188454-101	
C614	10pF, 0603, COG, 50V, .5pF	188454-100	
C620	10uF, EL, 85, 16V, 20%	177902-100C	
C900	.047uF, 0603, X7R, 5%, 25V	196999-473	
C903	1000pF, 0805, COG, 50V, 5%	133622-102	
C904	1000pF, 0805, COG, 50V, 5%	133622-102	
C905	1000pF, 0805, COG, 50V, 5%	133622-102	
C906	1000pF, 0805, COG, 50V, 5%	133622-102	
C911	1000pF, 0603, X7R, 50V	191470-102	
C912	.047uF, 0603, X7R, 5%, 25V	196999-473	
C913	.01uF, 0603, X7R, 50V	191470-103	

## Diodes

Reference Designator	Description	Part Number	Note
D3	SOT23, BAV99	147239	
D14	SOT23, BAV99	147239	
D17	SOT23, BAV99	147239	
D18	SOT23, BAV99	147239	
D20	SHOTTKY, BAT42W, SOD-123	196984-002	
D21	1N5239, ZEN, 9.1V, 225MW, 5%	135247-5239	
D200	SOT23, BAV99	147239	
D501	SCHOTTKY, 40V, 3A, SMB	193847-001	
D502	SCHOTTKY, 40V, 3A, SMB	193847-001	
DS601	LED, SMD, GREEN	256781-002	
DS602	LED, SMD, YELLOW	256781-003	

## Transistors

Reference Designator	Description	Part Number	Note
Q1	NPN, SOT, 47K	146817	
Q4	NPN, SOT, 47K	146817	
Q6	NPN, SOT, 47K	146817	
Q7	NPN, SOT, 47K	146817	
Q8	NPN, SOT, 47K	146817	
Q300	NPN, SOT, 47K	146817	
Q602	NPN, SOT, 47K	146817	
Q603	NPN, SOT, 47K	146817	
Q604	PNP, SOT, 47K	146818	
Q605	NPN, SOT, 47K	146817	

## DSP PCB Assembly 267391-0, PCB 267086-001

## PS18/28/48 Electrical Part List

## Integrated Circuits

Reference Designator	Description	Part Number	Note
U2	RECEIVER, SPDIF, CS8415A, SOIC	254193-001	
U3	VOLTAGE COMPARATOR, LM339	187618-001	
U4	DSP, QFP208, ADSP21065LKS	254191-001	
U101	AND GATE, QUAD2-INPUT, CMOS	256124-001	
U103	DSP, CS49329CL	254105-001	
U105	74LCX157, QUAD 2 CHANNEL MUX	260377-001	
U301	PROM, FLASH, 4MBIT	260332-001	
U302	SD RAM, 64KX16	254195-010	
U303	SD RAM, 64KX16	254195-010	
U401	CODEC, 24-BIT, CS4228A-KS, TS	254192-001	
U402	QUAD OPAMP, TLO74D, SOIC	186112	
U404	QUAD OPAMP, TLO74D, SOIC	186112	
U406	QUAD OPAMP, TLO74D, SOIC	186112	
U407	QUAD OPAMP, TLO74D, SOIC	186112	
U501	VOLTREG, 3.3V, 1.5A,	254196-001	
U502	VOLTAGE, REGULATOR, 3.3V	256094-03R3	
U503	VOLT REG, ADJ., 500MA, DPAK	258496-001	
U601	OCTAL BUFFER, 3V, TSSOP-20	193841-004	
U602	RESET, 3.3V, SOT23, 5-PIN	256123-001	

## Miscellaneous

Reference Designator	Description	Part Number	Note
FB1	400 OHMS, CHIP, 0805	188587-401	
FB2	400 OHMS, CHIP, 0805	188587-401	
FB3	400 OHMS, CHIP, 0805	188587-401	
FB4	400 OHMS, CHIP, 0805	188587-401	
FB5	400 OHMS, CHIP, 0805	188587-401	
FB6	400 OHMS, CHIP, 0805	188587-401	
FB7	400 OHMS, CHIP, 0805	188587-401	
FB101	400 OHMS, CHIP, 0805	188587-401	
FB102	400 OHMS, CHIP, 0805	188587-401	
FB103	400 OHMS, CHIP, 0805	188587-401	
FB104	400 OHMS, CHIP, 0805	188587-401	
FB401	400 OHMS, CHIP, 0805	188587-401	
FB402	400 OHMS, CHIP, 0805	188587-401	
FB403	400 OHMS, CHIP, 0805	188587-401	
L1	2.2uH, 10%, SMD, LFC32	178336-2R2K	
L501	22uH, 20%, SMD	173273-220	
L502	100uH, SMD, 20%	256773-101	
J1	CONN, MODULAR, SMT, 8 POS, TH MECH	260334-0012	
JP400	1K, CHIP, 0805, 5%	133626-1025	
S1	SWITCH, SMD, RTANG, DIP, 4-POS	256774-004	
T1	TRANSFORMER, PULSE	254185-001	
Y201	XTAL, 30.0MHZ, 50PPM, HC-49S	256128-001	



## Setting up a computer to issue TAP commands

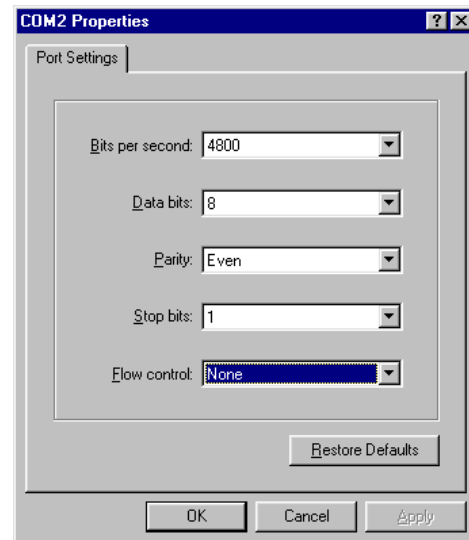
1. Open a terminal window. Click: Start/Program/Accessories/Hyperterminal/Hyperterminal.
2. In the "Connection Description" window, type the name "LS28, 35 bass module test" then click "OK"; any name may be entered.



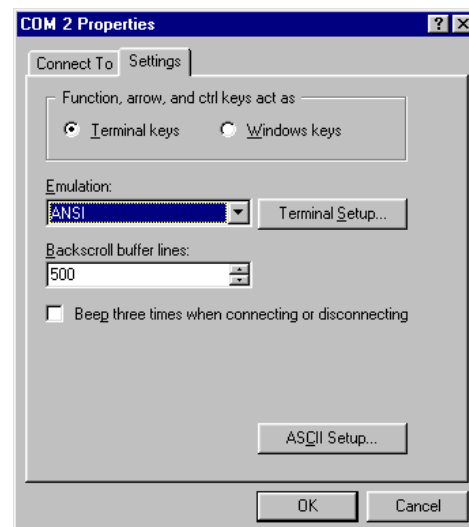
3. In the "Connect To" window, select the COM port on your computer that you will be connecting the bass module to and then click OK.



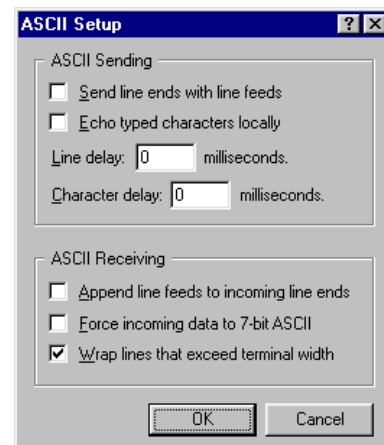
4. In the "COM1 Properties" window, make the selections in the various fields as shown.

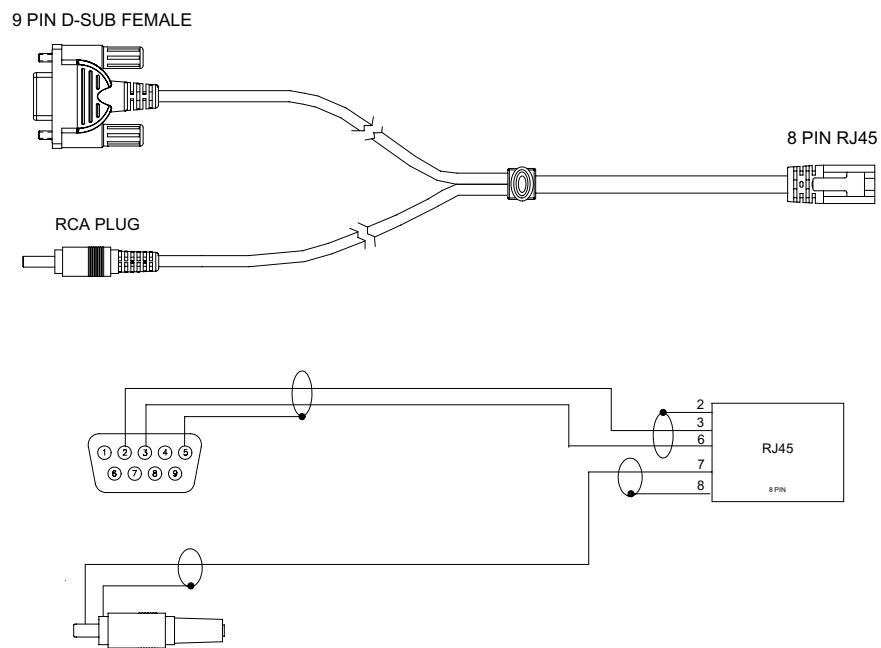


5. In the Hyper Terminal window, click on File/Properties. In the Properties window, click on the Settings tab, make the selections in the various fields as shown.



6. In the Settings window, click on ASCII setup and make the selections and changes as shown.





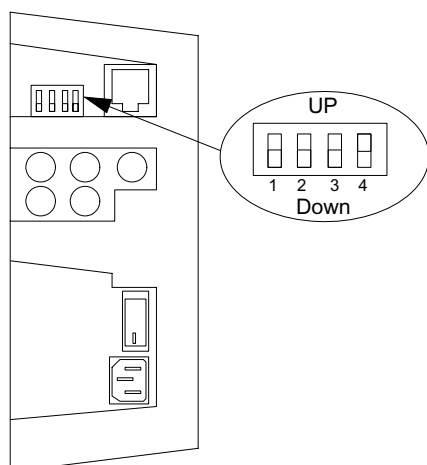
**Figure 11. Test cable part number 264564**

## Placing the Bass Module into TAP Mode

**! Place all four DIP switches to the down position before returning the unit to the customer !**

### 1. Place the bass module into TAP mode

**1.1** Set all four DIP switches into the “up” position. Apply power to the bass module using the AC line switch and wait until the amber LED blinks twice and the green LED blinks briefly at least once (approximately 3 seconds after power up). Then, within twenty seconds, flip ALL four switches down, then flip switch #4 (closest to the RJ-45 connector) back up. The unit will now communicate in TAP mode. The amber and green LED will blink alternately when no S/PDIF signal is applied. Note that when TAP mode is activated in this manner, the DSP will echo characters sent by the terminal.



**Figure 12. DIP switch Up/Down orientation**

### 2. Verify the bass module communicates in TAP mode.

**2.1** Connect the test cable's, part number 264564, DB-9 connector to the RS-232 COM port on your computer. Connect the test cable's RJ-45 connector to the bass module.

**2.2** Type the command ST S and hit “Enter”. The following response should be seen on your computer screen. The results may differ depending on the unit settings. If no S/PDIF signal is applied, the sample rate will be 29 kHz.

```
SAMPLE RATE : 44101.30
SPKR TYPE   : 02
DIP VALUE    : 1111
LCRB_MUTE   : 1
LSRS_MUTE   : 1
SAT_CLIP     : 1
BASS_CLIP    : 1
EURO_BASS    : 1
EURO_TREBLE : 0
```

**2.3** Check the software by typing (issuing) the command TN 4 and then hitting “Enter”. A typical response would be as follows.  
03DE6455, 010808  
03DE6455 is the checksum  
010808 is the software version

## Setting the Equalizer

Type the equalization setup command SE [SPEAKER TYPE], [EUROPEAN BASS], [EUROPEAN TREBLE]

Command	Condition		
	SPEAKER TYPE	EURO BASS	EURO TREBLE
SE	A = singleshot (18)	ON	OFF
	D = doubleshot (28)		
	C = cricket (35)		
	U = User EQ		

Example: To set the equalization to cricket cubes, euro bass off and euro treble off, type the command as follows. SE C,OFF,OFF

Verify the changes have been made by typing the command ST S.

The speaker type (SPKR TYPE) and other information will be displayed. Decode the numerical two digit speaker type as follows.

```
01 Doubleshots (Later version dual cube)
02 Cricket (Jewel® Cube)
128 Dublin (Single Cube)

05 User EQ (ADATiQ™ audio calibration)
```

## Test Procedures

### Test setup procedures

Place the bass module into TAP mode using the procedures on page 26.

**Note:** Place all four DIP switches into the down position before returning the unit to the customer.

Test cable part number 264564, Figure 16, is needed to test the bass module.

Connect the D-sub, 9 pin connector on the test cable to the COM port on your computer. Connect the RJ-45, 8 pin connector to the bass module.

The bass module requires a digital audio input. Connect the analog output of an oscillator to the analog input of an Analog to Digital (A-D) converter. Connect the test cable's RCA connector to the A-D converter S/PDIF output.

### 1. Sweep Test

**1.1** Issue the following TAP commands:

SO ALL D (select all digital source inputs)  
 SP 5 (5 speaker mode)  
 VO CB 0 (set volume to full output, 0dB)  
 MU AMP OFF (unmute the amp)

**1.2** Apply a 200 mVrms, 25 Hz signal to the left and right input of the analog to digital (A-D) converter. Listen for any extraneous noises such as rubbing, scraping, or ticking.

**Note:** No extraneous noises such as rubbing, scraping or ticking should be heard. To distinguish between normal suspension noise, rubs and ticks, displace the woofer cone with your finger. If the sound can be made to go away or get worse, it's a rub or tick and the woofer should be replaced. If the noise stays the same, it's normal suspension noise and it will not be heard with regular program material.

**1.3** Sweep the bass module from 40 Hz to 300 Hz. Listen carefully for any buzzes, rattles or extraneous noises coming from the bass module.

**Note:** Redress any wire or component that buzzes.

### 2 Bass Module Air Leak Test

**2.1** Apply a 200 mVrms, 40 Hz signal to the input of the A-D converter.

**2.2** Check for air leaks from the cabinet. Listen near the areas where the plastic seals to the wood.

### Test setup procedures

Remove the amplifier module from the bass module assembly. Refer to the disassembly/assembly procedures located in this manual.

Connect an 8 Ohm, 50W resistive load to the left, center, right, left surround, and right surround speaker outputs. Connect a 1.6 Ohm, 150W resistive load to the woofer output, J4.

**Note:** Do not tie the five RCA speaker output grounds together.

Turn the amplifier off and then place it into TAP mode using the procedures on page 26.

Issue the TAP command: VO CB -20 (set volume output to -20dB)

**Note:** Because the DSP has just booted (or rebooted) prior to being put into TAP mode and issuing this command, the amplifier module is now in a known state.

### 3. Input to Output Gain

**3.1** Apply a 500 mVrms signal, at a frequency and phase listed in the following table, to the left and right input of the A-D converter.

**Note:** For a 180° phase output, apply the positive output of a balanced output oscillator to the negative input of the A-D converter and the negative to the positive.

Channel	Frequency	Input	Phase	
			Right	Left
L	1 kHz	500 mVrms	0°	0°
C	1 kHz	500 mVrms	0°	0°
R	1 kHz	500 mVrms	0°	0°
LS	1 kHz	500 mVrms	0°	180°
RS	1 kHz	500 mVrms	0°	180°
B	50 Hz	500 mVrms	0°	0°

## Test Procedures

**3.2** Measure the gain from the input to the A-D converter to the speaker output listed in the table below.

Channel	Gain
Left	8dB $\pm$ 2.0dB
Center	16dB $\pm$ 2.0dB
Right	8dB $\pm$ 2.0dB
Left Surround	16dB $\pm$ 2.0dB
Right Surround	16dB $\pm$ 2.0dB
Bass	22dB $\pm$ 2.0dB

### 4. Speaker Output Noise

**4.1** Short the right and left inputs to the A-D converter.

**4.2** Measure the output at the left, right, center, left surround, right surround, and bass channel output. It should be  $\leq 500$   $\mu$ Vrms.

### 5. Cube Channel Large Signal Distortion

**5.1** Apply a 1.0 kHz signal to the A-D converter input at a level to obtain 11 Vrms measured at the channel's resistive output load.

**Note:** When measuring the left or right channel output, apply the signal to one channel only. When measuring the center channel, apply the signal to the left and right channel. When measuring the surround channels, apply the balanced output signal to the left and right channel with one channel 180° out of phase with the other.

**5.2** Issue the TAP command: VO CB 0 (set volume output to 0dB, full output)

**5.3** Measure the distortion at the left, right, center, left surround, right surround output. It should be  $<0.1\%$  THD+N.

### 6. Cube Channel DC Offset

**6.1** With no signal applied, measure the DC offset at the left, right, center, left surround, right surround, and bass channel output. It should be  $<70$  mVdc.

### 7. Bass Channel Large Signal Distortion

**7.1** Apply a 100 Hz signal to the A-D converter input at a level to obtain 11 Vrms measured at the bass channel resistive output load.

**7.2** Measure the distortion at the bass channel output. It should be  $<.2\%$  THD+N

### 8. Bass Channel DC Offset

**8.1** With no signal applied, measure the DC offset at the bass channel output. It should be  $<25$  mVdc.

### 9. Place the Unit in Normal Operation Mode

**9.1** Before returning the bass module to the customer, place the unit in normal operation mode. Place all four DIP switches into the down position (toward RCA plugs).

### 10. Cube Speaker Phase Test

**Note:** The DC voltage should only be momentarily applied to the cube speaker input to avoid damaging the speakers.

**10.1** Observing polarity, momentarily apply 8 Vdc to the input of the cube speaker.

**10.2** The speakers should move outward with the application of the dc voltage. Check the cube wiring if it moves inward.

### 11. Cube Speaker Sweep Test

**11.1** Apply an 11 Vrms, 20 Hz signal to the input of the cube. Change the applied signal to 8 Vrms, 150 Hz. Sweep the oscillator from 150 Hz to 2 kHz.

**11.2** Listen for rubs, ticks, air leaks, buzzes or other extraneous noises.

**Note:** Defects such as rubs, ticks and air leaks will typically be most audible during the 20 Hz test. Defects such as buzzes will typically be heard during the 150 Hz to 2 kHz sweep.

**Note:** The cube cubes are not repairable. The Jewel Cube® speakers are repairable.

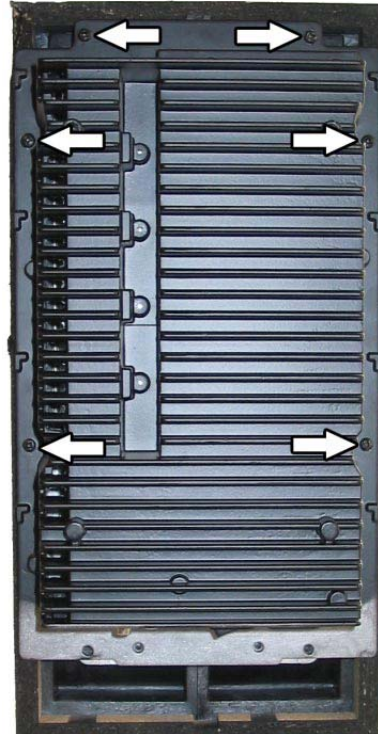


## Bass Module Disassembly Procedures



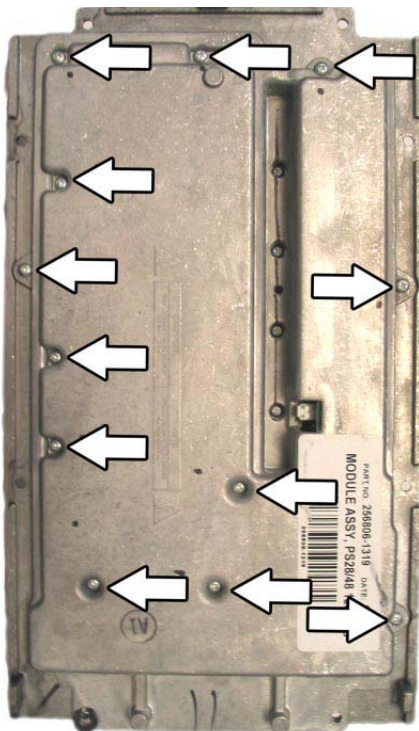
### 1. Rear Cover Removal

Remove four screws - pull off cover



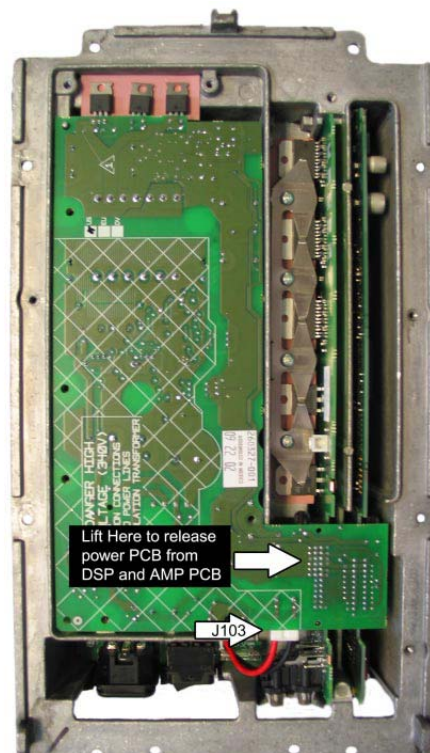
### 2. Amp Module Removal

Remove six screws - pull off amp module - unplug woofer harness



### 3. Amplifier Module Cover Removal

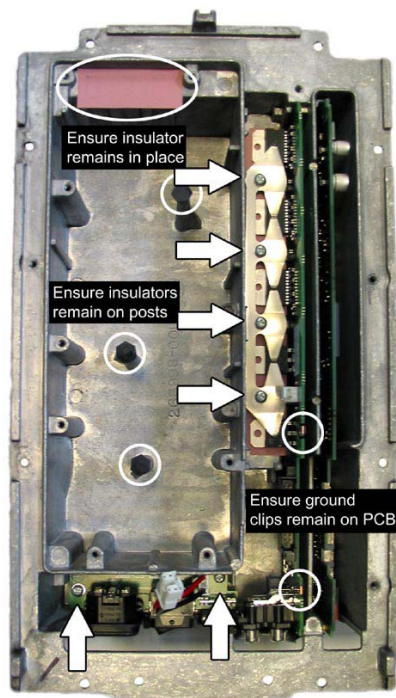
Remove 12 screws



### 4. Power PCB Removal

Disconnect J103, lift up PCB

## Bass Module Disassembly Procedures



### 5. DSP, AMP, AC Jack PCB Removal

**DSP PCB** - Lift up DSP PCB. (ensure grounding clips remain in place)

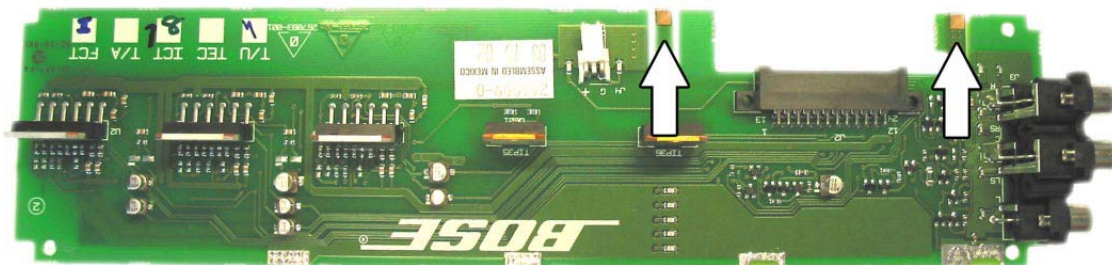
**AMP PCB** - Remove four screws, lift up AMP PCB. (ensure grounding clips and heat sink insulator remain in place, note spring bar location for reference when replacing)

**AC Jack PCB** - Remove 2 screws, lift up AC Jack PCB.



### DSP PCB

Ensure grounding clips indicated remain in place



### AMP PCB

Ensure grounding clips indicated remain in place



## Cube Speaker Disassembly Procedures

### Double and Single Cube Disassembly

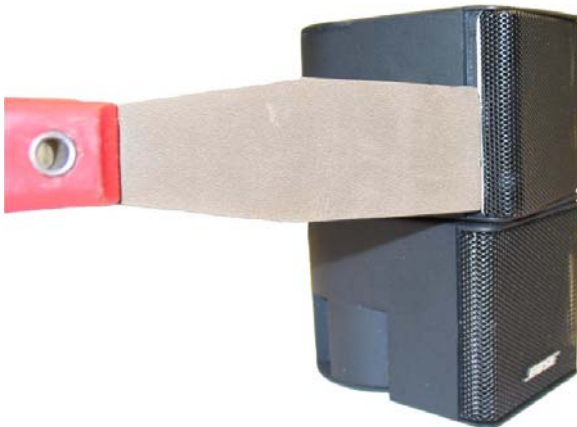


#### 1. Double and Single Cube Grille Removal

Remove grille with a flat plastic blade tool

**Note:** The Twiddler™ speakers are not removable

### Jewel® Cube Disassembly



#### 1. Grille Removal

Remove grille with a flat plastic blade tool



#### 2. Twiddler Speaker Removal

Pull off rubber screw covers  
then remove four screws



#### 3. Twiddler Speaker Removal

Pull out Twiddler speaker  
Note wire configuration  
Cut wires close to terminals

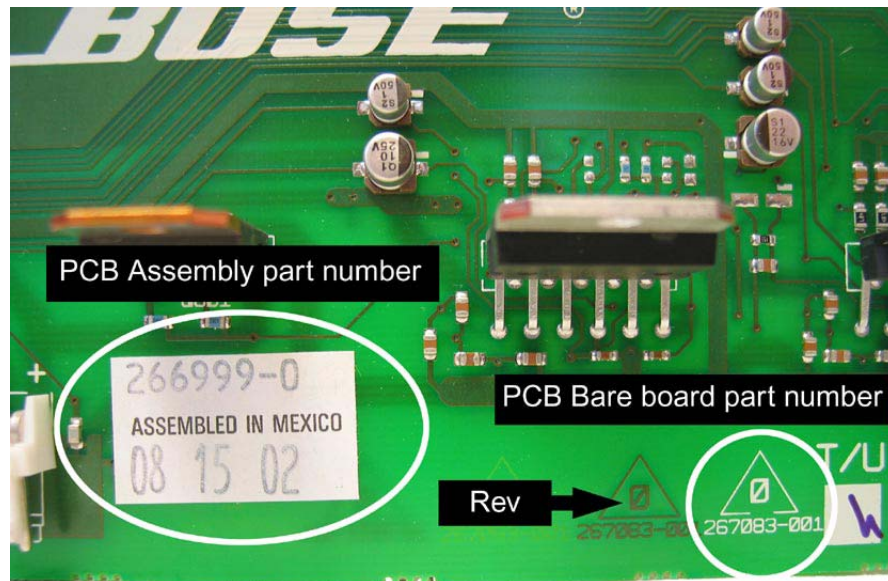


Figure 13. PCB Part Number Identification



Figure 14. Date Of Manufacture (DOM) Identification

The DOM is the four underlined numbers in the serial number.

Example: DOM 1303 -YDDD = 303rd day of 2001.

## Revision Page

Revision 00 - 01: Changed part number 260351-001 to 260351-002 per ECN32954

Revision 03-04 - Add new service bom part numbers for PCBs - new DSP PCB: ECN 36696

Specifications and Features Subject to Change Without Notice

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